

# PROJECT MANUAL



## Sewer System Improvements Phase I For the Town of Alamo Alamo, Tennessee

TDEC ARPA ID # WW-PDC-1

A2H # 21451.01

**Bid Date:  
July 10, 2024**

*This project is being supported, in whole or in part, by federal funds awarded to the Town of Alamo by the American Rescue Plan Act.*

# A2H

ENGINEERS • ARCHITECTS • PLANNERS

3009 Davies Plantation Road  
Lakeland, TN 38002

901.372.0404  
www.A2H.com

A2H, Inc.



## SEALS

CIVIL ENGINEER

TRAVIS MARTIN, PE

A2H, INC.

3009 DAVIES PLANTATION ROAD

LAKELAND, TN 38002

PHONE: (901) 372-0404



END OF SECTION



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**END OF SECTION**





## LIST OF DRAWINGS

### DESCRIPTION

The following is the list of Project Contract Drawings entitled **Sewer System Improvements Phase I** for the Town of Alamo in Alamo, Tennessee, dated April 16, 2024 with Revision dates, if any, as noted.

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END OF SECTION



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<b>Bid Number:</b>	TDEC ARPA # WW-PDC-1
<b>Bid Title:</b>	Sewer System Improvements Phase I
<b>Category:</b>	Public Works
<b>Status:</b>	Bidding

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### **Advertisement for Bids**

Sewer System Improvements Phase I  
TDEC ARPA # WW-PDC-1  
Alamo, Tennessee

Town of Alamo will be soliciting bids for Sewer System Improvements Phase I on the property located at Alamo, Tennessee. The Sewer System Improvements Phase I is a Public Works project with several functions for the Alamo, Tennessee community. The Project consists of the rehabilitation of the existing sewer collection system.

This project is being supported American Rescue Plan Act, Coronavirus State and Local Recovery Fund grant funding. Therefore, certain restrictions and other federal requirements attach to this opportunity.

Separate sealed bids for Sewer System Improvements Phase I will be received by the Town of Alamo, 97 S Johnson Street, Alamo, TN 38001, until **10:00 a.m. on July 10, 2024**, and then at said office publicly opened and read aloud. Any person with disability requiring special accommodations must contact the Town of Alamo no later than 7 days prior to the bid opening.

All bid documents may be examined at the following:

1) TOWN OF ALAMO  
97 S JOHNSON STREET  
ALAMO, TN 38001

2) A2H, INC.  
3009 DAVIES PLANTATION RD.  
LAKELAND, TN 38002  
[www.a2hplanroom.com](http://www.a2hplanroom.com)

3) BUILDERS EXCHANGE  
642 SOUTH COOPER  
MEMPHIS, TN 38104  
[www.memphisbx.com](http://www.memphisbx.com)

4) WEST TENNESSEE PLANS ROOM  
439 AIRWAYS BLVD.  
JACKSON, TN 38301  
[www.wtplanroom.com](http://www.wtplanroom.com)

Electronic files may be downloaded free of charge from the A2H Planroom at [www.a2hplanroom.com](http://www.a2hplanroom.com). Hard copy sets of plans and specifications will also be available for purchase on the planroom at the contractor's expense. For questions regarding obtaining the plans and specifications, please email Laurie Smith, Project Coordinator at [lauries@a2h.com](mailto:lauries@a2h.com).

PLEASE NOTE: Official plan holders list will only be the list maintained by **A2H, Inc.** It is the sole responsibility of all plan holders, whether they have received digital downloads or paper copies of the plans and specifications, to periodically check for Addenda which may have been posted

on the **A2H Planroom** at [www.a2hplanroom.com](http://www.a2hplanroom.com).

Town of Alamo hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, or national origin in consideration for an award. Town of Alamo is an Equal Opportunity Employer. Any contract that uses federal funds to pay for construction work is a “federally assisted construction contract” and must include the equal opportunity clause found in 2 C.F.R. Part 200, unless otherwise stated in 41 C.F.R. Part 60. We encourage all small and minority owned firms and women’s business enterprises to participate. No bidder may withdraw his bid within (60) days after the actual date of the opening thereof.

The Copeland "Anti-Kickback" Act is also applicable, which prohibits workers on construction contracts from giving up wages that they are owed. Contractors must not appear on Sam.gov disbarment list.

A detailed listing of all subcontractors shall be provided by the Bidder. In accordance with the Contract Documents, documentation that the prospective General Contractor and its subcontractors meet minimum qualifications shall be provided and submitted. Subcontractors must also not appear on Sam.gov disbarment list. Mark-ups on subcontractor work or Cost Plus Overhead will be disallowed for reimbursement.

A bid bond or certified check for **five percent (5%) of the total bid amount** must accompany each bid. The successful bidder will be required to furnish a performance bond in the amount of his bid and shall, before entering on the work of said contract, be licensed as a contractor of the Town of Alamo.

The owner reserves the right to waive any informalities or to reject any or all bids.

**Publication Date**

June 12, 2024

**Bid Opening Date/Time**

July 10, 2024, 10:00 a.m.

# 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.

## ARTICLE 2—BIDDING DOCUMENTS

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.03 Owner has established a Bidding Documents Website as indicated in the Advertisement or invitation to bid. Owner recommends that Bidder register as a plan holder with the Issuing Office at such website, and obtain a complete set of the Bidding Documents from such website. Bidders may rely that sets of Bidding Documents obtained from the Bidding Documents Website are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.04 Bidder may register as a plan holder and obtain complete sets of Bidding Documents, in the number and format stated in the Advertisement or invitation to bid, from the Issuing Office. Bidders may rely that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.05 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Bidding Documents Website or Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.
- 2.06 *Electronic Documents*
- A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.
1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader Version 6.0 or later. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control

the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

- B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.06.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.
- C. After the Contract is awarded, the Owner will provide or direct the Engineer to provide for the use of the Contractor documents that were developed by Engineer as part of the Project design process, as Electronic Documents in native file formats.
  - 1. Release of such documents will be solely for the convenience of the Contractor. No such document is a Contract Document.
  - 2. 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.
  - 3. 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. 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.
  - B. Bidder's state or other contractor license number, if applicable.
  - C. Subcontractor and Supplier qualification information.
  - D. 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 pre-bid conference will not be conducted for this Project.

## **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. No other Site-related documents are available.

5.04 *Site Visit and Testing by Bidders*

- A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.
- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- 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. Submit all questions via email to Laurie Smith, Project Coordinator ([lauries@a2h.com](mailto:lauries@a2h.com)).
- 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%)** 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 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 eady for final payment, are set forth in the Agreement.
- 9.02 Provisions for liquidated damages, if any, for failure to timely attain 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, and those "or-equal" or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No

item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer within 10 days of the issuance of the Advertisement for Bids or invitation to Bidders. Each such request must comply with the requirements of Paragraphs 7.05 and 7.06 of the General Conditions, and the review of the request will be governed by the principles in those paragraphs. The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all registered Bidders. Bidders cannot rely upon approvals made in any other manner.

- 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. 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 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed within five days after Bid opening:
- 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, either in ink or typewritten, 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 *Unit Price*
- A. Bidders must submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The “Bid Price” (sometimes referred to as the extended price) for each unit price Bid item will be the product of the “Estimated Quantity”, which Owner or its representative has set forth in the Bid Form, for the item and the corresponding “Bid Unit Price” offered by the Bidder. The

total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

#### 13.02 Allowances

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

### **ARTICLE 14—SUBMITTAL OF BID**

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

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

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

## **ARTICLE 16—OPENING OF BIDS**

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

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

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

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

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

- 18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility and qualifications 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.



# BID FORM FOR CONSTRUCTION CONTRACT

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

## ARTICLE 1—OWNER AND BIDDER

- 1.01 This Bid is submitted to: Town of Alamo, 97 S Johnson Street, Alamo, TN 38001
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

## ARTICLE 2—ATTACHMENTS TO THIS BID

- 2.01 The following documents are submitted with and made a condition of this Bid:
  - A. Required Bid security;
  - B. List of Proposed Subcontractors;
  - C. List of Proposed Suppliers;
  - D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
  - E. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;

## ARTICLE 3—BASIS OF BID

- 3.01 *Unit Price Bids*
  - A. Bidder will perform the Work at the unit prices indicated on the attached **Bid Schedule**:
  - B. Bidder acknowledges that:
    - 1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and
    - 2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

## ARTICLE 4—TIME OF COMPLETION

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



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

5.01 *Bid Acceptance Period*

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

5.02 *Instructions to Bidders*

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

5.03 *Receipt of Addenda*

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

Addendum Number	Addendum Date

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

6.01 *Bidder’s Representations*

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



necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

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

#### 6.02 *Bidder's Certifications*

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

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



**BID SCHEDULE**  
**SEWER SYSTEM IMPROVEMENTS PHASE I**  
**TDEC ARPA # WW-PDC-1**  
**ALAMO, TENNESSEE**

Bidder agrees to perform all the work as described in the Specifications and as shown on the plans for the following unit prices:

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT
1	MOBILIZATION	1	LS	\$	\$
2	8" CIPP	6,300	LF	\$	\$
3	POINT REPAIR	22	EA	\$	\$
4	LINEAR REPAIR	224	LF	\$	\$
<b>TOTAL BASE BID:</b>					<b>\$</b>

NOTE: Bids shall include sales tax and all other applicable taxes and fees.





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 Designated Contact:

Name:

\_\_\_\_\_

*(typed or printed)*

Title:

\_\_\_\_\_

*(typed or printed)*

Phone:

\_\_\_\_\_

Email:

\_\_\_\_\_

Address:

\_\_\_\_\_

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



## BID BOND (PENAL SUM FORM)

<b>Bidder</b> Name: Address <i>(principal place of business)</i> :	<b>Surety</b> Name: Address <i>(principal place of business)</i> :
<b>Owner</b> Name: <b>Town of Alamo</b> Address <i>(principal place of business)</i> :  <b>97 S Johnson Street</b> <b>Alamo, TN 38001</b>	<b>Bid</b> Project <i>(name and location)</i> : <b>Sewer System Improvements Phase I</b>  Bid Due Date: <b>July 10, 2024</b>
<b>Bond</b> 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.

**CERTIFICATION OF BIDDER REGARDING  
EQUAL EMPLOYMENT OPPORTUNITY**

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

**Certification by Bidder**

Bidder/Firm: \_\_\_\_\_

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

City: \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

- 1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.  Yes  No
- 2. Compliance reports were required to be filed in connection with such contract or subcontract.  Yes  No
- 3. Bidder has filed all compliance reports due under applicable instructions, including SF-100.  Yes  No  None Req.
- 4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended?  Yes  No

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

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

Signature: \_\_\_\_\_

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



**DRUG-FREE WORKPLACE AFFIDAVIT**

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

The undersigned, principal officer of \_\_\_\_\_, an employer of five (5) or more employees contracting with \_\_\_\_\_ government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of \_\_\_\_\_ (hereinafter referred to as the "Company"), and is duly authorized to execute this Affidavit on behalf of the Company.
  
2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the Tennessee Code Annotated.
  
3. The Company is in compliance with T.C.A. § 50-9-113.

Further affiant saith not.

\_\_\_\_\_  
Principal Officer

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me personally appeared \_\_\_\_\_, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_





**STATEMENT OF COMPLIANCE CERTIFICATE  
ILLEGAL IMMIGRANTS**

EACH CONTRACTOR BIDDING SHALL FILL IN AND SIGN THE FOLLOWING

This is to certify that \_\_\_\_\_  
have fully complied with all the requirements of Chapter No. 878 (House Bill No. 111 and Senate Bill No. 411) which serves to amend Tennessee Code Annotated Title 12, Chapter 4, Part I, attached herein for reference.

- *All Bidders for construction services on this project shall be required to submit an affidavit (by executing this compliance document) as part of their bid, that attests that such Bidder shall comply with requirements of T.C.A. § 12-3-309.*

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

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

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me personally appeared \_\_\_\_\_, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_





## STATE OF TENNESSEE

### BYRD ANTI-LOBBYING AMENDMENT CERTIFICATION

Contractors 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 who in turn will forward the certification(s) to the awarding agency.

#### **APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING – REQUIRED FOR CONTRACTS OVER \$100,000** *Certification for Contracts, Grants, Loans, and Cooperative Agreements*

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

- No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, 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.
- If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.



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

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

<b>Signature of Authorized Representative</b>	<b>Date</b>
<b>Printed Name and Title</b>	<b>Phone Number / Email Address</b>





**STATE OF TENNESSEE**  
**CERTIFICATION REGARDING DEBARMENT, SUSPENSION**  
**AND OTHER RESPONSIBILITY MATTERS**

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

- Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- Have not within a three-year period preceding this proposal been convicted of or had a civil judgement 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) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

<b>Signature of Authorized Representative</b>	<b>Date</b>
<b>Printed Name</b>	<b>Phone Number / Email Address</b>

I am unable to certify to the above statements. Explanation is attached.







**STATE OF TENNESSEE**  
**IRAN DIVESTMENT ACT CERTIFICATION**

<b>SUBJECT CONTRACT NUMBER(S):</b>	
<b>CONTRACTOR LEGAL ENTITY NAME:</b>	
<b>EDISON SUPPLIER IDENTIFICATION NUMBER:</b>	

The Iran Divestment Act, Tenn. Code Ann. § 12-12-101 et. seq. requires a person that attempts to contract with the state, including a contract renewal or assumption, to certify at the time the bid is submitted or the contract is entered into, renewed, or assigned, that the person or the assignee is not identified on a list created pursuant to § 12-12-106.

Currently, the list is available online at the following website: <https://www.tn.gov/generalservices/procurement/central-procurement-office--cpo-/library-/public-information-library.html>

The Contractor, identified above, certifies by signature below that it is not included on the list of persons created pursuant to Tenn. Code Ann. § 12-12-106 of the Iran Divestment Act.

---

**CONTRACTOR SIGNATURE**

NOTICE: This certification MUST be signed by an individual with legal capacity to contractually bind the Contractor.

---

**PRINTED NAME AND TITLE OF SIGNATORY**

---

**DATE**





**STATE OF TENNESSEE**  
**NON-BOYCOTT OF ISRAEL CERTIFICATION**

The Bidder certifies that it is not currently engaged in, and will not for the duration of the contract engage in, a boycott of Israel as defined by Tenn. Code Ann. § 12-4-119. This provision shall not apply to contracts with a total value of less than two hundred fifty thousand dollars (\$250,000) or to contractors with less than ten (10) employees.

According to the law, a boycott of Israel means engaging in refusals to deal, terminating business activities, or other commercial actions that are intended to limit commercial relations with Israel, or companies doing business in or with Israel or authorized by, licensed by, or organized under the laws of the State of Israel to do business, or persons or entities doing business in Israel, when such actions are taken:

- 1) In compliance with, or adherence to, calls for a boycott of Israel, or
- 2) In a manner that discriminates on the basis of nationality, national origin, religion, or other unreasonable basis, and is not based on a valid business reason. Tenn. Code Ann. § 12-4-119.

<b>Signature of Authorized Representative</b>	<b>Date</b>
<b>Printed Name</b>	<b>Phone Number / Email Address</b>





**STATE OF TENNESSEE**  
**CERTIFICATION OF BIDDER REGARDING**  
**USE OF WOMEN/MINORITY SUBCONTRACTORS**  
***\*Construction Projects Only\****

This certification is required for the contractor to demonstrate that when subcontractors are to be used on this project, an attempt will be made to utilize women/minority owned firms.

Documentation must be on file to show who has been contacted.

- I certify that every attempt was made to utilize female/minority contractors on this project.
- I am unable to certify to the above statements. Explanation is attached.

<b>Signature of Authorized Representative</b>	<b>Date</b>
<b>Printed Name</b>	<b>Phone Number</b>
<b>Email Address</b>	<b>Address</b>



# NOTICE OF AWARD

Date of Issuance: \_\_\_\_\_

Owner: Town of Alamo Owner's Project No.: \_\_\_\_\_

Engineer: A2H, Inc. Engineer's Project No.: 21451.01

Project: Sewer System Improvements Phase I

Bidder: \_\_\_\_\_

Bidder's Address: \_\_\_\_\_

You are notified that Owner has accepted your Bid dated **July 10, 2024** for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

## Sewer System Improvements Phase I

The Contract Price of the awarded Contract is \$\_\_\_\_\_.

**Four [4]** 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 **four [4]** 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.

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 Alamo

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

Name (*printed*): The Honorable John Emison

Title: Mayor

Copy: Engineer





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

This Agreement is by and between **Town of Alamo** (“Owner”) and \_\_\_\_\_ (“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 Project consists of the rehabilitation of the existing sewer collection system.

## ARTICLE 2—THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:  
**Sewer System Improvements Phase I, TDEC ARPA WW-PDC-1.**

## ARTICLE 3—ENGINEER

3.01 The Owner has retained **A2H, Inc.** (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by the **Engineer**.

## ARTICLE 4—CONTRACT TIMES

4.01 *Time is of the Essence*

A. All time limits completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Deleted.*

4.03 *Contract Times: Days*

A. The Work will be completed and ready for final payment within **120** days after the date when the Contract Times commence to run as provided in the Notice to Proceed.

4.04 *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 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. *Completion of Work*: If Contractor shall neglect, refuse, or fail to complete the Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner **\$500.00** for each day that expires after such time until the Work is completed and ready for final payment.
  2. Liquidated damages for failing to timely attain 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.

4.05 *Special Damages – Deleted.*

#### **ARTICLE 5—CONTRACT PRICE**

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

- A. For all Work, at the prices stated in Contractor's Bid, attached hereto.

#### **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 **25th** 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 Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
  - a. **95** percent of the value of the Work completed (with the balance being retainage).
    - 1) If 50 percent or more of the Work has been completed, as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
  - b. **95** percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

- B. Upon Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to **100** percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less **200** percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

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

6.04 *Consent of Surety*

- A. Owner will not make final payment, or return or release retainage 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 **3** 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.
  - 6. Drawings listed on the attached sheet index.
  - 7. Addenda (numbers \_\_\_ to \_\_\_, inclusive).
  - 8. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid Form.
  - 9. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    - a. Notice to Proceed.
    - b. Work Change Directives.
    - c. Change Orders.
    - d. Field Orders.
    - e. Warranty Bond, if any.

- B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

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

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

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

10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

#### 8.02 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
  1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
  4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

#### 8.03 *Standard General Conditions*

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

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

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

Owner:

Contractor:

**Town of Alamo**

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

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

By:

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

By:

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

Date:

\_\_\_\_\_  
*(date signed)*

Date:

\_\_\_\_\_  
*(date signed)*

Name:

**The Honorable John Emison**

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

Name:

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

Title:

**Mayor**

\_\_\_\_\_  
*(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)*

Attest:

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

Title:

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

Title:

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

Address for giving notices:

Address for giving notices:

\_\_\_\_\_  
97 S Johnson Street

\_\_\_\_\_  
Alamo, TN 38001

Designated Representative:

Designated Representative:

Name:

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

Name:

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

Title:

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

Title:

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

Address:

Address:

Phone:

\_\_\_\_\_

Phone:

\_\_\_\_\_

Email:

\_\_\_\_\_

Email:

\_\_\_\_\_

*(If [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.)*

License No.:

\_\_\_\_\_  
*(where applicable)*

State:

\_\_\_\_\_

## PERFORMANCE BOND

<b>Contractor</b> Name: Address <i>(principal place of business)</i> :	<b>Surety</b> Name: Address <i>(principal place of business)</i> :
<b>Owner</b> Name: Mailing address <i>(principal place of business)</i> :	<b>Contract</b> Description <i>(name and location)</i> :  Contract Price: Effective Date of Contract:
<b>Bond</b> Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
_____	_____
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____	By: _____
<i>(Signature)</i>	<i>(Signature)(Attach Power of Attorney)</i>
Name: _____	Name: _____
<i>(Printed or typed)</i>	<i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____	Attest: _____
<i>(Signature)</i>	<i>(Signature)</i>
Name: _____	Name: _____
<i>(Printed or typed)</i>	<i>(Printed or typed)</i>
Title: _____	Title: _____
<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>	

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



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

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

14. Definitions

14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

16. Modifications to this Bond are as follows: **None.**

## PAYMENT BOND

<b>Contractor</b> Name: Address <i>(principal place of business)</i> :	<b>Surety</b> Name: Address <i>(principal place of business)</i> :
<b>Owner</b> Name: Mailing address <i>(principal place of business)</i> :	<b>Contract</b> Description <i>(name and location)</i> :  Contract Price: Effective Date of Contract:
<b>Bond</b> Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 18	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <span style="margin-left: 100px;"><i>(Signature)</i></span>	By: _____ <span style="margin-left: 100px;"><i>(Signature)(Attach Power of Attorney)</i></span>
Name: _____ <span style="margin-left: 100px;"><i>(Printed or typed)</i></span>	Name: _____ <span style="margin-left: 100px;"><i>(Printed or typed)</i></span>
Title: _____	Title: _____
Attest: _____ <span style="margin-left: 100px;"><i>(Signature)</i></span>	Attest: _____ <span style="margin-left: 100px;"><i>(Signature)</i></span>
Name: _____ <span style="margin-left: 100px;"><i>(Printed or typed)</i></span>	Name: _____ <span style="margin-left: 100px;"><i>(Printed or typed)</i></span>
Title: _____	Title: _____
<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>	

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

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

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

## NOTICE TO PROCEED

Owner: Town of Alamo Owner's Project No.: \_\_\_\_\_  
Engineer: A2H, Inc. Engineer's Project No.: 21451.01  
Contractor: \_\_\_\_\_ Contractor's Project No.: \_\_\_\_\_  
Contract Name: Sewer System Improvements Phase I  
Effective Date of Contract: \_\_\_\_\_

In accordance with the Agreement dated \_\_\_\_\_:

Contractor is hereby notified to commence the work on or before \_\_\_\_\_, and is to complete the work within **120** consecutive calendar days thereafter. The date of Completion of all work is, therefore, \_\_\_\_\_.

Owner: Town of Alamo  
By (signature): \_\_\_\_\_  
Name (printed): The Honorable John Emison  
Title: Mayor  
Date Issued: \_\_\_\_\_  
Copy: Engineer





## Required and Recommended State and Local Fiscal Recovery Funds (SLRF) Supplemental Conditions for Contracts

Below is a listing of required and recommended supplemental conditions for contracts, along with sample language. This is not an exhaustive list. It is recommended Grantees use this list to supplement typical contract provisions and notify potential bidders of these conditions in the advertisement for bids.

### *Required Clauses*

#### Legal/contractual/administrative remedies for breach of contract

Contracts for more than the simplified acquisition threshold, currently set at \$250,000, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

#### Termination for cause or convenience

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.

#### Equal Employment Opportunity

Any contract that uses federal funds to pay for construction work is a “federally assisted construction contract” and must include the equal opportunity clause found in 2 C.F.R. Part 200, unless otherwise stated in 41 C.F.R. Part 60. This contract provision is required for all procurements that meet the definition of a “federally assisted construction contract.”

**Required Language.** The regulation at 41 C.F.R. Part 60-1.4(b) requires the insertion of the following contract clause.

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, sexual orientation, gender identity, 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, sexual orientation, gender identity, 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 consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

- (2) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (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 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. (8) 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.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable

to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

#### [Davis-Bacon Act](#)

U.S. Treasury exercised its federal authority outlining the requirements for water infrastructure projects executed using ARP funds. Therefore, the requirements for prevailing wages and rates slightly differs from the standards of Davis-Bacon. Individual projects less than \$10 million dollars are not required to provide certification that prevailing wages and rates were followed. Individual projects of \$10 million dollars or more require certification similar to Davis-Bacon and are outlined below. Please note that any project using other funding sources, like Community Development Block Grants or SRF loans, are subject to requirements for those programs. When combining funding sources on a single and complete project or phase, other funding program requirements may trump the requirements for the use of ARP funds. We recommend Grantees and Project Owners discuss project requirements with TDEC when leveraging ARP funds with other funding programs to ensure all applicable rules and regulations are followed.

#### **Individual Water Infrastructure Projects of \$10 million dollars or more**

- (1) A recipient may provide a certification that, for the relevant project, all laborers and mechanics employed by contractors and subcontractors in the performance of such project are paid wages at rates not less than those prevailing, as determined by the U.S. Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code (commonly known as the "Davis-Bacon Act"), for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the civil subdivision of the State (or the District of Columbia) in which the work is to be performed, or by the appropriate State entity pursuant to a corollary State prevailing-wage-in-construction law (commonly known as "baby Davis-Bacon Acts"). If such certification is not provided, a recipient must provide a project employment and local impact report detailing:
  - a. The number of employees of contractors and sub-contractors working on the project;
  - b. The number of employees on the project hired directly and hired through a third party;
  - c. The wages and benefits of workers on the project by classification; and
  - d. Whether those wages are at rates less than those prevailing. 19 Recipients must maintain sufficient records to substantiate this information upon request.

- (2) A recipient may provide a certification that a project includes a project labor agreement, meaning a pre-hire collective bargaining agreement consistent with section 8(f) of the National Labor Relations Act (29 U.S.C. 158(f)). If the recipient does not provide such certification, the recipient must provide a project workforce continuity plan, detailing:
- a. How the recipient will ensure the project has ready access to a sufficient supply of appropriately skilled and unskilled labor to ensure high-quality construction throughout the life of the project, including a description of any required professional certifications and/or in-house training;
  - b. How the recipient will minimize risks of labor disputes and disruptions that would jeopardize timeliness and cost-effectiveness of the project;
  - c. How the recipient will provide a safe and healthy workplace that avoids delays and costs associated with workplace illnesses, injuries, and fatalities, including descriptions of safety training, certification, and/or licensure requirements for all relevant workers (e.g., OSHA 10, OSHA 30);
  - d. Whether workers on the project will receive wages and benefits that will secure an appropriately skilled workforce in the context of the local or regional labor market; and
  - e. Whether the project has completed a project labor agreement.
- (3) Whether the project prioritizes local hires.
- (4) Whether the project has a Community Benefit Agreement, with a description of any such agreement.

**Suggested Language, if applicable.** The following provides a sample contract clause:

- a. All transactions regarding this contract shall be done in compliance with the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29C.F.R. pt. 5 as may be applicable. The contractor shall comply with 40 U.S.C. 3141-3144, and 3146-3148 and the requirements of 29 C.F.R. pt. 5 as applicable.
- b. b. Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor.
- c. c. Additionally, contractors are required to pay wages not less than once a week.

#### **Copeland Anti-Kickback Act**

The Copeland "Anti-Kickback" Act prohibits workers on construction contracts from giving up wages that they are owed. This requirement applies to all contracts for construction or repair work above \$2,000 in situations where the Davis-Bacon Act also applies.

**Suggested Language, if applicable.** The following provides a sample contract clause:

- a. a. Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
- b. b. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
- c. c. Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12."

### Contract Work Hours and Safety Standards Act

Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations at 29 C.F.R. Part 5. See 2 C.F.R. Part 200, Appendix II(E). Each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours.

**Required Language.** The following provides a sample contract clause:

#### **Compliance with the Contract Work Hours and Safety Standards Act.**

- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work 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.
- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work 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 (b)(1) of this section, in the t \$27 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 (b)(1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) 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 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 same prime 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 (b)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

### Clean Air Act and Federal Water Pollution Control Act

For contracts over \$150,000, contracts must contain a provision requiring contractors to comply with the Clean Air Act and the Federal Water Pollution Control Act. If applicable, contracts must contain a provision that requires the contractor to agree to comply with all applicable standards, orders, or regulations issued pursuant

to the Clean Air Act (42 U.S.C. §§ 7401-7671q.) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251-1387).

**Suggested Language.** The following provides a sample contract clause.

#### **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 (name of subrecipient entering into the contract) and understands and agrees that the (name of the subrecipient entering into the contract) will, in turn, report each violation as required to assure notification to Treasury, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000

#### **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 ets eq.
- (2) The contractor agrees to report each violation to the (name of the subrecipient entering into the contract) and understands and agrees that the (name of the subrecipient entering into the contract) will, in turn, report each violation as required to assure notification to the Treasury, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000

#### **Debarment and Suspension**

Non-federal entities, contractors and subcontractors are subject to debarment and suspension regulations. These regulations restrict awards, subawards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities. In general, an “excluded” party cannot receive a Federal grant award or a contract within the meaning of a “covered transaction,” to include subawards and subcontracts. The debarment and suspension clause is required for all contracts and subcontracts for \$25,000 or more, all contracts that require the consent of an official of a federal agency, and all contracts for federally required audit services.

**Suggested Language.** The following provides a debarment and suspension clause. It incorporates an optional method of verifying that contractors are not excluded or disqualified.

#### **Suspension and Debarment**

- (1) 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’s 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).
- (2) 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.

- (3) This certification is a material representation of fact relied upon by (insert name of recipient/subrecipient/applicant). 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 (insert name of recipient/subrecipient/applicant), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) 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.

#### Byrd Anti-Lobbying Amendment

Contractors that apply or bid for a contract of \$100,000 or more under a federal grant must file the required certification. This is also applicable to subcontractors of more than \$100,000, must include a contract provision prohibiting the use of federal appropriated funds to influence officers or employees of the federal government. Contractors that apply or bid for a contract for more than \$100,000 must also file the required certification regarding lobbying.

#### **Suggested Language.** The following provides a sample contract clause:

Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352

Contractors 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 who in turn will forward the certification(s) to the awarding agency.

#### Procurement of Recovered Materials

A non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

#### **Suggested Language.** The following provides a sample contract clause:

“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 competitively within a timeframe providing for compliance with the contract performance schedule; meeting contract performance requirements; or at a reasonable price.

Information about this requirement, along with the list of EPA-designated items, is available at [EPA's Comprehensive Procurement Guidelines webpage](#).

The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.”

### **Domestic Preference for Procurement**

As appropriate, and to the extent consistent with law, NFEs should, to the greatest extent practicable under a federal award, provide a preference for the purchase, acquisition, or use of goods, products or materials produced in the United States. This includes, but is not limited to, iron, aluminum, steel, cement, and other manufactured products.

#### **Suggested Language.** The following provides a sample contract clause:

“Domestic Preference for Procurements

As appropriate, and to the extent consistent with law, the contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. This includes, but is not limited to iron, aluminum, steel, cement, and other manufactured products.

For purposes of this clause:

Produced in the United States means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. Manufactured products mean items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.”

### **Recommended Clauses**

#### **Access to Records**

NFEs and their contractors and subcontractors must give the Department of Treasury and other authorized representatives access to records associated with their awards during the federally required record retention period and as long as the records are retained.

#### **Suggested Language.** The following provides a sample contract clause:

The following access to records requirements apply to this contract:

(1) The Contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), Treasury, 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.

(2) 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.



(3) The Contractor agrees to provide the Treasury or authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

#### Contract Changes or Modifications

To be eligible for ARP SLFRF assistance under the non-Federal entity's Treasury grant or cooperative agreement, the cost of the change, modification, change order, or constructive change must be allowable, allocable, within the scope of its grant or cooperative agreement, and reasonable for the completion of project scope.

#### Compliance with Federal Law, Regulations and Executive Orders

The recipient and its contractors are required to comply with all Federal laws, regulations, and executive orders.

#### **Suggested Language.** The following provides a sample contract clause:

"This is an acknowledgement that Treasury ARP SLFRF financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable Federal law, regulations, executive orders, Treasury policies, procedures, and directives."

#### Program Fraud and False or Fraudulent Statements or Related Acts

Recipients must comply with the requirements of The False Claims Act (31 U.S.C. §§ 3729-3733) which prohibits the submission of false or fraudulent claims for payment to the federal government. It is that the non-Federal entity include a provision in its contract that the contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to its actions pertaining to the contract.

#### **Suggested Language.** The following provides a sample contract clause:

"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 this contract."

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The following access to records requirements apply to this contract:

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"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 this contract."

These Supplemental Conditions are recommended by the Tennessee Department of Environment and Conservation for projects funded through under the American Rescue Plan (ARP) State and Local Fiscal Recovery Fund (SLFRF). If the information is reproduced or conflicts with other sections of this Bid Manual or the Contract, the more stringent requirement applies.

## Appendix II to Part 200

### Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

- (A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.
- (B) 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 effected and the basis for settlement.
- (C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of “federally assisted construction contract” in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”
- (D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.
- (E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is

compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

- (F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of “funding agreement” under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.
- (G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended - Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).
- (H) Debarment and Suspension (Executive Orders 12549 and 12689) - A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.
- (I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352) - Contractors that apply or bid for an award exceeding \$100,000 must 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 must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(J) See § 200.323.

(K) See § 200.216.

(L) See § 200.322.

[78 FR 78608, Dec. 26, 2013, as amended at 79 FR 75888, Dec. 19, 2014; 85 FR 49577, Aug. 13, 2020]

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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

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

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

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

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

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

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

## 1.02 Terminology

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



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

## **ARTICLE 2—PRELIMINARY MATTERS**

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

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

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

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

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

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

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

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

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

2.05 *Acceptance of Schedules*

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

2.06 *Electronic Transmittals*

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

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

### 3.01 *Intent*

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

### 3.02 *Reference Standards*

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

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

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies*

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

#### B. *Resolving Discrepancies*

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

### 3.04 *Requirements of the Contract Documents*

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

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

### 3.05 *Reuse of Documents*

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

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

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

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

### 4.02 *Starting the Work*

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

### 4.03 *Reference Points*

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

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

#### 4.04 *Progress Schedule*

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

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

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

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

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

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

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

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

5.02 *Use of Site and Other Areas*

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

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



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

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

### 5.03 *Subsurface and Physical Conditions*

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

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

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

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

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

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

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

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

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

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

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

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

#### 5.05 *Underground Facilities*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## **ARTICLE 6—BONDS AND INSURANCE**

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

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

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

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

#### 6.02 *Insurance—General Provisions*

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



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

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

6.03 *Contractor's Insurance*

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

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

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

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

#### 6.05 *Property Losses; Subrogation*

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

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

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

6.06 *Receipt and Application of Property Insurance Proceeds*

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

**ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

7.01 *Contractor's Means and Methods of Construction*

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

7.02 *Supervision and Superintendence*

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

7.03 *Labor; Working Hours*

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

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

7.04 *Services, Materials, and Equipment*

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

7.05 *"Or Equals"*

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

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

#### 7.06 *Substitutes*

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

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



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

7.07 *Concerning Subcontractors and Suppliers*

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

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

7.08 *Patent Fees and Royalties*

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

#### 7.09 *Permits*

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

#### 7.10 *Taxes*

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

#### 7.11 *Laws and Regulations*

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

#### 7.12 *Record Documents*

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

### 7.13 *Safety and Protection*

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

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

7.14 *Hazard Communication Programs*

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

7.15 *Emergencies*

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

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

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

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

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

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

*D. Resubmittal Procedures for Shop Drawings and Samples*

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

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

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

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

**7.17 Contractor's General Warranty and Guarantee**

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



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

7.18 *Indemnification*

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

7.19 *Delegation of Professional Design Services*

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

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

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

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

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

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

#### 8.02 *Coordination*

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

#### 8.03 *Legal Relationships*

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

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

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

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

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

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

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

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

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

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

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

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

## ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

### 10.01 *Owner's Representative*

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

### 10.02 *Visits to Site*

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

### 10.03 *Resident Project Representative*

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

### 10.04 *Engineer's Authority*

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

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

10.05 *Determinations for Unit Price Work*

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

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

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

10.07 *Limitations on Engineer's Authority and Responsibilities*

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

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

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

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

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

10.08 *Compliance with Safety Program*

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

## ARTICLE 11—CHANGES TO THE CONTRACT

### 11.01 *Amending and Supplementing the Contract*

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

### 11.02 *Change Orders*

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

### 11.03 *Work Change Directives*

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



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

#### 11.04 *Field Orders*

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

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

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

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

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

#### 11.07 *Change of Contract Price*

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

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

#### 11.08 *Change of Contract Times*

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

#### 11.09 *Change Proposals*

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

#### B. *Change Proposal Procedures*

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

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

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

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

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

#### 11.10 *Notification to Surety*

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

### **ARTICLE 12—CLAIMS**

#### 12.01 *Claims*

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

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

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

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

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

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

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

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

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

c. *Construction Equipment Rental*

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

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

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

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

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

D. *Contractor's Fee*

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



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

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

### 13.02 Allowances

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

### 13.03 Unit Price Work

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

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

E. *Adjustments in Unit Price*

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

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

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

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

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

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

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

#### 14.03 *Defective Work*

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

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

#### 14.04 *Acceptance of Defective Work*

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

#### 14.05 *Uncovering Work*

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

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

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

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

**14.07 Owner May Correct Defective Work**

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

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

**15.01 Progress Payments**

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

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

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

C. *Review of Applications*

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

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

**D. *Payment Becomes Due***

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

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

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

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

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

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

#### 15.03 *Substantial Completion*

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



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

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

#### 15.04 *Partial Use or Occupancy*

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

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

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

#### 15.05 *Final Inspection*

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

#### 15.06 *Final Payment*

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

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

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

#### 15.07 *Waiver of Claims*

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

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

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

#### 15.08 *Correction Period*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## **ARTICLE 18—MISCELLANEOUS**

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

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

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

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

18.03 *Cumulative Remedies*

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

18.04 *Limitation of Damages*

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

18.05 *No Waiver*

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

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Assignment of Contract*

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

18.09 *Successors and Assigns*

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

18.10 *Headings*

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



# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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

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

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

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

No suggested Supplementary Conditions in this Article.

## ARTICLE 2—PRELIMINARY MATTERS

### 2.01 *Delivery of Bonds and Evidence of Insurance*

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

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

### 2.02 *Copies of Documents*

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

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

### 2.06 *Electronic Transmittals*

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

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

- a. To the fullest extent practical, the parties agree to and will transmit and accept Electronic Documents in an electronic or digital format using the procedures described in this Protocol. Use of the Electronic Documents and any information contained therein is subject to the requirements of this Protocol and other provisions of the Contract.
- b. The contents of the information in any Electronic Document will be the responsibility of the transmitting party.
- c. Electronic Documents as exchanged by this Protocol may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.
- d. Except as otherwise explicitly stated herein, the terms of this Protocol will be incorporated into any other agreement or subcontract between a party and any third party for any portion of the Work on the Project, or any Project-related services, where that third party is, either directly or indirectly, required to exchange Electronic Documents with a party or with Engineer. Nothing herein will modify the requirements of the Contract regarding communications between and among the parties and their subcontractors and consultants.
- e. When transmitting Electronic Documents, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the receiving party's use of software application packages, operating systems, or computer hardware differing from those established in this Protocol.
- f. Nothing herein negates any obligation 1) in the Contract to create, provide, or maintain an original printed record version of Drawings and Specifications, signed and sealed according to applicable Laws and Regulations; 2) to comply with any applicable Law or Regulation governing the signing and sealing of design documents or the signing and electronic transmission of any other documents; or 3) to comply with the notice requirements of Paragraph 18.01 of the General Conditions.

## 2. *System Infrastructure for Electronic Document Exchange*

- a. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions ("System Infrastructure") at its own cost and sufficient for complying with the EDP requirements. With the exception of minimum standards set forth in this EDP, and any explicit system requirements specified by attachment to this EDP, it is the obligation of each party to determine, for itself, its own System Infrastructure.
  - 1) The maximum size of an email attachment for exchange of Electronic Documents under this EDP is **20 MB**. Attachments larger than that may be exchanged using large file transfer functions or physical media.
  - 2) Each Party assumes full and complete responsibility for any and all of its own costs, delays, deficiencies, and errors associated with converting, translating, updating, verifying, licensing, or otherwise enabling its System Infrastructure, including operating systems and software, for use with respect to this EDP.

- b. Each party is responsible for its own system operations, security, back-up, archiving, audits, printing resources, and other Information Technology (“IT”) for maintaining operations of its System Infrastructure during the Project, including coordination with the party’s individual(s) or entity responsible for managing its System Infrastructure and capable of addressing routine communications and other IT issues affecting the exchange of Electronic Documents.
- c. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.
- d. In the case of disputes, conflicts, or modifications to the EDP required to address issues affecting System Infrastructure, the parties shall cooperatively resolve the issues; but, failing resolution, the Owner is authorized to make and require reasonable and necessary changes to the EDP to effectuate its original intent. If the changes cause additional cost or time to Contractor, not reasonably anticipated under the original EDP, Contractor may seek an adjustment in price or time under the appropriate process in the Contract.
- e. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP, unless this EDP establishes a Project document archive, either as part of a mandatory Project website or other communications protocol, upon which the parties may rely for document archiving during the specified term of operation of such Project document archive. Further, each party remains solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract, or after termination of the Project document archive, if one is established, for as long as required by the Contract and as each party deems necessary for its own purposes.
- f. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.
- g. The parties will bring any non-conforming Electronic Documents into compliance with the EDP. The parties will attempt to complete a successful transmission of the Electronic Document or use an alternative delivery method to complete the communication.
- h. The Owner will operate a Project information management system (also referred to in this EDP as “Project Website”) for use of Owner, Engineer and Contractor during the Project for exchange and storage of Project-related communications and information. Except as otherwise provided in this EDP or the General Conditions, use of the Project Website by the parties as described in this Paragraph will be mandatory for exchange of Project documents, communications,

submittals, and other Project-related information. The following conditions and standards will govern use of the Project Website:

- 1) Describe the period of time during which the Project Website will be operated and be available for reliance by the parties;
- 2) Provide any minimum system infrastructure, software licensing and security standards for access to and use of the Project Website;
- 3) Describe the types and extent of services to be provided at the Project Website (such as large file transfer, email, communication and document archives, etc.); and
- 4) Include any other Project Website attributes that may be pertinent to Contractor's use of the facility and pricing of such use.

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

1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party (and if relevant from third parties), using the software formats required in this section of the EDP.
  - a. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.
2. The parties agree not to intentionally edit, reverse engineer, decrypt, remove security or encryption features, or convert to another format for modification purposes any Electronic Document or information contained therein that was transmitted in a software data format, including Portable Document Format (PDF), intended by sender not to be modified, unless the receiving party obtains the permission of the sending party or is citing or quoting excerpts of the Electronic Document for Project purposes.
3. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth in Exhibit A to this EDP, including software versions, if listed.

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

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

1. Release of any Electronic Document versions of the Project documents in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be at the sole discretion of the Owner.
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 \$[number] per hour) for any engineering costs necessary to create or otherwise prepare the data in a manner deemed appropriate by Engineer.

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

#### **3.01 Intent**

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

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

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

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

5. *Weather-Related Delays* – **See Section 01 2664 – Weather Days.**

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

5.03 *Subsurface and Physical Conditions*

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

- E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

Report Title	Date of Report	Technical Data
No Reports.		

- 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
No Reports.		

5.06 *Hazardous Environmental Conditions*

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
No Reports.		

- 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
No Reports.		

**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 (2010, 2013, or 2018 edition).



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

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

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

#### 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.

#### 6.03 *Contractor's Insurance*

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

- D. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
  1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
  2. damages insured by reasonably available personal injury liability coverage, and
  3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
  1. Products and completed operations coverage.
    - a. Such insurance must be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
  4. Underground, explosion, and collapse coverage.
  5. Personal injury coverage.

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

<b>Commercial General Liability</b>	<b>Policy limits of not less than:</b>
General Aggregate	\$1,000,000.00
Products—Completed Operations Aggregate	\$1,000,000.00
Personal and Advertising Injury	\$1,000,000.00
Bodily Injury and Property Damage—Each Occurrence	\$1,000,000.00

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

<b>Automobile Liability</b>	<b>Policy limits of not less than:</b>
<b>Bodily Injury</b>	
Each Person	\$1,000,000.00
Each Accident	\$1,000,000.00

<b>Automobile Liability</b>	<b>Policy limits of not less than:</b>
<b>Property Damage</b>	
Each Accident	\$1,000,000.00

- K. *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.

<b>Contractor's Professional Liability</b>	<b>Policy limits of not less than:</b>
Each Claim	\$1,000,000.00
Annual Aggregate	\$1,000,000.00

#### 6.04 Contractor's Responsibilities

### ARTICLE 7—LABOR; WORKING HOURS

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

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

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

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

## ARTICLE 8—OTHER WORK AT THE SITE

## ARTICLE 9—OWNER’S RESPONSIBILITIES

### 9.13 *Owner’s Site Representative*

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

### 9.13 *Owner’s Site Representative*

- A. Owner will furnish an “Owner’s Site Representative” to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Owner’s Site Representative is not Engineer’s consultant, agent, or employee.

## ARTICLE 10—ENGINEER’S STATUS DURING CONSTRUCTION

### 10.03 *Resident Project Representative*

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

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

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

- C. The Resident Project Representative (RPR) will be Engineer’s representative at the Site. RPR’s dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR’s dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:
  1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor’s safety meetings), and as appropriate prepare and circulate copies of minutes thereof.
  2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR’s own personal safety while at the Site.
  3. *Liaison*
    - a. Serve as Engineer’s liaison with Contractor. Working principally through Contractor’s authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
    - b. Assist Engineer in serving as Owner’s liaison with Contractor when Contractor’s operations affect Owner’s on-Site operations.
    - c. Assist in obtaining from Owner additional details or information, when required for Contractor’s proper execution of the Work.
  4. *Review of Work; Defective Work*

- a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
  - b. Observe whether any Work in place appears to be defective.
  - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.
5. *Inspections and Tests*
- a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
  - b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
6. *Payment Requests: Review Applications for Payment with Contractor.*
7. *Completion*
- a. Participate in Engineer's visits regarding Substantial Completion.
  - b. Assist in the preparation of a punch list of items to be completed or corrected.
  - c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
  - d. Observe whether items on the final punch list have been completed or corrected.
- D. The RPR will not:
- 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
  - 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
  - 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
  - 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.
  - 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
  - 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
  - 7. Authorize Owner to occupy the Project in whole or in part.

## **ARTICLE 11—CHANGES TO THE CONTRACT**

No suggested Supplementary Conditions in this Article.

## **ARTICLE 12—CLAIMS**

No suggested Supplementary Conditions in this Article.

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

### *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:
  - 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**

No suggested Supplementary Conditions in this Article.

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

### *15.01 Progress Payments*

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

- F. For contracts in which the Contract Price is based on the Cost of Work, if Owner determines that progress payments made to date substantially exceed the actual progress of the Work (as measured by reference to the Schedule of Values), or present a potential conflict with the Guaranteed Maximum Price, then Owner may require that Contractor prepare and submit a plan for the remaining anticipated Applications for Payment that will bring payments and progress into closer alignment and take into account the Guaranteed Maximum Price (if any), through reductions in billings, increases in retainage, or other equitable measures. Owner will review the plan, discuss any necessary modifications, and implement the plan as modified for all remaining Applications for Payment.

### *15.03 Substantial Completion*

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

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

paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

#### 15.08 *Correction Period*

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

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

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

No suggested Supplementary Conditions in this Article.

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

#### 17.02 *Arbitration*

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

#### 17.02 *Arbitration*

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

- E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.
- F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.
- G. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
  1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;
  2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;
  3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and
  4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.
- H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.
- I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

### 17.03 *Attorneys' Fees*

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

### 17.03 *Attorneys' Fees*

- A. For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys' fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration



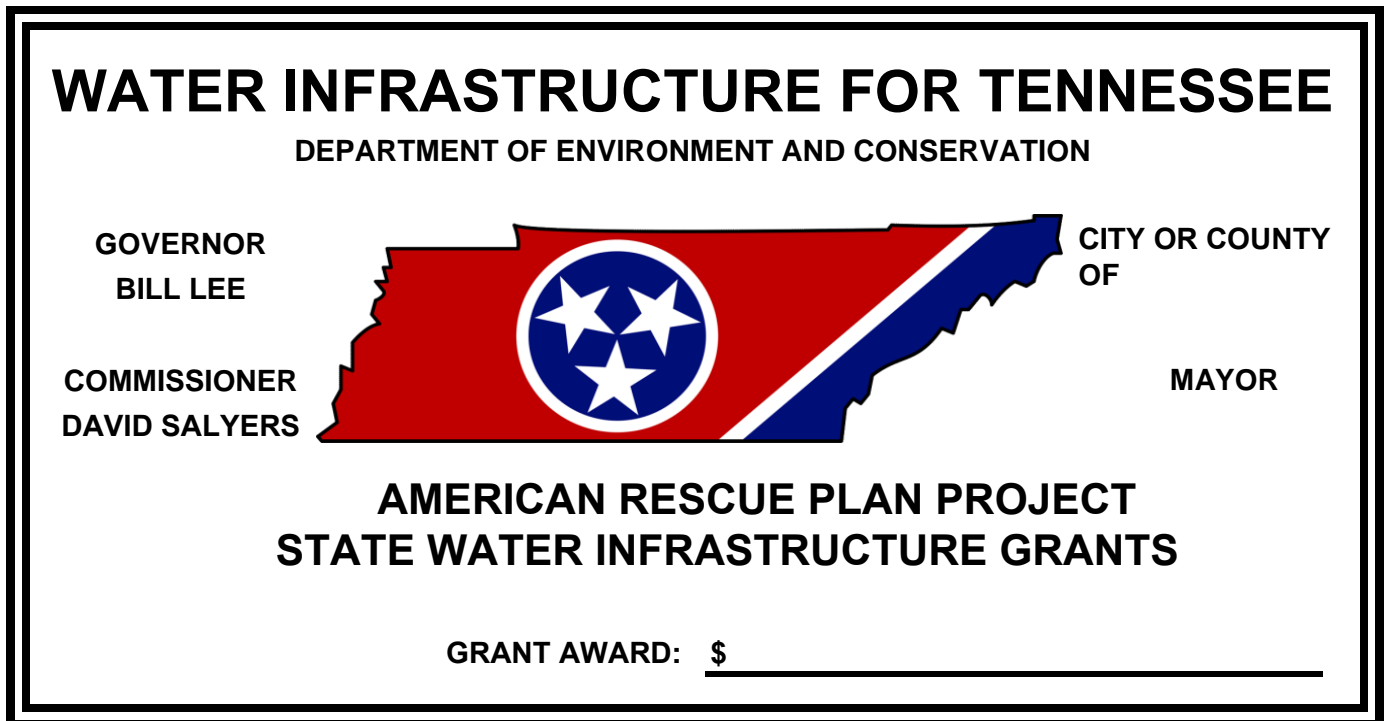
panel, or other arbiter of the matter subject to final resolution, taking into account the parties' initial demand or defense positions in comparison with the final result.



**STATE WATER INFRASTRUCTURE GRANTS  
IDENTIFICATION SIGN**

All plans and specifications for each project approved shall contain provisions for requiring the general contractor to provide identification signs. The signs shall conform to the following basic features:

1. The following diagram shall be used as a design:



2. The sign shall be a 4'0" X 8'0" sheet of exterior grade plywood and shall be built so as to remain erected during the entire construction phase of the project.
3. The background of both sides shall be white. The lettering shall be black and shall be large enough to take advantage of the full size of the plywood. The stars shall be white set on a blue field and surrounded by a white ring placed inside a state map in red with a stripe of white and blue on the right side. The sign shall be bordered by a one-inch blue stripe.



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**END OF SECTION**

## SECTION 01 1000 SUMMARY

### PART 1 GENERAL

#### 1.01 PROJECT

- A. Project Name: Sewer System Improvements Phase I
- B. Owner's Name: Town of Alamo.
- C. Engineer's Name: A2H, Inc..
- D. The Project consists of the construction of utilities as described in the drawings and project manual.

#### 1.02 CONTRACT DESCRIPTION

- A. The work of each separate prime contract is identified in this section and on Drawings.

#### 1.03 DESCRIPTION OF ALTERATIONS WORK

- A. Scope of demolition and removal work is indicated on drawings.
- B. Hazardous Substances: Discovery of a suspected dangerous or hazardous substance during construction stops construction operations and may seriously delay a project. Contractors often encounter asbestos, lead, polychlorinated biphenyls (PCBs), and similar hazardous materials on their construction projects. Because the use of those materials was common until recently, they are often found on renovation projects involving older buildings. AIA Document A201 outlines procedures contractors must follow when suspected dangerous or hazardous substances are uncovered during construction. If the suspect material proves to be a dangerous or hazardous substance, a contractor is not permitted to resume construction operations until the material has been rendered harmless or has been lawfully removed from the site.
- C. Scope of alterations work is indicated on drawings.
- D. Notice: In no event is a product to be used in this project known to contain any hazardous or toxic waste or material, radioactive materials, or other contaminants, the removal of which is required or the maintenance of which is prohibited, regulated or penalized by any local, state, or federal agency, authority or governmental unit. If any product is inadvertently specified which contains such materials, it is the contractor's, subcontractor's and supplier's obligation and duty to advise the Architect/Engineer of this fact prior to the ordering and/or installing of the product or material.

#### 1.04 DESCRIPTION OF CONSTRUCTION WORK

- A. Scope of construction work is shown on drawings and specified in other sections.
- B. Implementation / Installation
  - 1. Experienced Project Management
    - a. The Contractor and its representatives shall have a proven program of professional project management to ensure successful system installation. Project managers shall be experienced in managing the design, installation, and optimization of systems. Project management experience shall include system integration and training support.
  - 2. Installation
    - a. The installation process shall include fully automated meter/endpoint installation software that programs the endpoints. Meters and endpoints shall be installed and data collected in the field. All data shall flow from field to CIS system without the requirement for manual entry. Data collected in the field shall include: Meter Number, Ert ID, final reading, new reading, picture of outgoing meter, and GIS location of meter.

- b. Installer is responsible for updating customer accounts in billing system by replacing existing meter information with new meter information. Installer must be able to electronically update the system at regular intervals during the installation process to keep billing system current for the purpose of regular reading and billing.
- c. Installer must use a GPS Unit to capture coordinates of meter locations of all meters installed or retrofitted. Accuracy of meter location to be 3'±. Data file must be differentially corrected. Coordinates to be supplied in latitude and longitude.
- d. Successful bidder must contact QS/1 Governmental for all fees associated with electronic meter change out process and to include these fees in their bid.
- e. Contractor shall notify residences of work on their water meter by installing door hangers one day prior to start of work.
- f. Contractor is responsible for and shall repair all leaks after installation of meters.
- g. Contractor shall reset any meter vaults displaced during meter installation.
- h. Contractor shall repair any yard damage to original condition to the satisfaction of the home owner prior to final payment.
- i. Notice: In no event is a product to be used in this project known to contain any hazardous or toxic waste or material, radioactive materials, or other contaminants, the removal of which is required or the maintenance of which is prohibited, regulated or penalized by any local, state, or federal agency, authority or governmental unit. If any product is inadvertently specified which contains such materials, it is the Contractor's, subcontractor's and supplier's obligation and duty to advise the Architect/Engineer of this fact prior to the ordering and/or installing of the product or material.

#### **1.05 WORK BY OWNER**

- A. There is no work to be performed by the Owner.

#### **1.06 OWNER OCCUPANCY**

- A. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- B. Coordinate construction schedule and operations with Engineer.

#### **1.07 ACCIDENT PREVENTION**

- A. Contractor shall comply with safety and engineering practices set forth in "Manual of Accident Prevention in Construction", published by Associated General Contractors of America and with all applicable state and local safety and sanitary laws, regulations and ordinances, as well as established safety rules and practices of Owner. Contractor shall, at his own expense, properly protect Owner's property from injury and shall make good any damage to same caused by failure to exercise required care during this work.

#### **1.08 SPECIFICATION SECTIONS APPLICABLE**

- A. Unless otherwise noted, provisions of the sections listed below apply to every contract. Specific items of work listed under individual contract descriptions constitute exceptions.
- B. Section 01 2000 - Price and Payment Procedures.
- C. Section 01 2500 - Substitution Procedures.
- D. Section 01 3000 - Administrative Requirements.
- E. Section 01 4000 - Quality Requirements.
- F. Section 01 5000 - Temporary Facilities and Controls.
- G. Section 01 7800 - Closeout Submittals.

**END OF SECTION**



**SECTION 01 2000  
PRICE AND PAYMENT PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.

**1.02 RELATED REQUIREMENTS**

- A. C-520 - Agreement Form: Contract Sum, retainages, payment period, monetary values of unit prices.
- B. Section 01 2200 - Unit Prices: Monetary values of unit prices; Payment and modification procedures relating to unit prices.
- C. Revise schedule to list approved Change Orders with each Application for Payment.

**1.03 APPLICATIONS FOR PROGRESS PAYMENTS**

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Engineer for approval.
- C. Forms filled out by hand will not be accepted.
- D. For each item, provide a column for listing each of the following:
  - 1. Item Number.
  - 2. Description of work.
  - 3. Scheduled Values.
  - 4. Previous Applications.
  - 5. Work in Place and Stored Materials under this Application.
  - 6. Authorized Change Orders.
  - 7. Total Completed and Stored to Date of Application.
  - 8. Percentage of Completion.
  - 9. Balance to Finish.
  - 10. Retainage.
- E. Execute certification by signature of authorized officer.
- F. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- H. Submit one electronic and three hard-copies of each Application for Payment.
- I. Include the following with the application:
  - 1. Transmittal letter as specified for submittals in Section 01 3000.
  - 2. Project record documents as specified in Section 01 7800, for review by Owner which will be returned to the Contractor.
  - 3. Affidavits attesting to off-site stored products.
- J. When Engineer requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

**1.04 MODIFICATION PROCEDURES**

- A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to Contract Documents.
- B. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Engineer will issue instructions directly to Contractor.
- C. For other required changes, Engineer will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
  - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
  - 2. Promptly execute the change.
- D. For changes for which advance pricing is desired, Engineer will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 5 days.
- E. Contractor may propose a change by submitting a request for change to Engineer, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 6000.
- F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
  - 1. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Engineer.
  - 2. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.
  - 3. For change ordered by Engineer without a quotation from Contractor, the amount will be determined by Engineer based on the Contractor's substantiation of costs as specified for Time and Material work.
- G. Substantiation of Costs: Provide full information required for evaluation.
  - 1. On request, provide the following data:
    - a. Quantities of products, labor, and equipment.
    - b. Taxes, insurance, and bonds.
    - c. Overhead and profit.
    - d. Justification for any change in Contract Time.
    - e. Credit for deletions from Contract, similarly documented.
  - 2. Support each claim for additional costs with additional information:
    - a. Origin and date of claim.
    - b. Dates and times work was performed, and by whom.
    - c. Time records and wage rates paid.
    - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
  - 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- H. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

- J. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- K. Promptly enter changes in Project Record Documents.

#### **1.05 APPLICATION FOR FINAL PAYMENT**

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
  - 1. Completion of items specified for completion beyond time of substantial completion (regardless of whether payment application was previously made).
  - 2. Assurance, satisfactory to the Owner, that unsettled claims will be settled and that work not actually completed and accepted will be completed without undue delay.
  - 3. Transmittal of required project construction records to Owner.
  - 4. Proof, satisfactory to Owner, that taxes, fees and similar obligations of Contractor have been paid.
  - 5. Removal of temporary facilities, services, surplus materials, rubbish and similar elements.
  - 6. Change over of door locks and other Contractor's access provisions to Owner's property.

#### **PART 2 PRODUCTS - NOT USED**

#### **PART 3 EXECUTION - NOT USED**

**END OF SECTION**



**SECTION 01 2500  
SUBSTITUTION PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Procedural requirements for proposed substitutions.

**1.02 RELATED REQUIREMENTS**

- A. Section C-200 - Instructions to Bidders: Restrictions on timing of substitution requests.
- B. Section 01 3000 - Administrative Requirements: Submittal procedures, coordination.

**1.03 DEFINITIONS**

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
  - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
    - a. Unavailability.
    - b. Regulatory changes.
  - 2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
    - a. Substitution requests offering advantages solely to the Contractor will not be considered.

**1.04 REFERENCE STANDARDS**

- A. Section 01 2500b- Substitution Request Form

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 GENERAL REQUIREMENTS**

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
  - 2. Agrees to provide the same warranty for the substitution as for the specified product.
  - 3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
  - 4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
  - 5. Waives claims for additional costs or time extension that may subsequently become apparent.
  - 6. Agrees to reimburse Owner and Engineer for review or redesign services associated with re-approval by authorities.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
  - 1. Note explicitly any non-compliant characteristics.
- C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
  - 1. Forms indicated in the Project Manual are adequate for this purpose, and must be used.
- D. Limit each request to a single proposed substitution item.
  - 1. Submit an electronic document, combining the request form with supporting data into single document.

**3.02 SUBSTITUTION PROCEDURES AFTER BIDDING**

- A. Submittal Form (after award of contract):
  - 1. Submit substitution requests by completing Section 01 2500b - Substitution Request Form. See this section for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- B. Engineer will consider requests for substitutions only within 15 days after date of Agreement.
- C. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Engineer, in order to stay on approved project schedule.
- D. Submit request for Substitution for Convenience within 14 days of discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Engineer, in order to stay on approved project schedule.
  - 1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
  - 2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
  - 3. Bear the costs engendered by proposed substitution of:
    - a. Owner's compensation to the Engineer for any required redesign, time spent processing and evaluating the request.
    - b. Other construction by Owner.
    - c. Other unanticipated project considerations.
- E. Substitutions will not be considered under one or more of the following circumstances:
  - 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
  - 2. Without a separate written request.
  - 3. When acceptance will require revisions to Contract Documents.

**3.03 RESOLUTION**

- A. Engineer may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. Engineer will notify Contractor in writing of decision to accept or reject request.
  - 1. Engineer's decision following review of proposed substitution will be noted on the submitted form.

**3.04 ACCEPTANCE**

- A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

**3.05 CLOSEOUT ACTIVITIES**

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

**END OF SECTION**

**SECTION 01 2664  
WEATHER DAYS**

**PART 1 GENERAL**

**1.01 REQUIREMENTS**

- A. Wet Conditions: The required time of completion is given in calendar days in the Bid Form (which becomes part of the Contract). It is expressly understood and agreed, by and between the Contractor and Owner, that the time for completion of the work described in the bid form is a reasonable time for completion of the same, taking into consideration the average climatic range and usual lost time due to normal seasonal weather in this locality.
1. Time for completion in the Bid Form includes the average number of days that are lost due to wet conditions. The table below shows the average number of days lost in each month due to wet conditions on outdoor or exposed interior work of projects. These days are derived from historical data provided by the National Climatic Data Center regarding rainfall for Memphis, TN and Nashville, TN. They represent a number less than the actual number of days of measurable rainfall that can be expected to occur during a twenty-four (24) hour period for the months indicated.
- a.

MONTH	AVERAGE DAYS LOST TO NORMAL WET CONDITIONS
January	8
February	8
March	8
April	9
May	7
June	4
July	6
August	5
September	7
October	6
November	6
December	7

2. Based on rainfall data provided by the National Climatic Data Center for Memphis and Nashville. The total contract time includes these days that are expected to be lost each month.
- a. Definition of Rain Day: Precipitation (rain, snow, or ice) in excess of one-tenth of an inch (0.10") liquid measure in a 24 hour period.
- B. Ice, Standing Snow and Frozen Ground:
1. In addition to work being delayed due to wet conditions (See 1.01 A. above), it is recognized that the work may also be delayed due to certain conditions relating to ice, snow and frozen ground; and loss of working time may also be claimed for such last mentioned conditions in accordance with the provisions of this paragraph. The average number of days lost per month in this locality due to ice, standing snow and frozen ground conditions shall be considered zero, however, lost days due to ice, standing snow and frozen ground conditions may be claimed if it is caused by one or more of the following conditions which prevent outside construction activity or access to the site within a 24-hour period:
- a. Ice which does not melt on a substantial portion of the project by 10 A.M.
- b. Temperatures which do not rise above 32 degrees F by 10 A.M.

- c. Standing snow in excess of one inch (1.00").
  - d. Precipitation (rain, snow, or ice) in excess of one-tenth of an inch (0.10") liquid measure in a 24 hour period.
- C. Further Provisions Regarding Time for Completion:
- 1. A weather delay day may be counted, if appropriate, for dry-out days when the following conditions are met:
    - a. If there is a hindrance to site access; work on the envelope of the building such as masonry or roofing; site work such as excavation, backfill, or footings; and site improvements such as paving.
    - b. At a rate no greater than one (1) make-up day for each day or consecutive days of rain beyond the Standard Baseline that total one inch (1.00") or more, liquid measure.
  - 2. A weather delay day may be counted only if worse than average weather prevents work on the project for 50 percent or more of the Contractor's scheduled work day.
  - 3. The Contractor must submit Daily Jobsite Work Log showing which and to what extent construction activities have been affected by weather, on a monthly basis.
  - 4. The Contractor must submit actual weather data to support a claim for the time extension obtained from nearest NOAA weather station or other independently verified source approved by the Owner at the beginning of the project.
  - 5. The Contractor must maintain a rain gauge, thermometer and clock at the job site. Keep daily records of precipitation, temperature and the time of each occurrence throughout the project.
  - 6. The Contractor must organize claim and documentation to facilitate evaluation on a basis of calendar month periods, and submit monthly to the Owner.
  - 7. If an extension of the contract time is appropriate, it shall be effected in accordance with the provisions of the General Conditions of this contract.
  - 8. No extra cost will be incurred by the Owner for any extra time increase to the contract.

#### 1.02 EXAMPLE

- A. The following example is given for further clarification of how extra time for wet conditions and/or ice, standing snow and frozen ground is to be calculated. If wet conditions were to occur for a total of sixteen (16) days during the month of January, then the extra contract time allowed would be 16 days minus 8 days (from table above), or 8 days which may be rounded up to the nearest whole day. Also, if during the same month there was standing snow on any combination of conditions as in above for three (3) days, then the Contractor would be allowed an extra 3.0 days in addition to the 8.0 days for wet conditions. The Contractor would get a total of 11.0 extra days. No extra cost will be incurred by the Owner for any extra time increase to the Contract.

#### PART 2 PRODUCTS (NOT USED)

#### PART 3 EXECUTION (NOT USED)

**END OF SECTION**



**SECTION 01 3000  
ADMINISTRATIVE REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Preconstruction meeting.
- B. Progress meetings.
- C. Construction progress schedule.
- D. Contractor's daily reports.
- E. Progress photographs.
- F. Coordination drawings.
- G. Submittals for review, information, and project closeout.
- H. Number of copies of submittals.
- I. Requests for Interpretation (RFI) procedures.
- J. Submittal procedures.

**1.02 RELATED REQUIREMENTS**

- A. Section 00 7200 - General Conditions: Dates for applications for payment.
- B. Section 00 7200 - General Conditions: Duties of the Construction Manager.
- C. Section 00 7300 - Supplementary Conditions: Duties of the Construction Manager.
- D. Section 01 7800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

**1.03 PROJECT COORDINATOR**

- A. Project Coordinator: Contractor is responsible for Project Coordination.
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Coordinate use of temporary utilities and construction facilities.
- E. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- F. Make the following types of submittals to Engineer through the Project Coordinator:
  - 1. Requests for Interpretation.
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Design data.
  - 6. Manufacturer's instructions and field reports.
  - 7. Applications for payment and change order requests.
  - 8. Progress schedules.
  - 9. Correction Punch List and Final Correction Punch List for Substantial Completion.
  - 10. Closeout submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PRECONSTRUCTION MEETING**

- A. Engineer will schedule a meeting after Notice of Award.

- B. Attendance Required:
  - 1. Owner.
  - 2. Engineer.
  - 3. Contractor.
  - 4. Representatives of the major subcontractors.
  - 5. Other representatives.
- C. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
  - 5. Submission of initial Submittal schedule.
  - 6. Designation of personnel representing the parties to Contractor, Owner and Engineer.
  - 7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 8. Major equipment deliveries and priorities, handling of materials to permit inspection, storage of material off-site.
  - 9. Scheduling. Sequence of critical work. Review of schedules.
  - 10. Use of premises, access to site, field office and storage areas, security procedures and Owner's requirements.
  - 11. Payment procedures after substantial completion.
  - 12. Additional items and subjects requested by the Owner, Contractor and Architect/Engineer.
- D. Engineer will act as chairperson of the meeting; record minutes and distribute copies within two days after meeting to participants, with one copy to Architect/Engineer, Contractor, participants, and those affected by decisions made.

### **3.02 PROGRESS MEETINGS**

- A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of work progress.
  - 3. Field observations, problems, and decisions.
  - 4. Identification of problems that impede, or will impede, planned progress.
  - 5. Review of submittals schedule and status of submittals.
  - 6. Review of RFIs log and status of responses.
  - 7. Maintenance of progress schedule.
  - 8. Corrective measures to regain projected schedules.
  - 9. Planned progress during succeeding work period.
  - 10. Coordination of projected progress.
  - 11. Maintenance of quality and work standards.
  - 12. Effect of proposed changes on progress schedule and coordination.
  - 13. Other business relating to work.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, Owner, participants, and those affected by decisions made.

**3.03 CONSTRUCTION PROGRESS SCHEDULE**

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
  - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

**3.04 REQUESTS FOR INTERPRETATION (RFI)**

- A. Definition: A request seeking one of the following:
  - 1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
  - 2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
  - 1. Prepare a separate RFI for each specific item.
    - a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
    - b. Do not forward requests which solely require internal coordination between subcontractors.
  - 2. Prepare using an electronic version of the form appended to this section.
  - 3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
  - 1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
  - 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
    - a. Approval of submittals (use procedures specified elsewhere in this section).
    - b. Approval of substitutions.
    - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
    - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
  - 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
  - 4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
    - a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Engineer, and any of its consultants, due to

processing of such RFIs.

- E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
  - 1. Official Project name and number, and any additional required identifiers established in Contract Documents.
  - 2. Owner's, Engineer's, and Contractor's names.
  - 3. Discrete and consecutive RFI number, and descriptive subject/title.
  - 4. Issue date, and requested reply date.
  - 5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
  - 6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
  - 7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
- F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
  - 1. Indicate current status of every RFI. Update log promptly and on a regular basis.
  - 2. Note dates of when each request is made, and when a response is received.
  - 3. Highlight items requiring priority or expedited response.
  - 4. Highlight items for which a timely response has not been received to date.
  - 5. Identify and include improper or frivolous RFIs.
- H. Review Time: Engineer will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
  - 1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
- I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
  - 1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
  - 2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
  - 3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
  - 4. Notify Engineer within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

### 3.05 SUBMITTAL SCHEDULE

- A. Submit to Engineer for review a schedule for submittals in tabular format.
  - 1. Submit at the same time as the preliminary schedule.
  - 2. Coordinate with Contractor's construction schedule and schedule of values.

3. Format schedule to allow tracking of status of submittals throughout duration of construction.
4. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.
5. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
  - a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

### **3.06 SUBMITTALS FOR REVIEW**

- A. When the following are specified in individual sections, submit them for review:
  1. Product data.
  2. Design data.
  3. Shop drawings.
  4. Other types indicated.
- B. Submit to Engineer for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below.

### **3.07 SUBMITTALS FOR INFORMATION**

- A. When the following are specified in individual sections, submit them for information:
  1. Design data.
  2. Sustainability design submittals and reports.
  3. Certificates.
  4. Test reports.
  5. Inspection reports.
  6. Manufacturer's instructions.
  7. Manufacturer's field reports.
  8. Other types indicated.
- B. Submit for Engineer's knowledge as contract administrator or for Owner.

### **3.08 SUBMITTALS FOR PROJECT CLOSEOUT**

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:
  1. Project record documents.
  2. Operation and maintenance data.
  3. Warranties.
  4. Bonds.
  5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

### **3.09 NUMBER OF COPIES OF SUBMITTALS**

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Documents for Review:

1. Small Size Sheets, Not Larger Than 8-1/2 by 11 inches: Submit one copy; the Contractor shall make Contractor's own copies from original returned by the Engineer after making a file copy.
  2. Larger Sheets, Not Larger Than 36 by 48 inches: Submit two opaque reproductions, plus one copy that will be retained by Engineer.
- C. Documents for Information: Submit one copy.
- D. Extra Copies at Project Closeout.

### 3.10 SUBMITTAL PROCEDURES

#### A. General Requirements:

1. All submittals to Architect/Engineer are to be sent via email to: [submittals@a2h.com](mailto:submittals@a2h.com).
2. Use a single transmittal for related items.
3. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
4. Transmit using approved form.
  - a. Use Contractor's form, subject to prior approval by Engineer.
5. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
6. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
7. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
  - a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
8. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
  - a. Deliver submittals to Engineer at business address.
  - b. Send submittals in electronic format via email to Engineer.
9. Schedule submittals to expedite the Project, and coordinate submission of related items.
  - a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
  - b. For sequential reviews involving Engineer's consultants, Owner, or another affected party, allow an additional 7 days.
  - c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Engineer's approval, allow an additional 30 days.
10. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
11. Provide space for Contractor and Engineer review stamps.
12. When revised for resubmission, identify all changes made since previous submission.
13. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
14. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
15. Submittals not requested will not be recognized or processed.

#### B. Product Data Procedures:

1. Submit only information required by individual specification sections.
2. Collect required information into a single submittal.
3. Submit concurrently with related shop drawing submittal.
4. Do not submit (Material) Safety Data Sheets for materials or products.

5. Submit sustainable design reporting submittals under separate cover.
- C. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
  2. Do not reproduce Contract Documents to create shop drawings.
  3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
- D. Samples Procedures:
1. Transmit related items together as single package.
  2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.

### 3.11 SUBMITTAL REVIEW

- A. Submittals for Review: Engineer will review each submittal, and approve, or take other appropriate action.
- B. Submittals for Information: Engineer will acknowledge receipt and review. See below for actions to be taken.
- C. Engineer's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.
- D. Architect/Engineer's and consultants' actions on items submitted for review:
1. Authorizing purchasing, fabrication, delivery, and installation:
    - a. No Exceptions Taken: Where the submittal is marked "No Exceptions Taken," the Work covered by the submittal may proceed provided it complies with the Contract Documents. Final acceptance will depend on that compliance. Do not resubmit.
    - b. Exceptions Taken As Noted: Where the submittal is marked "Exceptions Taken As Noted," the work covered by the submittal may proceed provided it complies both with Architect's notations on the submittal and the Contract Documents. Final acceptance will depend on that compliance. Do not resubmit.
  2. Make Corrections Noted: Where submittal is marked "Make Corrections Noted," the work covered by the submittal may proceed provided it complies both with Architect's correction notations on the submittal and the Contract Documents. Final acceptance will depend on that compliance. Do not resubmit.
  3. Not Authorizing fabrication, delivery, and installation:
    - a. Revise and Resubmit: Where the submittal is marked "Revise and Resubmit," do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity for the product submitted. Revise and prepare a new submittal according to Architect's notations and corrections.
    - b. Submit Specified Item: Where the submittal is marked "Submit Specified Item," do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity for the product submitted. Revise and prepare a new submittal according to Architect's notations and corrections.
    - c. Rejected: Where the submittal is marked "Rejected," do not proceed with the Work covered by the submittal. Prepare a new submittal for a product that complies with the Contract Documents.
- E. Engineer's and consultants' actions on items submitted for information:
1. Items for which no action was taken:
    - a. "Received" - to notify the Contractor that the submittal has been received for record only.
  2. Items for which action was taken:

- a. "Reviewed" - no further action is required from Contractor.

**END OF SECTION**



**SECTION 01 4000  
QUALITY REQUIREMENTS**

**PART 3 EXECUTION**

**1.01 CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

**1.02 DEFECT ASSESSMENT**

- A. Replace Work or portions of the Work not complying with specified requirements.

**END OF SECTION**



**SECTION 01 4216  
DEFINITIONS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Other definitions are included in individual specification sections.

**1.02 DEFINITIONS**

- A. Furnish: To supply, deliver, unload, and inspect for damage.
- B. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.
- C. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.
- D. Provide: To furnish and install.
- E. Supply: Same as Furnish.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**



**SECTION 01 5000  
TEMPORARY FACILITIES AND CONTROLS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Waste removal facilities and services.
- B. Project identification sign.
- C. Field offices.

**1.02 BARRIERS**

- A. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

**1.03 WASTE REMOVAL**

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site weekly.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

**1.04 PROJECT IDENTIFICATION**

- A. Provide project identification sign of design and construction indicated on drawings.
- B. Erect on site at location indicated.
- C. No other signs are allowed without Owner permission except those required by law.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**



**SECTION 01 7000  
EXECUTION AND CLOSEOUT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Pre-installation meetings.
- D. Cleaning and protection.
- E. Starting of systems and equipment.
- F. Demonstration and instruction of Owner personnel.
- G. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- H. General requirements for maintenance service.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.

**1.03 REFERENCE STANDARDS**

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
  - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences. Include design drawings and calculations for bracing and shoring.
  - 2. Identify demolition firm and submit qualifications.
  - 3. Include a summary of safety procedures.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities.

**1.05 PROJECT CONDITIONS**

- A. Use of explosives is not permitted.
- B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
  - 1. Control fill, grading, and ditching to direct surface drainage away from excavations, pits, tunnels, and other construction areas; and to direct drainage to proper run-off.
  - 2. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site or to adjoining areas.
- D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
  2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.
- E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
1. Minimize amount of bare soil exposed at one time.
  2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
  3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
  4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
1. At All Times: Excessively noisy tools and operations will not be tolerated inside the building at any time of day; excessively noisy includes jackhammers.
  2. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.
  3. Indoors: Limit conduct of especially noisy interior work to the hours of 6 pm to 7 am.
- G. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
1. Pest Control Service: Weekly treatments.
- H. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.
1. Provide equipment and personnel, perform emergency measures required to contain any spillages, and to remove contaminated soils or liquids.
    - a. Excavate and dispose of any contaminated earth off-site, and replace with suitable compacted fill and topsoil.
  2. Take special measures to prevent harmful substances from entering public waters.
    - a. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.
  3. Provide systems for control of atmospheric pollutants.
    - a. Prevent toxic concentrations of chemicals.
    - b. Prevent harmful dispersal of pollutant into the atmosphere.
- I. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- J. Notify affected utility companies and comply with their requirements.
- K. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- L. Coordinate completion and clean-up of work of separate sections.

## **PART 2 PRODUCTS**

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.



- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### **3.02 PREINSTALLATION MEETINGS**

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Engineer four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
  - 1. Review conditions of examination, preparation and installation procedures.
  - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, Owner, participants, and those affected by decisions made.

### **3.03 GENERAL INSTALLATION REQUIREMENTS**

- A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.
- B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

### **3.04 PROTECTION OF INSTALLED WORK**

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

### **3.05 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to Engineer.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Engineer's Substantial Completion inspection.
- D. Conduct Substantial Completion inspection and create Final Correction Punch List containing Engineer's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Engineer.
- E. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

- F. Accompany Project Coordinator on Contractor's preliminary final inspection.
- G. Notify Engineer when work is considered finally complete and ready for Engineer's Substantial Completion final inspection.
- H. Complete items of work determined by Engineer listed in executed Certificate of Substantial Completion.

**END OF SECTION**

**SECTION 31 2316.13  
TRENCHING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Backfilling and compacting for utilities as indicated on the drawings.

**1.02 PRICE AND PAYMENT PROCEDURES**

- A. Compensation for these activities will be part of the unit price of the force main, separate payment will not be included.

**1.03 DEFINITIONS**

- A. Finish Grade Elevations: Indicated on drawings.
- B. Subgrade Elevations: Indicated on drawings.

**1.04 REFERENCE STANDARDS**

- A. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18 in.) Drop.
- B. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
- C. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method.
- D. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)).
- E. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- F. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
- G. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Materials Sources: Submit name of imported materials source.
- C. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used.
- D. Compaction Density Test Reports.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where they will not interfere with other site construction activities.
  - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
  - 2. Prevent contamination.
  - 3. Protect stockpiles from erosion and deterioration of materials.

**PART 2 PRODUCTS**

**2.01 BEDDING AND BACKFILL MATERIALS**

- A. Class I Material: Angular, 1/4 to 1 inch graded stone including a number of fill materials that have regional significance such as crushed stone, cinders, slag, and crushed shells.

- B. Class II Material: Coarse sands and gravels with a maximum particle dimension of 1-1/2 inches, including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry.
- C. Class III Material: Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures.
- D. Class IV Material: Silt, silty clays, and clays, including inorganic clays and silts of medium to high plasticity and liquid limits conforming to Standard Soils Classification (ASTM D2487) CL, CL-ML, ML.
- E. Class V Material: Organic soils, as well as soil containing frozen earth, debris, rocks larger than 1-1/2 inches, and other foreign material.

## 2.02 PIPE BEDDING CLASSIFICATIONS

- A. Type "A" bedding shall consist of a concrete cradle which shall be used only at the direction of the Engineer or if specifically called out and detailed in the construction plans.
- B. Type "B" bedding shall consist of material meeting the Class II material requirement in section 2.01, B. and meeting the following gradation:

Sieve Size	1-1/2"	1"	3/4"	3/8"	No. 4	No. 10	No. 100
% Passing	100	85-100	60-95	50-80	40-65	20-40	9-18

Bedding shall be a minimum of 6" of material under the pipe. The pipe shall be laid on the bedding with bell holes shaped to insure the full length of the pipe is supported. Material shall be rammed with hand tools under the haunches of the pipe. The Type II material shall be used for the initial backfill. It shall be installed in minimum 6" compacted lifts until the crown of the pipe has a minimum of 6" cover.

- C. Type "C" Bedding shall consist of Class III or IV material as defined in section 2.01, C. or D. Type "C" bedding may be required when the material excavated from the trench is considered unsuitable for use as bedding and backfill material. It shall be installed in the same manner as Type "B" bedding described above.
- D. Type "D" Bedding shall consist of suitable materials excavated from the trench meeting the requirements of Class I, II, III, or IV materials. Class V materials shall not be used. The pipe may be laid directly on the trench bottom with bell holes shaped as needed to insure the full length of the pipe is supported. After soil has been rammed under the haunches of the pipe the initial backfill using the excavated material shall proceed as described in 2.02,B. If the excavated material is unsuitable for use as backfill material Class "C" bedding shall be used.

## 2.03 SOURCE QUALITY CONTROL

- A. Where fill materials are specified by reference to a specific standard, test and analyze samples for compliance before delivery to site.
- B. If tests indicate materials do not meet specified requirements, change material and retest.
- C. Provide materials of each type from same source throughout the Work.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that survey benchmarks and intended elevations for the work are as indicated.

### 3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities that remain and protect from damage.

- C. Notify utility company to remove and relocate utilities when so noted in the construction documents.
- D. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- E. Protect plants, lawns, rock outcroppings, and other features to remain.
- F. Grade top perimeter of trenching area to prevent surface water from draining into trench. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by the Engineer.
- G. Install barriers and other devices to protect areas adjacent to construction.

### 3.03 TRENCHING

- A. Notify Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- B. Slope banks of excavations from 1' foot above the crown (top) of pipe to angle of repose or less until shored.
  - 1. When necessary furnish, put in place, and maintain such sheeting, bracing, etc., as may be required to support the sides of the excavation and to prevent movement. The trenching and excavation requirements of 29CFR 1926.651 and 1926.652 or comparable OSHA approved State requirements shall be used by the Contractor.
  - 2. Take care to prevent voids outside the sheeting.
  - 3. If voids are formed, immediately fill and ram to the satisfaction of the Engineer.
  - 4. Devise plans for performing this work subject to the approval of the Engineer.
  - 5. Unless it is to remain in place, advance the removal of all sheeting, shoring, and bracing as the bedding and initial backfill is placed around the pipe to insure intimate contact between the bedding and the trench walls.
  - 6. Cut off shoring to remain in place a minimum of 2' below finished grade.
- C. Do not interfere with 45 degree bearing splay of foundations.
- D. Trench width: minimum is pipe diameter plus 1 foot; the maximum is outside diameter of the pipe plus 4 feet.
- E. Cut pavement along neat, straight lines with either a pavement breaker or pavement saw.
- F. Trench depth: for pressure pipes--sufficient to provide minimum cover of 36 inches over the top of the pipe; for sewer lines--as shown on the Plans or as specified.
- G. Align trench as shown on the Plans unless a change is necessary to miss an unforeseen obstruction. Do not make field adjustment in the alignment or grade of gravity lines without written approval of the Engineer.
- H. Hand trim excavations. Remove loose matter.
- I. Remove large stones and other hard matter that could damage piping or impede consistent backfilling or compaction.
- J. Remove lumped subsoil up to 1/3 cubic yard measured by volume.
- K. Remove excavated material that is unsuitable for re-use from site.
- L. Remove excess excavated material from site.
- M. Provide temporary means and methods, as required, to remove all water from trenching until directed by the Engineer. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.
- N. Determine the prevailing groundwater level prior to trenching. If the proposed trench extends less than 1 foot into the prevailing groundwater, control groundwater intrusion with perimeter drains routed to sump pumps, or as directed by the Engineer.

- O. When unstable soil is encountered at the trench bottom, remove it to a depth required to assure support of the pipeline and backfill to the proper grade with coarse aggregate AASHTO M-43, Size No. 2. Before placing any bedding material over stone a non-woven filter fabric with a maximum 100 EOS shall be placed over the stone for full width and length of the trench where the stone foundation is used.

### 3.04 PREPARATION FOR UTILITY PLACEMENT

- A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
- B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- C. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.

### 3.05 BACKFILLING

- A. Backfill to contours and elevations indicated using unfrozen materials.
- B. Fill up to subgrade or finish elevations unless otherwise indicated.
- C. Employ a placement method that does not disturb or damage other work.
- D. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- E. Maintain optimum moisture content (+/- 2%) of fill materials to attain required compaction density.
- F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 8 inches compacted depth.
- G. Soil Fill: Place and compact material in equal continuous layers not exceeding 6 inches compacted depth.
- H. Slope grade away from building minimum 2 inches in 10 feet (2%), unless otherwise noted. Make gradual grade changes. Blend slope into level areas.
- I. Correct areas that are over-excavated.
  - 1. Thrust bearing surfaces: Fill with concrete.
  - 2. Other areas: Use general fill, flush to required elevation, compacted to minimum 95 percent of maximum dry density.
- J. Compaction Density Unless Otherwise Specified or Indicated:
  - 1. Under paving, slabs-on-grade, and similar construction: 98 percent of maximum dry density.
  - 2. At other locations: 95 percent of maximum dry density.
- K. Reshape and re-compact fills subjected to vehicular traffic.

### 3.06 BEDDING AND FILL AT SPECIFIC LOCATIONS

- A. Use general fill unless otherwise specified or indicated.
- B. Utility Piping, Conduits, and Duct Bank:
  - 1. Bedding: Use general fill.
  - 2. Cover with general fill.
  - 3. Fill up to finish grade elevation.
  - 4. Compact in maximum 8 inch lifts to 95 percent of maximum dry density.
- C. Sanitary Sewer Pipe
  - 1. All sanitary sewer pipe 15" diameter or less whether classified as flexible or rigid shall be installed using Type "B" bedding.
  - 2. Sewer pipe with a diameter greater than 15" classified and flexible (PVC, HDPE, etc.) shall be installed using Type "B" bedding.
  - 3. Sewer pipe with a diameter greater than 15" classified as rigid (RCP, DI, etc.) may be installed using Type "D" bedding, unless otherwise noted on the construction drawings.

- D. Water and Gas Lines - shall be installed using Type "D" bedding, unless otherwise noted on the construction drawings.

### 3.07 FINAL BACKFILLING

- A. After the initial backfill has been placed, perform final backfilling.
- B. Backfilling in unimproved areas.
  - 1. Dispose of and replace all soft or yielding material which is unsuitable for trench backfilling with suitable material.
  - 2. Suitable material excavated from the trench may be used as backfill material. It shall be installed in maximum of 8" loose lifts and compacted to a minimum of 95% standard Proctor.
- C. Backfilling beneath driveways and streets where non-rigid and rigid type surfacing is to be replaced.
  - 1. Use granular backfill of crushed stone or gravel meeting the requirements for Type A, Grading D as set forth in subsection 903.05 in the TDOT Standard Specifications for Road and Bridge Construction.
  - 2. Carefully deposit in uniform layers, not to exceed 6" thick.
  - 3. Compact each layer thoroughly by rolling, ramming, and tamping with tools suitable for that purpose in such a manner so as to not disturb the pipe.
- D. Backfilling of shoulders along streets and highways.
  - 1. Backfilling methods and materials for shoulders along streets and highways shall be in accordance with the requirements of governing local, county, or state departments maintaining the particular roadway or highway.
  - 2. Replace with similar materials, all shoulders which may be damaged or destroyed as a result of pipe trenching.
  - 3. Backfilling of shoulders shall not be directly measured for payment unless traffic whips out the shoulder material rather than settling it, then any additional crushed stone placed shall be paid for as crushed stone for shoulder replacement.
  - 4. Where shoulders along state highways have seal coat surfaces, replace with double bituminous seal.
  - 5. Where the State Highway Department or local authority requires trenches to be backfilled entirely with granular material in the shoulder of roads, granular material so placed shall not be a pay item, but included in the prices per linear foot of pipe.
- E. Crushed stone for pavement maintenance and shoulder replacement.
  - 1. Where possible, salvage and reuse all base material that is removed during construction.
  - 2. Wet and thoroughly compact crushed stone and blade to tie into the existing surface prior to final acceptance.
  - 3. Base material placed as a portion of pavement replacing items will not be directly measured for payment unless traffic whips out the base material rather than settling it, then any additional base material placed shall be paid for as crushed stone for pavement maintenance.

### 3.08 TOLERANCES

- A. Top Surface of General Backfilling: Plus or minus 0.1 ft. from required elevations.
- B. Top Surface of Backfilling Under Paved Areas: Plus or minus 0.4 ft. from required elevations.

### 3.09 FIELD QUALITY CONTROL

- A. Before installing the initial backfill the Contractor shall examine the pipe to insure proper line and grade has been established and all joints are fully belled up and properly installed. Should tests or observation made at a later date reveal problems with the pipe integrity and/or alignment it shall be the responsibility of the Contractor to correct the problem(s) at his own expense.

- B. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, or ASTM D6938.
- C. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D1557 ("modified Proctor"), AASHTO T 180, or ASTM D698 ("standard Proctor").
- D. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- E. Frequency of Tests: Minimum every 200 lineal feet of trench for each lift of backfill.

**3.10 CLEANING**

- A. Leave unused materials in a neat, compact stockpile.
- B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

**END OF SECTION**



**SECTION 33 0130  
CURED IN-PLACE PIPE LINER**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. This work consists of the method and process for furnishing all labor, materials, tools, equipment, and incidentals, necessary to provide for the complete rehabilitation of deteriorated sanitary sewer pipes by forming a new tight-fitting liner within the existing pipe. The process in a typical and general form consists of a flexible felt tube impregnated with an approved resin, which is inserted into an existing pipe. The curing may be accomplished by circulating heated water or air, curing resin system to affect the desired cure throughout the length of the tube, extending full-length from manhole to manhole. The resin should be cured into a hard, impermeable pipe of the desired thickness, providing a structurally sound, smooth interior and tight-fitting liner within the existing pipe. The lined pipe shall provide a hydraulic flow almost equal to, or greater than, the original new sewer capacity.

**1.02 REFERENCED DOCUMENTS**

- A. This specification references ASTM F1216 (Rehabilitation of pipelines by the inversion and curing of a resin-impregnated tube) and ASTM D790 (Test methods for flexural properties of non-reinforced plastics) which are made a part hereof by such reference and shall be the latest edition and revision thereof. In case of conflicting requirements between this specification and these referenced documents, this specification will govern.

**1.03 PRODUCT, MANUFACTURER/INSTALLER QUALIFICATION REQUIREMENTS**

- A. Since sewer products are intended to have a 50 year design life, and in order to minimize the Owner's risk, only proven products with substantial successful long term track records will be approved. All trenchless rehabilitation products and installers must be pre-approved prior to the formal opening of proposals.
- B. For a Product to be considered Commercially Proven, the manufacturer must have a minimum of 500,000 linear feet or 2,000 manhole-to-manhole line sections of successful wastewater collection system installations in the U.S. and must be documented to the satisfaction of the Owner to assure commercial viability. In addition, at least 100,000 linear feet of the product shall have been in successful service within the State for a minimum of five years.
- C. For an Installer to be considered as Commercially Proven, the Installer must satisfy all insurance, financial, and bonding requirements of the Owner, and must have had at least two (2) years active experience in the commercial installation of the product bid. In addition, the Installer must have successfully installed at least 150,000 feet of the product bid in wastewater collection systems. The footage must be installed by the contractor's own forces while working for said contractor under the current name submitted on bid form. Acceptable documentation of these minimum installations must be submitted to the Owner upon request. Any misrepresentation of references is grounds for disqualification.
- D. Sewer rehabilitation products submitted for approval must provide third party test results supporting the long term performance and structural strength of the product and such data shall be satisfactory to the Owner. Test samples shall be prepared so as to simulate installation methods and trauma of the product. No product will be approved without independent third party testing verification.
- E. The tube and resin manufacturer shall be third-party certified to ISO 9000 or other internationally recognized organization standards. Proof of certification shall be required for approval.

**1.04 SUBMITTALS**

- A. Shop Drawing

1. After the award of the Contract and before any sewer system materials are delivered to the job site, the Contractor shall submit to the Engineer a complete list of all materials proposed to be furnished and installed.
  - a. In addition to the Contractor shall submit the following:
    - 1) Satisfactory written certification of compliance with the ASTM standards listed in TS-34, Structural Requirements.
    - 2) Quality control test results on the liner, which will be furnished for this project.
    - 3) Calculations, prepared by a registered professional engineer licensed in Tennessee, showing the design for the liner thickness for the specific assigned sewer segments.
    - 4) Description of installation procedure and equipment proposed for use. Include the job curing water temperatures, locations, of monitors, etc.
      - (a) Contractor shall not permit any sewer lining component to be brought onto the job site until the shop drawings have been approved by the Engineer.
  - b. Inspection Line Segments
    - 1) Inspection of line segments shall be performed by experienced personnel trained to meet NASCO PACP certification and must use digital software systems that are compatible. Document the conditions of sewers, lateral connections and joints. Document the internal inspection before and after lining in digital form supplied to the Engineer, accompanied by typewritten logs of the internal inspection.
- B. Forms
  1. Sample "Notification of Sewerage Service Disruption" forms, to be issued by Contractor, for review and approval.
- C. Bypass Procedures
  1. If anticipated or identified as required, proposed bypass pumping techniques, equipment, procedures and emergency response plan including detailed plans for bypassing flow from sections of pipe and laterals prior to start of work.

## **PART 2 – PRODUCTS**

### **2.01 ENGINEER APPROVED EQUIVALENCY**

- A. Equivalent products by other manufacturers are acceptable, providing they meet or exceed all performance criteria of the referenced products. All products and manufacturers listed in this specification are referenced as a basis of presenting minimum standards and performance. Other products and manufacturers of equal quality may be submitted for review and approval. The intent is not to limit products and manufacturers used to those identified in these specifications.
- B. All equivalency determinations shall be made by the Engineer and are final.

### **2.02 GENERAL LINER MATERIALS, TESTING, AND PROCESS REQUIREMENTS**

- A. The proposed materials shall be suitable for use in the environment and conditions of this project.
- B. The product shall not be made of a dark or non-reflective material which would inhibit proper closed circuit TV inspection.
- C. **SIZING:** The felt fiber tube shall be fabricated to a size that when installed will neatly fit the internal circumference of the conduit as specified by Owner. Allowance for circumferential stretching during insertion shall be made as per manufacturer's standards.
- D. **LENGTH:** The length shall be that deemed necessary by Contractor to effectively carry out the insertion from inlet to outlet points. Payment shall be measured from center line of manhole to center line of manhole. No surplus or waste will be paid.

- E. Contractor shall verify the lengths in the field. Individual installation runs can be made over one or more access points as determined in the field by Contractor and approved by Owner.
- F. The material shall be manufactured in such a manner as to result in a tight-fitting, continuous liner after installation. There shall be no measurable annular space. The liner shall have a snug fit at service connections and manhole terminations as shall be evidenced by indentations and flares respectively.
- G. The Contractor shall familiarize himself with the jobsite prior to bidding with the sewer segments under consideration for lining. The Contractor shall certify in writing as to the applicability of the proposed liner process to each section to be lined.
- H. PATENTS: Contractor shall warrant and indemnify Owner against all claims for patent infringement and any loss thereof.

**2.03 STRUCTURAL REQUIREMENTS**

- A. The newly installed liner shall be designed for a minimum fifty-year service life under continuous loading conditions.
- B. Design of the liner shall be based on the condition of the existing pipe, which shall be classified as fully deteriorated – the pipe is structurally unsound, suffering from severe cracks, missing sections or other defects. The design shall assume no bonding to the original pipe wall. The liner shall be designed to withstand all imposed loads.
- C. The liner shall be designed by a professional engineer registered in Tennessee and shall have sufficient wall thickness to withstand the anticipated external pressures and loads which, will be imposed after installation. The design of the liner shall include considerations for ring bending, deflection, combined loading, buckling, and ovality.
- D. Calculations which determine wall thickness requirements of the liner shall be submitted to the Engineer for approval prior to installation. Designs shall be based on the use of standard flexible pipe equations, as detailed in ASTM F-1216 and shall account for the effects of ovality.
- E. A safety factor of at least two (2) shall be utilized.
- F. The tube manufacturer must have performed long-term testing for flexural creep of the CIPP pipe material installed by his Contractor. Such testing results are to be used to determine the long-term, time dependent flexural modulus to be utilized in the product design. This is a performance test of the materials (tube and resin) and general workmanship of the installation and curing. A percentage of the instantaneous flexural modulus value (as measured by ASTM D-790 testing) will be used in design calculations for external buckling. The percentage, or the long-term creep retention value utilized, will be verified by this testing. Values in excess of 50% will not be applied unless substantiated by qualified third party test data. The materials utilized for the contracted project shall be of a quality equal to or better than the materials used in the long-term test with respect to the initial flexural modulus used in design.
- G. The short term modulus of elasticity will be reduced by 50 percent in the calculations. If Contractor submits third party certified test results proving a lesser reduction in the long term modulus after a 10,000 hour test, Engineer will take this into consideration.
- H. The Enhancement Factor 'K' to be used in 'Partially Deteriorated' Design conditions shall be assigned a value of 7. Application of Enhancement (K) Factors in excess of 7 shall be substantiated through independent test data.

- 1. PHYSICAL PROPERTIES: The cured pipe shall conform to the minimum structural standards, as follows:

Cured Pipe	Standard	Results
Tensile Stress	ASTM D-638	3,000 psi
Flexural Stress	ASTM D-790	4,500 psi
Modulus of Elasticity	ASTM D-790	250,000 psi

- I. If so directed, Contractor shall furnish, prior to use of the materials, satisfactory written certification of his compliance with the manufacturer's standards for all materials and conformance with methods of the manufacturer's process.
- J. The liner thickness proposed by the Contractor will be checked by Engineer utilizing the design process listed in ASTM F-1216. If the Contractor's calculation method differs from these equations, Contractor shall explain, clearly in detail, why different equations are utilized. Any layers of the tube that are not saturated with resin prior to insertion into the existing pipe shall not be included in the structural wall thickness computation.
- K. The layers of the cured CIPP shall be uniformly bonded. It shall not be possible to separate any two layers with a probe or point of a knife blade so that the layers separate cleanly or the probe or knife blade moves freely between the layers. If separation of the layers occurs during testing of field samples, new samples will be cut from the work. Any reoccurrence may cause rejection of the work.

#### **2.04 LINER MATERIALS**

- A. The only liner products pre-approved for installation for this project are Insituform, In Liner, Liner Products, and Moore Liner. Any other processes shall be equal to the approved liner products.
- B. At the time of manufacture, each lot of liner shall be inspected for defects and tested in accordance with applicable ASTM standards. At the time of delivery, the liner shall be homogeneous throughout, uniform in color, free of cracks, holes, foreign materials, blisters, or deleterious faults.
- C. For testing purposes, a production lot shall consist of all liner having the same marking number. It shall include any and all items produced during any given work shift and must be so identified as opposed to previous or ensuing production.
- D. The Engineer may at any time direct the manufacturer to obtain compound samples and prepare test specimens in accordance with applicable ASTM standards.
- E. CURED-IN-PLACE PIPE MATERIALS: The fiber felt tubing, including the polyurethane, polyethylene, or poly-vinyl chloride covered felt and the thermosetting resin shall meet ASTM and manufacturer's standards.
  - 1. Tube
    - a. The CIPP Tube shall consist of one or more layers of absorbent non-woven felt fabric and meet the requirements of ASTM F1216 or ASTM F1743, Section 5. The tube shall be constructed to withstand installation pressures, have sufficient strength to bridge missing pipe, and stretch to fit irregular pipe sections.
    - b. The wet out tube shall have a uniform thickness that when compressed at installation pressures will meet or exceed the Design thickness.
    - c. The Tube shall be manufactured to a size that when installed will tightly fit the internal circumference and length of the original pipe. Allowance should be made for circumferential stretching during inversion. Overlapped layers of felt in longitudinal seams that cause lumps in the final product shall not be utilized.
    - d. The outside layer of the tube (before wet out) shall be coated with an impermeable, flexible membrane that will contain the resin and facilitate monitoring of resin saturation during the resin impregnation (wet out) procedure.
    - e. The tube shall be homogeneous across the entire wall thickness containing no intermediate or encapsulated elastomeric layers. No material shall be included in the tube that may cause delamination in the cured CIPP. No dry or unsaturated layers shall be evident.
    - f. The wall color of the interior pipe surface of CIPP after installation shall be a light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made.

- g. Seams in the tube shall be stronger than the non-seamed felt.
  - h. The outside of the tube shall be marked for distance at regular intervals along its entire length, not to exceed 5 ft. Such markings shall include the Manufacturers name or identifying symbol. The tubes must be manufactured in the USA.
    - 1) Resin - The resin system shall be a corrosion resistant polyester, vinyl ester, or epoxy and catalyst system that when properly cured within the tube composite meets the requirements of ASTM F1216 and ASTM F1743, the physical properties herein, and those which are to be utilized in the Design of the CIPP for this project. The resin shall produce CIPP which will comply with the structural and chemical resistance requirements of this specification.
- F. GENERAL CORROSION REQUIREMENTS: The cured-in-place pipe system shall utilize thermosetting resins which will withstand the corrosive effect of the existing residential, commercial, and industrial effluents, liquids and/or gases.
- G. HYDRAULIC CAPACITY: Overall, the hydraulic profile shall be maintained as large as possible. The liner shall have a minimum of the full flow capacity of the original pipe before rehabilitation. Calculated capacities may be derived using a commonly accepted roughness coefficient for the existing pipe material taking into consideration its age and condition.

### **PART 3 - EXECUTION**

#### **3.01 CLEANING**

- A. Prior to installation of the liner, Contractor shall clean the sewer to be lined. Cleaning operations shall result in virtually 100% of the debris being removed. The Contractor shall clean the sewer with hydraulically propelled, high velocity jet or mechanically powered equipment. Selection of the equipment shall be based on the conditions of lines at the time work commences. The equipment and methods selected shall be satisfactory to Owner and shall be capable of removing dirt, grease, rocks, sand, and other material and obstructions from the sewer line.
  - 1. Contractor is responsible for verifying all existing conditions, all access opportunities, and accounting for any issues in his bid. If the Contractor finds any conditions not as per the plans, he shall notify the Engineer in writing as soon as practical.
  - 2. Contractor shall be responsible to determine the extent of the cleaning during his pre-bid jobsite examination. The Contractor should assume all sewer sections within this project will require heavy cleaning, and no additional compensation will be made.
- B. During sewer cleaning operations, satisfactory precautions shall be taken in the use of cleaning equipment to prevent damage to the existing pipe.
- C. Debris disposal is the responsibility of the Contractor.
- D. The Contractor shall ensure no solids are passed downstream to the next pipe section during the cleaning operation.

#### **3.02 PRE-INSTALLATION TELEVISION**

- A. After cleaning the sewer segment, the Contractor shall internally inspect, via television inspection, the sewer segment to be lined. Personnel conducting the televising inspection shall be experienced in operating a sewer televising digital camera and analyzing pipe conditions from the video image. The Contractor shall record these inspections in digital format and shall include a verbal narrative noting:
  - B. Date, time of day, and depth of flow.
  - C. Sewer segment number: "from" manhole number and "to" manhole number.
  - D. Locations of service connections and branch sewers into the main line.
  - E. Locations of obstructions, structural defects, joint deterioration, leakage or evidence thereof, and other abnormalities with respect to the sewer condition. The distance from the centerline of the upstream manhole shall be indicated for each item noted.

- F. The interior of the pipeline shall be carefully inspected to determine the location and extent of any structural failures. The location of any conditions which may prevent proper installation of cured-in-place pipe into the pipelines shall be noted so that these conditions can be corrected.
- G. The camera utilized for closed circuit televising shall meet NASCO PACP certification be equipped with digital zoom and remote control devices to adjust the light intensity. The camera shall be equipped with an articulating lens to provide clear views of laterals and other items of importance. The camera shall have a minimum of 1,000 feet of coaxial cable. The camera shall be able to transmit a continuous image to the television monitor as it is being pulled through the sewer segment.
- H. Contractor shall present in digital format a continuous image of not less than ninety (90%) percent of the internal pipe circumference at all times. Maximum acceptable speed of camera through sewer shall be thirty feet per minute (30 fpm).
- I. If any obstruction in the sewer segment, such as a protruding building lateral, prohibits the passage of the television camera, the Contractor shall attempt to inspect the remainder of the sewer segment by making a reverse setup at the next downstream manhole.
- J. All obstructions which prevent the passage of the television camera shall be immediately reported to the Engineer by the Contractor referencing the location and nature of the obstruction.
- K. The deterioration of pipeline is an ongoing process. Should pre-lining television inspections reveal the pipes to be in substantially different conditions than those stated in the design considerations, then the Contractor shall request a change in thickness due to changed conditions. This claim shall be supported by design data in accordance with manufacturer's standard design policies. The change, if approved, shall be negotiated as a change order according to the procedures in these specifications.
- L. The Contractor shall submit the digital inspection files to the Engineer before installing the liner. Payment for pre-installation televising shall be included in the cost for installing the liner.

### 3.03 PUBLIC NOTIFICATION

- A. The Contractor shall make every effort to maintain service usage throughout the duration of the project. In the event that a service will be out of service, the maximum amount of time of no service shall be 8 hours for any property served by the sewer. A public notification program shall be implemented, and shall as a minimum, require the Contractor to be responsible for contacting each home or business connected to the sanitary sewer and informing them of the work to be conducted, and when the sewer will be off-line. The Contractor shall also provide the following:
  - 1. Written notice to be delivered to each home or business the day prior to the beginning of work being conducted on the section, and a local telephone number of the Contractor they can call to discuss the project or any problems which could arise.
  - 2. Personal contact with any home or business, which cannot be reconnected within the time stated in the written notice.

### 3.04 BYPASS PUMPING

- A. The Contractor, when required for proper installation of the liner, shall provide for the transfer of sewage flow around the section or sections of pipe designated for lining. The bypass shall be made by diversion of the flow at an existing upstream and directing the flow around the section to be taken from service. Bypass lines and pumps, if necessary, shall be of adequate capacity and size to handle the flow. The proposed bypassing system shall be set up to allow traffic flow to local business and residents. The proposed bypassing system shall be approved, in advance, by the Owner.

**3.05 CLEARING PROTRUDING LATERALS**

- A. An effort has been made to identify and list all protruding laterals in the bid form. It shall be the responsibility of the Contractor to clear protruding lateral. The Contractor shall clear the protruding lateral utilizing robotic equipment if possible. The Contractor shall include this cost in the installation costs of the CIPP.
- B. If clearing a protruding lateral remotely is not possible, the protruding lateral shall be cleared utilizing a point repair by excavation. The Contractor shall notify the Engineer of need for point repair before beginning work.

**3.06 CLEARING OBSTRUCTIONS (OTHER THAN PROTRUDING LATERALS) BY POINT REPAIR**

- A. An effort has been made to identify all obstructions in the bid form. If inspection reveals an obstruction not listed in the bid form cannot be removed by cleaning or remote methods, then the Contractor shall make a point repair by excavation, uncover and remove or repair the obstruction. The Contractor shall notify the Engineer of need for point repair before beginning work.

**3.07 PRODUCT HANDLING**

- A. The Contractor shall use all means necessary to protect sewer lining material during transportation, before, during, and after installation and to protect the installed work and materials of all other trades.
- B. In the event the liner material is damaged, the Contractor shall immediately make all repairs or replacements necessary to the approval of the Engineer, at no additional cost to the Owner.

**3.08 INSTALLATION PROCEDURE/CIPP**

- A. No pipe shall be lined without prior notification to the Engineer. Each liner shall be subject to inspection by the Engineer immediately before it is installed. Defective liner will be rejected.
  - 1. Following are general steps required for installation of CIPP liner systems. Specific requirements for temperature, pressure, and time shall be determined by the manufacturer.
  - 2. Resin Impregnation and Tube Insertion
    - a. The Contractor shall designate a location where the uncured resin in the original containers and the unimpregnated fiber felt tube will be vacuum impregnated prior to installation. The Contractor shall allow the Owner to inspect the materials and "wet out" procedure at the cost of the Contractor. A resin and catalyst system compatible with the requirement of this method shall be used. The quantities of the liquid thermosetting materials shall be per manufacturer's standards to provide the lining thickness specified.
    - b. The wet out fiber felt tube shall be inserted through an existing manhole or other approved access. The manufacturer's standards shall be closely followed during the elevated curing temperatures so as not to over stress the felt fiber and cause damage or failure prior to cure.
      - 1) Curing
        - (a) After installation of wet out felt tube is completed and calibration tube is inserted, the Contractor shall supply a suitable heat source and recirculation equipment. The equipment shall be capable of delivering adequate heat required to effect a cure of the resin. This temperature shall be determined by the resin/catalyst system employed.
        - (b) The heat source shall be fitted with suitable monitors to gauge the temperature of the incoming and outgoing heat exchanger circulating water. Thermocouples shall be placed between the impregnated tube and the invert at the far access point to determine the temperature and time of exotherm. Temperature in the pipeline during the cure period shall not be less than 150 F or more than 200 F as measured at the heat exchanger

- return line.
- (c) Initial cure shall be deemed to be completed when inspection of the exposed portions of cured-in-place pipe appear to be hard and sound and the thermocouples indicate that an exotherm has occurred. The cure period shall be of a duration recommended by the resin manufacturer, as modified for the cured-in-place pipe process being used, during which time the recirculation of the water and cycling of the heat exchanger to maintain the temperature continues.
- B. Cool Down
- 1. Contractor shall cool the finished cured-in-place pipe to a temperature below 100 F before relieving the static head in the inversion stand pipe. Cool-down may be accomplished by the introduction of cool water into the stand pipe to replace water being drained from the downstream end. Care shall be taken in the release of the static head such that a vacuum will not be developed that could damage the newly installed cured-in-place pipe.
- C. Finish
- 1. The finished cured-in-place pipe shall be continuous over the entire length of the insertion run and be as free as commercially practicable from significant defects. Any defects which will affect, in the foreseeable future, or warranty period, the integrity or strength of cured-in-place pipe, shall be repaired at Contractor's expense, in a manner mutually agreed by Owner and Contractor.
    - a. Sealing the Ends
      - 1) If due to broken or misaligned pipe at the access points, cured-in-place pipe fails to make a tight seal, the Contractor shall apply a seal at that point. The seal shall be of a resin mixture compatible with the cured-in-place pipe.
        - (a) The water tightness of cured-in-place pipe shall be gauged while curing and under positive head.
- D. CIPP installation shall be in accordance with ASTM F1216, Section 7, or ASTM, Section 6 with the following modifications:
- 1. Resin Impregnation - The quantity of resin used for tube impregnation shall be sufficient to fill the volume of air voids in the tube with additional allowances for polymerization shrinkage and the loss of resin through cracks and irregularities in the original pipe wall. A vacuum impregnation process shall be used. To insure thorough resin saturation throughout the length of the felt tube, the point of vacuum shall be no further than 25 feet from the point of initial resin introduction.
    - a. After vacuum in the tube is established, a vacuum point shall be no further than 75 feet from the leading edge of the resin. The leading edge of the resin slug shall be as near to perpendicular as possible. A roller system shall be used to uniformly distribute the resin throughout the tube. If the Installer uses an alternate method of resin impregnation, the method must produce the same results. Any alternate resin impregnation method must be proven.
      - 1) Tube Insertion – The wet out tube shall be positioned in the pipeline using either inversion or a pull-in method. If pulled into place, a power winch should be utilized and care should be exercised not to damage the tube as a result of pull-in friction. The tube should be pulled-in or inverted through an existing manhole or approved access point and fully extend to the next designated manhole or termination point.
      - 2) Temperature gauges shall be placed inside the tube at the invert level of each end to monitor the temperatures during the cure cycle.
      - 3) Curing shall be accomplished by utilizing hot water under hydrostatic pressure in accordance with the manufacturer's recommended cure schedule.



**3.09 SERVICE LATERAL REINSTATEMENT**

- A. It shall be the Contractor's responsibility to determine and to assure that all live laterals are connected to the liner.
- B. Lateral reinstatement shall be completed from inside the pipe. Excavation for lateral reinstatement should be avoided on this project and will only be allowed as approved by the Owner. Where holes are cut through the liner, they shall be neat and smooth in order to prevent blockage at the service connections. Robotically cut-in service connections shall be opened to a minimum of 95 percent of the internal diameter and a maximum of 100 percent of the lateral.
- C. Reconnecting the existing laterals to the newly lined sewer main shall include all labor, materials, equipment and incidentals including excavation, trench and site restoration, if required. The Contractor shall include this cost in the installation costs of the CIPP.
- D. In the event the Contractor makes a lateral reinstatement which is not at a lateral, the Contractor shall make a point repair by excavation, or shall apply an approved internal patch, to repair the cut-in hole so infiltration does not enter the pipe at that location and the structural integrity of the liner is not compromised. The Contractor shall make the necessary repairs at no cost to the Owner.

**3.10 CLEANUP**

- A. The Contractor shall flush and clean the lined sewer section, if necessary, to remove all accumulated construction debris, rocks, gravel, sand, silt and other foreign material from the sewer system at or near the closest downstream manhole. Debris shall not be allowed to pass downstream. If it does, the Contractor shall clean the next sewer segment at no additional cost.
- B. The Contractor shall restore or replace all removed or damaged paving, curbing, sidewalks, gutters, shrubbery, fences, sod or other disturbed surfaces or structures in a condition equal to that before the work began, to the satisfaction of the Engineer, and shall furnish all labor and material incidental thereto.
  - 1. After the installation has been completed and accepted, the Contractor shall clean up the entire project area. All excess material and debris not incorporated into the permanent installation shall be disposed of by the Contractor.
- C. Upon acceptance of the installation work and testing, the Contractor shall restore the project area affected by the operations to a condition at least equal to that existing prior to the work.

**3.11 POST-INSTALLATION TELEVISION INSPECTION**

- A. CONTRACTOR shall televise the inside of the lined sewer segment after installation of the liner and reinstatement of all lateral connections are completed. The post-installation television inspection shall comply with the provisions in paragraph 3.02.
- B. All defects discovered during the television inspection shall be corrected by the Contractor before the work under the Contract will be considered for substantial completion. After the defects are corrected, the sewer shall be video again.
  - 1. The post-installation television inspection digital footage shall be submitted to the Engineer in sufficient time to allow the Engineer to review the digital footage prior to the substantial completion milestone.
- C. The post-installation television inspection payment shall be included in the cost of installing the liner.

**END OF SECTION**



**SECTION 33 0130.01  
SEWER MAIN PIPE BURSTING**

**PART 1 - GENERAL**

**1.01 GENERAL INFORMATION**

- A. The following supplemental sewer main specifications are intended to address the installation of high-density polyethylene pipe for sewer main using pipe bursting methods and technology for sanitary sewer lines.

**1.02 DEFINITIONS**

- A. Pipe Bursting: Method of trenchless construction in which a bursting tool splits/fractures the existing pipe while simultaneously installing a new Polyethylene Pipe of the same size or larger using a Static or Pneumatic Pipe Bursting Technique.
- B. Engineer: Overall project engineer employed or retained by the municipal utility authority or private collection system owner.
- C. Project Owner: Municipal utility authority, sewer district or private owner of the sewer system.
- D. Contractor: Firm engaged in the construction of underground utility lines and with demonstrated competency using pipe bursting methods for the installation of sewer pipelines.

**1.03 SCOPE**

- A. This specification addresses the installation of sewer mains by the pipe bursting method, including connecting to existing sewer mains, connecting to existing services or installing house connections. The Contractor will furnish all labor, equipment, materials, tools and appurtenances necessary or proper for the performance and completion of the contract. Inspection and payment will be by the method stipulated in the contract.

**1.04 QUALIFICATIONS**

- A. The Pipe Bursting Contractor will have actively engaged in the installation of pipe using pipe bursting for a minimum of three (3) years and have installed, as a company, a minimum of 50,000 feet in similar conditions.
- B. Field Supervisory Personnel employed by the Pipe Bursting Contractor will have at least (3) three years of documented experience in the performance of the work and tasks as stated in the contract documents.

**1.05 SUBMITTAL**

- A. The Contractors shall submit the following:
  - 1. Documentation showing that personnel has three (3) years of Pipe Bursting experience with a list of a minimum 50,000 LF installed by the company including 3 sewer main projects similar or greater in scope and value to the project specified in the contract documents. Information for each supervisor and the company must include, but not be limited to, date of work, location, pipe information (i.e., length, diameter, depth of installation, pipe material, etc.), project owner information, (i.e., name, address, and telephone number, contact person).
  - 2. Drawings and documents:
    - a. Shop drawings, catalog data, and manufacturer's technical data showing complete information on material composition, physical properties, and dimensions of new pipe and fittings. Include manufacturer's recommendations for handling, storage, and repair of pipe and fittings damaged.
    - b. Certifications of personnel involved in Butt Fusion Welding.

**PART 2 - MATERIALS****2.01 HDPE PIPE**

- A. Polyethylene Plastic Pipe shall be High Density Polyethylene Pipe (HDPE) and meet applicable requirements of ASTM F14.
- B. HDPE pipe and fittings will be used in accordance with the material specifications. All additional appurtenances (manholes, tees, gaskets, etc.) will meet the material specifications. All pipe installed by pipe bursting will be joined by butt fusion, electro fusion, or full circle repair clamp as detailed in paragraph B (Pipe Joining) of this section.
- C. HDPE pipe will be produced from resins meeting the requirements of ASTM D1248, designation PE3408, ASTM D3350 cell classification PE345444C, and will meet the requirements of AWWA C901 and C906. HDPE pipe will meet the minimum stability requirements of ASTM D3350. Pipe will be legibly marked at intervals of no more than five feet with the manufacturer's name, trademark, pipe size, HDPE cell classification, appropriate legend such as SDR 19 or SDR 17, ASTM D3035, AWWA C901 or C906, date of manufacture and point of origin.
- D. All pipe shall be made of virgin material. No rework material except that obtained from the manufacturers own production of the same formulation shall be used.
- E. The pipe shall be homogeneous throughout and shall be free of visible cracks, holes, foreign material, blisters, or other deleterious faults.
- F. Pipe color shall be solid black unless otherwise specified in these contract documents.
- G. HDPE Pipe shall be Iron Pipe Size (IPS) unless otherwise specified in these contract documents.
- H. Dimension Ratios: The minimum wall thickness of the HDPE pipe shall meet the following;
  - 1. Minimum DR17

**2.02 PIPE JOINING FOR TERMINAL SECTIONS OF HDPE PIPE**

- A. The polyethylene pipe shall be assembled and joined at the site using the butt-fusion method to provide a leak proof joint. Threaded or solvent-cement joints and connections are not permitted. All equipment and procedures used shall be in strict compliance with the manufacturer's recommendations. Fusing shall be accomplished by personnel certified as fusion technicians by a manufacturer of polyethylene pipe and/or fusing equipment.
- B. Terminal sections may also be joined by Electrofuse Couplings by Central Plastic Company, Friatec, or approved equal.
- C. Terminal sections may also be joined by Full Circle Repair Clamps by Smith Blair, JCM, or approved equal.

**2.03 MATERIALS RELATED TO SEWER SERVICE CONNECTIONS**

- A. Sewer service connections to the HDPE main may be made by Plastic Saddles with Stainless Steel Straps, by GPK or approved equal or Rubber Saddles with Stainless Steel Straps by Fernco Company, DFW, or approved equal.
- B. Sewer service connections to the main may also be made with Electrofusion Saddles by Central Plastics, Friatec, or approved equal.
- C. Sewer service connections to the main may also be made with Inserta Tees by Fowler Manufacturing.

**2.04 MATERIALS FOR SEALING MANHOLES**

- A. The annular space at each manhole may be sealed with Oakum saturated with Avanti 202 or approved equal and covered with a quick setting grout.

- B. The annular space at each manhole may also be sealed with a water stop gasket by Fernco Company or approved equal and finished with a quick setting grout.

### **PART 3 - EQUIPMENT**

#### **3.01 DESIGN**

- A. The pipe bursting unit shall be designed and manufactured to force its way through the existing line by fracturing the pipe and compressing the broken pieces into the surrounding soil as the equipment progresses. The bursting unit shall generate sufficient force to burst and compact the existing pipeline. In each case the pipe bursting unit shall pull the polyethylene pipe with it as it moves forward.

### **PART 4 - EXECUTION**

#### **4.01 GENERAL**

- A. Bypass Pumping shall be accomplished when and where necessary. The Contractor shall provide flow diversion with pumps adequate in size and capacity to handle all flows generated during the pipe burst process. All costs for bypass pumping shall be incidental unless specific pay items for this work are included in the pay schedule.
- B. Excavation of insertion pits shall be at locations determined by the Contractor.
- C. Insertion pits shall be of sufficient length to allow the bursting head and new HDPE pipe to enter the host pipe at an angle that will maintain the grade of the existing sanitary sewer.

#### **4.02 PREPARATION**

- A. All sewer service connections shall be located prior to pipe bursting the main by PACP Pre-CCTV Inspection unless the work has been completed previously and provided by the Engineer.
- B. If the PACP Pre-CCTV inspection reveals obstructions or pipe materials that will prevent the existing pipe from being pipe burst properly and cannot be removed by conventional cleaning equipment, a point repair will be made by the Contractor, with approval from the Owner/Engineer. Separate payment for this work will be made and it is not considered incidental to the pipe bursting process.
- C. If the PACP Pre-CCTV inspection reveals a sag or hump, a sag or hump removal will be made by the Contractor, with approval from the Owner/Engineer. Separate payment for this work will be made and it is not considered incidental to the pipe bursting process.
- D. Before any excavation is done for any purposes, the Contractor shall contact the appropriate One Call agency for determining field locations of existing utilities.

#### **4.03 INSERTION OF THE HDPE PIPE**

- A. The polyethylene pipe shall be assembled and joined at the site using the butt-fusion method to provide a leak proof joint. Threaded or solvent-cement joints and connections are not permitted. All equipment and procedures used shall be in compliance with the manufacturer's recommendations. Fusing shall be accomplished by personnel certified as fusion technicians by a manufacturer of HDPE pipe and/or fusing equipment.
- B. The butt-fused joint shall be in true alignment and shall have uniform rollback beads resulting from the use of proper temperature and pressure. The joint shall be allowed adequate cooling time before removal of pressure. The fused joint shall be watertight and shall have tensile strength equal to that of the pipe. All defective joints shall be cut out and replaced at the expense of the Contractor.
- C. Service connections to the HDPE pipe shall be made with materials submitted and approved in accordance with Paragraph 2. Materials.
- D. An appropriate relaxation period shall be allowed prior to making service connections and connecting to manholes. The relaxation period shall be appropriate with and dependent upon

site conditions, as determined by Contractor.

- E. If concrete encasements are encountered, a point repair shall be performed to excavate and break out concrete prior to the bursting operation to allow the steady and free passage of the pipe bursting head, with approval from the Owner/Engineer. Separate payment for this work will be made and it is not considered incidental to the pipe bursting process.
- F. The new HDPE pipe shall be inserted immediately behind the bursting head in accordance with the manufacturer's recommended procedures. The bursting tool shall be specifically designed and manufactured for the type of insertion process being used. It shall be utilized to guide and assist the bursting head during the operation. A pushing machine may be utilized to aid pipe insertion from the rear.
- G. New HDPE pipe shall extend a minimum of 6" into each manhole. The annular space shall be sealed at each manhole with Oakum saturated with Avanti 202 or a Water Stop Gasket (as described in Paragraph 2) and finished with a quick setting grout.

#### **4.04 SERVICE RECONNECTIONS**

- A. Service connections to the HDPE pipe shall be made with materials submitted and approved in accordance with Paragraph 2. Materials. Services shall be reconnected so as to minimize disruption of service.
- B. After the new HDPE pipe has been installed and tested, the Contractor shall be responsible for reconnecting existing sewer services in the manner described in the bid form. All service lines shall be the size indicated in the plans and specifications.

#### **4.05 TESTING AND ACCEPTANCE**

- A. After the new HDPE pipe is installed and all services are reconnected, the line shall be inspected by CCTV. PACP Post-CCTV video shall be submitted to the Engineer or Owner for approval and acceptance of line.

**END OF SECTION**

**SECTION 33 3113**  
**SITE SANITARY SEWERAGE GRAVITY PIPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Sanitary sewerage drainage piping, fittings, and accessories.
- B. Installation of sanitary sewerage systems.
- C. Cleanout access and sewer manholes.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.

**1.03 PRICE AND PAYMENT PROCEDURES**

- A. Pipe and Fittings:
  - 1. Basis of Measurement: By the linear foot.
- B. Cleanout:
  - 1. Basis of Measurement: By the unit.
- C. Sanitary Sewer Manholes
  - 1. Basis of measurement; by the unit for a standard manhole (0-8 feet) deep.
  - 2. For manholes with depths exceeding 8.0 feet, will be measured for payment at the vertical lineal feet of depth exceeding 8.0 feet.

**1.04 DEFINITIONS**

- A. Bedding: Fill placed under, beside and directly over pipe, prior to subsequent backfill operations.

**1.05 REFERENCE STANDARDS**

- A. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe; 2022a.
- B. ASTM C443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets; 2021.
- C. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2021a.
- D. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications; 2020.
- E. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2021.
- F. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2023.
- G. ASTM D3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Materials; 2021.
- H. AWWA C111/A21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings; 2023.

**1.06 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination: Coordinate the installation of sanitary sewer system with size, location and installation of service utilities.
- B. Preinstallation Meeting: Conduct a preinstallation meeting at least one week prior to the start of the work of this section; require attendance by all affected installers.
- C. Sequencing: Ensure that utility connections are achieved in an orderly and expeditious manner.

**1.07 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating pipe, pipe accessories, and fittings.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
- E. Field Quality Control Submittals: Document results of field quality control testing.
- F. Project Record Documents:
  - 1. Record location of pipe runs, connections, manholes, cleanouts, and invert elevations.
  - 2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

**1.08 QUALITY ASSURANCE**

- A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of sanitary sewage system's products of types, materials, and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.
- B. Installer's Qualifications: Firm with at least 3 years of successful installation experience on projects with sanitary sewage work similar to that required for project.
- C. Plumbing Code Compliance: Comply with applicable portions of International Building Code pertaining to selection and installation of sanitary sewage system materials and products.

**PART 2 PRODUCTS****2.01 POLYVINYL CHLORIDE PIPE AND FITTINGS**

- A. Gravity Sewers (4-15 inch diameter):
  - 1. Manufactured from virgin, National Sanitation Foundation (NSF) approved resin conforming to ASTM D-1784, cell class 12454C.
  - 2. Unless otherwise specified, all PVC pipe and fittings shall conform to ASTM D-3034 and have a Standard Dimension Ratio (SDR) of 26.
  - 3. The gaskets used for joining PVC sewer pipe shall conform to ASTM F-477.
  - 4. All PVC gravity sewer pipe shall be clearly marked with the manufacturer's name, nominal diameter, SDR, ASTM D-3034, NSF approved seal, and be green in color.
- B. Gravity Sewers (18-60 inch diameter):
  - 1. Manufactured from virgin, National Sanitation Foundations (NSF) approved resin conforming to ASTM D-1784, cell classification 12454C or 12364C.
  - 2. The minimum pipe stiffness at 5% deflection shall be 46 psi when tested in accordance with ASTM D2412.
  - 3. The types of PVC pipe allowed are:
    - a. Solid wall PVC pipe 18 through 60 inch diameter meeting the requirements of ASTM F679-15.
    - b. Profiled wall PVC pipe with a controlled inside diameter; 4 through 48 inch diameter meeting the requirements of ASTM F794-03 (2014).
    - c. Corrugated PVC sewer pipe with a smooth interior; 4 through 36 inch diameter meeting the requirements of ASTM F949-15.
  - 4. All PVC pipe joints shall be gasketed bell and spigot push on type meeting the requirements of ASTM D3212. Gaskets shall meet the requirements of ASTM F477. All bells shall be formed integrally with the pipe. The gasket shall be factory installed and positively retained. No solvent weld cement joints will be permitted in field construction.
- C. Force Mains:



1. PVC 1120 pipe 4" and larger manufactured from virgin, National Sanitation Foundation (NSF) approved compounds meeting the requirements of ASTM D-1784.
2. Pressure rated based on Dimension Ratios of 21 and 100 psi working pressure unless otherwise noted in the drawings.
3. Outside diameter equivalent to the same outside diameter of cast iron pipe.
4. The minimum wall thickness of the bell, at any point, shall conform to the DR requirements of the pipe.
5. Furnish in standard laying lengths of twenty (20) feet.
6. Clearly mark with the manufacturer's name, nominal diameter, DR, PVC 1120, pressure class, AWWA C-900, and NSF approval seal.
7. All force main fittings shall be mechanical joint ductile iron, as specified herein.
8. PVC pipe 8" and smaller shall be schedule 80:
  - a. Conform to ASTM D1784 and ASTM D1785, green color; IPS equivalent outside diameter.
  - b. Joint for PVC piping 3 inch diameter or less may be solvent weld. A primer must be used. The primer shall be purple in color. The solvent cement shall meet ASTM D2564. The primer and cement shall be from the same manufacturer.

## 2.02 DUCTILE IRON PIPE AND FITTINGS

- A. Pipe:
  1. Manufactured in accordance with ANSI A-21.50 (AWWA C-151) and ANSI A-21.10 (AWWA C-110).
  2. The interior of the pipe and the bell and spigot ends shall be coated with Protecto 401 Ceramic Epoxy in accordance with the manufacturer's specifications.
  3. A minimum of 1 mil thick bituminous coating on the outside surface.
  4. Clearly mark with manufacturer's name, DI or Ductile, weight, class or nominal thickness, and casting period.
  5. Unless otherwise specified or shown on the drawings, ductile iron pipe shall have a minimum Pressure Class 200.
- B. Fittings:
  1. Fittings 4" - 24": Pressure rated at 350 psi.
  2. Fittings 30" - 36": Pressure rated at 250 psi.
  3. Joints meeting the requirements of ANSI A-21.11 (AWWA C-111).
  4. Coated inside and out with Protecto 401 Ceramic Epoxy.

## 2.03 HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS - FOR FORCE MAINS

- A. Pipe sizes 4-inch diameter and larger:
  1. Materials used for the manufacture of polyethylene pipe and fittings shall be made from PE 3408 high density polyethylene resin compound meeting cell classification 345434C per ASTM D3350; and meeting Type III, Class C, Category 5, Grade P34 per ASTM D1238.
  2. High Density Polyethylene (HDPE) pipe shall comply with AWWA Specification C906.
  3. Dimensions and workmanship shall be as specified by ASTM F714. HDPE fittings and transitions shall meet ASTM D3261. HDPE pipe shall have a minimum density of 0.955 grams per cubic centimeter. HDPE pipes and fittings shall have a Hydrostatic Design Basis (HDB) of 1,600 psi.
  4. The pipe shall be provided in ductile iron pipe sizes; and shall have a green stripe impregnated into the wall of the pipe.
  5. Pipe for open trench installation shall have a DR of 17 or less. Pipe for directional boring shall have a DR of 11 or less.
- B. Pipe sizes 3-inch diameter and less:

1. The HDPE pipe shall meet the requirements of AWWA C901 and have a DR 9. The HDPE pipe shall meet all other requirements noted above for the 4-inch and larger pipe.
- C. Pipe labeling - The pipe shall be marked with the following information:
1. Nominal size and OD base.
  2. Standard material code designation.
  3. Dimension Ratio.
  4. Pressure Class.
  5. AWWA designation.
  6. Manufacturers product code.
  7. Material test category of pipe.
- D. Fittings:
1. All joints in the pipeline shall be butt fusion.
  2. All molded fittings and fabricated fittings shall be provided by the same manufacturer as that of the pipe.
  3. Transition fittings between HDPE and other pipe materials shall be made with stiffeners. Stiffeners shall be stainless steel.

#### **2.04 JOINT RESTRAINT**

- A. All force main fittings that cannot be supported by thrust blocks, as specified, shall be restrained in conformance with the following criteria.
- B. Mechanical joint restraint shall be incorporated into the design of the follower gland. The restraint mechanism shall consist of a plurality of individually activated gripping surfaces to maximize restraint capability. Glands shall be manufactured of ductile iron conforming to ASTM A536-80.
- C. The gland shall be such that it can replace the standard mechanical joint gland and can be used with the standard mechanical joint bell as specified. Twist off nuts, sized same as tee-head bolts, shall be used to insure proper actuating of restraining devices.
- D. The restraining glands shall have a pressure rating equal to that of the pipe on which it is used, shall have been tested to UNI-B-13-92, and be UL and FM approved. The restraint shall be the EBAA Iron Series 2000PV, or approved equal.

#### **2.05 PIPE ENTRANCE COUPLINGS FOR MANHOLES**

- A. Two types of flexible connections will be acceptable:
1. Compression type rubber with stainless steel internal korbond and external pipe clamp, conforming to ASTM C923: Kor-N-Seal or approved equal.
  2. Integrally cast into pipe opening with external stainless steel pipe clamps conforming to ASTM C923: Z-Lok or approved equal.

#### **2.06 PRE-CAST CONCRETE MANHOLES**

- A. Precast manholes shall be constructed on a reinforced concrete foundation and shall be wet cast as modified herein. The bottom section of the manhole shall be precast integrally with the precast ring and shall be 4'-0" in diameter unless otherwise noted on the drawings. All concrete used in connection with the construction of manholes shall be 4,000 PSI concrete. Wet cast manholes shall conform to ASTM C-478.
- B. The precast manhole manufacturer shall use the additive Xypex Concentrate Admix C-2000/C-1000 at the rate of 2-3 percent by weight of cement in the concrete mix for all manholes. The Xypex Concentrate Admix must be added to the concrete at the time of batching as recommended by the manufacturer (Xypex Chemical Corporation, Richmond, British Columbia, Canada, local contact (615) 333-1000), or approved equal.
- C. Precast concrete rings shall be constructed using standard forms and shall conform to ASTM C478 including steel reinforcement.

- D. The precast sections shall be manufactured and installed in a manner so that there is no visible leakage in the manholes. The manhole section shall be manufactured in lengths such that a finished manhole will have the least possible number of joints. One section less than four feet in length will be allowed per manhole and that being the section required to bring the manhole to grade. Holes penetrating completely through the precast manhole wall for lifting will not be allowed. The precast rings shall be of the tongue and groove design and sealed watertight. Joints shall either be gasket joints meeting the requirements of ASTM C-1628, or bituminous butyl rubber sealant meeting the requirements of ASTM C-990-91. The joint shall be grouted smooth with non-shrink grout on the inside of the manhole so that no crack is visible. Pipe connections shall be as set forth in section 2.04.
- E. The manhole sidewall shall be adjusted with concrete grade adjustment rings as required to bring the casting to grade.
- F. The exterior manhole walls shall receive two coats of a water based acrylic coating or as required to provide 5mil dry coverage. The coating shall be black in color. The coating shall be CS-55 as manufactured by ConSeal Concrete Sealants, Inc., or approved equal. The coating shall be applied by the manufacturer of the precast manhole.
- G. After the manhole has been successfully vacuum tested, and the rim iron set to finished grade, the contractor shall install a locking ring in accordance with the detail SS-SMH-1 as shown on the drawings.

## **2.07 CAST IRON RIM & COVER**

- A. The cast iron rim and cover for the access opening for the manhole shall conform to ASTM A-48-70. The assembly shall be designed to carry an HS 20 loading.
- B. The cover shall have a diameter of 26-inches and have the word "SEWER" cast into the top. It shall have a single pick hole.
- C. The rim shall stand 7-inches measured from the bottom of bottom flange to the top edge of the rim. The outer diameter of the bottom flange shall be 36-inches and the clear opening shall be 24-inches.
- D. The mating surfaces of the rim and cover shall be machined so that when the cover is setting in the rim it will not rock or rattle when subjected to wheel traffic.

## **2.08 CLEANOUTS AND PLUGS**

- A. When called for on the drawings cleanouts shall be installed.
- B. In grassed areas and asphalt pavement areas the cleanout shall be set to grade and capped with a cast iron ferrule no-hub connection with a bronze counter-sunk plug.
  - 1. The house keeping pad measured 24" x 24" x 8" thick shall be poured at finished grade around each cleanout, using 3,500 psi concrete. The pad shall be flush with the surrounding grade.
- C. In paved areas the cleanout shall be set 3-inches  $\pm$  below finished grade and protected with an access cover. The frame shall be round coated cast iron with anchor angles and heavy-duty scoriated secured cover such as JOSAM 58680 Access Cover or approved equal.
  - 1. In areas to be paved with asphalt the access cover shall be set in a 24" x 24" x 12" thick concrete pad, 3,500 psi concrete poured to finished grade.
  - 2. In areas to be paved with concrete the access cover shall be installed as an integral part of the surrounding pavement.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Prior to laying pipe, prepare a suitable bedding according to Section 31 2316.13 - Trenching.
- B. Before placing pipe in the trench, field inspect for cracks or other defects; remove defective pipe from the construction site.

- C. Swab the interior of the pipe to remove all undesirable material.
- D. Prepare the bell end and remove undesirable material from the gasket and gasket recess.

### **3.02 INSTALLING GRAVITY SANITARY SEWERS**

- A. Lay pipe true to the lines and grades from the grade and alignment stakes, or equally usable references.
  - 1. Where laser equipment is used, provide offset hubs at every manhole location for purposes of checking grade between sections.
  - 2. Where batter boards are used, furnish stakes at intervals of 50 feet along the route of the pipeline.
    - a. Set stakes at such distance from centerline of excavations as is suitable for the excavating method and machinery used.
    - b. Provide and use accurately set batter boards at each 50-foot interval in establishing the bottom invert of each pipe laid.
    - c. Accurately establish the centerline of each pipe using a string stretched between targets and a plumb line extended to the centerline of the pipe.
- B. Carefully inspect all pipe and each fitting prior to its placement in the trench, and reject and remove any defective pipe or fitting from the job site.
- C. Lay pipe progressively upgrade, with bell upstream, in such a manner as to form close, concentric joints with smooth bottom inverts. Joining of all pipe shall be in accordance with manufacturer's specifications.
- D. Bed each pipe section in accordance with Section 31 2316.13 - Trenching.
- E. Unless otherwise specified, provide all gravity sewer lines with a minimum of 4 feet of cover in roadways and 2 1/2 feet of cover in open areas, unless ductile iron pipe or concrete encasement is used.
- F. A detectible locator tape shall be installed in the trench for all sewer laterals. It shall extend from the main to the point of termination of the service lateral.
- G. Do not allow walking on completed pipelines until backfill has been placed to a depth of at least 6 inches above the crown of the pipe.
- H. Keep the interior of the pipe free of all unneeded material, and upon completion of a section between any two manholes it shall be possible to view a complete circle of light when looking through the pipe.
- I. When laying pipe ceases, close the open ends of the pipe with a suitable plug for preventing the entrance of foreign materials.
- J. Couplings and adapters used for joining dissimilar gravity pipe materials, for repairing and rejoining sections of gravity sewer, shall meet the requirements of ASTM C-594.
- K. All couplings and adapters for gravity sewer pipe shall be of rubber, plastic, and metallic materials that will not be attacked by municipal wastewater or aggressive elements in the soil and conform to ASTM C-425, Section 5.
- L. Trench Dams: Trench Dams shall be installed in the bedding and backfill of all new or replaced sewer lines in order to disrupt the possible flow of water through the granular bedding and backfill material. The dam shall consist of a "plug" of clay material a minimum of 3-feet thick that is compacted around the pipe and extend to the top of the granular back fill. There shall be one "plug" placed within 10-feet of the upstream manhole in a run of pipe and one at the mid-point of the run.

### **3.03 INITIAL PROOF TESTING OF SANITARY SEWERS**

- A. It is the intent to specify a "test as you go" procedure in order to establish confidence in the installation and avoid the unnecessary delay of final acceptance.

- B. Before a reach of pipeline is approved for payment, successfully proof test that reach for grade, alignment, cleanliness, and leakage.
- C. In the event that four or more reaches fail to satisfactorily pass proof testing procedures, cease pipe laying until deficiencies are identified and corrected.
- D. The basis for grade, alignment, and cleanliness testing will be visual inspection. Leakage testing will be by means of low pressure air as specified hereinafter.
- E. Proof test flexible pipeline installation for deflection by pulling a "go-no go" test mandrell through the line after the initial backfill is complete to avoid unnecessary digups.

### 3.04 FINAL TESTING

- A. Before the job is accepted, a final testing procedure is to be followed.
- B. Perform a visual inspection when ground water levels are above the pipeline if possible. All visible leaks shall be repaired.
- C. If there is evidence of infiltration, make measurement with suitable pipe weirs:
  - 1. If the flow through the lower most manhole of a continuous section of sewer does not exceed 50 gallons day/inch/mile of pipeline and the groundwater level is representative of the highest annual level, the entire continuous section shall be approved for leakage.
  - 2. The leakage test will be conducted with all lines connected (including service lines).
  - 3. If the apparent infiltration rate exceeds 50 gallon/day/inch/mile, then take additional weir measurements to isolate those sections leaking.
  - 4. Any single reach of pipeline which exhibits an apparent infiltration rate in excess 50 gallon/day/inch/mile will not be accepted and all leaks will be located and corrected.
- D. If it is not practical to wait for groundwater levels that are representative of the highest annual level, the Contractor may request approval on the basis of a low pressure air exfiltration test.
  - 1. Such test, if approved by the Architect/Engineer, will be conducted in accordance with ASTM C-828.
  - 2. When an exfiltration test is used as a substitute for infiltration testing, correct all conditions that are potential sources of infiltration.
- E. If flexible pipe is used, pull an approved go-no go deflection mandrell of 95/100 pipe diameter through all reaches of gravity sewer main. No sections will be accepted that exhibit a deflection of more than 5%.

### 3.05 LOW PRESSURE AIR EXFILTRATION TEST

- A. Calculate the pressure drop as the number of minutes for the air pressure to drop from a stabilized pressure of 3 1/2 to 2 1/2 psig.
- B. Times for mixed pipe sizes of varying lengths should be calculated as described in ASTM C-828-76T.
- C. The following times are for one pipe size only:

Pipe Size (inches)	Time, T (sec/100 ft.)	Allowable Air Loss, Q (ft <sup>3</sup> /min)
6	42	2.0
8	72	2.0
10	90	2.5
12	108	3.0
15	126	4.0
18	144	5.0
21	180	5.5

24	216	6.0
27	252	6.5
30	288	7.0
Based upon formula $t = 0.0225 \times d^2 \times L/Q$		

**3.06 INSTALLING FORCE MAINS**

- A. Lay all pipe in a straight line on a uniform grade.
- B. After applying gasket lubricant, take extreme care to keep the spigot end from contacting the ground.
- C. Hone the pipe with suitable tools or equipment.
- D. Closely follow the manufacturer’s instruction in laying and joining pipe.
- E. Cut pipe for inserting valves, fittings, etc. in a neat and workmanlike manner without damaging the pipe so as to leave a smooth end at right angles to the axis of the pipe.
- F. Tracer wire shall be installed with all non-metallic force main in accordance with Section 33 0526 - Utility Identification.
- G. When the force main is installed by open cut an underground plastic line marker shall be installed at a minimum of 18" above the pipe. The marker shall meet the requirements of Section 33 0526 - Utility Identification.

**3.07 TESTING OF FORCE MAINS**

- A. Before backfilling, PVC and Ductile Iron force mains shall be tested at a minimum pressure of at least 50 percent above the design operating pressure for at least 30 minutes. Leakage shall not exceed the amount given by the following formula:

$$L = ND / (7,400 \times P^{0.5})$$

Where L is allowable leakage in gallons per hour.

N is the number of pipe joints

D is the pipe diameter in inches.

P is the test pressure in psi

- B. Pressure testing for HDPE forcemain
  - 1. Fill the line with water taking care to evacuate all air.
  - 2. Initial expansion phase - gradually increase the internal pressure to the test pressure and maintain the test pressure for three(3) hours. The polyethylene pipe will expand slightly. It will be necessary to add water to maintain the pressure. The amount of water does not need to be measured during initial expansion (the test pressure shall be 150% of the design operating pressure).
  - 3. At the end of the initial expansion phase start the leak test.
    - a. Maintain the test pressure for one hour.
    - b. Measure the amount of make-up water required to maintain the test pressure.
    - c. If the amount of make-up water needed to maintain the test pressure does not exceed the amount calculated using the following table, no leakage indicated.

Make-Up Water Allowance	
Nominal Pipe Size (in.)	US Gallon/100ft. of Pipe
1 Hour Test	
1-1/4	0.06
1-1/2	0.07

2	0.07
3	0.10
4	0.13
5-3/8	0.19
5	0.21
6	0.3
7-1/8	0.3
8	0.5
10	0.8
12	1.1
13-3/8	1.2
14	1.4
16	1.7
18	2.0
20	2.8
22	3.5
24	4.5
26	5.0
28	5.5
30	6.3
32	7.0
34	8.0
36	9.0
42	12.0
48	15.0
54	22.0

### 3.08 SEWER MANHOLES - GENERAL

- A. Unless otherwise specified, all manholes shall have an inside diameter of not less than 4 feet and a vertical wall height of not less than 2.5 feet.
- B. The clear opening in the manhole shall not be less than 2.0 feet.
- C. Depth of the manhole shall be the vertical distance from the lowest invert in the manhole to the base of the ring.
- D. Apply an application of bituminous material to the outside of each manhole section prior to backfilling and preferably when making the vacuum test.
- E. Backfill manholes with the same material used for pipelines.

### 3.09 MANHOLE VACUUM TEST

- A. All manholes shall be subjected to and shall pass a vacuum test of at least 10" Hg. prior to acceptance. The Contractor shall be responsible for providing the equipment required for the testing including the manhole sealing apparatus, gauges, pump, plugs, and operating personnel. The equipment shall be top quality, and in good condition and approved by the Engineer for use.
- B. Each manhole shall be tested immediately after assembly and prior to backfilling. The lifting holes shall be plugged with an approved non-shrink grout. The pipes entering the manhole shall be plugged, taking care to securely brace the plugs to prevent them from being drawn into the manhole.

- C. With the vacuum tester set in place on top of the cone section of the manhole:
  1. Inflate the compression band seal in accordance with the manufacturer's recommendations.
  2. Connect the vacuum pump to the outlet port with the valve open and draw a vacuum of 10 inches of mercury (Hg).
  3. Close the valve and shut off vacuum pump.
  4. Measure the time elapsed for the vacuum to drop to 9 inches Hg.
  5. The manhole shall pass if the time is greater than the times listed in the chart below:

<b>Minimum Test Times for Various Manhole Diameters</b>					
<b>Manhole Diameter (ft)</b>					
	<b>4 ft. dia.</b>	<b>5 ft. dia.</b>	<b>6 ft. dia.</b>	<b>7 ft. dia.</b>	<b>8 ft. dia.</b>
<b>Depth (ft.)</b>	<b>Test Time (sec)</b>				
<b>8</b>	20	26	33	42	55
<b>10</b>	25	33	41	51	64
<b>12</b>	30	39	49	66	86
<b>14</b>	35	46	57	74	96
<b>16</b>	40	52	67	87	113
<b>18</b>	45	59	73	95	123
<b>20</b>	50	65	81	105	137
<b>22</b>	55	72	89	116	150
<b>24</b>	59	78	97	126	164
<b>26</b>	64	85	105	137	177
<b>28</b>	69	91	121	147	191
<b>30</b>	74	98	121	157	205

- D. If the manhole fails the vacuum test, necessary repairs shall be made with an approved non-shrink grout while the vacuum is being drawn. Retesting as outlined above shall proceed until a satisfactory test is obtained.

**3.10 MEASUREMENT AND PAYMENT - GRAVITY SEWER PIPE**

- A. Sewer pipe shall be measured by the linear foot of pipe installed, tested, and accepted without deduction for the trench, granular bed, and backfill, removal, and disposal of existing materials, inspection, internal testing, internal sealing or replacement of defective joints, fittings, and appurtenances.
- B. Sewer pipe as above stipulated shall be paid for at the Contract unit price per linear foot for sewer pipe of the various sizes, depths, and material classifications.
- C. Each sewer manhole of a specified diameter shall be paid for as a standard manhole, complete in place including rim iron and cover.
  1. For purpose of measurement for payment a standard sewer manhole shall be defined as any manhole having a depth from 0 to 8'-0" deep.
  2. The depth of sanitary sewer manholes in excess of 8 feet shall be measured for payment on the basis of vertical lineal feet in excess of 8'-0". The measurement will be made from the rim iron to the flowline of the lowest pipe less the 8'-0" standard depth. The measurement shall be to the nearest 0.10 foot.

**END OF SECTION**





## Inspection report

Date: 8/31/2023	Work Order:	Weather: Dry	Surveyed By: SHAINE SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/31/2023 10:04:26 AM
Year laid:	Pre-cleaning: Heavy Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

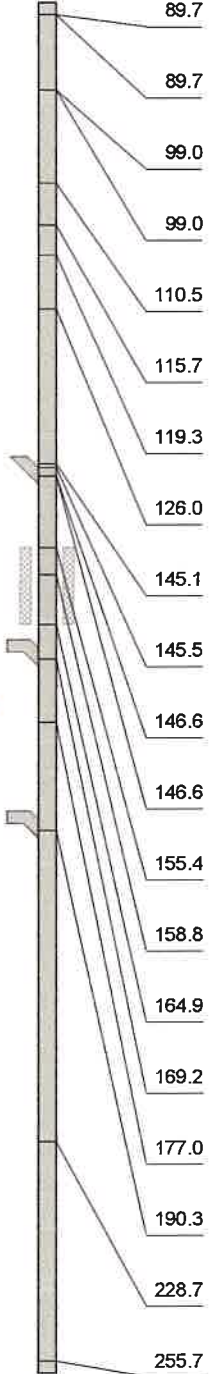
City: ALAMO	Drainage Area:	Upstream MH: L16
Street: BURNS ST	Media Label:	Up Rim to Invert: 0.0
Location Code: Local rural streets with light traffic	Flow Control: Not Controlled	Downstream MH: 253
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose: Pre-Rehabilitation Survey	Joints failed: 0
Lining Method:	Owner: ALAMO	

Additional Info:

1:876	Distance	Code	Observation	Counter	Photo	Grade
	0.0	AMH	Manhole / L16	00:00:08		
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:12		
	1.0 S01	B	Broken at 12 o'clock, Start / WITH ROOTS	00:00:19		
	5.0	RMJ	Roots Medium Joint from 10 o'clock to 2 o'clock, 15% of cross sectional area, within 8 inch	00:01:16	8_31_2023 10_04_26 AM_1ad73	
	6.6	TBD	Tap Break-In Defective at 11 o'clock, dia/height: 4inch / ROOTS	00:01:45	8_31_2023 10_04_26 AM_de857	
	6.6	RML	Roots Medium Lateral at 11 o'clock, 35% of cross sectional area	00:02:00	8_31_2023 10_04_26 AM_b2b7e	
	13.6 F01	B	Broken at 12 o'clock, Finish / WITH ROOTS	00:02:51		
	13.6 S02	RFJ	Roots Fine Joint from 3 o'clock to 9 o'clock, Start, within 8 inch	00:02:57	8_31_2023 10_04_26 AM_4c193	
	40.4	RFJ	Roots Fine Joint from 8 o'clock to 4 o'clock, within 8 inch	00:04:08	8_31_2023 10_04_26 AM_53dcc	
	41.3	CC	Crack Circumferential from 8 o'clock to 4 o'clock	00:04:32	8_31_2023 10_04_26 AM_30c49	
	53.1	RMJ	Roots Medium Joint from 7 o'clock to 5 o'clock, 15% of cross sectional area, within 8 inch	00:05:13	8_31_2023 10_04_26 AM_1c45f	
	61.9 F02	RFJ	Roots Fine Joint from 3 o'clock to 9 o'clock, Finish, within 8 inch	00:05:55	8_31_2023 10_04_26 AM_7a49a	
	65.4	CC	Crack Circumferential from 8 o'clock to 4 o'clock	00:06:23	8_31_2023 10_04_26 AM_0743c	
	65.4	ISB	Infiltration Stain Barrel from 8 o'clock to 4 o'clock / AT CRACK	00:06:30	8_31_2023 10_04_26 AM_2d9f4	
	76.6	RFJ	Roots Fine Joint from 8 o'clock to 4 o'clock, within 8 inch	00:07:06	8_31_2023 10_04_26 AM_804d1	
	86.7	B	Broken from 7 o'clock to 4 o'clock	00:07:50	8_31_2023 10_04_26 AM_fa4a2e	

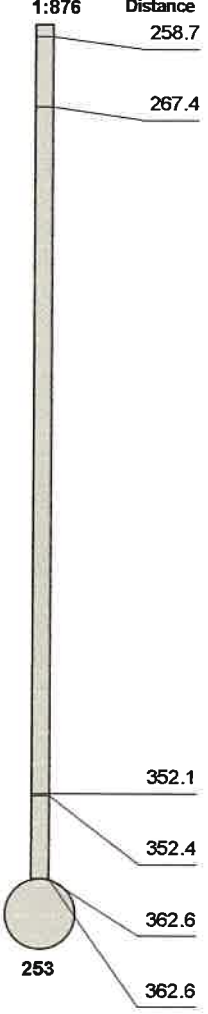
### Inspection report

Date: 8/31/2023	Work Order:	Weather: Dry	Surveyed By: SHAINE SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/31/2023 10:04:26 AM
Year laid:	Pre-cleaning: Heavy Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

	Distance	Code	Observation	Counter	Photo	Grade
	89.7	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:08:22	8_31_2023 10_04_26 AM_da6d6	
	89.7	ISB	Infiltration Stain Barrel from 2 o'clock to 5 o'clock / AT CRACK	00:08:32	8_31_2023 10_04_26 AM_6b4e1	
	99.0	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:09:08	8_31_2023 10_04_26 AM_d7e3e	
	99.0	ISB	Infiltration Stain Barrel from 8 o'clock to 4 o'clock	00:09:15	8_31_2023 10_04_26 AM_7a1a0	
	110.5	B	Broken from 7 o'clock to 5 o'clock	00:10:09	8_31_2023 10_04_26 AM_c425e	
	115.7	RFJ	Roots Fine Joint from 8 o'clock to 5 o'clock, within 8 inch	00:10:33	8_31_2023 10_04_26 AM_0ec89	
	119.3	RFJ	Roots Fine Joint from 12 o'clock to 5 o'clock, within 8 inch	00:10:53	8_31_2023 10_04_26 AM_43fd3	
	126.0	CC	Crack Circumferential from 7 o'clock to 4 o'clock	00:11:20	8_31_2023 10_04_26 AM_e3bc0	
	145.1	B	Broken at 3 o'clock / TAP ROOTS AT BREAK	00:13:11	8_31_2023 10_04_26 AM_f4dd6	
	145.5	B	Broken from 7 o'clock to 2 o'clock	00:13:36	8_31_2023 10_04_26 AM_cb025	
	146.6	TBI	Tap Break-In Intruding at 3 o'clock, dia/height: 6inch, intruding: 1inch	00:14:17	8_31_2023 10_04_26 AM_7e52d	
	146.6	RTC	Roots Tap Connection at 3 o'clock, 15% of cross sectional area	00:14:40	8_31_2023 10_04_26 AM_e775d	
	155.4	S03 RFJ	Roots Fine Joint from 7 o'clock to 5 o'clock, Start, within 8 inch	00:15:29	8_31_2023 10_04_26 AM_8ba6a	
	158.8	CS	Crack Spiral from 3 o'clock to 5 o'clock	00:15:56	8_31_2023 10_04_26 AM_acb7fe	
	164.9	F03 RFJ	Roots Fine Joint from 7 o'clock to 5 o'clock, Finish, within 8 inch	00:16:22	8_31_2023 10_04_26 AM_c116c	
	169.2	TFC	Tap Factory Made Capped at 2 o'clock, dia/height: 4inch	00:16:51	8_31_2023 10_04_26 AM_65114	
	177.0	B	Broken from 4 o'clock to 11 o'clock	00:17:36	8_31_2023 10_04_26 AM_7c7e6	
	190.3	TB	Tap Break-in/Hammer at 2 o'clock, dia/height: 6inch	00:18:48	8_31_2023 10_04_26 AM_2682e	
	228.7	B	Broken from 2 o'clock to 5 o'clock	00:20:20	8_31_2023 10_04_26 AM_2c89c	
	255.7	CS	Crack Spiral from 8 o'clock to 11 o'clock	00:21:35	8_31_2023 10_04_26 AM_dcf4c	

### Inspection report

Date: <b>8/31/2023</b>	Work Order:	Weather: <b>Dry</b>	Surveyed By: <b>SHAINE SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/31/2023 10:04:26 AM</b>
Year laid:	Pre-cleaning: <b>Heavy Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:

	Distance	Code	Observation	Counter	Photo	Grade
		CS	Crack Spiral from 2 o'clock to 4 o'clock	00:22:14	8_31_2023 10_04_26 AM_100d8	
		CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:22:44	8_31_2023 10_04_26 AM_c9bd4	
		CC	Crack Circumferential from 8 o'clock to 12 o'clock	00:25:46	8_31_2023 10_04_26 AM_47cc0	
		CL	Crack Longitudinal at 12 o'clock	00:26:14	8_31_2023 10_04_26 AM_78390	
		MWL	Water Level, 5% of the vertical dimension	00:27:20	8_31_2023 10_04_26 AM_8555b	
		AMH	Manhole / 253	00:27:24	8_31_2023 10_04_26 AM_dcd48	

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4924	3521	4935	51.0	36.0	87.0	2.6	1.4	1.9



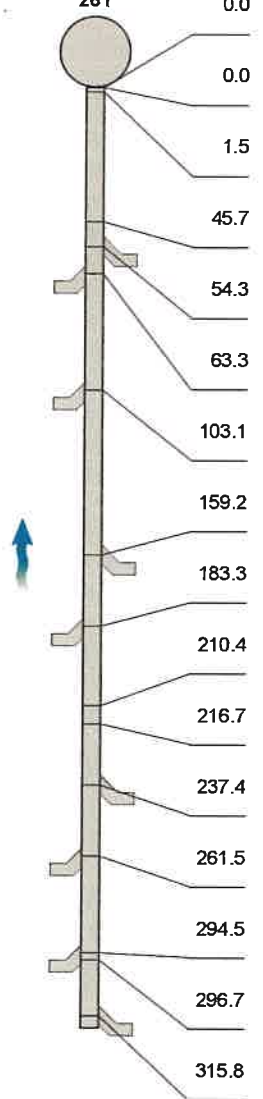
## Inspection report

Date: 8/22/2023	Work Order:	Weather: Dry	Surveyed By: SHAINE SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/22/2023 1:52:29 PM
Year laid:	Pre-cleaning: Light Cleaning	Direction: Upstream	Pipe Joint Length:	Total Length:	Length Surveyed:

City: ALAMO	Drainage Area:	Upstream MH: L17
Street: W. VINE ST.	Media Label:	Up Rim to Invert: 0.0
Location Code: Local rural streets with light traffic	Flow Control: Not Controlled	Downstream MH: 261
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose: Pre-Rehabilitation Survey	Joints failed: 0
Lining Method:	Owner: ALAMO	

### Additional Info:

1:2416	Distance	Code	Observation	Counter	Photo	Grade
	261	AMH	Manhole / 261	00:00:08	8_22_2023 1_52_29 PM_35119	
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:20		
	1.5	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:00:33	8_22_2023 1_52_29 PM_c1a04	
	45.7	CS	Crack Spiral from 3 o'clock to 5 o'clock	00:02:17	8_22_2023 1_52_29 PM_63f77	
	54.3	TF	Tap Factory Made at 10 o'clock, dia/height: 4inch	00:02:56	8_22_2023 1_52_29 PM_699e2	
	63.3	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:03:38	8_22_2023 1_52_29 PM_11639	
	103.1	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:05:11	8_22_2023 1_52_29 PM_cbe8a	
	159.2	TF	Tap Factory Made at 10 o'clock, dia/height: 4inch	00:07:15	8_22_2023 1_52_29 PM_816c4	
	183.3	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:08:47	8_22_2023 1_52_29 PM_f3db1	
	210.4	B	Broken from 10 o'clock to 2 o'clock	00:09:54	8_22_2023 1_52_29 PM_98b00	
	216.7	CS	Crack Spiral from 11 o'clock to 3 o'clock	00:10:27	8_22_2023 1_52_29 PM_dded0	
	237.4	TF	Tap Factory Made at 10 o'clock, dia/height: 4inch	00:11:34	8_22_2023 1_52_29 PM_bb70e	
	261.5	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:12:43	8_22_2023 1_52_29 PM_b59b8	
	294.5	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:14:30	8_22_2023 1_52_29 PM_39f5d	
	296.7	DAGS	Deposits Attached Grease, 5% of cross sectional area from 2 o'clock to 4 o'clock	00:14:53	8_22_2023 1_52_29 PM_eef38	
	315.8	TFD	Tap Factory Made Defective at 10 o'clock, dia/height: 4inch / MUD AT CONNECTION	00:16:09	8_22_2023 1_52_29 PM_f19fd	





## Inspection report

Date: 8/22/2023	Work Order:	Weather: Dry	Surveyed By: SHAINÉ SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/22/2023 1:52:29 PM
Year laid:	Pre-cleaning: Light Cleaning	Direction: Upstream	Pipe Joint Length:	Total Length:	Length Surveyed:

Distance	Code	Observation	Counter	Photo	Grade
324.4	MMC	Miscellaneous Material Change, Polyvinyl chloride / FROM CONCRETE TO PVC	00:16:53	8_22_2023 1_52_29 PM_d60f3	
324.4	JOL	Joint Offset Large, 1Inch	00:17:01	8_22_2023 1_52_29 PM_ab47e	
327.5	TF	Tap Factory Made at 12 o'clock, dia/height: 6inch	00:17:36	8_22_2023 1_52_29 PM_95dc0	
329.7	MMC	Miscellaneous Material Change, Concrete pipe (non reinforced) / FROM PVC TO CONCRETE	00:18:01	8_22_2023 1_52_29 PM_2ab46	
333.8	MWL	Water Level, 5% of the vertical dimension	00:26:14		
333.8	AMH	Manhole / END OBSERVATION DUE CAMERA FLIPPED OVER IN PIPE	00:26:18		

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4222	3121	4231	13.0	5.0	18.0	2.6	2.5	2.6



## Inspection report

Date: <b>8/15/2023</b>	Work Order:	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>JONATHAN TAYLOR</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/15/2023 5:28:59 PM</b>
Year laid:	Pre-cleaning: <b>Heavy Cleaning</b>	Direction: <b>Upstream</b>	Pipe Joint Length:	Total Length: <b>204.8'</b>	Length Surveyed: <b>204.8'</b>

City: <b>ALAMAO</b>	Drainage Area:	Upstream MH: <b>L27</b>
Street: <b>RAIBOW CIRCLE</b>	Media Label:	Up Rim to Invert:
Location Code: <b>Yard</b>	Flow Control:	Downstream MH: <b>L25</b>
Location Details:	Sheet Number:	Down Rim to Invert:
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8"</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Concrete Pipe (non-reinforced)</b>	Purpose: <b>Pre-Rehabilitation Survey</b>	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMO</b>	

Additional Info:

1:1546	Distance	Code	Observation	Counter	Photo	Grade		
	0.0	AMH	Manhole / L25	00:00:00	8_15_2023 5_28_59 PM_acc9a			
	0.0	MWL	Water Level, 25% of the vertical dimension	00:00:23				
	62.8	TB	Tap Break-in/Hammer at 3 o'clock, dia/height: 3inch	00:02:17	8_15_2023 5_28_59 PM_435b9			
	62.8	BVV	Broken Void Visible from 4 o'clock to 8 o'clock	00:02:49	8_15_2023 5_28_59 PM_f1fd37	S5		
	96.2	TFC	Tap Factory Made Capped at 3 o'clock, dia/height: 4inch	00:03:45	8_15_2023 5_28_59 PM_20792			
	204.8	MWL	Water Level, 5% of the vertical dimension	00:06:57				
	204.8	AMH	Manhole / L27	00:07:03	8_15_2023 5_28_59 PM_a78db			
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5100	0000	5100	5.0	0.0	5.0	5.0	0.0	5.0





## Inspection report

Date: <b>8/28/2023</b>	Work Order:	Weather: <b>Dry</b>	Surveyed By: <b>SHAINÉ SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/28/2023 12:19:41 PM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Upstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:

City: <b>ALAMO</b>	Drainage Area:	Upstream MH: <b>193B</b>
Street: <b>W CHURCH ST</b>	Media Label:	Up Rim to Invert: <b>0.0</b>
Location Code: <b>Primary major arterial roads</b>	Flow Control: <b>Not Controlled</b>	Downstream MH: <b>193A</b>
Location Details: <b>EDGE OF HWY</b>	Sheet Number:	Down Rim to Invert: <b>0.0</b>
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Not Known</b>	Purpose: <b>Pre-Rehabilitation Survey</b>	Joints failed: <b>0</b>
Lining Method: <b>Cured in Place</b>	Owner: <b>ALAMO</b>	

Additional Info:

1:1348	Distance	Code	Observation	Counter	Photo	Grade			
	0.0	AMH	Manhole / 193A	00:00:09	8_28_2023 12_19_41 PM_c7ec4				
	0.0	MWL	Water Level, 15% of the vertical dimension	00:00:25					
	3.6	DFBR	Deformed Flexible Bulging Round, change to: 20% from 8 o'clock to 12 o'clock	00:00:57	8_28_2023 12_19_41 PM_2c2ae				
	41.8	DFBR	Deformed Flexible Bulging Round, change to: 10% from 10 o'clock to 2 o'clock	00:03:18	8_28_2023 12_19_41 PM_6b7b1				
	84.2	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:06:06	8_28_2023 12_19_41 PM_8b43d				
	178.6	MGO	Miscellaneous General Observation / EXTRA MANHOLE NOT ON PLANS	00:11:58					
	178.6	AMH	Manhole / 193B	00:12:50	8_28_2023 12_19_41 PM_2e573				
	QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
	5141	0000	5141	9.0	0.0	9.0	4.5	0.0	4.5



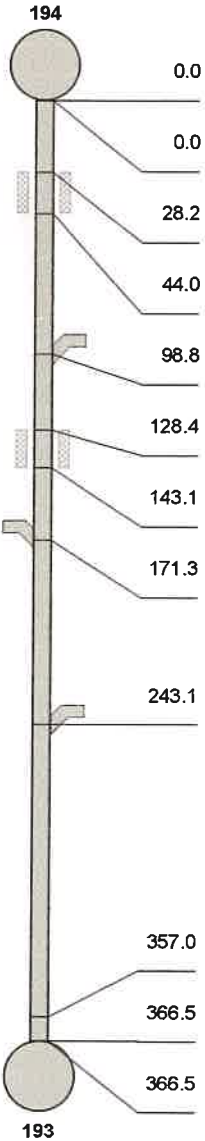
## Inspection report

Date: 8/24/2023	Work Order:	Weather: Dry	Surveyed By: SHAINE SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/24/2023 11:50:26 AM
Year laid:	Pre-cleaning: Light Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

City: <b>ALAMO</b>	Drainage Area:	Upstream MH: <b>194</b>
Street: <b>W CHURCH ST</b>	Media Label:	Up Rim to Invert: <b>0.0</b>
Location Code: <b>Local rural streets with light traffic</b>	Flow Control: <b>Not Controlled</b>	Downstream MH: <b>193</b>
Location Details: <b>EDGE OF HWY</b>	Sheet Number:	Down Rim to Invert: <b>0.0</b>
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Not Known</b>	Purpose: <b>Pre-Rehabilitation Survey</b>	Joints failed: <b>0</b>
Lining Method: <b>Cured in Place</b>	Owner: <b>ALAMO</b>	

### Additional Info:

1:2767	Distance	Code	Observation	Counter	Photo	Grade
	0.0	AMH	Manhole / 194	00:00:05		
	0.0	MWL	Water Level, 20% of the vertical dimension	00:00:08		
	28.2	S01 MWLS	Miscellaneous Water Level, Sag, 55% of the vertical dimension, Start	00:01:19	8_24_2023 11_50_26 AM_eda5d	
	44.0	F01 MWLS	Miscellaneous Water Level, Sag, 55% of the vertical dimension, Finish	00:02:12	8_24_2023 11_50_26 AM_75aad	
	98.8	TF	Tap Factory Made at 10 o'clock, dia/height: 4inch	00:04:33	8_24_2023 11_50_26 AM_aa468	
	128.4	S02 MWLS	Miscellaneous Water Level, Sag, 60% of the vertical dimension, Start	00:06:04	8_24_2023 11_50_26 AM_23df9	
	143.1	F02 MWLS	Miscellaneous Water Level, Sag, 60% of the vertical dimension, Finish	00:06:54	8_24_2023 11_50_26 AM_5d328	
	171.3	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:08:15	8_24_2023 11_50_26 AM_76b3d	
	243.1	TF	Tap Factory Made at 10 o'clock, dia/height: 4inch	00:10:56	8_24_2023 11_50_26 AM_d6731	
	357.0	MWLS	Miscellaneous Water Level, Sag, 70% of the vertical dimension	00:15:59	8_24_2023 11_50_26 AM_49656	
	366.5	MWL	Water Level, 20% of the vertical dimension	00:17:14		
	366.5	AMH	Manhole / 193	00:17:17		





### Inspection report

Date: <b>8/21/2023</b>	Work Order:	Weather: <b>Dry</b>	Surveyed By: <b>JONATHAN TAYLOR</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/21/2023 12:48:34 PM</b>
Year laid:	Pre-cleaning: <b>Heavy Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length: <b>398.7'</b>	Length Surveyed: <b>398.7'</b>

City: <b>ALAMAO</b>	Drainage Area:	Upstream MH: <b>199</b>
Street: <b>W CHURCH ST</b>	Media Label:	Up Rim to Invert:
Location Code: <b>Primary major arterial roads</b>	Flow Control: <b>Not Controlled</b>	Downstream MH: <b>199A</b>
Location Details: <b>EDGE OF HWY</b>	Sheet Number:	Down Rim to Invert:
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8"</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Concrete Pipe (non-reinforced)</b>	Purpose: <b>Pre-Rehabilitation Survey</b>	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMO</b>	

Additional Info:

	1:2948 Distance	Code	Observation	Counter	Photo	Grade
	0.0	AMH	Manhole / 199A	00:00:00	8_21_2023 12_48_34 PM_816dd	
	0.0	MWL	Water Level, 10% of the vertical dimension	00:00:31		
	7.1	MGO	Miscellaneous General Observation / PIPE IS CONCRETE NOT VCP	00:02:17		
	25.5	TB	Tap Break-in/Hammer at 3 o'clock, dia/height: 4inch	00:04:24	8_21_2023 12_48_34 PM_f2e8c	
	123.5	ISSRL	Intruding Sealing Material Sealing Ring Loose/Poorly Fitting from 10 o'clock to 2 o'clock	00:10:03	8_21_2023 12_48_34 PM_14000	
	131.6	ISSRL	Intruding Sealing Material Sealing Ring Loose/Poorly Fitting from 11 o'clock to 2 o'clock	00:10:51	8_21_2023 12_48_34 PM_d43ca	
	138.2	MWLS	Miscellaneous Water Level, Sag, 60% of the vertical dimension	00:11:17	8_21_2023 12_48_34 PM_94c2b	S4
	144.2	ISSRL	Intruding Sealing Material Sealing Ring Loose/Poorly Fitting from 8 o'clock to 1 o'clock	00:11:38	8_21_2023 12_48_34 PM_022f3	
	151.0	TB	Tap Break-in/Hammer at 10 o'clock, dia/height: 4inch	00:12:08	8_21_2023 12_48_34 PM_c7ac7	
	164.0	ISSRH	Intruding Sealing Material Sealing Ring Hanging, 5% of cross sectional area from 10 o'clock to 2 o'clock	00:12:46	8_21_2023 12_48_34 PM_fd649	M2
	203.7	ISSRH	Intruding Sealing Material Sealing Ring Hanging, 5% of cross sectional area from 12 o'clock to 4 o'clock	00:17:30	8_21_2023 12_48_34 PM_0b714	M2
	210.6	B	Broken from 1 o'clock to 5 o'clock	00:18:04	8_21_2023 12_48_34 PM_764f8	S4
	349.2	LL	Line Left, 7%	00:31:08		M1
	372.4	LL	Line Left, 10%	00:32:14	8_21_2023 12_48_34 PM_e206d	M1
	382.4	TF	Tap Factory Made at 1 o'clock, dia/height: 4inch	00:32:47	8_21_2023 12_48_34 PM_45e3c	



## Inspection report

Date: <b>8/21/2023</b>	Work Order:	Weather: <b>Dry</b>	Surveyed By: <b>JONATHAN TAYLOR</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/21/2023 12:48:34 PM</b>
Year laid:	Pre-cleaning: <b>Heavy Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length: <b>398.7'</b>	Length Surveyed: <b>398.7'</b>

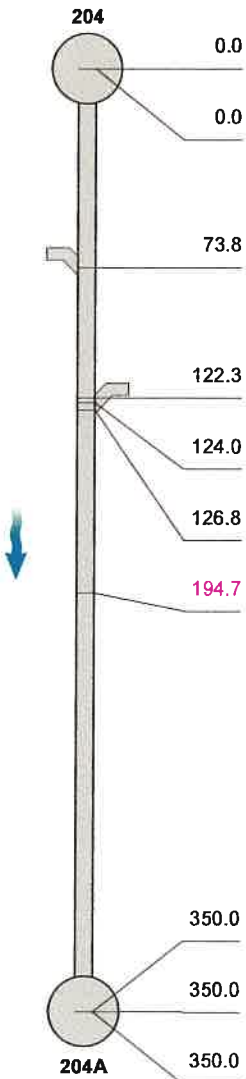
	Distance	Code	Observation	Counter	Photo	Grade		
	398.7	MWL	Water Level, 10% of the vertical dimension	00:33:50				
	398.7	AMH	Manhole / 199A	00:33:56	8_21_2023 12_48_34 PM_00a63			
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4200	2212	4222	8.0	6.0	14.0	4.0	1.5	2.3

### Inspection report

Date: <b>8/21/2023</b>	Work Order:	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>JONATHAN TAYLOR</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/21/2023 10:27:05 AM</b>
Year laid:	Pre-cleaning: <b>Heavy Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length: <b>350.0'</b>	Length Surveyed: <b>350.0'</b>

City: <b>ALAMAO</b>	Drainage Area:	Upstream MH: <b>204</b>
Street: <b>W CHURCH ST</b>	Media Label:	Up Rim to Invert:
Location Code: <b>Primary major arterial roads</b>	Flow Control: <b>Not Controlled</b>	Downstream MH: <b>204A</b>
Location Details: <b>EDGE OF HWY</b>	Sheet Number:	Down Rim to Invert:
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8"</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Vitrified Clay Pipe</b>	Purpose: <b>Pre-Rehabilitation Survey</b>	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMO</b>	

Additional Info:

1:2642	Distance	Code	Observation	Counter	Photo	Grade		
	0.0	AMH	Manhole / 204	00:00:00	8_21_2023 10_27_05 AM_5ab94			
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:29				
	73.8	TB	Tap Break-in/Hammer at 3 o'clock, dia/height: 4inch	00:03:47	8_21_2023 10_27_05 AM_8979ff			
	122.3	MMC	Miscellaneous Material Change, Polyvinyl chloride / FROM VCP TO PVC	00:06:04				
	124.0	TF	Tap Factory Made at 9 o'clock, dia/height: 6inch	00:06:34	8_21_2023 10_27_05 AM_b859e			
	126.8	MMC	Miscellaneous Material Change, Vitrified clay pipe / FROM PVC TO VCP	00:07:33	8_21_2023 10_27_05 AM_2717e			
	194.7	B	Broken from 8 o'clock to 3 o'clock	00:09:11	8_21_2023 10_27_05 AM_38e11	S4		
	350.0	MWL	Water Level, 5% of the vertical dimension	00:13:32				
	350.0	AMH	Manhole / 204A	00:13:39	8_21_2023 10_27_05 AM_20eab			
	350.0	MGO	Miscellaneous General Observation / EXTRA MANHOLE NOT ON PLANS	00:13:47	8_21_2023 10_27_05 AM_d98b2			
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4100	0000	4100	4.0	0.0	4.0	4.0	0.0	4.0



## Inspection report

Date: 8/16/2023	Work Order:	Weather: Dry Weather/Wet Ground	Surveyed By: SHAIINE SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/16/2023 3:55:00 PM
Year laid:	Pre-cleaning: Heavy Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

City: ALAMO	Drainage Area:	Upstream MH: 227
Street: NANCEWOOD DR ESMT	Media Label:	Up Rim to Invert: 0.0
Location Code: Easement/Right of way	Flow Control: Not Controlled	Downstream MH: 228
Location Details: BEHIND HOUSES IN YARD	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose: Pre-Rehabilitation Survey	Joints failed: 0
Lining Method:	Owner: ALAMO	

Additional Info:

1:1520	Distance	Code	Observation	Counter	Photo	Grade			
	0.0	AMH	Manhole / 227	00:00:09	8_16_2023 3_55_00 PM_f0b3e				
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:17					
	45.7	TF	Tap Factory Made at 1 o'clock, dia/height: 3inch	00:02:02	8_16_2023 3_55_00 PM_978c3				
	49.2	TF	Tap Factory Made at 11 o'clock, dia/height: 4inch	00:02:33	8_16_2023 3_55_00 PM_b1e17				
	145.5	TB	Tap Break-in/Hammer at 11 o'clock, dia/height: 4inch	00:04:51	8_16_2023 3_55_00 PM_0a8ea				
	150.1	TFI	Tap Factory Made Intruding at 2 o'clock, dia/height: 4inch, intruding: 2inch	00:05:20	8_16_2023 3_55_00 PM_9fb3cf				
	150.1	RFL	Roots Fine Lateral at 2 o'clock	00:06:01	8_16_2023 3_55_00 PM_f81ba				
	188.3	RMJ	Roots Medium Joint from 11 o'clock to 6 o'clock, 40% of cross sectional area, within 8 inch	00:07:08	8_16_2023 3_55_00 PM_24932				
	196.4	RBJ	Roots Ball Joint from 8 o'clock to 4 o'clock, 70% of cross sectional area, within 8 inch	00:07:52	8_16_2023 3_55_00 PM_a9a1c				
	196.4	JSL	Joint Separated Large, 1Inch	00:08:00	8_16_2023 3_55_00 PM_b6798				
	196.4	DAGS	Deposits Attached Grease, 20% of cross sectional area from 1 o'clock to 4 o'clock	00:08:20	8_16_2023 3_55_00 PM_d1143				
	201.3	MWL	Water Level, 5% of the vertical dimension	00:19:20					
	201.3	MSA	Miscellaneous Survey Abandoned / UNABLE TO CONTINUE DUE TO ROOTYS, WILL DO REVERSE	00:19:23					
	QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
	4100	4232	4332	4.0	15.0	19.0	4.0	3.0	3.2



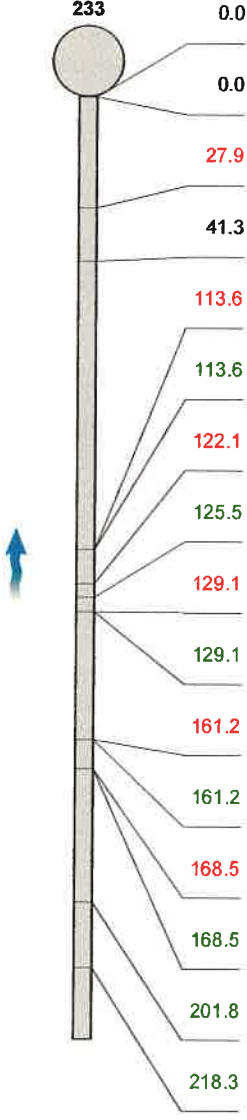
## Inspection report

Date: <b>8/14/2023</b>	Work Order:	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>JONATHAN TAYLOR</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/14/2023 4:33:54 PM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Upstream</b>	Pipe Joint Length:	Total Length: <b>323.0'</b>	Length Surveyed: <b>323.0'</b>

City: <b>ALAMO</b>	Drainage Area:	Upstream MH: <b>228</b>
Street: <del>RAINED W/ R/ C/ E/ S/ M/ T/ O/ N/ A/ N/ D/ C/ C/ E/ S/ M/ I</del>	Media Label:	Up Rim to Invert:
Location Code: <b>Easement/Right of way</b>	Flow Control: <b>Not Controlled</b>	Downstream MH: <b>233</b>
Location Details: <b>BEHIND HOUSES</b>	Sheet Number:	Down Rim to Invert:
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8"</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Concrete Pipe (non-reinforced)</b>	Purpose:	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMO, TN</b>	

Additional Info:

1:1784	Distance	Code	Observation	Counter	Photo	Grade
	<b>233</b>	AMH	Manhole / 233	00:00:00	8_14_2023 4_33_54 PM_4e833	
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:39		
	27.9	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:03:28	8_14_2023 4_33_54 PM_1d58c	S1
	41.3	ISSRL	Intruding Sealing Material Sealing Ring Loose/Poorly Fitting from 10 o'clock to 2 o'clock	00:04:17	8_14_2023 4_33_54 PM_40e8b	
	113.6	H	Hole at 11 o'clock	00:07:11	8_14_2023 4_33_54 PM_4d6ad	S4
	113.6	ISB	Infiltration Stain Barrel from 8 o'clock to 11 o'clock	00:07:18	8_14_2023 4_33_54 PM_9db6c	M1
	122.1	H	Hole at 8 o'clock / WITH FINE ROOTS	00:08:40	8_14_2023 4_33_54 PM_5969d	S4
	125.5	RMJ	Roots Medium Joint at 4 o'clock, 5% of cross sectional area, within 8 inch	00:09:13	8_14_2023 4_33_54 PM_a358e	M3
	129.1	CC	Crack Circumferential from 2 o'clock to 9 o'clock	00:09:42	8_14_2023 4_33_54 PM_6f23f0	S1
	129.1	RMB	Roots Medium Barrell from 4 o'clock to 9 o'clock, 15% of cross sectional area / AT CRACK	00:09:51	8_14_2023 4_33_54 PM_2e86d	M4
	161.2	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:12:24	8_14_2023 4_33_54 PM_264e8	S1
	161.2	RFB	Roots Fine Barrell from 4 o'clock to 8 o'clock / AT CRACK	00:12:39	8_14_2023 4_33_54 PM_c718b	M2
	168.5	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:14:27		S1
	168.5	RMB	Roots Medium Barrell from 3 o'clock to 9 o'clock, 15% of cross sectional area	00:14:40		M4
	201.8	IS	Infiltration Stain from 6 o'clock to 9 o'clock	00:16:15	8_14_2023 4_33_54 PM_66a75	M1
	218.3	RFJ	Roots Fine Joint at 12 o'clock, within 8 inch	00:17:22	8_14_2023 4_33_54 PM_2be98	M1





## Inspection report

Date: <b>8/14/2023</b>	Work Order:	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>JONATHAN TAYLOR</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/14/2023 4:33:54 PM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Upstream</b>	Pipe Joint Length:	Total Length: <b>323.0'</b>	Length Surveyed: <b>323.0'</b>

1:1784	Distance	Code	Observation	Counter	Photo	Grade
	254.2	RMJ	Roots Medium Joint at 7 o'clock, 5% of cross sectional area, within 8 inch	00:18:58	8_14_2023 4_33_54 PM_ac9bd	M3
	323.0	MWL	Water Level, 0% of the vertical dimension / MANHOLE FULL OF PAPER AND ROOTS	00:21:29		
	323.0	AMH	Manhole / 228	00:21:36		

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4214	4232	4432	12.0	19.0	31.0	2.0	2.4	2.2



### Inspection report

Date: <b>8/14/2023</b>	Work Order:	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>JONATHAN TAYLOR</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/14/2023 11:53:40 AM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Upstream</b>	Pipe Joint Length:	Total Length: <b>253.1'</b>	Length Surveyed: <b>253.1'</b>

City: <b>ALAMO</b>	Drainage Area:	Upstream MH: <b>229</b>
Street: <b>NANCEWOOD DRIVE ESMT</b>	Media Label:	Up Rim to Invert:
Location Code: <b>Easement/Right of way</b>	Flow Control: <b>Not Controlled</b>	Downstream MH: <b>230</b>
Location Details: <b>BEHIND HOUSES</b>	Sheet Number:	Down Rim to Invert:
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8"</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Concrete Pipe (non-reinforced)</b>	Purpose:	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMO, TN</b>	

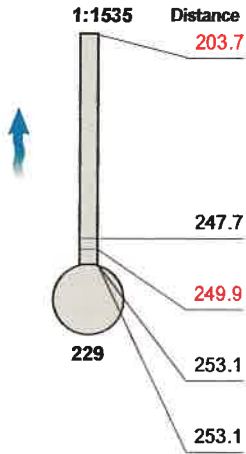
Additional Info:

1:1535	Distance	Code	Observation	Counter	Photo	Grade
	0.0	AMH	Manhole / 230	00:00:00	8_14_2023 11_53_40 AM_50d50	
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:17	8_14_2023 11_53_40 AM_f84ab	
	39.3	CC	Crack Circumferential from 8 o'clock to 4 o'clock	00:05:08	8_14_2023 11_53_40 AM_1bb73	S1
	98.0	TFC	Tap Factory Made Capped at 9 o'clock, dia/height: 4inch / ROOTS AROUND CAP	00:08:01	8_14_2023 11_53_40 AM_06a2b	
	98.0	RMC	Roots Medium Connection at 9 o'clock, 15% of cross sectional area	00:08:09	8_14_2023 11_53_40 AM_aae20	M3
	102.5	TFC	Tap Factory Made Capped at 3 o'clock, dia/height: 4inch / ROOTS AT CAP	00:09:39	8_14_2023 11_53_40 AM_da657	
	102.5	RMC	Roots Medium Connection at 3 o'clock, 25% of cross sectional area / AROUND CAPPED SERVICE	00:09:49	8_14_2023 11_53_40 AM_438e8	M3
	102.8	RMJ	Roots Medium Joint from 8 o'clock to 4 o'clock, 19% of cross sectional area, within 8 inch	00:10:25	8_14_2023 11_53_40 AM_cbd8	M3
	116.2	S01 MWLS	Miscellaneous Water Level, Sag, 15% of the vertical dimension, Start	00:11:13	8_14_2023 11_53_40 AM_f7985	
	123.2	F01 MWLS	Miscellaneous Water Level, Sag, 15% of the vertical dimension, Finish	00:11:54	8_14_2023 11_53_40 AM_4cbbe	S2
	159.4	RMJ	Roots Medium Joint from 9 o'clock to 3 o'clock, 2% of cross sectional area, within 8 inch	00:14:07	8_14_2023 11_53_40 AM_4d6fb	M3
	167.7	RMJ	Roots Medium Joint from 6 o'clock to 3 o'clock, 20% of cross sectional area, within 8 inch	00:15:42	8_14_2023 11_53_40 AM_06373	M3
	198.7	TBD	Tap Break-In Defective at 9 o'clock, dia/height: 4inch / ROOTS	00:18:13		M3
	198.7	RML	Roots Medium Lateral at 9 o'clock, 20% of cross sectional area	00:18:24	8_14_2023 11_53_40 AM_6b8f4	M3
	203.0	TBD	Tap Break-In Defective at 3 o'clock, dia/height: 4inch / ROOTS	00:19:05	8_14_2023 11_53_40 AM_66d7f	M3
	203.0	RMC	Roots Medium Connection at 3 o'clock, 10% of cross sectional area / ROOTS AROUND SERVICE	00:19:19	8_14_2023 11_53_40 AM_2a0ed	M3

## Inspection report

Date: <b>8/14/2023</b>	Work Order:	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>JONATHAN TAYLOR</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/14/2023 11:53:40 AM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Upstream</b>	Pipe Joint Length:	Total Length: <b>253.1'</b>	Length Surveyed: <b>253.1'</b>

Distance	Code	Observation	Counter	Photo	Grade
1:1535 203.7	BVV	Broken Void Visible from 11 o'clock to 2 o'clock	00:20:11	8_14_2023 11_53_40 AM_16cb1	S5
247.7	ISSRL	Intruding Sealing Material Sealing Ring Loose/Poorly Fitting from 7 o'clock to 5 o'clock	00:22:15	8_14_2023 11_53_40 AM_b4ca9	
249.9	B	Broken from 7 o'clock to 4 o'clock	00:22:48	8_14_2023 11_53_40 AM_76378	S4
229 253.1	MWL	Water Level, 5% of the vertical dimension	00:23:33		
253.1	AMH	Manhole / 229	00:23:46		



QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5141	3900	5141	12.0	27.0	39.0	3.0	3.0	3.0





## Inspection report

Date: <b>8/16/2023</b>	Work Order:	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>SHAINE SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/16/2023 10:57:53 AM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:

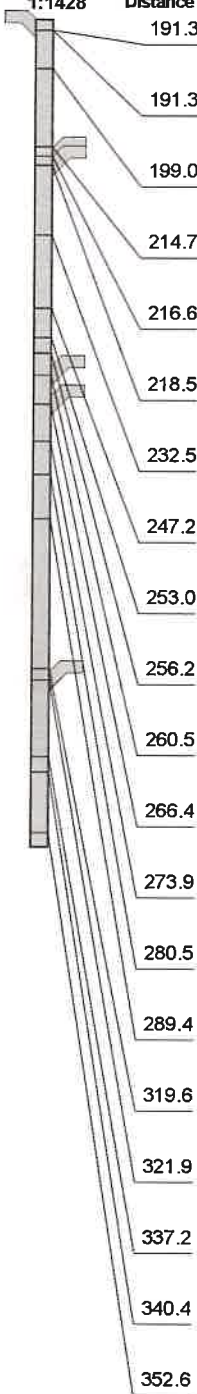
City: <b>ALAMO</b>	Drainage Area:	Upstream MH: <b>292</b>
Street: <b>W MAIN ST</b>	Media Label:	Up Rim to Invert: <b>0.0</b>
Location Code: <b>Secondary roads, non-numbered suburban/rural</b>	Flow Control:	Downstream MH: <b>291</b>
Location Details:	Sheet Number:	Down Rim to Invert: <b>0.0</b>
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Concrete Pipe (non-reinforced)</b>	Purpose:	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMO</b>	

Additional Info:

1:1428	Distance	Code	Observation	Counter	Photo	Grade
	0.0	AMH	Manhole / 292	00:00:11	8_16_2023 10_57_53 AM_3aee8	
	0.0	MWL	Water Level, 0% of the vertical dimension	00:00:15	8_16_2023 10_57_53	
	5.0	B	Broken from 8 o'clock to 4 o'clock	00:00:40	8_16_2023 10_57_53 AM_d6889	
	44.0	TF	Tap Factory Made at 1 o'clock, dia/height: 4inch	00:02:32	8_16_2023 10_57_53 AM_7916e	
	47.2	TFC	Tap Factory Made Capped at 1 o'clock, dia/height: 4inch	00:03:08	8_16_2023 10_57_53 AM_7c1d1	
	51.6	B	Broken from 12 o'clock to 12 o'clock	00:03:43	8_16_2023 10_57_53 AM_a0f7b	
	69.4	CC	Crack Circumferential from 2 o'clock to 10 o'clock	00:04:44	8_16_2023 10_57_53 AM_49228	
	100.7	TBI	Tap Break-In Intruding at 1 o'clock, dia/height: 4inch, intruding: 1inch	00:06:17	8_16_2023 10_57_53 AM_9889e	
	110.2	TFC	Tap Factory Made Capped at 2 o'clock, dia/height: 4inch	00:07:02	8_16_2023 10_57_53 AM_85b36	
	142.4	CS	Crack Spiral from 9 o'clock to 4 o'clock	00:09:11	8_16_2023 10_57_53 AM_6301d	
	146.5	TBD	Tap Break-In Defective at 10 o'clock, dia/height: 4inch / SERVICE STOPPED UP WITH WOOD AND PAPER	00:10:14	8_16_2023 10_57_53 AM_0fd77	
	165.9	CH3	Crack Longitudinal Hinge, 3 from 9 o'clock to 3 o'clock	00:11:51	8_16_2023 10_57_53 AM_e8f1d	
	169.5	CS	Crack Spiral from 4 o'clock to 11 o'clock	00:12:27	8_16_2023 10_57_53 AM_e65ecf	
	171.6	B	Broken from 8 o'clock to 4 o'clock	00:12:48	8_16_2023 10_57_53 AM_26d7e	
	185.5	TFC	Tap Factory Made Capped at 2 o'clock, dia/height: 4inch	00:13:37	8_16_2023 10_57_53 AM_1a8d4	
	186.9	CS	Crack Spiral from 1 o'clock to 5 o'clock	00:14:01	8_16_2023 10_57_53 AM_053b1 AM_1e33f	

### Inspection report

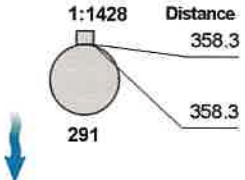
Date: <b>8/16/2023</b>	Work Order: <b>Pre-cleaning: Light Cleaning</b>	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>SHAINE SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/16/2023 10:57:53 AM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:

	Distance	Code	Observation	Counter	Photo	Grade
	1:1428					
	191.3	TB	Tap Break-in/Hammer at 3 o'clock, dia/height: 4inch	00:14:53	8_16_2023 10_57_53 AM_800c2	
	191.3	BVV	Broken Void Visible at 3 o'clock / AT SERVICE CONNECTION	00:15:14	8_16_2023 10_57_53 AM_c0e17	
	199.0	CC	Crack Circumferential from 7 o'clock to 5 o'clock	00:15:58	8_16_2023 10_57_53 AM_6ee18	
	214.7	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:16:41	8_16_2023 10_57_53 AM_85653	
	216.6	TBI	Tap Break-In Intruding at 11 o'clock, dia/height: 4inch, intruding: 1inch	00:17:01	8_16_2023 10_57_53 AM_5f7f70	
	218.5	TFC	Tap Factory Made Capped at 10 o'clock, dia/height: 4inch	00:18:14	8_16_2023 10_57_53 AM_838f3	
	232.5	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:19:07	8_16_2023 10_57_53 AM_d3ae3	
	247.2	CS	Crack Spiral from 8 o'clock to 4 o'clock	00:19:49	8_16_2023 10_57_53 AM_63f26	
	253.0	CC	Crack Circumferential from 9 o'clock to 6 o'clock	00:20:21	8_16_2023 10_57_53 AM_5778f	
	256.2	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:21:00	8_16_2023 10_57_53 AM_b30c1	
	260.5	TFC	Tap Factory Made Capped at 10 o'clock, dia/height: 4inch	00:21:32	8_16_2023 10_57_53 AM_dfd1f7	
	266.4	TF	Tap Factory Made at 9 o'clock, dia/height: 4inch	00:22:20	8_16_2023 10_57_53 AM_00a9f	
	273.9	IS	Infiltration Stain from 4 o'clock to 8 o'clock	00:22:57	8_16_2023 10_57_53 AM_a9d28	
	280.5	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:23:22	8_16_2023 10_57_53 AM_aa8f7a	
	289.4	CS	Crack Spiral from 2 o'clock to 4 o'clock	00:23:57	8_16_2023 10_57_53 AM_8dfbd	
	319.6	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:25:10	8_16_2023 10_57_53 AM_5f439	
	321.9	TBI	Tap Break-In Intruding at 9 o'clock, dia/height: 4inch, intruding: 1inch	00:25:46	8_16_2023 10_57_53 AM_b92ca	
	337.2	IS	Infiltration Stain from 4 o'clock to 5 o'clock	00:26:36	8_16_2023 10_57_53 AM_61357	
	340.4	CS	Crack Spiral from 12 o'clock to 4 o'clock	00:26:57	8_16_2023 10_57_53 AM_21ad1	
352.6	CS	Crack Spiral from 7 o'clock to 5 o'clock	00:27:39	8_16_2023 10_57_53 AM_a3b51		



## Inspection report

Date: <b>8/16/2023</b>	Work Order:	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>SHAINE SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/16/2023 10:57:53 AM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:



Code	Observation
MWL	Water Level, 5% of the vertical dimension
AMH	Manhole / 291

Counter	Photo	Grade
00:28:21	8_16_2023 10_57_53 AM_1f974	
00:28:29		

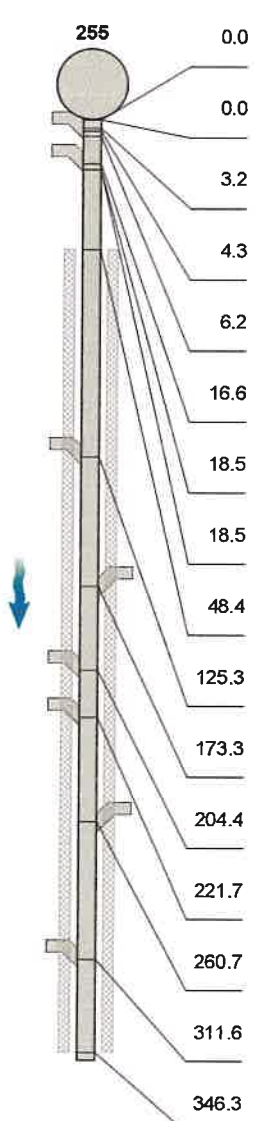
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5143	3412	5143	42.0	14.0	56.0	2.1	2.3	2.2

### Inspection report

Date: <b>8/21/2023</b>	Work Order:	Weather:	Surveyed By: <b>SHAIINE SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/21/2023 11:56:44 AM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:

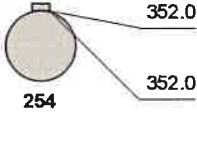
City: <b>ALAMO</b>	Drainage Area:	Upstream MH: <b>255</b>
Street: <b>W. KOONCE ST.</b>	Media Label:	Up Rim to Invert: <b>0.0</b>
Location Code: <b>Local rural streets with light traffic</b>	Flow Control: <b>Not Controlled</b>	Downstream MH: <b>254</b>
Location Details:	Sheet Number:	Down Rim to Invert: <b>0.0</b>
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Concrete Pipe (non-reinforced)</b>	Purpose: <b>Pre-Rehabilitation Survey</b>	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMO</b>	

**Additional Info:**

	1:2636 Distance	Code	Observation	Counter	Photo	Grade
	255	AMH	Manhole / 255	00:00:13		
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:19		
	3.2	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:00:39	8_21_2023 11_56_44 AM_9b8ce	
	4.3	TB	Tap Break-in/Hammer at 3 o'clock, dia/height: 4inch	00:01:04	8_21_2023 11_56_44 AM_2489b	
	6.2	B	Broken from 5 o'clock to 9 o'clock	00:01:35	8_21_2023 11_56_44 AM_67b67	
	16.6	TF	Tap Factory Made at 3 o'clock, dia/height: 4inch	00:02:20	8_21_2023 11_56_44 AM_5b9e6	
	18.5	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:04:00	8_21_2023 11_56_44 AM_f56f7b	
	18.5	IS	Infiltration Stain from 2 o'clock to 9 o'clock	00:04:12	8_21_2023 11_56_44 AM_bf4eff	
	48.4	S01 CM	Crack Multiple from 12 o'clock to 12 o'clock, Start	00:05:40	8_21_2023 11_56_44 AM_f92f23	
	125.3	TF	Tap Factory Made at 3 o'clock, dia/height: 4inch	00:08:53	8_21_2023 11_56_44 AM_6ed2c	
	173.3	TF	Tap Factory Made at 10 o'clock, dia/height: 4inch	00:11:11	8_21_2023 11_56_44 AM_33183	
	204.4	TB	Tap Break-in/Hammer at 3 o'clock, dia/height: 4inch	00:12:59	8_21_2023 11_56_44 AM_e56e7	
	221.7	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch / POSSIBLY CAPPED	00:14:37	8_21_2023 11_56_44 AM_090ea	
	260.7	TF	Tap Factory Made at 10 o'clock, dia/height: 4inch	00:16:54	8_21_2023 11_56_44 AM_188c3	
	311.6	TFD	Tap Factory Made Defective at 2 o'clock, dia/height: 4inch / SERVICE BROKE	00:19:33	8_21_2023 11_56_44 AM_48878	
346.3	F01 CM	Crack Multiple from 12 o'clock to 12 o'clock, Finish	00:21:30	8_21_2023 11_56_44 AM_160d4		

### Inspection report

Date: <b>8/21/2023</b>	Work Order:	Weather:	Surveyed By: <b>SHAINE SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/21/2023 11:56:44 AM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:

	Distance	Code	Observation	Counter	Photo	Grade
	352.0	MWL	Water Level, 5% of the vertical dimension	00:22:25		
	352.0	AMH	Manhole / 254	00:22:30		
QSR	QMR	QOR	SPR	MPR	OPR	SPRI
413K	3111	413K	188.0	4.0	192.0	3.0
						MPRI
						2.0
						OPRI
						3.0





## Inspection report

Date: 8/21/2023	Work Order:	Weather:	Surveyed By: <b>SHAINE SNODGRASS</b>	Certificate Number: 3100-002	Pipe Segment Ref.: 8/21/2023 11:08:36 AM
Year laid:	Pre-cleaning: Light Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

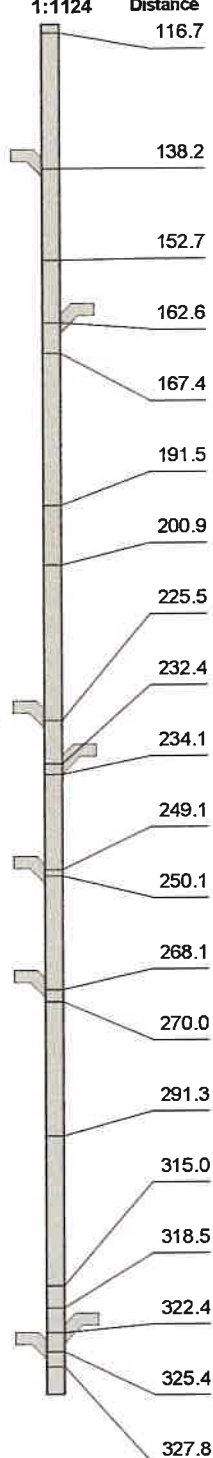
City: <b>ALAMO</b>	Drainage Area:	Upstream MH: <b>256</b>
Street: <b>W. KOONCE ST.</b>	Media Label:	Up Rim to Invert: <b>0.0</b>
Location Code: <b>Yard</b>	Flow Control: <b>Not Controlled</b>	Downstream MH: <b>255</b>
Location Details:	Sheet Number:	Down Rim to Invert: <b>0.0</b>
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Concrete Pipe (non-reinforced)</b>	Purpose: <b>Pre-Rehabilitation Survey</b>	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMO</b>	

### Additional Info:

1:1124	Distance	Code	Observation	Counter	Photo	Grade
	0.0	AMH	Manhole / 256	00:00:11		
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:16		
	3.4	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:02:07	8_21_2023_11_08_36_AM_9c899	
	11.3	TF	Tap Factory Made at 9 o'clock, dia/height: 4inch	00:04:45	8_21_2023_11_08_36_AM_7db1d	
	14.3	TF	Tap Factory Made at 3 o'clock, dia/height: 4inch	00:05:24	8_21_2023_11_08_36_AM_c2d3d	
	16.4	CM	Crack Multiple from 8 o'clock to 4 o'clock	00:05:53	8_21_2023_11_08_36_AM_f9c3c	
	19.0	CC	Crack Circumferential from 1 o'clock to 2 o'clock	00:06:26	8_21_2023_11_08_36_AM_32d47	
	26.3	TF	Tap Factory Made at 3 o'clock, dia/height: 4inch	00:07:10	8_21_2023_11_08_36_AM_f9c10	
	46.6	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:08:15	8_21_2023_11_08_36_AM_c2819	
	57.7	TFI	Tap Factory Made Intruding at 3 o'clock, dia/height: 4inch, intruding: 1inch	00:09:24	8_21_2023_11_08_36_AM_73a14	
	58.7	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:10:28	8_21_2023_11_08_36_AM_3ca12	
	77.7	TF	Tap Factory Made at 3 o'clock, dia/height: 4inch	00:11:33	8_21_2023_11_08_36_AM_20351	
	97.7	CC	Crack Circumferential from 10 o'clock to 4 o'clock	00:12:34	8_21_2023_11_08_36_AM_7a353	
	109.9	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:13:16	8_21_2023_11_08_36_AM_50dc3	
	113.1	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:13:43	8_21_2023_11_08_36_AM_c9d11	
	113.9	TB	Tap Break-in/Hammer at 3 o'clock, dia/height: 4inch	00:14:12	8_21_2023_11_08_36_AM_33bd4	

### Inspection report

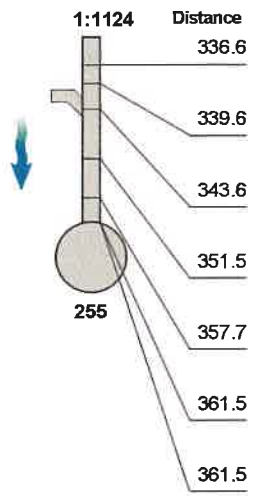
Date: <b>8/21/2023</b>	Work Order:	Weather:	Surveyed By: <b>SHAINÉ SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/21/2023 11:08:36 AM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:

	Distance	Code	Observation	Counter	Photo	Grade
	116.7	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:14:49	8_21_2023 11_08_36 AM_09c84	
	138.2	TF	Tap Factory Made at 3 o'clock, dia/height: 4inch	00:16:00	8_21_2023 11_08_36 AM_f5b03	
	152.7	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:17:23	8_21_2023 11_08_36 AM_95cfb	
	162.6	TF	Tap Factory Made at 9 o'clock, dia/height: 4inch	00:18:21	8_21_2023 11_08_36 AM_ef5e0	
	167.4	CS	Crack Spiral from 12 o'clock to 5 o'clock	00:18:55	8_21_2023 11_08_36 AM_40be4	
	191.5	CC	Crack Circumferential from 7 o'clock to 11 o'clock	00:19:52	8_21_2023 11_08_36 AM_a7e52	
	200.9	CC	Crack Circumferential from 7 o'clock to 5 o'clock	00:20:28	8_21_2023 11_08_36 AM_b6ce0	
	225.5	TF	Tap Factory Made at 3 o'clock, dia/height: 4inch	00:21:40	8_21_2023 11_08_36 AM_7b38d	
	232.4	TB	Tap Break-in/Hammer at 10 o'clock, dia/height: 4inch	00:22:31	8_21_2023 11_08_36 AM_a27ce	
	234.1	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:23:12	8_21_2023 11_08_36 AM_c652c	
	249.1	CL	Crack Longitudinal at 12 o'clock, length: 6inch	00:24:00	8_21_2023 11_08_36 AM_99114	
	250.1	TB	Tap Break-in/Hammer at 2 o'clock, dia/height: 4inch	00:24:26	8_21_2023 11_08_36 AM_5ff39a	
	268.1	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:25:41	8_21_2023 11_08_36 AM_2181c	
	270.0	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:26:15	8_21_2023 11_08_36 AM_6500f	
	291.3	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:27:09	8_21_2023 11_08_36 AM_f3d14	
	315.0	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:28:13	8_21_2023 11_08_36 AM_5e62b	
	318.5	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:28:35	8_21_2023 11_08_36 AM_b5071	
	322.4	TFC	Tap Factory Made Capped at 10 o'clock, dia/height: 4inch	00:29:09	8_21_2023 11_08_36 AM_ab48d	
	325.4	TFC	Tap Factory Made Capped at 3 o'clock, dia/height: 4inch	00:29:49	8_21_2023 11_08_36 AM_ce719	
	327.8	B	Broken from 4 o'clock to 8 o'clock	00:30:16	8_21_2023 11_08_36 AM_75e26	

## Inspection report

Date: <b>8/21/2023</b>	Work Order:	Weather:	Surveyed By: <b>SHAINÉ SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/21/2023 11:08:36 AM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:

Distance	Code	Observation	Counter	Photo	Grade
1:1124 336.6	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:31:03	8_21_2023 11_08_36 AM_99a3c	
339.6	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:31:35	8_21_2023 11_08_36 AM_651df	
343.6	TF	Tap Factory Made at 3 o'clock, dia/height: 4inch	00:32:08	8_21_2023 11_08_36 AM_4375e	
351.5	CM	Crack Multiple from 9 o'clock to 2 o'clock	00:32:50	8_21_2023 11_08_36 AM_c596f	
357.7	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:33:18	8_21_2023 11_08_36 AM_64290	
361.5	MWL	Water Level, 5% of the vertical dimension	00:34:00		
361.5	AMH	Manhole / 255	00:34:07		



QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
413A	3100	413A	51.0	3.0	54.0	2.1	3.0	2.2





## Inspection report

Date: 8/22/2023	Work Order:	Weather: Dry	Surveyed By: SHAINE SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/22/2023 11:32:43 AM
Year laid:	Pre-cleaning: Heavy Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

City: <b>ALAMO</b>	Drainage Area:	Upstream MH: <b>258A</b>
Street: <b>BURNS ST.</b>	Media Label:	Up Rim to Invert: <b>0.0</b>
Location Code: <b>Local rural streets with light traffic</b>	Flow Control: <b>Not Controlled</b>	Downstream MH: <b>258</b>
Location Details:	Sheet Number:	Down Rim to Invert: <b>0.0</b>
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Concrete Pipe (non-reinforced)</b>	Purpose: <b>Pre-Rehabilitation Survey</b>	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMO</b>	

Additional Info:

1:1837	Distance	Code	Observation	Counter	Photo	Grade			
	0.0	AMH	Manhole / 258A	00:00:07	8_22_2023 11_32_43 AM_c1c90				
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:12					
	22.7	TB	Tap Break-in/Hammer at 1 o'clock, dia/height: 6inch	00:05:07	8_22_2023 11_32_43 AM_1df5b				
	82.6	TFC	Tap Factory Made Capped at 2 o'clock, dia/height: 4inch	00:07:08	8_22_2023 11_32_43 AM_d2eb4				
	147.7	B	Broken from 7 o'clock to 5 o'clock	00:09:25	8_22_2023 11_32_43 AM_44af9f				
	243.3	MWL	Water Level, 5% of the vertical dimension	00:14:46					
	243.3	AMH	Manhole / 258	00:14:54	8_22_2023 11_32_43 AM_e3e66				
	QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
	4100	0000	4100	4.0	0.0	4.0	4.0	0.0	4.0



## Inspection report

Date: 8/24/2023	Work Order:	Weather: Dry	Surveyed By: SHAINÉ SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/24/2023 8:21:28 AM
Year laid:	Pre-cleaning: Light Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

City: ALAMO	Drainage Area:	Upstream MH: 264
Street: S. BRANCH ST.	Media Label:	Up Rim to Invert: 0.0
Location Code: Local rural streets with light traffic	Flow Control: Not Controlled	Downstream MH: 263
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose: Pre-Rehabilitation Survey	Joints failed: 0
Lining Method:	Owner: ALAMO	

Additional Info:

1:1818	Distance	Code	Observation	Counter	Photo	Grade
	264	AMH	Manhole / 264	00:00:19		
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:22		
	15.4	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:01:23	8_24_2023 8_21_28 AM_dd37d	
	17.9	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:01:46	8_24_2023 8_21_28 AM_b89a1	
	52.0	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:03:07	8_24_2023 8_21_28 AM_f2374	
	74.4	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:04:04	8_24_2023 8_21_28 AM_2cbd2	
	87.3	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:04:43	8_24_2023 8_21_28 AM_8efbb	
	114.2	CM	Crack Multiple from 8 o'clock to 2 o'clock	00:05:51	8_24_2023 8_21_28 AM_959ba	
	126.3	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:06:27	8_24_2023 8_21_28 AM_f6626	
	139.6	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:07:12	8_24_2023 8_21_28 AM_3ea58	
	162.9	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:08:13	8_24_2023 8_21_28 AM_66a23	
	187.0	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:09:11	8_24_2023 8_21_28 AM_3c169	
	192.6	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:09:40	8_24_2023 8_21_28 AM_467c6	
	212.0	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:10:40	8_24_2023 8_21_28 AM_50cfa	
	217.0	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:11:11	8_24_2023 8_21_28 AM_a5003	
	228.4	TB	Tap Break-in/Hammer at 2 o'clock, dia/height: 4inch	00:11:59	8_24_2023 8_21_28 AM_529c6	



## Inspection report

Date: 8/24/2023	Work Order:	Weather: Dry	Surveyed By: SHAINE SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/24/2023 8:21:28 AM
Year laid:	Pre-cleaning: Light Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

1:1818	Distance	Code	Observation	Counter	Photo	Grade
	253.2	CS	Crack Spiral from 8 o'clock to 2 o'clock	00:13:07	8_24_2023 8_21_28 AM_2833ff	
	262.2	CS	Crack Spiral from 8 o'clock to 4 o'clock	00:13:39	8_24_2023 8_21_28 AM_ef7bc	
	271.0	IS	Infiltration Stain from 3 o'clock to 9 o'clock	00:14:09	8_24_2023 8_21_28 AM_cfb3	
	272.5	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:14:41	8_24_2023 8_21_28 AM_91810	
	274.2	CM	Crack Multiple from 10 o'clock to 3 o'clock	00:15:20	8_24_2023 8_21_28 AM_68856	
	280.6	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:15:56	8_24_2023 8_21_28 AM_e46da	
	280.6	IS	Infiltration Stain from 2 o'clock to 10 o'clock	00:16:05	8_24_2023 8_21_28 AM_02b88	
	283.2	IS	Infiltration Stain from 3 o'clock to 9 o'clock	00:16:28	8_24_2023 8_21_28 AM_0ed57	
	286.3	CS	Crack Spiral from 8 o'clock to 4 o'clock	00:16:56	8_24_2023 8_21_28 AM_56678	
	289.3	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:17:22	8_24_2023 8_21_28 AM_399e5	
	301.2	CM	Crack Multiple from 8 o'clock to 4 o'clock	00:18:01	8_24_2023 8_21_28 AM_84f2c	
	325.7	B	Broken from 12 o'clock to 12 o'clock, length: 24inch	00:19:08	8_24_2023 8_21_28 AM_61d61	
	328.7	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:19:31	8_24_2023 8_21_28 AM_4d080	
	334.6	CS	Crack Spiral from 3 o'clock to 9 o'clock	00:20:00	8_24_2023 8_21_28 AM_4a617	
	341.7	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:20:44	8_24_2023 8_21_28 AM_cb438	
	343.7	CS	Crack Spiral from 7 o'clock to 5 o'clock	00:21:11	8_24_2023 8_21_28 AM_ff8fbc	
	344.9	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:21:31	8_24_2023 8_21_28 AM_7e88e	
	347.7	MWL	Water Level, 5% of the vertical dimension	00:22:05		
	347.7	AMH	Manhole / 263	00:22:10		

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
413A	1300	413A	52.0	3.0	55.0	2.4	1.0	2.2

### Inspection report

Date: <b>8/16/2023</b>	Work Order:	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>SHAINA SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/16/2023 12:59:35 PM</b>
Year laid:	Pre-cleaning: <b>Light Cleaning</b>	Direction: <b>Upstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:

City: <b>ALAMO</b>	Drainage Area:	Upstream MH: <b>279</b>
Street: <b>W MAIN ST</b>	Media Label:	Up Rim to Invert: <b>0.0</b>
Location Code: <b>Secondary roads, non-numbered suburban/rural</b>	Flow Control:	Downstream MH: <b>282</b>
Location Details:	Sheet Number:	Down Rim to Invert: <b>0.0</b>
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Concrete Pipe (non-reinforced)</b>	Purpose:	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMO</b>	

Additional Info:

1:2016	Distance	Code	Observation	Counter	Photo	Grade
	<b>282</b>					
	0.0	AMH	Manhole / 282	00:00:07		
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:10		
	139.1	TFC	Tap Factory Made Capped at 10 o'clock, dia/height: 4inch	00:06:48	8_16_2023 12_59_35 PM_ae331	
	142.0	TB	Tap Break-in/Hammer at 10 o'clock, dia/height: 4inch	00:07:24	8_16_2023 12_59_35 PM_8a6b9	
	180.1	ISJ	Infiltration Stain Joint from 3 o'clock to 5 o'clock, within 8 inch	00:08:54	8_16_2023 12_59_35 PM_8f2fb2	
	201.0	TB	Tap Break-in/Hammer at 10 o'clock, dia/height: 4inch	00:10:12	8_16_2023 12_59_35 PM_9ddd2	
	201.0	ISL	Infiltration Stain Lateral at 10 o'clock	00:10:32	8_16_2023 12_59_35 PM_519f0	
	222.9	TFC	Tap Factory Made Capped at 10 o'clock, dia/height: 4inch / LEAKING AROUND CAP	00:11:34	8_16_2023 12_59_35 PM_bf0d4	
	222.9	ISL	Infiltration Stain Lateral at 10 o'clock / AROUND CAP	00:11:42	8_16_2023 12_59_35 PM_e715b	
	231.2	ISL	Infiltration Stain Lateral from 8 o'clock to 4 o'clock	00:12:16	8_16_2023 12_59_35 PM_b0371	
	231.2	TBI	Tap Break-In Intruding at 12 o'clock, dia/height: 4inch, intruding: 1inch	00:12:40	8_16_2023 12_59_35 PM_23c77	
	231.2	B	Broken from 8 o'clock to 4 o'clock	00:13:04	8_16_2023 12_59_35 PM_b6354	
	238.3	MGO	Miscellaneous General Observation / FORCE MAIN KICKED ON	00:13:43	8_16_2023 12_59_35 PM_86f27	
	267.0	MWL	Water Level, 5% of the vertical dimension	00:15:34		
	<b>279</b>					
	267.0	AMH	Manhole / 279	00:15:59		

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4100	3114	4131	4.0	7.0	11.0	4.0	1.4	1.8



## Inspection report

Date: <b>8/15/2023</b>	Work Order:	Weather: <b>Dry Weather/Wet Ground</b>	Surveyed By: <b>JONATHAN TAYLOR</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: <b>8/15/2023 4:05:25 PM</b>
Year laid:	Pre-cleaning: <b>Heavy Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length: <b>316.2'</b>	Length Surveyed: <b>316.2'</b>

City: <b>ALAMAO</b>	Drainage Area:	Upstream MH: <b>288</b>
Street: <b>ALAMAO CT</b>	Media Label:	Up Rim to Invert:
Location Code: <i>Secondary roads, non-numbered suburban/rural</i>	Flow Control:	Downstream MH: <b>290</b>
Location Details:	Sheet Number:	Down Rim to Invert:
Pipe shape: <b>Circular</b>	Sewer Use: <b>Sanitary Sewage Pipe</b>	Total gallons used: <b>0.0</b>
Pipe size: <b>8"</b>	Sewer Category: <b>SEC</b>	Joints passed: <b>0</b>
Pipe material: <b>Concrete Pipe (non-reinforced)</b>	Purpose: <b>Pre-Rehabilitation Survey</b>	Joints failed: <b>0</b>
Lining Method:	Owner: <b>ALAMAO</b>	

### Additional Info:

1:2387	Distance	Code	Observation	Counter	Photo	Grade
	0.0	AMH	Manhole / 288	00:00:00	8_15_2023 4_05_25 PM_69f7fa	
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:39		
	13.6	TFC	Tap Factory Made Capped at 2 o'clock, dia/height: 4inch	00:01:45	8_15_2023 4_05_25 PM_2e3a1	
	29.2	TBI	Tap Break-In Intruding at 3 o'clock, dia/height: 4inch, intruding: 1inch	00:02:34	8_15_2023 4_05_25 PM_024ef	M3
	53.8	TFC	Tap Factory Made Capped at 10 o'clock, dia/height: 4inch	00:04:37	8_15_2023 4_05_25 PM_58e2b	
	73.6	TB	Tap Break-in/Hammer at 9 o'clock, dia/height: 4inch	00:05:28	8_15_2023 4_05_25 PM_774ec	
	101.4	TFD	Tap Factory Made Defective at 2 o'clock, dia/height: 4inch	00:06:53	8_15_2023 4_05_25 PM_c5cc4f	M3
	152.8	TBD	Tap Break-In Defective at 10 o'clock, dia/height: 4inch / PVC TAP WITH BAG WRAPPED AROUND PIPE	00:08:57	8_15_2023 4_05_25 PM_d519e	M3
	152.8	B	Broken from 8 o'clock to 9 o'clock	00:10:34		S4
	152.8	B	Broken from 3 o'clock to 6 o'clock	00:10:50	8_15_2023 4_05_25 PM_fbc4e	S4
	196.7	TFD	Tap Factory Made Defective at 2 o'clock, dia/height: 4inch / BROKEN AT CONNECTION	00:12:16	8_15_2023 4_05_25 PM_08358	M3
	244.3	TF	Tap Factory Made at 10 o'clock, dia/height: 4inch	00:13:57	8_15_2023 4_05_25 PM_089be	
	248.3	TBI	Tap Break-In Intruding at 10 o'clock, dia/height: 4inch, intruding: 1.5inch / INTRUDING PVC TAP	00:14:26	8_15_2023 4_05_25 PM_75662	M3
	276.3	TF	Tap Factory Made at 2 o'clock, dia/height: 4inch	00:15:31	8_15_2023 4_05_25 PM_e27d4	
	316.2	MWL	Water Level, 5% of the vertical dimension	00:16:44		
	316.2	AMH	Manhole / 290	00:16:53		

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4200	3500	4235	8.0	15.0	23.0	4.0	3.0	3.3





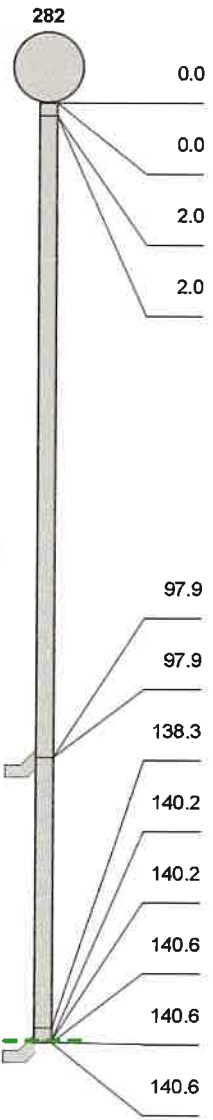
## Inspection report

Date: 8/16/2023	Work Order:	Weather: Dry Weather/Wet Ground	Surveyed By: SHAINÉ SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/16/2023 12:41:15 PM
Year laid:	Pre-cleaning: Light Cleaning	Direction: Upstream	Pipe Joint Length:	Total Length:	Length Surveyed:

City: ALAMO	Drainage Area:	Upstream MH: 290
Street: ALAMO CIRCLE	Media Label:	Up Rim to Invert: 0.0
Location Code: Secondary roads, non-numbered suburban/rural	Flow Control:	Downstream MH: 282
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose:	Joints failed: 0
Lining Method:	Owner: ALAMO	

Additional Info:

1:1062	Distance	Code	Observation	Counter	Photo	Grade
	0.0	AMH	Manhole / 282	00:00:06		
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:21		
	2.0	JSL	Joint Separated Large, 1Inch	00:01:06	8_16_2023 12_41_15 PM_982e6	
	2.0	ISSRL	Intruding Sealing Material Sealing Ring Loose/Poorly Fitting from 12 o'clock to 12 o'clock	00:01:16	8_16_2023 12_41_15 PM_e45ab	
	97.9	TFD	Tap Factory Made Defective at 1 o'clock, dia/height: 4inch / FULL OF ROOTS	00:06:00	8_16_2023 12_41_15 PM_07293	
	97.9	RBL	Roots Ball Lateral at 1 o'clock, 80% of cross sectional area	00:06:08	8_16_2023 12_41_15 PM_291ac	
	138.3	RMJ	Roots Medium Joint from 12 o'clock to 12 o'clock, 15% of cross sectional area, within 8 inch	00:08:13	8_16_2023 12_41_15 PM_6b252	
	140.2	MWL	Water Level, 5% of the vertical dimension	00:11:57	8_16_2023 12_41_15 PM_93225	
	140.2	MSA	Miscellaneous Survey Abandoned / UNABLE TO CONTINUE DUE TO ROOT MASS AT SERVICE	00:12:04	8_16_2023 12_41_15 PM_db887	
	140.6	TFD	Tap Factory Made Defective at 2 o'clock, dia/height: 4inch / LARGE ROOT MASS	00:08:51	8_16_2023 12_41_15 PM_25921	
	140.6	RBL	Roots Ball Lateral at 2 o'clock, 100% of cross sectional area	00:08:58	8_16_2023 12_41_15 PM_31ea4	
	140.6		End of pipe			

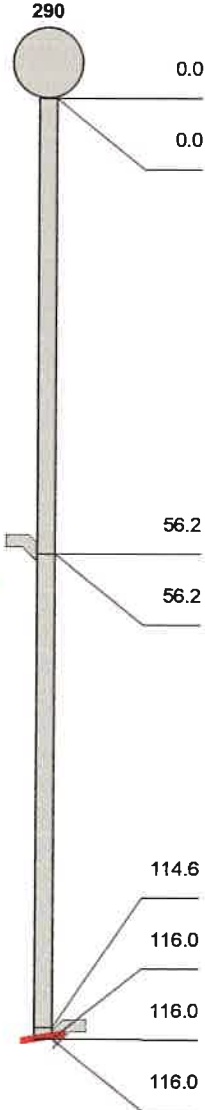


### Inspection report

Date: 8/16/2023	Work Order:	Weather: Dry Weather/Wet Ground	Surveyed By: SHAINE SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/16/2023 1:52:37 PM
Year laid:	Pre-cleaning: Light Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

City: ALAMO	Drainage Area:	Upstream MH: 290
Street: ALAMO CIRCLE	Media Label:	Up Rim to Invert: 0.0
Location Code: Secondary roads, non-numbered suburban/rural	Flow Control: Not Controlled	Downstream MH: 282
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose: Pre-Rehabilitation Survey	Joints failed: 0
Lining Method:	Owner: ALAMO	

Additional Info: REVERSE

	1:876 Distance	Code	Observation	Counter	Photo	Grade			
	0.0	AMH	Manhole / 290	00:00:07					
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:10	8_16_2023 1_52_37 PM_550b8				
	56.2	TFD	Tap Factory Made Defective at 2 o'clock, dia/height: 4inch / ROOTS	00:02:53	8_16_2023 1_52_37 PM_4cb24				
	56.2	RML	Roots Medium Lateral at 2 o'clock, 25% of cross sectional area	00:03:01	8_16_2023 1_52_37 PM_fd631				
	114.6	RBJ	Roots Ball Joint from 9 o'clock to 4 o'clock, 70% of cross sectional area, within 8 inch	00:05:06	8_16_2023 1_52_37 PM_9f94c				
	116.0	TFD	Tap Factory Made Defective at 9 o'clock, dia/height: 4inch / ROOT AT SERVICE	00:05:30	8_16_2023 1_52_37 PM_b39b2				
	116.0	MWL	Water Level, 10% of the vertical dimension	00:05:38					
	116.0	MSA	Miscellaneous Survey Abandoned / POINT OF REVERSE, LINE COMPLETE	00:05:45					
	QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
	0000	4133	4133	0.0	13.0	13.0	0.0	3.2	3.2



## Inspection report

Date: 8/17/2023	Work Order:	Weather:	Surveyed By: SHAINE SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/17/2023 8:44:34 AM
Year laid:	Pre-cleaning: Heavy Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

City: ALAMO	Drainage Area:	Upstream MH: 293
Street: NOTH LASALLESE	Media Label:	Up Rim to Invert: 0.0
Location Code: Local rural streets with light traffic	Flow Control:	Downstream MH: 309
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose:	Joints failed: 0
Lining Method:	Owner: ALAMO	

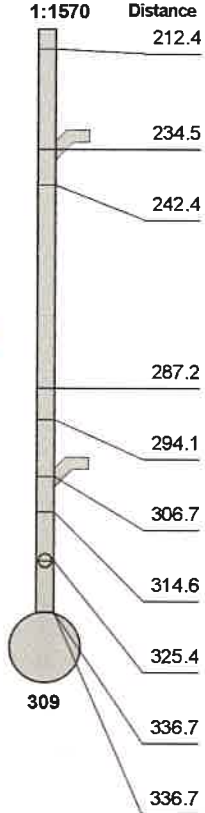
Additional Info:

1:1570	Distance	Code	Observation	Counter	Photo	Grade
	0.0	AMH	Manhole / 293	00:00:08		
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:12		
	29.4	CS	Crack Spiral from 7 o'clock to 10 o'clock	00:02:50	8_17_2023 8_44_34 AM_ee561	
	34.8	CS	Crack Spiral from 5 o'clock to 7 o'clock	00:03:24	8_17_2023 8_44_34 AM_dcde5	
	47.2	CS	Crack Spiral from 9 o'clock to 4 o'clock	00:03:59	8_17_2023 8_44_34 AM_105c1	
	48.3	S01 MWLS	Miscellaneous Water Level, Sag, 55% of the vertical dimension, Start	00:04:13	8_17_2023 8_44_34 AM_7f6f36	
	50.1	B	Broken from 9 o'clock to 4 o'clock	00:04:33	8_17_2023 8_44_34 AM_397be	
	62.8	F01 MWLS	Miscellaneous Water Level, Sag, 55% of the vertical dimension, Finish	00:05:19	8_17_2023 8_44_34 AM_6f7f51	
	113.3	TB	Tap Break-in/Hammer at 12 o'clock, dia/height: 6inch	00:07:29	8_17_2023 8_44_34 AM_852cb	
	131.5	CS	Crack Spiral from 7 o'clock to 9 o'clock	00:09:28	8_17_2023 8_44_34 AM_0b773	
	149.5	CS	Crack Spiral from 8 o'clock to 4 o'clock	00:10:36	8_17_2023 8_44_34 AM_6a12f	
	167.5	CL	Crack Longitudinal at 2 o'clock	00:11:48	8_17_2023 8_44_34 AM_f92cbf	
	167.5	CL	Crack Longitudinal at 10 o'clock	00:12:11	8_17_2023 8_44_34 AM_8dc0d	
	174.7	TFD	Tap Factory Made Defective at 10 o'clock, dia/height: 4inch / PIPE SEPARATED AT SERVICE CONNECTION, VOID VISIBLE	00:12:48	8_17_2023 8_44_34 AM_b0253	
	174.7	IR	Infiltration Runner at 10 o'clock	00:13:00	8_17_2023 8_44_34 AM_a5c95	
	203.4	CS	Crack Spiral from 8 o'clock to 4 o'clock	00:14:10	8_17_2023 8_44_34 AM_540be	



### Inspection report

Date: 8/17/2023	Work Order:	Weather:	Surveyed By: <b>SHAI NE SNODGRASS</b>	Certificate Number: <b>3100-002</b>	Pipe Segment Ref.: 8/17/2023 8:44:34 AM
Year laid:	Pre-cleaning: <b>Heavy Cleaning</b>	Direction: <b>Downstream</b>	Pipe Joint Length:	Total Length:	Length Surveyed:

	Distance	Code	Observation	Counter	Photo	Grade
	212.4	B	Broken from 7 o'clock to 8 o'clock	00:14:43	8_17_2023 8_44_34 AM_e4b78	
	234.5	TF	Tap Factory Made at 11 o'clock, dia/height: 4inch	00:15:52	8_17_2023 8_44_34 AM_9770e	
	242.4	CS	Crack Spiral from 7 o'clock to 10 o'clock	00:16:31	8_17_2023 8_44_34 AM_3e3bc	
	287.2	B	Broken from 9 o'clock to 4 o'clock	00:18:21	8_17_2023 8_44_34 AM_e3d67	
	294.1	CC	Crack Circumferential from 12 o'clock to 12 o'clock	00:18:51	8_17_2023 8_44_34 AM_eade5	
	306.7	TFC	Tap Factory Made Capped at 11 o'clock, dia/height: 4inch	00:19:35	8_17_2023 8_44_34 AM_8e252	
	314.6	CC	Crack Circumferential from 8 o'clock to 5 o'clock	00:20:15	8_17_2023 8_44_34 AM_17292	
	325.4	TB	Tap Break-in/Hammer at 12 o'clock, dia/height: 6inch	00:20:55	8_17_2023 8_44_34 AM_80690	
	336.7	MWL	Water Level, 5% of the vertical dimension	00:22:09		
	336.7	AMH	Manhole / 309	00:22:21	8_17_2023 8_44_34 AM_b590e	

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4629	4131	4731	44.0	7.0	51.0	2.6	3.5	2.7

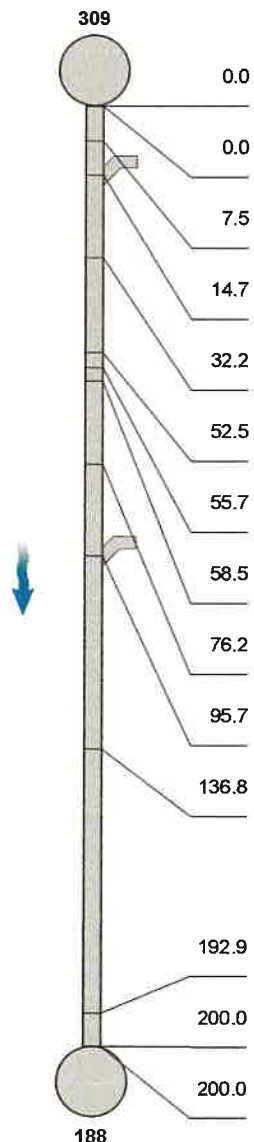


## Inspection report

Date: 8/17/2023	Work Order:	Weather:	Surveyed By: SHAINE SNODGRASS	Certificate Number: 3100-002	Pipe Segment Ref.: 8/17/2023 9:13:07 AM
Year laid:	Pre-cleaning: Heavy Cleaning	Direction: Downstream	Pipe Joint Length:	Total Length:	Length Surveyed:

City: ALAMO	Drainage Area:	Upstream MH: 309
Street: NOTH LASALLESE	Media Label:	Up Rim to Invert: 0.0
Location Code: Local rural streets with light traffic	Flow Control:	Downstream MH: 188
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose:	Joints failed: 0
Lining Method:	Owner: ALAMO	

Additional Info:

1:1510	Distance	Code	Observation	Counter	Photo	Grade		
								
	0.0	AMH	Manhole / 309	00:00:04				
	0.0	MWL	Water Level, 5% of the vertical dimension	00:00:06				
	7.5	CM	Crack Multiple from 12 o'clock to 12 o'clock	00:00:45	8_17_2023 9_13_07 AM_7941b			
	14.7	TFC	Tap Factory Made Capped at 10 o'clock, dia/height: 4inch	00:02:28	8_17_2023 9_13_07 AM_e1bbe			
	32.2	CC	Crack Circumferential from 8 o'clock to 4 o'clock	00:03:28	8_17_2023 9_13_07 AM_cb0b7			
	52.5	CS	Crack Spiral from 8 o'clock to 4 o'clock	00:11:14	8_17_2023 9_13_07 AM_4826a			
	55.7	B	Broken from 8 o'clock to 4 o'clock	00:11:38	8_17_2023 9_13_07 AM_7b20b			
	58.5	CS	Crack Spiral from 6 o'clock to 9 o'clock	00:12:03	8_17_2023 9_13_07 AM_f519d			
	76.2	DSC	Deposits Settled Compacted, 10% of cross sectional area from 4 o'clock to 6 o'clock	00:13:04	8_17_2023 9_13_07 AM_76b5e			
	95.7	TF	Tap Factory Made at 9 o'clock, dia/height: 4inch	00:13:59	8_17_2023 9_13_07 AM_ce1ec			
	136.8	DSC	Deposits Settled Compacted, 10% of cross sectional area from 4 o'clock to 7 o'clock	00:17:16	8_17_2023 9_13_07 AM_7917c			
	192.9	B	Broken from 6 o'clock to 2 o'clock	00:19:22	8_17_2023 9_13_07 AM_9d3c4			
	200.0	MWL	Water Level, 5% of the vertical dimension	00:20:17				
	200.0	AMH	Manhole / 188	00:00:00				
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4231	2200	4231	16.0	4.0	20.0	2.7	2.0	2.5