

DRIVING FORWARD



PARKER COUNTY TRANSPORTATION BOND

CONTRACT DOCUMENTS FOR CONSTRUCTION OF East Bankhead Highway Widening From Vernon Road to FM 1187

**FOR
Parker County, Texas**

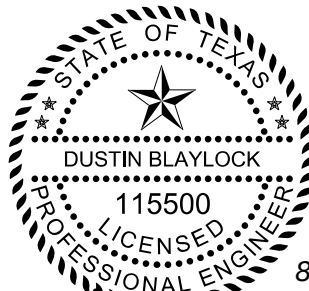
**County Judge
PAT DEEN**

**Precinct 1 Commissioner
GEORGE CONLEY**

**Precinct 3 Commissioner
LARRY WALDEN**

**Precinct 2 Commissioner
JACOB HOLT**

**Precinct 4 Commissioner
MIKE HALE**



8/27/2026

Dustin Blaylock



FNI Project No. PRK24109

August 2026

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00 11 16 INVITATION TO BID

ARTICLE 1 – GENERAL NOTICE

- 1.01 Parker County, Texas (Owner) is requesting Bids for the construction of the following Project:
East Bankhead Highway Widening – Part 1 From Vernon Road to FM 1187
- 1.02 Description of the Work
- A. **The East Bankhead Highway Widening project includes the reconstruction of an existing rural asphalt road (2-3 lanes) as a 3-4 lane urban concrete roadway. The project begins 200ft northwest of Vernon Road and extends southeast approximately 0.85 Miles to the FM 1187 intersection. The project includes two traffic signals: one new traffic signal at the intersection of East Bankhead Highway and Champions Drive, and the modification of an existing traffic signal intersection of East Bankhead Highway and FM 1187. The project includes traffic control, erosion control, earthwork, roadway pavement, sidewalks, drainage, retaining walls, traffic signals, pavement markings and signage.**
- 1.03 The Project is to be substantially complete and ready for operation **456 Calendar days** after the Notice to Proceed date. The Project is to be complete and eligible for final payment **30** calendar days after Substantial Completion. This project includes additive alternate bids. Additional contract time will be awarded along with any alternate bid that is awarded.

ARTICLE 2 – EXAMINATION AND PURCHASE OF DOCUMENTS

- 2.01 Advertisement and bidding information for the Project can be found at the following procurement website:
www.parkercountytx.com
- 2.02 Prospective Offerors must register with the procurement website as a plan holder, even if the Contract Documents are obtained from a plan room or other site. All official notifications, Addenda, and other documents will be offered only through the procurement website.
- 2.03 The Contract Documents may be downloaded from the procurement website by prospective Offerors registered as plan holders. Offerors are responsible for ensuring that a complete set of documents, as defined in Section 00 52 13 “Agreement,” are used in the preparation of their Bids. The documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download does not confer a license or grant permission or authorization for any other use. Authorization to download documents includes the right for Offerors to print documents for their sole use, provided they pay all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.04 The procurement website will be updated periodically with Addenda, lists of interested parties, reports, or other information relevant to submitting a Bid for the Project.

- 2.05 Printed copies of the Contract Documents, Technical Data, and other information may be examined free of charge at the following address:

**Parker County Annex office of the Purchasing Agent
1112 Santa Fe Drive**

Weatherford, TX 76086

Hours Available for Viewing: **Monday – Thursday: 8 AM to 5 PM, Friday: 8 AM to 3 PM**

ARTICLE 3 – PRE-BID CONFERENCE

- 3.01 A **non-mandatory** pre-bid conference for the Project will be held on **Thursday, September 17, 2026 at 2:00 p.m.** virtually only:

The pre-bid meeting will be held utilizing the Microsoft TEAMS software. A meeting invite will be emailed to all plan holders within 24 hours of the scheduled pre-bid meeting. The Video Conference ID is **283 945 205 141 633** with a passcode of **2bU2gU7D**. The call-in only phone number is **(866) 606-1179** and the Phone Conference ID is **815018854#**

ARTICLE 4 – QUESTIONS REGARDING BIDDING PROCESS OR SOLICITATION DOCUMENTS

- 4.01 Questions are to be submitted using the question and answer process on the procurement website. Responses to questions posted on the procurement website will be posted for the benefit of all Offerors. A response will be posted for questions submitted up to **48 hours prior to bid opening**. Questions submitted within 48 hours of the bid opening may not be answered.
- 4.02 A response to a question posted on the procurement website that requires modification of the Contract Documents will be made by Addenda. Modifications to the Contract Documents prior to the award of the Contract can only be made by Addenda. Only answers in Addenda posted on the procurement website will be binding. Oral and other interpretations or clarifications will be without legal effect.

ARTICLE 5 – BID SECURITY

- 5.01 Offerors must submit an acceptable Bid Security with their Bids as a guarantee that the Successful Offeror will enter into a contract for the Project with the Owner within 180 days of Notice of Award of the Contract. The Bid Security must be payable to **Parker County** in the amount of 5 percent of the proposed Contract Price. The Successful Offeror must execute the Contract and bonds on the forms provided in the Contract Documents and provide evidence of insurance as required by the Contract Documents.
- 5.02 Bid Security must be in the form of a bid bond. The bid bond may be submitted on the form provided in Section 00 43 13 “Bid Bond” or Offerors may provide their surety’s standard penal

sum bid bond form. The bid bond must reference the Owner and the Project by name as identified in this Section.

- 5.03 Bid Security may be in the form of a bid bond, a cashier's check, or certified check. Checks must be made out to **Parker County, Texas**. The bid bond may be submitted on the form provided in Section 00 43 13 "Bid Bond" or Offerors may provide their surety's standard penal sum bid bond form. The bid bond must reference the Owner and Project by name as identified in this Section.

ARTICLE 6 – DELIVERY OF BIDS

- 6.01 Sealed Bids must be delivered to the Owner at the address below no later than **10:00 A.M., CDT, Thursday, October 15, 2026** to be accepted. At that time and place the proposals will be publicly opened and read aloud and retained by the County for tabulation, checking, and evaluation. Bids shall be submitted in **ONE** of the following ways:
- A. **HARD COPY:** Submit sealed hard copy bids addressed to Mrs. Kim Rivas, Purchasing Agent, Parker County Texas, 1112 Santa Fe Drive Weatherford, TX 76086. Bids shall be submitted upon the blank form of proposal furnished. Sealed bids shall be marked **"PROPOSED ROADWAY CONSTRUCTION FOR EAST BANKHEAD HIGHWAY WIDENING – PART 1 FROM VERNON ROAD TO FM 1187. DO NOT OPEN UNTIL 10:00 A.M. THURSDAY, OCTOBER 15, 2026.** Bids received after designated time will be returned unopened.
 - B. **ELECTRONIC:** Bids may also be submitted electronically by visiting the website:
 - C. Bidders are encouraged to submit only one bid; however, if a contractor submits more than one bid the latest submittal will be accepted. Hard copy bids will be timestamped by the county upon receipt of the hard copy bid. The timestamp by the county will be the date/time used to compare to the timestamp of the electronic bid submittal if the bidder submits a hard copy and an electronic copy. The latest submittal with the timestamp will be accepted and all previous submittals by same bidder will be rejected.

ARTICLE 7 – AWARD OF CONTRACT

- 7.01 It is the intent of the Owner to award this Contract to the lowest responsible Offeror. The Owner reserves the right to adopt the most advantageous interpretation of the Bids submitted in the case of ambiguity or lack of clearness in stating bid prices, to reject any or all Bids, and/or waive formalities. Bids will remain subject to acceptance and may not be withdrawn within **180 calendar** days from the date on which Bids are opened.

ARTICLE 8 – OTHER CONTRACT REQUIREMENTS

- 8.01 Selected Contractor will be required to pay the prevailing wage rates established for this Project in accordance with the Contract Documents and Tex. Gov't Code Chapter 2258.
- 8.02 Performance, payment, and maintenance bonds will be required for this Project.

END OF SECTION

00 21 13 INSTRUCTIONS TO OFFERORS

ARTICLE 1 – DEFINED TERMS

- 1.01 The terms used in these Instructions to Offerors have the meanings assigned to them in the General Conditions and Supplementary Conditions.

ARTICLE 2 – RECEIPT OF BIDS

- 2.01 Refer to Section 00 11 16 “Invitation to Bid” for information on receipt of Bids.

ARTICLE 3 – COPIES OF CONTRACT DOCUMENTS

- 3.01 Obtain a complete set of the Contract Documents as indicated in Section 00 52 13 “Agreement.”
- 3.02 Use complete sets of Contract Documents in preparing Bids. Offeror assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.
- 3.03 Owner makes copies of Contract Documents available for the sole purpose of obtaining Bids for completion of the Project and does not confer a license or grant permission or authorization for any other use.

ARTICLE 4 – QUALIFICATIONS STATEMENT

- 4.01 Submit information as required in Section 00 45 13 “Qualifications Statement” within 5 days of the date Bids are due if requested to do so by the Owner.

ARTICLE 5 – EXAMINATION OF THE CONTRACT DOCUMENTS AND THE SITE

- 5.01 Examine the Contract Documents, the Site, and other information readily available before submitting a Bid.
- A. Examine the Contract Documents and supplemental data:
1. Carefully study the Contract Documents.
 2. Carefully study supplemental information, including Technical Data, record drawings from previous projects, available utility maps, reports, and studies referenced or made available to the Offeror.
 3. Promptly notify the Construction Manager of all conflicts, errors, ambiguities, or discrepancies that the Offeror discovers in the Contract Documents, Addenda, and supplemental information.
 4. Determine that the Contract Documents, Addenda, and supplemental data are generally sufficient to indicate and convey understanding of all terms and conditions for completion of Work to the degree necessary to prepare a Bid for the Project.
 5. Make observations and investigations, correlate knowledge and observations with the requirements of the Contract Documents, and consider these in preparation of a Bid for the Project.

- B. Become familiar with all federal, state, and local Laws and Regulations that may affect cost, progress, or the completion of Work.
- C. Visit the Site to become familiar with any general, local, or Site conditions that may affect the cost, progress, or performance of the Work in any manner. The Site is generally accessible to the public. Coordinate access to private property through the Owner.
- D. The submission of a Bid will constitute an incontrovertible representation by the Offeror that the Offeror has complied with every requirement of this Article, and that without exception the Bid is premised on the following:
 - 1. Work will be completed in accordance with the Contract Documents for the Contract Price within the Contract Times;
 - 2. Offeror has given the Construction Manager written notice of all conflicts, errors, ambiguities, and discrepancies that the Offeror has discovered in the Contract Documents, Addenda, and the related supplemental data;
 - 3. Written resolutions provided by the Construction Manager are acceptable to the Offeror; and
 - 4. Contract Documents, Addenda, and the related supplemental data are generally sufficient to indicate and convey understanding of all terms and conditions for completion of Work.

ARTICLE 6 – PRE-BID CONFERENCE

- 6.01 A non-mandatory pre-bid conference will be held at the time and location indicated in Section 00 11 16 “Invitation to Bid.”

ARTICLE 7 – INTERPRETATIONS AND ALTERNATE BIDS

- 7.01 Submit all questions about the meaning or intent of the Contract Documents, Addenda, and the related supplemental data to the Construction Manager using the procurement website as indicated in Section 00 11 16 “Invitation to Bid.”
- 7.02 Submit any offer of alternate terms and conditions or offer of Work not in strict compliance with the Contract Documents to the Construction Manager no later than 10 days after the date Project is advertised. Construction Manager and Design Professional will issue Addenda as appropriate if any of the proposed changes to the Contract Documents are accepted. A Bid submitted with clarifications or taking exceptions to the Contract Documents, except as modified by Addenda, will be considered non-responsive.
- 7.03 Offeror may submit a separate and additional Bid if the Offeror includes exceptions or the Offeror wishes to make a Bid that is not in accordance with the terms and conditions of the Contract Documents, or for Work that is not in strict compliance with the Contract Documents. Describe the intent and substance of the changes in the additional Bid in adequate detail so they are clearly understood. Alternate Bids will not be considered in the evaluation of the Bids. Upon selection of the Bid of the lowest responsible Offeror, and after the award of the Contract, the Construction Manager may issue a Request for a Change Proposal if Owner chooses to accept any Bid alternates.

- 7.04 Addenda may be issued to clarify, correct, or change the Contract Documents, Addenda, or the related supplemental data as deemed advisable by the Owner or Designer.

ARTICLE 8 – BID SECURITY

- 8.01 Offerors must submit an acceptable bid bond, cashier's check, or certified check as Bid Security with their Bids as required by Section 00 11 16 "Invitation to Bid." The acceptable bid bond must be issued by a surety legally authorized to do business in Texas and meet the requirements of the General Conditions. Cashier's or certified checks must be made payable to the **Parker County** and are to be effective on the day Bids are submitted and valid for a period of at least **180 calendar** days from the date the check is issued.
- 8.02 Owner may annul the Notice of Award and retain the Bid Security of the apparent Successful Offeror upon Offeror's failure to execute and deliver the Agreement or Amendments to the Agreement.
- 8.03 Bid Securities are to remain in effect until the Contract is executed. Bid bonds will become void when the Contract is awarded, or all Bids are rejected. Cashier's or certified checks will be returned by the Owner when the Contract is executed, or all Bids are rejected.

ARTICLE 9 – CONTRACT TIMES

- 9.01 See applicable provisions for Contract Times in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES, RETAINAGE, AND INTEREST

- 10.01 Provisions for liquidated damages and the payment of retainage and interest are set forth in the Agreement.

ARTICLE 11 – PREPARATION OF THE BID FORM

- 11.01 The Bid Form is included with the Contract Documents and is also available at the procurement website. Complete all blanks on the Bid Form by typing or printing in ink. Indicate prices for each item or alternate shown in the Bid Form.
- 11.02 The unit price governs if a conflict exists between the extended amount derived by multiplying the unit price by the stated quantity of units and the extended amount shown in the Bid Form.
- 11.03 Execute the Bid Form as indicated in the document and include evidence of authority to sign.
- 11.04 Acknowledge receipt of all Addenda by filling in the number and date of each Addendum. Provide a signature as indicated to verify that the Addenda were received. A Bid that does not acknowledge the receipt of all Addenda may be considered non-responsive.
- 11.05 Provide the name, address, and telephone number of the individual to be contacted for any communications regarding the Bid in the Bid Form.
- 11.06 Provide evidence of the Offeror's authority and qualification to do business in Texas or agree to obtain such qualification prior to award of the Contract. Failure to obtain this qualification will render the Bid non-responsive and Offeror will forfeit its Bid Security.

ARTICLE 12 – CONFIDENTIALITY OF BID INFORMATION

- 12.01 The Owner is a governmental body subject to the limitation of Tex. Gov't Code Chapter 552 and has limited obligations with regard to protecting confidential information submitted by Offerors. Bids will be opened in a manner that avoids disclosure of trade secrets and confidential information to competing Offerors and keeps the Bids from the public until a contract is awarded. The Owner will protect trade secrets and confidential information to the extent allowed by Laws and Regulations.
- 12.02 Clearly indicate which specific documents are considered to be trade secrets or confidential information by stamping or watermarking all such documents with the word "confidential" prominently on each page or sheet or on the cover of bound documents. Place "confidential" stamps or watermarks so that they do not obscure any of the required information on the document, either in the original or in a way that would obscure any of the required information in a photocopy of the document. Submit all confidential information in a different binder so this confidential material is separate from the rest of the Bid.
- 12.03 The Owner, upon receiving an application or other request for the disclosure of confidential information, will promptly notify Offeror of the request as required by Section 552.305 and request a ruling by the Texas Attorney General as to whether any such information may be released.
- 12.04 Offeror acknowledges and agrees that it will be solely responsible for submitting any arguments, authorities, or other information to the Attorney General of Texas regarding release of the information marked as confidential as provided by Section 552.305(b) and that if disclosure is required, the Owner has no liability for releasing this information and Offeror will not be entitled to exercise any remedy for a disclosure made pursuant to the Chapter 552.
- 12.05 The obligations of the Owner as recipient with respect to confidential information under the terms of this Agreement are subject to the following exceptions:
- A. If confidential information becomes a part of the public domain through publication or otherwise but through no fault of the Owner;
 - B. Owner can demonstrate through suitable documentation that the confidential information was already in the Owner's possession or otherwise publicly available prior to the date of disclosure hereunder;
 - C. The confidential information is subsequently disclosed to the Owner by a third party who has a lawful right to disclose such information; or
 - D. The Owner is required to disclose the confidential information by court order or by applicable law.
- 12.06 If the Owner is requested or becomes legally compelled (by oral questions, interrogatories, requests for information or documents, subpoena, civil or criminal investigative demand, public information requests, including requests under Chapter 552, or similar process) or is required by a regulatory body to make any disclosure that is prohibited or otherwise constrained by this Agreement, the Owner will provide Offeror with prompt notice of this request so that it may seek an appropriate protective order or other appropriate remedy.

ARTICLE 13 – DELIVERY OF BIDS

- 13.01 Complete and deliver the Bid Form along with all required documents identified in the Bid Form.
- 13.02 Submit the Bid no later than the date and time prescribed and at the place indicated in Section 00 11 16 “Invitation to Bid.” Enclose the Bid in an opaque sealed envelope plainly marked with the Project name and the name and address of the Offeror, along with the Bid Security and other required documents. Enclose the sealed envelope containing the Bid in a separate envelope plainly marked on the outside with the notation “BID ENCLOSED” if the Bid is sent by mail or other delivery system. Address the outer envelope to the mailing address shown in Section 00 11 16 “Invitation to Bid.” Offeror assumes full responsibility for ensuring that the Bid arrives at the prescribed location before the prescribed time.
- 13.03 Bids may be submitted electronically via the project procurement website. Submit all required documents electronically. A scanned electronic copy of the original bid bond may be submitted electronically with the bid. Submit the original bid bond to the owner within one week of the bid opening if a scanned electronic copy of the original bid bond was submitted electronically as the official bid.

ARTICLE 14 – MODIFICATION OR WITHDRAWAL OF BIDS

- 14.01 Modify or withdraw a Bid using a document executed in the same manner that a Bid must be executed. Deliver the document to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 14.02 An Offeror may withdraw its Bid within 24 hours after Bids are opened if the Offeror files a signed written notice with the Owner and promptly thereafter demonstrates to the reasonable satisfaction of the Owner that there was a material and substantial mistake in the preparation of its Bid. The Bid Security will be returned if it is clearly demonstrated to the Owner that there was a material and substantial mistake in its Bid. An Offeror that requests to withdraw its Bid under these conditions may be disqualified from responding to a reissued Invitation to Bid for the Work to be furnished under these Contract Documents.

ARTICLE 15 – OPENING OF BIDS

- 15.01 Bids will be opened at the time and place indicated in Section 00 11 16 “Invitation to Bid.” The Owner will publicly acknowledge receipt of Bids received in time to be considered and then open and read aloud the names of the Offerors and the amount bid as required by applicable Laws and Regulations.

ARTICLE 16 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 16.01 All Bids will remain subject to acceptance for the number of days specified in Section 00 11 16 “Invitation to Bid.” The Owner may, at its sole discretion, release any Bid and return the Bid Security prior to the end of this period.

ARTICLE 17 – EVALUATION OF BIDS

- 17.01 The Owner will consider the proposed Contract Price and Contract Times and the qualifications of the Offerors to determine the lowest responsible Offeror.

- 17.02 Owner may conduct such investigations as it deems necessary to establish the responsibility, qualifications, and financial ability of consultants, individuals, or entities proposed to furnish parts of the Work in accordance with the Contract Documents.
- 17.03 Each Offeror agrees to waive any claim it has or may have against the members of the OPT and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any Bid.
- 17.04 Notwithstanding any other provision of the Contract Documents, it is stipulated and agreed that by accepting a Bid, the Owner has not and does not waive its sovereign immunity from suit and/or liability.

ARTICLE 18 – AWARD OF CONTRACT

- 18.01 Owner reserves the right to reject any and all Bids, including non-conforming, non-responsive, or conditional Bids. The Owner may also reject the Bid of any Offeror if the Owner believes that it would not be in the best interest of the Owner to make an award to that Offeror. The Owner reserves the right to waive all formalities.
- 18.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered, except as additional Bids in accordance with Article [7]. Reasonable grounds for believing that any Offeror has an interest in more than one Bid for the Work will be cause for disqualification of that Offeror and the rejection of all Bids in which that Offeror has an interest.
- 18.03 The Contract will be awarded to the lowest responsible Offeror if a contract is to be awarded.
- 18.04 Owner may consider the following in evaluating the Bids and awarding the Contract:
 - A. Offeror's qualifications and ability to demonstrate current capability to complete the Project in conformance with the requirements of the Contract Documents.
 - B. Compliance of the Bids with requirements of the Contract Documents.
 - C. Alternates and unit prices if requested in the bid forms.
 - D. The amount bid.
 - E. Proposed date of completion and the ability to meet intermediate Milestones that may have been established for the Project.

ARTICLE 19 – BONDS AND INSURANCE

- 19.01 The General Conditions set forth the Owner's requirements as to bonds and insurance. When the Successful Offeror delivers the executed Agreement to the Owner, it must be accompanied by the performance and payment bonds and required evidence of insurance.
- 19.02 Provide performance and payment bonds for this Project that fully comply with the provisions of Tex. Gov't Code Chapter 2253. Administration of these bonds will conform to Chapter 2253 and the provisions of the Contract Documents.

ARTICLE 20 – SIGNING OF THE AGREEMENT

- 20.01 The Notice of Award to the Successful Offeror will be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents that are identified in the Agreement. The Successful Offeror must sign and deliver the required number of counterparts of the Agreement and attached documents to the Owner within 15 days. The Owner will deliver two fully signed counterparts to the Successful Offeror within 10 days after receiving the signed documents from the Successful Offeror.
- 20.02 The Successful Offeror must also complete and submit a Certificate of Interested Parties (Form 1295) to the Owner as required by Tex. Gov't Code Chapter 2252 with the signed Agreement.

ARTICLE 21 – SALES AND USE TAXES

- 21.01 The Owner generally qualifies as a tax-exempt agency as defined by the statutes of the State of Texas and is usually not subject to any local or state sales or use taxes, however certain items such as rented equipment may be taxable even though Owner is a tax-exempt agency. Offerors assume responsibility for including any applicable sales taxes in their Bids and for complying with all applicable statutes and rulings of the State of Texas Comptroller.
- 21.02 It is the Owner's intent to have this Contract qualifies as a "separated contract." In order for this Contract to qualify:
- A. Obtain a sales tax permit from the State of Texas Comptroller if awarded this Contract.
 - B. Identify the dollar value of materials exempt from the sales tax. This information must be reported in Section 00 45 04 "State Sales Tax Requirements." Bids that do not include the information requested in this Section may be considered non-responsive.

ARTICLE 22 – WAGE RATES

- 22.01 This Contract is subject to Tex. Gov't Code Chapter 2258 concerning payment of prevailing wage rates. Requirements for paying the prevailing wage rates are discussed in Section 00 73 43 "Wage Rate Requirements." A schedule listing the minimum wage rates for various classifications of laborers which have been established by the Owner for this Project are included in Section 00 73 46 "Wage Determination Schedule." Offerors will be required to pay at least the minimum wages shown on this list and comply with all applicable federal, state, and local Laws and Regulations related to the payment of prevailing wage rates.

END OF SECTION

00 41 13 BID FORM

ARTICLE 1 – BID RECIPIENT

1.01 Offeror submits this Bid to:

Parker County, Texas
Parker County Annex office of the Purchasing Agent
1112 Santa Fe Drive
Weatherford Tx 76086
Attention: Mrs. Kim Rivas, Purchasing Agent
East Bankhead Highway Widening From Vernon Road to FM 1187

ARTICLE 2 – OFFEROR’S ACKNOWLEDGMENTS

- 2.01 Offeror proposes and agrees, if this Bid is accepted, to enter into an Agreement with the Owner on the form included in the Contract Documents and to perform all Work specified or indicated in Contract Documents for the Contract Price indicated in this Bid or as modified by Contract Amendment. Offeror agrees to complete the Work within the Contract Times established in the Agreement or as modified by Contract Amendment and comply with all terms and conditions of the Contract Documents.
- 2.02 Offeror accepts all terms and conditions of Section 00 11 16 “Invitation to Bid” and Section 00 21 13 “Instructions to Offerors.”
- 2.03 Offeror accepts the provisions of the Agreement as to liquidated damages in the event of its failure to complete Work in accordance with the schedule set forth in the Agreement.
- 2.04 Offeror acknowledges receipt of the following Addenda:

Addendum No.	Addendum Date	Signature Acknowledging Receipt

ARTICLE 3 – OFFEROR’S REPRESENTATIONS

- 3.01 Offeror has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- 3.02 Offeror has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- 3.03 Offeror is familiar with Laws and Regulations that may affect cost, progress, and performance of the Work.
- 3.04 Offeror has carefully studied the following Site-related reports and drawings as identified in the Supplementary Conditions:
- A. Geotechnical Data Reports regarding subsurface conditions at or adjacent to the Site;

- B. Drawings of physical conditions relating to existing surface or subsurface structures at the Site;
 - C. Underground Facilities referenced in reports and drawings;
 - D. Reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site; and
 - E. Technical Data related to each of these reports and drawings.
- 3.05 Offeror has considered the:
- A. Information known to the Offeror;
 - B. Information commonly known to contractors doing business in the locality of the Site;
 - C. Information and observations obtained from visits to the Site; and
 - D. The Contract Documents.
- 3.06 Offeror has considered the items identified in this Article with respect to the effect of such information, observations, and documents on:
- A. The cost, progress, and performance of the Work;
 - B. The means, methods, techniques, sequences, and procedures of construction to be employed by Offeror; and
 - C. Offeror's safety precautions and programs.
- 3.07 Offeror 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 Documents based on the information and observations referred to in the preceding paragraphs.
- 3.08 Offeror 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.
- 3.09 Offeror has correlated the information known to the Offeror, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- 3.10 Offeror has given the Construction Manager written notice of all conflicts, errors, ambiguities, or discrepancies that the Offeror has discovered in the Contract Documents, and the written resolution provided by the Construction Manager is acceptable to the Offeror.
- 3.11 The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- 3.12 Offeror's submittal of a Bid constitutes an incontrovertible representation that, without exception, all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 4 – BASIS OF OFFER

- 4.01 Offeror will complete the Work in accordance with the Contract Documents at the unit prices shown in the attached in Section 00 41 16 “Bid Form Exhibit A”:
- A. Extended amounts have been computed in accordance with the General Conditions.
 - B. Offeror acknowledges that the estimated quantities are not guaranteed, and final payment for all unit price items will be based on actual quantities provided, measured as provided in the Contract Documents.
 - C. Unit prices will be used to compute the actual Bid price.

ARTICLE 5 – TIME OF COMPLETION

- 5.01 Offeror agrees that the Work will be Substantially Complete and will be completed and ready for final payment in accordance with the General Conditions within the number of calendar days indicated in Section 00 41 16 “Bid Form Exhibit A.”

ARTICLE 6 – ATTACHMENTS TO THIS BID

- 6.01 The following documents are attached to and made a condition of this Bid:
- A. Section 00 41 16 “Bid Form Exhibit A.”
 - B. Section 00 43 13 “Bid Bond.”
 - C. Section 00 45 01 “Nonresident Bidders.”
 - D. Section 00 45 02 “Non-Collusion Certification.”
 - E. Section 00 45 03 “Conflict of Interest Questionnaire.”
 - F. Section 00 45 04 “State Sales Tax Requirements.”

ARTICLE 7 – VENUE

- 7.01 Offeror agrees that venue will lie exclusively in **Parker** County, Texas for any legal action.

ARTICLE 8 – BID DELIVERY

8.01 This Bid is submitted by:

Offeror: _____
(typed or printed name of organization)

Signature: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

Phone: _____ Email: _____
(Attach evidence of authority to sign if Offeror is a corporation, partnership, or a joint venture.)

END OF SECTION

00 41 16 Bid Form Exhibit A

Project:	East Bankhead Highway Widening Part 1		Project No.:
Owner:	Parker County		PRK24109
Design Professional:	Freese and Nichols, Inc.		
Offeror:			

Base Bid					
Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Extended Amount
Base Bid Item I: General					
I-01	MOBILIZATION (MAX 5% OF BASE BID)	LS	1		
I-02	PREPARING RIGHT OF WAY	STA	46		
I-03	EXCAVATION (ROADWAY)	CY	4,900		
I-04	EMBANKMENT (FINAL)(DENS CONT)(TY C)	CY	4,900		
I-05	EMBANKMENT (FINAL)(DENS CONT)(TY C - OFF SITE)	CY	30,180		
I-06	PREPARE TRAFFIC CONTROL PLAN (PART 1)	LS	1		
I-07	IMPLEMENT TRAFFIC CONTROL PLAN	MO	15		
I-08	PROJECT DESIGNATION SIGN	EA	2		
I-09	FIELD OFFICE	LS	1		
I-10	REMOVING STAB BASE & ASPH PAV (7"-12")	SY	14,700		
I-11	REMOVING CONC (PAV)	SY	2,990		
I-12	REMOVING CONC (DRIVEWAYS)	SY	1,240		
I-13	REMOV STR (SET)	EA	12		
I-14	REMOV STR (PIPE)	LF	1,052		
I-15	REMOV STR (WINGWALL)	EA	3		
I-16	REMOV STR (BOX CULVERT)	LF	32		
I-17	REMOV STR (SMALL FENCE)	LF	5,681		
I-18	BARBED WIRE FENCE (INSTALL)	LF	5,631		
I-19	REMOVE METAL BEAM GUARD FENCE (Complete)	LF	590		
I-20	TEMPORARY SPL SHORING	SF	264		
I-21	PORT CTB (FUR & INST)(LOW PROF)(TY 1)	LF	3,540		
I-22	PORT CTB (FUR & INST)(LOW PROF)(TY 2)	LF	200		
I-23	PORT CTB (MOVE)(LOW PROF)(TY 1)	LF	2,800		
I-24	PORT CTB (MOVE)(LOW PROF)(TY 2)	LF	240		
I-25	PORT CTB (REMOVE)(LOW PROF)(TY 1)	LF	3,540		
I-26	PORT CTB (REMOVE)(LOW PROF)(TY 2)	LF	200		
Base Bid Item II: Paving Improvements					
II-01	COMPOST MANUFACTURED TOPSOIL (4")	SY	15,511		
II-02	BLOCK SODDING	SY	15,511		
II-03	CONC PVMT (CRCP) (8")	SY	30,832		
II-04	D-GR HMA TY-D SAC-B PG70-22	TON	129		
II-05	FLEXIBLE BASE (TY A GR 1-2)	CY	104		
II-06	LIME TRT (EXST MATL)(8")	SY	33,565		
II-07	LIME (HYDRATED LIME (SLURRY)) (42 LB/SY)	TON	710		
II-08	CONSTRUCTING DETOURS	SY	2,000		
II-09	CONC CURB (MONO) (TY II)	LF	14,654		
II-10	RETAINING WALL (CAST-IN-PLACE)	SF	1,194		
II-11	RAIL (TY C1W)	LF	415		
II-12	6" STAMPED AND COLORED CONCRETE	SY	1,045		
II-13	CONC PVMT (CRCP) (8") (STAMPED AND COLORED CONCRETE)	SY	101		
II-14	CONC PVMT (CRCP) (10") (STAMPED AND COLORED CONCRETE)	SY	4		
II-15	DRIVEWAYS (CONC)	SY	1,281		
II-16	CONC SIDEWALKS (4")	SY	5,167		
II-17	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	54		
II-18	CURB RAMPS (TY 1)	EA	15		
II-19	CURB RAMPS (TY 2)	EA	1		
II-20	CURB RAMPS (TY 7)	EA	7		
II-21	CURB RAMPS (TY 10)	EA	2		
II-22	CURB RAMPS (TY 22)	EA	2		

Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Extended Amount
Base Bid Item III: Signage and Pavement Markings					
III-01	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	17		
III-02	REFL PAV MRK TY I (W)6"(BRK)(100MIL)	LF	1,190		
III-03	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	3,610		
III-04	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF	303		
III-05	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF	64		
III-06	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	1,120		
III-07	REFL PAV MRK TY I (Y)6"(SLD)(100MIL)	LF	3,925		
III-08	REFL PAV MRK TY I (Y)6"(BRK)(100MIL)	LF	880		
III-09	REFL PAV MRK TY I (W)(WORD)(100MIL)	EA	16		
III-10	REFL PAV MRK TY I (W)(ARROW)(100MIL)	EA	16		
III-11	REFL PAV MRK TY I(W)(DBL ARROW)(100MIL)	EA	3		
III-12	REF PAV MRK TY I(W)18"(YLD TRI)(100MIL)	EA	21		
III-13	REFL PAV MRK TY II (W)6"(BRK)(100MIL)	LF	1,190		
III-14	REFL PAV MRK TY II (W)8"(SLD)(100MIL)	LF	3,610		
III-15	REFL PAV MRK TY II (W)8"(DOT)(100MIL)	LF	303		
III-16	REFL PAV MRK TY II (W)12"(SLD)(100MIL)	LF	64		
III-17	REFL PAV MRK TY II (W)24"(SLD)(100MIL)	LF	1,120		
III-18	REFL PAV MRK TY II (Y)6"(SLD)(100MIL)	LF	3,925		
III-19	REFL PAV MRK TY II (Y)6"(BRK)(100MIL)	LF	880		
III-20	REFL PAV MRK TY II (W)(WORD)(100MIL)	EA	16		
III-21	REFL PAV MRK TY II (W)(ARROW)(100MIL)	EA	16		
III-22	REFL PAV MRK TY II(W)(DBL ARROW)(100MIL)	EA	3		
III-23	REF PAV MRK TY II(W)18"(YLD TRI)(100MIL)	EA	21		
III-24	REFL PAV MRKR TY I-C	EA	223		
III-25	REFL PAV MRKR TY II-A-A	EA	167		
III-26	ELIM EXT PM & MRKS (4")	LF	1,650		
III-27	ELIM EXT PM & MRKS (ARROW)	EA	3		
III-28	ELIM EXT PM & MRKS (WORD)	EA	3		
Base Bid Item IV: Drainage Improvements					
IV-01	TRENCH EXCAVATION PROTECTION	LF	4,686		
IV-02	RIPRAP (STONE PROTECTION)(18 IN)	CY	526		
IV-03	CONC BOX CULV (8 FT X 6 FT)	LF	88		
IV-04	CONC BOX CULV (10 FT X 8 FT)	LF	21		
IV-05	RC PIPE (CL III)(18 IN)	LF	988		
IV-06	RC PIPE (CL III)(24 IN)	LF	3,589		
IV-07	WINGWALL (PW - 1) (HW=10 FT) - Culvert "G" 8'x6'	EA	1		
IV-08	WINGWALL (PW - 1) (HW=11 FT) - Culvert "G" 8'x6'	EA	1		
IV-09	WINGWALL (PW - 1) (HW=11 FT) - Culvert "F" 10'x8'	EA	1		
IV-10	INLET (COMPL)(PAZD-CZ)(FG)(3FTX3FT-3FTX3FT)	EA	1		
IV-11	INLET (COMPL)(CO)(10 FT)(FTW)	EA	10		
IV-12	INLET (COMPL)(CO)(15 FT)(FTW)	EA	5		
IV-13	INLET (COMPL)(CO)(20 FT)(FTW)	EA	4		
IV-14	MANH (COMPL)(TY SD)(3FT X 3FT)(FTW)	EA	8		
Base Bid Item V: Erosion Control Improvements					
V-01	ROCK FILTER DAMS (INSTALL) (TY 2)	LF	110		
V-02	ROCK FILTER DAMS (INSTALL) (TY 3)	LF	220		
V-03	ROCK FILTER DAMS (REMOVE)	LF	330		
V-04	CONSTRUCTION EXITS (INSTALL) (TY 2)	SY	260		
V-05	CONSTRUCTION EXITS (REMOVE)	SY	260		
V-06	TEMP SEDMT CONT FENCE (INSTALL)	LF	3,950		
V-07	TEMP SEDMT CONT FENCE (REMOVE)	LF	3,950		
V-08	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	340		
V-09	BIODEG EROSN CONT LOGS (REMOVE)	LF	340		
V-10	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	1		
V-11	IMPLEMENT AND MAINTAIN SWPPP	LS	1		
Base Bid Item VI: Utility Improvements					
VI-01	REMOVE AND REPLACE EXISTING CORROSION CONTROL TEST STATION	EA	1		
VI-02	ADJUST MH TO PROPOSED GRADE	EA	3		
VI-03	EXISTING 36" WATER LINE ENCASEMENT - 54" SPLIT STEEL CASING PIPE	LF	60		

Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Extended Amount
Base Bid Item VII: Traffic Signal Improvements @ FM 1187					
VII-01	REMOVE GROUND BOX	EA	2		
VII-02	RELOC TRF SG PL AM(S)SNGL MST ARM POLE	EA	2		
VII-03	RELOCATE PED POLE ASSEMBLY	EA	1		
VII-04	REMOVAL OF CONDUIT	LF	200		
VII-05	REMOVAL OF SIGNAL HEAD ASSM	EA	1		
VII-06	REPLACE OF SIGNAL HEAD ASSM	EA	1		
VII-07	DRILL SHAFT (TRF SIG POLE) (30 IN)	LF	12		
VII-08	DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	14		
VII-09	CONDT (PVC) (SCH 80) (3") (BORE)	LF	30		
VII-10	CONDT (PVC) (SCH 80) (4")	LF	10		
VII-11	CONDT (PVC) (SCH 80) (4") (BORE)	LF	290		
VII-12	ELEC CONDR (NO.6) BARE	LF	320		
VII-13	TRAY CABLE (4 CONDR) (12 AWG)	LF	900		
VII-14	GROUND BOX TY D (162922)W/APRON	EA	1		
VII-15	VEH SIG SEC (12")LED(GRN)	EA	2		
VII-16	VEH SIG SEC (12")LED(GRN ARW)	EA	1		
VII-17	VEH SIG SEC (12")LED(YEL)	EA	2		
VII-18	VEH SIG SEC (12")LED(YEL ARW)	EA	1		
VII-19	VEH SIG SEC (12")LED(RED)	EA	2		
VII-20	BACKPLATE W/REFL BRDR(3 SEC)ALUM	EA	1		
VII-21	BACKPLATE W/REFL BRDR(5 SEC)ALUM	EA	1		
VII-22	TRF SIG CBL (TY A)(14 AWG)(5 CONDR)	LF	30		
VII-23	TRF SIG CBL (TY A)(14 AWG)(7 CONDR)	LF	50		
VII-24	TRF SIG CBL (TY A)(14 AWG)(12 CONDR)	LF	280		
VII-25	TRF SIG CBL (TY A)(14 AWG)(16 CONDR)	LF	880		
VII-26	TRF SIG CBL (TY C)(12 AWG)(2 CONDR)	LF	1,460		
VII-27	PED POLE ASSEMBLY	EA	1		
VII-28	PED DETECT PUSH BUTTON (APS)	EA	1		
VII-29	VIVDS CABLE (INSTALL)	LF	970		
VII-30	RADAR PRESENCE DETECTOR COMM CABLE	LF	1,260		
VII-31	GROUND BOX (PREPARE)	EA	3		
VII-32	ALUMINUM SIGNS (TY A)	SF	60		
VII-33	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	2		
Base Bid Item VIII: Traffic Signal Improvements @ Champions Dr					
VIII-01	REMOVE SM RD SN SUP&AM	EA	2		
VIII-02	DRILL SHAFT (TRF SIG POLE) (30 IN)	LF	12		
VIII-03	DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	42		
VIII-04	CONDT (PVC) (SCH 80) (2")	LF	170		
VIII-05	CONDT (PVC) (SCH 80) (3")	LF	270		
VIII-06	CONDT (PVC) (SCH 80) (4")	LF	70		
VIII-07	CONDT (PVC) (SCH 80) (4") (BORE)	LF	270		
VIII-08	ELEC CONDR (NO.12) INSULATED	LF	320		
VIII-09	ELEC CONDR (NO.8) INSULATED	LF	880		
VIII-10	ELEC CONDR (NO.6) BARE	LF	780		
VIII-11	ELEC CONDR (NO.6) INSULATED	LF	380		
VIII-12	GROUND BOX TY D (162922)	EA	1		
VIII-13	GROUND BOX TY D (162922)W/APRON	EA	3		
VIII-14	ELC SRV TY D 120/240 070(NS)SS(E)PS(U)	EA	1		
VIII-15	INS HY TRF SIG (DPT SUP CNT & CAB)(ISO)	EA	1		
VIII-16	VEH SIG SEC (12")LED(GRN)	EA	8		
VIII-17	VEH SIG SEC (12")LED(GRN ARW)	EA	2		
VIII-18	VEH SIG SEC (12")LED(YEL)	EA	8		
VIII-19	VEH SIG SEC (12")LED(YEL ARW)	EA	2		
VIII-20	VEH SIG SEC (12")LED(RED)	EA	8		
VIII-21	VEH SIG SEC (12")LED(RED ARW)	EA	2		
VIII-22	PED SIG SEC (LED)(COUNTDOWN)	EA	8		
VIII-23	BACKPLATE W/REFL BRDR(3 SEC)ALUM	EA	10		
VIII-24	TRF SIG CBL (TY A)(14 AWG)(5 CONDR)	LF	510		
VIII-25	TRF SIG CBL (TY A)(14 AWG)(12 CONDR)	LF	750		
VIII-26	TRF SIG CBL (TY A)(14 AWG)(16 CONDR)	LF	610		
VIII-27	TRF SIG CBL (TY C)(12 AWG)(2 CONDR)	LF	1,240		
VIII-28	INS TRF SIG PL AM(S)1 ARM(28')LUM	EA	1		
VIII-29	INS TRF SIG PL AM(S)1 ARM(36')	EA	1		
VIII-30	INS TRF SIG PL AM(S)1 ARM(40')LUM	EA	1		

Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Extended Amount
VIII-31	INS TRF SIG PL AM(S)1 ARM(44')LUM	EA	1		
VIII-32	PED POLE ASSEMBLY	EA	5		
VIII-33	PED DETECT PUSH BUTTON (APS)	EA	8		
VIII-34	PED DETECTOR CONTROLLER UNIT	EA	1		
VIII-35	RVDS(PRESENCE DETECTION ONLY)	EA	2		
VIII-36	RVDS(PRESENCE AND ADVANCE DETECTION)	EA	2		
VIII-37	RADAR PRESENCE DETECTOR COMM CABLE	LF	1,000		
VIII-38	ALUMINUM SIGNS (TY A)	SF	85		
VIII-39	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	5		
BASE BID SUMMARY:					
Total Amount for Base Bid Item I: General					\$ -
Total Amount for Base Bid Item II: Paving Improvements					\$ -
Total Amount for Base Bid Item III: Signage and Pavement Markings					\$ -
Total Amount for Base Bid Item IV: Drainage Improvements					\$ -
Total Amount for Base Bid Item V: Erosion Control Improvements					\$ -
Total Amount for Base Bid Item VI: Utility Improvements					\$ -
Total Amount for Base Bid Item VII: Traffic Signal Improvements @ FM 1187					\$ -
Total Amount for Base Bid Item VIII: Traffic Signal Improvements @ Champions Dr					\$ -
Total Amount for Base Bid (Sum of Extended Amounts for each Base Bid Line Item)					\$ -

[illegible]

Surety and Offeror, intending to be legally bound by this bond, do each cause this bond to be duly executed on its behalf by its authorized officer, agent, or representative. Surety and Offeror bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally to this bond. The condition of this obligation is such that if Owner accepts the Offeror's Bid or Proposal and Offeror delivers the executed Agreement and the required bonds and evidence of insurance within the time stipulated in the Bidding or Proposal Documents this obligation is null and void. Payment under this bond will be due and payable upon default by Offeror and within 30 days after receipt by Offeror and Surety of written notice of default from Owner. This Agreement shall be administered and interpreted under the laws of the state where the Project is located. Venue lies exclusively in Parker County for any legal action.

Offeror as Principal	Surety
Signature: _____	Signature: _____
Name: _____	Name: _____
Title: _____	Title: _____
Email: _____	Email: _____ (Attach Power of Attorney)

END OF SECTION

00 45 01 NONRESIDENT BIDDERS

Texas Government Code Chapter 2252 applies to the award of government contracts to nonresident bidders. This chapter provides that:

“a government entity may not award a governmental contract to a nonresident bidder unless the nonresident underbids the lower bid submitted by a responsible resident bidder by an amount that is not less than the amount by which a resident bidder would be required to underbid the nonresident bidder to obtain a comparable contract in the state in which the nonresident’s principal place of business is located.”

“Nonresident bidder” refers to a person who is not a resident of Texas.

“Resident bidder” refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

Check the statement that is correct for Offeror:

- ☐ Offeror (includes parent company or majority owner) qualifies as a resident bidder whose principal place of business is in Texas.
- ☐ Offeror qualifies as a nonresident bidder whose principal place of business or residency is in the state of: _____

Any determination of state bidder preference law will be based on the Texas Comptroller’s annual summary of other state bidder preference laws.

Offeror: _____
(typed or printed name of organization)

Signature: _____
(individual’s signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Business Address:

Phone: _____ Email: _____
(Attach evidence of authority to sign if Offeror is a corporation, partnership, or a joint venture.)

END OF SECTION

00 45 02 NON-COLLUSION CERTIFICATION

STATE OF Texas §

COUNTY OF Parker §

Owner: **Parker County**
1 Courthouse Square
Weatherford, Tx 76086

Contract: **East Bankhead Highway Widening From Vernon Road to FM 1187**
PRK24109

Offeror certifies that it has not been a party to any collusion among Offerors in the restraint of freedom of competition by agreement to submit a Bid or Proposal at a fixed price or to refrain from submitting a Bid or Proposal; or with any official or employee of the Owner as to quantity, quality, or price in the prospective contract, or any other terms of said prospective contract; or in any discussion between Offerors and any official of the Owner concerning exchange of money or other thing of value for special consideration in the letting of a contract.

Certified this _____ day of _____ 20 ____ .

Offeror: _____
(typed or printed name of organization)

Signature: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Business Address:

Phone: _____ Email: _____

(Attach evidence of authority to sign if Offeror is a corporation, partnership, or a joint venture.)

END OF SECTION

00 45 03 CONFLICT OF INTEREST QUESTIONNAIRE

CONFLICT OF INTEREST QUESTIONNAIRE		FORM CIQ
For vendor doing business with local governmental entity		OFFICE USE ONLY
This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session. This questionnaire is being filed in accordance with Chapter 176 of the Local Government Code by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a). By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code. A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.		Date Received
1	Name of vendor who has a business relationship with local governmental entity.	
2	☐ Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)	
3	Name of local government officer about whom the information is being disclosed.	
 _____ Name of Officer		
4	Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.	
A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor? ☐ Yes ☐ No B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity? ☐ Yes ☐ No		
5	Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.	
6	☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1)	
7	 	
_____ Signature of vendor doing business with the governmental entity _____ Date		

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed;
or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or
(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

END OF SECTION

00 45 04 STATE SALES TAX REQUIREMENTS

Comply with all applicable sales, excise, and use tax requirements of the Texas Tax Code. The Offeror hereby certifies that the Contract Price is divided as follows:

Tax exempt products, materials, and services (See Notes 1 and 2)	\$	_____
Taxable products, materials, and services (See Note 3)	\$	_____
Total (See Note 4)	\$	_____

Offeror: _____
(typed or printed name of organization)

Signature: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Business Address: _____

Phone: _____ Email: _____
(Attach evidence of authority to sign if Offeror is a corporation, partnership, or a joint venture.)

Notes:

1. Exempt products and materials are those items purchased for the Project which are physically incorporated into the facilities constructed for the Owner or are necessary and essential for the performance of the Work and are completely consumed at the Site. For purposes of this definition, products and materials are completely consumed if after being used once for its intended purpose it is used up or destroyed. Products and materials rented or leased for use in the performance of the Work cannot be completely consumed for the purposes of this definition.
2. Exempt services are those services performed at the Site where the Contract expressly requires the specific service to be provided or purchased by the person performing the Work or the service is integral to the performance of the Work.
3. Products, materials, and services are not tax exempt if they are used by the Contractor but are not physically incorporated into the Owner's facilities or are not consumed by construction as defined above. Machinery or equipment and its accessories and repair and replacement parts used in the performance of the Work are not exempt.
4. The total sum of the amount for tax exempt and taxable products, materials, and services must equal the Contract Price.

END OF SECTION

00 45 13 QUALIFICATIONS STATEMENT

ARTICLE 1 – REQUIREMENTS FOR THE QUALIFICATIONS STATEMENT

- 1.01 The Qualifications Statement must be submitted by the apparent low Offeror within 5 calendar days of the bid opening and include the information as described in this Section as a minimum. Failure to submit the required information in the Qualifications Statement may result in Owner considering the Bid non-responsive and may result in rejection of the Bid by Owner. Offerors may be required to provide supplemental information if requested by Owner to clarify, enhance, or supplement the information provided in the Qualifications Statement.
- 1.02 Offeror must provide the information requested in this Qualifications Statement using the forms attached to this Section. The information requested in these forms must be provided completely and in detail. Information that cannot be totally incorporated in the forms may be included as an appendix to the form. This appendix must be clearly referenced by appendix number on the form, and the appended material must include the appendix number on every sheet of the appendix. The appendix must include only the information that responds to the question or item number to which the appended information applies.
- 1.03 Offeror may provide supplemental information to the Qualifications Statement such as organizational brochures or other marketing information to help demonstrate their qualifications to Owner. This information may not be submitted as a substitute for the information specifically requested in this Section. The reference must include the specific paragraph or section that applies to that question or item if this information is included as an appendix to the information requested in Article 2.

ARTICLE 2 – INSTRUCTIONS FOR PREPARING THE QUALIFICATIONS STATEMENT

- 2.01 Offeror's Organization and General Information:
 - A. Provide general information about the Offeror's organization using copies of Table 1. Provide the same information for each joint venture partner if the Offeror is a joint venture.
 - B. Provide information regarding the operational structure of the Offeror's organization, including a list of officers, the limits of authority for these individuals with regards to the proposed Project, documentation of authority to execute documents, and a copy of organizations' certificate of authorization to conduct business in the state the Project is located in. If the Project is located in a state that licenses contractors, Offeror must also provide documentation showing that the organization is licensed as a general contractor in that state, including any applicable classifications and limitations.
 - C. Financial Management:
 1. Provide the Offeror's most recent audited financial statement and the most recent financial statement if the most recent audited financial statement is more than 2 years old.

2. Provide the Offeror's financial summary information in Table 1, including the financial indicators from the Offeror's most recent financial statement using the formulas below:

Current Ratio: $\text{Current Assets} \div \text{Current Liabilities}$

Quick Ratio: $(\text{Cash and Cash Equivalents} + \text{Accounts Receivable} + \text{Short Term Investments}) \div \text{Current Liabilities}$

3. Describe the resources that are available to Offeror to provide adequate cash flow for the Project if the Offeror's Current Ratio or Quick Ratio are less than 1.0.

D. Safety:

1. Provide a narrative not to exceed four pages describing the Offeror's success in implementing an effective project site safety program. Provide a narrative describing the Offeror's safety program and a statement regarding the organization's commitment to safety. Do not provide copies of safety manuals or programs.
2. Provide Experience Modification Ratio (EMR) and Total Recordable Frequency Rate (TRFR) history for the last 3 years for Offeror and any proposed subcontractors that will provide Work valued at 25 percent or more of the Contract Price. Provide this information in Table 1.
 - a. Offeror's EMR is a computation by the insurance industry that compares a company's annual losses in workers' compensation insurance claims against its policy premiums over a three-year period, excluding the current year.
 - b. Offeror's TRFR is a calculation of a firm's total number of OSHA-recordable injuries and illnesses over a given period (usually a year), divided by the total number of personnel-hours worked.

- E. Claims Experience and Litigation History: Provide a list of all claims or litigation involving owners on other construction projects that have been active over the last 5 years or that are currently unresolved. Include this information in Table 1. Provide a narrative describing the issues being contested and when it is anticipated that the disputes will be resolved. Claims are to include only those items which have progressed through the change management process for the project and are being disputed by Offeror or the project owner.

- F. Past Experience with the Owner: Provide a list of projects that have been completed with Owner over the last 5 years. Include this information in Table 1. Provide a narrative not to exceed two pages describing how this experience will impact the performance of Offeror on this Project.

2.02 Project Experience:

- A. Provide a list of projects completed by Offeror in the last 5 years using copies of Table 2.
- B. Provide detailed descriptions of projects which demonstrate the experience of the Offeror's team with construction of similar projects. Experience must include, as a minimum, the satisfactory completion of at least five similar projects within the last 5 years. Offerors not *Declare if the experience is provided by the Prime or a subcontractor and provide the name of the company with the experience. Provide a tabulation of the number of projects and length of time the Prime and subcontractor have worked together.*

meeting the requirement for similar projects may be disqualified as being non-responsive. Similar projects must include:

1. **20,000 SY or more of Concrete Pavement using a slip form paving machine**
 2. **2,000 LF or more of storm drain pipe greater than 18" diameter.**
 3. **1 Traffic Signal**
 4. **20,000 LF of pavement markings on new concrete pavement**
 5. **10,000 CY of Embankment**
 6. **Traffic Control with a minimum of one lane closure along a roadway section with a minimum of 10,000 ADT**
 7. **1 Project requiring pavement and traffic control work within TXDOT ROW.**
- C. Provide a narrative not to exceed two pages for each project describing up to five specific projects that qualify as similar projects. Projects selected must demonstrate the capabilities of Offeror.

2.03 Experience and Qualifications of Proposed Key Personnel:

- A. Provide a narrative not to exceed four pages describing the Offeror's project management structure and the qualifications of the project management team for this Project. Include an organization chart showing the relationship between Offeror and key subcontractors and suppliers.
- B. Provide information on the key personnel proposed for this Project on Tables 3 through 7. Key personnel include the project manager, project superintendent, safety manager, and quality control manager. Offeror may provide information on an alternate individual if it is not able to commit to one individual for the Project at the time the Bid is submitted. Qualifications of these individuals will be considered in evaluating the Offeror's qualifications. Offeror must commit to providing the services of the proposed key personnel or alternate for the life of the Project as a condition of qualification. Failure to provide the proposed key personnel may result in the disqualification of Offeror and will provide the basis for termination of the Contract at the discretion of Owner.
- C. Include a list of the current project assignments for each of the individuals proposed, the anticipated completion date for these assignments, and the percentage of the time they will have available to devote to this Project. The project superintendent must be dedicated to the Project full time for the duration of the Project. If any other key personnel are not devoted solely to the Project, indicate how time is to be divided between the Project and other assignments. Specifically address how and when individuals currently on other assignments will transition to the Project.
- D. Provide resumes not exceeding two pages for each individual proposed for the key personnel positions and their alternates. Resumes must describe the qualifications of the individual and include the following as a minimum: technical experience, managerial experience, education and formal training, primary language, and a work history which describes project experience, including the roles and responsibilities for each assignment. Additional information highlighting the experience which makes them the best candidate for the assignment should also be included. Focus on projects on which individuals

proposed have had significant involvement in the last 5 years and which demonstrate experience with similar projects.

- E. Identify individuals that will fill one or more of these key roles and describe their ability to handle multiple responsibilities. Provide a written narrative describing the percentage of the time that will be devoted to each role and the qualifications to fulfill each role if an individual is to fulfill more than one of the key personnel roles.
- F. Provide a tabulation of the projects on which the key personnel have been personally involved using copies of Table 7. This tabulation is to include the name and a current telephone number for references for each of these project assignments.
- G. Provide a narrative not to exceed two pages for each project the proposed individuals have worked on that qualify as similar projects. Specifically identify the role and responsibilities of the individual on these similar projects. Projects selected must demonstrate the capabilities of the proposed key personnel.
- H. Provide a narrative not to exceed ten pages to describe the overall performance of the individuals on these projects. This narrative may include references to letters of recommendation, project awards, and other references to demonstrate experience in constructing a project which meets the project owner's expectations for a quality project constructed on time and within budget.

2.04 Offeror's Ability to Complete Projects within the Contract Price and Contract Times:

- A. Provide a tabulation of budget performance on projects completed by Offeror within the last 5 years using copies of Table 8 to demonstrate the ability of the Offeror to complete projects for the Contract Price. Notes may be added to each line item to describe circumstances for change orders beyond the control of Offeror.
- B. Provide a tabulation of all projects completed by Offeror within the last 5 years on Table 9 to demonstrate performance in completing projects on time. Notes may be added to the tabulations to indicate the reasons for not meeting original contract completion dates.

ARTICLE 3 – BID REQUIREMENTS

- 3.01 Provide the Qualifications Statement using the referenced tables and narrative descriptions as described in this Section. Pages are to be 8-1/2 x 11, with a minimum font size of 10. Provide a tab to separate materials responding to each of the rating categories listed in Article 2.
- 3.02 Additional information may be included in appendices attached to the Bid. Each appendix must reference the section of the criteria it is in reference to.
- 3.03 Provide one printed copy of the Bid at the time and place set forth in Section 00 11 16 "Invitation to Bid." Provide a digital copy of the Bid in Portable Document Format (pdf) on a CD. This digital copy is to include all information required to evaluate the Bid.

ARTICLE 4 – FORMS

- 4.01 The following tables are attached to this Section:

Table	Description
1	General Information

Table	Description
2	Current Projects and Project Completed within the last 5 Years
3	Proposed Project Managers
4	Proposed Project Superintendents
5	Proposed Project Safety Managers
6	Proposed Project Quality Control Managers
7	Project Information for Key Personnel
8	Demonstration of Budget Performance
9	Demonstration of On-Time Performance

ARTICLE 5 – CERTIFICATION

- 5.01 By submitting this Qualifications Statement and related information, Offeror certifies that it has read this Qualifications Statement and that the Offeror's responses are true and correct and contain no material misrepresentations, and that the individual signing below is authorized to make this certification on behalf of the Offeror's organization.

Offeror: _____
(typed or printed name of organization)

Signature: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Attest: _____
(individual's signature)

Designated Representative:

Name: _____

Title: _____

Address for giving notices:

Phone: _____ Email: _____

(Attach evidence of authority to sign if Offeror is a corporation, partnership, or a joint venture.)

Table 1 - General Information

Organization			
Legal Name of Business			
Form of Business Entity: ☐ Joint Venture ☐ Corporation ☐ General Partnership ☐ Limited Partnership			
Date Business was formed		State under which Business was formed	
Is this Business authorized to operate in the Project location: ☐ Yes ☐ No ☐ Pending			
Is this Business licensed as a general contractor in the Project location: ☐ Yes ☐ No ☐ Pending ☐ N/A			
List of companies, firms, or organizations that own any part of this Business.			
Name of company, firm, or organization.			Percent ownership
Principal Office			
Primary contact		Main telephone number	
Email address		Website address	
Business address of principal office			
Regional Office			
Primary contact		Main telephone number	
Email address		Website address	
Business address of regional office			
Business History			
List of names that this Business currently has or anticipates operating under over the history of the Business, including the names of related companies presently doing business.			
Names of organization		From date	To date
Indicators of Organization Size			
Average number of current full-time employees			
Average estimate of revenue for the current year			

Table 1 - General Information Cont'd

Previous Contracting Experience			
Years of experience in projects similar to the proposed Project:			
As a general contractor		As a joint venture partner	
Has this organization or a participating or predecessor organization ever been disqualified as a bidder by any local, state, or federal agency within the last 5 years? ☐ Yes* ☐ No			
Has this organization or a participating or predecessor organization ever been barred from contracting by any local, state, or federal agency within the last 5 years? ☐ Yes* ☐ No			
Has this organization or a participating or predecessor organization been released from a bid or proposal in the past 5 years? ☐ Yes* ☐ No			
Has this organization or a participating or predecessor organization ever defaulted on a project or failed to complete any contract awarded to it? ☐ Yes* ☐ No			
Has this organization or a participating or predecessor organization ever refused to construct or refused to provide materials defined in the contract documents or in a change order? ☐ Yes* ☐ No			
Is this organization or a participating or predecessor organization currently involved in any litigation or contemplating litigation? ☐ Yes* ☐ No			
Provide full details in a separate attachment for each statement above with a “yes” response above.			
Previous History with Owner			
List projects that have been completed with the Owner over the last 5 years. If more than 5 projects, list only the most recent.			
	Project Name		Year
1			
2			
3			
4			
5			
Previous Claims History and Litigation Experience			
List all claims or litigation involving owners on other construction projects that have been active over the last 5 years or that are currently unresolved.			
	Description of Claim or Litigation		Status
1			
2			
3			
4			
5			

Table 1 - General Information Cont'd

Surety								
Surety Name								
Mailing address (principal place of business):					Physical address (principal place of business):			
Telephone (main number)					Telephone (claims notices)			
Name of Local Agent for Surety								
Telephone				Email				
Surety is a corporation organized and existing under the laws of the state of								
Is surety authorized to provide surety bonds in the Project location? ☐ Yes ☐ No								
Is surety listed in the U.S. Department of the Treasury's Listing of Approved Sureties (Department Circular 570 "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies")? ☐ Yes ☐ No								
Insurance								
Name of Insurance Provider								
Provider is a corporation organized and existing under the laws of the state of								
Is Provider licensed or authorized to issue insurance policies in the Project location?							☐ Yes ☐ No	
Does Provider have an A.M. Best Rating of A-VIII or Better?							☐ Yes ☐ No	
Mailing Address (principal place of business)								
Physical Address (principal place of business)								
Telephone (main number)								
Telephone (for notice of claims)								
Local Agent for Provider								
Address for Local Agent								
Telephone for Local Agent								
Construction Site Safety Experience								
Provide Offeror's Experience Modification Ratio (EMR) and Total Recordable Frequency Rate (TRFR) for the last 3 years and the EMR and TRFR history for the last 3 years of any proposed Subcontractor that will provide Work valued at 25% or more of the Contract Price.								
Year	Offeror		Subcontractor		Subcontractor		Subcontractor	
	EMR	TRFR	EMR	TRFR	EMR	TRFR	EMR	TRFR
1								
2								
3								

Table 1 - General Information Cont'd

Financial Summary Information for Offeror		
Date of Offeror's most current financial statement		
Date of Offeror's most current audited financial statement		
Financial indicators from the most current financial statement:		
Offeror's Current Ratio = Current Assets ÷ Current Liabilities		
Offeror's Quick Ratio = (Cash and Cash Equivalents + Accounts Receivable + Short Term Investments) ÷ Current Liabilities		
Describe the resources that are available to the Offeror to provide adequate cash flow for the Project if Offeror's Current Ratio or Quick Ratio are less than 1.0:		
Disadvantaged Business Certifications		
Name of Certification	Certifying Agency	Certification Date
☐ Disadvantage Business Enterprise		
☐ Minority Business Enterprise		
☐ Woman Business Enterprise		
☐ Disabled Veteran Owned Business		
☐ Historically Underutilized Business		
☐ Small Business Enterprise		
☐ Other		
☐ None		

Table 3 - Proposed Project Managers

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

Table 4 - Proposed Project Superintendents

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

Table 5 - Proposed Project Safety Managers

Name of Organization			
Primary Candidate			
Name of individual			
Years of experience as project safety manager			
Years of experience with this organization			
Number of similar projects as project safety manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment	Percent of time used for this project	Estimated project completion date	
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Role on project		Role on project	
Alternate Candidate			
Name of individual			
Years of experience as project safety manager			
Years of experience with this organization			
Number of similar projects as project safety manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment	Percent of time used for this project	Estimated project completion date	
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Role on project		Role on project	

Table 6 - Proposed Project Quality Control Managers

Name of Organization			
Primary Candidate			
Name of individual			
Years of experience as quality control manager			
Years of experience with this organization			
Number of similar projects as quality control manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment	Percent of time used for this project	Estimated project completion date	
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Role on project		Role on project	
Alternate Candidate			
Name of individual			
Years of experience as quality control manager			
Years of experience with this organization			
Number of similar projects as quality control manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment	Percent of time used for this project	Estimated project completion date	
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Role on project		Role on project	

Table 7 - Project Information for Key Personnel

Name of Organization						
Provide information on all projects completed by the Organization within the last 5 years.						
Project Owner		Project Name				
General Description of Project						
Project Budget and Schedule Performance						
Budget History	Amount	% of Bid Amount	Schedule Performance	Date	Days	
Original Contract Price			Notice to Proceed			
Change Orders			Contract Substantial Completion Date at Notice to Proceed			
Owner Enhancements			Contract Final Completion Date at Notice to Proceed			
Unforeseen Conditions			Change Order Authorized Substantial Completion Date			
Design Issues			Change Order Authorized Final Completion Date			
Total			Actual / Estimated Substantial Completion Date			
Final Cost			Actual / Estimated Final Completion Date			
Key Project Personnel						
	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager		
Name						
Percentage of time devoted to the project						
Percentage of time proposed for this Project						
Did Individual start and complete the project?						
If not, who started or completed the project in their place?						
Reason for change?						
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)						
	Name	Title/Position	Organization	Telephone	Email	
Owner						
Designer						
Construction Manager						
Surety						
Issues / disputes resolved or pending resolution by arbitration, litigation or dispute review boards						
Number of issues resolved	Total amount involved in resolved issues		Number of issues pending	Total amount involved in issues pending		

Table 8 - Demonstration of Budget Performance

Name of Offeror		Provide information on all projects completed by the Offeror within the last 5 years.						
Owner Name	Project Description	Original Contract Price	Value of Change Orders			Total Change Orders	Percent of Changes to Original Contract Price	
			Owner Enhancements	Unforeseen Conditions	Design Issues			
Notes:								
Notes:								
Notes:								
Notes:								
Notes:								
Notes:								
Notes:								
Notes:								
Notes:								
Notes:								

Provide information on all projects completed by the Organization within the last 5 years.

Provide information on all projects completed by the Organization within the last 5 years.

END OF SECTION

00 52 13 AGREEMENT

This Agreement is between **Parker County** (Owner) and **[name of Contractor to be inserted at time of Contract execution]** (Contractor).

Owner and Contractor agree as follows:

ARTICLE 1 – WORK

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is designated as follows:

East Bankhead Highway Widening From Vernon Road To Fm 1187

ARTICLE 2 – DESIGN PROFESSIONAL

- 2.01 The Design Professional for this Project is:

Dustin Blaylock, P.E.
801 Cherry Street, Suite 2800
Fort Worth, Texas, 76102

ARTICLE 3 – CONSTRUCTION MANAGER

- 3.01 The Construction Manager for this Project is:

Jonathan Capps
801 Cherry Street, Suite 2800
Fort Worth, Texas, 76102

ARTICLE 4 – CONTRACT TIMES

- 4.01 Contract Times

- A. The Base Bid Work is required to be substantially complete within **456 calendar** days after the date when the Contract Times commence to run as provided in the General Conditions and complete and ready for final payment in accordance with the General Conditions within **30 Calendar Days** after the date of Substantial Completion.
- B. Critical Operations, maximum time out of service, and associated liquidated damages are as defined in Section 01 35 00 “Special Procedures.”

- 4.02 Liquidated Damages

- A. Owner and Contractor recognize that the Contract Times specified for **Critical Operations, and Substantial Completion** and Final Completion are of the essence in the Contract. Owner and Contractor recognize that the Owner will suffer financial loss if the Work is not completed within the Contract Times specified in this **Agreement and in Section 01 35 00 “Special Procedures”** as may be adjusted in accordance with the General Conditions. Owner and Contractor also recognize the delays, expense, and difficulties involved in

proving in a legal or arbitration preceding the actual loss suffered by Owner if the Work is not completed within the Contract Times. Accordingly, instead of requiring proof of the amount of these damages, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Contractor agrees to pay Owner **\$2,500** for each calendar day that expires after the time specified in this Agreement for Substantial Completion until the Work is substantially complete.
 2. Contractor agrees to pay Owner **\$2,500** for each calendar day that expires after the time specified in this Agreement for Final Completion until the Work is completed and ready for final payment in accordance with the General Conditions.
 3. Contractor agrees to pay Owner **\$2,500** for each calendar day that expires after the time specified in the Agreement and in Section 01 35 00 “Special Procedures” until the Work is completed and ready for final payment in accordance with the General Conditions.
- B. Liquidated damages for failing to timely attain Substantial Completion and Final Completion are not additive and will not be imposed concurrently.
- C. as stipulated in Section 01 35 00 “Special Procedures” for failure to meet Contract Times for Critical Operations.
- D. OPT will determine whether the Work has been completed within the Contract Times. Assessment of liquidated damages by the Owner does not waive the Owner’s right to assess or collect additional damages which the Owner may sustain by the failure of the Contractor to perform in accordance with the terms of the Contract.

ARTICLE 5 – CONTRACT PRICE

- 5.01 Owner will pay Contractor for completion of the Work in accordance with the Contract Documents at the prices shown in this Agreement. The Contract Price has been computed in accordance with the General Conditions. Contractor acknowledges that for unit price items, estimated quantities are not guaranteed and are solely for the purpose of comparing Bids, and that final payment will be based on actual quantities determined in accordance with the Contract Documents.

ARTICLE 6 – PAYMENT PROCEDURES

- 6.01 Submit Applications for Payment in accordance with the General Conditions. Applications for Payment will be processed by the Construction Manager per Section 01 29 00 “Application for Payment Procedures.”
- 6.02 Owner will make progress payments within 30 days of receiving the recommendation of progress payment from the Engineer and/or Construction Manager. Payment is based on the total earned value of Work completed in the previous month in accordance with the Schedule of Values established as provided in the General Conditions.
- 6.03 Payment will be made for the total earned value of Work completed in the previous month after deducting:
- A. Retainage calculated per this Agreement;

- B. Set-offs determined in accordance with the General Conditions; and
- C. The total amount of payments previously made.

6.04 Retainage

- A. Progress payments will be made in an amount equal to 95 percent of the total earned value to date for completed Work and properly stored materials. The remaining 5 percent of the total earned value to date will be held as retainage in accordance with Tex. Transp. Code Chapter 223.

6.05 Release or reduction in retainage is contingent upon the consent of surety to the reduction in retainage. Submit a Consent of Surety Company to Reduction of or Partial Release of Retainage form as provided by or approved by the Construction Manager.

6.06 Owner will pay the remainder of the Contract Price as recommended by Construction Manager in accordance with the General Conditions upon Final Completion and acceptance of the Work.

ARTICLE 7 – PAYMENT OF INTEREST

7.01 All moneys not paid when due as provided in the General Conditions will earn interest at the rate specified in Tex. Gov't Code Chapter 2251. Interest accrual will cease upon payment by the Owner.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 The Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied the following Site related reports and drawings as identified in the Supplementary Conditions:
 - 1. Geotechnical Data Reports regarding subsurface conditions at or adjacent to the Site;
 - 2. Drawings of physical conditions relating to existing surface or subsurface structures at the Site;
 - 3. Underground Facilities referenced in reports and drawings;
 - 4. Reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site; and
 - 5. Technical Data related to each of these reports and drawings.
- E. Contractor has considered the:
 - 1. Information known to Contractor;
 - 2. Information commonly known to contractors doing business in the locality of the Site;

3. Information and observations obtained from visits to the Site; and
 4. The Contract Documents.
- F. Contractor has considered the items identified in this Article with respect to the effect of such information, observations, and documents on:
1. The cost, progress, and performance of the Work;
 2. The means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and
 3. Contractor's safety precautions and programs.
- G. Based on the information and observations referred to in the preceding paragraphs, 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 Documents.
- H. 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.
- I. Contractor has correlated the information known to the Contractor reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- J. Contractor has given the Construction Manager written notice of all conflicts, errors, ambiguities, or discrepancies that the Contractor has discovered in the Contract Documents, and the written resolution provided by the Construction Manager is acceptable to the Contractor.
- K. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- L. Contractor's entry into this Agreement constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – ACCOUNTING RECORDS

- 9.01 Accounting Record Availability: Contractor is to establish and maintain, in accordance with generally accepted accounting practices, full and detailed accounting records of materials incorporated into the Project, and labor, tools, materials, and equipment used for the Work, consistent with the requirements of the General Conditions and as necessary for proper financial management under this Agreement. Subject to prior written notice, provide Owner reasonable access during normal business hours to Contractor's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and the Contractor's fee. Preserve all such documents for a period of 3 years after the final payment by the Owner.

ARTICLE 10 – OTHER REQUIREMENTS

10.01 Workers' Compensation Insurance

- A. By signing this Agreement, Contractor certifies that it provides workers' compensation insurance coverage for all employees employed on this Project pursuant to Tex. Lab. Code Section 406.096(a).
- B. As required by Section 406.096(b), Contractor must require each Subcontractor to certify in writing to the Contractor that the Subcontractor provides workers' compensation insurance coverage for all of the employees it employs on this Project. Contractor must provide these certifications to the Owner within **[10]** days of the Effective Date of the Agreement.

10.02 Contracts Prohibited by Tex. Gov't Code Chapter 2155

- A. Section 2155.004:
 - 1. Section 2155.004 states that "a state agency may not accept a bid or award a contract that includes proposed financial participation by a person who received compensation from the agency to participate in preparing the specifications or request for proposals on which the bid or contract is based."
 - 2. Under Section 2155.004, Government Code, Contractor certifies that the individual or business entity named in this bid or contract is not ineligible to receive the specified Contract and acknowledges that this Contract may be terminated and payment withheld if this certification is inaccurate.
- B. Section 2155.006:
 - 1. Section 2155.006 states that "a state agency may not accept a bid or award a contract, including a contract for which purchasing authority is delegated to a state agency, that includes proposed financial participation by a person who, during the five-year period preceding the date of the bid or award, has been: (1) convicted of violating a federal law in connection with a contract awarded by the federal government for relief, recovery, or reconstruction efforts as a result of Hurricane Rita, as defined by Section 39.459, Utilities Code, Hurricane Katrina, or any other disaster occurring after September 24, 2005; or (2) assessed a penalty in a federal civil or administrative enforcement action in connection with a contract awarded by the federal government for relief, recovery, or reconstruction efforts as a result of Hurricane Rita, as defined by Section 39.459, Utilities Code, Hurricane Katrina, or any other disaster occurring after September 24, 2005.
 - 2. Under Section 2155.006, Government Code, Contractor certifies that the individual or business entity named in this bid or contract is not ineligible to receive the specified Contract and acknowledges that this Contract may be terminated and payment withheld if this certification is inaccurate.

10.03 Prohibition on Contracts with Companies Engaged in Business with Iran, Sudan, or Foreign Terrorist Organizations

- A. Tex. Gov't Code Chapter 2252, Subchapter F, prohibits the award of governmental contracts to companies engaged in business with Iran, Sudan, or foreign terrorist organizations.

- B. By signing this Agreement, Contractor certifies that it is not ineligible to be awarded this Contract under Chapter 2252, Subchapter F.

10.04 Prohibition on Contracts with Certain Companies that Boycott Israel

- A. Tex. Gov't Code Chapter 2271 prohibits a governmental entity from entering into a contract with a company for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the contract.
- B. By signing this Agreement, Contractor certifies that it does not boycott Israel and will not boycott Israel during the term of this Contract.

10.05 Prohibition on Contracts with Companies That Discriminate Against Firearm and Ammunition Industries

- A. Tex. Gov't Code Chapter 2274 prohibits a governmental entity from entering into a contract with a company for goods or services unless the contract contains a written verification from the company that it: (1) does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association.
- B. By signing this Agreement, Contractor certifies that it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and will not discriminate against a firearm entity or firearm trade association during the term of the contract.

10.06 Prohibition on Contracts with Certain Foreign-Owned Companies in Connection with Critical Infrastructure

- A. Tex. Gov't Code Chapter 2275 prohibits a governmental entity from entering into certain contracts or other agreements relating to critical infrastructure if the governmental entity knows that the company has ownership interests held or controlled by citizens or the governments of China, Iran, North Korea, Russia or other countries designated by the State of Texas.
- B. By signing this Agreement, Contractor certifies that it is not ineligible to be awarded this Contract under this Chapter 2275.

10.07 Prohibition on Contracts with Companies Boycotting Certain Energy Companies

- A. Tex. Gov't Code Chapter 2276 prohibits a governmental entity from entering into a contract with a company for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott energy companies; and (2) will not boycott energy companies during the term of the contract.
- B. By signing this Agreement, Contractor certifies that it does not boycott energy companies and will not boycott energy companies during the term of this Contract.

10.08 Certificate of Interested Parties: Contractor must complete and submit a Certificate of Interested Parties (Form 1295) to the Owner with the signed Agreement as required by Tex. Gov't Code Section 2252.908.

ARTICLE 11 – VENUE

- 11.01 This Agreement shall be administered and interpreted under the laws of the State of Texas. Contractor agrees that venue lies exclusively in **Parker** County, Texas for any legal action.

ARTICLE 12 – CONTRACT DOCUMENTS

12.01 Contract Documents

- A. Specifications Sections listed in Section 00 01 10 “Table of Contents” except as specifically excluded in Paragraph **[12.02]**.
- B. Drawings listed in the **Sheet Index on the Drawings**.
- C. Addenda (Numbers 00 91 01 to 00 91 **[Insert last addenda no. prior to execution]**, inclusive).
- D. The following are also Contract Documents which may be delivered or issued on or after the Effective Date of the Contract:
 - 1. Notice to Proceed.
 - 2. Contract Amendment(s).
 - 3. Change Order(s).
 - 4. Field Order(s).
 - 5. Work Change Directive(s).
- E. There are no Contract Documents other than those listed above in this Paragraph. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

12.02 Bidding Requirements and Informational Documents

- A. The following Bidding Requirements are not Contract Documents:
 - 00 01 01 Project Cover Sheet
 - 00 01 10 Table of Contents
 - 00 11 16 Invitation to Bid
 - 00 21 13 Instructions to Offerors
 - 00 41 13 Bid Form
 - 00 41 16 Bid Form Exhibit A
 - 00 43 13 Bid Bond
 - 00 45 01 Nonresident Bidders
 - 00 45 02 Non-Collusion Certification
 - 00 45 03 Conflict of Interest Questionnaire
 - 00 45 04 State Sales Tax Requirements
 - 00 45 13 Qualifications Statement

The Effective Date of the Contract is **[date to be inserted at the time of contract execution]**.

Owner: _____ Contractor: _____
(typed or printed) *(typed or printed)*

By: _____ By: _____
(individual's signature) *(individual's signature)*

Name: _____ Name: _____
(typed or printed) *(typed or printed)*

Title: _____ Title: _____
(typed or printed) *(typed or printed)*
(Attach evidence of authority to sign)

Address for giving notice: _____ Address for giving notice: _____

Designated representative: _____ Designated representative: _____

Name: _____ Name: _____

Title: _____ Title: _____

Address: _____ Address: _____

Phone: _____ Phone: _____

Email: _____ Email: _____

END OF SECTION

00 61 13 PERFORMANCE BOND

Contractor as Principal Name: Mailing address (principal place of business):	Surety Name: Mailing address (principal place of business):
Owner Name: Parker County, Texas Mailing address (principal place of business): 1 Court House Square Weatherford, Texas 76086	Physical address (principal place of business): Telephone (Main): Telephone (Claims): Surety's state of incorporation:
Contract Project name: East Bankhead Highway Widening From Vernon Road to FM 1187 Project number: PRK24109 Contract Price: Effective Date of Contract:	<i>By submitting this bond, Surety affirms that it is licensed to provide and execute this bond and authorized to do business in Texas.</i>
Bond Bond Amount: 100 percent of Contract Price Date of Bond: (Date of Bond cannot be earlier than Effective Date of Contract)	Local Agent for Surety Name: Mailing address (principal place of business): Telephone (Main): <i>The address of the surety company to which any notice of claim should be sent may be obtained from the Texas Dept. of Insurance by calling the following toll-free number: 1-800-252-3439.</i>

Surety and Contractor, intending to be legally bound and obligated to Owner, do each cause this performance bond to be duly executed on its behalf by its authorized officer, agent, or representative. The Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally to this bond. The condition of this obligation is such that if the Contractor as Principal faithfully performs the Work required by the Contract then this obligation will be null and void; otherwise the obligation is to remain in full force and effect. Provisions of this bond shall be pursuant to the terms and provisions of Texas Government Code Chapter 2253 as amended and all liabilities on this bond shall be determined in accordance with the terms and provisions of said Chapter to the same extent as if it were copied at length herein. Venue lies exclusively in Parker County, Texas for any legal action.

Contractor as Principal

Signature: _____

Name: _____

Title: _____

Email: _____

Surety

Signature: _____

Name: _____

Title: _____

Email: _____

(Attach Power of Attorney and place surety seal below)

END OF SECTION

00 61 16 PAYMENT BOND

Contractor as Principal Name: Mailing address (principal place of business):	Surety Name: Mailing address (principal place of business):
Owner Name: Parker County, Texas Mailing address (principal place of business): 1 Court House Square Weatherford, Texas 76086	Physical address (principal place of business): Telephone (Main): Telephone (Claims):
Contract Project name: East Bankhead Highway Widening From Vernon Road to FM 1187 Project number: PRK24109 Contract Price: Effective Date of Contract:	Surety's state of incorporation: <i>By submitting this bond, Surety affirms that it is licensed to provide and execute this bond and authorized to do business in Texas.</i> Local Agent for Surety Name: Mailing address (principal place of business):
Bond Bond Amount: 100 percent of Contract Price Date of Bond: (Date of Bond cannot be earlier than Effective Date of Contract)	Telephone (Main): <i>The address of the surety company to which any notice of claim should be sent may be obtained from the Texas Dept. of Insurance by calling the following toll-free number: 1-800-252-3439.</i>

Surety and Contractor intending to be legally bound and obligated to Owner do each cause this payment bond to be duly executed on its behalf by its authorized officer, agent, or representative. The Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally to this bond. The condition of this obligation is such that if the Contractor as Principal pays all claimants providing labor or materials to Contractor or to a Subcontractor in the prosecution of the Work required by the Contract then this obligation will be null and void; otherwise the obligation is to remain in full force and effect. Provisions of the bond shall be pursuant to the terms and provisions of Texas Government Code Chapter 2253 as amended and all liabilities on this bond shall be determined in accordance with the terms and provisions of said Chapter to the same extent as if it were copied at length herein. Venue lies exclusively in Parker County, Texas for any legal action.

Contractor as Principal

Signature: _____

Name: _____

Title: _____

Email: _____

Surety

Signature: _____

Name: _____

Title: _____

Email: _____

(Attach Power of Attorney and place surety seal below)

END OF SECTION

Contractor as Principal Name: Mailing address (principal place of business):	Surety Name: Mailing address (principal place of business):
Owner Name: Parker County, Texas Mailing address (principal place of business): 1 Court House Square Weatherford, Texas 76086	Physical address (principal place of business): Telephone (Main): Telephone (Claims):
Contract Project name: East Bankhead Highway Widening From Vernon Road to FM 1187 Project number: PRK24109 Contract Price: Effective Date of Contract:	Surety's state of incorporation: <i>By submitting this bond, Surety affirms it is authorized to do business and licensed to execute bonds in the state where the Project is located.</i>
Bond Bond Amount: 100 percent of Contract Price Bond Duration: 1 year beginning at end of 1 year correction period Bond Date: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i>	Local Agent for Surety Name: Mailing address (principal place of business): Telephone (Main):

Surety and Contractor, intending to be legally bound and obligated to Owner do each cause this maintenance bond to be duly executed on its behalf by its authorized officer, agent, or representative. Surety and Contractor bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally to this bond. The condition of this obligation is such that if the Contractor faithfully performs maintenance work required by the Contract Documents then this obligation will be null and void; otherwise the obligation is to remain in full force and effect. Provisions of the bond shall be pursuant to the terms and provisions of the Contract Documents with regard to the continued maintenance of the Project for the period specified in the Contract Documents. All liabilities on this bond will be determined in accordance with the provisions of said Contract Documents to the same extent as if they were copied at length herein. This Agreement shall be administered and interpreted under the laws of the state where the Project is located. Venue lies exclusively in Parker County for any legal action.

Contractor as Principal	Surety
Signature: _____	Signature: _____
Name: _____	Name: _____
Title: _____	Title: _____
Email: _____	Email: _____ (Attach Power of Attorney)

END OF SECTION

00 61 20 MAINTENANCE BOND REQUIREMENTS

ARTICLE 1 – MAINTENANCE BOND REQUIREMENTS

- 1.01 Provide a maintenance bond that complies with the requirements of this Section. A maintenance bond is defined as a performance bond that extends the correction period for a specified period of time beyond the one-year correction period described in the General Conditions.
- 1.02 Provide a maintenance bond that begins at the end of the one-year correction period and continues for the period stated in Section 00 61 19 “Maintenance Bond.”
- 1.03 Provide a maintenance bond in the amount stated in Section 00 61 19 “Maintenance Bond.”
- 1.04 Provide a maintenance bond that meets the same requirements for bonds as the Contractor’s performance bond as described in the Contract Documents.
- 1.05 Surety for the maintenance bond must meet the same requirements for the performance and payment bonds as set forth in the General Conditions.
- 1.06 Indemnification provisions of the General Conditions apply to the maintenance bond period.

ARTICLE 2 – DOCUMENTATION

- 2.01 Provide a maintenance bond using the form provided in Section 00 61 19 “Maintenance Bond.”
- 2.02 Comply with the requirements of Section 01 70 00 “Execution and Closeout Requirements.”

ARTICLE 3 – CORRECTIVE ACTION DURING THE MAINTENANCE BOND PERIOD

- 3.01 Correct Defective Work during the one-year correction period in accordance with the General Conditions.
- 3.02 Correct Defective Work during the maintenance bond period just as required for the one-year correction period specified in the General Conditions. Provide labor and materials required to correct Defective Work or correct Work that does not function as required by the Contract Documents.
- 3.03 Correction of Defective Work during the maintenance bond period does not extend the correction period as is required under the provisions of the one-year correction period described in the General Conditions.
- 3.04 Promptly correct damages to the Site or adjacent areas that Contractor has arranged to use through construction easements or other agreements. Promptly correct damages to the Work or the work of others. Make the corrections without cost to Owner.
- 3.05 Owner may correct Defective Work without notice to Contractor in an emergency where delay would cause serious risk of loss or damage.
- 3.06 Include the cost for correcting Defective Work during the maintenance bond period in the Contract Price. Include all costs associated with providing the maintenance bond in the Contract Price.
- 3.07 Reimburse Owner for engineering and special services required to be furnished by Owner which are directly attributable to the corrective Work.

3.08 Remedy for Failure to Correct Defective Work:

- A. Owner may correct Defective Work if Contractor fails or refuses to perform corrective Work within 10 days after Owner notifies Contractor of Defective Work.
- B. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this paragraph are to be paid by Contractor or its surety. These claims, costs, losses, and damages include costs of repair and the cost of replacement of work of others destroyed or damaged by correction, removal, or replacement of the Contractor's Defective Work. Owner is not required to obtain the lowest price for the Work performed when exercising its rights or remedies under this paragraph.

ARTICLE 4 – INSURANCE REQUIREMENTS

- 4.01 Provide insurance as required by the Contract Documents during the maintenance bond period. Provide evidence of insurance prior to beginning corrective Work if evidence of insurance is not current.

END OF SECTION

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

- A. A term with initial capital letters, including the term's singular and plural forms, has the meaning indicated in this Paragraph wherever used in the Bidding Requirements or Proposal Requirements or Contract Documents. In addition to the terms specifically defined, terms with initial capital letters in the Contract Documents may include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Documents issued prior to the receipt of Bids or Proposals which clarify or modify the Bidding Requirements/Proposal Requirements or the proposed Contract Documents.
 2. *Agreement*—The document signed by Owner and Contractor that establishes the Contract Price and Contract Times, and designates the specific documents that are Contract Documents.
 3. *Application for Payment*—The documents used by Contractor to request payments from Owner and the supporting documentation required by the Contract Documents.
 4. *Bid; Proposal*—An offer submitted to Owner for the Project setting forth the Contract Price and Contract Times for the Work to be performed.
 5. *Bidding Documents; Proposal Documents*—The Bidding Requirements or Proposal Requirements, the proposed Contract Documents, and Addenda.
 6. *Bidding Requirements; Proposal Requirements*—The Invitation to Bid or Request for Proposals, Instructions to Offerors, Bid Security or Proposal Security, Bid Form or Proposal Form and attachments, and required certifications and affidavits.
 7. *Bid Security; Proposal Security*—The financial security provided by Offeror at the time the Bid or Proposal is submitted and held by Owner until the Agreement is executed and the evidence of insurance and bonds required by the Contract Documents are provided.
 8. *Change Order*—A document issued on or after the Effective Date of the Contract and signed by Owner and Contractor which modifies the Work, Contract Price, Contract Times, or terms and conditions of the Contract.
 9. *Change Proposal*—A document submitted by Contractor in accordance with the requirements of the Contract Documents:
 - a. Requesting an adjustment in Contract Price or Contract Times;
 - b. Contesting an initial decision concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents;
 - c. Challenging a Set-off against payment due; or
 - d. Seeking other relief with respect to the terms and conditions of the Contract.
 10. *Claim*—A demand or assertion by Owner or Contractor submitted in accordance with the requirements of the Contract Documents. A demand for money or services by an entity other than Owner or Contractor 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. *Construction Manager*—The individual or entity named as Construction Manager in the Agreement and the consultants, subconsultants, individuals, or entities directly or indirectly employed or retained by them to provide construction management as advisor services to Owner.
13. *Construction Manager at Risk (CMAR)*—The individual or entity selected by Owner to construct the Project using the Construction Manager at Risk project delivery method. The term Contractor means Construction Manager at Risk in the Contract Documents when the Construction Manager at Risk project delivery method is used.
14. *Contract*—The entire integrated set of documents concerning the Work and describing the relationship between the Owner and Contractor.
15. *Contract Amendment*—A document issued on or after the Effective Date of the Contract and signed by Owner and Contractor which:
 - a. Authorizes new phases of the Work and establishes the Contract Price, Contract Times, or terms and conditions of the Contract for the new phase of Work; or
 - b. Modifies the terms and conditions of the Contract, but does not make changes in the Work.
16. *Contract Documents*—Those items designated as Contract Documents in the Agreement.
17. *Contract Price*—The monetary amount stated in the Agreement and as adjusted by Modifications, and increases or decreases in unit price quantities, if any, that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
18. *Contract Times*—The number of days or the dates by which Contractor must achieve specified Milestones, achieve Substantial Completion, and complete the Work.
19. *Contractor*—The individual or entity with which Owner has contracted to perform the Work.
20. *Contractor's Team*—Contractor, Subcontractors, Suppliers, and individuals or entities directly or indirectly employed or retained by Contractor, Subcontractors, or Suppliers to perform part of the Work, or anyone for whose acts they may be liable.
21. *Cost of the Work*—The sum of costs incurred for the performance of the Work as allowed by Article 13.
22. *Day*—A day of 24 hours measured from midnight to the next midnight.
23. *Defective*—When applied to Work, refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. Does not conform to the Contract Documents;

- b. Does not meet the requirements of applicable inspections, reference standards, tests, or approvals referred to in the Contract Documents; or
 - c. Has been damaged prior to Construction Manager's recommendation of final payment unless responsibility for the protection of the Work has been assumed by Owner at Substantial Completion in accordance with Article 15.
24. *Design Professional*—The individuals or entity named as the Architect or Engineer in the Agreement and the subconsultants, individuals, or entities directly or indirectly employed or retained by Design Professional to provide design or other technical services to Owner. Design Professional has responsibility for design and technical issues related to the Contract Documents.
25. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work. Shop Drawings and other documents generated by Contractor's Team are not Drawings.
26. *Effective Date of the Contract*—The date indicated in the Agreement on which the Contract becomes effective.
27. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including Shop Drawings and other Submittals, that are in an electronic or digital format.
28. *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.
29. *Field Order*—A document issued by Construction Manager or Design Professional requiring changes in the Work that do not change the Contract Price or the Contract Times.
30. *Final Completion*—The point where the Work is complete in accordance with the Contract Documents, items and documents required by the Contract Documents have been accepted by Owner and the Project is ready for Final Payment.
31. *Guaranteed Maximum Price (GMP)*—The maximum amount to be paid by Owner for the sum of the Cost of the Work plus Contractor's fee as set forth in the Agreement, subject to increases or decreases for changes in the Work, when the Construction Manager at Risk project delivery method is used.
32. *Hazardous Environmental Condition*—The presence of Constituents of Concern at the Site in quantities or circumstances that may present a danger to persons or property exposed to Constituents of Concern. The presence of Constituents of Concern at the Site necessary for the execution of the Work or to be incorporated into the Work is not a Hazardous Environmental Condition provided these Constituents of Concern are

controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract.

- a. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - b. 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.
33. *Indemnified Costs*—All costs, losses, judgments, and damages resulting from claims or demands against Owner’s Indemnitees. These costs include fees for design professionals, attorneys, and other professionals and any legal, court, arbitration, or other dispute resolution costs.
 34. *Laws and Regulations; Laws or Regulations*—Applicable laws, statutes, rules, regulations, ordinances, codes, permits, and binding decrees, resolutions, and orders of governmental bodies, agencies, authorities, and courts having jurisdiction over the Project.
 35. *Liens*—Charges, security interests, or encumbrances upon Contract related funds, real property, or private property.
 36. *Manufacturer*—The individual or entity that designs, casts, fabricates, manufactures, assembles, tests, and provides materials or equipment to be incorporated in the Work.
 37. *Milestone*—A principal event in the performance of the Work that Contractor is required by Contract to complete by a specified date or within a specified time.
 38. *Modification*—Change made to the Contract Documents by Contract Amendment, Change Order, Field Order, or Work Change Directive.
 39. *Notice of Award*—The notice of Owner’s acceptance of the Successful Offeror’s Bid or Proposal.
 40. *Notice to Proceed*—A notice to Contractor of the Contract Times and the date Work is to begin.
 41. *Offeror*—An individual or entity that submits a Bid or Proposal to Owner.
 42. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
 43. *Owner’s Budget*—The amount budgeted by Owner for the construction of the Project.
 44. *Owner’s Indemnitees*—Each member of OPT and their officers, directors, members, partners, employees, agents, consultants, and subcontractors.
 45. *Owner’s Project Team (OPT)*—The Owner, Design Professional, Construction Manager, and the other entities identified in the Supplementary Conditions and the consultants, subconsultants, individuals or entities directly or indirectly employed or retained by them to provide services to Owner.

46. *Progress Schedule*—A schedule prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
47. *Project*—The total undertaking to be accomplished for Owner under the Contract Documents.
48. *Project Construction Manager (PCM)*—The authorized representative of OPT assigned to assist Construction Manager at the Site. The term Project Construction Manager includes assistants and field staff of Construction Manager.
49. *Project Management Information System (PMIS)*—The online project management system that will be used by OPT and Contractor to submit and share documentation and other related communications and information for this Project.
50. *Samples*—Physical examples of materials, equipment, or workmanship representing some portion of the Work that are used to establish the standards for that portion of the Work.
51. *Schedule of Anticipated Payments*—A detailed tabulation, prepared and maintained by Contractor, showing the anticipated amount of each Application for Payment and the month in which they will be submitted.
52. *Schedule of Submittals*—A detailed tabulation, prepared and maintained by Contractor, of each required submittal and the time requirements for review and approval of each submittal.
53. *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 Contractor’s Applications for Payment.
54. *Set-off*—A reduction in payment due to Contractor under Article 15.
55. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by Contractor’s Team 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.
56. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed. The Site includes rights-of-way, easements, and other lands or areas furnished by Owner which are designated for use by Contractor.
57. *Specifications*—The part of the Contract that describes the requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
58. *Subcontractor*—An individual or entity having a direct contract with Contractor or with other Subcontractors or Suppliers for the performance of a part of the Work.
59. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Construction Manager, or that is indicated as a Submittal in the Schedule of Submittals accepted by Construction Manager. Submittals, whether approved or accepted by OPT, are not Contract Documents.

- 60. *Substantial Completion*—The point where the Work or a specified part of the Work is sufficiently complete to be used for its intended purpose in accordance with the Contract Documents.
- 61. *Successful Offeror*—The Offeror to which Owner awards the Contract.
- 62. *Supplementary Conditions*—The part of the Contract that amends or supplements the General Conditions.
- 63. *Supplier*—A Manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with Subcontractors or other Suppliers to furnish materials or equipment to be incorporated in the Work.
- 64. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions with respect to either:
 - a. Existing subsurface conditions at or adjacent to the Site;
 - b. Existing physical conditions at or adjacent to the Site including existing surface or subsurface structures at the Site, except Underground Facilities; or
 - c. Hazardous Environmental Conditions at the Site.
- 65. *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 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.
- 66. *Unit Price Work*—Work to be paid for based on unit prices.
- 67. *Work*—The construction of the Project or its component parts as required by the Contract Documents. Work includes and is the result of performing and providing all labor, services, and documentation to construct the Project; providing all materials and equipment to be incorporated into the Project, and providing related services for testing, startup and commissioning, all as required by the Contract Documents.
- 68. *Work Change Directive*—A directive issued to Contractor on or after the Effective Date of the Contract ordering an addition, deletion, or revision in the Work. The Work Change Directive serves as a memorandum of understanding regarding the directive until a Change Order can be issued.

1.02 Terminology

- A. The words and terms discussed in this Paragraph 1.02 are not defined terms that require initial capital letters, but when used in the Bidding Requirements or Proposal Requirements or Contract Documents, have the indicated meaning.
- B. Contract Documents are written using imperative language:
 - 1. Simple imperative sentence structure is used which places a verb as the first word in the sentence. It is understood that the words “furnish,” “install,” “perform,” “provide,”

or similar words include the meaning of the phrase "Contractor shall..." before these words.

2. Unless specifically stated that action is to be taken by OPT or others, it is understood that the action described is a requirement of Contractor.
- C. The use of the words "furnish," "install," "perform," and "provide" have the following meanings when used relating to services, materials, or equipment:
1. Furnish means to supply and deliver the specified services, materials, or equipment to the Site or other specified location ready for use or installation.
 2. Install means to complete construction or assembly of the specified services, materials, or equipment so they are ready for their intended use.
 3. Perform or provide means to furnish and install specified services, materials, or equipment, complete and ready for their intended use.
 4. Perform or provide the specified services, materials, or equipment complete and ready for intended use if the Contract Documents require specific services, materials, or equipment, but do not expressly use the words "furnish," "install," "perform," or "provide."
- D. The meaning and intent of certain terms or adjectives are described as follows:
1. The terms "as allowed," "as approved," "as ordered," "as directed," or similar terms in the Contract Documents indicate an exercise of professional judgment by OPT.
 2. Adjectives like "reasonable," "suitable," "acceptable," "proper," "satisfactory," or similar adjectives are used to describe a determination of OPT regarding the Work.
 3. Any exercise of professional judgment by OPT will be made solely to evaluate the Work for general compliance with the Contract Documents unless there is a specific statement in the Contract Documents indicating otherwise.
 4. The use of these or similar terms or adjectives does not assign a duty or give OPT authority to supervise or direct the performance of the Work, or assign a duty or give authority to OPT to undertake responsibilities contrary to the provisions of Article 9, Article 10 or other provisions of the Contract Documents.
- E. Requirements apply to all Work of the same kind, class, and type even though the word "all" or "any" is not stated.
- F. The terms "includes" and "including" are used as terms of enlargement and not of limitation or exclusive enumeration, and use of these terms does not create a presumption that components not expressed are excluded. The terms "consist of" or "consisting of" limits the interpretation to only those items specifically listed.
- G. It is understood that the cost of providing Work is included in the Contract Price and no additional compensation is to be paid by Owner unless specifically stated otherwise in the Contract Documents. Expressions like "at no additional cost to Owner," "at Contractor's expense," or similar words mean that Contractor is to include the cost of this Work in their Contract Price and perform or provide specified Work without an increase in the Contract Price.

- H. Words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with this recognized meaning unless stated otherwise in the Contract Documents.
- I. Written documents are required where reference is made to notices, reports, approvals, consents, statements, instructions, opinions, or other types of documentation or communications required by the Contract Documents. Approval and consent documents must be received by Contractor prior to the action or decision for which approval or consent is given. These may be made in printed or electronic format through OPT's Project Management Information System or other electronic media as required by the Contract Documents or approved by Construction Manager.
- J. Giving notice as required by the Contract Documents may be by printed or electronic media using a method that requires acknowledgment of the receipt of that notice.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

- A. Provide required bonds and evidence of insurance required by the Contract Documents to Construction Manager with the executed Agreement.
- B. Evidence of insurance must include copies of the insurance policies, including all endorsements, and identification of applicable self-insured retentions and deductibles. Contractor 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

- A. OPT will furnish one copy of the executed Contract Documents in electronic portable document format (PDF). This document is the Project Record Copy of the Contract Documents.

2.03 Before Starting Construction

- A. Provide the following preliminary documents in accordance with the Contract Documents within 10 days after the Effective Date of the Contract:
 - 1. Progress Schedule;
 - 2. Schedule of Submittals;
 - 3. Schedule of Values; and
 - 4. Schedule of Anticipated Payments.
- B. Designate the specific individuals authorized to act as representatives of Contractor. These individuals must have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of Contractor.
- C. Owner will designate the specific individuals authorized to act as representatives of Owner and the limits of their authority regarding acting on behalf of Owner.

2.04 Electronic Transmittals

- A. Except as otherwise stated elsewhere in the Contract Documents, the OPT and Contractor will send and accept Electronic Documents sent by Electronic Means using the protocols specified in Section 01 33 00 "Document Management."

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 Intent

- A. Requirements of each part of the Contract Documents are as binding as if required by all Contract Documents. It is the intent of the Contract Documents to describe a functionally complete project. The Contract Documents do not indicate or describe all the Work required to complete the Project. Additional details required for construction of the Project are to be provided by Contractor and coordinated with OPT.
- B. Provide the labor, documentation, services, materials, or equipment that may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result, whether specifically called for in the Contract Documents or not. Include these related costs in the offered Contract Price.
- C. Provide equipment that is functionally complete as described in the Contract Documents. The Drawings and Specifications do not indicate or describe all the Work required to complete the installation of equipment purchased by the Owner or Contractor. Additional details required for the correct installation of selected equipment are to be provided by Contractor and coordinated with Design Professional through Construction Manager.
- D. Comply with the most stringent requirements where compliance with two or more standards is specified and they establish different or conflicting requirements for the Work, unless the Contract Documents indicate otherwise.
- E. Provide materials and equipment comparable in quality to similar materials and equipment incorporated in the Project or as required to meet the minimum requirements of the application if the materials and equipment are shown in the Drawings but are not included in the Specifications.
- F. The Project Record Copy of the Contract Documents governs if there is a discrepancy between the Project Record Copy of the Contract Documents and subsequent electronic or digital versions of the Contract Documents, including printed copies derived from these electronic or digital versions.
- G. The Contract supersedes all prior written or oral negotiations, representations, and agreements. The Contract Documents comprise the entire Agreement between Owner and Contractor. The Contract Documents may be modified only by a Modification.
- H. Request clarification from Construction Manager for a decision before proceeding if Contractor is not clear on the meaning of the Contract Documents. Construction Manager is to issue clarifications and interpretations of the Contract Documents in accordance with the Contract Documents.

I. Organization of the Documents:

1. Organization of the Contract Documents is not intended to control or lessen the responsibility of Contractor when dividing Work among Subcontractors or Suppliers, or to establish the extent of Work to be performed by trades, Subcontractors, or Suppliers, except on multi-prime contracts. Specifications or details do not need to be indicated or specified in each Specification or Drawing. Items shown in the Contract Documents are applicable regardless of their location in the Contract Documents.
2. Standard Paragraph titles and other identifications of subject matter in the Specifications are intended to aid in locating and recognizing various requirements of the Specifications. Titles do not define, limit, or otherwise restrict Specification text.
3. The Contract requirements described in the General Conditions, Supplementary Conditions, and General Requirements (Division 01 of the Specifications) apply to Work regardless of where it is described in the Contract Documents, unless specifically noted otherwise.
4. Specifications or details do not need to be indicated or specified in each Specification or Drawing. Items shown in the Contract Documents are applicable regardless of their location in the Contract Documents.

J. 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.

K. Nothing in the Contract Documents creates:

1. a contractual relationship between OPT 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. an obligation on the part of OPT 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. Standard Specifications, Codes, Laws and Regulations:

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of technical societies, organizations, or associations, or to Laws or Regulations, whether specific or implied, are those in effect at the time Contractor's Bid or Proposal is submitted or when Contractor negotiates the Contract Price unless specifically stated otherwise in the Contract Documents.
2. No provision of referenced standard specifications, manuals, reference standards, codes, or instructions of a Supplier changes the duties or responsibilities of OPT or Contractor from those described in the Contract Documents or assigns a duty to or gives authority to OPT to supervise or direct the performance of the Work or undertake responsibilities inconsistent with the Contract Documents.

3. The provisions of the Contract Documents take precedence over standard specifications, manuals, reference standards, codes, or instructions of a Supplier unless specifically stated otherwise in the Contract Documents.
- B. Comply with applicable construction industry standards, whether referenced or not.
 1. Standards referenced in the Contract Documents govern over standards not referenced but recognized as applicable in the construction industry.
 2. Comply with the requirements of the Contract Documents if they produce a higher quality of Work than the applicable construction industry standards.
 3. Submit questions regarding which code or standard is applicable to Construction Manager. Design Professional will determine whether a code or standard is applicable, which of several codes or standards are applicable, or if the Contract Documents produce a higher quality of Work. Construction Manager will respond to the question as appropriate.
- C. Make copies of reference standards available if requested by Construction Manager.

3.03 Reporting and Resolving Discrepancies

- A. Reporting Discrepancies:
 1. Carefully study the Drawings and verify pertinent figures and dimensions with respect to actual field measurements before undertaking the Work. Immediately report conflicts, errors, ambiguities, or discrepancies that Contractor discovers or has actual knowledge of to Construction Manager.
 2. Immediately notify the Construction Manager of conflicts, errors, ambiguities, or discrepancies in the Contract Documents or discrepancies between the Contract Documents and:
 - a. Applicable Laws or Regulations;
 - b. Actual field conditions;
 - c. Standard specifications, manuals, reference standards, or codes; or
 - d. Instructions of Suppliers.
 3. Do not proceed with affected Work until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation from Construction Manager or by a Modification to the Contract Documents issued pursuant to Paragraph 11.01, except in an emergency as required by Paragraph 7.12.
 4. Contractor is liable to OPT for failure to report conflicts, errors, ambiguities, or discrepancies in the Contract Documents of which Contractor has actual knowledge.
 5. Contractor is deemed to have included the most expensive item, system, procedure, etc. in the Contract Price if a conflict, error, ambiguity, or discrepancy in the Contract Documents was known, but not reported prior to submitting the Bid or Proposal or when Contractor negotiates the Contract Price.

3.04 Interpretation of the Contract Documents

- A. Submit questions concerning the non-technical or contractual/administrative requirements of the Contract Documents to Construction Manager immediately after the question arises. Construction Manager will provide an interpretation of the Contract Documents regarding these questions and will coordinate the response of OPT to Contractor.
- B. Submit questions regarding the design of the Project described in the Contract Documents to Construction Manager immediately after the question arises. Construction Manager will request an interpretation of the Contract Documents from Design Professional. Construction Manager will coordinate the response of OPT to Contractor.
- C. OPT may initiate a Modification to the Contract Documents through Construction Manager if a response to the question indicates that a change in the Contract Documents is required. Contractor may appeal Design Professional's or Construction Manager's interpretation by submitting a Change Proposal.

3.05 Reuse of Documents

- A. Contractor's Team has no rights to the Contract Documents and may not use the Contract Documents or copies or electronic media editions of the Contract Documents other than for the construction of this Project. This provision survives final payment or termination of the Contract.
- B. Contractor can retain a copy of the Contract Documents for record purposes, unless specifically prohibited by Owner for security reasons. Surrender paper and digital copies of the Contract Documents and other related documents and remove these documents from computer equipment or storage devices as a condition of final payment if Owner so directs.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 Commencement of Contract Times; Notice to Proceed

- A. The Contract Times commence to run on the date indicated in the Notice to Proceed. If a Notice to Proceed is not issued, the Contract Times will commence to run 15 days after the Contract is signed by all parties.
- B. Begin performing the Work on the date indicated in the Notice to Proceed. Do not begin Work before the date indicated in the Notice to Proceed or prior to providing evidence that insurance required in Article 6 is in effect.

4.02 Progress Schedule

- A. Construct the Work in accordance with the Progress Schedule established in accordance with the Contract Documents.
 - 1. Adjust the Progress Schedule as required to accurately reflect actual progress on the Work.
 - 2. Submit proposed adjustments in the Progress Schedule that change the Contract Times in accordance with the requirements of Article 11.

- B. Continue performing Work and adhere to the Progress Schedule during disputes or disagreements with Owner. Do not delay or postpone Work pending resolution of disputes or disagreements, or during an appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree.

4.03 Delays in Contractor's Progress

- A. Contractor is not entitled to an adjustment in Contract Price or Contract Times for delays, disruptions, or interference caused by or within the control of Contractor's Team.
- B. Contractor is entitled to an equitable adjustment in Contract Price or Contract Times if OPT directly delays, disrupts, or interferes with the performance or progress of the Work. Contractor is not entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Owner if this delay is concurrent with a delay, disruption, or interference attributable to or within the control of Contractor's Team.
- C. Contractor is entitled to an equitable adjustment in the Contract Times, but not Contract Price, if Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of OPT or Contractor. These adjustments in Contract Times are Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. These unanticipated causes include:
 - 1. Severe and unavoidable natural catastrophes e.g. fires, floods, epidemics, and earthquakes;
 - 2. Acts of war or terrorism;
 - 3. Acts or failures to act of utility owners or other third-party entities other than those third-party utility owners performing other work at or adjacent to the Site as arranged by Owner and, as contemplated in Article 8;
 - 4. The existence of a differing subsurface or physical condition;
 - 5. An Underground Facility not shown or not indicated with reasonable accuracy by the Contract Documents;
 - 6. Hazardous Environmental Conditions; and
 - 7. 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 unless this other work also for Owner.
- D. Contractor is entitled to an equitable adjustment in the Contract Times, but not Contract Price, if Contractor's performance or progress is delayed or disrupted by weather conditions provided such weather conditions exceed those that could normally be expected for the Site in that month of the year, unless other provisions for weather related delays are included in the Contract Documents. Contractor is to include time associated with normal weather-related delays in the Project Schedule and assumes the risks, including costs, associated with delays related to normal weather conditions.
- E. Contractor is only entitled to an adjustment of the Contract Times for specific delays, disruptions, and interference to the performance or progress of the Work that can be

demonstrated to directly impact the ability of Contractor to complete the Work within the Contract Times. No adjustments in Contract Times are allowed for delays on components of the Work which were or could have been completed without impacting the Contract Times.

- F. Notify Construction Manager immediately of a potential delaying, disrupting, or interfering event. Submit a Change Proposal seeking an adjustment in Contract Price or Contract Times within 30 days of the commencement of the delaying, disrupting, or interfering event. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11. Change Proposal seeking an increase in Contract Times or Contract Price submitted must include supporting data that details 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;
 5. A revised Progress Schedule indicating all the activities affected by the delay, disruption, or interference;
 6. An explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work;
 7. The impact on Contract Price; and
 8. Such additional supporting documentation as OPT may require.

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

5.01 Availability of Lands

- A. Owner will furnish the Site and inform Contractor of encumbrances or restrictions known to Owner related to use of the Site with which Contractor must comply in performing the Work.
- B. Provide for additional lands and access Contractor requires for temporary construction facilities or storage of materials and equipment, other than those identified in the Contract Documents. Provide documentation of authority to use these additional lands to Construction Manager before using them.

5.02 Use of Site and Other Areas

- A. Confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Owner or Contractor has arranged to use through construction easements or agreements, and other adjacent areas as permitted by Laws and Regulations. Assume full responsibility for damage

or injuries which result from the performance of the Work or from other actions or conduct of Contractor's Team, including:

1. Damage to the Site;
 2. Damage to adjacent areas used for Contractor's Team's operations;
 3. Damage to other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and
 4. Injuries and losses sustained by the owners or occupants of these lands or areas.
- B. Take the following action if a damage or injury claim is made by the owner or occupant of adjacent land or area because of the performance of the Work, or because of other actions or conduct of Contractor's Team:
1. Take immediate corrective or remedial action as required by Paragraph 7.10; and
 2. Attempt to settle the claim through negotiations with the owner or occupant, or otherwise resolve the claim by mediation or other dispute resolution proceeding or at law; and
 3. **TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, INDEMNIFY AND HOLD HARMLESS OWNER'S INDEMNITEES FROM AND AGAINST ANY SUCH CLAIM AND ALL INDEMNIFIED COSTS ARISING OUT OF OR RELATING TO ANY CLAIM OR ACTION BROUGHT BY ANY SUCH OWNER OR OCCUPANT AGAINST OWNER'S INDEMNITEES 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 CONTRACTOR'S TEAM.**

5.03 Subsurface and Physical Conditions

- A. 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 these reports and drawings.
- B. If no Technical Data have been identified in the Supplementary Conditions, then Technical Data is defined, with respect to conditions at the Site, 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, or 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.

- D. Contractor may rely upon the accuracy of the Technical Data contained in these reports and drawings, but these reports and drawings are not Contract Documents. Except for this reliance on Technical Data, Contractor may not rely upon or make claims against Owner's Indemnitees with respect to:
1. The completeness of reports and drawings for Contractor's purposes, including aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, or Contractor's safety precautions and programs;
 2. Other data, interpretations, opinions, and information contained in these reports or shown or indicated in the 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. Contractor's interpretation of or conclusions drawn from Technical Data or other data, interpretations, opinions, or information.

5.04 Differing Subsurface or Physical Conditions

- A. Notify Construction Manager immediately, but in no event later than 3 days, after becoming aware of a subsurface or physical condition that is uncovered or revealed at the Site, and before further disturbing the subsurface or physical conditions or performing any related Work that:
1. Establishes that the Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
 2. Requires 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.
- B. Do not further disturb or perform Work related to this subsurface or physical condition, except in an emergency as required by Paragraph 7.12, until permission to do so is issued by Construction Manager.
- C. Construction Manager is to notify OPT after receiving notice of a differing subsurface or physical condition from Contractor. OPT will:
1. Promptly review the subsurface or physical condition;
 2. Determine the necessity of OPT's obtaining additional exploration or tests with respect to the subsurface or physical condition;
 3. Determine if the subsurface or physical condition falls within one or more of the differing site condition categories in Paragraph 5.04.A;
 4. Prepare recommendations regarding Contractor's resumption of Work relating to the subsurface or physical condition in question;
 5. Determine the need for changes in the Drawings or Specifications; and

6. Advise Contractor of OPT's findings, conclusions, and recommendations.
- D. Construction Manager is to issue a statement to Contractor regarding the subsurface or physical condition in question and recommend action as appropriate after review of OPT's findings, conclusions, and recommendations. Construction Manager may instruct Contractor to resume Work if OPT determines that the subsurface or physical condition in question has been adequately documented.
- E. Contractor is entitled to an equitable adjustment in Contract Price or Contract Times to the extent that a differing subsurface or physical condition causes a change in Contractor's cost or time to perform the Work provided the condition falls within one or more of the categories described in Paragraph 5.04.A. Any adjustment in Contract Price for Work that is paid for on a unit price basis is subject to the provisions of Paragraph 13.03. Contractor is not entitled to an adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 1. Contractor knew of the existence of the subsurface or physical condition at the time Contractor made an offer to Owner with respect to Contract Price and Contract Times;
 2. The existence of the subsurface or physical condition could have been discovered or revealed by examinations, investigations, explorations, tests, or studies of the Site and contiguous areas expressly required by the Bidding Requirements or Proposal Requirements or the Contract Documents prior to when Contractor's Bid or Proposal is submitted or when Contractor negotiates the Contract Price; or
 3. Contractor failed to give notice as required by Paragraph 5.04.A.
- F. Contractor may submit a Change Proposal no later than 30 days after Construction Manager's issuance of the OPT's statement to Contractor regarding the subsurface or physical condition in question.

5.05 Underground Facilities

- A. The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to OPT by the owners of these Underground Facilities or by others. OPT is not responsible for the accuracy or completeness of information or data provided by others that OPT makes available to Contractor. Contractor is responsible for:
 1. Reviewing and checking available information and data regarding existing Underground Facilities at the Site;
 2. Complying with Laws and Regulations related to locating Underground Facilities before beginning Work;
 3. Locating Underground Facilities shown or indicated in the Contract Documents;
 4. Coordinating the Work with the owners, including Owner, of Underground Facilities during construction; and
 5. The safety and protection of existing Underground Facilities at or adjacent to the Site and repairing damage resulting from the Work.
- B. Notify Construction Manager and the owner of the Underground Facility immediately if an Underground Facility is uncovered or revealed at the Site that was not shown in the

Contract Documents or was not shown with reasonable accuracy in the Contract Documents. Do not further disturb conditions or perform Work affected by this discovery, except in the event of an emergency as required by Paragraph 7.12.

- C. OPT is to take the following action after receiving notice from Construction Manager:
 - 1. Promptly review the Underground Facility to determine if the Underground Facility was shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy;
 - 2. Identify and communicate with the owner of the Underground Facility;
 - 3. Prepare recommendations to OPT regarding Contractor's resumption of Work relating to this Underground Facility;
 - 4. Determine the extent to which a change is required in the Drawings or Specifications to document the consequences of the existence or location of the Underground Facility; and
 - 5. Construction Manager will advise Contractor of OPT's findings, conclusions, and recommendations and provide revised Drawings and Specifications if required.
- D. Construction Manager is to issue a statement to Contractor regarding the Underground Facility in question and recommend action as appropriate after review of OPT's findings, conclusions, and recommendations.
- E. Contractor is entitled to an equitable adjustment in the Contract Price or Contract Times to the extent that the existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy. Any adjustment in Contract Price for Work that is paid for on a unit price basis is subject to the provisions of Paragraph 13.03.
- F. Contractor is not entitled an adjustment in the Contract Price or Contract Times with respect to an existing Underground Facility at the Site if:
 - 1. Contractor knew of the existence of the existing Underground Facility at the Site at the time Contractor made an offer to Owner with respect to Contract Price and Contract Times;
 - 2. The existence of the existing Underground Facility at the Site could have been discovered or revealed by examinations, investigations, explorations, tests, or studies of the Site and contiguous areas expressly required by the Bidding Requirements or Proposal Requirements or the Contract Documents prior to when Contractor's Bid or Proposal is submitted or when Contractor negotiates the Contract Price; or
 - 3. Contractor failed to give notice as required by Paragraph 5.05.B.
- G. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of adjustments in the Contract Price or Contract Times no later than 30 days after Construction Manager's issuance of OPT's statement to Contractor regarding the Underground Facility.

5.06 Hazardous Environmental Conditions at Site

- A. The Supplementary Conditions identify those reports and drawings known to OPT relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and the Technical Data contained in these reports and drawings.
- B. Contractor may rely upon the accuracy of the Technical Data contained in reports and drawings relating to Hazardous Environmental Conditions identified in the Supplementary Conditions, but these reports and drawings are not Contract Documents. Except for the reliance on expressly identified Technical Data, Contractor may not rely upon or make claims against Owner's Indemnitees with respect to:
 - 1. The completeness of these reports and drawings for Contractor's purposes, including aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor or Contractor's safety precautions and programs related to Hazardous Environmental Conditions;
 - 2. Other data, interpretations, opinions, and information contained in these reports or shown or indicated in the drawings; or
 - 3. Any Contractor interpretation of or conclusion drawn from Technical Data or other data, interpretations, opinions, or information.
- C. The results of tests performed on materials described in environmental reports specifically prepared for the Project and made available to Contractor are defined as Technical Data unless Technical Data has been defined more specifically in the Supplementary Conditions.
- D. Contractor is not responsible for removing or remediating Hazardous Environmental Conditions encountered, uncovered, or revealed at the Site unless this removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- E. Contractor is responsible for controlling, containing, and duly removing and remediating Constituents of Concern brought to the Site by Contractor's Team and paying associated costs.
 - 1. Owner may remove and remediate the Hazardous Environmental Condition and impose a Set-off against payments to Contractor for associated costs if Contractor's Team creates a Hazardous Environmental Condition and Contractor does not take acceptable action to remove and remediate the Hazardous Environmental Condition.
 - 2. **TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS OWNER'S INDEMNITEES FROM AND AGAINST ALL CLAIMS AND INDEMNIFIED COSTS ARISING OUT OF OR RELATING TO THE FAILURE TO CONTROL, CONTAIN, OR REMOVE A CONSTITUENT OF CONCERN BROUGHT TO THE SITE BY CONTRACTOR'S TEAM, OR TO A HAZARDOUS ENVIRONMENTAL CONDITION CREATED BY CONTRACTOR'S TEAM. NOTHING IN THIS PARAGRAPH SHALL OBLIGATE CONTRACTOR TO INDEMNIFY ANY INDIVIDUAL OR ENTITY FROM AND AGAINST THE CONSEQUENCES OF THAT INDIVIDUAL'S OR ENTITY'S OWN NEGLIGENCE.**

- F. Immediately notify Construction Manager and take the following action if Contractor uncovers or reveals a Hazardous Environmental Condition at the Site or adjacent areas used by Contractor's Team that was not created by Contractor's Team:
1. Secure or otherwise isolate this condition;
 2. Stop Work in affected areas or connected with the condition, except in an emergency as required by Paragraph 7.12; and
 3. Do not resume Work relating to the Hazardous Environmental Condition or in affected areas until after OPT has obtained required permits and Construction Manager sends notice to Contractor:
 - a. Specifying that this condition and affected areas are or have been rendered safe for the resumption of Work; or
 - b. Specifying special conditions under which Work may be resumed safely.
 4. Owner may order the portion of the Work that is in the area affected by the Hazardous Environmental Condition to be deleted from the Work following the procedures in Article 11 if Contractor does not agree to:
 - a. Resume the Work based on a reasonable belief it is unsafe; or
 - b. Resume the Work under the special conditions provided by Construction Manager.
 5. Owner may have this deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- G. Contractor may submit a Change Proposal or Owner may impose a Set-off if an agreement is not reached within 10 days of Construction Manager's notice regarding the resumption of Work as to whether Contractor is entitled to an adjustment in Contract Price or Contract Times or on the amount or extent of adjustments resulting from this Work stoppage or special conditions under which Contractor agrees to resume Work.
- H. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

- A. Furnish a performance bond in an amount equal to the Contract Price as security for the faithful performance of Work. Contractor is to use amounts paid by Owner to Contractor under the Contract for the performance of the Contract. This bond is to remain in effect until 1 year after the date of final payment.
- B. Furnish a payment bond in an amount equal to the Contract Price as security to ensure payment of Contractor's obligations under the Contract Documents. This bond is to remain in effect until 1 year after the date of final payment.
1. Notify Construction Manager of claims filed against the payment bond. Notify the claimant and Construction Manager of undisputed amounts and the basis for

challenging disputed amounts when a claimant has satisfied the conditions prescribed by Laws and Regulations. Promptly pay undisputed amounts.

2. Owner is not liable for payment of costs or expenses of claimants under the payment bond. Owner has no obligations to pay, give notice, or take other action to claimants under the payment bond.
 3. OPT will provide a copy of the payment bond and payment information to Subcontractors, Suppliers, or other persons or entities claiming to have furnished labor or materials used in the performance of the Work that request this information in accordance with Laws and Regulations.
- C. Notify Construction Manager immediately if the surety on bonds furnished by Contractor:
1. Is declared bankrupt, or becomes insolvent;
 2. Has its right to do business in state in which the Project is located is terminated; or
 3. Ceases to meet the requirements of Paragraph 6.02.
- D. Provide a bond and surety which comply with the requirements of Paragraph 6.02 within 20 days after the event giving rise to this notification.
- E. Furnish other bonds as required by the Contract Documents.
- F. Owner may exclude Contractor from the Site and exercise Owner's termination rights under Article 16 if Contractor fails to obtain or maintain required bonds.

6.02 Licensed Sureties

- A. Provide bonds in the form prescribed by the Contract Documents from sureties named in the U.S. Department of the Treasury's Listing of Approved Sureties (Department Circular 570 "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies").
- B. Provide bonds required by the Contract Documents from surety companies that are duly licensed or authorized to provide bonds in the state in which the Project is constructed.

6.03 Insurance - General Provisions

- A. Obtain and maintain insurance with coverage amounts equal to or greater than the amounts specified in Section 00 73 16 "Insurance Requirements" or greater where required by Laws and Regulations.
- B. Obtain insurance from companies that are duly licensed or authorized in the state in which the Project is constructed to issue insurance policies and that have an A.M. Best rating of A-VIII or better.
- C. Deliver evidence of insurance in accordance with Section 00 73 16 "Insurance Requirements" to Owner to demonstrate that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Provide copies of these certificates to Owner and additional insured.
- D. Furnish copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles upon request by Owner or any additional insured. Contractor

may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this paragraph.

- E. OPT's failure to demand such certificates or other evidence of Contractor's full compliance with the insurance requirements or failure to identify a deficiency in compliance from the evidence provided is not a waiver of Contractor's obligation to obtain and maintain the insurance required by the Contract Documents.
- F. Notify Owner if Contractor fails to purchase or maintain the insurance required by the Contract Documents. Do not perform any Work on the Project unless the required insurance policies are in effect. Owner may exclude Contractor from the Site and exercise Owner's termination rights under Article 16 if Contractor fails to obtain or maintain the required insurance.
- G. Owner may elect to obtain equivalent insurance to protect Owner's interests without prejudice to any other right or remedy if Contractor fails to obtain or maintain the required insurance. Owner may impose a reasonable Set-off against payments due under Article 15 to recover the cost of the insurance.
- H. Owner does not represent that the insurance coverage and limits established in this Contract are adequate to protect Contractor or Contractor's interests.
- I. The required insurance and insurance limits do not limit Contractor's liability under the indemnities granted to Owner's Indemnitees in the Contract Documents.
- J. Provide for an endorsement that the "other insurance" clause will not apply to OPT where OPT is an additional insured shown on the policy. Contractor's insurance is primary and non-contributory with respect to any insurance or self-insurance carried by OPT for liability arising out of operations under this Agreement.
- K. Include and list OPT and any other individuals or entities identified in Section 00 73 16 "Insurance Requirements" as additional insureds on all policies except for the workers' compensation policy and Contractor's professional liability policy.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 Contractor's Means and Methods of Construction

- A. Contractor is solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. Provide professional engineering or other design services if the Contract Documents require such services or if Contractor determines that such services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety. Engineering or other design services are to be provided by a properly licensed design professional authorized to provide these services in the state in which the Project is constructed. Such services are not Owner-delegated professional design services under this Contract, and OPT does not have 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. Supervise, inspect, and direct the performance of the Work.
- B. Provide a competent resident superintendent acceptable to OPT. The resident superintendent or acceptable qualified assistant is to always be present when Work is being done. Do not replace this resident superintendent except under extraordinary circumstances. Provide a replacement resident superintendent equally competent to the previous resident superintendent if replacement is required. Notify Owner prior to replacing the resident superintendent and obtain Owner's consent to the change in superintendent.

7.03 Labor; Working Hours

- A. Provide competent, suitably qualified personnel to complete the Work. Maintain good discipline and order at the Site. Contractor is responsible for all acts and omissions of Contractor's Team.
- B. Perform Work at the Site during regular working hours except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent to the Site and except as otherwise stated in the Contract Documents.
- C. Do not perform Work on a Saturday, Sunday, or Owner-observed holiday without Construction Manager's consent. If a legal holiday falls on a Saturday, it will be observed the preceding Friday. If a legal holiday falls on a Sunday, it will be observed the following Monday.
- D. Pay additional cost incurred by Owner for services of Construction Manager to observe Work constructed outside of regular working hours. Construction Manager will issue a Set-off in the Application for Payment for this cost per Paragraph 15.01.B.

7.04 Services, Materials, and Equipment

- A. Provide services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and other facilities and incidentals necessary for the performance, testing, startup, and completion of the Work, whether or not these items are specifically called for in the Contract Documents.
- B. Provide new materials and equipment to be incorporated into the Work. Provide special warranties and guarantees required by the Contract Document. Provide satisfactory evidence, including reports of required tests, as to the source, kind, and quality of materials and equipment as required by the Contract Documents or as requested by Construction Manager.

- C. Store, apply, install, connect, erect, protect, use, clean, and condition materials and equipment in accordance with instructions of the applicable Supplier, unless otherwise required by the Contract Documents.

7.05 Concerning Subcontractors, and Suppliers

- A. Contractor may retain Subcontractors and Suppliers which are acceptable to Owner for the performance of parts of the Work. Contractor must retain specific Subcontractors or Suppliers if required to do so by the Contract Documents. Contractor must use Subcontractors or Suppliers named in the Bid or Proposal if Contractor was selected in part based on these named Subcontractors or Suppliers.
- B. Submit a list of proposed Subcontractors and Suppliers to Construction Manager prior to entering into binding subcontracts or purchase orders. These proposed Subcontractors or Suppliers are deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 10 days after receiving this list.
- C. Owner may require the replacement of Subcontractors or Suppliers retained by Contractor. Provide an acceptable replacement for the rejected Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements, subject to Contractor's reasonable objections.
- D. Contractor may be entitled to an adjustment in Contract Price or Contract Times with respect to a replacement of Subcontractors or Suppliers required by Owner. Notify Construction Manager immediately if a replacement of Subcontractors or Suppliers increases the Contract Price or Contract Times. Initiate a Change Proposal for the adjustment within 10 days of Owner's notice to replace a Subcontractor or Supplier. Do not make the replacement until the change in Contract Price or Contract Times has been accepted by Owner if Change Proposal is to be submitted. Contractor is not entitled to an adjustment in Contract Price or Contract Times if OPT requires the replacement of the Subcontractor or Supplier based on an unacceptable safety record, lack of experience or qualifications, or other cause.
- E. Acceptance by Owner of Subcontractors, Suppliers, or other individuals or entities, whether initially or as a replacement, does not constitute a waiver of the obligation of Contractor to complete the Work in accordance with the Contract Documents.
- F. Maintain a current and complete list of Subcontractors and Suppliers that are to perform or furnish part of the Work.
- G. Contractor is fully responsible for the acts and omissions of Subcontractors and Suppliers and is solely responsible for scheduling and coordinating their Work.
- H. Require Subcontractors, Suppliers, and other individuals or entities performing or furnishing Work to communicate with OPT through Contractor.
- I. Contracts between Contractor and their Subcontractors or Suppliers may specifically bind the Subcontractors or Suppliers to the applicable terms and conditions of the Contract Documents. Contractor is responsible for meeting the requirements of the Contract Documents if they choose to not bind the Subcontractors or Suppliers to applicable terms or conditions of the Contract Documents.

- J. OPT may furnish information about amounts paid to Contractor for Work provided by Subcontractors or Suppliers to the entity providing the Work.
- K. Nothing in the Contract Documents:
 - 1. Creates a contractual relationship between members of OPT and members of Contractor's Team; or
 - 2. Creates an obligation on the part of Owner to pay or to see to the payment of money due members of Contractor's Team, except as may be required by Laws and Regulations.

7.06 Patent Fees and Royalties

- A. Pay license fees, royalties, and costs incident to the use of inventions, designs, processes, products, or devices which are patented or copyrighted by others in the performance of the Work, or to incorporate these inventions, designs, processes, products, or devices which are patented or copyrighted by others in the Work. The Contract Documents identify inventions, designs, processes, products, or devices OPT knows are patented or copyrighted by others, or that its use is subject to patent rights or copyrights calling for the payment of a license fee or royalty to others. Contractor is to include the cost associated with the use of patented or copyrighted products or processes, whether specified or selected by Contractor, in the Contract Price.
- B. **TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS OWNER'S INDEMNITEES FROM AND AGAINST ALL CLAIMS AND INDEMNIFIED COSTS ARISING OUT OF OR RELATING TO ANY INFRINGEMENT OF PATENT RIGHTS OR COPYRIGHTS BY CONTRACTOR'S TEAM 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.**

7.07 Permits

- A. Obtain and pay for construction permits and licenses, and certificates of occupancy, if required. OPT is to assist Contractor in obtaining permits and licenses when required to do so by applicable Laws and Regulations. Pay governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time the Contractor's Bid or Proposal is submitted or when Contractor negotiates the Contract Price.

7.08 Taxes

- A. Contractor is responsible for all taxes and duties arising out of the Work. Contractor is responsible for including in the Contract Price any applicable sales and use taxes and is responsible for complying with all applicable Laws and Regulations. Pay sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations.

7.09 Laws and Regulations

- A. Give required notices and comply with Laws and Regulations applicable to the performance of the Work. OPT is not responsible for monitoring Contractor's compliance with Laws or Regulations except where expressly required by applicable Laws and Regulations.

- B. Pay costs resulting from actions taken by Contractor that are contrary to Laws or Regulations. Contractor is not responsible for determining that the design aspects of the Work described in the Contract Documents is in accordance with Laws and Regulations. This does not relieve Contractor of its obligations under Paragraph 3.03.
- C. **TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, CONTRACTOR SHALL INDEMNIFY AND HOLD OWNER'S INDEMNITEES HARMLESS FROM ALL CLAIMS AND INDEMNIFIED COSTS RESULTING FROM ACTIONS TAKEN BY CONTRACTOR'S TEAM THAT ARE CONTRARY TO LAWS OR REGULATIONS.**
- D. Owner or Contractor may give notice to the other party of changes in Laws or Regulations that may affect the cost or time of performance of the Work, including:
 - 1. Changes in Laws or Regulations affecting procurement of permits; and
 - 2. Sales, use, value-added, consumption, and other similar taxes which come into effect after Contractor's Bid or Proposal is submitted or when Contractor negotiates the Contract Price.
- E. Contractor may submit a Change Proposal or Owner may initiate a Claim within 30 days of this notice if Owner and Contractor are unable to agree on entitlement to or on the amount or extent of adjustments in Contract Price or Contract Times resulting from these changes.

7.10 Safety and Protection

- A. Contractor is solely responsible for initiating, maintaining, and supervising safety precautions and programs relating to the Work. This 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. Take necessary precautions for the safety of persons on the Site or who may be affected by the Work, and provide the necessary protection to prevent damage, injury, or loss to:
 - 1. Work and materials and equipment to be incorporated in the Work, whether stored on or off the Site; and
 - 2. Other property at or adjacent to the Site, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement during construction.
- C. Comply with applicable Laws and Regulations relating to the safety and protection of persons or property. Erect and maintain necessary safeguards for safety and protection. Notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site when prosecution of the Work may affect them. Cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- D. Remedy damage, injury, or loss to property referred to in Paragraph 7.10.B caused by Contractor's Team. Pay remediation costs unless the damage or loss is:
 - 1. Attributable to the fault of the Contract Documents;
 - 2. Attributable to acts or omissions of OPT; or

- 3. Not attributable to the actions or failure to act of Contractor's Team.
- E. Contractor's duties and responsibilities for safety and protection of persons or the Work or property at or adjacent to the Site continues until Work is completed and resumes whenever Contractor's Team returns to the Site to fulfill warranty or correction obligations or to conduct other tasks.
- F. Comply with the applicable requirements of the Owner's safety program if required to do so in the Supplementary Conditions. A copy of the Owner's safety program will be provided in the Bidding Documents or Proposal Documents.
- G. Provide a qualified and experienced safety representative at the Site whose duties and responsibilities are the prevention of accidents and maintaining and supervising safety programs.

7.11 Hazard Communication Programs

- A. Coordinate the exchange of safety data sheets or other hazard communication information required to be made available or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.12 Emergencies

- A. Act to prevent threatened damage, injury, or loss in emergencies affecting the safety or protection of persons or the Work or property at or adjacent to the Site. Notify Construction Manager immediately if Contractor believes that significant changes in the Work or variations from the Contract Documents have been caused or are required because of this need to act. A Modification is to be issued by Construction Manager if OPT determines that the incident giving rise to the emergency action was not the responsibility of Contractor and that a change in the Contract Documents is required because of the action taken by Contractor in response to this emergency.

7.13 Contractor's General Warranty and Guarantee

- A. Contractor warrants and guarantees to Owner that Work is in accordance with the Contract Documents and is not Defective. Owner is entitled to rely on Contractor's warranty and guarantee. 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 7.14. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.13 is limited only by applicable Laws and Regulations restricting actions to enforce such rights. Assume and bear responsibility for costs and time delays associated with variations from the requirements of the Contract Documents.
- B. This Contractor's warranty and guarantee excludes defects or damage caused by abuse, improper maintenance or operation, or modification by OPT; or normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete Work in accordance with the Contract Documents is absolute. None of the following constitute an acceptance of Defective Work,

a release of Contractor's obligation to perform Work in accordance with the Contract Documents or a release of Owner's warranty or guarantee rights under this Paragraph:

1. Observations by OPT;
 2. Recommendation by Construction Manager or payment by Owner of progress or final payments;
 3. The issuance of a certificate of Substantial Completion;
 4. The issuance of a certificate of Final Completion;
 5. The end of the correction period established in Paragraph 7.14;
 6. Use or occupancy of part of the Work by Owner;
 7. Review and approval of a Shop Drawing or Sample;
 8. Inspections, tests, or approvals by others; or
 9. Correction of Defective Work by Owner.
- D. The Contract Documents may require Contractor to accept the assignment of a contract between the Owner and a contractor or supplier. The specific warranties, guarantees, and correction obligations contained in an assigned contract govern with respect to Contractor's performance obligations to Owner for the Work described in an assigned contract.

7.14 Correction Period

- A. Promptly correct Defective Work without cost to Owner for 1 year after the date of Substantial Completion or longer periods of time prescribed by the terms of the Contract Documents.
- B. Promptly correct damages to the Site or adjacent areas that Contractor has arranged to use through construction easements or other agreements. Promptly correct damages to Work or the work of others. Make corrections without cost to Owner.
- C. Owner may have the Defective Work and damages described in Paragraphs 7.14.A and 7.14.B corrected if Contractor does not comply with the terms of Construction Manager's instructions, or in an emergency where delay would cause serious risk of loss or damage.
- D. **NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THIS AGREEMENT OR THE CONTRACT DOCUMENTS AND TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, CONTRACTOR SHALL INDEMNIFY AND HOLD OWNER'S INDEMNITEES HARMLESS FROM AND AGAINST ALL CLAIMS AND INDEMNIFIED COSTS ARISING OUT OF OR RELATING TO THE CORRECTION OF DEFECTIVE WORK.**
- E. The correction period starts to run from the date when a specific item of equipment or systems are placed in continuous beneficial use by Owner before Substantial Completion of Work if so provided in the Specifications or if accepted for beneficial use by Owner.
- F. The correction period is extended for an additional period of 1 year for Defective Work corrected after the date of Substantial Completion or after the accepted date the correction period starts to run as described in Paragraph 7.14.E. This extended correction

period starts to run when Defective Work has been satisfactorily corrected under this Paragraph 7.14.

- G. Contractor's obligations under this Paragraph 7.14 are in addition to other obligations or warranties. The provisions of this Paragraph 7.14 are not a substitute for, or a waiver of, the provisions of applicable statutes of limitation or repose.

7.15 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'S INDEMNITEES FROM AND AGAINST ALL CLAIMS AND INDEMNIFIED COSTS ARISING OUT OF OR RELATING TO THE PERFORMANCE OF THE WORK, PROVIDED THAT ANY SUCH CLAIM, ACTION, LOSS, 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'S TEAM.**
- B. The indemnification obligation under Paragraph 7.15.A is not limited by the amount or type of damages, compensation, or benefits payable by or for members of Contractor's Team or other individuals or entities under workers' compensation acts, disability benefit acts, or other employee benefit acts in claims against Owner's Indemnitees by an employee or the survivor or personal representative of employee of Contractor's Team.

7.16 Delegation of Professional Design Services

- A. Contractor is to provide professional design services required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures.
- B. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. This delegation will specify the performance and design criteria that such services must satisfy and the Submittals that Contractor must furnish to Construction Manager with respect to Owner delegated design. Contractor is not required to provide these professional services in violation of applicable Laws and Regulations.
- C. Owner-delegated professional design services provided through Contractor are 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 other Submittals prepared by such design professional. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Construction Manager, then such Shop Drawing or other Submittal must bear the design professional's written approval when submitted by Contractor to Construction Manager.
- D. OPT is entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by Contractor's design professionals, provided OPT has specified to Contractor the performance and design criteria that these services must satisfy.

- E. Pursuant to this Paragraph 7.16, OPT's review and approval of 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;
 - 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 is not responsible for the adequacy of the performance or design criteria specified by OPT. Advise OPT if the performance or design criteria are known or considered likely to be inadequate or otherwise deficient.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 Other Work

- A. Owner may arrange for other work at or adjacent to the Site which is not part of the Contractor's Work. This other work may be performed by Owner's employees or through other contractors. Utility owners may perform work on their utilities and facilities at or adjacent to the Site. Include costs associated with coordinating with entities performing other work or associated with connecting to this other work in the Contract Price if this other work is shown in the Contract Documents.
- B. OPT is to notify Contractor of other work prior to starting the work and provide any knowledge they have regarding the start of utility work at or adjacent to the Site to Contractor.
- C. Provide other contractors:
 - 1. Proper and safe access to the Site;
 - 2. Reasonable opportunity for the introduction and storage of materials and equipment; and
 - 3. Reasonable opportunity to execute their work.
- D. Provide cutting, fitting, and patching of the Work required to properly connect or integrate with other work. Do not endanger the work of others by cutting, excavating, or otherwise altering the work of others without the consent of Construction Manager and the others whose work will be affected.
- E. Inspect the work of others and immediately notify Construction Manager if the proper execution of part of Contractor's Work depends upon work performed by others and this work has not been performed or is unsuitable for the proper execution of Contractor's Work. Contractor's failure to notify Construction Manager constitutes an acceptance of this other work as acceptable for integration with Contractor's Work. This acceptance does not apply to latent defects or deficiencies in the work of others.
- F. Take adequate measures to prevent damages, delays, disruptions, or interference with the work of Owner, other contractors, or utility owners performing other work at or adjacent to the Site.

- G. The provisions of this Article 8 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 4.03.

8.02 Coordination

- A. Owner has sole authority and responsibility for coordination of this other work unless otherwise provided in the Contract Documents. Owner is to identify the entity with authority and responsibility for coordination of the activities of the various contractors, the limitations of their authority, and the work to be coordinated prior to the start of other work at or adjacent to the Site.

8.03 Legal Relationships

- A. Contractor may be entitled to a change in Contract Price or Contract Times if, while performing other work at or adjacent to the Site for Owner, the OPT, other contractor, or utility owner:
 - 1. Damages the Work or property of Contractor's Team;
 - 2. Delays, disrupts, or interferes with the execution of the Work; or
 - 3. Increases the scope or cost of performing the Work through their actions or inaction.
- B. Notify Construction Manager immediately of the event leading to a potential Change Proposal so corrective or mitigating action can be taken. Submit the Change Proposal within 30 days of the event if corrective action has not adequately mitigated the impact of the actions or inactions of others. Information regarding this other work in the Contract Documents is used to determine if Contractor is entitled to a change in Contract Price or Contract Times. Changes in Contract Price require that Contractor assign rights against the other contractor or utility owner to Owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Changes in Contract Times require that the time extension is essential to Contractor's ability to complete the Work within the Contract Times.
- C. Take prompt corrective action if Contractor's Team damages, delays, disrupts, or interferes with the work of Owner's employees, other contractors, or utility owners performing other work at or adjacent to the Site or agree to compensate other contractors or utility owners for correcting the damage. Promptly attempt to settle claims with other contractors or utility owners if Contractor damages, delays, disrupts, or interferes with the work of other contractors or utility owners performing other work at or adjacent to the Site.
- D. Owner may impose a Set-off against payments due to Contractor and assign the Owner's contractual rights against Contractor with respect to the breach of the obligations described in this Paragraph 8.03 to other contractors or utility owners if damages, delays, disruptions, or interference occur.
- E. **NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THIS AGREEMENT OR THE CONTRACT DOCUMENTS AND TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, CONTRACTOR SHALL INDEMNIFY AND HOLD OWNER'S INDEMNITEES**

HARMLESS FROM AND AGAINST ALL CLAIMS AND INDEMNIFIED COSTS RESULTING FROM CONTRACTOR'S TEAM'S ACTION OR INACTION RELATED TO DAMAGES, DELAYS, DISRUPTIONS, OR INTERFERENCE WITH THE WORK OF OWNER'S EMPLOYEES, OTHER CONTRACTORS, OR UTILITY OWNERS PERFORMING OTHER WORK AT OR ADJACENT TO THE SITE.

ARTICLE 9 – OWNER'S AND OPT'S RESPONSIBILITIES

9.01 Communications to Contractor

- A. OPT issues communications to Contractor through Construction Manager except as otherwise provided in the Contract Documents.

9.02 Replacement of Owner's Project Team Members

- A. Owner may replace members of OPT at its discretion.

9.03 Furnish Data

- A. OPT is to furnish the data required of OPT under the Contract Documents.

9.04 Pay When Due

- A. Owner is to make payments to Contractor when due as described in Article 15.

9.05 Lands and Easements; Reports and Tests

- A. Owner's duties with respect to providing lands and easements are described in Paragraph 5.01. OPT will make copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site available to Contractor in accordance with Paragraph 5.03.

9.06 Insurance

- A. Owner's responsibilities with respect to purchasing and maintaining insurance are described in Article 6.

9.07 Modifications

- A. Owner's responsibilities with respect to Modifications are described in Article 11.

9.08 Inspections, Tests, and Approvals

- A. OPT's responsibility with respect to certain inspections, tests, and approvals are described in Paragraph 14.02.

9.09 Limitations on OPT's Responsibilities

- A. OPT does not supervise, direct, or have control or authority over, and is not responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or related safety precautions and programs, or for failure of Contractor to comply with Laws

and Regulations applicable to the performance of the Work. OPT is not responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

- B. OPT is not responsible for the acts or omissions of Contractor's Team. No actions or failure to act, or decisions made in good faith to exercise or not exercise the authority or responsibility available under the Contract Documents creates a duty in contract, tort, or otherwise of OPT to the Contractor or members of Contractor's Team.

9.10 Undisclosed Hazardous Environmental Condition

- A. OPT's responsibility for undisclosed Hazardous Environmental Conditions is described in Paragraph 5.06.

9.11 Compliance with Safety Program

- A. Contractor is to inform OPT of its safety programs and OPT is to comply with the specific applicable requirements of this program.

ARTICLE 10 – DESIGN PROFESSIONAL'S AND CONSTRUCTION MANAGER'S STATUS DURING CONSTRUCTION

10.01 Owner's Representative

- A. Construction Manager is Owner's representative. The duties and responsibilities and the limitations of authority of Construction Manager as Owner's representative are described in the Contract Documents.

10.02 Visits to Site

- A. Design Professional is to make periodic visits to the Site to observe the progress and quality of the Work. Design Professional is to determine, in general, if the Work is proceeding in accordance with the Contract Documents based on observations made during these visits. Design Professional is not required to make exhaustive or continuous inspections to check the quality or quantity of the Work. Design Professional is to inform OPT of issues or concerns and Construction Manager is to work with Contractor to address these issues or concerns. Design Professional's visits and observations are subject to the limitations on Design Professional's authority and responsibility described in the Contract Documents.
- B. Construction Manager is to observe the Work to check the quality and quantity of Work, implement Owner's quality assurance program and administer the Contract as Owner's representative as described in the Contract Documents. Construction Manager's visits and observations are subject to the limitations on Construction Manager's authority and responsibility described in the Contract Documents.

10.03 Rejecting Defective Work

- A. OPT has the authority to reject Work in accordance with Article 14. Construction Manager is to notify Contractor of Defective Work of which it is aware and document when Defective Work has been corrected or accepted in accordance with Article 14.

10.04 Decisions on Requirements of Contract Documents and Acceptability of Work

- A. Construction Manager is to render decisions regarding non-technical or contractual/administrative requirements of the Contract Documents and will coordinate the response of OPT to Contractor.
- B. Design Professional is to render decisions regarding the conformance of the Work to the requirements of the Contract Documents. Design Professional will render a decision to either correct the Defective Work, or accept the Work under the provisions of Paragraph 14.04, if Work does not conform to the Contract Documents. Construction Manager will coordinate the response of OPT to Contractor.
- C. Construction Manager will issue a Request for a Change Proposal if a Modification is required. Construction Manager will provide documentation for changes related to the non-technical or contractual/administrative requirements of the Contract Documents. Design Professional will provide documentation if design related changes are required through Construction Manager.
- D. Contractor may appeal OPT's decision by submitting a Change Proposal if Contractor does not agree with the OPT's decision.

ARTICLE 11 – CHANGES TO THE CONTRACT

11.01 Amending and Supplementing the Contract Documents

- A. A Contract Amendment, Change Order, Work Change Directive, or Field Order may modify the Contract Documents. Modifications that include a change in the Contract Price or Contract Times can only be made in a Contract Amendment or Change Order.
- B. 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 design or technical matters, must be supported by Design Professional's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of Design Professional.
- C. Proceed with the Changes in the Work or, in the case of a deletion in the Work, immediately cease construction activities related to the deleted Work upon receipt of the Modification.
- D. Contractor is not entitled to an increase in the Contract Price or an extension of the Contract Times with respect to Work performed that is not required by the Contract Documents, except in the case of an emergency as provided in Paragraph 7.12, or in the case of uncovering Work as provided in Paragraph 14.05. Contractor is responsible for costs and time delays associated with variations from the requirements of the Contract Documents unless the variations are specifically approved by Change Order.
- E. Acceptance of a Modification by Contractor constitutes agreement that the compensation provided by that Modification is the full, complete, and final compensation for all costs Contractor has or may incur because of or relating to this Modification whether these costs are known, unknown, foreseen, or unforeseen at this time, including any cost for delay, extended overhead, ripple or impact cost, or any other effect on changed or unchanged Work as a result of this Modification.

- F. Acceptance of a Modification by Contractor constitutes agreement that the changes in Contract Times are the complete and final adjustments for direct impacts to the ability of Contractor to complete the Work within the Contract Times and are the only adjustments to which Contractor is entitled.
- G. Perform added or revised Work under the applicable provisions of the Contract Documents for the same or similar Work unless different Drawings, Specifications, or directions are provided in the Modification.
- H. Nothing in this paragraph 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.

11.02 Contract Amendments

- A. Owner and Contractor may modify the terms and conditions of the Contract Documents without the recommendation of Design Professional using a Contract Amendment.
- B. A Contract Amendment may also be used for authorizing a new task order for task order contracts or a new phase of the Work when using phased construction or purchasing Goods and Special Services to be incorporated into the Project. The Contract Amendment may be used to establish the Contract Price, Contract Times, or terms and conditions of the Contract for the new task order or phase of Work if not already established in the Contract Documents.

11.03 Change Orders

- A. All changes to the Contract Documents that include a change in the Contract Price or the Contract Times for previously authorized Work and changes to the Work requiring Design Professional's approval must be made by a Change Order. Change Orders prepared by Construction Manager may cover:
 - 1. Changes in Contract Price or Contract Times which are submitted by Contractor as a Change Proposal and agreed to by the parties;
 - 2. Changes in Contract Price or Contract Times to pay for undisputed Work performed in accordance with a Work Change Directive;
 - 3. Changes in Contract Price or Contract Times making final adjustments for Work covered under Alternates and Allowances;
 - 4. Changes in Contract Price or Contract Times making final adjustments to actual quantities for Unit Price Work;
 - 5. Changes in Contract Price resulting from an Owner Set-off, unless the set off has been successfully challenged by Contractor;
 - 6. Changes in Contract Price or Contract Times resulting from resolution of Claims;
 - 7. Changes in Contract Price or Contract Times 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
 - 8. Other similar provisions that will modify the Contract Price or Contract Times.

- B. A Change Order may also be used to establish modifications of the Contract Documents that do not affect the Contract Price or Contract Times.

11.04 Work Change Directives

- A. A Work Change Directive does not change the Contract Price or the Contract Times, but is evidence that the parties expect that the modifications ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations on the Contract Price and Contract Times.
- B. Contractor must submit a Change Proposal seeking an adjustment of the Contract Price or the Contract Times no later than 30 days after the completion of the Work set out in the Work Change Directive if negotiations are unsuccessful under the terms of the Contract Documents governing adjustments.

11.05 Field Orders

- A. Design Professional may require minor changes in the Work that do not change the Contract Price or Contract Times using a Field Order through Construction Manager. Construction Manager may issue a Field Order for non-technical, administrative issues. Submit a Change Proposal if Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times before proceeding with the Work described in the Field Order.

11.06 Change Proposals

- A. Submit a Change Proposal to Construction Manager to:
 - 1. Request an adjustment in the Contract Price or Contract Times;
 - 2. Contest an initial decision by OPT concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents;
 - 3. Contest a Set-off against payment due; or
 - 4. Seek other relief under the Contract Documents.
- B. Notify Construction Manager immediately if a Change Proposal is to be submitted. Submit each Change Proposal to Construction Manager no later than 30 days after the event initiating the Change Proposal. Submit the following as part of the Change Proposal:
 - 1. Any proposed change in Contract Price, Contract Times, or other relief, accompanied by a statement that the requested Change Order is the entire adjustment to which Contractor believes it is entitled;
 - 2. The reason for the proposed change; and
 - 3. Supporting data, accompanied by a statement that the supporting data is accurate and complete.
- C. Construction Manager is to advise OPT regarding the Change Proposal. OPT is to review each Change Proposal and Contractor's supporting data, and within 30 days after receipt of the documents, direct Construction Manager to either approve or deny the Change Proposal in whole or in part. Construction Manager is to issue a Change Order for an approved Change Proposal. Change Proposals are denied if Construction Manager does not

act on the Change Proposal within 30 days. Contractor may start the time for appeal of the denial under Article 12.

11.07 Change of Contract Price; Contract Times

- A. Change Proposals for an adjustment in the Contract Price must comply with the provisions of this Paragraph 11.07. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12. Any adjustment of the Contract Times is subject to the limitations described in Paragraph 4.03.
- B. An adjustment in the Contract Price is to be determined as follows:
 - 1. By applying unit prices to the quantities of the items involved, subject to the provisions of Paragraph 13.03, where the Work involved is covered by unit prices in the Contract Documents;
 - 2. By a mutually agreed lump sum where the Work involved is not covered by unit prices in the Contract Documents; or
 - 3. Payment based on the Cost of the Work determined as provided in Article 13 when the Work involved is not covered by unit prices in the Contract Documents or the parties do not reach a mutual agreement to a lump sum.
- C. The original Contract Price may not be increased by more than 25 percent unless further limited by Laws and Regulations. Owner may decrease the Work by up to 25 percent of the Contract Price without adjusting Contractor's fee.

11.08 Execution of Change Orders and Contract Amendments

- A. Each Change Order or Contract Amendment must be specific and final as to changes in Contract Price and Contract Times for the changes described in the Change Order or Contract Amendment. Acceptance of a Change Order or Contract Amendment by Contractor constitutes a full accord and satisfaction for all claims and costs of any kind, whether direct or indirect, including impact, delay, or acceleration damages related to the Change Order or Contract Amendment. The execution of a Change Order or Contract Amendment by Contractor constitutes conclusive evidence of Contractor's agreement to the ordered changes in the Work, with no reservations or other provisions allowing for future changes in the Contract Price or Contract Times. This Contract, as amended, forever releases any claim against Owner for additional time or compensation for matters relating to or arising out of or resulting from the Work included within or affected by the executed Change Order or Contract Amendment. This release applies to claims related to the cumulative impact of all Change Orders or Contract Amendment and to any claim related to the effect of a change on unchanged Work.
- B. A Change Order or Contract Amendment is deemed to be in full force as if executed by Contractor if Contractor refuses to execute a Change Order or Contract Amendment that is required to be executed under the terms of this Paragraph 11.08.

11.09 Notice to Surety

- A. Notify the surety of Modifications affecting the general scope of the Work, changes in the provisions of the Contract Documents, or changes in Contract Price or Contract Times. Adjust the amount of each bond when Modifications change the Contract Price.

ARTICLE 12 – CLAIMS

12.01 Claims

- A. Follow the Claims process described in this Article for a demand or assertion by Contractor:
 - 1. Contesting an initial decision by OPT concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents;
 - 2. Contesting OPT's decision regarding a Change Proposal;
 - 3. Seeking resolution of a contractual issue that OPT has declined to address;
 - 4. Seeking other relief with respect to the terms of the Contract; or
 - 5. Any issue, request, demand, or dispute arising after Construction Manager's recommendation of Final Payment not specifically listed in the Certificate of Final Completion.
- B. Notify Construction Manager no later than 7 days after the start of the event giving rise to the Claim or, in the case of appeals regarding Change Proposals, within 7 days of the decision under appeal. The responsibility to substantiate a Claim rests with the entity making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Price or Contract Times, Contractor must certify that the Claim is made in good faith, that the supporting data is 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. The entity receiving a Claim is to review the Claim and consider its merits. The Owner and Contractor are to seek to resolve the Claim through the exchange of information and direct negotiations. The Owner and Contractor may extend the time for resolving the Claim by mutual agreement. Notify Construction Manager of actions taken on a Claim.
- D. Owner and Contractor may mutually agree to mediate the underlying dispute at any time after initiation of a Claim.
 - 1. The agreement to mediate suspends the Claims process.
 - 2. Owner or Contractor may unilaterally terminate the mediation process after 60 days from the agreement to mediate and resume the Claims process as of the date of the termination. The Claim process resumes as of the date of the conclusion of the mediation, as determined by the mediator, if the mediation is unsuccessful in resolving the dispute.
 - 3. Owner and Contractor are to each pay one-half of the mediator's fees and costs.
- E. If the entity receiving a Claim approves the Claim in part or denies it in part, this action is final and binding unless the other entity invokes the procedure described in Article 17 for final resolution of disputes within 30 days of this action.

- F. Notify Construction Manager if efforts to resolve the Claim are not successful and the Claim is denied. A denial of the Claim is final and binding unless the other entity invokes the procedure described in Article 17 for the final resolution of disputes within 30 days of the denial.
- G. The results of the agreement or action on the Claim is to be incorporated in a Change Order by Construction Manager to the extent they affect the Contract Documents, the Contract Price, or the Contract Times if the Owner and Contractor reach an agreement regarding a Claim.

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

13.01 Cost of the Work

- A. The Cost of the Work is the sum of costs described in this Paragraph 13.01, except those excluded in Paragraph 13.01.D, necessary for the proper performance of the Work. 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, time-and-materials, or other cost-based terms; or
 - 2. To determine the value of a Change Order, Change Proposal, Claim, Set-off, or other adjustment in Contract Price.
- B. Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the events giving rise to the adjustment when the value of the adjustment is determined on the basis of the Cost of the Work.
- C. Costs included in the Cost of the Work may not exceed the costs commonly incurred in the proximate area of the Site for similar work unless agreed to by Owner. Cost of the Work includes only the following items:
 - 1. Payroll costs for Contractor's employees performing the Work, including one foreman per crew, and other required and agreed upon personnel for the time they are employed on the Work. Employees are to be paid according to wage rates for job classifications as agreed to by Owner in advance of the Work. Rates paid for this Work are to be the same as paid for Contract Work as established by certified payroll. Payroll costs may include:
 - a. Actual costs paid for salaries and wages;
 - b. Actual cost paid for fringe benefits, which consists of:
 - 1) Social security contributions,
 - 2) Unemployment,
 - 3) Excise and payroll taxes,
 - 4) Workers' compensation,
 - 5) Health and retirement benefits, and
 - 6) Paid time off for sick leave, vacations and holidays; and

- c. Actual cost of additional compensation paid for performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, to the extent authorized by Owner.
- 2. Cost of materials and equipment furnished and incorporated in the Work, including transportation and storage costs and required Suppliers' field services. Contractor may retain cash discounts unless Owner provided funds to Contractor for early payment of these materials and equipment. Cash discounts are to be credited to Owner if Owner provides funds for early payment. Make provisions for trade discounts, rebates, refunds, and returns from sale of surplus materials and equipment and reduce the Cost of the Work by these amounts.
- 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. Obtain competitive bids from Subcontractors acceptable to Owner if required by OPT. Bids are to be opened in the presence of Construction Manager and other designated members for OPT. Provide copies of bids to Construction Manager to use in determining, with OPT, which bids are acceptable. The Subcontractor's Cost of the Work and fee are determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01 if the subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee.
- 4. Supplemental 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. Costs of materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site including transportation and maintenance costs related specifically to the Work;
 - c. Costs of engineers, architects, testing laboratories, surveyors, employed or retained for services specifically related to the Work.
 - d. Actual cost for construction equipment, including the costs of transporting, loading, unloading, assembling, dismantling, and removing construction equipment, whether owned by Contractor or rented from others.
 - 1) Cost for construction equipment must not exceed the cost shown in the most current edition of the rental rate book named in the Supplemental Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
 - 2) 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.

- e. Applicable sales, consumer, use, and other similar taxes related to the Work for which Owner is not exempt, and which Contractor pays consistent with Laws and Regulations;
 - f. Deposits lost for causes other than negligence of Contractor's Team;
 - g. Royalty payments and fees for permits and licenses;
 - h. Cost of additional utilities, fuel, and sanitary facilities at the Site;
 - i. Minor expense items directly required by the Work; and
 - j. Premiums for bonds and insurance required by the Contract Documents.
- D. The Cost of the Work does not include the following administrative costs which are to be covered by the Contractor's fee:
- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, safety managers, superintendents, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, 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.C.1.
 - 2. The cost of purchasing, renting or furnishing any tool or equipment whose current price would be less than \$500 if purchased new at retail.
 - 3. Office expenses 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 actions of Contractor's Team for the correction of Defective Work, disposal of materials or equipment that do not comply with Specifications, and correcting damage to property.
 - 6. Losses, damages, and related expenses caused by damage to the Work or sustained by Contractor in connection with the performance of the Work. Contractor is entitled to recover costs if covered by Owner's insurance, if applicable. Such losses may include settlements made with the approval of Owner. Do not include these losses, damages, and expenses in the Cost of the Work when determining Contractor's fee.
 - 7. Expenses incurred in preparing and advancing Claims.
 - 8. Any Indemnified Cost paid with regard to Contractor's indemnification of Owner's Indemnitees.
 - 9. Other overhead or general expense costs and the costs of items not described in Paragraph 13.01.C.
- E. Contractor's fee is determined in accordance with the Agreement when the Work is performed on a cost-plus basis.

- F. Contractor's Fee is determined as follows for Work included in a Change Proposal.
1. Contractor's fee is 15 percent of the costs included in the Cost of the Work per Paragraph 13.01.C.1 for payroll cost and per Paragraph 13.01.C.2 for cost of materials and equipment furnished and incorporated in the Work.
 2. Contractor's fee is 5 percent of costs included in the Cost of the Work paid by Contractor for Work performed by Subcontractors per Paragraph 13.01.C.3.
 3. No fee will be payable for costs included in the Cost of the Work for supplemental costs per Paragraph 13.01.C.4.
 4. Fees are to be determined as follows where one or more tiers of Subcontracts are used:
 - a. The Subcontractor's fee is 15 percent for costs incurred under Paragraphs 13.01.C (excluding Paragraph 13.01.C.3) for the Subcontractor that performs the Work;
 - b. The Contractor and Subcontractors of a tier higher than that of the Subcontractor that performs the Work are allowed a fee of 5 percent of the total costs incurred by the next lower tier Subcontractor; and
 - c. Regardless of the number of subcontractor tiers involved, the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that performs the Work.
- G. When a Change Proposal includes additions and credits, the Contractor's fee will be calculated on the sum of costs for each cost category in Paragraph 13.01.C. and applying the appropriate fee from Paragraph 13.01.E. The amount to be credited by Contractor to Owner for any Change Proposal which results in a net decrease in the Cost of Work will be the amount of the actual net decrease in the Cost of Work plus an additional amount equal to 5 percent of the actual net decrease in the Cost of Work.
- H. Establish and maintain records in accordance with generally accepted accounting practices and submit these records, including an itemized cost breakdown together with supporting data, in a form and at intervals acceptable to Construction Manager whenever the Cost of the Work is to be determined pursuant to this Paragraph 13.01.

13.02 Allowances

- A. Include allowances specified in the Contract Documents in the Contract Price and provide Work covered by the allowance as authorized by Owner through Construction Manager.
- B. Contractor agrees that:
1. The cash allowance is used to compensate Contractor for the cost of furnishing materials and equipment for the Work covered by the allowance item in the Contract Documents. Cost may include applicable taxes. Make provisions for trade discounts, rebates, and refunds and reduce the allowance costs by these amounts.
 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

3. Costs for cash allowances and installation costs as described in Paragraphs 13.02.B.1 and 13.02.B.2 above are included in the Contract Price.
- C. Construction Manager will issue a Change Order to adjust the Contract Price by the difference between the allowance amount and the actual amount paid by Contractor for Work covered by the allowance. The Change Order will be issued at the time costs are incurred by Contractor for Work covered by the allowance and this Work is included on the Application for Payment.

13.03 Unit Price Work

- A. The initial Contract Price for Unit Price Work is equal to the sum of the unit price line items in the Agreement. Each unit price line item amount is equal to the product of the unit price for each line item 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 comparing offers and determining an initial Contract Price. Payments to Contractor for Unit Price Work are to be based on actual quantities measured for Work in place.
- C. Each unit price is deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Construction Manager is to determine the actual quantities and classifications of Unit Price Work performed by Contractor to be incorporated into each Application for Payment. Construction Manager's decision on actual quantities is final and binding, subject to the provisions of Paragraph 13.03.E.
- E. Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price within 30 days of Construction Manager's decision under Paragraph 13.03.D, if:
 1. The total cost of a particular item of Unit Price Work amounts to 20 percent or more of the total Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 20 percent from the estimated quantity of an item indicated in the Agreement;
 2. There is no corresponding adjustment with respect to other items of Work; and
 3. Contractor believes it has incurred additional expense as a result of this condition or if Owner believes that the quantity variation entitles Owner to an adjustment in the Contract Price.
- F. Construction Manager will issue a Change Order adjusting estimated quantities to actual quantities to determine the final Contract Price.

13.04 Contingencies

- A. Contingency funds may be included in the Contract Price to pay for Work not defined specifically by the Contract Documents that is essential to the completion of the Project. Contingency funds will be as described in the Agreement.

- B. The contingency funds may be used for costs incurred by Contractor, provided these costs are approved by Owner. Costs are to be determined and documented in accordance with Paragraph 13.01. The contingency funds are not to be used for the following items:
 - 1. Cost overruns due to changes in material costs after the Contract Price is established, unless specific price escalation provisions are made in the Agreement;
 - 2. Rework required to correct Defective Work;
 - 3. Inefficiencies in completing the Work due to Contractor's selected means, methods, sequences, or procedures of construction;
 - 4. Work Contractor failed to include in the Contract Price;
 - 5. Changes required by changes in Laws and Regulations enacted after the Contract Price is established; or
 - 6. Any Work that does not constitute a change in Scope in the Work included in the Contract Price.
- C. Construction Manager is to issue a Change Order for approved expenditures from contingency funds. When the Change Order is issued, the costs are to be added to the Application for Payment. Contractor is to maintain a tabulation showing the contingency amount, adjustments to the contingency amount, and amounts remaining as the Project progresses.
- D. Any contingency amounts that are not included in a Change Order are retained by Owner. A Change Order will be issued to deduct unused contingency amounts from the Contract Price prior to Final Payment.

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

14.01 Access to Work

- A. Provide safe access to the Site and the Work for the observation, inspection, and testing of the Work in progress. Contractor can require compliance with Contractor's safety procedures and programs as part of providing safe access.

14.02 Tests, Inspections, and Approvals

- A. OPT may retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform inspections. Cooperate with inspection and testing personnel and assist with providing access for required inspections, tests, and handling test specimens or Samples.
- B. Arrange for and facilitate inspections, tests, and approvals required by Laws or Regulations of governmental entities having jurisdiction that require Work to be inspected, tested, or approved by an employee or other representative of that entity. Pay associated costs and furnish Construction Manager with the required certificates of inspection or approval.
- C. Arrange, obtain, and pay for inspections and tests required:
 - 1. By the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to OPT;

2. To attain OPT'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;
 5. For acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work;
 6. For re-inspecting or retesting Defective Work, including any associated costs incurred by the testing laboratory for cancelled tests or standby time; and
 7. For retesting due to failed tests.
- D. Provide independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to OPT to provide these inspections and tests.

14.03 Defective Work

- A. It is Contractor's obligation to ensure that the Work is not Defective.
- B. OPT has the authority to determine whether Work is Defective and to reject Defective Work.
- C. Construction Manager is to notify Contractor of Defective Work of which OPT has actual knowledge.
- D. Promptly correct Defective Work.
- E. Take no action that would void or otherwise impair Owner's special warranties or guarantees when correcting Defective Work.
- F. Pay claims, costs, losses, and damages arising out of or relating to Defective Work, including:
 1. Costs for correction, removal, and replacement of Defective Work;
 2. Cost of the inspection and testing related to correction of Defective Work;
 3. Costs for Design Professional's fees associated with review and approval of design modifications for correction, removal, and replacement of Defective Work.
 4. Fines levied against Owner by governmental authorities because of Defective Work; and
 5. Costs of repair or replacement of work of others resulting from Defective Work.

14.04 Acceptance of Defective Work

- A. Owner may elect to accept Defective Work instead of requiring correction or removal and replacement of Defective Work provided:
 1. This acceptance occurs prior to final payment;
 2. Design Professional confirms that the Defective Work is in general accordance with the design intent and applicable design principles; and

3. Design Professional confirms that acceptance of the Defective Work does not endanger public health or safety.
- B. Owner may impose a reasonable Set-off against payments due under Article 15 for costs associated with OPT's evaluation of Defective Work to determine if it can be accepted and to determine the diminished value of the Work. Owner may impose a reasonable Set-off against payments due under Article 15 if the parties are unable to agree as to the decrease in the Contract Price to compensate Owner for the diminished value of Defective Work accepted. Construction Manager is to issue a Change Order for acceptance of the Defective Work prior to final payment. Pay an appropriate amount to Owner if the acceptance of Defective Work occurs after final payment.

14.05 Uncovering Work

- A. OPT has the authority to require inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. Work that is covered prior to approval of Construction Manager must be uncovered for OPT's observation if requested by Construction Manager. Pay for uncovering Work and its subsequent restoration unless Contractor has given Construction Manager timely notice of Contractor's intention to cover the Work and Construction Manager fails to act with reasonable promptness in response to this notice.
- C. Provide necessary labor, material, and equipment and uncover, expose, or otherwise make available the portion of the Work suspected of being Defective for observation, inspection, or testing if OPT considers it necessary or advisable that covered Work be observed by Design Professional or inspected or tested by others as directed by Construction Manager.
 1. Pay for claims, costs, losses, and damages associated with uncovering, exposing, observing, inspecting, and testing if it is found that the uncovered Work is Defective. Pay costs for correction of Defective Work. Pay for reconstruction, repair, or replacement of work of others if it is found that the uncovered Work is Defective.
 2. Submit a Change Proposal for an increase in the Contract Price or an extension of the Contract Times directly attributable to this uncovering, exposure, observation, inspection, testing, and reconstruction if the uncovered Work is found to not be Defective.

14.06 Owner May Stop the Work

- A. Owner may order Contractor to stop the Work if:
 1. The Work is Defective;
 2. Contractor fails to supply sufficient skilled workers or suitable materials or equipment;
or
 3. Contractor performs Work that may fail to conform to the Contract Documents when completed.
- B. This stop work order is to remain in effect until the reason for the stop work order has been eliminated. Owner's right to stop the Work does not create a duty to exercise this right for the benefit of Contractor's Team or surety.

14.07 Owner May Correct Defective Work

- A. Owner may remedy Defective Work after 7 days' notice to Contractor if Contractor fails to correct Defective Work, or to remove and replace Defective Work as required by OPT;
- B. Owner may:
 - 1. Exclude Contractor from the Site;
 - 2. Take possession of the Work and suspend Contractor's services related to the Work; and
 - 3. Incorporate stored materials and equipment in the Work.
- C. Allow OPT access to the Site and off-site storage areas to enable Owner to exercise the rights and remedies under this paragraph.
- D. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 are to be charged against Contractor as a Set-off against payments due under Article 15. These claims, costs, losses, and damages include costs of repair and the cost of replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's Defective Work.
- E. Contractor is not allowed an extension of the Contract Times because of delays in the performance of the Work attributable to the exercise of the Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; FINAL COMPLETION

15.01 Progress Payments

- A. Progress payments are to be submitted to Construction Manager on the Application for Payment form provided by Construction Manager following procedures in the Contract Documents.
 - 1. Progress payments for lump sum Work are to be paid based on the earned value to date at the amounts shown in the Schedule of Values submitted as required by Paragraph 2.03. Final payment will be for the total lump sum amount.
 - 2. Progress payments for Unit Price Work are based on the number of units completed as determined under the provisions of Paragraph 13.03.
 - 3. Progress payments for Work to be paid based on the Cost of the Work per Article 13 are to be paid for Work completed by Contractor during the pay period.
- B. Reduction in Payment by Owner:
 - 1. Owner is entitled to impose a Set-off against payment based on the following:
 - a. Claims made against Owner or costs, losses, or damages incurred by Owner related to:
 - 1) Contractor's conduct in the performance of the Work, including workplace injuries, non-compliance with Laws and Regulations, or patent infringement; or

- 2) Contractor's failure to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site, including workplace injuries, property damage, and non-compliance with Laws and Regulations.
 - b. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - c. Work is Defective, or completed Work has been damaged by Contractor's Team, requiring correction or replacement;
 - d. Owner has been required to correct Defective Work or complete Work in accordance with Paragraph 14.07;
 - e. The Contract Price has been reduced by Change Orders;
 - f. Events have occurred that would constitute a default by Contractor justifying a termination for cause;
 - g. Liquidated or other damages have accrued because of Contractor's failure to achieve Milestones, Substantial Completion, or completion of the Work;
 - h. Liens have been filed regarding the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of these Liens;
 - i. Owner has been notified of failure to make payments to Subcontractors, Suppliers, or Employees;
 - j. Failure to submit up-to-date record documents as required by the Contract Documents;
 - k. Failure to submit monthly Progress Schedule updates or revised schedules as requested by Construction Manager;
 - l. Failure to provide Project photographs required by the Contract Documents;
 - m. Failure to provide Certified Payroll required by the Contract Documents;
 - n. Compensation for OPT for overtime charges of Construction Manager, third review of Shop Drawings, review of substitutions, re-inspection fees, inspections or designs related to correction of Defective Work, or other services identified as requiring payment by Contractor;
 - o. Costs for tests performed by Owner to verify that Work previously tested and found to be Defective has been corrected;
 - p. OPT has actual knowledge of the occurrence of events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents with associated cost impacts;
 - q. Payment would result in an over-payment of the Contract Price; or
 - r. Other items entitling Owner to a Set-off against the amount recommended.
2. Compensation for services of OPT staff is to be at the rates established in the Supplementary Conditions.

3. Construction Manager is to notify Contractor stating the amount and the reasons for an imposed Set-off. Owner is to pay Contractor amounts remaining after deduction of the Set-off. Owner is to pay the Set-off amount agreed to by Owner and Contractor if Contractor remedies the reasons for the Set-off. Contractor may submit a Change Proposal contesting the Set-off.
- C. No payment will be made for Work authorized by a Work Change Directive until the Work Change Directive is incorporated into a Change Order, unless arrangements or interim payments have been included in the Work Change Directive. Payment can be included in an Application for Payment when the Change Order is approved.
- D. Owner is to pay the amount of payment recommended by Construction Manager within 30 days after receipt of the Application for Payment and accompanying documentation from Construction Manager.
- E. Contractor certifies that all Work, including materials, covered by each Application for Payment have been completed or delivered and stored in accordance with the Contract Documents, that all amounts have been paid for Work, materials, and equipment for which previous payment has been made by Owner, and that the current payment amount shown in this Application for Payment is due.

15.02 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to the Work, materials, and equipment furnished under the Contract is to pass to Owner free and clear of Liens, title defects, and patent, licensing, copyright, or royalty obligations no later than 7 days after the time of payment by Owner of the Application for Payment which includes these items.

15.03 Substantial Completion

- A. Notify Construction Manager when the Work or portion of the Work to be accepted under Paragraph 15.04 is substantially complete and request a Certificate of Substantial Completion.
- B. OPT is to inspect the Work after Contractor's notification to determine if the Work is substantially complete. Construction Manager is to either issue the Certificate of Substantial Completion which sets the date of Substantial Completion or notify Contractor of the reasons the Project is not considered to be substantially complete.
- C. The OPT and Contractor are to meet to discuss Owner's use or occupancy of the Work following Substantial Completion. Items to be discussed at this meeting include:
 1. Review of insurance policies with respect to the end of the Contractor's coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner;
 2. Owner's assumption of responsibility for security, operation, protection of the Work, maintenance, and utilities upon Owner's use or occupancy of the Work;
 3. Contractor's obligations for operations and maintenance during performance and acceptance testing;
 4. Contractor's access to the Site to complete punch list items; and

5. Procedures for correction of Defective Work during the one-year correction period.

15.04 Partial Utilization

- A. Owner may use or occupy substantially completed parts of the Work which are specifically identified in the Contract Documents, or which OPT and Contractor agree constitutes a separately functioning and usable part of the Work prior to Substantial Completion of the Work. Owner must be able to use that part of the Work for its intended purpose without significant interference with Contractor's performance of the remainder of the Work. Contractor and OPT are to follow the procedures of Paragraph 15.03 for this part of the Work.
- B. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Article 6.

15.05 Final Inspection

- A. OPT is to make a final inspection upon notice from Contractor that the entire Work or portion to be accepted under Paragraph 15.04 is complete. Construction Manager is to notify Contractor of Work determined to be incomplete or Defective. Immediately take corrective measures to complete the Work and correct Defective Work.
- B. Notify Construction Manager when the entire Project and ready for Final Payment under Paragraph 15.06 and request a Certificate of Final Completion.
- C. OPT is to inspect the Work after Contractor's notification to determine if the Project is complete. Construction Manager is to either issue the Certificate of Final Completion which sets the date of Final Completion or notify Contractor of the reasons the Project is not considered to be complete.

15.06 Final Payment

- A. Make application for final payment after completing required corrections identified during the final inspection and delivering items and documents required by the Contract Documents. Provide the following with the final Application for Payment:
 - 1. Consent of Surety to Final Payment acknowledging unsettled disputes; or
 - 2. Affidavit of Payment of Debts and Claims or Affidavit of Release of Liens or furnish receipts or releases from Subcontractors and Suppliers when a payment bond is not required.
- B. Construction Manager is to either recommend payment of the final Application for Payment to Owner if OPT is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled or notify Contractor of OPT's reasons for not recommending final payment.
- C. The Work is complete, subject to surviving obligations, when it is ready for final payment as established by the Construction Manager's recommendation of payment of the final Application for Payment to Owner and the issuance of a Certificate of Final Completion.
- D. Owner is to pay the amount of final payment recommended by Construction Manager within 30 days after receipt of the final Application for Payment and accompanying

documentation from Construction Manager; unless additional time is required for approval of a governing board or entity. Payment will be within 30 days of approval by the governing board or entity.

15.07 Waiver of Claims

- A. The making of final payment does not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from:
 - 1. Unsettled Liens or claims for non-payment;
 - 2. Defective Work appearing after final inspection pursuant to Paragraph 15.05;
 - 3. Contractor's failure to comply with the terms of special guarantees specified in the Contract Documents;
 - 4. Outstanding Claims or express reservation of rights by Owner; or
 - 5. Contractor's continuing obligations under the Contract Documents.
- B. Contractor waives claims and rights against Owner by accepting final payment except for those Claims made in accordance with the provisions of Article 17 and specifically noted in the Certificate of Final Completion.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 Owner May Suspend Work

- A. Owner may suspend the Work or a portion of the Work for a period of not more than 90 consecutive days, at any time and without cause, by notice to Contractor. This notice fixes the date on which Contractor is to resume Work. Contractor is entitled to adjustments in the Contract Price and Contract Times directly attributable to this suspension. Submit a Change Proposal seeking an adjustment no later than 30 days after the date fixed for resumption of Work.

16.02 Owner May Terminate for Cause

- A. The occurrence of one or more of the following events constitutes a default by Contractor and justifies termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents, including failure to supply sufficient skilled workers or suitable materials or equipment;
 - 2. Failure to adhere to the Progress Schedule;
 - 3. Failure of Contractor to provide a satisfactory replacement bond or insurance in the event either is lost or canceled;
 - 4. Failure of Contractor to maintain financial solvency to adequately complete the Project as indicated by one or more of the following:
 - a. A petition of bankruptcy is filed by or against Contractor;
 - b. Contractor is adjudged as bankrupt or insolvent;

- c. Contractor or surety makes a general assignment for the benefit of creditors;
 - d. A receiver is appointed for the benefit of Contractor's creditors; or
 - e. A receiver is appointed because Contractor's insolvency;
- 5. Contractor's disregard of Laws or Regulations of public bodies having jurisdiction; or
- 6. Contractor's repeated disregard of the authority of OPT.
- B. Contractor and surety must provide adequate assurance of future performance in accordance with the Contract Documents that is satisfactory to Owner if Contractor is believed to be in financial distress due to the existence of one or more of the indicators listed in Paragraph 16.02.A.4. Owner may terminate this Contract if Contractor and surety fail to provide adequate documentation satisfactory to Owner within 10 days of Construction Manager's request for this information.
- C. Owner may declare Contractor to be in default, give notice to Contractor and surety that the Contract is terminated, and enforce the rights available to Owner under the performance bond after giving Contractor and surety 10 days' notice that one or more of the events identified in Paragraph 16.02.A has occurred.
- D. Owner may exclude Contractor from the Site, take possession of the Work, incorporate the materials and equipment stored and complete the Work as Owner may deem expedient if Owner has terminated the Contract for cause.
- E. Owner may elect not to proceed with termination of the Contract under this Paragraph 16.02 if Contractor begins to cure the cause for termination within 7 days of receipt of notice of intent to terminate.
- F. Contractor is not entitled to receive further payments until the Work is completed if Owner proceeds as provided in this Paragraph 16.02. The amount of the Contract Price remaining is to be paid to Contractor if the unpaid balance exceeds the cost to complete the Work. This cost to complete the Work may include related claims, costs, losses, damages, and the fees and charges of engineers, architects, attorneys, and other professionals retained by Owner. Pay the difference to Owner if the cost to complete the Work including related claims, costs, losses, and damages exceeds the unpaid balance of the Contract Price. Claims, costs, losses, and damages incurred by Owner are to be reviewed as to their reasonableness and incorporated in a Change Order by Construction Manager. Owner is not required to obtain the lowest price for the Work performed when exercising its rights or remedies under this paragraph.
- G. Termination does not affect the rights or remedies of Owner against Contractor or against surety under the payment bond or performance bond. Owner does not release Contractor from liability by paying or retaining money due Contractor.

16.03 Owner May Terminate for Convenience

- A. Owner may terminate the Contract without cause after giving 7 days' notice to Contractor of the effective date of termination. Contractor is to be paid for the following if Owner terminates for convenience:
 - 1. Work completed in accordance with the Contract Documents prior to the effective date of termination;

2. Actual costs sustained prior to the effective date of termination for Work in progress, plus a fair and reasonable amount for overhead and profit; fee calculated in accordance with Paragraph 13.01; and
 3. Reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor will not be paid for loss of anticipated profits or revenue, post termination overhead costs, or other economic loss arising out of or resulting from this termination.

16.04 Contractor May Stop Work or Terminate

- A. Contractor may terminate the Contract and issue a Change Proposal requesting payment from Owner on the same terms as provided in Paragraph 16.03 after 10 days' notice to Construction Manager provided that, through no act or fault of Contractor:
1. The Work is suspended for more than 90 consecutive days by Owner;
 2. Construction Manager fails to act on an Application for Payment within 30 days after it is submitted; or
 3. Owner fails to pay Contractor sums determined to be due, other than the final payment, within 30 days after payment is recommended by Construction Manager; and
 4. OPT does not remedy this suspension or failure within 10 days after receipt of the notice.
- B. Contractor may stop Work, without prejudice to other rights or remedies in lieu of terminating the Contract if Construction Manager has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed to pay Contractor within 30 days after payment is recommended by Construction Manager. 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 for 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. The Owner or Contractor may appeal a Claim, approved or denied in part or in full, by:
1. Electing to invoke the dispute resolution process if one is provided for in the Supplementary Conditions;
 2. Agreeing with the other party to submit the dispute to a dispute resolution process; or
 3. Notifying the other party of the intent to submit the dispute to a court of competent jurisdiction if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to.

ARTICLE 18 – MISCELLANEOUS

18.01 Computation of Times

- A. Exclude the first day and include the last day when determining dates for a period referred to in the Contract Documents by days. The last day of this period is to be omitted from the determination if it falls on a Saturday, Sunday, or a legal holiday.
- B. All references and conditions for a calendar day contract in the Contract Documents apply for a Fixed Date Contract. A fixed date contract is one in which the calendar dates for reaching Substantial Completion and/or Final Completion are specified in lieu of identifying the number of calendar days involved.

18.02 Independent Contractor

- A. Contractor is to perform its duties under this Contract as an independent contractor. Contractor's Team and their personnel are not considered to be employees or agents of Owner. Nothing in this Agreement is to be interpreted as granting Contractor's Team the right or authority to make commitments for Owner. This Agreement does not constitute or create a joint venture, partnership, or formal business organization of any kind.

18.03 Cumulative Remedies

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available to the Owner or Contractor by these General Conditions are in addition to, and are not a limitation of, the rights and remedies which are otherwise imposed or available by:
 - 1. Laws or Regulations,
 - 2. Special warranties or guarantees, or
 - 3. Other provisions of the Contract Documents.
- B. The provisions of this Paragraph 18.03 are as effective as if repeated specifically in the Contract Documents regarding each duty, obligation, right, and remedy to which they apply.

18.04 Limitation of Damages

- A. Owner's Indemnitees are not liable to Contractor for claims, costs, losses, or damages sustained by Contractor's Team associated with other projects or anticipated projects.

18.05 No Waiver

- A. The failure of Owner or Contractor to enforce any provision of this Contract does not constitute a waiver of that provision, affect the enforceability of that provision, or the enforceability of the remainder of this Contract.

18.06 Severability

- A. If a court of competent jurisdiction renders a part of this Contract invalid or unenforceable, that part is to be severed and the remainder of this Contract continues in full force.

18.07 Survival of Obligations

- A. Representations, indemnifications, warranties, guarantees, and continuing obligations required by the Contract Documents survive completion and acceptance of the Work or termination of the Contract.

18.08 No Third-Party Beneficiaries

- A. Nothing in this Contract can be construed to create rights in any entity other than the Owner and Contractor. Neither the Owner nor Contractor intends to create third party beneficiaries by entering into this 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 Assignment of Contract

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights or interests in the Contract will be binding on the other party without the written consent of the other party. 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.

18.11 No Waiver of Sovereign Immunity

- A. Owner has not waived its sovereign immunity by entering into and performing its obligations under this Contract.

18.12 Controlling Law

- A. This Contract is to be governed by the law of the state in which the Project is located.
- B. Venue for legal proceedings lies exclusively in the county in which the Owner's home office is located unless specified elsewhere in the Contract Documents.

END OF SECTION

00 73 00 SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement Section 00 72 00 "General Conditions." 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.

The paragraph numbers used in the Supplementary Conditions correspond to the General Condition paragraphs they modify with the prefix "SC" added—for example, "Paragraph SC-4.05." modifies General Conditions Paragraph 4.05.

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

- A. The Owner's Project Team as defined in the Paragraph 1.01.A.45 of the General Conditions consists of the following organizations:
 - 1. **Parker County, Texas**
 - 2. **Freese and Nichols, Inc.**
 - 3. **Yellow Rose Mapping, LLC.**

ARTICLE 2 – PRELIMINARY MATTERS

- A. Supplement Paragraph 2.04 of the General Conditions by adding the following paragraph:
 - "G. 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 Paragraph 2.04.F will be at the discretion of the OPT.
 - 2. To the extent determined by OPT, release of Electronic Documents versions of Project documents and other Project information requested by Contractor ("Request") in formats other than those identified in Paragraph 2.04.F will be subject to the provisions of the Owner's response to the Request, and to the following conditions:
 - a. The content included in the Electronic Documents covered by the Request was prepared by Design Professional as an internal working document solely for Design Professional's purposes, and is being provided to Contractor on an "AS IS" basis without any warranties of any kind, including, 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 Design Professional 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 Design Professional or Owner arising from use of data in Electronic Documents covered by the Request.
 - c. **CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS OWNER AND DESIGN PROFESSIONAL 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 Design Professional, 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 Design Professional 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 for any costs necessary to create or otherwise prepare the data in a manner deemed appropriate by Design Professional at the rates set for in Article 15."

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

SC-5.03 Subsurface and Physical Conditions

- A. This Supplementary Condition identifies the reports and drawings referenced in Paragraph 5.03 of the General Conditions related to subsurface and physical conditions.
1. 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	Report Date	Technical Data

2. 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:

Drawing Title	Drawing Date	Technical Data
None	None	None

3. Copies of reports and drawings may be downloaded from the project procurement website.

SC-5.06 Hazardous Environmental Conditions at Site

- A. This Supplementary Condition identifies the reports and drawings referenced in Paragraph 5.06 of the General Conditions related to Hazardous Environmental Conditions at the Site.

1. 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	Report Date	Technical Data
None	None	None

2. 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:

Drawing Title	Drawing Date	Technical Data
None	None	None

3. Copies of reports and drawings may be downloaded from the project procurement website.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.01 Performance, Payment, and Other Bonds

- A. Supplement Paragraph 6.01.D of the General Conditions by adding the following subparagraph(s):
 - “1. Contractor must provide a maintenance bond in accordance with the maintenance bond form provided in the Contract Documents. Surety company providing the maintenance bond must be the same surety company that provides the performance bond for the Project. The term and amount of the bond will be as specified in the bond form.”
 - “2. Contractor must provide a warranty bond for equipment as specified. Surety company providing the warranty bond may be the same surety company that provides the performance bond for the Project. The term and amount of the bond will be as specified in the bond form. Bond must be written to cover the interest of the Contractor and Owner and be transferable to the Owner at Final Completion.”

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

SC-13.01 Cost of the Work

- A. Supplement Paragraph 13.01.C.4.d.1) by adding the following sentence:

“The equipment rental rate book that governs the included costs for the rental of machinery and equipment owned by Contractor (or a related entity) under the Cost of the Work provisions of this Contract is the most current edition of **the equipment rental rate blue book for construction equipment**.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; FINAL COMPLETION

SC-15.01 Progress Payments

- A. Compensation for services of OPT staff as specified in Paragraph 15.01 will be at the following rates:

Position	Hourly Rate
Principal in Charge	\$300
Project Manager	\$240
Project Engineer	\$200
Construction Manager	\$220
Resident Engineer	\$140
Project Construction Manager	\$220
Design Engineer	\$160
Engineering Technician	\$110
Clerk	\$80

- B. Expenses will be billed at the actual cost multiplied by 1.15.

SC-15.03 Substantial Completion

- A. **All pavement must be complete and roads must be open to traffic in their final configuration. All pavement markings, signage, delineators, and object markers must be installed.**

00 73 16 INSURANCE REQUIREMENTS

ARTICLE 1 – GENERAL PROVISIONS

1.01 CONTRACTOR’S INSURANCE

- A. Obtain and maintain insurance that complies with this Section with coverage amounts equal to or greater than the amounts specified in Article 2 or greater where required by Laws and Regulations.
- B. Coverage is to remain in effect at least until the Work is complete and longer if expressly required elsewhere in this Contract, and when Contractor may be correcting, removing, or replacing Defective Work as a warranty or correction obligation, or returning to the Site to conduct other tasks arising from the Contract.
- C. Coverage is to apply with respect to the performance of the Work, whether 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.
- D. Obtain insurance from companies that are duly licensed or authorized in the state in which the Project is constructed to issue insurance policies for the required limits and coverages and that have an A.M. Best rating of A-VIII or better.
- E. Alternative forms of insurance coverage, including self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not acceptable to meet the insurance requirements of this Contract.
- F. Owner will not purchase or maintain insurance to protect the interest of Contractor, subcontractors, or others in the Work. Owner does not represent that the insurance coverage and limits established in this Contract are adequate to protect Contractor or the 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 it deems necessary and including the cost of this insurance in the offered Contract Price.
- G. Contractor is fully responsible for all losses arising out of, resulting from, or connected with operations under this Contract whether or not these losses are covered by insurance. The acceptance of evidence of insurance by OPT, or others listed as an additional insured, that does not comply with the Contract requirements does not release Contractor from the requirement to comply with Contract requirements.
- H. The required insurance and insurance limits do not limit the Contractor’s liability under the indemnities granted to Owner’s Indemnitees in the Contract Documents.
- I. Do not perform any Work on the Project unless the required insurance policies are in effect. Owner may exclude Contractor from the Site and exercise the Owner’s termination rights under the General Conditions if Contractor fails to obtain or maintain the required insurance.
- J. Policies must provide notice before cancellation, non-renewal, or any material change in the policy’s terms and conditions as described in Paragraph **[1.04.D]**. Contractor is to notify Owner and the additional insured of any notice received within 3 days of receipt of a notice

by Contractor. Contractor is to cease all Work covered by cancelled or non-renewed insurance if suitable coverage is not in place in time to prevent a lapse in coverage. Contractor is solely responsible for any delays associated with lapsed coverage.

- K. Owner may elect, but is in no way obligated, to obtain equivalent insurance to protect the Owner's interests without prejudice to any other right or remedy if Contractor fails to obtain or maintain the required insurance. Owner may impose a reasonable Set-off against payments to recover the cost of the insurance.
- L. Owner's policies, if any, operate separately and independently from policies required to be provided by Contractor and Contractor cannot rely upon the Owner's policies to meet any of the Contractor's obligations to Owner, Design Professional, or any third party.

1.02 SUBCONTRACTOR OR SUPPLIER INSURANCE

- A. Require subcontractors to purchase and maintain workers' compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project. Include OPT as additional insureds on subcontractor policies in accordance with Paragraph **[1.03]**.
- B. Require suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- C. Contractor is liable for all losses that would have been covered by subcontractor or supplier insurance if subcontractor or supplier fails to provide coverage.

1.03 ADDITIONAL INSURED

- A. The following are to be named as an additional insured on all insurance policies, except workers' compensation insurance, builder's risk insurance, and the Contractor's professional liability insurance:
 - 1. **Parker County**
Attn: **Kim Rivas**
1112 Santa Fe Drive
Weatherford, TX 76086
 - 2. **Freese and Nichols, Inc.**
Attn: **Risk Management**
801 Cherry Street, Suite 2800
Fort Worth, Tx 76102
- B. All insurance related notices are to be sent to the addresses listed above.
- C. Notify Owner and each additional insured if Contractor fails to purchase or maintain the insurance required by the Contract Documents.
- D. All insurance policies must include a waiver of subrogation in favor of each additional insured.
- E. Provide for an endorsement that the "other insurance" clause will not apply to OPT where OPT is an additional insured. Contractor's insurance is primary and non-contributory with respect to any insurance or self-insurance carried by OPT for liability arising out of operations under this Contract.

1.04 EVIDENCE OF INSURANCE

- A. Deliver evidence of insurance, in accordance with this Section, to the Owner with the signed Contract Documents to demonstrate that Contractor has obtained the policies, coverages, and endorsements required by the Contract.
 - 1. Continue to provide evidence Contractor is maintaining the required insurance for the duration of the Contract Times and such extended periods as required by the Contract Documents.
 - 2. Provide this evidence of insurance to Owner and each additional insured.
 - 3. Contractor may block out (redact) any confidential premium or pricing information and wording specific to a project or jurisdiction in any policy or endorsement furnished under this paragraph not applicable to this Contract.
- B. OPT's failure to demand evidence of insurance or verify the Contractor's full compliance with insurance requirements or failure to identify a deficiency in compliance from the evidence provided is not a waiver of the Contractor's obligation to obtain and maintain the insurance required by the Contract Documents.
- C. Provide evidence of insurance acceptable to Owner with the executed Contract Documents. Provide the following as evidence of insurance:
 - 1. Copy of insurance policies;
 - 2. Certificates of insurance on an acceptable form;
 - 3. Full disclosure of exclusions;
 - 4. Declaration pages, riders, or endorsements to policies;
 - 5. Documentation of deductibles;
 - 6. List of named and additional insureds for each policy; and
 - 7. Evidence that waivers of subrogation are provided on applicable policies.
- D. Provide evidence of a requirement in the policy that at least 10 days' notice will be given before cancellation, non-renewal or any material change in the policy's terms and conditions including:
 - 1. Type of coverage provided;
 - 2. Riders or endorsements to policies;
 - 3. Policy limits of coverage;
 - 4. Change in deductible amount;
 - 5. Status of named or additional insured; or
 - 6. Waivers of subrogation.
- E. Certificates of Insurance:
 - 1. Submit certificates of insurance meeting the applicable requirements of the applicable state department of insurance. No requirement of this Contract may be interpreted as requiring the issuance of a certificate of insurance on a form that has not first been filed with and/or approved by the applicable state department of insurance.

2. Include the name of the Project in the description of operations box on the certificate of insurance, and the name of each additional insured.
- F. Continuing Evidence of Coverage:
1. Provide updated, revised, or new evidence of insurance prior to the expiration of existing policies. A certificate of insurance is acceptable as evidence of renewal of insurance policies, provided no changes are made in the policy originally provided with signed Contract Documents.
 2. Provide evidence of continuation of insurance coverage at final payment and for the following 3 years.

ARTICLE 2 – INSURANCE COVERAGE AMOUNTS AND POLICY REQUIREMENTS

2.01 CONTRACTOR’S INSURANCE

- A. Workers’ Compensation and Employer’s Liability Insurance:
1. Purchase and maintain workers’ compensation and employer’s liability insurance, including, as applicable, United States Longshoreman and Harbor Workers’ Compensation Act, Jones Act, stop-gap employer’s liability coverage for monopolistic states, and foreign voluntary workers’ compensation, including off-site operations.
 2. Provide the following coverage with not less than the minimum limits indicated:

Workers’ Compensation and Related Insurance	Policy Limits
Workers’ Compensation	
State	Statutory
Applicable Federal (e.g., Longshore)	Statutory
Foreign Voluntary Workers’ Compensation (Employer’s Responsibility Coverage), if Applicable	Statutory
Employers’ Liability	
Each Accident	\$ 1,000,000
Each Employee	\$ 1,000,000
Policy Limit	\$ 1,000,000

- B. Commercial General Liability:
1. Purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
 - a. Damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees;
 - b. Damages insured by reasonably available personal injury liability coverage; and
 - c. Damages because of injury to or destruction of tangible property wherever located, including loss of use resulting from the damage.
 2. Contractor’s commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form).
 - a. Provide 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). Equivalent endorsements may be used if Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available.

- b. Provide ISO Endorsement CG 20 32 07 04 “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent for Design Professional additional insured.
3. Provide the following coverages and endorsements:
 - a. Products and completed operations coverage.
 - 1) Maintain coverage for 3 years after final payment.
 - 2) Provide Owner and each other additional insured evidence of continuation of such insurance at final payment and for 3 years thereafter.
 - b. Blanket contractual liability coverage, including coverage of Contractor’s contractual indemnity obligations in the General Conditions.
 - c. Severability of interests and no insured-versus-insured or cross-liability exclusions.
 - d. Underground, explosion, and collapse coverage.
 - e. Personal injury coverage.
4. The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
 - a. Modifications 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).
 - b. Exclusion for water intrusion or water damage.
 - c. Provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
 - d. Exclusion of coverage relating to earth subsidence or movement.
 - e. Exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than workers’ compensation).
 - f. Limitations or exclusions based on the nature of Contractor’s work.
 - g. Professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
5. Provide the following coverage with not less than the minimum limits indicated:

Commercial General Liability Insurance	Policy Limits
General Aggregate	\$1,000,000 / Occurrence \$2,000,000 / Aggregate
Products - Completed Operations	\$1,000,000 / Occurrence \$2,000,000 / Aggregate
Personal and Advertising Injury (Limit Per Person)	\$1,000,000
Bodily Injury and Property Damage – Each Occurrence	\$1,000,000

C. Automobile Liability:

1. 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. Coverage can be provided through individual limits for bodily injury and for property damage or a combined single limit covering both bodily injury and property damage.
2. Provide the following coverage with not less than the minimum limits indicated:

Automobile Liability Insurance	Policy Limits
Bodily Injury	
Each Person	\$1,000,000
Each Accident	\$1,000,000
Property Damage	
Each Accident	\$1,000,000
Combined Single Limit	
Combined Single Limit for Bodily Injury and Property Damage	\$1,000,000

D. Umbrella or Excess Liability:

1. Purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the Paragraphs A through C above. The coverage afforded must be at least as broad as that of each underlying policy.

E. Contractor's Professional Liability Insurance:

1. Purchase and maintain applicable professional liability insurance if Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise. 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 2 years after Substantial Completion. The policy must pre-date the commencement of furnishing services on the Project.
2. Provide the following coverage with not less than the minimum limits indicated:

Contractor's Professional Liability Insurance	Policy Limits
Each Claim	\$ 1,000,000
Annual Aggregate	\$ 1,000,000

F. Unmanned Aerial Vehicle Liability Insurance:

1. Purchase and maintain Unmanned Aerial Vehicle (UAV—commonly referred to as drones) liability insurance if Contractor uses UAV at the Site or in support of any aspect of the Work. Insurance must provide coverage for property damage, bodily injury or death, and invasion of privacy.

2. Provide the following coverage with not less than the minimum limits indicated:

Unmanned Aerial Vehicle Liability Insurance	Policy Limits
Each Claim	\$ 1,000,000
Annual Aggregate	\$ 1,000,000

G. Railroad Protective Liability Insurance:

1. Prior to commencing any Work within 50 feet of railroad-owned and controlled property: (1) endorse Contractor's commercial general liability policy with ISO CG 24 17, removing the contractual liability exclusion for work within 50 feet of a railroad, (2) purchase and maintain railroad protective liability insurance meeting the following requirements, (3) furnish a copy of the endorsement to Owner, and (4) submit a copy of the railroad protective policy and other railroad-required documentation to the railroad, and notify Owner of such submittal.
2. Provide the following coverage with not less than the minimum limits indicated:

Railroad Protective Liability Insurance	Policy Limits
Each Claim	\$ 2,000,000
Aggregate	\$ 2,000,000

END OF SECTION

00 73 17 TEXAS WORKERS' COMPENSATION INSURANCE

ARTICLE 1 – REQUIRED NOTICE

1.01 Workers' Compensation Insurance Coverage

A. Definitions:

1. Certificate of coverage ("certificate") - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the division, or a coverage agreement (DWC Form 81, DWC Form 82, DWC Form 83, or DWC Form 84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.
2. Duration of the project - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.
3. Persons providing services on the project ("subcontractor" in §406.096) - includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

- B. The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.
- C. The contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.
- D. If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.
- E. The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:
 1. a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 2. no later than 7 days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

- F. The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.
- G. The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.
- H. The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Department of Insurance, Division of Workers' Compensation, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- I. The contractor shall contractually require each person with whom it contracts to provide services on a project, to:
 - 1. provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;
 - 2. provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;
 - 3. provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - 4. obtain from each other person with whom it contracts, and provide to the contractor:
 - a. a certificate of coverage, prior to the other person beginning work on the project; and
 - b. a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - 5. retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - 6. notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - 7. contractually require each person with whom it contracts, to perform as required by paragraphs 1-7, with the certificates of coverage to be provided to the person for whom they are providing services.
- J. By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the

division. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

- K. The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.

END OF SECTION

00 73 43 WAGE RATE REQUIREMENTS

ARTICLE 1 – PAYMENT OF PREVAILING WAGE RATES

- 1.01 Contractor and Subcontractors employed on this Project must pay not less than the rates established by the Owner as required by Tex. Gov't Code Chapter 2258.
- 1.02 The minimum wage rates for various labor classifications as established by the Owner are included in Section 00 73 46 "Wage Determination Schedule."

ARTICLE 2 – PENALTY

- 2.01 In accordance with Section 2258.023(b), any Contractor or Subcontractor who violates the requirements of Chapter 2258 shall pay the Owner \$60 for each worker employed or each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the Contract.
- 2.02 Failure to comply with the requirements of Chapter 2258 may subject the Owner, Contractor, or Subcontractor(s) to additional civil and criminal penalties.

ARTICLE 3 – RECORDS

- 3.01 In accordance with Section 2258.024, the Contractor and its Subcontractors, if any, shall keep a record showing:
 - A. The name and occupation of each worker employed by the Contractor or Subcontractor in the construction of the Work; and
 - B. The actual per diem wages paid to each worker.
- 3.02 This record shall be open at all reasonable hours to inspection by the officers and agents of the OPT.

ARTICLE 4 – ENFORCEMENT

- 4.01 Owner will enforce the provisions related to the payment of prevailing wage rates as required by Chapter 2258, Subchapter C.
- 4.02 Owner may be required to withhold money forfeited or required to be withheld under Chapter 2258 from the payments to the Contractor. If required, these amounts will be withheld from payments to the Contractor through a Set-off in accordance with the General Conditions.

END OF SECTION

00 73 46 WAGE DETERMINATION SCHEDULE

Wage Determination (WD) No.	Construction Type	Project Type
TX-31	Heavy	Heavy construction projects (including sewer and water line construction and drainage projects)
TX-36	Heavy	Heavy construction projects (including water and sewer lines)
TX-40	Highway	Highway construction projects (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).
TX-45	Heavy	Pipeline - on-shore pipeline construction
TX-46	Heavy	Pipeline - off-shore construction
TX-51	Building	Building construction projects (does not include residential construction consisting of single family homes and apartments up to and including 4 stories.)
TX-75	Heavy	Dredging projects along the Texas gulf coast area including all public channels, harbors, rivers, tributaries and the gulf intracoastal waterways.
TX-81	Heavy	Tunnel construction projects (bored, 48" in diameter or more)

END OF SECTION

01 11 00 SUMMARY OF WORK

PART 1 - GENERAL

1.01 SUMMARY

- A. Construct Work as described in the Contract Documents.
 - 1. Provide the materials, equipment, and incidentals required to make the Project completely and fully operable.
 - 2. Provide the labor, equipment, tools, and consumable supplies required for a complete Project.
 - 3. Provide the civil, architectural, structural, mechanical, electrical, instrumentation, and all other Work required for a complete and operable Project.
 - 4. Test and place the completed Project in operation.
 - 5. Provide the special tools, spare parts, lubricants, supplies, or other materials as indicated in the Contract Documents for the operation and maintenance of the Project.
 - 6. The Contract Documents do not indicate or describe all Work required to complete the Project. Additional details required for the correct installation of selected products are to be provided by the Contractor and coordinated with the Construction Manager.
- B. Owner may pre-select or pre-purchase goods for this Project per Section 01 64 00 "Owner-Furnished Goods and Special Services." Install these goods and coordinate the performance of specified special services.

1.02 DESCRIPTION OF WORK

- A. Work is described in general, non-inclusive terms as:
 - 1. **Embankment (~35,000 CY)**
 - 2. **Excavation (~5,000 CY)**
 - 3. **Concrete Pavement (~30,000 SY)**
 - 4. **Traffic Signal (1 new location and 1 modification at an existing location)**
 - 5. **Storm Drain pipe (~4,500 LF)**
 - 6. **Pavement markings and signage for ~0.87 miles of roadway**
 - 7. **Sidewalks (~ 5,200 SY) and ADA Ramps (~27 each)**
 - 8. **Retaining Wall (C.I.P.) (1,194 SF)**

1.03 WORK UNDER OTHER CONTRACTS

- A. Owner has no knowledge of work, other than the Work included in this Contract, which may impact construction scheduling, testing, and startup.

- B. The following items of work are not included in this Contract, but may impact construction scheduling, testing, and startup:

Owner	Description
City of Willow Park	Water and Sewer Improvements along E. Bankhead Highway and along IH-20 EB Frontage Road

- C. Bring any discrepancies in the list to the attention of the Construction Manager. It will be deemed that the Contractor included the more expensive listing in the Contract Price if the Contractor fails to bring any discrepancies to the attention of the Construction Manager prior to executing the Agreement.
- D. Completion of the Work described in this Contract may impact the construction and testing of the items listed above.
1. Coordinate construction activities through the Construction Manager.
 2. Pay claims for damages which result from the late completion of the Project or any specified Milestones.

1.04 WORK BY OWNER

- A. Owner has no knowledge of work, other than the Work included in this Contract that may impact construction scheduling, testing, and startup.
- B. Owner plans to perform the following items of work which are not included in this Contract, but may impact construction scheduling, testing, and startup:

Owner	Description
N/A	N/A

- C. Bring any discrepancies between the projects listed above and those specified elsewhere in the Contract Documents to the attention of the Construction Manager. It will be deemed that the Contractor included the more expensive listing in the Contract Price if the Contractor fails to bring any discrepancies to the attention of the Construction Manager prior to executing the Agreement.
- D. Completion of the Work described in this Contract may impact the construction and testing of the items listed above.
1. Coordinate construction activities through the Construction Manager.
 2. Pay claims for damages which result from the late completion of the Project or any specified Milestones.
- E. Owner will provide normal operation and maintenance of the existing facilities during construction, unless otherwise stated.

1.05 CONSTRUCTION OF UTILITIES

- A. **Utility companies or their contractors will provide new or enhanced utilities for this Project.** Coordinate with others performing Work associated with this Project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 26 00 CHANGE MANAGEMENT

PART 1 - GENERAL

1.01 REQUESTS FOR CHANGE PROPOSAL

- A. Construction Manager will initiate Modifications by issuing a Request for Change Proposal (RCP).
 - 1. Construction Manager and Design Professional will prepare a description of proposed Modifications.
 - 2. Construction Manager will issue the Request for Change Proposal form to Contractor. A number will be assigned to the Request for a Change Proposal when issued.
 - 3. Return a Change Proposal in accordance with Paragraph **[1.02]** for evaluation by the OPT.

1.02 CHANGE PROPOSALS

- A. Submit a Change Proposal (CP) to the Construction Manager for Contractor initiated changes in the Contract Documents or in response to a Request for Change Proposal. Submit the Change Proposal and attach the forms provided by the Construction Manager.
 - 1. Use the Change Proposal form provided by the Construction Manager.
 - 2. Include with the Change Proposal:
 - a. A complete description of the proposed Modification if Contractor initiated or proposed changes to the OPT's description of the proposed Modification.
 - b. The reason the Modification is requested, if not in response to a Request for a Change Proposal.
 - c. A detailed breakdown of the cost of the change if the Modification requires a change in Contract Price. The itemized breakdown is to include:
 - 1) List of materials and equipment to be installed;
 - 2) Man hours for labor by classification;
 - 3) Equipment used in construction;
 - 4) Consumable supplies, fuels, and materials;
 - 5) Royalties and patent fees;
 - 6) Bonds and insurance;
 - 7) Overhead and profit;
 - 8) Field office costs;
 - 9) Home office cost; and
 - 10) Other items of cost.
 - d. Provide the level of detail outlined in the paragraph above for each Subcontractor or Supplier actually performing the Work if Work is to be provided by a

Subcontractor or Supplier. Indicate appropriate Contractor mark ups for Work provided through Subcontractors and Suppliers. Provide the level of detail outlined in the paragraph above for self-performed Work.

- e. Submit Change Proposals that comply with the General Conditions for Cost of Work.
 - f. Provide a revised schedule. Show the effect of the change on the Project Schedule and the Contract Times.
- B. Submit a Change Proposal to the Construction Manager to request a Field Order.
- C. A Change Proposal is required for all substitutions or deviations from the Contract Documents.
- D. Request changes to products in accordance with Section 01 33 02 “Shop Drawings.”

1.03 CONSTRUCTION MANAGER WILL EVALUATE THE REQUEST FOR A MODIFICATION

- A. Construction Manager will issue a Modification per the General Conditions if the Change Proposal is acceptable to the Owner. Construction Manager will issue a Change Order or Contract Amendment for any changes in Contract Price or Contract Times.
- 1. Change Orders and Contract Amendments will be sent to the Contractor for execution with a copy to the Owner recommending approval. A Work Change Directive may be issued if Work needs to progress before the Change Order or Contract Amendment can be authorized by the Owner.
 - 2. Work Change Directives, Change Orders, and Contract Amendments can only be approved by the Owner.
 - a. Work performed on the Change Proposal prior to receiving a Work Change Directive or approval of the Change Order or Contract Amendment is performed at the Contractor’s risk.
 - b. No payment will be made for Work on Change Orders or Contract Amendments until approved by the Owner.
- B. Contractor may be informed that the Change Proposal is not approved and construction is to proceed in accordance with the Contract Documents.

1.04 EQUAL NON-SPECIFIED PRODUCTS

- A. The products of the listed manufacturers are to be furnished where the Specifications list several manufacturers and do not specifically list “or equal” or “or approved equal” products. Use of any products other than those specifically listed is a substitution. Follow the procedures in Paragraph [1.05] for a substitution.
- B. Contractor may submit other manufacturers’ products that are in full compliance with the Specifications where Specifications list one or more manufacturers followed by the phrase “or equal” or “or approved equal.”
- 1. Submit a Shop Drawing as required by Section 01 33 02 “Shop Drawings” to document that the proposed product is equal or superior to the specified product.

2. Prove that the product is equal. It is not the OPT's responsibility to prove the product is not equal.
 - a. Indicate on a point-by-point basis for each specified feature that the product is equal to the Contract Document requirements.
 - b. Make a direct comparison with the specified manufacturer's published data sheets and available information. Provide this printed material with the Shop Drawing.
 - c. The decision of the Design Professional regarding the acceptability of the proposed product is final.
3. Provide a certification that, in furnishing the proposed product as an equal, the Contractor:
 - a. Has thoroughly examined the proposed product and has determined that it is equal or superior in all respects to the product specified.
 - b. Has determined that the product will perform in the same manner and result in the same process as the specified product.
 - c. Will provide the same warranties and/or bonds as for the product specified.
 - d. Will assume all responsibility to coordinate any modifications that may be necessary to incorporate the product into the construction and will waive all claims for additional Work which may be necessary to incorporate the product into the Project which may subsequently become apparent.
 - e. Will maintain the same time schedule as for the specified product.
- C. A Change Proposal is not required for any product that is in full compliance with the Contract Documents. If the product is not in full compliance, it may be offered as a Substitution.

1.05 SUBSTITUTIONS

- A. Substitutions are defined as any product that the Contractor proposes to provide for the Project in lieu of the specified product. Submit a Change Proposal per Paragraph **[1.02]** along with documents required for a Shop Drawing as required by Section 01 33 02 "Shop Drawings" to request approval of a substitution.
- B. Prove that the product is acceptable as a substitute. It is not the Design Professional's responsibility to prove the product is not acceptable as a substitute.
 1. Indicate on a point-by-point basis for each specified feature that the product is acceptable to meet the intent of the Contract Documents requirements.
 2. Make a direct comparison with the specified Suppliers published data sheets and available information. Provide this printed material with the Shop Drawing.
 3. The decision of the Design Professional regarding the acceptability of the proposed substitute product is final.

- C. Provide a certification that, in making the substitution request, the Contractor:
 - 1. Has determined that the substituted product will perform in substantially the same manner and result in the same ability to meet the specified performance as the specified product;
 - 2. Will provide the same warranties and/or bonds for the substituted product as specified or as would be provided by the manufacturer of the specified product;
 - 3. Will assume all responsibility to coordinate any modifications that may be necessary to incorporate the substituted product into the Project and will waive all claims for additional Work which may be necessary to incorporate the substituted product into the Project which may subsequently become apparent; and
 - 4. Will maintain the same time schedule as for the specified product.
- D. Pay for review of substitutions in accordance with Section 01 33 02 "Shop Drawings."

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 29 00 APPLICATION FOR PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Submit Applications for Payment for completed Work and for materials and equipment in accordance with the General Conditions, the Supplementary Conditions, the Agreement, and this Section. The Contract Price is to include costs for:
 - 1. Providing the Work in accordance with the Contract Documents;
 - 2. Installing Owner furnished equipment and materials, if any;
 - 3. Providing Work for alternates and allowances, if any;
 - 4. Providing Work for extra work items, if any and if authorized
 - 5. Commissioning, startup, training, and initial maintenance and operation;
 - 6. Acceptance testing at the manufacturer's facilities or at the Site;
 - 7. All home office overhead costs and expenses, including profit made directly or indirectly from the Project;
 - 8. Project management, contract administration, and field office and field operations staff including supervision, clerical support, and technology system support;
 - 9. Professional services including design fees, legal fees, and other professional services;
 - 10. Bonds and insurance;
 - 11. Permits, licenses, patent fees, and royalties;
 - 12. Taxes;
 - 13. Providing all documentation and Samples required by the Contract Documents;
 - 14. Facilities and equipment at the Site including:
 - a. Field offices, office furnishings, and all related office supplies, software, and equipment,
 - b. Storage facilities for Contractor's use and storage facilities for stored materials and equipment including spare parts storage,
 - c. Shops, physical plant, construction equipment, small tools, vehicles, and technology and telecommunications equipment,
 - d. Safety equipment and facilities to provide safe access and working conditions for workers and for others working at the Site,
 - e. Temporary facilities for power and communications,
 - f. Potable water and sanitation facilities, and
 - g. Mobilization and demobilization for all these facilities and equipment.
 - 15. Products, materials, and equipment stored at the Site or other suitable location in accordance with Section 01 31 00 "Project Management and Coordination";

16. Products, materials, and equipment permanently incorporated into the Project;
 17. Temporary facilities for managing water including facilities for pumping, storage, and treatment as required for construction and protection of the environment;
 18. Temporary facilities for managing environmental conditions and Constituents of Concern;
 19. Temporary facilities such as sheeting, shoring, bracing, formwork, embankments, storage facilities, working areas, and other facilities required for construction of the Project;
 20. Temporary and permanent facilities for protection of all overhead, surface, or underground structures or features;
 21. Temporary and permanent facilities for removal, relocation, or replacement of any overhead, surface, or underground structures or features;
 22. Products, materials, and equipment consumed during the construction of the Project;
 23. Contractor labor and supervision to complete the Project including that provided through Subcontractors or Suppliers;
 24. Correcting Defective Work during the Contract Times, during the Correction Period, or as required to meet any warranty provision of the Contract Documents;
 25. Risk associated with weather and environmental conditions, startup, and initial operation of facilities including equipment, processes, and systems;
 26. Contractor safety programs, including management, administration, and training;
 27. Maintenance of facilities including equipment, processes, and systems until operation is transferred to Owner;
 28. Warranties, extended or special warranties, or extended service agreements;
 29. Cleanup and disposal of any and all surplus materials; and
 30. Demobilization of all physical, temporary facilities not incorporated into the Project.
- B. Include the cost not specifically set forth as an individual payment item but required to provide a complete and functional system in the Contract Price.
- C. Provide written approval of the surety company providing performance and payment bonds for the Schedule of Values, Application for Payment form, and method of payment prior to submitting the first Application for Payment. Submit approval using the "Consent of Surety Company to Payment Procedures" form provided by the Construction Manager. Payment will not be made without this approval.
- D. Construction Manager may withhold processing the Applications for Payment if any of the following processes or documentation is not up to date:
1. Progress Schedule per Section 01 33 05 "Construction Progress Schedule."
 2. Project videos and photographs per Section 01 33 06 "Graphic Documentation."
 3. Record Documents per Section 01 31 13 "Project Administration."

1.02 SCHEDULE OF VALUES

- A. Divide the Contract Price into an adequate number of line items to allow more accurate determination of the earned value for each line item when evaluating progress payments. Submit a detailed Schedule of Values for the Project at least 10 days prior to submitting the first Application for Payment using forms provided by the Construction Manager.
- B. Do not apply for payment until the Schedule of Values has been approved by the Construction Manager.
- C. Divide the cost associated with each line item in the Schedule of Values into installation and materials components.
 - 1. Installation cost is to include all cost associated with the line item except materials cost.
 - 2. Materials cost is the direct cost (as verified by invoice values) for products, materials, and equipment to be permanently incorporated into the Project associated with the line item.
 - 3. Installation cost is to include all direct costs and a proportionate amount of the indirect costs for the Work associated with each line item. Include costs not specifically set forth as an individual payment item but required to provide a complete and functional system.
 - 4. The sum of materials and installation costs for all line items must equal the Contract Price.
- D. Use each unit price line item in the Agreement as a line item in the Schedule of Values. The sum of materials and installation costs for each line item for unit price contracts must equal the value of the line item in the Agreement. In addition to the installation cost described in Paragraph **[1.02.C.3]**, installation costs for unit price items are to include costs for waste and overages.
 - 1. Installation and materials cost may be left as a single installation component if:
 - a. Contractor does not intend to request payment for stored materials for that line item; or
 - b. Work in the line item will be completed within a single payment period.
 - 2. Provide adequate detail to allow a more accurate determination of the earned value for installation costs, expressed as a decimal fraction of Work completed, for each line item.
 - 3. Installation cost line items may not exceed \$50,000.00. Items that are not subdivided into smaller units may only be included in the Application for Payment when Work on the entire unit is complete.
 - 4. Lump sum items may be divided into an estimated number of units to estimate earned value. The estimated number of units times the cost per unit must equal the lump sum amount for that line item.
 - 5. Include Contractor's overhead and profit in the installation costs each line item in proportion to the value of the line item to the Contract Price.

6. Include cost not specifically set forth as an individual payment item but required to provide a complete and functional system in the Contract Price for each item.
 7. Line items may be used to establish the value of Work to be added or deleted from the Project.
- E. Include a breakdown of both mobilization and demobilization costs in the Schedule of Values. The total cost for both mobilization and demobilization may not exceed **5** percent of the total Contract Price. Payment for mobilization and demobilization will be based on the earned value of Work completed. Payment for these costs will only be made for Work completed for the following:
1. Bonds and insurance;
 2. Transportation and setup for equipment;
 3. Transportation and/or erection of all field offices, sheds, and storage facilities;
 4. Salaries for preparation of documents required before the first Application for Payment; and
 5. Salaries for field personnel directly related to the mobilization of the Project.

1.03 SCHEDULE OF ANTICIPATED PAYMENTS

- A. Submit a schedule of the anticipated Application for Payments showing the anticipated application numbers, submission dates, and the amount to be requested for each Application for Payment on the form provided by the Construction Manager.
- B. Update the schedule of anticipated payments as necessary to provide a reasonably accurate indication of the funds required to make payments each month to the Contractor for Work performed.

1.04 ALTERNATES, ALLOWANCES, AND EXTRA WORK ITEMS

- A. Include line items and amounts for specified alternate Work and allowances for Work in the Agreement, if any, and as described in Section 01 23 10 "Alternates and Allowances."
- B. Include line items and amounts for Extra Work items in the Agreement, if any, and as described in Section 01 29 01 "Measurement and Basis for Payment."

1.05 RETAINAGE AND SET-OFFS

- A. Retainage will be withheld from each Application for Payment per the Agreement.
- B. Reduce payments for set-offs per the General Conditions as directed by the Construction Manager.

1.06 PROCEDURES FOR SUBMITTING AN APPLICATION FOR PAYMENT

- A. Submit a draft Application for Payment to the Construction Manager each month at least **20** days before the date established in the Agreement for Owner to make progress payments. Do not submit Applications for Payment more often than monthly. Review the

draft Application for Payment with the Construction Manager to determine concurrence with:

1. Values requested for materials and equipment, stored or incorporated into the Project as documented by invoices;
 2. The earned value for installation costs for each line item in the Application for Payment form expressed as a percent complete for that line item;
 3. The quantity of Work completed for each unit price item;
 4. Amount of retainage to be withheld; and
 5. Set-offs included in the Application for Payment.
- B. Submit Applications for Payment to the Construction Manager after agreement has been reached on the draft Application for Payment with the Construction Manager.
- C. Provide all information requested in the Application for Payment form. Do not leave any blanks incomplete. If information is not applicable, enter “N/A” in the space provided.
1. Number each application sequentially and include the dates for the application period.
 2. Complete the “Contract Time Summary” section on the Application for Payment form. If the Final Completion date shows the Project is more than 30 days behind schedule, revise the Schedule of Anticipated Payments to correspond to the updated schedule required per Section 01 33 05 “Construction Progress Schedule.”
 3. Complete the “Summary of Earned Value and Set-offs” section on the Application for Payment form. Show the total amounts for earned value of original Contract performed, earned value for Work on approved Contract Amendments and Change Orders, retainage and set-offs.
 4. Sign and date the Contractor’s Certification on the Application for Payment form that all Work, including materials, covered by this Application for Payment have been completed or delivered and stored in accordance with the Contract Documents, that all amounts have been paid for Work, materials, and equipment for which previous Payment has been made by the Owner, and that the current payment amount shown in this Application for Payment is now due.
 5. Include “Attachment A - Tabulation of Earned Value of Original Contract Performed” to show the value of materials stored and successfully incorporated into the Project and the earned value for installation of the Work for each line item in the Application for Payment for Work. Attachment A includes Work on the original Contract Price and on approved Contract Amendments and Change Orders.
 6. Include “Attachment B - Tabulation of Values for Materials and Equipment” to track invoices used to support amounts requested as materials in Attachment A. Enter materials to show the amount of the invoice assigned to each item in Attachment A if an invoice includes materials used on several line items.
 7. Include “Attachment C - Summary of Set-offs” to document set-offs made per the Contract Documents. Show each set-off as it is applied. Show a corresponding line item to reduce the set-off amount if a payment held by a set-off is released for payment.

8. Include “Attachment D - Retainage Calculation” to show method for calculating retainage. The amount of retainage with respect to progress payments is stipulated in the Agreement. Any request for a reduction in retainage must be accompanied by a Consent of Surety to Reduction or Partial Release of Retainage.
 9. Include “Attachment E - EVA Calculation” and the EVA Chart showing the anticipated and actual total earned value of fees, Work, and materials. Create a graphic representation (curve) of the anticipated progress on the Project each month. Compare the anticipated cumulative total earned value of fees, Work, and materials to the actual total earned value of fees, Work, and materials to determine performance on budget and schedule. Adjust the table and curve to incorporate Modifications.
- D. Submit attachments in Portable Document Format (PDF).
1. Generate attachments to the Application for Payment using the Excel spreadsheet provided by the Construction Manager.
 2. Submit PDF documents with adequate resolution to allow documents to be printed in a format equivalent to the document original. Documents are to be scalable to allow printing on standard 8-1/2 x 11 or 11 x 17 paper.

1.07 ADJUSTMENTS TO THE SCHEDULE OF VALUES IN THE APPLICATION FOR PAYMENT

- A. Submit a Change Proposal to request any changes to the Schedule of Values incorporated into the Application for Payment once approved. A Field Order will be issued by the Construction Manager to modify the Application for Payment form if approved.
- B. Payment for materials and equipment shown in the Application for Payment will be made for the total of associated invoice amounts, up to the value shown for materials in the Application for Payment for that line item.
 1. If the total amount for invoices for materials and equipment for a line item are less than the amount shown for the materials component of that line item in the Application for Payment, and it can be demonstrated that no additional materials or equipment are required to complete Work described in that item, the difference between the total invoice for materials and equipment and the materials component for that line item can be added to the installation component of that Work item.
 2. Costs for material and equipment in excess of the value shown in the Schedule of Values may not be paid for under other line items.

1.08 CONSTRUCTION MANAGER’S RESPONSIBILITY

- A. Construction Manager will review each draft Application for Payment with Contractor to reach an agreement on the amount to be recommended to Owner for payment. Contractor is to revise the Application for Payment to incorporate changes, if any, resulting from this review process.
- B. Construction Manager will review the Application for Payment to determine that the Application for Payment has been properly submitted and is in accordance with the agreed to draft Application for Payment.
- C. Construction Manager will either recommend payment of the Application for Payment to Owner or notify the Contractor of the reasons for not recommending payment. Contractor

may make necessary corrections and resubmit the Application for Payment. Construction Manager will review resubmitted Application for Payment and reject or recommend payment of the Application for Payment to Owner as appropriate.

- D. Construction Manager's recommendation of the Application for Payment constitutes a representation that based on its experience and the information available:
 - 1. The Work has progressed to the point indicated;
 - 2. The quality of the Work is generally in accordance with the Contract Documents; and
 - 3. Requirements prerequisite to payment have been met.
- E. This representation is subject to:
 - 1. Further evaluation of the Work as a functioning whole;
 - 2. The results of subsequent tests called for in the Contract Documents; or
 - 3. Any other qualifications stated in the recommendation.
- F. Construction Manager does not represent by recommending payment that:
 - 1. Inspections made to check the quality or the quantity of the Work as it was performed were exhaustive or extended to every aspect of the Work in progress; or
 - 2. Other matters or issues that might entitle Contractor to additional compensation or entitle Owner to withhold payment to Contractor exist.
- G. Neither Construction Manager's review of Contractor's Work for the purposes of recommending payments nor Construction Manager's recommendation of payment imposes responsibility on the Construction Manager or Owner:
 - 1. To supervise, direct, or control the Work;
 - 2. For the means, methods, techniques, sequences, or procedures of construction, or safety precautions and programs;
 - 3. For Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - 4. To make examinations to ascertain how or for what purposes Contractor has used the monies paid on account of the Contract Price; or
 - 5. To determine that title to the Work, materials, or equipment has passed to Owner free and clear of Liens.

1.09 FINAL APPLICATION FOR PAYMENT

- A. Include adjustments to the Contract Price in the final Application for Payment for:
 - 1. Approved Change Orders and Contract Amendments;
 - 2. Allowances not previously adjusted by Change Order;
 - 3. Deductions for Defective Work that have been accepted by the Owner;
 - 4. Penalties and bonuses;
 - 5. Deduction for all final set-offs; and

6. Other adjustments if needed.
- B. Construction Manager will prepare a final Change Order reflecting the approved adjustments to the Contract Price which have not been covered by previously approved Change Orders and, if necessary, to reconcile estimated unit price quantities with actual quantities.
- C. Submit the final Application for Payment per the General Conditions, including the final Change Order. Provide the following with the final Application for Payment:
 1. Evidence of payment or release of Liens on the forms provided by the Construction Manager and as required by the General Conditions.
 2. Consent from surety to final payment.
- D. Final payment will also require additional procedures and documentation per Section 01 70 00 "Execution and Closeout Requirements."

1.10 PAYMENT BY OWNER

- A. Owner is to pay the amount recommended for monthly payments within 30 days after receipt of the Construction Manager's recommended Application for Payment.
- B. Final payment may take longer than 30 days since Owner's **Commissioner Court** must approve final payment.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 29 01 MEASUREMENT AND BASIS FOR PAYMENT

PART 1 - GENERAL

1.01 PAYMENT FOR MATERIALS AND EQUIPMENT

- A. Payment will be made for materials and equipment materials properly stored and successfully incorporated into the Project less the specified retainage.
- B. Provide a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of Liens. Provide documentation of payment for materials and equipment with the next Application for Payment. Remove items from the tabulation of materials and equipment if this documentation is not provided with the next Application for Payment.
- C. Provide evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest.
- D. The Work covered by progress payments becomes the property of the Owner at the time of payment. The Contractor's obligations with regard to proper care and maintenance, insurance, and other requirements are not changed by this transfer of ownership until final acceptance in accordance with the General Conditions.
- E. Payment for materials and equipment does not constitute acceptance of the product.

1.02 MEASUREMENT AND BASIS FOR PAYMENTS ON LUMP SUM ITEMS

- A. Measurement for progress payments is the invoice value for stored materials and the earned value for all other cost for constructing each item. Earned value is expressed as the value of the Work completed divided by the total value of installation cost. The total amount paid will be equal to the total lump sum amount for that item.

1.03 MEASUREMENT AND BASIS FOR PAYMENTS ON UNIT PRICE ITEMS

- A. Measure the Work using the unit of measure indicated in this Section for each unit price line item. Payment will be made only for the actual measured unit and/or computed length, area, solid contents, number, and weight unless other provisions are made in the Contract Documents. Payment on a unit price basis will not be made for Work outside dimensions shown in the Contract Documents.
- B. Payment will be made for the actual quantity of Work completed and for materials and equipment stored during the payment period. Payment amount is the Work quantity measured per Paragraph A above multiplied by the unit price for that line item in the Agreement.

1.04 MEASUREMENT AND BASIS FOR PAYMENT FOR BASE ITEMS

ITEM I: GENERAL

- A. Item **[I-01]** - MOBILIZATION (MAX 5% OF BASE BID):
 - 1. This item shall consist of mobilization for the construction of the project. The project shall be constructed in phases as shown in the plans. This pay item shall be inclusive of any and all mobilizations associated with the project. Mobilization shall be defined as

all necessary equipment, supplies, materials and personnel on the job site ready to begin construction. Work shall be in accordance with TxDOT item 500.

- B. Measurement and payment shall be made on the basis of the price bid per lump sum and shall be full compensation for all labor, materials and equipment necessary to complete this pay item. Payment will be in accordance with TxDOT Item 500.
- C. Item **[I-02]** - PREPARING RIGHT OF WAY:
 - 1. This item shall consist of the preparation of the existing and proposed right-of-way for construction as required by the plans and specifications. It will include the area between the right-of-way limits, additional areas beyond the right-of-way such as temporary construction, slope, and drainage easements, and any other easements or agreements as shown on the plans. Work shall be in accordance with TxDOT Item 100 and shall include, but not be limited to: all obstructions above ground or below such as trees, shrubs, stumps, brush, roots, vegetation, logs, trash concrete, concrete driveways, culverts, curb and gutter, asphalt pavement, sidewalks, inlets storm drain pipe, fences, structures, foundations, lumber, scrap metal, abandoned appliances, sprinkler systems, abandoned utility pipe or conduits unless included as a pay item elsewhere in the contract and any other items not included as pay items elsewhere in the contract documents, but necessary for the preparation of the rights-of-way and/or permanent or temporary easements for construction.
 - 2. Measurement and payment shall be made on the basis of the price bid per Station and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- D. Item **[I-03]** - EXCAVATION (ROADWAY):
 - 1. This item shall consist of the roadway excavation of existing material, including rock when present, in the areas shown on the plans and to the lines, grades and typical sections as specified. Excavation shall include all materials encountered regardless of their nature or of the manner in which they are removed. Work shall be in compliance with TxDOT Item 110.
 - 2. Measurement and payment shall be made on the basis of the price bid per cubic yard and shall be full compensation for all labor, materials and equipment necessary to complete this pay item. This item shall be based on the PLANS quantity established at the time bids are opened.
- E. Item **[I-04]** - EMBANKMENT (FINAL)(DENS CONT)(TY C):
 - 1. This item shall consist of the furnishing, placement, and compaction of all suitable fill material to the established grade and to the shape of the cross-section as shown in the plans. Work shall be in accordance with TxDOT Item 132. This item is to include the placement and compaction of excavated material along the entire project. **Material must have a PI greater than or equal to 4 or less than or equal to 35.** The fill material shall be compacted in lifts of loose depth not exceeding 8" and compaction shall not be less than 95% of the density as determined in accordance with test method ASTM D698. Hauling, placement, sprinkling, rolling, and obtaining final compaction are all considered subsidiary items. Proctors will be taken on all fill materials before they are placed to check plasticity index and composition.

2. Measurement and payment shall be made on the basis of the price bid per cubic yard and shall be full compensation for all labor, materials and equipment necessary to complete this pay item. This item shall be based on the PLANS quantity (shown in Bid Form Exhibit "A") established at the time bids are opened.
- F. Item **[I-05]** - EMBANKMENT (FINAL)(DENS CONT)(TY C – OFF SITE):
1. This item shall consist of the furnishing, placement, and compaction of all suitable fill material to the established grade and to the shape of the cross-section as shown in the plans. Work shall be in accordance with TxDOT Item 132. This item is to include the placement and compaction of excavated material along the entire project. **Material must have a PI greater than or equal to 4 or less than or equal to 35.** The fill material shall be compacted in lifts of loose depth not exceeding 8" and compaction shall not be less than 95% of the density as determined in accordance with test method ASTM D698. Hauling, placement, sprinkling, rolling, and obtaining final compaction are all considered subsidiary items. Proctors will be taken on all fill materials before they are placed to check plasticity index and composition. Material placed that does not meet the PI requirements shall be removed at no cost to the owner.
 2. Measurement and payment shall be made on the basis of the price bid per cubic yard and shall be full compensation for all labor, materials and equipment necessary to complete this pay item. This item shall be based on the PLANS quantity (shown in Bid Form Exhibit "A") established at the time bids are opened.
- G. Item **[I-06]** - PREPARE TRAFFIC CONTROL PLAN (PART 1):
1. Work completed under this item shall be completed in accordance with TxDOT Item 502, "Barricades, Signs and Traffic Handling".

Modification to TxDOT Item 502: The construction phasing plan provided in the plans is intended to aid the contractor in developing a traffic control plans. The contractor may propose an alternate construction phasing for approval by the Engineer. The contractor shall submit a traffic control plan signed and sealed by a Professional Engineer currently licensed by the Texas Board of Professional Engineers. Traffic Control Plans without a PE signature will be rejected without review. The traffic control plan shall be based on the construction phasing plan included at the time of bidding unless an alternate construction phasing plan submitted by the contractor has been approved by the Engineer.
 2. Measurement and payment shall be made on the basis of the price bid per Lump Sum (LS) and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- H. Item **[I-07]** - IMPLEMENT TRAFFIC CONTROL PLAN:
1. Work completed under this item shall be completed in accordance with TxDOT Item 502, "Barricades, Signs and Traffic Handling".
 2. Measurement and payment shall be made on the basis of the price bid per month and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

- I. Item **[I-08]** – PROJECT DESIGNATION SIGN:
 - 1. Work completed under this item shall be in accordance with the detail shown in the appendix of this manual.
 - 2. Measurement and payment shall be made on the basis of the price bid per each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- J. Item **[I-09]** - FIELD OFFICE:
 - 1. Work completed under this item shall be in accordance with the Section 01 50 00 Temporary Facilities and Controls.
 - 2. Measurement and payment shall be made on the basis of the price bid per LS and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- K. Item **[I-10]** – REMOVING STAB BASE & ASPH PAV (7"-12"):
 - 1. Work completed under this item shall be in accordance with the TxDOT Item 105.
 - 2. Measurement and payment shall be made on the basis of the price bid per SY and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- L. Item **[I-11]** - REMOVING CONC (PAV):
 - 1. Work completed under this item shall be in accordance with the TxDOT Item 104.
 - 2. Measurement and payment shall be made on the basis of the price bid per SY and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- M. Item **[I-12]** - REMOVE CONC. (DRIVEWAYS):
 - 1. Work completed under this item shall be in accordance with the TxDOT Item 104.
 - 2. Measurement and payment shall be made on the basis of the price bid per SY and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- N. Item **[I-13]** – REMOV STR (SET):
 - 1. This item shall consist of furnishing all labor and equipment necessary to remove a Safety End Treatment. Work completed under this item shall be in accordance with TxDOT Item 496.
 - 2. Measurement and payment shall be made on the basis of the price bid per EA safety end treatment removed and disposed of and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- O. Item **[I-14]** – REMOV STR (PIPE):
 - 1. This item shall consist of furnishing all labor and equipment necessary to remove storm drain pipe. Work completed under this item shall be in accordance with TxDOT Item 496.

2. Measurement and payment shall be made on the basis of the price bid per LF of storm drain pipe removed and disposed of and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- P. Item **[I-15]** – REMOV STR (WINGWALL):
1. This item shall consist of furnishing all labor and equipment necessary to remove wingwall. Work completed under this item shall be in accordance with TxDOT Item 496.
 2. Measurement and payment shall be made on the basis of the price bid per EA wingwall removed and disposed of and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- Q. Item **[I-16]** – REMOV STR (BOX CULVERT):
1. This item shall consist of furnishing all labor and equipment necessary to remove Box Culverts. Work completed under this item shall be in accordance with TxDOT Item 496.
 2. Measurement and payment shall be made on the basis of the price bid per linear foot (LF) of Box Culvert removed and disposed of and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- R. Item **[I-17]** – REMOV STR (SMALL FENCE):
1. This item shall consist of furnishing all labor and equipment necessary to remove fence. Work completed under this item shall be in accordance with TxDOT Item 100.
 2. Measurement and payment shall be made on the basis of the price bid per linear foot (LF) of fence removed and disposed of and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- S. Item **[I-18]** – BARBED WIRE FENCE (INSTALL):
1. Work completed under this item shall be in accordance with the TxDOT Item 552.
 2. Measurement and payment shall be made on the basis of the price bid per linear foot (LF) and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- T. Item **[I-19]** – REMOVE METAL BEAM GUARD FENCE (Complete):
1. Work completed under this item shall be in accordance with the TxDOT Item 542.
 2. Measurement and payment shall be made on the basis of the price bid per LF and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- U. Item **[I-20]** – TEMPORARY SPL SHORING:
1. Work completed under this item shall be in accordance with the TxDOT Item 403.
 2. Measurement and payment shall be made on the basis of the price bid per square foot (SF) and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

- V. Item **[I-21 through I-26]** –PORT CTB (LOW PROF)(*All Types*):
1. Work completed under this item shall be completed in accordance with TxDOT Item 502, “Barricades, Signs and Traffic Handling”.
 2. Measurement and payment shall be made on the basis of the price bid per LF and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

ITEM II: PAVING IMPROVEMENTS

- W. Item **[II-01]** – COMPOST MANUFACTURED TOPSOIL (4"):
1. This item shall consist of providing a uniform topsoil layer on all disturbed areas as determined by the Engineer including but not limited to parkways, medians, temporary and permanent slope, grading and drainage easements. Compost manufactured topsoil shall be placed in accordance with TxDOT Item 161. Native excavated material intended for use by CONTRACTOR as an ingredient in “Compost Manufactured Topsoil” must be approved prior to use by the OWNER.
 2. Measurement and payment shall be made on the basis of the price bid per square yard and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.
- X. Item **[II-02]** – BLOCK SODDING:
1. This item shall consist of providing and installing grass sod as shown on the plans or as directed in accordance with TXDOT Item 162.
 2. Payment will be made at the unit price bid per square yard and shall be full compensation for all labor, materials, equipment, tools, watering and incidentals necessary to install item complete in place.
- Y. Item **[II-03]** – CONC PVMT (CRCP) (8"):
1. This item shall consist of the construction of concrete pavement as shown on the plans. The concrete pavement shall be 8" thick reinforced concrete pavement in accordance with the details provided in the plans. All concrete for the roadway construction shall have a minimum compressive strength of 4400 psi at 28 days. The cost for furnishing and placing reinforcement is subsidiary to the price bid. The cost for sawing and sealing the joint along between the edge of concrete pavement and asphalt shoulders, when present, is subsidiary to this bid item. All concrete, except for Engineer approved “leave-outs”, shall be placed with a self-propelled paving machine capable of spreading, densifying, and shaping the concrete mix to the required lined and grades as shown on the approved plans. Work shall be in compliance with TxDOT item 360.
 2. Measurement and payment shall be made on the basis of the price bid per square yard and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

Z. Item **[II-04]** – D-GR HMA TY-D SAC-B PG70-22:

1. This item shall consist of the construction of HMA pavement in the locations shown in the plans. The pavement thickness shall be constructed according to the typical sections shown in the plans. HMA surface course, Type “D”. Work shall be in compliance with the TxDOT item 341. Tack coat shall be required when placed against a paved surface. Tack coat shall be considered subsidiary to the asphalt bid item. Tack coat shall be at a rate of 0.1 GAL/SY.
2. Measurement and payment shall be made on the basis of the price bid per ton and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

AA. Item **[II-05]** – Flexible Base (TY A GR 1-2):

1. This item shall be in accordance with TxDOT Item 247.
2. Measurement and payment shall be made on the basis of the price bid per square yard shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

BB. Item **[II-06]** – LIME TRT (EXST MATL)(8"):

1. This item shall consist in accordance with TxDOT Item 260. Contractor shall coordinate with the Engineer for the owner’s lab to perform a Lime series test in accordance with Tex-121-E to determine the target lime content for all material that will be lime treated.
2. Measurement and payment shall be made on the basis of the price per SY and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

CC. Item **[II-07]** – LIME (HYDRATED LIME (SLURRY)) (42 LB/SY):

1. This item shall consist in accordance with TxDOT Item 260.
2. Measurement and payment shall be made on the basis of the price bid per ton and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

DD. Item **[II-08]** – CONSTRUCTING DETOURS:

1. Work completed under this item shall be in accordance with the TxDOT Item 508.
2. Measurement and payment shall be made on the basis of the price bid per SY and shall be full compensation for all labor, materials and equipment necessary to complete this pay item in accordance with TxDOT Item 508, including the removal of the temporary pavement.

EE. Item **[II-09]** – CONC CURB (MONO) (TY II):

1. This item shall be in accordance with TxDOT Item 529.
2. Measurement and payment shall be made on the basis of the price bid per linear foot shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

FF. Item **[II-10]** – RETAINING WALL (CAST-IN-PLACE):

1. This item shall consist of furnishing, constructing, and installing retaining walls in accordance with TxDOT Item 423.
2. Measurement and payment shall be made on the basis of price per square foot and shall be full compensation for all labor, materials, and equipment necessary to complete this pay item.

GG. Item **[II-11]** – RAIL (TY C1W):

1. This item shall consist of work done in accordance with TxDOT Item 450.
2. Measurement and payment shall be made on the basis of the price bid per linear foot and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

HH. Item **[II-12]** – 6" STAMPED AND COLORED CONCRETE:

1. This item shall be in accordance with TxDOT Item 528. Concrete shall be stamped with a pattern as shown in the plans and colored as shown in the plans with LITHOCHROME® Color Hardener or an approved equal. All colored surfaces shall be sealed with SCOFIELD® CureSeal™ 350 or an approved equal. Contractor shall submit a 3x3 mockup to the engineer for approval prior to constructing this bid item. The mock up will not be paid directly but shall be considered incidental to this bid item.
2. Measurement and payment shall be made on the basis of the price bid per square yard of Colored Textured Concrete completed and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

II. Item **[II-13 through II-14]** – CONC PVMT (CPCD) (8", 10") (STAMPED AND COLORED CONCRETE):

1. This item shall be in accordance with TxDOT Item 528. Concrete shall be stamped with a pattern as shown in the plans and colored as shown in the plans with LITHOCHROME® Color Hardener or an approved equal. All colored surfaces shall be sealed with SCOFIELD® CureSeal™ 350 or an approved equal. Contractor shall submit a 3x3 mockup to the engineer for approval prior to constructing this bid item. The mock up will not be paid directly but shall be considered incidental to this bid item.
2. Measurement and payment shall be made on the basis of the price bid per square yard of Colored Textured Concrete completed and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

JJ. Item **[II-15]** – DRIVEWAYS (CONC):

1. This item shall be in accordance with TxDOT Item 530.
2. Measurement and payment shall be made on the basis of the price bid per square yard shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

KK. Item **[II-16]** – CONC SIDEWALKS (4"):

1. This Item shall be in accordance with TxDOT Item 531.

2. Measurement and payment shall be made on the basis of the price bid per square yard and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

LL. Item **[II-17]** – CONC SIDEWALKS (SPECIAL) (TYPE B):

1. This Item shall be in accordance with TxDOT Item 531.
2. Measurement and payment shall be made on the basis of the price bid per square yard and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

MM. Item **[II-18 through II-22]** – CURB RAMPS (ALL TYPES):

1. This Item shall be in accordance with TxDOT Item 531.
2. Measurement and payment shall be made on the basis of the price bid per each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

ITEM III: SIGNAGE AND PAVEMENT MARKINGS

NN. Item **[III-01]** – IN SM RD SN SUP&AM TY10BWG(1)SA(P):

1. This item shall consist of the furnishing, fabrication, galvanizing and erection of supports; for constructing concrete foundations; for furnishing complete signs including sign connections and all hardware; for attaching the signs to the supports; and for washing and cleaning the signs. Signs shall be Aluminum Type “A” signs and shall be in compliance with the TxDOT Specifications Item 636. The sign assembly shall be in compliance with the TxDOT Specifications Item 644.
2. Measurement and payment shall be made on the basis of the price bid per each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

OO. Item **[III-02 through III-25]** – PAVEMENT MARKINGS:

1. This item shall consist of the installation of reflectorized stripes, raised pavement markers, arrows, symbols and words in the color, width and thickness as shown on the plans. Type I markings (stripes, arrows, symbols and words) are thermoplastic type materials that require heating to elevated temperatures for application. Type II markings (stripes, arrows, symbols and words) are paint-type materials that are applied at ambient or slightly elevated temperatures. New Portland-cement-concrete surfaces shall be cleaned to remove curing membrane, dirt, grease, loose and/or flaking existing construction markings and other forms of contamination. Pavement to which material is to be applied shall be completely dry and tested in accordance with . New Portland-cement- concrete surfaces shall be further prepared for Type I markings, after cleaning, by placing a Type II marking as a sealer. Provide Raised Pavement Markings of the type shown in the plans. Prepare pavement surfaces areas before placement of pavement markings and raised pavement markers in accordance with TXDOT Spec Item 678. Work shall be in compliance with the TxDOT Specifications Items 662, 666, 668, 672, and 678.
2. Measurement and payment shall be made on the basis of the price bid per linear foot of stripe installed, or price per each for raised pavement markers, arrows, symbols,

and words installed (see bid form exhibit A) and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

PP. Item **[III-26 through III-28]** – ELIM EXT PM & MRKS:

1. This item shall be in accordance with TxDOT Item 677.
2. Measurement and payment shall be made on the basis of the price bid per linear foot or each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

ITEM IV: DRAINAGE IMPROVEMENTS

QQ. Item **[IV-01]** – TRENCH EXCAVATION PROTECTION:

1. The Contractor shall be solely responsible for trench safety provisions meeting the requirements of the United States Department of Labor Occupational Safety and Health Administration. The Contractor's trench safety system shall include all shoring and/or bracing necessary to adequately provide a safe trench situation for all construction on this project. The Contractor shall have a trench safety plan prepared, signed, and sealed by a registered professional engineer from the State of Texas.
2. Measurement and payment for Trench Safety Systems shall be made on the basis of the price bid per linear foot for a trench depth of (5) five feet or greater for all the main line pipes. Payment shall be full compensation for all materials, equipment, labor and other incidentals necessary to furnish, install and remove the Trench Safety Systems. Included in this item will be all soil borings necessary for preparation of this safety plan.

RR. Item **[IV-02]** – RIPRAP (STONE PROTECTION)(18 IN):

1. This item shall consist of work done in accordance with TxDOT Item 432. Filter Fabric or Bedding Material in accordance with TxDOT Item 432 is required and shall be included in this pay item.
2. Measurement and payment shall be made on the basis of the price bid per cubic yard of Stone Riprap and shall be full compensation for all labor, materials and equipment necessary to complete this pay item. Filter Fabric and Bedding material will not be measured directly but will be considered subsidiary to this pay item.

SS. Item **[IV-03 through IV-04]** – CONC BOX CULV:

1. This item shall consist of the installation of ASTM C-76 precast or CIP reinforced concrete boxes at the locations and to the grades shown on the plans. Omniflex joint material, or approved equal, shall be used for all joints. All fittings and bends shall be prefabricated. Work shall be in accordance with TxDOT Item 462. Use Class B bedding as shown in TxDOT Item 400.
2. Measurement and payment shall be made on the basis of the price bid per linear foot and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

TT. Item **[IV-05 through IV-06]** – RC PIPE:

1. This item shall consist of the installation of ASTM C-76 precast or CIP reinforced concrete pipes at the locations and to the grades shown on the plans. Omniflex joint

material, or approved equal, shall be used for all joints. All fittings and bends shall be prefabricated. Work shall be in accordance with TxDOT Item 464. Use Class B bedding as shown in TxDOT Item 400.

2. Measurement and payment shall be made on the basis of the price bid per linear foot and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

UU. Item **[IV-07 through IV-09]** – WINGWALLS:

1. This item shall consist of work done in accordance with TxDOT Item 466.
2. Measurement and payment shall be made on the basis of the price bid per each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

VV. Item **[IV-10 through IV-14]** – INLETS AND MANHOLES (All Types and Sizes):

1. This item shall consist of the construction and installation of precast or CIP reinforced concrete inlets, junction boxes, and manholes at the locations and to the grades shown on the plans. Furnishing and installation of frames, grates, rings, and covers are included and shall be in accordance with TxDOT Item 465.
2. Measurement and payment shall be made on the basis of the price bid per each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

Item V: EROSION CONTROL IMPROVEMENTS

WW. Item **[V-01 through V-03]** – ROCK FILTER DAMS (All Types, Install and Remove):

1. This item shall consist of furnishing all labor and materials necessary for installation, maintenance, and removal of Rock Filter Dams as specified in the plans and in accordance with TxDOT Item 506.
2. Measurement and payment shall be made on the basis of the price bid per linear foot and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

XX. Item **[V-04]** – CONSTRUCTION EXITS (INSTALL) (TY 2):

1. Work completed under this item shall be completed in accordance with TxDOT Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls".
2. Measurement and payment shall be made on the basis of the price bid per SY and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

YY. Item **[V-05]** – CONSTRUCTION EXITS (REMOVE):

1. Work completed under this item shall be completed in accordance with TxDOT Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls".
2. Measurement and payment shall be made on the basis of the price bid per SY and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

ZZ. Item [V-06 through V-07] – TEMP SEDMT CONT FENCE (INSTALL and REMOVE):

1. This item shall consist of furnishing all labor and materials necessary for installation, maintenance, and removal of Sediment Control Fence as specified in the plans and in accordance with TxDOT Item 506.
2. Measurement and payment shall be made on the basis of the price bid per linear foot and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

AAA. Item [V-08 through V-09] – BIODEG EROSN CONT LOGS (INSTALL & REMOVE):

1. This item shall consist of furnishing all labor and materials necessary for installation, maintenance, and removal of erosion control logs as specified in the plans and in accordance with TxDOT Item 506.
2. Measurement and payment shall be made on the basis of the price bid per linear foot and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

BBB. Item [V-10] – PREPARE STORM WATER POLLUTION PREVENTION PLAN:

1. Measurement and payment shall be made on the basis of the price bid per lump sum and shall be full compensation for all labor, materials and equipment necessary to complete this pay item in accordance with section 01 57 23 Temporary Stormwater Pollution Control.

CCC. Item [V-11] – IMPLEMENT AND MAINTAIN SWPPP:

1. Measurement and payment shall be made on the basis of the price bid per month and shall be full compensation for all labor, materials and equipment necessary to complete this pay item in accordance with section 01 57 23 Temporary Stormwater Pollution Control.

Item VI: UTILITY IMPROVEMENTS

DDD. Item [VI-01] – REMOVE AND REPLACE EXISTING CORROSION CONTROL TEST STATION:

1. This item shall consist of furnishing all labor and materials necessary for removal of existing and installation of new Corrosion Control Test Station as specified in the plans and in accordance with City of Weatherford Spec 16640.
2. Measurement and payment shall be made on the basis of the price bid per each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

EEE. Item [VI-02] – ADJUST MH TO PROPOSED GRADE:

1. Work completed under this item shall be completed in accordance with Specification Section 33 39 13.
2. Measurement and payment shall be made on the basis of the price bid per each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

FFF. Item **[VI-03]** – EXISTING 36" WATER LINE ENCASEMENT - 54" SPLIT STEEL CASING PIPE:

1. Provide and install split steel casings in accordance with the plans and Specifications. The split casings will be of the sizes, materials, and dimensions shown on the plans and will include all materials, labor, and equipment required to complete the work.
2. All steel encasement pipes shall be of new material and shall have smooth walls. No corrugated pipe shall be permitted.
3. Steel casing must be in accordance with ASTM A36, with a minimum thickness of 0.25 in. Actual thickness will be as shown on the plans. Split casing must be hot-dipped galvanized after fabrication. The casing pipe nominal diameter must be at least 6 in. larger than the outside diameter of the carrier pipe joint restraint system. Ensure each section is split in half sections. Pipe ends and split sections must be beveled and suitable for field butt welding.

30 in. and Smaller			
Casing Pipe Size (in.)	Outside Diameter (in.)	Min Wall Thickness (in.)	Approximate Weight Per Lineal Ft., Uncoated (lb.)
8	8.625	0.219	19.64
10	10.750	0.219	24.60
12	12.750	0.219	29.28
16	16.000	0.219	36.86
18	18.000	0.250	47.39
20	20.000	0.250	52.73
24	24.000	0.250	63.41
54	54.000	0.500	290
Note: Refer to the plans for casing thickness. However, never use a pipe wall thickness less than that defined in the above table.			

Provide steel casing sections for split casing in lengths a maximum of 20 ft. Ensure each section is split in half-sections. Bevel the ends and split sections for field butt-welding.

4. Pipeline Excavation and Backfill shall be per the details. The bedding and initial backfill materials around the completed split steel casing must be flowable fill.
5. Proposed steel encasement pipe shall be installed at various depths as indicated on the Plans. Any compensation for extra depth shall be covered under this Bid Item.
6. Steel casing pipe installation shall be performed as recommended by the manufacturer.
7. Ensure the completed and shaped trench is wide enough to receive the casing and to provide free working space for installing the spacers and casing and backfilling under and around the installed casing.
8. Hold the split casing in place for welding by using hinges, coupling bands, or any other acceptable method. Use tables, "V" notches, or straps equally spaced to sustain split casing shape.
9. Perform welds in accordance with the requirements of AWWA Standard C206. Provide welds capable of developing the full strength of pipe throughout the joint and casing split. Ensure welds run along the horizontal plane of the split casing.

10. All welds must be sound, must be free from embedded scale and slag, must have a tensile strength across the weld at least that of the thinner of the connective sections, and must be watertight. Use butt welds for all welded joints in line-pipe assemblies and in the fabrication of bends and other specials. All welds will be subject to the Inspector and Engineer upon request.
11. Seal the ends of the encasement pipe with approved end seals.
12. After installation of the split steel casing, clean, prime, or paint all ends of pipe adjacent to the welded field joints, including the weld proper.
13. The cost of concrete plugs at the upper and lower ends of the encasement pipe, including appurtenances, shall be covered under this Bid Item.
14. Split Steel Casings installed in open cut trenches will be paid for at the unit price bid for "Split Steel Casing" per foot of casing of the various sizes installed, as shown on the plans. This price will include the excavation, backfill, backfill materials, spacers, end seals, grouting, pipe detection system, hauling, and disposition of surplus excavated materials.

Item VII: TRAFFIC SIGNAL IMPROVEMENTS @ FM 1187

G.G.G. Item **[VII-01]** – REMOVE GROUND BOX:

1. This item shall consist of furnishing all labor and equipment necessary to remove existing ground box. Work completed under this item shall be in accordance with TxDOT Item 624.
2. Measurement and payment shall be made on the basis of the price bid per EA ground box removed and disposed of and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

H.H.H. Item **[VII-02]** – RELOC TRF SG PL AM(S) SNGL MST ARM POLE:

1. This item shall consist of furnishing all labor, material, and equipment necessary to relocate an existing a traffic signal pole with a single mast arm. Work completed under this item shall be in accordance with TxDOT Item 686.
2. Measurement and payment shall be made on the basis of the price bid per EA traffic signal pole relocated and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

I.I.I. Item **[VII-03]** – RELOCATE PED POLE ASSEMBLY:

1. This item shall consist of furnishing all labor, material, and equipment necessary to relocate an existing pedestrian pole assembly which is an element of an existing traffic signal. Work completed under this item shall be in accordance with TxDOT Item 686.
2. Measurement and payment shall be made on the basis of the price bid per EA pedestrian pole assembly relocated and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

J.J.J. Item **[VII-04]** – REMOVAL OF CONDUIT:

1. This item shall consist of furnishing all labor and equipment necessary to remove conduit. Work completed under this item shall be in accordance with TxDOT Item 690.

2. Measurement and payment shall be made on the basis of the price bid per LF of conduit removed and disposed of and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

KKK. Item **[VII-05]** – REMOVAL OF SIGNAL HEAD ASSEMBLY:

1. This item shall consist of furnishing all labor, material, and equipment necessary to remove an existing Signal Head Assembly which is an element of an existing traffic signal. Work completed under this item shall be in accordance with TxDOT Item 690.
2. Measurement and payment shall be made on the basis of the price bid per EA Signal Head Assembly removed and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

LLL. Item **[VII-06]** – REPLACE OF SIGNAL HEAD ASSEMBLY:

1. This item shall consist of furnishing all labor, material, and equipment necessary to replace an existing Signal Head Assembly which is an element of an existing traffic signal. Work completed under this item shall be in accordance with TxDOT Item 690.
2. Measurement and payment shall be made on the basis of the price bid per EA Signal Head Assembly replaced and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

MMM. Item **[VII-07 through VII-08]** – DRILL SHAFT (TRF SIG POLE) (All Sizes)

1. This item shall consist of work done in accordance with TxDOT Item 416.
2. Measurement and payment shall be made on the basis of the price bid per linear foot and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

NNN. Item **[VII-09 through VII-11]** – CONDT (PVC) (SCH 80) (all sizes) (various methods):

1. This item shall consist of furnishing all labor, material and equipment necessary to install conduit utilizing methods shown in plans and/or bid form. Work completed under this item shall be in accordance with TxDOT Item 690.
2. Measurement and payment shall be at the unit price per linear foot of electrical conduit installed in accordance with TxDOT Item 690.

OOO. Item **[VII-12]** – ELEC CONDR (NO.6) BARE:

1. This item shall consist of furnishing all labor, material and equipment necessary to install electrical conductor wire. Work completed under this item shall be in accordance with TxDOT Item 620.
2. Measurement and payment shall be at the unit price per linear foot of electrical conductor wire installed in accordance with TxDOT Item 620.

PPP. Item **[VII-13]** – TRAY CABLE (4 CONDR) (12 AWG):

1. This item shall consist of furnishing all labor, material and equipment necessary to install tray cable (4 conductor)(12 AWG). Work completed under this item shall be in accordance with TxDOT Item 621.
2. Measurement and payment shall be at the unit price per linear foot of electrical conductor wire installed in accordance with TxDOT Item 621.

QQQ. Item **[VII-14]** – GROUND BOX TY D (162922)W/APRON:

1. This item shall consist of furnishing all labor, material and equipment necessary to install ground box with apron. Work completed under this item shall be in accordance with TxDOT Item 624.
2. Measurement and payment shall be made on the basis of the price bid per each shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

RRR. Item **[VII-15 through VII-19]** – VEHICLE SIGNAL SECTION (12")LED(*Color & Shape vary*):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install Vehicle Signal Sections. Work completed under this item shall be in accordance with TxDOT Item 682
2. Measurement and payment shall be at the unit price per each vehicle signal section installed in accordance with TxDOT Item 682.

SSS. Item **[VII-20]** – BACKPLATE W/REFL BRDR(3 SEC)ALUM:

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install Backplate w/reflector borders (3 sec) (alum). Work completed under this item shall be in accordance with TxDOT Item 682
2. Measurement and payment shall be at the unit price per each Backplate w/reflector borders (3 sec) (alum) installed in accordance with TxDOT Item 682.

TTT. Item **[VII-21]** – BACKPLATE W/REFL BRDR(5 SEC)ALUM :

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install Backplate w/reflector borders (5 sec) (alum). Work completed under this item shall be in accordance with TxDOT Item 682.
2. Measurement and payment shall be at the unit price per each Backplate w/reflector borders (5 sec) (alum) installed in accordance with TxDOT Item 682.

UUU. Item **[VII-22 through VII-26]** – TRF SIG CBL (Multi Types)(14 AWG)(All Conductor Types):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install TRF SIG CBL (Multi Types)(14 AWG)(All Conductor Types). Work completed under this item shall be in accordance with TxDOT Item 684.
2. Measurement and payment shall be at the unit price per linear foot of traffic signal cable installed in accordance with TxDOT Item 684.

VVV. Item **[VII-27]** – PED POLE ASSEMBLY:

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install Pedestrian Pole Assembly as part of a signalized intersection. Work completed under this item shall be in accordance with TxDOT Item 687.
2. Measurement and payment shall be at the unit price per each of Pedestrian Pole Assembly installed in accordance with TxDOT Item 687.

WWW. Item **[VII-28]** – PED DETECT PUSH BUTTON (APS):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install PED DETECT PUSH BUTTON (APS). Work completed under this item shall be in accordance with TxDOT Item 687.
2. Measurement and payment shall be at the unit price per each PED DETECT PUSH BUTTON (APS) installed in accordance with TxDOT Item 687.

XXX. Item **[VII-29]** – VIVDS CABLE (INSTALL):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install VIVDS CABLE (INSTALL). Work completed under this item shall be in accordance with TxDOT Special Specification Item 6006.
2. Measurement and payment shall be at the unit price per linear foot of RADAR PRESENCE DETECTOR COMM CABLE installed in accordance with TxDOT Special Specification Item 6006.

YYY. Item **[VII-30]** – RADAR PRESENCE DETECTOR COMM CABLE:

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install RADAR PRESENCE DETECTOR COMM CABLE. Work completed under this item shall be in accordance with TxDOT Special Specification Item 6008.
2. Measurement and payment shall be at the unit price per linear foot of RADAR PRESENCE DETECTOR COMM CABLE installed in accordance with TxDOT Item 6008.

ZZZ. Item **[VII-31]** – GROUND BOX (PREPARE):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install Ground Box. Work completed under this item shall be in accordance with TxDOT Special Specification Item 624.
2. Measurement and payment shall be at the unit price per each ground box installed or removed in accordance with TxDOT Item 624.

AAAA. Item **[VII-32]** – ALUMINUM SIGNS (TY A):

1. This item shall consist of the furnishing, fabrication, and for attaching the signs to the supports; and for washing and cleaning the signs. Signs shall be Aluminum Type “A” signs and shall be in compliance with the TxDOT Specifications Item 636.
2. Measurement and payment shall be made on the basis of the price bid per square foot and shall be full compensation for all labor, materials, and equipment necessary to complete this pay item.

BBBB. Item **[VII-33]** – IN SM RD SN SUP&AM TY10BWG(1)SA(T):

1. This item shall consist of the furnishing, fabrication, galvanizing and erection of supports; for constructing concrete foundations; for furnishing complete signs including sign connections and all hardware; for attaching the signs to the supports; and for washing and cleaning the signs. Signs shall be Aluminum Type “A” signs and shall be in compliance with the TxDOT Specifications Item 636. The sign assembly shall be in compliance with the TxDOT Specifications Item 644.

2. Measurement and payment shall be made on the basis of the price bid per each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

ITEM VIII: TRAFFIC SIGNAL IMPROVEMENTS @ CHAMPIONS DR

CCCC. Item [VIII-01] – REMOVE SM RD SN SUP&AM:

1. Work completed under this item shall be in accordance with the TxDOT Item 644.
2. Measurement and payment shall be made on the basis of the price bid per each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

DDDD. Item [VIII-02 through VIII-03] – DRILL SHAFT (TRF SIG POLE) (ALL SIZES):

1. This item shall consist of work done in accordance with TxDOT Item 416.
2. Measurement and payment shall be made on the basis of the price bid per linear foot and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

EEEE. Item [VIII-04 through VIII-07] – CONDT (PVC) (SCH 80) (ALL SIZES)(VARIOUS METHODS):

1. This item shall consist of furnishing all labor, material and equipment necessary to install conduit utilizing methods shown in plans and/or bid form. Work completed under this item shall be in accordance with TxDOT Item 690.
2. Measurement and payment shall be at the unit price per linear foot of electrical conduit installed in accordance with TxDOT Item 690.

FFFF. Item [VIII-08 through VIII-11] – ELEC CONDR (ALL SIZES):

1. This item shall consist of furnishing all labor, material and equipment necessary to install electrical conductor wire. Work completed under this item shall be in accordance with TxDOT Item 620.
2. Measurement and payment shall be at the unit price per linear foot of electrical conductor wire installed in accordance with TxDOT Item 620.

GGGG. Item [VIII-12 through VIII-13] – GROUND BOX:

1. This item shall consist of furnishing all labor, material and equipment necessary to install ground box. Work completed under this item shall be in accordance with TxDOT Item 624.
2. Measurement and payment shall be made on the basis of the price bid per each shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

HHHH. Item [VIII-14] – ELC SRV TY D 120/240 070(NS)SS(E)PS(U):

1. This item shall consist of furnishing all labor, material, coordination with others, and equipment necessary to install electrical service as shown in the plans. Work completed under this item shall be in accordance with TxDOT Item 628.

2. Measurement and payment shall be made on the basis of the price bid per each shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

IIII. Item **[VIII-15]** – INS HY TRF SIG (CNT & CAB)(ISO):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install Highway Traffic Signal Contractor supplied controller and cabinet. Work completed under this item shall be in accordance with TxDOT Item 680
2. Measurement and payment shall be at the unit price per each vehicle signal section installed in accordance with TxDOT Item 680.

JJJJ. Item **[VIII-16 through 21]** –VEHICLE SIGNAL SECTION (12")LED(*Color & Shape vary*):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install Vehicle Signal Sections. Work completed under this item shall be in accordance with TxDOT Item 682
2. Measurement and payment shall be at the unit price per each vehicle signal section installed in accordance with TxDOT Item 682.

KKKK. Item **[VIII-22]** – PED SIG SEC (LED)(COUNTDOWN):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install Pedestrian Signal Sections. Work completed under this item shall be in accordance with TxDOT Item 682.
2. Measurement and payment shall be at the unit price per each Pedestrian Signal Sections installed in accordance with TxDOT Item 682.

LLLL.Item **[VIII-23]** – BACKPLATE W/REFL BRDR(3 SEC)ALUM:

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install Backplate W/Refl Brdr. Work completed under this item shall be in accordance with TxDOT Item 682.
2. Measurement and payment shall be at the unit price per each Backplate W/Refl Brdr installed in accordance with TxDOT Item 682.

MMMM. Item **[VIII-24 through VIII-27]** – TRF SIG CBL (*VARIOUS TYPES, SIZES, AND CONDR COUNT*):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install TRF SIG CBL (Multi Types)(14 AWG)(All Conductor Types). Work completed under this item shall be in accordance with TxDOT Item 684.
2. Measurement and payment shall be at the unit price per linear foot of traffic signal cable installed in accordance with TxDOT Item 684.

NNNN. Item **[VIII-28 through VIII-31]** – INS TRF SIG PL AM(S)1 ARM(*Various Lengths and with and without Luminaires*):

1. This item shall consist of furnishing all labor, material, and equipment necessary to furnish and install a traffic signal pole with a single mast arm. Work completed under this item shall be in accordance with TxDOT Item 686.

2. Measurement and payment shall be made on the basis of the price bid per EA traffic signal pole with a single mast arm furnished and installed and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

OOOO. Item **[VIII-32]** – PED POLE ASSEMBLY:

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install Pedestrian Pole Assembly as part of a signalized intersection. Work completed under this item shall be in accordance with TxDOT Item 687.
2. Measurement and payment shall be at the unit price per each of Pedestrian Pole Assembly installed in accordance with TxDOT Item 687.

PPPP. Item **[VIII-33]** –PED DETECT PUSH BUTTON (APS):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install PED DETECT PUSH BUTTON (APS). Work completed under this item shall be in accordance with TxDOT Item 687.
2. Measurement and payment shall be at the unit price per each PED DETECT PUSH BUTTON (APS) installed in accordance with TxDOT Item 687.

QQQQ. Item **[VIII-34]** – PED DETECTOR CONTROLLER UNIT:

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install PED DETECTOR CONTROLLER UNIT. Work completed under this item shall be in accordance with TxDOT Item 688.
2. Measurement and payment shall be at the unit price per each PED DETECTOR CONTROLLER UNIT installed in accordance with TxDOT Item 688.

RRRR. Item **[VIII-35]** – RVDS (PRESENCE DETECTION ONLY):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install RVDS (PRESENCE DETECTION ONLY). Work completed under this item shall be in accordance with TxDOT Item 6008.
2. Measurement and payment shall be at the unit price per each RVDS (PRESENCE DETECTION ONLY) installed in accordance with TxDOT Item 6008.

SSSS. Item **[VIII-36]** – RVDS (PRESENCE AND ADVANCE DETECTION):

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install RVDS (PRESENCE AND ADVANCE DETECTION). Work completed under this item shall be in accordance with TxDOT Item 6008.
2. Measurement and payment shall be at the unit price per each RVDS (PRESENCE AND ADVANCE DETECTION) installed in accordance with TxDOT Item 6008.

TTTT. Item **[VIII-37]** – RADAR PRESENCE DETECTOR COMM CABLE:

1. This item shall consist of furnishing all labor, materials, and equipment necessary to install RADAR PRESENCE DETECTOR COMM CABLE. Work completed under this item shall be in accordance with TxDOT Item 6008.
2. Measurement and payment shall be at the unit price per linear foot RADAR PRESENCE DETECTOR COMM CABLE installed in accordance with TxDOT Item 6008.

UUUU. Item **[VIII-38]** – ALUMINUM SIGNS (TY A):

1. This item shall consist of the furnishing, fabrication, and for attaching the signs to the supports; and for washing and cleaning the signs. Signs shall be Aluminum Type “A” signs and shall be in compliance with the TxDOT Specifications Item 636.
2. Measurement and payment shall be made on the basis of the price bid per square foot and shall be full compensation for all labor, materials, and equipment necessary to complete this pay item.

VVVV. Item **[VIII-39]** – IN SM RD SN SUP&AM TY10BWG(1)SA(T):

1. This item shall consist of the furnishing, fabrication, galvanizing and erection of supports; for constructing concrete foundations; for furnishing complete signs including sign connections and all hardware; for attaching the signs to the supports; and for washing and cleaning the signs. Signs shall be Aluminum Type “A” signs and shall be in compliance with the TxDOT Specifications Item 636. The sign assembly shall be in compliance with the TxDOT Specifications Item 644.
2. Measurement and payment shall be made on the basis of the price bid per each and shall be full compensation for all labor, materials and equipment necessary to complete this pay item.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 31 00 PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Furnish resources required to complete the Project in accordance with the Contract Documents and within the Contract Times.
- B. Construct Project in accordance with current safety practices.
- C. Manage Site to allow access to Site and control construction operations.
- D. Construct temporary facilities to provide and maintain control over environmental conditions at the Site. Remove temporary facilities when no longer needed.
- E. Provide temporary controls for pollution, management of water, and management of excess earth as required in Section 01 57 00 "Temporary Controls."

1.02 STANDARDS

- A. Perform Work to comply with:
 - 1. Requirements of the Contract Documents;
 - 2. Laws and Regulations; and
 - 3. Specified industry standards.

1.03 DOCUMENTATION

- A. Provide documents in accordance with Section 01 33 00 "Document Management."
- B. Provide copies of Supplier's printed storage instructions prior to furnishing materials or products and installation instructions prior to beginning the installation.
- C. Incorporate field notes, sketches, recordings, and computations made by the Contractor in Record Drawings per Section 01 31 13 "Project Administration."

1.04 PERMITS

- A. Obtain environmental permits required for construction at the Site.
- B. Provide required permits for transporting heavy or oversized loads.
- C. Provide other permits required to conduct any part of the Work.
- D. Arrange for inspections and certification by agencies having jurisdiction over the Work and include the cost for these inspections and certifications in the Contract Price.
- E. Make arrangements with private utility companies and pay fees associated with obtaining services or inspections.
- F. Retain copies of permits and licenses at the Site and comply with all regulations and conditions of the permit or license.

1.05 SAFETY REQUIREMENTS

- A. Manage safety to protect the safety and welfare of persons at the Site.
- B. Provide safe access to move through the Site. Provide protective devices to warn and protect from hazards at the Site.
- C. Provide safe access for those performing tests and inspections.
- D. Maintain a supply of personal protective equipment for visitors to the Site.
- E. Comply with latest provisions of the Occupational Health and Safety Administration (OSHA) and other Laws and Regulations.
- F. Cooperate with accident investigations. Provide two copies of all reports, including insurance company reports, prepared concerning accidents, injuries, or deaths related to the Project to the Construction Manager as Record Data per Section 01 31 13 "Project Administration."

1.06 ACCESS TO THE SITE

- A. Maintain access to the facilities at all times. Do not obstruct roads, pedestrian walks, or access to the various buildings, structures, stairways, or entrances. Provide safe access for normal operations during construction.
- B. Provide adequate and safe access for inspections. Leave ladders, bridges, scaffolding, and protective equipment in place until inspections have been completed. Construct additional safe access if required for inspections.
- C. Use roadways for construction traffic only with written approval of the appropriate representatives of each entity. Roadways may not be approved for construction traffic. Obtain written approval to use roads to deliver heavy or oversized loads to the Site. Furnish copies of the written approvals to the Construction Manager as Record Data per Section 01 31 13 "Project Administration."

1.07 CONTRACTOR'S USE OF THE SITE

- A. Limit the use of Site for Work and storage to those areas designated on the Drawings or approved by the Construction Manager. Coordinate the use of the Site with the Construction Manager.
- B. Provide security at the Site as necessary to protect against vandalism and loss by theft.
- C. Park construction equipment in designated areas only and provide spill control measures as discussed in Section 01 57 00 "Temporary Controls."
- D. Park employees' vehicles in designated areas only.
- E. Obtain written permission of the property owner before entering privately-owned land outside of the Owner's property, rights-of-way, or easements.
- F. Cooperate with public and private agencies with facilities operating within the limits of the Project. Provide 48 hours' notice to any applicable agency when Work is anticipated to proceed in the vicinity of any facility by using **Texas811**.

G. Conduct of Contractor's or Subcontractor's Employees:

1. Do not permit alcoholic beverages or illegal substances on the Site. Do not allow persons under the influence of alcoholic beverages or illegal substances to enter or remain on the Site at any time. Persons on Site under the influence of alcoholic beverages or illegal substances will be permanently prohibited from returning to the Site. Criminal or civil penalties may also apply.
2. Do not allow the use of offensive language or sexual harassment in any form. These actions will cause immediate and permanent removal of the offender from the premises. Criminal or civil penalties may apply.
3. Require workers to wear clothing that is inoffensive and meets safety requirements. Do not allow sleeveless shirts, shorts, or any exceedingly torn, ripped, or soiled clothing to be worn on the Site.
4. Do not allow the use, possession, concealment, transportation, promotion, or sale of the following prohibited items anywhere on the Site:
 - a. Firearms (including air rifles and pistols and BB or pellet guns) and ammunition;
 - b. Bows, crossbows, arrows, bolts, or any other projectile weapons;
 - c. Explosives of any kind, including fireworks;
 - d. Illegal knives;
 - e. Other weapons prohibited by state Laws and Regulations; and
 - f. Any other item that has been designed or intended to be used as a weapon.

No exceptions will be made for the possession of a firearm by a person that has a valid state-issued license to carry a firearm. Remove any of the prohibited items listed above from the Site immediately and permanently. Any person found to be in possession of any prohibited item must also be removed from the Site and may be reported to local law enforcement.

1.08 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. Examine the Site and review the available information concerning the Site. Locate utilities, underground facilities, and existing structures. Verify the elevations of the structures adjacent to excavations. Report any discrepancies from information in the Contract Documents to the Construction Manager before beginning construction.
- B. Determine if existing structures, poles, piping, or other utilities at excavations will require relocation or replacement. Prepare a Plan of Action per Section 01 31 13 "Project Administration." Coordinate Work with local utility company and others for the relocation or replacement.
- C. Protect utilities, underground facilities and existing structures unless they are shown to be replaced or relocated on the Drawings. Restore damaged items to the satisfaction of the Owner and utility or property owner.
- D. Carefully support and protect all structures and/or utilities so that there will be no failure or settlement where excavation or demolition endangers adjacent structures and utilities. Do not take existing utilities out of service unless required by the Contract Documents or

approved by the Construction Manager. Notify and cooperate with the utility owner if it is necessary to move services, poles, guy wires, pipelines, or other obstructions.

- E. Protect existing trees and landscaping at the Site. Mark trees that may be removed during construction and review with the Construction Manager for approval before removing. Protect trees to remain from damage limiting activity, including stockpiling of materials within the drip line of the tree.
- F. Protect buildings from damage when handling material or equipment. Protect finished surfaces, including floors, doors, and jambs. Remove doors and install temporary wood protective coverings over jambs, if needed.

1.09 DISRUPTION TO SERVICES/CONTINUED OPERATIONS

- A. Owner's facilities are to continue in service as usual during the construction unless noted otherwise. Owner or utilities must be able to operate and maintain the facilities. Keep disruptions to existing utilities, piping, process piping, or electrical services to a minimum.
 - 1. Do not restrict access to critical valves, operators, or electrical panels.
 - 2. Do not store material or products inside structures unless authorized by the Construction Manager.
 - 3. Limit operations to the minimum amount of space needed to complete the specified Work.
 - 4. Maintain storm sewers and sanitary sewers in service at all times. Provide temporary service around the construction or otherwise construct the Work in a manner that flow is not restricted.
- B. Provide a Plan of Action in accordance with Section 01 35 00 "Special Procedures" if facilities must be taken out of operation.

1.10 FIELD VERIFICATION

- A. Perform complete field measurements prior to purchasing products or beginning construction for products required to fit existing conditions.
- B. Verify property lines, control lines, grades, and levels indicated on the Drawings.
- C. Verify pipe class, equipment capacities, existing electrical systems, and power sources for existing conditions.
- D. Check Shop Drawings and indicate the actual dimensions available where products are to be installed.
- E. Include field measurements in Record Documents as required in Section 01 31 13 "Project Administration."

1.11 REFERENCE DATA AND CONTROL POINTS

- A. Construction Manager will provide the following control points:
 - 1. Base line or grid reference points for horizontal control.
 - 2. Benchmarks for vertical control.

- B. Locate and protect control points prior to starting the Work and preserve permanent reference points during construction. Designated control points may be on an existing structure or monument. Do not change or relocate points without prior approval of the Construction Manager. Notify Construction Manager when a reference point is lost, destroyed, or requires relocation. Replace Project control points on the basis of the original survey. Control points or benchmarks damaged, disturbed or destroyed as a result of the Contractor's negligence will be restored by the Construction Manager. Owner will impose a set-off as compensation for the effort required.
- C. Provide complete engineering layout of the Work needed for construction.
 - 1. Provide competent personnel. Provide equipment including accurate surveying instruments, stakes, platforms, tools, and materials.
 - 2. Provide surveying with accuracy meeting the requirements established by TxDOT Survey Manual
 - 3. Provide Record Data per Section 01 31 13 "Project Administration" and measurements per standards.

1.12 DELIVERY AND STORAGE

- A. Deliver products and materials to the Site in time to prevent delays in construction.
- B. Deliver packaged products to Site in original undamaged containers with identifying labels attached. Open cartons as necessary to check for damage and to verify invoices. Reseal cartons and store properly until used. Leave products in original packages or other containers until installed. If original packages or containers are damaged, repackage in containers and include packing slips, labels and other information from the original packaging.
- C. Deliver products that are too large to fit through openings to the Site in advance of the time enclosing walls and roofs are erected. Set in place, raised above floor on cribs or pallets.
- D. Assume full responsibility for the protection and safekeeping of products stored at the Site.
- E. Store products at locations acceptable to the Construction Manager and to allow Owner access to maintain and operate existing facilities.
- F. Store products in accordance with the Supplier's storage instructions immediately upon delivery. Leave seals and labels intact. Arrange storage to allow access for maintenance of stored items and for inspection. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.
- G. Provide additional storage areas as needed for construction. Store products subject to damage by elements in substantial weather-tight enclosures or storage sheds. Provide and maintain storage sheds as required for the protection of products. Provide temperature, humidity control, and ventilation within the ranges stated in the Supplier's instructions. Remove storage facilities at the completion of the Project.
- H. Protect the pipe interior. Keep all foreign materials such as dirt, debris, animals, or other objects out of the pipe during the Work.
- I. Provide adequate exterior storage for products that may be stored out-of-doors.

1. Provide substantial platforms, blocking, or skids to support materials and products above ground which has been sloped to provide drainage. Protect products from soiling or staining.
 2. Cover products subject to discoloration or deterioration from exposure to the elements, with impervious sheet materials. Provide ventilation to prevent condensation below covering.
 3. Store loose, granular materials on clean, solid surfaces, or on rigid sheet materials, to prevent mixing with foreign matter.
 4. Provide surface drainage to prevent erosion and ponding of water.
 5. Prevent mixing of refuse or chemically injurious materials or liquids with stored materials.
 6. Pipes and conduits stored outdoors are to have open ends sealed to prevent the entrance of dirt, moisture, and other injurious materials. Protect PVC pipe from ultraviolet light exposure.
 7. Store products to prevent wind damage.
- J. Protect and maintain mechanical and electrical equipment in storage.
1. Provide Supplier's service instructions on the exterior of the package.
 2. Service equipment on a regular basis as recommended by the Supplier. Maintain a log of maintenance services. Submit the log as Record Data per Section 01 31 13 "Project Administration" when Owner assumes responsibility for maintenance and operation.
 3. Provide power to and energize space heaters for all equipment for which these devices are provided.
 4. Provide temporary enclosures for all electrical equipment, including electrical systems on mechanical devices. Provide and maintain heat in the enclosures until equipment is energized.
- K. Maintain storage facilities. Inspect stored products on a weekly basis and after periods of severe weather to verify that:
1. Storage facilities continue to meet specified requirements;
 2. Supplier's required environmental conditions are continually maintained; and
 3. Products that can be damaged by exposure to the elements are not adversely affected.
- L. Replace any stored item damaged by inadequate protection or environmental controls.
- M. Payment may be withheld for any products not properly stored.

1.13 CLEANING DURING CONSTRUCTION

- A. Provide positive methods to minimize raising dust from construction operations and provide positive means to prevent air-borne dust from discharging into the atmosphere. Control dust and dirt from demolition, cutting, and patching operations.

- B. Clean the Site as Work progresses and dispose of waste materials, keeping the Site free from accumulations of waste or rubbish. Provide containers at the Site for waste collection. Do not allow waste materials or debris to blow around or off of the Site. Control dust from waste materials. Transport waste materials with as few handlings as possible.
- C. Comply with Laws and Regulations. Do not burn or bury waste materials. Remove waste materials, rubbish, and debris from the Site and legally dispose of these at public or private disposal facilities.

1.14 MAINTENANCE OF ROADS, DRIVEWAYS, AND ACCESS

- A. Maintain roads and streets in a manner that is suitable for safe operations of public vehicle during all phases of construction unless the Owner approves a street closing. Do not close public roads overnight. Coordinate and arrange for emergency vehicle access when streets are to be closed.
- B. Submit a Notification by Contractor for Owner's approval of a street closing. The request must state:
 - 1. The reason for closing the street.
 - 2. How long the street will remain closed.
 - 3. Procedures to be taken to maintain the flow of traffic.
- C. Obtain permits and permissions of the entity that owns the road prior to any Work and provide a copy of the permit or permission Record Data per Section 01 31 13 "Project Administration."
- D. Construct temporary detours, including by-pass roads around construction, with adequately clear width to maintain the free flow of traffic at all times. Maintain barricades, signs, and safety features around the detour and excavations. Maintain barricades, signs, and safety features around the Work in accordance with all provisions of the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
- E. Assume responsibility for any damage resulting from construction along roads or drives.

1.15 BLASTING

- A. Blasting is not allowed for any purpose.

1.16 ARCHAEOLOGICAL REQUIREMENTS

- A. Cease operations immediately and contact the Owner for instructions if historical or archaeological artifacts are found during construction.
- B. Conduct all construction activities to avoid adverse impact of the sites where significant historical or archaeological artifacts are found or identified as an area where other artifacts could be found.
 - 1. Obtain details for working in these areas from regulatory agencies.
 - 2. Maintain confidentiality regarding the site(s) of artifacts.
 - 3. Adhere to the requirements of applicable local, state, and federal Laws and Regulations.

4. Notify the Construction Manager and any local, state, or federal agency as required by applicable Laws and Regulations.
- C. Do not disturb archaeological sites.
 1. Obtain the services of a qualified archaeological specialist to instruct construction personnel on how to identify and protect archaeological finds on an emergency basis.
 2. Coordinate activities to permit archaeological work to take place within the area.
 - a. Attempt to archaeologically clear areas needed for construction as soon as possible.
 - b. Provide a determination of priority for such areas.
- D. Assume responsibility for any unauthorized destruction that might result to such sites by construction personnel, and pay all penalties assessed by state or federal agencies for non-compliance with these requirements.
- E. Contract Times will be modified to compensate for delays caused by such archaeological finds. No additional compensation will be paid for delays.

1.17 ENDANGERED SPECIES RESOURCES

- A. Do not perform any activity that is likely to destroy or adversely modify the habitat or jeopardize the continued existence of a threatened or endangered species as listed or proposed for listing under the Federal Endangered Species Act (ESA) or applicable state Laws and Regulations.
- B. Cease Work immediately in the area of the encounter and notify the Construction Manager if a threatened or endangered species is encountered during construction. Construction Manager will implement actions in accordance with the ESA and applicable state statutes. Resume construction in the area of the encounter when authorized to do so by the Construction Manager.

1.18 OCCUPANCY

- A. Owner has the right to occupy or operate any portion of the Project that is ready for use after notifying the Contractor of its intent to do so.
- B. Testing of equipment and appurtenances including specified test periods, training, and startup does not constitute acceptance for operation.
- C. Owner may accept the facility for continued use after startup and testing at the option of the Owner. If acceptance is delayed at the option of the Owner, shut down facilities per approved operation and maintenance procedures.
- D. The execution of bonds is understood to indicate the consent of the surety to these provisions for occupancy of the structures and use of equipment.
- E. Provide an endorsement from the insurance carrier permitting occupancy of the structures and use of equipment during the remaining period of construction.
- F. Conduct operations to ensure the least inconvenience to the Owner and general public.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 31 13 PROJECT ADMINISTRATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Administer contract requirements to construct the Project. Provide documentation per the requirements of this Section. Provide information as requested by the OPT.

1.02 DOCUMENTATION

- A. Provide documents in accordance with Section 01 33 00 "Document Management."

1.03 COMMUNICATION DURING THE PROJECT

- A. Construction Manager is to be the first point of contact for all parties on matters concerning this Project.
- B. Construction Manager will coordinate correspondence concerning:
 - 1. Contract administration;
 - 2. Clarification and interpretation of the Contract Documents;
 - 3. Contract modifications;
 - 4. Observation of Work and testing; and
 - 5. Claims.
- C. Construction Manager will normally communicate only with the Contractor. Any required communication with Subcontractors or Suppliers will only be with the direct involvement of the Contractor.
- D. Direct written communications to the Construction Manager at the address indicated at the pre-construction conference. Include the following with communications as a minimum:
 - 1. Name of the Owner;
 - 2. Project name;
 - 3. Contract title;
 - 4. Project number;
 - 5. Date; and
 - 6. A reference statement.
- E. Submit communications on the forms referenced in this Section or in Section 01 33 00 "Document Management."

1.04 PROJECT MEETINGS

- A. Pre-Construction Conference:
 - 1. Attend a pre-construction conference;
 - 2. The location of the conference will be determined by the Construction Manager;

3. The time of the conference will be determined by the Construction Manager, but will be after the Notice of Award is issued and not later than 15 days after the Notice to Proceed is issued;
 4. OPT, Contractor's project manager and superintendent, representatives of utility companies, and representatives from major Subcontractors and Suppliers may attend the conference; and
 5. Provide and be prepared to discuss:
 - a. Preliminary construction schedule per Section 01 33 05 "Construction Progress Schedule";
 - b. Preliminary Schedule of Documents per Section 01 33 00 "Document Management";
 - c. Schedule of Values and anticipated schedule of payments per Section 01 29 00 "Application for Payment Procedures";
 - d. List of Subcontractors and Suppliers;
 - e. Contractor's organizational chart as it relates to this Project; and
 - f. Letter indicating the agents of authority for the Contractor and the limit of that authority with respect to the execution of legal documents, contract modifications, and payment requests.
- B. Progress Meetings:
1. Attend meetings with the Construction Manager, Design Professional, and Owner.
 - a. Meet monthly or as requested by the Construction Manager to discuss the Project.
 - b. Meet at the Site or other location as designated by the Construction Manager.
 - c. Contractor's superintendent and other key personnel are to attend the meeting. Other individuals may be requested to attend to discuss specific matters.
 - d. Notify the Construction Manager of any specific items to be discussed a minimum of 1 week prior to the meeting.
 2. Provide information as requested by the Construction Manager, Design Professional or Owner concerning this Project. Prepare to discuss:
 - a. Status of overall project schedule;
 - b. Contractor's detailed schedule for the next month;
 - c. Anticipated delivery dates for equipment;
 - d. Coordination with the Owner;
 - e. Status of documents;
 - f. Information or clarification of the Contract Documents;
 - g. Claims and proposed modifications to the Contract;
 - h. Field observations, problems, or conflicts; and

- i. Maintenance of quality standards.
- 3. Construction Manager will prepare a record of meeting proceedings. Review the record of the meeting and notify the Construction Manager of any discrepancies within 10 days of the date the record of the meeting is provided. The record will not be corrected after the 10 days have expired. Corrections will be reflected in the record of the following meeting.
- C. Pre-Documentation and Pre-Installation Meetings:
 - 1. Conduct pre-documentation and pre-installation meetings as required in the individual technical Specifications or as determined necessary by the Construction Manager (for example, instrumentation, roofing, concrete mix design, etc.).
 - 2. Set the time and location of the meetings when ready to proceed with the associated Work. Submit a Notification by Contractor in accordance with Paragraph **[1.07]** for the meeting 2 weeks before the meeting. OPT must approve of the proposed time and location.
 - 3. Attend the meeting and require the participation of appropriate Subcontractors and Suppliers in the meeting.
 - 4. Construction Manager will prepare a record of meeting proceedings. Review the record of the meeting and notify the Construction Manager of any discrepancies within 10 days of the date the record of the meeting is provided. The record will not be corrected after the 10 days have expired. Corrections will be reflected in the record of the following meeting.
- D. Weekly Coordination Meetings: Meet on a weekly basis with the Construction Manager or designated on-site representative of the OPT to discuss Work planned for the following week, review coordination issues, testing required, or other issues. Records of these meetings are not required.

1.05 REQUESTS FOR INFORMATION

- A. Submit a Request for Information to the Construction Manager to obtain additional information or clarification of the Contract Documents.
 - 1. Submit a separate Request for Information for each item on the form provided by the Construction Manager.
 - 2. Attach adequate information to permit a response without further clarification. Construction Manager will return requests that do not have adequate information to the Contractor for additional information. Contractor is responsible for all delays resulting from multiple reviews due to inadequate information.
 - 3. A response will be made when adequate information is provided. The response will be made on the Request for Information form provided by the Construction Manager.
- B. Response to a Request for Information is given to provide additional information, interpretation, or clarification of the requirements of the Contract Documents, and does not modify the Contract Documents.
 - 1. Submit a Change Proposal per Section 01 26 00 "Change Management" if a contract modification is suggested or required.

- C. Use the Decision Register to document decisions made at meetings and actions to be taken in accordance with Paragraph **[1.06]**.
- D. Use the Action Item Register to document assignments for actions to be taken in accordance with Paragraph **[1.06]**.

1.06 DECISION AND ACTION ITEM REGISTER

- A. Construction Manager will maintain a Decision Register to document key decisions made during meetings, telephone conversations, or visits to the Site using the format provided by the Construction Manager:
 - 1. Review the Decision Register prior to each regular meeting.
 - 2. Report any discrepancies to the Construction Manager for correction or discussion at the next monthly meeting.
- B. Construction Manager will maintain an Action Item Register in conjunction with the Decision Register to track assignments made during meetings, telephone conversations or visits to the Site using the format provided by the Construction Manager:
 - 1. Review the Action Item Register prior to each regular meeting.
 - 2. Report actions taken after the previous progress meeting on items in the register assigned to the Contractor or through the Contractor to a Subcontractor or Supplier to the Construction Manager. Report on status of progress 1 week prior to each progress meeting established in Paragraph **[1.04]** to allow Construction Manager to update the register prior to the Progress Meetings.
 - 3. Be prepared to discuss the status at each meeting.
- C. Decisions or action items in the register that require a change in the Contract Documents will have the preparation of a Modification as an action items if appropriate. The Contract Documents can only be changed by a Modification.

1.07 NOTIFICATION BY CONTRACTOR

- A. Notify the Construction Manager of:
 - 1. Need for testing;
 - 2. Intent to work outside regular working hours;
 - 3. Request to shut down facilities or utilities;
 - 4. Proposed utility connections;
 - 5. Required observation by Construction Manager, Engineer, or inspection agencies prior to covering Work; and
 - 6. Training.
- B. Provide notification a minimum of 2 weeks in advance to allow OPT time to respond appropriately to the notification.
- C. Use the Notification by Contractor form provided by the Construction Manager.

1.08 REQUESTS FOR MODIFICATIONS

- A. Submit requests for Modifications per Section 01 26 00 “Change Management.”

1.09 RECORD DATA

- A. Submit information required by the Contract Documents that is not related to a product as Record Data using the form provided by the Construction Manager.

1.10 RECORD DOCUMENTS

- A. Maintain one complete set of printed Record Documents at the Site including:
 - 1. Drawings;
 - 2. Specifications;
 - 3. Addenda;
 - 4. Modifications;
 - 5. Product Data and approved Shop Drawings;
 - 6. Construction photographs;
 - 7. Test Reports;
 - 8. Clarifications and other information provided in Request for Information responses; and
 - 9. Reference standards.
- B. Store printed Record Documents and Samples in the Contractor’s field office.
 - 1. Record Documents are to remain separate from documents used for construction.
 - 2. Provide files and racks for the storage of Record Documents.
 - 3. Provide a secure storage space for the storage of Samples.
 - 4. Maintain Record Documents in clean, dry, legible conditions, and in good order.
 - 5. Make Record Documents and Samples available at all times for inspection by the OPT.
- C. Maintain an electronic record of Specifications and Addenda to identify products provided in PDF format.
 - 1. Reference the Product Data number, Shop Drawing number, and O&M manual number for each product and item of equipment furnished or installed.
 - 2. Reference Modifications by type and number for all changes.
- D. Maintain an electronic record of Drawings in PDF format.
 - 1. Reference the Product Data number, Shop Drawing number, and O&M manual number for each product and item of equipment furnished or installed.
 - 2. Reference Modifications by type and number for all changes.
 - 3. Record information as construction is being performed. Do not conceal any Work until the required information is recorded.

4. Mark drawings to record actual construction.
 - a. Depths of various elements of the foundation in relation to finished first floor datum or the top of walls.
 - b. Horizontal and vertical locations of underground utilities and appurtenances constructed, and existing utilities encountered during construction.
 - c. Location of utilities and appurtenances concealed in the Work. Refer measurements to permanent structures on the surface. Include the following equipment:
 - 1) Piping;
 - 2) Ductwork;
 - 3) Equipment and control devices requiring periodic maintenance or repair;
 - 4) Valves, unions, traps, and tanks;
 - 5) Services entrance;
 - 6) Feeders; and
 - 7) Outlets.
 - d. Changes of dimension and detail.
 - e. Changes by Modifications.
 - f. Information in Requests for Information or included in the Decision Register.
 - g. Details not on the original Drawings. Include field verified dimensions and clarifications, interpretations, and additional information issued in response to Requests for Information.
 5. Mark Drawings with the following colors:
 - a. Highlight references to other documents, including Modifications in blue.
 - b. Highlight mark ups for new or revised Work (lines added) in yellow.
 - c. Highlight items deleted or not installed (lines to be removed) in red.
 - d. Highlight items constructed per the Contract Documents in green.
 6. Submit Record Documents to Construction Manager for review and acceptance 30 days prior to Final Completion of the Project.
- E. Applications for Payment will not be recommended for payment if Record Documents are found to be incomplete or not in order. Final payment will not be recommended without complete Record Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 33 00 DOCUMENT MANAGEMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Submit documentation as required by the Contract Documents and as requested by the Construction Manager.
- B. Use the Project Management Information System (PMIS) provided by the **Construction Manager**. Software for the PMIS is **FNiManager** which has the following system requirements:
 - 1. Operating Systems: Windows 7 or later and OS X v10.8 or later.
 - 2. Supported Internet Browsers: Internet Explorer 11.0 or later, Google Chrome 70.0 or later, Firefox 63.0 or later, Safari 11.0 or later, and Microsoft Edge 17.0 or later.
 - 3. Screen Resolution: The recommended screen resolution is 1280 x 1024 or higher. The minimum screen resolution required to support all features is 1024 x 768.

1.02 QUALITY ASSURANCE

- A. Submit legible, accurate, complete documents presented in a clear, easily understood manner. Documents not meeting these criteria will be returned without review as “Not Approved.”

1.03 CONTRACTOR’S RESPONSIBILITIES

- A. Review documents prior to submission. Make certifications as required by the Contract Documents and as indicated on Construction Manager provided forms.
- B. Provide a Schedule of Documents to list the documents that are to be submitted and the dates on which documents are to be sent to the Construction Manager for review. Use the form provided by the Construction Manager for this list.
- C. Incorporate the dates for processing documents into the Progress Schedule required by Section 01 33 05 “Construction Progress Schedule.”
 - 1. Provide documents in accordance with the schedule so construction of the Project is not delayed.
 - 2. Allow a reasonable time for the review of documents when preparing the Progress Schedule. Assume a 14-day review cycle for each document unless a longer period of time is indicated in the Contract Documents or agreed to by Construction Manager and Contractor.
 - 3. Schedule delivery of review documents to provide all information for interrelated Work at one time.
 - 4. Allow adequate time for processing documents so construction of the Project is not delayed.

1.04 FORMS AND WORKFLOWS

- A. Use the forms or workflow process provided by the Construction Manager for project documentation.

1.05 DOCUMENT PREPARATION AND DELIVERY PROCEDURES

- A. Deliver documents in electronic format as directed by the Construction Manager.
 - 1. Do not leave any blanks incomplete. If information is not applicable, enter NA in the space provided.
 - 2. Deliver all documents in Portable Document Format (PDF).
 - a. Create PDF document using Bluebeam Revu software.
 - b. Create PDF documents from native format files unless files are only available from scanned documents.
 - c. Rotate pages so that the top of each document appears at the top of the monitor screen when opened in PDF viewing software.
 - d. Provide PDF document with adequate resolution to allow documents to be printed in a format equivalent to the document original. Documents are to be scalable to allow printing on standard 8-1/2 x 11 or 11 x 17 paper.
 - e. Submit color PDF documents where color is required to interpret the document.
 - f. Create or convert documents to allow text to be selected for comments or searched using text search features. Run scanned documents through Optical Character Recognition (OCR) software if necessary.
 - g. Flatten markups in documents to prevent markups made by Contractor from being moved or deleted. Flatten documents to allow markup recovery.
 - h. Use Bluebeam Revu software to reduce file size using default settings except the option for “Drop Metadata”. Uncheck the “Drop Metadata” box when reducing file size.
 - i. Add footers to each document with the name of the Project.

1.06 DOCUMENT NUMBERING

- A. Assign a document number to the Contractor originated document to allow tracking of the document during the review process.
 - 1. Assign the number consisting of a prefix, a sequence number, and a letter suffix. Prefixes will be as follows:

Prefix	Description
AP	Application for Payment
CP	Change Proposal
CTR	Certified Test Report
EIR	Equipment Installation Report
GD	Graphic Documentation

Prefix	Description
NBC	Notification by Contractor
O&M	Operation and Maintenance Manuals
PD	Product Data
RD	Record Data
RFI	Request for Information
SD	Shop Drawing
SCH	Schedule of Progress

2. Issue sequence numbers in chronological order for each type of document as directed by the Construction Manager.
 3. Issue numbers for resubmittals that have the same number as the original document followed by an alphabetical suffix indicating the number of times the same document has been sent to the Construction Manager for processing. For example: SD-025 A represents Shop Drawing number 25 and the letter “A” designates this is the second time this document has been sent for review.
 4. Clearly note the document number on each page or sheet of the document.
 5. Correct assignment of numbers is essential since different document types are processed in different ways.
- B. Include reference to the Drawing number and/or Specification Section, detail designation, schedule, or location that corresponds with the data submitted on the Document Transmittal form. Other identification may also be required, such as layout drawings or schedules to allow the reviewer to determine where a particular product is to be used.

1.07 DOCUMENTATION

- A. Furnish documents as indicated in Section 01 33 01 “Document Register” or in the individual Specification Sections. Submit documents per the procedures described in the Contract Documents.
- B. Submit documents per the Specification Sections shown in the following table:

Document Type	Specification Section
Application for Payment	01 29 00
Certified Test Report	01 33 02 for approval of product 01 40 00 to demonstrate compliance
Change Management	01 26 00
Equipment Installation Report	01 75 00
Graphic Documentation	01 33 06
Notification by Contractor	01 31 13
Operation & Maintenance Manuals	01 33 04
Product Data	01 33 03
Progress Schedules	01 33 05
Record Data	01 31 13
Request for Information	01 31 13
Schedule of Values	01 29 00

Document Type	Specification Section
Shop Drawing	01 33 02
Substitutions	01 26 00
Suppliers and Subcontractors	01 31 13 01 33 03

1.08 Electronic Documents Protocol

- A. The parties shall follow the provisions in this Section, referred to as the Electronic Documents Protocol (“EDP”), for exchange of electronic transmittals.
- B. Basic Requirements:
1. Except as otherwise stated elsewhere in the Contract Documents, the OPT and Contractor will send and accept Electronic Documents sent by Electronic Means using the protocols provided in this Section.
 2. The contents of the information in any Electronic Document will be the responsibility of the transmitting party. Electronic Documents may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, and are subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.
 3. Provisions of this Contract regarding Electronic Documents must be incorporated into other agreements or subcontracts on the Project. Nothing in this paragraph reduces or eliminates requirements:
 - a. to create, provide, or maintain an original printed record version of Drawings and Specifications, signed and sealed according to applicable Laws and Regulations;
 - b. to comply with any applicable Law or Regulation governing the signing and sealing of design documents and related Modifications or the signing and electronic transmission of any other documents; or
 - c. to comply with the notice requirements.
 4. When sending Electronic Documents by Electronic Means the sending 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 sending Electronic Documents.
- C. System Infrastructure for Electronic Document Exchange:
1. Contractor will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions (“System Infrastructure”) at its own cost. System Infrastructure must comply with these requirements.
 2. The maximum size of an email attachment for exchange of Electronic Documents under this EDP is **100 MB**. Attachments larger than that may be exchanged in parts or by using large file transfer functions or physical media.
 3. Contractor assumes full and complete responsibility for 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.

4. Contractor 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 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.
5. Contractor will operate and maintain industry-standard, industry-accepted, ISO standard, commercial-grade security software and systems that are intended to protect others 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. Contractor will not be liable to others for any breach of system security to the extent that Contractor maintains and operates required security software and systems.
6. In the case of disputes, conflicts, or modifications to the use of Electronic Documents required to address issues affecting System Infrastructure, Contractor and OPT will cooperatively resolve the issues; but, failing resolution, OPT is authorized to make and require reasonable and necessary changes meet its original intent. Contractor may submit a Change Proposal if the changes cause additional cost or time to Contractor that could not have reasonably been anticipated.
7. Contractor and OPT are both responsible for their own back-up and archive of documents sent and received during the term of the contract. Contractor and OPT remain solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract as each party deems necessary for its own purposes.
8. If a Contractor or OPT receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission. The parties will attempt to complete a successful transmission of the Electronic Document or use an alternative delivery method to complete the communication.
9. OPT will operate a project information management system (Project Website) for use of OPT and Contractor during the Project for exchange and storage of Project-related communications and information. Except as otherwise provided in this Contract, use of the Project Website will be mandatory for exchange of Project documents, communications, submittals, and other Project-related information.

D. Software Requirements:

1. OPT and Contractor will each 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 following software formats:

Document	Document Format
Email	.htm, .rtf, or .txt without formatting that impair legibility of content on screen or in printed copies
Submittals	Bluebeam PDF
Applications for Payment	Bluebeam PDF and Microsoft® Excel
Progress Schedules	PDF and Schedule in Schedule in Native Format
Layouts and drawings to be submitted to Owner for future use and modification	Autodesk® AutoCAD .dwg format or Bentley MicroStation .dgn format
Document submitted to OPT for future word processing use and modification	Microsoft® Word
Spreadsheets and data submitted to OPT for future data processing use and modification	Microsoft® Excel
Photographs	.jpg or .jpeg
Videos	.mp4, .mpeg, or .avi

2. Software will be the version currently published at the time Contract is signed, unless a specific software version is listed in the Supplementary Conditions. 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 convert to comply with this Section.
3. 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.

E. Requests by Contractor for Electronic Documents in Other Formats:

1. Release of any Electronic Documents developed during the design process (including Contract Documents, Technical Data, Drawings, and computer models) in formats other than those identified in this Section will be at the discretion of the OPT.
2. To the extent determined by OPT, release of Electronic Documents and other project information requested by Contractor ("Request") in formats other than those identified in this Section will be subject to the provisions of Owner's response to the Request, and to the following conditions:
 - a. The content included in the Electronic Documents covered by the Request was prepared by Design Professional as an internal working document or electronic computer model solely for Design Professional's purposes and not for any construction processes and is being provided to Contractor on an "AS IS" basis without any warranties of any kind, including, any implied warranties of fitness

for any purpose. 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 Design Professional 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 Contractor waives any claims against the Design Professional or Owner arising from use of data in Electronic Documents covered by the Request.
 - c. **CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER AND DESIGN PROFESSIONAL AND THEIR SUBCONSULTANTS FROM ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES, INCLUDING ATTORNEYS' FEES AND DEFENSE COSTS ARISING OUT OF OR RESULTING FROM THE 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 Design Professional, unless such distribution is specifically identified in the Request and is limited to the Contractor's subcontractors. Contractor warrants that subsequent use by the Contractor's subcontractors complies with all terms of the Contract Documents and the Owner's response to Request.
3. In the event that Owner elects to provide or directs Design Professional 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, Owner shall be reimbursed by Contractor on an hourly basis for any costs necessary to create or otherwise prepare the data in a manner deemed appropriate by Design Professional in accordance with the General Conditions.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 33 02 SHOP DRAWINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Shop Drawings are required for those products that cannot adequately be described in the Contract Documents to allow fabrication, erection, or installation of the product without additional detailed information from the Supplier.
- B. Submit Shop Drawings as required by the Contract Documents and as reasonably requested by the Construction Manager to:
 - 1. Record the products incorporated into the Project;
 - 2. Provide detailed information for the products proposed for the Project regarding their fabrication, installation, commissioning, and testing; and
 - 3. Allow the Design Professional to advise the Owner if products proposed for the Project by the Contractor conform, in general, to the design concepts of the Contract Documents.
- C. Contractor's responsibility for full compliance with the Contract Documents is not relieved by the review of Shop Drawings, Samples, or mockups.
- D. Submit a Change Proposal per Section 01 26 00 "Change Management" to request modifications to the Contract Documents, including those for approval of "or equal" products when specifically allowed by the Contract Documents or as a substitution for specified products or procedures. Deviations from the Contract Documents can only be approved by Change Order or Field Order.

1.02 QUALITY ASSURANCE

- A. Submit legible, accurate, and complete documents presented in a clear, easily understood manner. Shop Drawings not meeting these criteria will not be approved.
- B. Demonstrate that the proposed products are in full compliance with the design criteria and requirements of the Contract Documents, or will be if deviations requested per Paragraph **[1.11]** are approved.
- C. Furnish and install products that fully comply with the information included in the Shop Drawings.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Shop Drawings are required as stated in the project specifications or as requested by the OPT.
- B. Include Shop Drawings in the Document Register required by Section 01 33 00 "Document Management" to indicate the Shop Drawings to be submitted, the dates on which Shop Drawings are to be sent to the Construction Manager for review, and proposed dates that the product will be incorporated into the Project.
- C. Incorporate the dates for processing Shop Drawings into the Progress Schedule required by Section 01 33 05 "Construction Progress Schedule."

1. Submit Shop Drawings in accordance with the schedule so construction of the Project is not delayed.
 2. Submit Shop Drawings for interrelated Work at one time.
 3. Allow adequate time for ordering, fabricating, delivering, and installing products so construction of the Project is not delayed.
- D. Complete the following before submitting a Shop Drawing or Sample:
1. Prepare and review the Shop Drawing or Sample. Coordinate the Shop Drawing or Sample with other Shop Drawings and Samples, with the requirements of the Work, and the Contract Documents;
 2. Determine and verify specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to Shop Drawings and Samples;
 3. Determine and verify the suitability of 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
 4. Determine and verify information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
- E. Determine and verify:
1. Field measurements, quantities, and dimensions are shown on the Shop Drawing and are accurate;
 2. Location of existing structures, utilities, and equipment related to the Shop Drawing have been shown and conflicts between the products, existing structures, utilities, and equipment have been identified;
 3. Conflicts that impact the installation of the products have been brought to the attention of the Construction Manager;
 4. Shop Drawing is complete for its intended purpose; and
 5. Conflicts between the Shop Drawing related to the various Subcontractors and Suppliers have been resolved.
- F. Review Shop Drawings prior to submitting to the Construction Manager. Certify that all Shop Drawings have been reviewed by the Contractor and are in strict conformance with the Contract Documents as modified by Addenda, Change Order, Field Order, or Contract Amendment when submitting Shop Drawings except for deviations specifically brought to the Construction Manager's attention on an attached Shop Drawing Deviation Request form in accordance with Paragraph **[1.11]**.
- G. Fabrication or installation of any products prior to the approval of Shop Drawings is done at the Contractor's risk. Defective products may be rejected at the Owner's option.
- H. Payment will not be made for products for which Shop Drawings or Samples are required until these are approved by the Construction Manager and Design Professional.

1.04 DOCUMENTATION

- A. Provide adequate information in Shop Drawings and with Samples so the Design Professional can:
 - 1. Assist the Owner in selecting colors, textures, or other aesthetic features.
 - 2. Compare the proposed features of the product with the specified features and advise Owner that the product does, in general, conform to the Contract Documents.
 - 3. Compare the performance features of the proposed product with those specified and advise the Owner that the product does, in general, conform to the performance criteria specified in the Contract Documents.
 - 4. Review required certifications, guarantees, warranties, and service agreements for compliance with the Contract Documents.
- B. Include a complete description of the material or equipment to be furnished, including:
 - 1. Type, dimensions, size, arrangement, model number, and operational parameters of the components;
 - 2. Weights, gauges, materials of construction, external connections, anchors, and supports required;
 - 3. Performance characteristics, capacities, engineering data, motor curves, and other information necessary to allow a complete evaluation of mechanical components;
 - 4. All applicable standards;
 - 5. Fabrication and installation drawings, setting diagrams, manufacturing instructions, templates, patterns, and coordination drawings;
 - 6. Wiring and piping diagrams and related controls;
 - 7. Mix designs for concrete, asphalt, or other materials proportioned for the Project; and
 - 8. Complete and accurate field measurements for products which must fit existing conditions. Indicate on the document that the measurements represent actual dimensions obtained at the Site.
- C. Submit Shop Drawings that require coordination with other Shop Drawings for fabrication at the same time. Shop Drawings requiring coordination with other Shop Drawings will not be approved until a complete package is submitted, unless approved by the Construction Manager.
- D. Submit information for all of the components and related equipment required for a complete and operational system in one Submittal.
 - 1. Include electrical, mechanical, and other information required to indicate how the various components of the system function together as a system.
 - 2. Provide certifications, warranties, and written guarantees and service contracts with the document package for review when these are required.

1.05 SPECIAL CERTIFICATIONS AND REPORTS

- A. Provide all required special certifications, reports, and other documentation with the Shop Drawings as specified in the individual Specification Sections which may include:
 - 1. Certified Test Reports (CTR): A report prepared by an approved testing agency giving results of tests performed on products to indicate their compliance with the Specifications. This report is to demonstrate that the product, when installed, will meet the requirements of the Contract Documents and is part of the Shop Drawing. Field tests may be performed by the Owner to determine that in place materials or products meet the same quality as indicated in the CTR submitted as part of the Shop Drawing.
 - 2. Certification of Local Field Service (CLS): A certified letter stating that field service is available from a factory or supplier approved service organization located within a 300-mile radius of the Site. Include the names, addresses, and telephone numbers of approved service organizations with the certificate.
 - 3. Certification of Adequacy of Design (CAD): A certified letter from the manufacturer of the equipment stating that the equipment has been designed to be structurally stable and to withstand all imposed loads without deformation, failure, or adverse effects to the performance and operational requirements of the unit. The letter must state that mechanical and electrical components have been adequately sized to be fully operational for the conditions specified or normally encountered by the product's intended use.
 - 4. Certification of Applicator/Subcontractor (CSQ): A certified letter stating that the applicator or subcontractor proposed to perform a specified function is duly designated as factory authorized and trained for the application of the specified product.

1.06 WARRANTIES AND GUARANTEES

- A. Provide all required warranties, guarantees, and related documents with the Shop Drawing. The effective date of warranties and guarantees will be the date of Substantial Completion.
- B. Identify all extended warranties which are defined as any guarantee of performance for the product or system beyond the one-year correction period described in the General Conditions. Issue the warranty certificate in the name of the Owner. Provide a warranty bond for extended warranties if required by the individual Specification Sections.
- C. Include an additional copy of equipment warranties in operation and maintenance manuals.
- D. Provide a copy of all warranties in a separate document in accordance with Section 01 70 00 "Execution and Closeout Requirements."

1.07 SHOP DRAWING SUBMITTAL PROCEDURES

- A. Submit Shop Drawings to the Construction Manager. Send all documents in digital format for processing.

1. Provide all information requested. Do not leave any blanks incomplete. If information is not applicable, enter NA in the space provided.
 2. Submit all documents in Portable Document Format (PDF) as required by Section 01 33 00 "Document Management." Provide color PDF documents where color is required to interpret the Shop Drawing. Provide Samples and color charts per Paragraph **[1.10]**.
 3. Submit each specific product, class of material, or equipment system separately so these can be tracked and processed independently. Do not submit Shop Drawings for more than one independent system in the same Submittal.
 4. Submit items specified in different Specification Sections separately unless they are part of an integrated system.
 5. Define abbreviations and symbols used in Shop Drawings.
 - a. Use terms and symbols in Shop Drawings consistent with the Contract Drawings.
 - b. Provide a list of abbreviations and their meaning as used in the Shop Drawings.
 - c. Provide a legend for symbols used on Shop Drawings.
 6. Mark Shop Drawings to reference:
 - a. Related Specification Sections;
 - b. Drawing number and detail designation;
 - c. Equipment designation or name;
 - d. Schedule references;
 - e. System into which the product is incorporated; and
 - f. Location where the product is incorporated into the Project.
- B. Use the following conventions to markup Shop Drawings for review:
1. Make comments and corrections in the color blue. Add explanatory comments to the markup.
 2. Highlight items in black (redact) that are not being furnished when the Supplier's standard drawings or information sheets are provided so that only the products to be provided are in their original color.
 3. Make comments in yellow where selections or decisions by the Design Professional are required, but such selections do not constitute a deviation from the Contract Documents. Add explanatory comments to the markup to indicate the action requested of the Design Professional.
 4. Make comments in orange that are deviation requests. Include the deviation request number on the Shop Drawing that corresponds to the deviation request on the Shop Drawing Deviation Request form. Include explanatory comments in the Shop Drawing Deviation Request form.
 5. Mark dimensions with the prefix "FD" to indicate field verified dimensions on the Shop Drawings.

- C. Designate a document as requiring priority treatment to place the review of the Shop Drawing ahead of other Shop Drawings previously delivered. Shop Drawings are typically reviewed in the order received, unless Contractor requests that a different priority be assigned. Priority Shop Drawings will be reviewed before other Shop Drawings already received but not yet reviewed. Use of this priority designation for Shop Drawings may delay the review of Shop Drawings previously submitted. Contractor is responsible for delays resulting from the use of the priority designation status on Shop Drawings.
- D. Complete the certification required by Paragraph **[1.03.G]**.

1.08 SAMPLE AND MOCKUP SUBMITTAL PROCEDURES

- A. Submit color charts and Samples for every product requiring color, texture, or finish selection.
 - 1. Submit color charts and Samples only after Shop Drawings for the products have been approved.
 - 2. Deliver all color charts and Samples at one time.
 - 3. Provide Samples of adequate size to clearly illustrate the functional characteristics of the product, with integrally related parts and attachment devices.
 - 4. Indicate the full range of color, texture, and patterns.
 - 5. Deliver color charts and Samples to the field office and store for the duration of the Project.
 - 6. Notify the Construction Manager that color charts and Samples have been delivered for approval using the Notification by Contractor form.
 - 7. Submit color charts and Samples not less than 30 days prior to when these products are to be ordered or released for fabrication to comply with the Project schedule.
 - 8. Remove Samples that have not been approved. Submit new Samples following the same process as for the initial Sample until Samples are approved.
 - 9. Dispose of Samples when related Work has been completed and approved and disposal is approved by the Construction Manager. At Owner's option, Samples will become the property of the Owner.
- B. Construct mockups for comparison with the Work being performed.
 - 1. Construct mockups from the actual products to be used in construction per the detailed specifications.
 - 2. Construct mockups of the size and in the area indicated in the Contract Documents.
 - 3. Construct mockups complete with texture and finish to represent the finished product.
 - 4. Notify the Construction Manager that mockups have been constructed and are ready for approval using the Notification by Contractor form. Allow 2 weeks for Construction Manager to approve of the mockup before beginning the Work represented by the mockup.
 - 5. Remove mockups that have not been approved. Construct new mockups following the same process as for the initial mockup until mockup is approved.

6. Protect mockups until Work has been completed and accepted by the Construction Manager.
7. Dispose of mockups when related Work has been completed and disposal is approved by the Construction Manager.

1.09 REQUESTS FOR DEVIATION

- A. Submit a Change Proposal per Section 01 26 00 “Change Management” to request modifications to the Contract Documents, including those for approval of “or equal” products when specifically allowed by the Contract Documents or as a substitution for specified products or procedures.
- B. Provide a Shop Drawing with the Change Proposal that clearly identifies deviations for any product or component of the product that does not fully comply with the Contract Documents using the Shop Drawing Deviation Request form provided by the Construction Manager. Mark deviations on the Shop Drawing per Paragraph **[1.09.B]**.
- C. Include a description of why the deviation is required and the impact on Contract Price or Contract Times. Include the amount of any cost savings to the Owner for deviations that result in a reduction in cost.
- D. Identify each deviation request as a separate item. Include all requested deviations that must be approved as a group together and identify them as a single item.
- E. Construction Manager will issue a Field Order or Change Order to approve acceptable deviations. Approval of a requested Shop Drawing deviation by the Design Professional on the Shop Drawings Deviation Request form indicates approval of the requested deviation only on its technical merits as generally conforming to the Contract Documents. Deviations from the Contract Documents can only be approved by a Modification issued by the Construction Manager.

1.10 CONSTRUCTION MANAGER AND DESIGN PROFESSIONAL RESPONSIBILITIES

- A. Shop Drawings will be received by the Construction Manager. Construction Manager will log the documents and forward to the Design Professional for review per this Section for general conformance with the Contract Documents.
 1. Design Professional’s review and approval will be only to determine if the products described in the Shop Drawing or Sample will, after installation or incorporation in the Work, conform to the information given in 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. Design Professional’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. Design Professional’s review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
- B. Comments will be made on items called to the attention of the Design Professional for review and comment. Any marks made by the Design Professional do not constitute a

blanket review of the document or relieve the Contractor from responsibility for errors or deviations from the Contract requirements.

1. Design Professional will respond to Contractor's markups by either making markups directly in the Shop Drawing file using the color red or by attaching a Document Review Comments form with review comments keyed to the Drawings or Shop Drawing Deviation Request.
2. Shop Drawings that are reviewed will be returned with one or more of the following status designations:
 - a. Approved: Shop Drawing is found to be acceptable as submitted.
 - b. Approved as Noted: Shop Drawing is approved so long as corrections or notations made by Design Professional are incorporated into the Shop Drawing.
 - c. Not Approved: Shop Drawing or products described are not acceptable.
 - d. Cancelled: This action indicates that for some reason, the Shop Drawing is to be removed from consideration and all efforts regarding the processing of that document are to cease.
3. Shop Drawings will also be designated for one of the following actions:
 - a. Documents Filed: Shop Drawing is acceptable without further action and has been filed as a record document.
 - b. Shop Drawing Not Required: A Shop Drawing was not required by the Contract Documents. Resubmit the document per Section 01 33 03 "Product Data."
 - c. Cancelled: This action indicates that for some reason, the Shop Drawing is to be removed from consideration and all efforts regarding the processing of that document are to cease.
 - d. Revise and Resubmit: Shop Drawing has deviations from the Contract Documents, significant errors, or is inadequate and must be revised and resubmitted for subsequent review.

Actions "a" through "c" will close out the Shop Drawing review process and no further action is required as a Shop Drawing. Action "d" requires follow up action to close out the review process.

4. Drawings with a significant or substantial number of markings by the Contractor may be marked "Approved as Noted." These drawings are to be revised to provide a clean record of the document. Proceed with ordering products as the documents are revised.
 5. Dimensions or other data that do not appear to conform to the Contract Documents will be marked as "At Variance With" (AVW) the Contract Documents or other information provided. The Contractor is to make revisions as appropriate to comply with the Contract Documents.
- C. Bring deviations to the Shop Drawings to the attention of the Design Professional for approval by using the Shop Drawing Deviation Request form. Use a single line for each requested deviation so the Status and Action for each deviation can be determined for that requested deviation. If approval or rejection of a requested deviation will impact other

requested deviation, then all related deviations should be included in that requested deviation line so the status and action can be determined on the requested deviation as a whole.

- D. Requested deviations will be reviewed as a possible Modification to the Contract Documents.
 - 1. A requested deviation will be marked as “Not Approved” if the requested deviation is unacceptable. Contractor is to revise and resubmit the Shop Drawing with corrections for approval.
 - 2. A Field Order will be issued by the Construction Manager for deviations approved by the Design Professional if the requested deviation is acceptable and if the requested deviation will not result in a change in Contract Price or Contract Times. Requested deviations from the Contract Documents may only be approved by Field Order.
 - 3. A requested deviation will not be approved if the requested deviation is acceptable but the requested deviation will or should result in a change in Contract Price or Contract Times. Submit any requested deviation that requires a change in Contract Price or Contract Times as a Change Proposal for approval prior to resubmitting the Shop Drawing.
- E. Contractor is to resubmit a complete Shop Drawing incorporating revisions until it is acceptable and marked “Approved” or “Approved as Noted” and is assigned an action per Paragraph **[1.12.B.3]** that indicates that the Shop Drawing process is closed.
- F. Information that is submitted as a Shop Drawing that should be submitted as Product Data or other type of document, or is not required may be returned without review, or may be deleted. No further action is required and the Shop Drawing process for this document will be closed.

1.11 RESUBMISSION REQUIREMENTS

- A. Make all corrections or changes required by the Design Professional in the document and resubmit to the Construction Manager until approved.
- B. Resubmit a complete Shop Drawing for each resubmittal. The last approved Shop Drawing must not rely on previous submissions. The final Shop Drawing is to provide a complete record for the Owner’s records.
- C. Revise initial drawings or data and resubmit as specified for the reviewed document.
 - 1. Highlight or cloud in green those revisions which have been made in response to the previous reviews by the Design Professional. This will include changes previously highlighted or clouded in yellow to direct attention to Design Professional to items requiring selections, decisions by the Design Professional or highlighted or clouded in orange for a requested deviation from the Contract Documents, or comments in red made by the Construction Manager.
 - 2. Highlight and cloud new items in yellow where selections or decisions by the Design Professional are required, but such selections do not constitute a deviation from the Contract Documents. Add explanatory comments to the markup to indicate the action to be taken by the Design Professional.

3. Highlight and cloud new items in orange that are deviation requests. Include the deviation request number on the Shop Drawing that corresponds to the deviation request on the Shop Drawing Deviation Request form. Numbering for these new items is to start with the next number following the last Shop Drawing deviation requested. Include explanatory comments in the Shop Drawing Deviation Request form.
- D. Pay for excessive review of Shop Drawings.
1. Excessive review of Shop Drawings is defined as any review required after the original review has been made and the first resubmittal has been checked to see that corrections have been made.
 2. Review of Shop Drawings or Samples will be an additional service requiring payment by the Contractor if the Contractor submits a substitution for a product for which a Shop Drawing or Sample has previously been approved, unless the need for such change is beyond the control of Contractor.
 3. Cost for additional review time will be billed to the Owner by the Design Professional for the actual hours required for the review of Shop Drawings by Design Professional and in accordance with the rates listed in Section 00 73 00 "Supplementary Conditions."
 4. A set-off will be included in each Application for Payment to pay the cost for the additional review. The set-off will be based on invoices submitted to the Owner for these services.
 5. Need for more than one resubmission or any other delay in obtaining Design Professional's approval of Shop Drawings will not entitle the Contractor to an adjustment in Contract Price or an extension of Contract Times.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 33 03 PRODUCT DATA

PART 1 - GENERAL

1.01 SUMMARY

- A. Submit Product Data as required by the Contract Documents and as reasonably requested by the Construction Manager. Provide Product Data for all products unless a Shop Drawing is required for the same item.
- B. Submit Product Data to provide documents that allow the Owner to:
 - 1. Record the products incorporated into the Project;
 - 2. Record detailed information about products regarding their fabrication, installation, commissioning, and testing; and
 - 3. Provide replacement or repair of products at some future date.
- C. Contractor's responsibility for full compliance with the Contract Documents is not relieved by the receipt or cursory review of Product Data.
- D. Submit a Change Proposal per Section 01 26 00 "Change Management" to request modifications to the Contract Documents, including those for approval of "or equal" products when specifically allowed by the Contract Documents or as a substitution for specified products or procedures. Deviations from the Contract Documents can only be made by an approved Change Order or Field Order.

1.02 QUALITY ASSURANCE

- A. Submit legible, accurate, and complete documents presented in a clear, easily understood manner. Product Data not meeting these criteria will not be accepted and must be resubmitted.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Product Data is required as stated in the project specifications or as requested by the OPT.
- B. Include Product Data in the Document Register required by Section 01 33 00 "Document Management" to indicate the Product Data to be submitted, the dates on which documents are to be sent to the Construction Manager for review, and proposed dates that the product will be incorporated into the Project.
- C. Complete the following before submitting Product Data:
 - 1. Prepare Product Data and coordinate with Shop Drawings, Samples, Product Data for related products, and with the requirements of the Contract Documents;
 - 2. Determine and verify specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information;
 - 3. Determine and verify the suitability of 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

4. Determine and verify information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
- D. Determine and verify:
 1. Field measurements, quantities, and dimensions are shown on the Product Data and are accurate;
 2. Location of existing structures, utilities, and equipment related to the Product Data have been shown and conflicts between the products, existing structures, utilities, and equipment have been brought to the attention of the Construction Manager;
 3. Conflicts that impact the installation of the products have been brought to the attention of the Construction Manager;
 4. Product Data is complete for its intended purpose; and
 5. Conflicts between the Product Data related to the various Subcontractors and Suppliers have been resolved.
- E. Review Product Data prior to submitting to the Construction Manager. Certify that all Product Data has been reviewed by the Contractor and is in strict conformance with the Contract Documents as modified by Addenda, Change Order, Field Order, or Contract Amendment when submitting Product Data.

1.04 DOCUMENTATION

- A. Include a complete description of the material or equipment to be furnished, including:
 1. Type, dimensions, size, arrangement, model number, and operational parameters of the components;
 2. Weights, gauges, materials of construction, external connections, anchors, and supports required;
 3. Performance characteristics, capacities, engineering data, motor curves, and other information necessary to allow a complete evaluation of mechanical components;
 4. All applicable standards;
 5. Fabrication and installation drawings, setting diagrams, manufacturing instructions, templates, patterns, and coordination drawings;
 6. Wiring and piping diagrams and related controls;
 7. Mix designs for concrete, asphalt, or other materials proportioned for the Project; and
 8. Complete and accurate field measurements for products which must fit existing conditions. Indicate on the document that the measurements represent actual dimensions obtained at the Site.
- B. Submit information for all components and related equipment required for a complete and operational system in one submittal.
 1. Include electrical, mechanical, and other information required to indicate how the various components of the system function together as a system.

2. Provide certifications, warranties, and written guarantees and service contracts with the document package for review when these are required.

1.05 SPECIAL CERTIFICATIONS AND REPORTS

- A. Provide all required certifications with the Product Data as specified in the individual Specification Sections:
 1. Certified Test Reports (CTR): A report prepared by an approved testing agency giving results of tests performed on products to indicate their compliance with the Specifications. This report is to demonstrate that the product when installed will meet the requirements of the Contract Documents and is part of the Product Data. Field tests may be performed by the Owner to determine that in place materials or products meet the same quality as indicated in the CTR submitted as part of the Product Data.
 2. Certification of Local Field Service (CLS): A certified letter stating that field service is available from a factory or supplier approved service organization located within a 300-mile radius of the Site. Include the names, addresses, and telephone numbers of approved service organizations with the certificate.
 3. Certification of Adequacy of Design (CAD): A certified letter from the manufacturer of the equipment stating that the equipment has been designed to be structurally stable and to withstand all imposed loads without deformation, failure, or adverse effects to the performance and operational requirements of the unit. The letter must state that mechanical and electrical components have been adequately sized to be fully operational for the conditions specified or normally encountered by the product's intended use.
 4. Certification of Applicator/Subcontractor (CSQ): A certified letter stating that the applicator or subcontractor proposed to perform a specified function is duly designated as factory authorized and trained for the application of the specified product.

1.06 WARRANTIES AND GUARANTEES

- A. Provide all required warranties, guarantees, and related documents with the Product Data. The effective date of warranties and guarantees will be the date of Substantial Completion.
- B. Identify all Extended Warranties which are defined as any guarantee of performance for the product or system beyond the one-year correction period described in the General Conditions. Issue the warranty certificate in the name of the Owner. Provide a warranty bond for extended warranties if required by Specification Sections.
- C. Include an additional copy of equipment warranties in operation and maintenance manuals.
- D. Provide a copy of all warranties in a separate document in accordance with Section 01 70 00 "Execution and Closeout Requirements."

1.07 PRODUCT DATA SUBMITTAL PROCEDURES

- A. Submit Product Data to the Construction Manager. Send all documents in digital format for processing.

1. Provide all information requested. Do not leave any blanks incomplete. If information is not applicable, enter NA in the space provided.
 2. Submit all documents in Portable Document Format (PDF) as required by Section 01 33 00 "Document Management." Provide color PDF documents where color is required to interpret the Product Data.
 3. Submit each specific product, class of material, or equipment system separately so these can be tracked and processed independently. Do not submit Product Data for more than one system in the same Submittal.
 4. Submit items specified in different Specification Sections separately unless they are part of an integrated system.
 5. Define abbreviations and symbols used in Product Data.
 - a. Use terms and symbols in Product Data consistent with the Contract Drawings.
 - b. Provide a list of abbreviations and their meaning as used in the Product Data.
 - c. Provide a legend for symbols used on Product Data.
 6. Mark Product Data to reference:
 - a. Related Specification Sections;
 - b. Drawing number and detail designation;
 - c. Equipment designation or name;
 - d. Schedule references;
 - e. System into which the product is incorporated; and
 - f. Location where the product is incorporated into the Project.
- B. Complete the certification required by Paragraph **[1.03.F]**.

1.08 CONSTRUCTION MANAGER AND DESIGN PROFESSIONAL RESPONSIBILITIES

- A. Product Data will be received by the Construction Manager, logged, and provided to Owner as the Project record.
1. Product Data may be reviewed to see that the information provided is adequate for the purpose intended. Product Data not meeting the requirements of Paragraph **[1.02]** may not be approved.
 2. Product Data is not reviewed for compliance with the Contract Documents. Comments may be returned if deviations from the Contract Documents are noted during the cursory review performed to see that the information is adequate.
 3. Contractor's responsibility for full compliance with the Contract Documents is not relieved by the review of Product Data. Contract modifications can only be approved by a Change Order or Field Order.

- B. Construction Manager may take the following action in processing Product Data:
1. File Product Data as received if the cursory review indicates that the document meets the requirements of Paragraph **[1.02]**. Document will be marked “Filed as Received” and “Documents Filed.” No further action is required on that Product Data.
 2. Not approve the Product Data for one of the following reasons:
 - a. The documentation requirements of the Contract Documents indicate that the document submitted as Product Data should have been submitted as a Shop Drawing. The Product Data will be marked “Not Approved” and “Submit as Shop Drawing.” No further action is required on this document as Product Data and the Product Data process will be closed. Resubmit the document as a Shop Drawing per Section 01 33 02 “Shop Drawings.”
 - b. The cursory review indicates that the document does not meet the requirements of Paragraph **[1.02]**. The Product Data will be marked “Not Approved” and “Revise and Resubmit.” Contractor is to resubmit the Product Data until it is acceptable and marked “Filed as Received.” When Product Data is filed, no further action is required and the Product Data process will be closed.
 - c. The Product Data is not required by the Contract Documents nor is applicable to the Project. The Product Data will be marked “Not Approved” and “Cancelled.” No further action is required and the Product Data process will be closed.
- C. Contractor is to resubmit the Product Data until it is acceptable and marked “Filed as Received.”

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 33 05 CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.01 SUMMARY

- A. Prepare and submit a Progress Schedule for the Work and update the schedule on a monthly basis for the duration of the Project.
- B. Provide Progress Schedule in adequate detail to allow Owner to monitor progress and to relate submittal processing to sequential activities of the Work.
- C. Incorporate Contract Milestones into the schedule and show activities leading to achievement of these milestones.
- D. Assume complete responsibility for maintaining the progress of the Work per the Progress Schedule submitted.

1.02 DOCUMENTATION

- A. Submit the schedules to the Construction Manager. Send all documents in digital format for processing.
- B. Do not leave any blanks incomplete. If information is not applicable, enter NA in the space provided.
- C. Provide schedules, schedule updates and revisions to the Construction Manager in electronic format in its originating software and in Portable Document Format (PDF) as required by Section 01 33 00 "Document Management."
- D. Submit a preliminary Progress Schedule at the pre-construction conference.
- E. Submit a detailed Progress Schedule at least 10 days prior to the first payment request.
- F. Submit Progress Schedule updates monthly within 10 days after submitting Applications for Payment to indicate the progress made on the Project to the closing date for the Application for Payment. Failure to submit Progress Schedules will cause delay in the review and approval of subsequent Applications for Payment.

1.03 PROGRESS SCHEDULE REQUIREMENTS

- A. Progress Schedule is to be in adequate detail to:
 - 1. Ensure adequate planning, scheduling, and reporting during the execution of the Work;
 - 2. Ensure the coordination of the Work of the Contractor and the various Subcontractors and Suppliers;
 - 3. Monitor the progress of the Work; and
 - 4. Evaluate the impact of proposed changes to the Contract Times and Project Schedule.
- B. Provide personnel with 5 years' minimum experience in scheduling construction work comparable to this Project. Prepare the Progress Schedule using acceptable scheduling software.

- C. Provide the Progress Schedule in the form of a computer-generated critical path schedule which includes Work to be performed on the Project. It is intended that the Progress Schedule accomplish the following:
 - 1. Give early warning of delays in time for correction.
 - 2. Provide detailed plans for the execution of the Work in the form of future activities and events in sequential relationships.
 - 3. Establish relationships of significant planned Work activities and provide a logical sequence for planned Work activities.
 - 4. Provide continuous current status information.
 - 5. Allow analysis of the Contractor's program for the completion of the Project.
 - 6. Permit schedules to be revised when the existing schedule is not achievable.
 - 7. Log the progress of the Work as it actually occurs.
- D. Provide a time-scaled horizontal bar chart which indicates graphically the Work scheduled at any time during the Project. The chart is to indicate:
 - 1. Complete sequence of construction by activity;
 - 2. Identification of the activity by structure, location, and type of Work;
 - 3. Chronological order of the start of each item of Work;
 - 4. The activity start and stop dates;
 - 5. The activity duration; and production rates used to determine the duration;
 - 6. Successor and predecessor relationships for each activity;
 - 7. A clearly indicated single critical path; and
 - 8. Projected percentage of completion, based on dollar value of the Work included in each activity as of the first day of each month.
- E. Provide a Progress Schedule for Submittals:
 - 1. Indicate the specific dates each document is to be delivered to the Construction Manager.
 - 2. Allow a reasonable time to review each document, taking into consideration the size and complexity of the document, other documents being processed, and other factors that may affect review time.
 - 3. Include time for making revisions to the Shop Drawings and resubmitting the Shop Drawing for at least a second review.
 - 4. Assume a 14-day review cycle for each time a Shop Drawing is submitted for review unless a longer period is indicated in the Contract Documents or provided by the Construction Manager.
 - 5. Contractor is responsible for delays associated with additional time required to review incomplete or erroneous documents and for time lost when documents are submitted for products that do not meet specification requirements.

1.04 PROGRESS SCHEDULE REVISIONS

- A. Revise the Progress Schedule if it appears that the schedule no longer represents the actual progress of the Work.
 - 1. Submit a Plan of Action for schedule recovery if the Progress Schedule or earned value analysis indicates that the Project is more than 30 days behind schedule. The report is to include:
 - a. Number of days behind schedule;
 - b. Narrative description of the steps to be taken to bring the Project back on schedule; and
 - c. Anticipated time required to bring the Project back on schedule.
 - 2. Submit a revised Progress Schedule indicating the action that the Contractor proposes to take to bring the Project back on schedule.
- B. Revise the Progress Schedule to indicate any adjustments in Contract Times approved by a Modification.
 - 1. Include a revised Progress Schedule with Change Proposals if a change in Contract Times is requested.
 - 2. Construction Manager will deem any Change Proposal that does not have a revised Progress Schedule and request for a change in Contract Times as having no impact on the ability of the Contractor to complete the Project within the Contract Times.
- C. Updating the Progress Schedule to reflect actual progress is not considered a revision to the schedule.
- D. Applications for Payment will not be recommended for payment without a revised Progress Schedule and if required, the report indicating the Contractor's plan for bringing the Project back on schedule.

1.05 FLOAT TIME

- A. Define float time as the amount of time between the earliest start date and the latest start date of a chain of activities on the construction schedule.
- B. Float time is not for the exclusive use or benefit of either the Contractor or Owner.
- C. Where several subsystems each have a critical path, the subsystem with the longest time of completion is the critical path and float time is to be assigned to other subsystems.
- D. Schedule completion date must be the same as the Contract completion date. Time between the end of construction and the Contract completion date is float time.

1.06 MODIFICATION OF CONTRACT TIMES

- A. Contract Times cannot be changed by the submission of a Progress Schedule. Contract Times can only be modified by a Change Order or Contract Amendment.
- B. Submit a Change Proposal for any proposed change in Contract Times, and include justification for the change in accordance with the provisions of the Contract Documents.

1.07 NEAR-TERM LOOK AHEAD SCHEDULES

- A. Provide a near-term look ahead schedule (NTLA Schedule) every 30 days, typically at periodic coordination meetings, using the form provided by the Construction Manager which shows the days of planned activity for the following:
 - 1. Submittals to be provided and day of anticipated return;
 - 2. Equipment and material deliveries;
 - 3. Arrival and departure of key construction equipment; and
 - 4. Activities for the Contractor and each Subcontractor.
- B. Coordinate NTLA Schedule with Project Schedule. Submit a report with each NTLA Schedule identifying deviations from the Project Schedule.
- C. Submit a report of near-term work planned in the previous NTLA Schedule that was delayed or not executed by marking actual activity on the previous near term look ahead schedule. Provide explanation of why planned work was not executed and plan to execute in the future and regain time lost.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 33 06 GRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Furnish an adequate number of photographs of the Site to clearly depict the completed Project.
 - 1. Provide aerial photographs of the completed Project from an angle and height to include the entire Site.
 - 2. Provide a minimum of four different views.
 - 3. Photograph a panoramic view of the entire Site.
 - 4. Photograph all significant areas of completed construction.
 - 5. Do not take completion photographs until all construction trailers, excess materials, trash, and debris have been removed.
 - 6. Employ a professional photographer approved by the Construction Manager to photograph the Project.
- B. Provide video recordings of the Site.
 - 1. Record the condition of all existing facilities in or abutting the construction area (right-of-way) including streets, curb and gutter, utilities, driveways, fencing, landscaping, etc., prior the beginning of construction. Provide one copy of the dated and labeled recording to the Construction Manager before the start of construction. Provide additional recording as directed by the Construction Manager if the recording provided is not considered suitable for the purpose of recording pre-existing conditions.
 - 2. Provide a video recording of the Site after the Project is complete and all construction trailers, excess materials, trash, and debris have been removed. Provide a 360-degree view of the Project from a consistent height and angle.
 - 3. Format must allow photographic still shots to be extracted from the video recording.
- C. All photographs and video recordings are to become the property of the Owner. Photographs or recordings may not be used for public or private publication or display without the written consent of the Owner.
- D. Unmanned Aerial Vehicles used for aerial photography must be registered and piloted by licensed individuals in accordance with Laws and Regulations.

1.02 DOCUMENTATION

- A. Submit photographic documentation in accordance with Section 01 33 00 "Document Management."

1.03 QUALITY ASSURANCE

- A. Provide clear photographs and video recordings taken with proper exposure. View photographs and video recordings in the field and take new photographs or video

recordings immediately if photos of an adequate print quality cannot be produced or video quality is not adequate. Provide photographs with adequate quality and resolution to permit enlargements.

PART 2 - PRODUCTS

2.01 PHOTOGRAPHS

- A. Provide photographs in digital format with a minimum resolution of 1280x960, accomplished without a digital zoom.
- B. Take photographs at locations acceptable to the Construction Manager.
- C. Provide a digital copy of each photograph taken.
- D. Identify each photograph with:
 - 1. Name of the Project.
 - 2. Date, time, location, and orientation of the exposure.
 - 3. Description of the subject of photograph.

2.02 VIDEO RECORDING

- A. Provide video recordings in digital format that can be played with Windows Media Player in full screen mode without loss of resolution.
- B. Identify Project on video by audio or visual means.
- C. Provide video with file size that does not exceed 1 GB.
- D. Provide video resolution of at least 1080p.
- E. The quality of the video must be adequate to determine the existing conditions of the construction area. Camera panning must be performed while at rest; do not pan the camera while walking or driving. Camera pans should be performed at intervals to clearly view the entire construction area.
- F. Construction stationing is to be annotated in the video.
- G. The entire construction area recording must be submitted at once. Sections submitted separately will not be accepted.
- H. Site components must be video recorded in an organized sequential order with major components identified.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 40 00 QUALITY MANAGEMENT

PART 1 - GENERAL

1.01 OVERVIEW

- A. Quality management refers to the overall process of delivering a completed Project to the Owner that complies with the requirements of the Contract Documents. Quality management applies to documentation, products, services, and the Work.
- B. Contractor is responsible for the quality of documentation, products, services, and the Work provided.
 - 1. Contractor is to integrate quality control procedures into the execution of the Work that are adequate to produce a Project that meets the requirements of the Contract Documents, while minimizing loss of time and increased costs. Contractor is solely responsible for time and cost impacts of correcting Defective Work.
 - 2. Contractor is to provide all testing and inspection required to control the quality of the Work in progress to determine that completed Work will comply with the requirements of the Contract Documents.
 - 3. Contractor is to provide verification or acceptance testing as required by the Contract Documents to demonstrate that the completed Work complies with the requirements of the Contract Documents, except for those test that the Owner has determined are to be conducted independent of the Contractor and identified as Owner testing in the Owner's Quality Management Plan.

1.02 STANDARDS

- A. Provide testing laboratories that comply with the American Council of Independent Laboratories (ACIL) "Recommended Requirements for Independent Laboratory Qualifications."
- B. Perform testing in accordance with the published standards and procedures for testing listed in the Specifications and applicable Laws and Regulations.

1.03 DOCUMENTATION

- A. Provide documentation which includes:
 - 1. Contractor's Quality Management Plan that establishes the methods of ensuring compliance with the Contract Documents. Submit this plan as Product Data per Section 01 31 13 "Project Administration."
 - 2. A statement of qualifications for any proposed testing laboratory that includes a list of the engineers and technical staff that will provide testing services on the Project, descriptions of the qualifications of these individuals, list of tests that can be performed, equipment used with date of last certification, and a list of recent projects for which testing has been performed with references for those projects.
 - 3. Certified Test Reports for products to be incorporated into the Project. Provide reports to indicate that the proposed products comply with the Contract Documents or indicate that the proposed products do not comply with the Contract Documents and

why those products do not comply. Submit Certified Test Reports as part of a Shop Drawing submitted per Section 01 33 02 “Shop Drawings.”

4. Certified Test Reports for inspections and testing required in this Section and in other Sections of the Specifications. Provide reports to indicate that the Work complies with the Contract Documents or indicate that the Work does not comply with the Contract Documents and why the Work does not comply. Submit these test reports on forms provided by the Construction Manager per Section 01 33 00 “Document Management.”
5. Certified Test Reports of Defective Work and Certified Test Reports documenting that successful corrective action has produced Work that complies with the Contract Documents. Construction Manager will maintain a Defective Work register. Progress on correction of Defective Work will be discussed at progress meetings as described in Paragraph [1.05.E]. The final Defective Work register will be incorporated into closeout documentation required per Section 01 70 00 “Execution and Closeout Requirements” as a record that all Defective Work has been corrected.

1.04 OWNER’S QUALITY MANAGEMENT ACTIVITIES

- A. Owner may perform its own verification testing independent of the Contractor. The Owner’s Quality Management Plan describes the Owner’s anticipated verification testing program for this Project. The preliminary testing plan is **provided as the Appendix to the Contract Documents shown in Paragraph 3.04**. This plan outlines the anticipated testing in general terms and may not reflect the actual testing performed by the Owner. Actual testing will depend on the Contractor’s means, methods, and procedures of construction which will not be known until the Contractor submits the Contractor’s Quality Control Plan (CQCP) to the Construction Manager. There is no guarantee that all testing in the preliminary OQMP included in the Bidding/Proposal Documents will be performed by the Owner. Contractor will arrange and pay for all production control testing deemed necessary by the Contractor to produce quality results.
- B. Quality management activities of the Owner are for verifying the results of the Contractor’s Work complies with the requirements of the Contract Documents. Performance or non-performance of verification activities by the Owner:
 1. Does not relieve the Contractor of its responsibility to provide Work and furnish products that comply with the requirements of the Contract Documents;
 2. Does not relieve the Contractor of its responsibility to provide adequate quality control measures to produce quality documents, products, services, or Work;
 3. Does not relieve the Contractor of its responsibility for damage to or loss of Work or products before Owner’s acceptance; and
 4. Does not affect the continuing rights of the Owner after acceptance of the completed Work.
- C. The Work is subject to observations or testing at any time by the OPT. Products which have been tested or inspected and accepted by the Owner at a supply source or staging area may be inspected or tested again by the OPT before, during, or after incorporation into the Work and rejected if products do not comply with the Contract Documents.

- D. Verification testing performed by the OPT will be paid for by the Owner, except for testing related to Defective Work as discussed in Paragraph **[3.03]**.

1.05 CONTRACTOR'S RESPONSIBILITIES

- A. Review the OQMP and provide a Contractor's Quality Control Plan (CQCP) outlining testing to be provided by the Contractor per Paragraph **[1.07]**.
- B. Implement the CQCP to provide Work that complies with the requirements of the Contract Documents.
 - 1. Provide quality documents meeting the requirements of the Contract Documents.
 - 2. Provide services meeting the requirements of the Contract Documents.
 - 3. Provide the services of a Construction Materials Inspection and Testing (CMIT) provider meeting the requirements of this Section to provide testing required by the Contract Documents to demonstrate that products proposed for the Project in Shop Drawings and Product Data fully comply with the Contract Documents.
 - 4. Inspect and test products to be incorporated into the Project to identify defects before installing them. Do not install Defective products. Conspicuously mark Defective products and remove from the Site. If products are installed before the defect is recognized, remove the Defective products, mark them as Defective and remove them from the Site when the defect is recognized.
 - 5. Integrate production quality control measures into construction activities to produce Work meeting the requirements of the Contract Documents. Inspect self-performed Work and the Work of Subcontractors and Suppliers to identify defects. Correct or replace Defective Work.
 - 6. Provide facilities, equipment, and Samples required for inspections and tests.
 - a. Give the Construction Manager adequate notice before proceeding with Work that would interfere with inspections or testing.
 - b. Notify the Construction Manager and CMIT provider prior to the time that testing is required, providing adequate lead time to allow arrangements for inspections or testing to be performed.
 - c. Do not proceed with Work that would impact the ability to correct defects, or with Work that would require that it be removed to correct defects, until testing is complete, and test results indicate that the corrected Work is acceptable.
 - d. Provide safe access for all CMIT activities, including those to be conducted as part of the Owner's Quality Management Program.
 - e. Cooperate fully with the performance of sampling, inspection, and testing. Provide personnel to assist with sampling or to assist in making inspections and field tests.
 - f. Provide Samples and products in adequate quantities for testing at the Site or at the production source of the product for testing.
 - g. Provide facilities required to store and cure test Samples.

- h. Provide calibrated scales and measuring devices for OPT's use in performing inspections and testing.
 - i. Provide adequate lighting to allow OPT observations.
 - j. Make Contract Documents available to testing agencies when requested.
- C. Perform tests as indicated in Contract Documents. All verification testing is to be observed by the Construction Manager or its designated representative.
- D. Submit test reports to the Construction Manager.
- E. Provide an update on quality control activities performed the previous month and planned for the coming month at monthly progress meetings required by Section 01 31 13 "Project Administration."
- F. Determine testing or inspections required to implement the CQCP. Include costs for additional testing and inspections required to meet the Contractor's quality control obligations in the Contract Price.

1.06 CONTRACTOR'S QUALITY CONTROL MANAGER

- A. The resident superintendent or an approved assistant can serve as Quality Control Manager, provided other duties will allow adequate time to serve in this capacity.

1.07 CONTRACTOR'S QUALITY CONTROL PLAN

- A. Provide a CQCP that describes testing and inspections for Work performed at the Site and at remote locations. Include Work by Subcontractors and Suppliers. The CQCP is to include:
 - 1. A description of the quality control organization, including an organization chart showing lines of authority to control the quality of Work.
 - 2. Documentation describing name, qualifications (in resume format), duties, responsibilities, and level of authority of the Quality Control Manager.
 - 3. The name, qualifications (in resume format), duties, responsibilities, and authorities of other persons assigned a quality control function.
 - 4. Procedures for scheduling, reviewing, certifying, and managing documentation including documentation provided by Subcontractors and Suppliers.
 - 5. Control, verification, and acceptance testing procedures for each specific test. Include:
 - a. Name of tests to be performed;
 - b. Specification paragraph requiring test;
 - c. Parameters of Work to be tested;
 - d. Test frequency;
 - e. Persons responsible for each test; and
 - f. Applicable industry testing standards and laboratory facilities to be used for the test.
 - 6. Incorporate the testing specified in the OQMP into the CQCP, specifically identifying the tests or inspections that will be provided by the OQMP;

7. Procedures for tracking and documenting quality management efforts per Paragraph **[1.03]**.
 8. Reporting procedures which incorporate the use of forms provided by the Construction Manager.
 9. The name of the proposed testing laboratories along with documentation of qualifications per Paragraph **[1.03]**.
- B. Use the Contractor's Quality Control Plan Checklist provided by the Construction Manager to review the CQCP before submitting and include a copy of the completed checklist with the CQCP. Do not begin Work until the CQCP is accepted. Submit an interim plan covering only the portion of Work to be performed if the Contractor plans to begin Work prior to submitting the complete CQCP for the Project. Do not begin Work on other parts of the Project until the complete CQCP is accepted.
 - C. Meet with the OPT 7 days after CQCP is submitted and before start of construction to discuss the CQCP.
 - D. Notify the Construction Manager of any changes to the CQCP or quality control personnel.

1.08 CONTRACTOR'S USE OF OWNER'S TEST REPORTS

- A. Contractor will receive copies of all test reports documenting the Owner's verification tests. Contractor is entitled to rely on the accuracy of these tests results and use these as part of its quality control efforts.
- B. Contractor may submit a Change Proposal if the Owner's testing program deviates significantly from the OQMP. Contractor must demonstrate that actual testing and inspection costs were incurred implementing the CQCP as a result of Owner's decision to not provide testing described in the OQMP.

1.09 LIMITATION OF AUTHORITY OF THE TESTING LABORATORY

- A. The testing laboratory representatives are limited to providing testing services and interpreting the results of the test performed.
- B. The testing laboratory is not authorized to:
 1. Alter the requirements of the Contract Documents;
 2. Accept or reject any portion of the Work;
 3. Perform any of the duties of the Contractor; or
 4. Direct or stop the Work.

1.10 TEST REPORTS

- A. Certified Test Reports are to be prepared for all tests.
 1. Tests performed by testing laboratories may be submitted on their standard test report forms if acceptable to the Owner using the process directed by the Construction Manager. These reports must include the following:
 - a. Name of the Owner, Project title and number, and name of the Contractor;

- b. Name, address, and telephone number of the laboratory;
 - c. Name and signature of the laboratory personnel performing the test;
 - d. Description of the product being sampled or tested;
 - e. Date and time of sampling, inspection, and testing;
 - f. Date the report was issued;
 - g. Description of the test performed;
 - h. Weather conditions and temperature at time of test or sampling;
 - i. Location at the Site or structure where the test was taken;
 - j. Standard or test procedure used in making the test;
 - k. A description of the results of the test;
 - l. Statement of compliance or non-compliance with the Contract Documents; and
 - m. Interpretations of test results, if appropriate.
 - 2. Submit reports on tests performed by the Contractor, Subcontractors, or Suppliers as directed by the Construction Manager.
 - 3. OPT will prepare test reports on tests performed by the OPT.
 - B. Submit test reports as directed by the Construction Manager within 24 hours of completing the test. Flag tests reports with results that do not comply with Contract Documents for immediate attention. Notify the Construction Manager, using acceptable means other than the test report, immediately of any test that fails to comply with the Contract Documents.
- 1.11 DELIVERY, STORAGE, AND HANDLING
- A. Handle and protect test specimens of products and construction materials at the Site in accordance with recognized test procedures. Provide facilities for storing, curing, and processing test specimens as required by test standards to maintain the integrity of Samples. Transport test specimens in a manner to prevent damage to specimens while in transit.

PART 2 - PRODUCTS

2.01 TESTING APPARATUS

- A. Furnish testing apparatus and related accessories necessary to perform the tests.

2.02 SAMPLE PRODUCTS

- A. Provide Samples of products in adequate quantity for testing.

PART 3 - EXECUTION

3.01 IMPLEMENTING CONTRACTOR'S QUALITY CONTROL PLAN

- A. Perform quality control observations and testing as required in each Section of the Specifications and where indicated on the Drawings.
- B. Include the phases listed below for each definable work task. A definable work task is one which is separate and distinct from other tasks, has separate control requirements, may be provided by different trades or disciplines, or may be work by the same trade in a different environment.
 - 1. Planning Phase: Perform the following before beginning each definable work task:
 - a. Review the Contract Documents.
 - b. Review documents the Contractor will submit and determine that they are complete in accordance with the Contract Documents.
 - c. Check to ensure that all materials and/or equipment have been tested, submitted, and approved.
 - d. Examine the work area to ensure that all required preliminary Work has been completed and complies with the Contract Documents.
 - e. Examine required materials, equipment, and sample Work to ensure that they are on hand, conform to Contract Documents, Shop Drawings and Product Data, and are properly stored.
 - f. Review requirements for quality control inspection and testing.
 - g. Discuss procedures for controlling quality of the Work. Document construction tolerances and workmanship standards for the work task.
 - h. Check that the portion of the plan for the Work to be performed incorporates document review comments.
 - i. Discuss results of planning phase with the Construction Manager. Conduct a meeting attended by the Construction Manager, Quality Control Manager, superintendent, other quality control personnel as applicable, and the foreman responsible for the work task. Instruct applicable workers as to the acceptable level of workmanship required to meet the requirements of the Contract Documents. Document the results of the planning phase actions by separate meeting minutes prepared by the Quality Control Manager and attached to the quality control report.
 - j. Do not move to the next phase unless results of investigations required for the planning phase indicate that requirements have been met.
 - 2. Work Phase: Complete this phase after the planning phase.
 - a. Notify the Construction Manager at least 1 week in advance of beginning the Work and discuss the review of the planning phase effort to indicate that requirements have been met.

- b. Check the Work to ensure that it is in full compliance with the Contract Documents.
 - c. Verify adequacy of controls to ensure full compliance with the Contract Documents. Verify required control inspection and testing is performed.
 - d. Verify that established levels of workmanship meet acceptable workmanship standards. Compare with required Sample panels as appropriate.
 - e. Repeat the work phase for each new crew to work on-site, or any time acceptable specified quality standards are not being met.
- 3. Follow-Up Phase: Perform daily checks to ensure control activities, including control testing, are providing continued compliance with contract requirements.
 - a. Make checks daily and record observations in the quality control documentation.
 - b. Conduct follow-up checks and correct all defects prior to the start of additional work tasks that may be affected by the Defective Work. Do not build upon nor conceal Defective Work.
 - c. Conduct a review of the Work at least 1 month prior to the expiration of the correction period prescribed in the General Conditions with the OPT. Correct defects as noted during the review.
- C. Conduct additional planning and work phases if:
 - 1. The quality of on-going Work is unacceptable;
 - 2. Changes are made in applicable quality control staff, on-site production supervision, or crews;
 - 3. Work on a task is resumed after a substantial period of inactivity; or
 - 4. Other quality problems develop.

3.02 DEFECTIVE WORK

- A. Immediately correct any Defective Work or notify the Construction Manager why the Work is not to be corrected immediately and when corrective action will be completed.
- B. Work performed that is connected or adjacent to Defective Work or Work that would have to be removed to correct Defective Work is also considered to be Defective. Contractor is responsible for all costs associated with replacing any acceptable Work that must be removed, or might be damaged by corrective actions.
- C. Document Defective Work, corrective actions taken to correct defects, and that corrected Work complies with the Contract Documents.
- D. Implement countermeasures to prevent future Defective Work.
- E. No payment will be made for Defective Work. Remove Work from the Application for Payment if Work paid for on a previous Application for Payment is found to be Defective.
- F. Owner will withhold payment for Defective Work or Work that has not been tested or inspected in accordance with the CQCP, OQCP, or the Contract Documents.

3.03 VERIFICATION TESTING FOR CORRECTED DEFECTS

- A. Provide verification testing on corrected Work when corrective action is complete to demonstrate that the corrected Work complies with the Contract Documents. Conduct the same tests or inspections used to determine that the original Work was Defective. Different tests or methods may be used if approved by the Owner. Document that Defective Work has been corrected with the Construction Manager.
- B. Pay for verification testing until Work meets quality requirement set forth in the Contract Documents. OPT may perform verification testing as part of the Owner's Quality Management Program and impose a set-off to recover the cost for this testing.

3.04 OWNER'S PRELIMINARY QUALITY CONTROL PLAN

- A. Refer to the "Schedule of Testing" within the appendix.

END OF SECTION

01 50 00 TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide temporary facilities, including OPT's field office, Contractor's field offices, storage sheds, workshops, and other facilities needed to complete the Work.
- B. Provide temporary utilities needed to support the operation of the facilities and construction activities.
- C. Provide and maintain temporary project identification signs for Owner.
- D. Provide temporary informational signs to identify key elements of construction and direct the flow of traffic.
- E. Provide a weatherproof kiosk for display of permits and other notices required by Laws and Regulations.

1.02 DOCUMENTATION

- A. Submit a Shop Drawing, in accordance with Section 01 33 02 "Shop Drawings," showing a scaled office floor plan prior to installation of OPT's field office. Include details for:
 - 1. Internet equipment;
 - 2. Printer equipment;
 - 3. Security/alarm systems; and
 - 4. Office furniture and appliances.

1.03 QUALITY ASSURANCE

- A. Inspect and test each utility before using facilities. Arrange for all required inspections and tests by regulatory agencies, and obtain required certifications and permits for use of facilities.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Transport, unload, and set up all temporary buildings and utilities.

1.05 JOB CONDITIONS

- A. Locate buildings and sheds at the Site as indicated or as approved by the OPT.
- B. Prepare the Site by removing trees, brush, or debris and performing demolition or grubbing needed to clear a space adequate for the structures.
- C. Provide Contractor's temporary facilities and utilities in time to avoid delays in the performance of the Work.
- D. Provide OPT's field office, complete and ready for occupancy, and use no later than 7 days after the Notice to Proceed. Applications for Payment will not be processed until OPT's field office facilities are completed and approved.

- E. Provide and maintain temporary facilities and utilities.
- F. Operate temporary facilities in a safe and efficient manner.
 - 1. Restrict loads on utilities to operate within their designed or designated capacities.
 - 2. Provide sanitary conditions. Prevent public nuisance or hazardous conditions from developing or existing at the Site.
 - 3. Prevent freezing of pipes, flooding, or the contamination of water.
 - 4. Maintain site security and protection of the facilities.
- G. Remove temporary facilities and utilities when construction is complete and removal is approved by the Construction Manager.

PART 2 - PRODUCTS

2.01 SIGN MATERIALS

- A. Provide wood or metal signs in sound condition, structurally adequate to withstand wind and weather.
- B. Provide 3/4-inch exterior grade A/D face veneer plywood with medium density overlay for sign surface.
- C. Provide galvanized or stainless steel bolts, brackets, fasteners, and other hardware.
- D. Provide exterior quality coatings.

2.02 OPT FIELD OFFICES

- A. Provide and continuously maintain OPT's field office separate from Contractor's field office. Provide an office with a minimum nominal size of 12 feet by 40 feet.
 - 1. Office and/or materials of construction may be new or like new condition but must be serviceable, adequate for the intended purpose, acceptable to the Construction Manager, and must not violate codes or regulations.
 - 2. Offices are to be structurally sound, weather-tight, insulated and have floor raised above the ground. Brace and anchor offices to prevent movement.
 - 3. Skirt around perimeter of structures with the same material as structure siding or an approved alternate material of equal or better quality than the structure siding as approved by the Construction Manager.
 - 4. Divide the office into three separate spaces (one office, restroom, and conference). Provide one 10-foot by 12-foot or larger (or comparable square footage) office at one end with full height walls and interior 3-foot by 6-foot-8-inch doors.
 - 5. Provide an ADA compliant restroom with door in the center section of the office.
 - 6. Provide vinyl or VCT tile on floors.
 - 7. Provide burglar bar security on doors and windows.
 - 8. Provide outside doors with padlocks and door locks.
 - 9. Provide operable, screened windows with locks.

10. Provide window blinds.
 11. Provide mounted boot brush / cleaner / scraper on porch at entrances.
- B. Construct a wood porch with steps and a covered overhang at doors that ensures that rain will be completely diverted from doors. Provide wooden railing around porch and on the steps.
- C. Provide electricity to the field office adequate to power equipment, appliances, and heating and cooling systems.
1. Provide sufficient lighting for office environment using fluorescent or LED light fixtures with lenses energized by wall switches. Provide separate switches just inside exterior doors for the main area, inside of offices and inside the restroom.
 2. Provide outside security lighting.
 3. Provide three duplex receptacles in the office and five duplex receptacles in remainder of building at locations designated by Construction Manager.
- D. Provide an electric heating and cooling system for the field office capable of maintaining the following conditions:
1. Heat to a minimum of 75 deg. F inside when outside temperatures are 10 deg. F.
 2. Cool to a minimum 72 deg. F inside temperature when outside temperatures are 105 deg. F.
 3. Maintain relative humidity between 48 to 54 percent.
- E. Provide fully plumbed indoor restroom with flush toilet, sink, hot water, mirror, and storage cabinet for paper goods. Connect fixtures to complete potable water, sanitary, and vent systems.
- F. Provide an electric water cooler and a supply of bottled water.
- G. Provide furnishings at the field office as follows:

Qty.	Furnishing
1	2'-6" x 5'-0" office desks with credenzas
2	Fabric covered cushioned arm chairs with swivel/tilt/roll capabilities
15	Folding chairs (Lifetime Commercial Grade white granite)
4	3'-0" x 8'-0" folding tables (Lifetime Commercial Grade white granite)
1	Legal size, four-drawer metal filing cabinets
1	6" X 48" x 12" book shelves
1	Table to place full size 22"x34" plans
1	Plastic waste can for the office
2	Large waste cans for open area and restroom
1	42"x48" (or larger) dry erase board with 5 different color dry erase markers

- H. Provide unlimited internet service at the field office with the following features:
1. Minimum 200 Mbps download, 50 Mbps upload speed;

2. Maximum file transfer size of 2 GB; and
 3. Unlimited email/storage size.
- I. Provide wireless router for internet services with adequate range to reach all areas of the office.
 - J. Provide color copier with the following capabilities:
 1. Provide service and maintenance agreement throughout the Project. Provide toner, paper supply for the duration of the Project, and other supplies as needed to operate the copier.
 2. Ability to scan to email/file/folder.
 3. Ability to print, sort and collate.
 4. Produce up to 45 copies per minute in black and white.
 5. Ability to scan and print in black and white, grayscale, or color.
 6. Ability to auto feed and auto duplex.
 7. Provide a minimum of two paper trays with 500-sheet capacity.
 8. Reduction and enlargement capability with range from 25 to 400 percent.
 9. Ability to scan, copy, and print up to 11 x 17 format.
 - K. Provide a fire extinguisher and commercially serviced first aid kit.
 - L. Furnish a microwave unit with a minimum cooking volume of 1.5 cubic feet.
 - M. Furnish a refrigerator/freezer with minimum storage capacity of 3.5 cubic feet.
 - N. Furnish and maintain office supply stock, including but not limited to, pens, pencils, markers, staples, notepads, paper, posted notes, file folders, paper clips, binder clips, etc., for duration of Project. Pay for OPT's office supply purchases up to \$50 per month.
 - O. Field office and furniture will remain the property of the Contractor.
 - P. Provide access to reserved parking spaces for four vehicles adjacent to the OPT's field offices. Provide a durable parking area surface to prevent erosion, mud, dust, or rutting caused by vehicles. Provide a minimum of 4 inches of flexible crushed limestone base material or reclaimed asphalt concrete millings.

2.03 CONTRACTOR'S FIELD OFFICE

- A. Furnish a field office of adequate size for Contractor's use.
- B. Subcontractors may provide their own field offices only when space is available on the Site and the OPT agrees to its size, condition, and location.

2.04 TEMPORARY STORAGE BUILDINGS

- A. Furnish storage buildings of adequate size to store any materials or equipment delivered to the Site that might be affected by weather.

2.05 TEMPORARY SANITARY FACILITIES

- A. Provide sanitary facilities at the Site for the entire duration of the Project. Maintain these facilities in a clean and sanitary condition at all times, and comply with the requirements of the local health authority. On large sites, provide portable toilets at such locations so that no point at the Site will be more than 600 feet from a toilet.
- B. Use these sanitary facilities. Do not use restrooms within existing or Owner-occupied buildings.

2.06 TEMPORARY HEAT

- A. Provide heating devices needed to protect buildings during construction. Provide fuel needed to operate the heating devices and attend the heating devices at all times they are in operation, including overnight operations.

2.07 TEMPORARY UTILITIES

- A. Provide the temporary utilities for administration, construction, testing, disinfection, and startup of the Work, including electrical power, water, and telephone. Pay all costs associated with furnishing temporary utilities.
 - 1. Provide a source of temporary electrical power of adequate size for construction procedures.
 - a. Use existing power systems where spare capacity is available. Provide temporary power connections that do not adversely affect the existing power supply. Submit connections to the Construction Manager for approval prior to installation.
 - b. Provide electrical pole and service connections that comply with Laws and Regulations and the requirements of the power company.
 - 2. Provide temporary water. Potable water may be purchased from **source to be determined by the contractor**.
- B. Provide power for construction and storage. Provide power to energize space heaters for stored electrical equipment.

2.08 WATER FOR CONSTRUCTION

- A. Provide temporary water. Potable water may be purchased from an approved source and transporting water from a water hydrant. Non-potable water may be used for hydraulic testing of non-potable basins or pipelines. Include the cost of water in the Contract Price.

PART 3 - EXECUTION

3.01 LOCATION OF TEMPORARY FACILITIES

- A. Locate temporary facilities in areas approved by the Construction Manager. Construct and install signs at locations approved by the Construction Manager. Install informational signs so they are clearly visible.

3.02 PROJECT IDENTIFICATION SIGNS

- A. Arrange for a professional sign painter to paint and erect a sign for the Site in accordance with the sign information provided in the Contract Documents or provided by Owner. Sign will include identification of the OPT and Contractor (including appropriate logos, as required) and other Project information as determined by the Construction Manager. Paint sign on a 4-foot by 8-foot by 3/4-inch exterior grade plywood board. Frame plywood with 2 x 4 wood frame and mount on not less than two 4 x 4 posts. House plywood board in a channel routed 1/2 inch deep in the 2 x 4 frame. Shoulder, glue, and screw corners.

3.03 TEMPORARY LIGHTING

- A. Provide temporary lighting inside buildings once buildings are weatherproof.
- B. Provide exterior security lighting.
- C. Provide lighting that is adequate to perform Work within any space. Temporary lights may be removed once the permanent lighting is in service.
- D. Provide portable flood lights at any time that Work will be performed outside the structure at night. Provide adequate lighting at any location Work is being performed.

3.04 DRINKING WATER

- A. Provide all field offices with potable water. Provide a dispenser and cooling apparatus if bottled drinking water is provided.
- B. Pay for water services and maintain daily.

3.05 CONSTRUCTION FENCE

- A. Install and maintain a chain-link construction fence around the Site and off-site storage yards. Fence must be a minimum 6 feet high. Provide gates with padlocks.

3.06 REMOVAL OF TEMPORARY FACILITIES

- A. Remove temporary buildings, sheds, and utilities at the conclusion of the Project and restore the Site to original condition or finished condition in accordance with the Drawings.
- B. Remove informational signs upon completion of construction.
- C. Remove project identification signs, framing, supports, and foundations upon completion of the Project.

3.07 MAINTENANCE AND JANITORIAL SERVICE

- A. Provide janitorial service for the OPT's field office on a weekly basis or as requested. Empty trash receptacles daily or as needed.
- B. Maintain signs and supports in a neat, clean condition. Repair damage to structures, framings, or signs.
- C. Repair any damage to Work caused by placement or removal of temporary signage.

- D. Service, maintain, and replace, if necessary, the field office computer equipment throughout the Project as required by the OPT including replacement cartridges for all office equipment.

END OF SECTION

01 57 00 TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide labor, materials, equipment, and incidentals necessary to construct temporary facilities to provide and maintain control over environmental conditions at the Site. Remove temporary facilities when no longer needed.
- B. Construct temporary impounding works, channels, diversions, furnishing, and operation of pumps, installing piping and fittings, and other construction for control of conditions at the Site. Remove temporary controls at the end of the Project.

1.02 DOCUMENTATION

- A. Provide Shop Drawings in accordance with Section 01 33 02 "Shop Drawings."
- B. Provide copies of notices, records, and reports required by the Contract Documents or Laws and Regulations as Product Data in accordance with Section 01 31 13 "Project Administration."

1.03 QUALITY ASSURANCE

- A. Construct and maintain temporary controls with adequate workmanship using durable materials to provide effective environmental management systems meeting the requirements of the Contract Documents and Laws and Regulations. Use materials that require minimal maintenance to prevent disruption of construction activities while providing adequate protection of the environment.
- B. Periodically inspect systems to determine that they are meeting the requirements of the Contract Documents.

1.04 POLLUTION CONTROL

- A. Prevent the contamination of soil, water, or atmosphere by the discharge of noxious substances from construction operations. Provide adequate measures to prevent the creation of noxious air-borne pollutants. Prevent dispersal of pollutants into the atmosphere. Do not dump or otherwise discharge noxious or harmful fluids into drains or sewers, nor allow noxious liquids to contaminate public waterways in any manner.
- B. Provide equipment and personnel and perform emergency measures necessary to contain any spillage.
 - 1. Contain chemicals in protective areas and do not dump on soil. Dispose of such materials at off-site locations in an acceptable manner.
 - 2. Excavate contaminated soil and dispose at an off-site location if contamination of the soil does occur. Fill resulting excavations with suitable backfill and compact to the density of the surrounding undisturbed soil.
 - 3. Provide documentation to the Owner which states the nature and strength of the contaminant, method of disposal, and the location of the disposal site.

4. Comply with Laws and Regulations regarding the disposal of pollutants.
- C. Groundwater or run-off water which has come into contact with noxious chemicals, sludge, or contaminated soil is considered contaminated. Do not allow contaminated water to enter streams or water courses, leave the Site in a non-contained form, or enter non-contaminated areas of the Site.
 1. Construct temporary holding ponds or take other precautions and measures as required to contain the contaminated water and pump to a designated storage area.
 2. Wash any equipment used for handling contaminated water or soil within contaminated areas three times with uncontaminated water prior to using such equipment in an uncontaminated area. Dispose of wash water used to wash such equipment as contaminated water.

1.05 EARTH CONTROL

- A. Remove excess soil, spoil materials, and other earth not required for backfill. Control stockpiled materials to eliminate interference with Contractor and Owner's operations.
- B. Dispose of excess earth off the Site. Provide written approval from the property owner for soils deposited on private property as Product Data per Section 01 31 13 "Project Administration." Obtain approval of the OPT if this disposal impacts the use of Site or other easements.

1.06 AIR POLLUTION CONTROL

- A. Air Pollution Watch Days:
 1. Air Pollution Watch Days (APWD) may occur in the following times:
 - a. Typical Ozone Season: May 1 through October 31.
 - b. Critical Emission Time: 6:00 a.m. to 10:00 a.m.
 2. Watch Days:
 - a. State or local environmental regulatory agencies, in coordination with the National Weather Service, may designate the following day as an APWD by 3:00 p.m. on the prior afternoon.
 - b. Begin work after 10:00 a.m. on designated APWD if work requires the use of heavy construction equipment for run times in excess of 1 hour prior to 10:00 a.m. Heavy construction equipment may be used prior to 10:00 a.m. if equipment is certified by EPA as "Low Emitting" or equipment burns Ultra Low Sulfur Diesel (ULSD), diesel emulsions, or alternative fuels such as CNG.
- B. Obtain air permit for construction activities per requirements of Laws and Regulations.

1.07 TEMPORARY STORMWATER POLLUTION CONTROL

- A. Provide temporary stormwater pollution control per Section 01 57 23 "Temporary Stormwater Pollution Control."

1.08 MANAGEMENT OF WATER

- A. Manage water resulting from rains or ground water at the Site. Maintain trenches and excavations free of water at all times.
- B. Lower the water table in the construction area by acceptable means if necessary to maintain a dry and workable condition at all times. Provide drains, sumps, casings, well points, and other water control devices as necessary to remove excess water.
- C. Provide continuous operation of water management actions. Maintain standby equipment to provide proper and continuous operation for water management.
- D. Ensure that water drainage does not damage adjacent property. Divert water into the same natural watercourse in which its headwaters are located, or other natural stream or waterway as approved by the Owner. Assume responsibility for the discharge of water from the Site.
- E. Remove the temporary construction and restore the Site in a manner acceptable to the Construction Manager and to match surrounding material at the conclusion of the Work.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Provide materials that comply with Laws and Regulations.

PART 3 - EXECUTION

3.01 CONSTRUCTING, MAINTAINING, AND REMOVING TEMPORARY CONTROLS

- A. Construct temporary controls in accordance with Laws and Regulations.
- B. Maintain controls in accordance with regulatory requirements where applicable or in accordance with the requirements of the Contract Documents.
- C. Remove temporary control when no longer required, but before the Project is complete. Correct any damage or pollution that occurs as the result of removing controls while they are still required.

END OF SECTION

01 57 23 TEMPORARY STORMWATER POLLUTION CONTROL

PART 1 - GENERAL

1.01 SUMMARY

- A. Furnish labor, materials, equipment, and incidentals necessary to provide stormwater pollution prevention for the duration of the construction period including furnishing, installing, and maintaining erosion and sediment control structures and procedures and properly removing the features when no longer required.
- B. Develop, implement, and maintain a stormwater pollution prevention plan (SWPPP) in compliance with local, state, and federal Laws and Regulations. Provide preventive measures to keep sediment and other pollutants from the construction activity from entering any stormwater system, including open channels.
- C. Comply with the **Texas Commission on Environmental Quality General Permit, TXR150000, (General Permit) for storm water discharges from construction activities under the Texas Pollutant Discharge Elimination System (TPDES) program.**
- D. File all required legal notices and obtain required permits prior to beginning any construction activity.
- E. This Section provides guidelines and Best Management Practices information for the Contractor to use in adhering to all local, state, and federal environmental Laws and Regulations with respect to stormwater pollution prevention during construction activities.

1.02 DOCUMENTATION

- A. Documentation must be provided in accordance with Section 01 33 00 "Document Management."
- B. Submit copies of required notices and reports to the Construction Manager as Product Data in accordance with Section 01 33 03 "Product Data." Retain copies of these documents at the Site for review and inspection by the OPT or regulatory agencies at all times.
- C. Submit copies of required notices to local, state, and federal authorities and any other entity as required by the General Permit and applicable Laws and Regulations.
- D. Post a copy of required notices at the Site in a location where it is readily available for viewing by the general public and local, state, and federal authorities prior to starting construction activities and maintain the posting until completion of the construction activities.
- E. Maintain copies of a schedule of major construction activities, inspection reports, and revision documentation with the SWPPP required under the General Permit.
- F. Provide schedules in accordance with Paragraph **[3.05]**.

1.03 QUALITY ASSURANCE

- A. Comply with applicable requirements of all governing authorities having jurisdiction. The Specifications and the Drawings are not intended to be prescriptive but rather to convey

the intent to provide complete slope protection, erosion control, and stormwater pollution prevention for both the Owner's property and adjacent properties.

- B. Perform Work to comply with “Best Practices” as established by the **North Central Texas Council Of Governments (NCTCOG) integrated Storm Water Management (ISWM) Design Manual for Construction** or the local agency of jurisdiction.
- C. Contractor must develop and implement a SWPPP in accordance with the General Permit prior to the beginning of construction activity.
- D. Contractor assumes sole responsibility for implementing, updating, and modifying the General Permit per Laws and Regulations for the SWPPP and Best Management Practices.
- E. Stormwater pollution prevention measures must be established prior to the beginning of construction and maintained during the entire length of construction until final stabilization has been achieved for the area protected.
- F. All land-disturbing activities must be planned and conducted to minimize the area to be exposed at any one time as well as time of exposure, off-site erosion, sedimentation, and adverse water quality impacts.
- G. Surface water runoff originating upgrade of an exposed area must be managed to minimize erosion and sediment loss during the period of exposure.
- H. Install measures to control both the velocity and rate of release so as to minimize erosion and sedimentation of the receiving water body (i.e. , ditch, channel, stream) in accordance with regulatory requirements and as directed by the OPT.
- I. Periodically clean out and dispose of all sediment and other pollutants as necessary to maintain adequate treatment capacity of each pollution control feature. Clean out and properly dispose of all sediment and other stormwater pollutants at the time of completion of the Work.

1.04 JOB CONDITIONS, CODES AND ORDINANCES

- A. Comply with the local codes and ordinances. If local codes and ordinances require more stringent or additional stormwater pollution prevention measures during construction beyond those required by state and federal Laws and Regulations, the Contractor must provide such measures at no additional cost.

1.05 STANDARDS

- A. The applicable provisions of the following standards apply as if written here in their entirety:
 - 1. ASTM International (ASTM):

ASTM D4632	Standard Test Method for Grab Breaking Load and Elongation of Geotextiles, 90 pounds
ASTM D4833	Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 60 pounds
ASTM D3786	Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 280 psi
ASTM D4751	Standard Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 70 (max) to No. 100 (min)

ASTM D4355	Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc-Type Apparatus
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials used for stormwater pollution prevention must meet the minimum design and specification requirements identified below for commonly used sediment loss prevention **(referenced from the North Central Texas Council Of Governments (NCTCOG) integrated Storm Water Management (iSWM) Design Manual for Construction)**. The Contractor must use appropriate control devices to protect against stormwater pollution from construction site activities.
- B. Erosion control blankets (ECBs) to hold seed and soil in place until vegetation is established on disturbed areas are subject to the following design criteria:
 - 1. The type and class of erosion control mat must be specified as appropriate for the slope of the area to be protected, the flow rate (sheet flow on cut/fill slopes) or velocity (concentrated flow in swales) of stormwater runoff in contact with the ECB, and the anticipated length of service.
 - 2. Erosion control blankets must meet the applicable **Texas Department of Transportation (TxDOT) Minimum Performance Standards for TxDOT as provided in its Erosion Control Report and/or be listed on the most current annual Approved Products List for TxDOT applicable to TxDOT Item 169 Soil Retention Blanket and its Special Provisions.**
- C. Silt fences for perimeter controls located downstream of disturbed areas are subject to the following design criteria:
 - 1. If 50 percent or less soil by weight passes the U.S. Standard sieve No. 200, select the apparent opening size (A.O.S.) to retain 85 percent of the soil.
 - 2. If 85 percent or more of soil by weight passes the U.S. Standard sieve No. 200, silt fences must not be used unless the soil mass is evaluated and deemed suitable by a soil scientist or geotechnical engineer concerning the erodibility of the soil mass, dispersive characteristics, and the potential grain-size characteristics of the material that is likely to be eroded.
 - 3. Silt fence fabric must meet the following minimum criteria:
 - a. Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles, 90 pounds.
 - b. Puncture Rating, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 60 pounds.
 - c. Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 280 psi.

- d. Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 70 (max) to No. 100 (min).
 - e. Ultraviolet Resistance, ASTM D4355 Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc-Type Apparatus. Minimum 70 percent.
- 4. Filter stone for an overflow structure must be 1-1/2-inch washed stone containing no fine material. Angular shaped stone is preferable to rounded shaped stone.
- 5. Fence posts must be galvanized steel or equivalent and may be T-section or L-section, 1.3 pounds per linear foot minimum, and 4 feet in length minimum. Wood posts may be used depending on anticipated length of service and provided they are 4 feet in length minimum and have a nominal cross-section of 2 inches by 4 inches for pine or 2 inches by 2 inches for hardwoods.
- 6. Silt fence must be supported by galvanized steel wire fence fabric as follows:
 - a. 4-inch by 4-inch mesh size, W1.4/1.4, minimum 14-gauge wire fence fabric;
 - b. Hog wire, 12-gauge wire, small openings installed at bottom of silt fence;
 - c. Standard 2-inch by 2-inch chain link fence fabric; or
 - d. Other welded or woven steel fabrics consisting of equal or smaller spacing as that listed herein and appropriate gauge wire to provide support.
- D. Inlet protection used in new developments that include new inlets or roads with new curb inlets or during repairs to existing roadways are subject to the following design criteria:
 - 1. Filter fabric protection must be designed and maintained in a manner similar to a silt fence.
 - 2. Where applicable, filter fabric, posts, and wire backing must meet the material requirements specified in Paragraph **[2.01.C]**.
 - 3. Filter gravel must be 3/4-inch washed stone containing no fines. Angular shaped stone is preferable to rounded shapes.
 - 4. Concrete blocks must be standard 8-inch by 8-inch by 16-inch concrete masonry units.
 - 5. When organic filter tubes are used, the designer must specify the type of material to be used (or excluded) on a particular site:
 - a. Straw filter material must be Certified Weed Free Forage. The straw must be in good condition, air-dried, and not rotten or moldy.
 - b. Compost must conform to the requirements for Erosion Control Compost in **TxDOT Special Specification 1001 Compost (2004)**. Compost may provide some oil and grease removal; however, the large percentage of fines in compost will result in less filtering and more ponding of stormwater.
 - c. Wood chips must be 100 percent untreated chips and free of inorganic debris, such as plastic, glass, metal, etc. Wood chip size must not be smaller than 1 inch and must not exceed 3 inches in diameter. Shavings must not be more than 5 percent of the total mass.

6. Bags used to secure inlet protection devices on pavement must be filled with aggregate, filter stone, or crushed rock that is less likely than sand to be washed into an inlet if the bag is broken. Filled bags must be 24 to 30 inches long, 16 to 18 inches wide, and 6 to 8 inches thick. Bags must be polypropylene, polyethylene, or polyamide woven fabric with a minimum unit weight of 4 ounces per square yard and meet the following criteria:
 - a. Greater than 300 psi Mullen Burst Strength using ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method.
 - b. Greater than 70 percent UV Stability using ASTM D4355 Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc Type Apparatus.
- E. Stone outlet sediment traps (bermed or excavated) used in situations where flows are concentrated in a drainage swale or channel are subject to the following design criteria:
 1. The embankment must be placed on geotextile fabric meeting the following minimum criteria:
 - a. Tensile Strength, ASTM D4632 Text Method for Grab Breaking Load and Elongation of Geotextiles, 250 pounds.
 - b. Puncture Rating, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 135 pounds.
 - c. Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 420 psi.
 - d. Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 20 (max).
 2. Fill placed to constrict the swale for construction of the excavated stone outlet sediment trap and fill placed for the berm in the bermed stone outlet sediment trap must consist of clay material, minimum Plasticity Index of 30, using ASTM D4318 Standard Test for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
 3. The embankment must be comprised of well graded stone riprap with a size range of 6 to 12 inches in diameter.
- F. Sediment basins used as treatment devices for sites with disturbed areas of 10 acres and larger that are part of a common drainage area are subject to the following design criteria:
 1. The embankment must be constructed with clay soil, minimum Plasticity Index of 30 using ASTM D4318 Standard Test for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
 2. Texas Administrative Code Title 30, Chapter 299 (30 TAC 299), Dams and Reservoirs, contains specific requirements for dams that:
 - a. Have a height greater than or equal to 25 feet and a maximum storage capacity greater than or equal to 15 acre-feet;
 - b. Have a height greater than 6 feet and a maximum storage capacity greater than or equal to 50 acre feet;

- c. Are a high- or significant-hazard dam as defined in Chapter 299, regardless of height or maximum storage capacity; or
 - d. Are used as a pumped storage or terminal storage facility.
- 3. If the size of the detention basin meets or exceeds the above applicability, the design must be in accordance with state criteria, and the final construction Drawings and Specifications must be submitted to the **TCEQ** for review and approval.
- G. Check dams used for long drainage swales or ditches to reduce erosive velocities are subject to the following design criteria:
 - 1. Use geotextile filter fabric under check dams exceeding 12 inches in height. The fabric must meet the material specified for the Stone Outlet Sediment Trap discussed above.
 - 2. Loose, unconfined soil, wood chips, compost, and other material that can float or be transported by runoff must not be used to construct check dams.
 - 3. Sand bags must not be used for check dams, due to their propensity to break and release sand that is transported by the concentrated flow in the drainage swale or ditch.
 - 4. Rock Check Dams:
 - a. Stone must be well graded with stone size ranging from 3 to 6 inches in diameter for a check dam height of 24 inches or less.
 - b. The stone size range for check dams greater than 24 inches is 4 to 8 inches in diameter.
 - 5. Rock Bag Check Dams Bags:
 - a. Fill material should be pea gravel, filter stone or aggregate that is clean and free of deleterious material.
 - b. Bag material must comply with the requirements of Inlet Protection above.
 - 6. Sack Gabion Check Dams:
 - a. Sack gabions must be wrapped in galvanized steel, woven wire mesh. The wire must be 20 gauge with 1-inch diameter, hexagonal openings.
 - b. Stone must be well graded with a minimum size range from 3 to 6 inches in diameter.
 - 7. Organic Filter Tube Check Dams:
 - a. Filter material used within tubes to construct check dams must be limited to coir, straw, aspen fiber and other organic material with high cellulose content.
 - b. The material should be slow to decay or leach nutrients in standing water and comply with the requirements for Inlet Protection above.
- H. Stabilized construction exits used for sites in which significant truck traffic occurs on a daily basis are subject to the following design criteria:
 - 1. The construction exit material must be a minimum thickness of 6 inches. The stone or recycled concrete used must be 3 to 5 inches in size with little or no fines.

2. The geotextile fabric must meet the following minimum criteria:
 - a. Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles, 300 pounds.
 - b. Puncture Strength, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 120 pounds.
 - c. Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 600 psi.
 - d. Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 40 (max).
- I. Alternative pollution prevention measures selected by the Contractor must be identified from one or more of the following reference sources, as appropriate for the region of the construction activity:
 1. City of Austin Environmental Criteria Manual.
 2. North Central Texas Council of Governments (NCTCOG) integrated Stormwater Management (iSWM) Design Manual for Construction.
 3. Harris County/Harris County Flood Control District/City of Houston Stormwater Management Handbook for Construction Activities.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Prepare a SWPPP in accordance with applicable permit requirements for construction activity. Develop the SWPPP in conformance with the General Permit and any applicable local requirements.
- B. Prepare and implement the SWPPP prior to the beginning of construction activity in accordance with local, state, and federal Laws and Regulations.
- C. OPT may require Contractor to install stormwater pollution prevention devices and/or practices during construction in addition to those required under the approved SWPPP. Contractor must remain solely responsible for complying with all local, state, and federal Laws and Regulations.

3.02 INSTALLATION

- A. Erosion control blankets to hold seed and soil in place until vegetation is established on disturbed areas are subject to the following installation criteria:
 1. Prior to the installation of any erosion control matting, all rocks, dirt clods, stumps, roots, trash, and any other obstructions that would prevent the mat from lying in direct contact with the soil must be removed.
 2. Anchor trenching must be located along the entire perimeter of the installation area, except for small areas with less than 2 percent slope.
 3. Installation and anchoring must conform to the recommendations shown within the manufacturer's published literature for the erosion control blanket.

4. Anchors (staples) must be a minimum of 6 inches in length and 1 inch wide. They must be made of 11-gauge wire, or equivalent, unless the ECB is intended to remain in place with final stabilization and biodegrade.
 5. Particular attention must be paid to joints and overlapping material. Overlap along the sides and at the ends of ECBs should be per the manufacturer's recommendations for site conditions and the type of ECB being installed. At a minimum, the end of each roll of ECB must overlap the next roll by 3 feet and the sides of rolls must overlap 4 inches.
 6. After installation, check blankets for uniform contact with the soil, security of the lap joints, and flushness of the staples with the ground.
- B. Silt fences for perimeter controls located downstream of disturbed areas are subject to the following installation criteria:
1. Construct fences along a line of constant elevation (along a contour line if possible).
 2. Maximum drainage area must be 0.25 acres per 100 linear feet of silt fence.
 3. Maximum flow to any 20-foot section of silt fence must be 1 cfs.
 4. Maximum distance of flow to silt fence must be 200 feet or less. If the slope exceeds 10 percent, the flow distance must be less than 50 feet.
 5. Maximum slope adjacent to the fence must be 2:1.
 6. Stone overflow structures or other outlet control devices must be installed at all low points along the fence or spaced at approximately 300 feet if there is no apparent low point.
 7. A 6-inch wide trench is to be cut 6 inches deep at the toe of the fence to allow the fabric to be laid below the surface and backfilled with compacted earth or gravel to prevent bypass of runoff under the fence. Fabric must overlap at abutting ends a minimum of 3 feet and must be joined such that no leakage or bypass occurs. If soil conditions prevent a minimum toe-in depth of 6 inches or installation of support post to depth of 12 inches, silt fences must not be used.
 8. Sufficient room for the operation of sediment removal equipment must be provided between the silt fence and other obstructions in order to properly maintain the fence.
 9. The last 10 feet (or more) at the ends of a line of silt fence must be turned upslope to prevent bypass of stormwater. Additional upslope runs of silt fence may be needed every 200 to 400 linear feet, depending on the traverse slope along the line of silt fence.
- C. Inlet protection for new developments that include new inlets or roads with new curb inlets or during repairs to existing roadways are subject to the following installation criteria:
1. Maintain barricades, signs, and safety features around the Work in accordance with all provisions of the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD), when installing inlet protection on publicly traveled streets or in developed areas. Ensure that inlet protection is properly designed, installed, and maintained to avoid flooding of the roadway or adjacent properties and structures.
 2. Maximum depth of flow must be 8 inches or less.
 3. A 2-inch overflow gap or weir is required on all curb inlet protection devices.

4. Positive drainage is critical in the design of inlet protection. If overflow is not provided for at the inlet, excess flows must be routed through established swales, streets, or other watercourses to minimize damage due to flooding.
5. Filter Fabric Protection:
 - a. Filter fabric protection is appropriate where the drainage area is less than 1 acre and the basin slope is less than 5 percent.
 - b. Filter fabric, posts, and wire mesh must meet the material requirements specified in Paragraph **[2.01.C]**.
 - c. A 6-inch wide trench is to be cut 6 inches deep at the toe of the fence to allow the fabric to be laid below the surface and backfilled with compacted earth or gravel. This entrenchment prevents any bypass of runoff under the fence.
 - d. Stone overflow structures must be installed where flow to the inlet is concentrated and more than 1 cfs according to the criteria in Paragraph **[2.01]**.
6. Block and Gravel Protection (Curb and Drop Inlets):
 - a. Concrete blocks are to be placed on their sides in a single row around the perimeter of the inlet, with ends abutting.
 - b. Openings in the blocks should face outward, not upward. 1/2-inch by 1/2-inch wire mesh must then be placed over the outside face of the blocks covering the holes.
 - c. Filter stone must then be piled against the wire mesh to the top of the blocks with the base of the stone being a minimum of 18 inches from the blocks.
 - d. Alternatively, where loose stone is a concern (streets, etc.), the filter stone may be placed in appropriately sized geotextile fabric bags.
7. Excavated Impoundment Protection:
 - a. Excavated impoundment protection is only applicable to drop inlets.
 - b. It should not be applied to Y inlets because it will undermine the concrete pad surrounding the inlet opening. Nor can it be used for inlets on pavement.
 - c. With this protection method, it is necessary to install weep holes to allow the impoundment to drain completely.
 - d. The impoundment must be sized such that the volume of excavation is equal to or exceeds the runoff volume from the temporary control design storm (2-year, 24-hour) for the inlet's drainage area.
 - e. The trap must have a minimum depth of 1 foot and a maximum depth of 2 feet as measured from the top of the inlet and must have side slopes of 2:1 or flatter.
8. Organic Filter Tube Protection (Curb and Drop Inlets):
 - a. Organic filter tubes may be used on paved or unpaved surfaces. On paved surfaces, tubes must be secured in place by rock bags. On unpaved surfaces, the tubes must be embedded in the ground a minimum of 3 inches and staked at 4-foot spacing.

- b. Designer must provide calculations and specify the diameter of tube to be used based on the inlet's drainage area and the flow rate of runoff to the inlet.
 - c. The minimum allowable diameter is 12 inches.
 - d. For curb protection, the diameter of the tube must be at least 2 inches less than the height of the inlet opening. The tube should not be allowed to block the entire opening, since it will clog.
 - e. The tube must be placed on 4-inch by 4-inch or 2-inch by 4-inch wire mesh to prevent the tube from sagging into the inlet. The tube should be long enough to extend a minimum of 12 inches past the curb opening on each side of the inlet.
- D. Stone outlet sediment traps (excavated or bermed) for situations where flows are concentrated in a drainage swale or channel are subject to the following installation criteria:
 - 1. The maximum drainage area contributing to the trap must be less than 10 acres for the excavated trap, and 5 acres or less for the bermed trap. For larger drainage areas a sediment basin must be used.
 - 2. The minimum storage volume must be the volume of runoff from the temporary control design storm (2-year, 24-hour) for the sediment trap's drainage area.
 - 3. The surface area of the design storage must be 1 percent of the area draining to the device.
 - 4. The maximum embankment height must be 6 feet as measured from the toe of the slope on the downstream side.
 - 5. Minimum width of the embankment at the top must be 2 feet.
 - 6. Embankment slope must be 1:5:1 or flatter.
 - 7. The embankment must have a depressed area to serve as the outlet with a minimum width of 4 feet.
 - 8. A 6-inch minimum thickness layer of 1-1/2-inch filter stone must be placed on the upstream face of the embankment when stormwater runoff contains fine silt and clay particles.
 - 9. The embankment must consist of stone riprap or a combination of compacted fill with stone riprap. The stone may be enclosed in wire mesh or a gabion basket and anchored to the channel bottom to prevent washing away.
 - 10. Fill must be placed in 8-inch loose lifts (maximum) and compacted to 95 percent Standard Proctor Density at optimum moisture content using ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.
 - 11. Geotextile fabric, covered with a layer of stone, must extend past the base of the embankment on the downstream side a minimum of 2 feet.
 - 12. The outlet must be designed to have a minimum freeboard of 6 inches at design flow.

- E. Sediment basins for treatment devices for sites with disturbed areas of 10 acres and larger that are part of a common drainage area are subject to the following installation criteria:
1. Design of the sediment basin should be coordinated with design of the permanent drainage infrastructure for the development. Sediment basin sizing and discharge volumes should be calculated using the **NCTCOG iSWM Technical Manual** or similar technical manual in accordance with the design criteria of the locality where the basin is constructed.
 2. Minimum capacity of the basin must be the calculated volume of runoff from a 2-year, 24-hour duration storm event plus sediment storage capacity of at least 1000 cubic feet.
 3. The basin must be laid out such that the effective flow length to width ratio of the basin is a minimum of 4:1. The effectiveness of sediment basins may be increased by using baffles to prevent short-circuiting of flow through the basin.
 4. Top width of the embankment must be determined by the Design Professional based on the total height of the embankment as measured from the toe of the slope on the downstream side.
 5. Embankment side slopes must be 3:1 or flatter.
 6. Clay soil for the embankment must be placed in 8-inch lifts and compacted to 95 percent Standard Proctor Density at optimum moisture content using ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.
 7. The primary outlet must have a minimum design dewatering time of 36 hours for the temporary control design storm (2-year, 24-hour).
 8. Whenever possible, the outlet must be designed to drain the basin in less than 72 hours to minimize the potential for breeding mosquitoes.
 9. The basin's primary outlet and spillway must be sized to pass the difference between the conveyance storm (25-year, 24-hour) and the temporary control design storm without causing damage to the embankment and structures.
 10. Unless infeasible, the primary outlet structure should withdraw water from the surface of the impounded water. Outlet structures that do this include surface skimmers, solid risers (non-perforated), flashboard risers, and weirs.
 11. The outlet of the outfall pipe (barrel) must be stabilized with riprap or other materials designed using the conveyance storm flow rate and velocity. Velocity dissipation measures must be used to reduce outfall velocities in excess of 5 feet per second.
 12. The outfall pipe through the embankment must be provided with anti-seep collars connected to the exterior of the pipe section or at a normal joint of the pipe material. The anti-seep collar material must be compatible with the pipe material used and must have a watertight bond to the exterior of the pipe section. The size and number of collars must be selected by the designer in accordance with the **NCTCOG iSWM Technical Manual** or similar technical manual in accordance with the design criteria of the locality where the basin is constructed.

13. Risers used to discharge high flows must be equipped with an anti-vortex device and trash rack.
 14. Spillways must be constructed in undisturbed soil material (not fill) and must not be placed on the embankment that forms the basin.
- F. Check dams for long drainage swales or ditches to reduce erosive velocities are subject to the following installation criteria:
1. Typically, the dam height should be between 9 inches and 36 inches, depending on the material of which they are made. The height of the check dam must always be less than one-third the depth of the channel.
 2. Dams should be spaced such that the top of the downstream dam is at the same elevation as the toe of the upstream dam. On channel grades flatter than 0.4 percent, check dams should be placed at a distance that allows small pools to form between each check dam.
 3. The top of the side of the check dam must be a minimum of 12 inches higher than the middle of the dam. In addition, the side of the dams must be embedded a minimum of 18 inches into the side of the drainage ditch, swale or channel to minimize the potential for flows to erode around the side of the dam.
 4. Larger flows (greater than 2-year, 24-hour design storm) must pass the check dam without causing excessive upstream flooding.
 5. Check dams should be used in conjunction with other sediment reduction techniques prior to releasing flow off-site.
 6. Rock Check Dams: Rock check dams must have a minimum top width of 2 feet with side slopes of 2:1 or flatter. Rock check dams within the clear zone as defined by TxDOT Roadway Design Manual must have a top width of 2 feet with side slopes of 6:1 or flatter
 7. Rock Bag Check Dams:
 - a. Rock bag check dams should have a minimum top width of 16 inches.
 - b. Bag length must be 24 to 30 inches, width must be 16 to 18 inches, and thickness must be 6 to 8 inches and having a minimum weight of 40 pounds.
 - c. Minimum rock bag dam height of 12 inches would consist of one row of bags stacked on top of two rows of bag. The dam must always be one more row wide than it is high, stacked pyramid fashion.
 - d. PVC pipes may be installed through the dam to allow for controlled flow through the dam. Pipe should be schedule 40 or heavier polyvinyl chloride (PVC) having a nominal internal diameter of 2 inches.
 8. Sack Gabion Check Dams:
 - a. Sack gabion check dams may be used in channels with a contributing drainage area of 5 acres or less.
 - b. Wire mesh must be one piece, wrapped around the rock, and secured to itself on the downstream side using wire ties or hog rings.

- c. Sack gabions must be staked with 3/4-inch rebar at a maximum spacing of 3 feet. Each wire sack must have a minimum of two stakes.
- 9. Organic Filter Tube Check Dams:
 - a. Organic filter tubes may be used as check dams in channels with a contributing drainage area of 5 acres or less.
 - b. Organic filter tubes must be a minimum of 12 inches in diameter.
 - c. Staking of filter tubes must be at a maximum of 4-foot spacing and must alternate through the tube and on the downstream face of the tube.
- G. Stabilized construction exits for sites in which significant truck traffic occurs on a daily basis are subject to the following installation criteria:
 - 1. Limit site access to one route during construction, if possible; two routes for linear and larger projects.
 - 2. Prevent traffic from avoiding or shortcutting the full length of the construction exit by installing barriers. Barriers may consist of silt fence, construction safety fencing, or similar barriers.
 - 3. Design the access point(s) to be at the upslope side of the construction site. Do not place construction access at the lowest point on the construction site.
 - 4. Stabilized Construction Exits are to be constructed such that drainage across the entrance is directed to a controlled, stabilized outlet on-site with provisions for storage, proper filtration, and removal of wash water.
 - 5. The exit must be sloped away from the paved surface so that stormwater is not allowed to leave the Site onto roadways.
 - 6. Minimum width of exit must be 15 feet.
 - 7. Vehicles must not be permitted to track or drop sediment onto paved roads, streets, or parking lots. When necessary, vehicles must be cleaned to remove sediment prior to exit onto paved areas. When washing is required, it must be done on a constructed wheel wash facility that drains into an approved sediment trap or sediment basin or other sedimentation/filtration device.
 - 8. Minimum dimensions for the exit must be as follows:

Tract Area	Min. Width of Exit	Min. Length of Exit
<1 Acre	15 feet	20 feet
≥ 1 acre but <5 Acres	25 feet	50 feet
≥5 Acres	30 feet	50 feet

- H. Install pollution control devices in a manner consistent with their designed intent.

3.03 MAINTENANCE

- A. Maintain pollution prevention control structures and procedures in full working order at all times during construction. This must include any necessary repair or replacement of items which have become damaged or ineffective. Remove sediment and other pollutants which

accumulate in pollution control devices as necessary to maintain the intended design efficiency for the pollution prevention measure.

- B. Dispose properly of trash, debris, and other pollutants.
- C. Place sediment material in approved earth spoil areas or return the sediment material to the area from which it eroded.
- D. Maintain pollution prevention structures and procedures until construction is complete for the area protected and until the Site achieves final stabilization. Unless more stringently defined by local, state, or federal requirements, final stabilization is defined as achieving 70 percent of background vegetative cover or placement of permanent cover, such as concrete or asphalt.
- E. Upon completion of construction and achievement of final stabilization, properly remove the temporary pollutant control structures and complete the area as indicated. Pollution control devices made of organic materials designed to degrade naturally in place will not require removal, unless specifically required by the OPT.
- F. Erosion control blankets must be inspected regularly (at least as often as required by the General Permit) for bare spots caused by weather related events. Missing or loosened blankets must be replaced or re-anchored. Also check for excess sediment deposited from runoff. Remove sediment and/or replace blanket as necessary. In addition, determine the source of excess sediment and implement appropriate Best Management Practices to control the erosion.
- G. Silt fences must be inspected regularly (at least as often as required by the General Permit) for buildup of excess sediment, undercutting, sags, and other failures. Sediment should be removed when it reaches approximately one-half the height of the fence. In addition, determine the source of excess sediment and implement appropriate Best Management Practices to control the erosion. If the fabric becomes damaged or clogged, it must be repaired or replaced as necessary.
- H. Inlet protection must be inspected regularly (at least as often as required by the General Permit). Floatable debris and other trash caught by the inlet protection should be removed after each storm event. Sediment should also be removed from curb inlet protection after each storm event because of the limited storage area associated with curb inlets. Sediment collected at inlet protection should be removed before it reaches half the height of the protection device. Sediment should be removed from inlets with excavated impoundment protection before the volume of the excavation is reduced by 50 percent. In addition, the weep holes should be checked and kept clear of blockage. Concrete blocks, 2-inch by 4-inch boards, stakes, and other materials used to construct inlet protection should be checked for damaged and repaired or replaced if damaged. When filter fabric or organic filter tubes are used, they should be cleaned or replaced when the material becomes clogged. For systems using filter stone, when the filter stone becomes clogged with sediment, the stones must be pulled away from the inlet and cleaned or replaced. Because of the potential for inlet protection to divert runoff or cause localized flooding, remove inlet protection as soon as the drainage area contributing runoff to the inlet is stabilized. Ensure that all inlet protection devices are removed at the end of the construction.
- I. The stone outlet sediment trap should be inspected regularly (at least as often as required by the General Permit) to check for clogging of the void spaces between stones. If the filter

stone appears to be clogged, such that the basin will not completely drain, then the filter stone will require maintenance. If the filter stone is not completely clogged it may be raked with a garden rake to allow the water to release from the basin. If filter stone is completely clogged with mud and sediment, then the filter stone will have to be removed and replaced. Failure to keep the filter stone material properly maintained will lead to clogging of the stone riprap embankment. When this occurs, the entire stone rip-rap structure will need to be replaced. If the aggregate appears to be silted in such that efficiency is diminished, the stone should be replaced. Trash and debris should be removed from the trap after each storm event to prevent it from plugging the rock. Deposited sediment must be removed before the storage capacity is decreased by one-third, or sediment has reached a depth of 1 foot, whichever is less. The removed sediment must be stockpiled or redistributed in areas that are protected with erosion and sediment controls.

- J. Sediment basins should be inspected regularly (at least as often as required by the General Permit) to check for damage and to ensure that obstructions are not diminishing the effectiveness of the structure. Sediment must be removed and the basin must be re-graded to its original dimensions when the sediment storage capacity of the impoundment has been reduced by 20 percent. The removed sediment may be stockpiled or redistributed on-site in areas that are protected by erosion and sediment controls. Inspect temporary stabilization of the embankment and graded basin and the velocity dissipaters at the outlet and spillway for signs of erosion. Repair any eroded areas that are found. Install additional erosion controls if erosion is frequently evident.
- K. Check dams should be inspected regularly (at least as often as required by the General Permit). Silt must be removed when it reaches approximately one-third the height of the dam or 12 inches, whichever is less. Inspectors should monitor the edges of the dam where it meets the sides of the drainage ditch, swale, or channel for evidence of erosion due to bypass or high flows. Eroded areas must be repaired. If erosion continues to be a problem, modifications to the check dam or additional controls are needed. Care must be used when taking out rock check dams in order to remove as much rock as possible. Loose rock can create an extreme hazard during mowing operations once the area has been stabilized.
- L. Stabilized construction exits should be inspected regularly (at least as often as required by the General Permit). The stabilized construction exit must be maintained in a condition that prevents tracking or flow of sediment onto paved surfaces. Periodic re-grading and top dressing with additional stone must be done to keep the efficiency of the exit from diminishing. The rock must be re-graded when ruts appear. Additional rock must be added when soil is showing through the rock surface. Additional controls are needed if inspections reveal a properly installed and maintained exit, but tracking of soil outside the construction area is still evident. Additional controls may be daily sweeping of all soil spilled, dropped, or tracked onto public rights-of-way or the installation of a wheel cleaning system.

3.04 FIELD QUALITY CONTROL

- A. In the event of conflict between the specified requirements and stormwater pollution control laws, rules, or regulations or other local, state, or federal agencies, the more restrictive laws, rules, or regulations will apply.

3.05 SCHEDULES

- A. Prior to start of construction, submit schedules to the OPT for accomplishment of temporary and permanent erosion control work in connection with required clearing and grubbing, grading, construction, and paving. Include a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials in the submittal.

END OF SECTION

01 70 00 EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Comply with requirements of the General Conditions and specified administrative procedures in closing out the Contract.

1.02 DOCUMENTATION

- A. Submit affidavits and releases on forms provided by the Construction Manager **through the PMIS.**

1.03 SUBSTANTIAL COMPLETION

- A. The following requirements must be met for the Project or a designated portion of the Work to be Substantially Complete per the General Conditions:
 - 1. Work must be fully functional and able to operate in accordance with the Contract Documents without special or extraordinary efforts on the part of the Owner.
 - 2. The following items may remain incomplete in accordance with the Contract Documents:
 - a. **Removal of erosion control devices (silt fence, rock filter dam, etc.)**
 - b. **Vegetation established per specifications**
- B. Conduct inspections with superintendent, Subcontractors, and Suppliers for the Work or a designated portion of the Work prior to calling for a Substantial Completion inspection by the OPT. Create a list of deficiencies in the Work that must be completed for the Project to qualify for Substantial Completion. Review the list with the Construction Manager or the designated member of the OPT. The Construction Manager or the designated member of the OPT may assist the Contractor with this effort; however, it is the Contractor's responsibility to create and manage this list of deficiencies until corrections are made.
- C. Correct the identified deficiencies prior to calling for a Substantial Completion inspection.
- D. Notify the Construction Manager that the Work or a designated portion of the Work is Substantially Complete per the General Conditions. Include a list of the items remaining to be completed or corrected before the Project will be considered for Final Completion.
- E. OPT will visit the Site to observe the Work within a reasonable time after notification is received to determine the status of the Project.
- F. Construction Manager will notify the Contractor that the Work is either Substantially Complete or that additional Work must be performed before the Project will be considered Substantially Complete.
 - 1. Construction Manager will notify the Contractor of items that must be completed before the Project will be considered Substantially Complete.
 - 2. Correct the noted deficiencies in the Work.

3. Notify the Construction Manager when the items of Work in the Construction Manager's notice have been completed.
4. OPT will revisit the Site and repeat the process.
5. Construction Manager will issue a Certificate of Substantial Completion to the Contractor when the OPT considers the Project to be Substantially Complete. The certificate will include a tentative list of items to be corrected before Final Payment will be recommended.
6. Review the list and notify the Construction Manager of any objections to items on the list within 10 days after receiving the Certificate of Substantial Completion.

1.04 TRANSFER OF UTILITIES

- A. Transfer utilities to the Owner when the Certificate of Substantial Completion has been issued.
- B. Submit final meter readings for utilities and similar data as of the date the Owner occupied the Work.

1.05 CLOSEOUT REQUIREMENTS

- A. Provide the following before Final Completion:
 1. Record Documents per Section 01 31 13 "Project Administration";
 2. Keys and keying schedule;
 3. Warranties, bonds, and service agreements;
 4. Equipment Installation Reports;
 5. Shop Drawings, Product Data, operation and maintenance manuals, and other documentation required by the Contract Documents;
 6. Specified spare parts and special tools;
 7. Certificates of occupancy, operating certificates, or other similar releases required to allow the Owner unrestricted use of the Work and access to services and utilities;
 8. Evidence of continuing insurance and bond coverage as required by the Contract Documents; and
 9. Final videos and photographs per Section 01 33 06 "Graphic Documentation."

1.06 WARRANTIES, BONDS, AND SERVICES AGREEMENTS

- A. Provide warranties, bonds, and service agreements required by Section 01 33 00 "Document Management" or by the individual Sections of the Specifications.
- B. The date for the start of warranties, bonds, and service agreements is established per the General Conditions.
- C. Compile warranties, bonds, and service agreements and review these documents for compliance with the Contract Documents.
 1. Each document is to be signed by the respective Supplier or Subcontractor.

2. Each document is to include:
 - a. The product or Work item description;
 - b. The firm name, with the name of the principal, address, and telephone number;
 - c. Scope of warranty, bond, or services agreement;
 - d. Date, duration, and expiration date for each warranty bond and service agreement;
 - e. Procedures to be followed in the event of a failure; and
 - f. Specific instances that might invalidate the warranty or bond.
- D. Submit digital copies of the documents to the Construction Manager for review.
- E. Submit warranties, bonds, and services agreements within 10 days after equipment or components placed in service.

1.07 FINAL COMPLETION

- A. Conduct inspections with Superintendent, Subcontractors, and Suppliers prior to calling for a Final Completion inspection by the OPT. Create a list of deficiencies in the Work that must be completed for the Project to qualify for the Final Completion inspection. Review the list with the Construction Manager or the designated member of the OPT. The Construction Manager or the designated member of the OPT may assist the Contractor with this effort; however, it is the Contractor's responsibility to create and manage this list of deficiencies until corrections are made.
- B. Identify, list, and correct deficiencies prior to calling for a Final Completion inspection. The Project at the call for Final Completion represents the Contractor's interpretation of a project completed in conformance with the Contract Documents and reflects the Contractor's representation of a quality project meeting the Owner's expectations.
- C. Notify the Construction Manager when:
 1. Work has been completed and complies with the Contract Documents;
 2. Equipment and systems have been tested per the Contract Documents and are fully operational;
 3. Final operation and maintenance manuals have been provided to the Owner and all operator training has been completed;
 4. Specified spare parts and special tools have been provided;
 5. Work is complete and ready for final inspection;
 6. Final documentation for all outstanding Modifications and Claims (other than those listed on the Certificate of Final Completion) have been processed and are ready for incorporation into the final Application for Payment; and
 7. Closeout requirements in Paragraph **[1.05]** have been completed.
- D. OPT will visit the Site to determine if the Project is complete and ready for final payment within a reasonable time after the notice is received.

- E. Construction Manager will notify the Contractor that the Project is complete or will notify the Contractor that Work is Defective.
- F. Take immediate steps to correct Defective Work. Notify the Construction Manager when Defective Work has corrected. OPT will visit the Site to determine if the Project is complete and the Work is acceptable. Construction Manager will issue a Certificate of Final Completion to the Contractor when the Project is complete or will notify the Contractor that Work is Defective.
- G. Submit the request for final payment with closeout documentation described in Paragraph **[1.06]** if notified that the Project is complete and the Work is acceptable.

1.08 REINSPECTION FEES

- A. Owner may impose a set-off against the Application for Payment in accordance with the General Conditions to compensate the OPT for additional visits to the Project if additional Work is required.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 74 23 FINAL CLEANING

PART 1 - GENERAL

1.01 SUMMARY

- A. Perform a thorough cleaning of the Site, buildings, or other structures prior to Owner occupancy and use of the site and/or buildings, and prior to Final Completion. Leave the Project area and when applicable buildings clean and ready for use and occupancy.

1.02 DOCUMENTATION

- A. Provide data for maintenance per Section 01 33 04 "Operation and Maintenance Data."

1.03 QUALITY CONTROL

- A. Use experienced workmen or professional cleaners for final cleaning.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Furnish the labor and products needed for cleaning and finishing as recommended by the manufacturer of the surface material being cleaned.
- B. Use cleaning products only on the surfaces recommended by the Supplier.
- C. Use only those cleaning products which will not create hazards to health or property, and which will not damage surfaces.

PART 3 - EXECUTION

3.01 FINAL CLEANING

- A. Thoroughly clean the entire Site and make ready for occupancy.
 - 1. Remove construction debris, boxes, and trash from the Site.
 - 2. Remove construction storage sheds and field offices.
 - 3. Restore grade to match surrounding condition and remove excess dirt.
 - 4. Sweep all drives and parking lots clean of dirt and debris. Use water trucks or hose down paved site to like new appearance.
- B. Clean floors and inspect for damage.
 - 1. Remove oil, grease, paint drippings, and other contaminants from floors, then mop repeatedly until thoroughly clean. Replace damaged flooring.
 - 2. Clean resilient flooring with an approved cleaner and provide one coat of liquid floor polish as recommended by the flooring manufacturer. Polish to a buffed appearance with powered floor buffer.
 - 3. Vacuum all carpets with powered floor sweeper to remove dirt and dust. Remove glue or other substances from nap of carpet.

- C. Clean and polish inside and outside glass surfaces. Wash with window cleaner and water, apply a coat of high quality glass polish, and wipe clean. Do not scratch or otherwise mar glass surfaces.
- D. Clean wall surfaces to remove dirt or scuff marks. Remove excess adhesive along top edges of wall base. Remove adhesive from surfaces of vinyl wall coverings.
- E. Align ceiling tile to fit properly in grid and replace cracked or damaged tile. Remove smear marks and other dirt from tile and clean surface of grid system.
- F. Spot paint nicks and other damage. Repaint the wall from inside corner to inside corner if spot-painting does not blend into the existing color and texture of the surrounding surfaces. Touch up damaged surfaces on factory finished equipment using special paint furnished by the manufacturer.
- G. Clean plumbing fixtures, valves, and trim. Clean toilet seats and covers. Remove labels and adhesive from fixtures. Remove floor drains and clean baskets or buckets. Polish strainers and exposed chrome or brass.
- H. Remove dirt, oil, grease, dust, and other contaminants from floors, equipment, and apparatus in mechanical and electrical rooms.
- I. Clean and polish ceramic tile floors and wall surfaces to remove mildew or other stains. Tuck point defective joints.
- J. Inspect exterior painted surfaces. Spot paint any damaged surfaces.
- K. Clean permanent filters and replace disposable filters on heating, ventilating, and air conditioning systems. Clean ducts, blowers, and coils if units were operated without filters during construction.
- L. Clean roof areas of debris; flush roof drainage systems with water until clear.
- M. Broom clean exterior paved surfaces and rake clean other surfaces of the grounds.
- N. Clean and polish all electrical equipment and exposed conduits. Remove paint or cement overspray. Provide a blemish free appearance on all exposed equipment and conduits.

END OF SECTION

31 23 33 TRENCHING AND BACKFILL

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to perform operations in trenching, pipe bedding, backfilling, clearing, grubbing and site preparation; handling, storage, transportation and disposal of excavated material; pumping and dewatering; preparation of subgrades; protection of adjacent property; fills, grading; and other appurtenant work. Trenching, backfilling, and pipe embedment procedures shall be in full compliance with Section 31 23 33.14 "Trench Safety." Earth removed from excavations and which is not required for backfill shall be removed from the Site by the Contractor at his own expense, unless arrangements are made with the Owner through his representative to allow disposal on Site. If permitted, the Contractor shall dump and spread excess earth in a manner agreed upon by the Contractor and the Owner. Excavations, other than trench excavation, are not part of this Section.

1.02 QUALITY ASSURANCE

- A. Classification:
 - 1. Excavations shall include material of whatever nature encountered, including but not limited to clays, sands, gravels, conglomeritic boulders, weathered clay shales, rock, debris and abandoned existing structures. Excavation and trenching shall include the removal and subsequent handling of materials excavated or otherwise handled in the performance of the Work.
 - 2. Bidders must satisfy themselves as to the actual existing subsurface conditions prior to the submittal of a proposal to complete the proposed Work.
 - 3. Trench excavation shall consist of excavation to the lines and grades indicated, required for installation of the pipe, pipe bedding, backfill, and to accommodate trench safety systems.

1.03 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:
 - 1. Sieve analysis on embedment materials
 - 2. Test results indicating soil resistivity for embedment material used on metal pipe

1.04 REFERENCE SPECIFICATIONS

- A. Section 01 33 00 "Submittal Procedures"
- B. Section 31 23 33.14 "Trench Safety"

1.05 STANDARDS

- A. The following publications, referred to hereafter by basic designation only, form a part of this Section to the extent indicated by the references thereto:

1. American Society for Testing and Materials (ASTM) Standards:

ASTM C33	Standard Specification for Concrete Aggregates
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C125	Standard Terminology Relating to Concrete and Concrete Aggregates
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C535	Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM D448	Standard Classification for Size of Aggregate for Road Bridge Construction
ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lb/ft ³ (600 kN-m/m ³))
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D2487	Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D4253	Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
ASTM D4254	Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
ASTM D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-aggregate by Nuclear Methods (Shallow Depth)
ASTM G57	Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method

- B. Any other testing required by these specifications and not specifically referenced to a standard shall be performed under ASTM or other appropriate standards as designated by the Engineer.
- C. Reference herein or on the Drawings to soil classifications shall be understood to be according to ASTM D2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

1.06 DELIVERY AND STORAGE

- A. Excavated materials to be used for backfill may be deposited in stockpiles at points convenient for rehandling the material during the backfilling process. The location of stockpiles shall be within the limits of construction easements or public right-of-way. The location of stockpiles is subject to the approval of the Owner or the Owner's representative. Keep drainage channels clear of stockpiled materials.

1.07 JOB CONDITIONS

- A. Place no embedment or backfill material during freezing weather or upon frozen subgrades or previously placed frozen embedment or backfill materials.

2.00 PRODUCTS

2.01 MATERIALS

- A. Concrete for Backfill, Blocking, Cradling and Encasement: Unless other strength requirements are designated, concrete used shall be 1500 psi as specified in Section 03 30 53 "Miscellaneous Cast-In-Place Concrete."
- B. Class 1 Earth Fill: Limited to clays and sandy clays classified as CH material with a liquid limit greater than or equal to 50, a plasticity index greater than or equal to 25, and a minimum of 60 percent passing the No. 200 sieve, which are free of organic materials.
- C. Class 3 Earth Fill: Consist of any materials classified as CH, CL, SM, SP, SP-SM, SC, and GC, which have a minimum plasticity index of 4, which are free of organic materials.
- D. Class 12 Earth Fill: Consist of soils suitable for topsoil which are relatively free of stones or other objectionable debris, which have sufficient humus content to readily support vegetative growth. The suitability of soils for topsoil shall be subject to the approval of the Engineer.
- E. Class 3 Aggregate Fill: Composed of durable particles of crushed stone, angular, tough durable particles, free from thin, flat and elongated pieces of silt, clay, or other unsuitable materials and have a percentage of wear of not more than 40 percent when tested in accordance with ASTM C131 or C535. When material is subjected to five cycles of the sodium sulfate soundness test in accordance with ASTM C88, Sodium Sulfate Solution, the weighted percentage of loss shall not exceed 12 percent. The source of the material shall be approved by the Engineer and meet the following gradation in accordance with ASTM D448, size number 7:

Sieve Size Square Opening	Percent Passing
3/4"	100
1/2"	90-100
3/8"	40-70
No. 4	0-15
No. 8	0-5

- F. Class 10 Aggregate Fill: Consists of washed and screened natural sands or sands manufactured by crushing stones complying with the requirements and tests of "Standard Specifications for Concrete Aggregates", ASTM C33. The gradation as included in ASTM C33 is as follows:

Sieve Size Square Opening	Percent Passing
3/8"	100
No. 4	95-100

Sieve Size Square Opening	Percent Passing
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10

1. Class 10 Aggregate Fill shall have not more than 45 percent passing any sieve and retained on the next consecutive sieve of those shown above, and its fineness modulus, as defined in ASTM C125, shall be not less than 2.3 nor more than 3.1.

G. Cement: Type I Portland Cement.

H. Flowable Fill: Flowable fill shall be in accordance with Section 31 23 23.33 "Flowable Fill."

I. Modified Flowable Fill: Modified flowable backfill in areas of possible future excavation shall consist of a mixture of native soils or manufactured materials, cement and/or fly ash, air entraining material and water which produces a material with unconfined compressive strength of between 250 and 450 psi after 28 days. Any materials used shall be primarily granular, with a plasticity index less than 12 and with 100 percent passing a 3/4-inch sieve. The flowable mixture shall be mixed in a pug mill, concrete mixer, or transit mixer and shall have a minimum slump of 5 inches. The flowable mixture must be allowed to set prior to the placement of any overlying materials. Modified flowable backfill in permanent areas such as abandoned pipe closures shall contain the same materials and have an unconfined compressive strength greater than 250 psi after 28 days.

J. Utility Detection Tape: Utility pipe detection tape, green in color for sewer, blue in color for water, with black non-degradable printing reading "CAUTION SANITARY SEWER LINE BURIED BELOW" or "CAUTION WATER LINE BURIED BELOW" shall be installed over all PVC, HDPE, or fiberglass pipelines 8 inches and larger. The tape shall be bright-colored, continuous-printed plasticized aluminum tape, intended for direct-burial service; not less than 6 inches wide by 5 mils thick. Detection tape must be installed above the pipe zone, 12 inches above pipe.

2.02 MIXES; SAND-CEMENT BACKFILL

A. A minimum sand and cement mixture of 25 parts sand and 2 parts cement will be required.

1. Fine Sand: 25 Cubic Feet
2. Cement: 2 Bags (minimum)
3. Water: Optimum moisture

B. Sand shall be free of any cohesive material and shall meet the following gradation and plasticity index requirements:

Sieve Size	Percent Passing
1"	100
1/2"	95-100

Sieve Size	Percent Passing
No. 40	80-100

C. PI and LL Amounts:

1. Plasticity Index: 10 Maximum
2. Liquid Limit: 25 or less

3.00 EXECUTION

3.01 PREPARATION

A. Site:

1. Clear sites of logs, trees, roots, brush, tree trimmings and other objectionable materials and debris which are to be occupied by pipe trenches, and grub stumps. Designate material not salvaged for reuse as surface material as spoiled and dispose of material in accordance with Paragraph 3.01.E, Disposal of Spoil Material.
2. Do not remove trees outside of the required working area unless their removal is authorized in writing by the Engineer and with the approval of the local governing authority. Adequately protect the trees left standing from permanent damage by construction operations. Standing trees may be trimmed where necessary to facilitate construction, but only with written authorization from the Engineer.

B. Dewatering:

1. Provide and maintain adequate dewatering equipment to remove and dispose of surface and ground water entering the excavations, trenches, or other parts of the Work. Keep each excavation dry during subgrade preparation and continually thereafter until the proposed pipe is installed. Maintain the proper procedures necessary to protect against damage to the proposed Work from hydrostatic pressure, flotation, or other water related causes.
2. Dewater excavations which extend down to or below ground water elevation by lowering and keeping the ground water level a minimum of 2 feet below the bottom of the excavation.
3. Divert surface water or otherwise prevent water from entering excavated areas to the fullest extent possible without causing damage to adjacent property.
4. Provide and maintain any piping or conduit necessary to facilitate drainage. Do not alter area drainage patterns to the extent that adjacent property and landowners become threatened with localized flooding and/or water damage. Should such a situation occur, the Contractor shall be responsible for repairing the damage at no additional cost to the Owner.

C. Protection of Existing Structures and Utilities:

1. Prior to the start of construction, communicate with the representatives of the local utility companies, including the oil, gas, telephone and communications companies, and local water and sewer utilities operating in the location of the proposed construction area. Seek the utility companies' assistance in locating existing facilities to avoid

conflicts during construction. The location, number, depth, and owner of utilities indicated are for information purposes only, and all utilities and structures may not be shown or may not be in the location shown.

2. Where construction endangers adjacent structures, utilities, embankments and/or roadways, the Contractor shall, at this own expense, carefully support and protect such structures so that no damage occurs throughout the construction process. In case damage should occur, the Contractor shall be responsible for restoring the damaged structure to a condition acceptable to the Owner of that structure and shall bear all cost of such reparations.
 3. Repair or replace damaged street surfaces, driveways, sidewalks, curbs, gutters, fences, drainage structures, or other such facilities to the satisfaction of the Owner. Structures shall be returned to a condition equal to or better than the original condition and of same or better material and quality.
- D. Blasting: Blasting shall not be allowed in any instance.
- E. Disposal of Spoil Material:
1. Suitable material from excavations which meets the requirements for pipe backfill material as indicated, except stripping excavation, may be reused. Designate the remaining excavated materials as spoiled material and dispose of material off the Site in accordance with all applicable laws, ordinances, and codes. Contractor shall be responsible for the storage, transportation, and deposition of spoiled material and shall be responsible for acquiring the necessary permits, and the payment of fees and duties at no additional cost to the Owner.
 2. No burning of materials shall be permitted on the Site.

3.02 TRENCH EXCAVATION

- A. General: The trenches shall be excavated to the alignment and depth indicated or as necessary for the proper installation of the pipe and appurtenances. Brace and dewater the trench if necessary so that the workmen may work therein safely and efficiently. Any specific requirement listed in Paragraph 3.00, Execution, may be modified as necessary to meet OSHA requirements. However, if trench widths are wider than indicated, the Contractor shall be responsible for determining and furnishing the proper class of embedment and piping for the installation with no additional compensation to the Contractor.
- B. Trench Width: The trench widths shall be as shown on the Drawings.
- C. Pipe Foundation Subgrade:
1. Excavate the trench to an even grade to permit the installation of the pipe so that the full length of the pipe barrel is supported on the proper depth of bedding material. The entire foundation subgrade area in the bottom of the excavations shall be firm, stable material, and the material shall not be disturbed below required grade except as described in this Section. Where the character of the subgrade material is such that proper subgrade cannot be obtained at the elevation indicated, deepen the excavation to a satisfactory subgrade material.

2. Remove the material until a firm, stable, and uniform bearing is reached and the subgrade brought back to the required grade with the specified bedding material compacted in place or with lean concrete material. The expense of replacing any unsatisfactory subgrade shall be borne by the Contractor.
- D. Correcting Faulty Grade: Should any part of the trench be excavated below required grade, correct the trench with bedding material, thoroughly compacted, or with lean concrete, at no additional compensation to the Contractor.
- E. Care of Surface Material for Reuse: If local conditions permit reuse, keep surface material suitable for reuse separate from the general excavation material.
- F. Trenching Methods: The use of any suitable trench digging machinery is permitted except in places where such operations may cause damage, above or below ground, in which case, employ hand methods.
- G. Pipe Clearance in Rock: Remove ledge rock, rock fragments, shale, or other rock to provide proper clearance for bedding materials. Provide adequate clearance for properly jointing pipe laid in rock trenches at bell holes.

3.03 BACKFILL

- A. Bedding within Pipe Zone:
 1. Concrete Cradle, Encasement or Concrete Arch: Where indicated, install the pipe in concrete cradle, encasement, or concrete arch. Take precautions to prevent pipe movement or deflection during construction. Where pipes are placed below structures, completely encase pipes in 1500 psi concrete, and extend up to bottom of structure.
 2. Concrete Blocking: Place blocking to rest against firm undisturbed trench walls. The supporting area for each block shall be at least as great as that indicated and shall be sufficient to withstand the thrust, including water hammer, which may develop. Each block shall rest on a firm undisturbed foundation of trench sides and bottom.
- B. Aggregate Fill Bedding:
 1. After the trench has been cut to the depths indicated, bring up the bedding layer to a point slightly above grade in maximum 4-inch lifts and uniformly compact to the density indicated. Form bell holes and scoop out a trough to grade so that the pipe is uniformly supported by the embedment material. Lay and joint the pipe. Bring up the embedment material in maximum 4-inch lifts on either side of the pipe to the elevation above the pipe shown on the Drawings. Uniformly compact the pipe as indicated.
 2. After moisture is gone from the embedment material, place utility detection tape and backfill and compact the remaining backfill by tamping or other appropriate methods. Water jetting shall not be permitted.
 3. Install utility detection tape and tracer wire.
- C. Compaction Requirements:
 1. Compact earth fill and cohesive aggregate fill in maximum 4-inch lifts with pneumatic rollers or power hand tampers and make a minimum of eight passes.

2. Compact cohesionless aggregate fill in maximum 4-inch lifts with vibratory rollers or vibratory plate power hand compactors and make a minimum of eight passes.
3. The acceptability of the compaction equipment shall be based upon the results of a test section. Compact earth fill and cohesive aggregate fill to a minimum of 95 percent of maximum dry density as determined by ASTM D698, Standard Proctor.
4. Compact Class 1 and 2 earth fill at a moisture content within minus 0 to plus 5 percentage points of the optimum moisture content. Compact the remaining classes of earth fill and cohesive aggregate fill at a moisture content within minus 2 to plus 5 percentage points of optimum moisture content. The moisture ranges listed above are minimum and maximum limits. A tighter moisture range within these limits may be required to consistently achieve the specified density.
5. Compact cohesionless aggregate fill on which it is not practical to control the density by "Proctor" methods to a minimum of 75 percent relative density as determined by ASTM D4253 and D 4254, or at the discretion of the Engineer, by a field compaction mold method correlated to ASTM D4253 and D 4254.
6. Compact cohesionless aggregate fill at a moisture content within a range that accommodates consistent placement and compaction to the minimum relative density specified above.
7. The Owner will arrange and pay for density and moisture testing. The testing frequency and methods shall be as requested by the Engineer. The Engineer may waive testing requirements on cohesionless bedding where testing is not practical because of limited space between the pipe and trench walls, however, the minimum number of passes of the compaction equipment specified above shall be achieved.

3.04 FINISHING

- A. Grade and rake areas smooth and even which do not receive any type of paved surface, to allow drainage to drain away from the structures and toward the roads and streets or the natural drainage course. Break up large clods of earth and remove rocks, trash or debris near the surface.
- B. Finish the top portion of backfill beneath established sodded (lawn) areas with not less than 6 inches of topsoil corresponding to, or better than, that underlying adjoining sodded areas.

3.05 FIELD QUALITY CONTROL

- A. Compact backfill and appropriate embedment material to a minimum of 95 percent of maximum density at a moisture content of 0 to plus 5 percent of optimum for backfill and at optimum for sand-cement embedment as determined by ASTM D698, Standard Proctor.
- B. Make periodic tests of compaction every 100' for conformance with this Section by an approved testing laboratory selected and paid for by the Owner. Contractor shall pay for re-testing until acceptable test results are obtained.

3.06 CLEAN AND ADJUST

- A. Remove surplus pipeline materials, tools, rubbish and temporary structures and leave the construction site clean, to the satisfaction of the Engineer.

END OF SECTION

31 23 33.14 TRENCH SAFETY

1.00 GENERAL

1.01 WORK INCLUDED

- A. This specification consists of the basic requirements which the Contractor must comply with in order to provide for the safety and health of workers in a trench. This specification is for the purpose of providing minimum performance specifications, and the Contractor shall develop, design, and implement the trench safety system. The Contractor shall bear the sole responsibility for the adequacy of the trench safety system and providing “a safe place to work” for the workman.
- B. Should the trench safety protection system require wider trenches than specified elsewhere, the Contractor shall be responsible for the costs associated with determining adequacy of pipe bedding and class, as well as, purchase and installation of alternate materials.

1.02 STANDARDS

- A. The following standard shall be the minimum governing requirement of this specification and is hereby made a part of this specification as if written in its entirety.
 - 1. Occupational Safety and Health Standards - Excavations (29CFR Part 1926), U.S. Department of Labor, latest edition.
- B. Comply with the applicable Federal, State, and local rules, regulations, and ordinances.

2.00 PRODUCTS (NOT APPLICABLE)

3.00 EXECUTION (NOT APPLICABLE)

END OF SECTION

33 05 01.09 POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND FITTINGS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to install polyvinyl chloride (PVC) pressure pipe, appurtenances, and fittings to the diameters indicated for water supply and wastewater pressure piping. Trenching, backfilling, and pipe embedment shall be in accordance with Section 31 23 33 "Trenching and Backfill."

1.02 QUALITY ASSURANCE

- A. Certification: Domestic water piping shall be approved by the Underwriters Laboratory and shall be accepted by the State Fire Insurance Commission for use in water distribution systems. PVC water pipe shall bear the seal of approval (or "NSF" mark) of the National Sanitation Foundation Testing Laboratory for potable water pipe.
- B. Design Criteria: The maximum allowable load for PVC pipe installations shall produce a maximum deflection of 4 percent.

1.03 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:
 - 1. Certified Test Reports from the Manufacturer's testing facility or an approved testing laboratory.
 - 2. Manufacturer's data on piping and jointing methods as Record Data.
 - 3. Thrust restraint lengths and lay schedule as Shop Drawing.

1.04 REFERENCE SPECIFICATIONS

- A. Section 01 33 00 "Submittal Procedures."
- B. Section 01 40 00 "Quality Requirements."
- C. Section 33 10 13 "Disinfecting of Water Utility Distribution."
- D. Section 31 23 33 "Trenching and Backfill."

1.05 STANDARDS

- A. The applicable provisions of the following standards shall apply as if written here in their entirety. PVC piping and fittings shall be in full compliance with the applicable standards and specifications for each type of plastic pipe involved. Pipe may be rejected for failure to comply with any requirement of this Section.

1. American Society for Testing and Materials (ASTM) Standards:

ASTM D1785	Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
ASTM D2464	Standard Specification for Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D2466	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings Schedule 40
ASTM D2467	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D2855	Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings
ASTM D3139	Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
ASTM F1674	Standard Test Method for Joint Restraint Products for Use with PVC Pipe

2. American Water Works Association (AWWA) Standards:

AWWA C104	Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water
AWWA C105	Polyethylene Encasement for Ductile-Iron Pipe Systems
AWWA C110	Ductile-Iron and Gray-Iron Fittings
AWWA C153	Ductile-Iron Compact Fittings
AWWA C605	Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water
AWWA C900	Poly Vinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 through 12 Inches for Water Transmission and Distribution
AWWA C905	Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 through 48 Inches for Water Transmission and Distribution

1.06 DELIVERY AND STORAGE

- A. Store PVC material so that there is no exposure to sunlight.

2.00 PRODUCTS

2.01 MATERIALS

- A. Pipe:

1. Four to 12 inches:

Class 305 (DR14) C900 with cast iron outside dimensions	Fire water lines, 305 psi rating
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2. Fourteen to 42 inches:

14" to 42" PR 165 (DR-25) C905 with cast Iron Outside dimensions	Large diameter transmission mains
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B. PVC Pressure Piping:

1. Smaller than 4 inches in size shall be Type 1, Grade 1, Polyvinyl Chloride, Schedule 40 pipe conforming to ASTM D1785.
2. For pipe 2 inches in diameter and smaller, joints shall be glued.
3. For pipe larger than 2 inches in diameter, joints shall be bell and spigot push-on type as specified in ASTM D3139.

C. Fittings: 3- through 12-inch cast iron and conforming to AWWA C110, American National Standard Specification for Gray Iron and Ductile Iron Fittings. Fittings smaller than 12 inches in diameter shall be of the short body design, ASA Class 250. Fittings for piping smaller than 3 inches shall be in accordance with ASTM D2466.

D. Thrust Restraint: Thrust restraint devices shall be Mega-lug or approved equal and shall be factory tested and pressure rated in accordance with ASTM F1674.

1. Joint restraint devices shall be designed specifically for use with PVC pipe of the joint type and pressure rating specified.
2. Restrained joints shall be used for a sufficient distance from each bend, tee, plug, valve or other fitting to resist thrust. which will be developed at the design pressure of the pipe. For the purposes of thrust restraint, working pressure shall be 305 psi, the pipe pressure class indicated on the plans.
3. The length of pipe with restrained joints to resist thrust forces shall be the sole responsibility of and determined by the Pipe Manufacturer using the following parameters:
 - a. Laying condition equal to AWWA C605 Type 3 bedding.
 - b. No thrust restraint contribution shall be allowed for pipe in casing.
 - c. Soil density = 100 pcf.

2.02 MARKINGS

- A. The Pipe Manufacturer shall mark the piping with the size and appropriate AWWA/ASTM Standard designations as applicable.

3.00 EXECUTION

3.01 INSTALLATION

- A. Install pipe, fittings, and specials to the lines and grades indicated. Begin installation at the main supply line valve and make connections where indicated.
- B. Excavate trenches where required to alignment and depth specified or as required for proper installation of pipe. Carefully lower pipe, fittings, and specials into the trench to avoid damage to the pipe and/or fittings. Take necessary precautions to protect pipe during backfilling operations. Replace any damaged pipe before it is buried. Keep the pipe clean during laying operations, and seal the pipe against the entrance of objects at the close of each operating day.

- C. Place thrust restraint fittings at bends, tees, crosses, valves, and plugs in the pipe line in accordance with approved Shop Drawing lay schedule and Paragraph 2.01.D.
- D. Buried ductile iron fittings shall be double wrapped in 8mm high density polyethylene encasement in accordance with AWWA C105, repair or replace encasements which have tears, rips or punctures in the polyethylene wrap.
- E. The minimum cover for 1- to 4-inch PVC piping shall be 36 inches. For 6-inch PVC piping and larger, the minimum cover shall be 48 inches.
- F. The following minimum horizontal clearances shall be maintained between crossing lines: Water line/new sanitary or reuse sewer line separation. When new sanitary sewers or reuse waterlines are installed, install lines no closer to potable waterlines than 9 feet in all directions. Wastewater lines that parallel potable waterlines must be installed in separate trenches. Where the 9-foot separation distance cannot be achieved, the following guidelines shall apply:
 - G. Where a sanitary sewer parallels a potable waterline, construct the sewer of PVC meeting ASTM specifications with a pressure rating for both the pipe and joints of 150 psi. The vertical separation shall be a minimum of 2 feet between outside diameters and the horizontal separation shall be a minimum of 4 feet between outside diameters. The wastewater line shall be located below the waterline.
 - H. Where a sanitary sewer line crosses a waterline, construct the sewer of PVC with a minimum pressure rating of 150 psi, an absolute minimum distance of 6 inches between outside diameters shall be maintained. In addition, the sewer shall be located below the waterline where possible and one length of the wastewater pipe shall be centered on the waterline.
 - I. Where a sewer crosses over a waterline construct all portions of the sewer within 9 feet of the waterline of PVC pipe with a pressure rating of at least 150 psi using appropriate adapters.
 - J. Solvent weld joints shall be in accordance with ASTM D2855, and shall be made generally as follows: cut square and smooth the ends of the plastic pipe and wipe clean. Apply primer and solvent cement to the outside of the pipe and the inside of the fitting socket with a small brush. Immediately push the coated surfaces snugly together and rotate the pipe approximately one-half turn to insure uniform distribution of the cement. Remove the excess cement by wiping. Cement shall be of type which welds plastic surfaces together. Cement shall be as recommended by the Pipe Manufacturer and shall be compatible with the chemical conveyed.
 - K. Push-on joints shall be in accordance with the manufacturer's instructions.
 - L. Joint lubricant shall be as recommended by the pipe manufacturer.

3.02 FIELD CONTROL HYDROSTATIC TESTING

- A. Test PVC pressure piping for leakage by a hydrostatic pressure test in accordance with Section 01 40 00 "Quality Requirements."

3.03 PURGING OF WATER LINES

- A. Purge, sterilize, and test the constructed water lines in accordance with Section 33 10 13 “Disinfecting of Water Utility Distribution.”
 - 1. During construction operations, maintain the installed surfaces of the system, which come in contact with the City’s water supply, in a sanitary condition.
 - 2. Every effort must be made to keep the inside of the pipe, fittings, and valves free of loose foreign matter.
 - 3. Should the Contractor’s carrier be required to transport potable water to the job site for main testing, sterilize tankage and piping, including pumps used to transport or transfer potable water into the main.
- B. When the entire pipeline or selected sections have been completed and are ready for use, disinfect the line or section according to the following procedures:

3.04 SERVICE CONNECTIONS

- A. Make service connections in accordance with AWWA Manual M23 “PVC Pipe - Design and Installation” and the instructions from the Manufacturer. Use a service clamp or saddle to connect 2-inch and smaller services to PVC pipe sizes 4 to 12 inches. Use a ductile iron tapped tee to connect 3-inch service connections.

3.05 FIELD QUALITY CONTROL

- A. Do not enclose or cover any Work until inspected.

END OF SECTION

33 10 13 DISINFECTING OF WATER UTILITY DISTRIBUTION

1.00 GENERAL

1.01 WORK INCLUDED

- A. Disinfect the facilities for pumping, storing, or conveying potable water to comply with the standards for potable water of the regulatory agency of jurisdiction. Potable water is defined as any water that has been filtered, disinfected or otherwise treated to the meet regulatory standards (in the water treatment plant this includes the inside surfaces of the filters).
- B. Disinfect piping systems that are used to convey water, solutions, or chemicals to the potable water facilities.
- C. Test water from the disinfected system per regulatory standards to verify that water is acceptable. Repeat procedure if tests do not meet standards.
- D. In accordance with Texas Commission on Environmental Quality (TCEQ) Chapter 290 regulations, disinfection must be performed when repairs are made to existing facilities and before new facilities are placed into service. When it is necessary to return the facility back to service as rapidly as possible, it is acceptable to increase the doses to 500 mg/l and the contact time reduced to 30 minutes. This Project will require the critical operations to be disinfected by 500 mg/l for 30 minutes followed by flushing prior to the sample being taken. The Owner will take the sample and have it tested. Contractor may also take a sample to be tested. Cost for failed tests and all associated re-disinfection, flushing shall be borne by the Contractor. Prior to the 30-minute test time, all new valves shall be fully closed and opened.

2.00 PRODUCTS

2.01 MATERIALS

- A. Liquid Chlorine: Meeting the requirements of AWWA B301.
- B. Calcium Hypochlorite: Meeting the requirements of AWWA B300.

3.00 EXECUTION

3.01 NEW FACILITIES

- A. New facilities shall be thoroughly disinfected in accordance with AWWA Standard C651 - Water Mains, C652 - Storage Facilities, C653 – Water Treatment Plants, and then flushed and sampled before being placed in service. Samples shall be collected and tested in accordance with the TCEQ Rules and Regulations, Chapter 290.
- B. During construction keep basins, pipe, fittings, equipment, and appurtenances free from dirt and debris.
 - 1. Clean basins thoroughly before disinfection.
 - 2. Seal the open ends of pipe with water-tight plugs when pipe is not being laid.

3. Pump water from trenches before removing the plug when water accumulates in the trench.
- C. Complete hydrostatic test of the line prior to disinfection.
- D. Wash the surfaces to be disinfected.
 1. Flush pipelines. The minimum quantity of water used for flushing must exceed the capacity of the line to ensure that clean water has traversed the entire length of pipe.
 2. Power wash the surfaces of basins and reservoirs using high pressure wash systems.
- E. Disinfect facilities per the following procedures of AWWA:
 1. Water Mains: C651 - latest revision.
 2. Water Storage Facilities: C652 - latest revision.
 3. Water Treatment Plants: C653 - latest revision.
- F. Fill the system with potable water. Test the water to see that it meets the requirements of the regulatory agency of jurisdiction for potable water. Monitor the system for 2 days. If water test fails to meet the prescribed standards, repeat the disinfection process until water meets quality standards for disinfection.

3.02 REPAIRS OR CONNECTIONS TO EXISTING LINES

- A. Clean and sterilize the interior surfaces of new piping, fittings, equipment, and appurtenances to be installed in an existing potable water system or connected to an existing system.
- B. Clean and sterilize the existing pipe or facilities for a minimum distance of 3 pipe diameters back from the ends of the pipe. Plug the ends of the line when work is not being performed on the pipe.
- C. Perform sterilization by swabbing each item with a concentrated chlorine solution.
 1. Each piece is to be disinfected prior to being assembled for installation in the existing pipe.
 2. Disinfect each piece just prior to assembly to help prevent re contamination.
 3. Plug the ends of the assembly until a new item is to be added to the assembly.
 4. Store disinfected materials on blocks to prevent contact with the ground.

3.03 DISPOSAL OF FLUSHING AND DISINFECTION WATER

- A. Chlorinated water used in flushing and disinfecting pipelines, storage tanks, or vessels prior to connection to the distribution system shall be disposed of by the Contractor in an acceptable manner. Chlorinated water must be “de-chlorinated” prior to disposal to eliminate adverse impacts to the surrounding environment. Water released to the environment shall meet all AWWA, EPA, and TCEQ regulatory requirements.
 1. The Contractor is responsible for complying with all of the applicable requirements of the TPDES General Permit TXG670000, issued by the TCEQ, regarding the discharge of hydrostatic test water.

2. Residual chlorine concentrations may be reduced using sulfur dioxide, sodium bisulfite, sodium sulfite, sodium thiosulfate, or ascorbic acid.
 3. The discharge must be to a splash pad or paved area, and may not be located within 300 feet of the intake for a domestic drinking water supply or 500 feet of any public or private water well.
 4. An effluent water sample must be taken during the first hour of discharge at a location immediately near the point of discharge, and collected prior to commingling with storm water, wastewater, or other flows.
 5. For discharges that extend beyond an hour in duration, a second sample must be taken of the last 10 percent of the effluent.
 6. Sampling protocol, sample containers, holding times, preservation methods, and analytical methods must follow the requirements set forth in the general permit.
 7. The effluent grab sample(s) must be analyzed for total residual chlorine by an accredited and certified laboratory.
 8. Any noncompliance that endangers human health or safety, or the environment must be reported to the TCEQ in accordance with the general permit.
 9. Any effluent violation which deviates from the permitted effluent limitation by more than 40 percent must be reported to the TCEQ in accordance with the general permit.
 10. The Contractor must record all hydrostatic test water sample results on an approved DMR (EPA Form 3320-1). These monitoring records shall be retained for a period of 3 years from the date of the record and be readily available for review by the TCEQ upon request. See attached form
- B. With the written permission of the Owner of the system, chlorinated water may be disposed of in a sanitary sewer system if one is available. In the case of larger pipelines and the larger volumes of water involved, the Contractor will not be permitted to use the sanitary sewer system for disposal even if one is available.

END OF SECTION

☐ Check here if No Discharge

NOTE: Read instructions before connecting this form

MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
			TO		

FACILITY LOCATION

PARAMETER	SAMPLE MEASUREMENT PERMIT	QUANTITY OR LOADING				QUALITY OR CONCENTRATION				NO. OF ANALYSIS	FREQUENCY OF ANALYSIS	SAMPLE TYPE			
		VALUE		UNITS		VALUE		UNITS							
		VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	VALUE	UNITS						
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NAME (TITLE, PRINCIPAL EXECUTIVE OFFICER)		1500 N. 1500th St, Suite 100, Phoenix, AZ 85007 1500 N. 1500th St, Suite 100, Phoenix, AZ 85007 1500 N. 1500th St, Suite 100, Phoenix, AZ 85007 1500 N. 1500th St, Suite 100, Phoenix, AZ 85007										TELEPHONE		DATE	
SIGNATURE AND POSITION		1500 N. 1500th St, Suite 100, Phoenix, AZ 85007 1500 N. 1500th St, Suite 100, Phoenix, AZ 85007 1500 N. 1500th St, Suite 100, Phoenix, AZ 85007 1500 N. 1500th St, Suite 100, Phoenix, AZ 85007										AREA / BARBERS		WEIGH / MP / PMW	
SIGNATURE AND POSITION		1500 N. 1500th St, Suite 100, Phoenix, AZ 85007 1500 N. 1500th St, Suite 100, Phoenix, AZ 85007 1500 N. 1500th St, Suite 100, Phoenix, AZ 85007 1500 N. 1500th St, Suite 100, Phoenix, AZ 85007										AREA / BARBERS		WEIGH / MP / PMW	

33 12 13 WATER SERVICE CONNECTIONS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to install service connections on existing and proposed water lines, including meter boxes, water service piping, fittings and all appurtenances.

1.02 GUARANTEE AND WARRANTY

- A. Manufacturer must warrant the equipment and materials furnished under this Section against defects in materials and workmanship and operational failure for the duration of the warranty period indicated in the Contract Documents.

1.03 SUBMITTALS

- A. Submittals must be in accordance with Section 01 33 00 "Document Management" and must include:
1. Record Data:
 - a. Submit manufacturer's data on materials furnished indicating compliance with this specification.
 - b. NSF/ANSI 61 certification for all materials.

1.04 STANDARDS

- A. The applicable provisions of the following standards must apply as if written here in their entirety:
- B. American Society for Testing and Materials (ASTM):

ASTM B88	Standard Specification for Seamless Copper Water Tube
ASTM A536	Standard Specification for Ductile Iron Castings
ASTM B584	Standard Specification for Copper Alloy Sand Castings for General Applications

- C. American Water Works Association (AWWA):

AWWA C800	Underground Service Line Valves and Fittings
M23	PVC Pipe-Design and Installation
M41	Ductile-Iron Pipe and Fittings

- D. NSF International (NSF) / American National Standards Institute (ANSI):

NSF/ANSI Standard 61	Drinking Water System Components
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2.00 PRODUCTS

2.01 SERVICE SADDLES

- A. Saddles must be in accordance with AWWA C800 standards.
- B. Saddle must be approved by the manufacturer for the pipe material to be tapped.
- C. Body must be ductile iron meeting ASTM A536 and be fusion bonded epoxy coated. Coating must be NSF 61 certified.
- D. Gasket must be NSF 61 certified EPDM.
- E. Saddle casting or body must be of a double band type. Bands must be a minimum of 18 gauge 304L stainless steel, with a minimum width of 3 inches per band.
- F. Hardware must be 304 stainless steel.
- G. Minimum working pressure must meet or exceed the maximum rated pressure of the piping material.
- H. Approved Manufacturers:
 - 1. Ford Meter Box Company, Inc.
 - 1. Mueller Co.
 - 2. Romac Industries, Inc.
 - 3. Smith-Blair, Inc.
 - 4. Approved Equal.

2.02 SERVICE LINE

- A. Diameters 3/4 through 2 inches:
 - 1. Copper tube meeting ASTM B88, Type “K” hard-drawn copper tubing.
 - 2. Copper fittings meeting ANSI B16.26; wrought-copper, compression type. Solder for sweated fittings must meet NSF/ANSI Standard 61.
- B. Sizes greater than 2 inches: Material must be as shown on the Drawings.
- C. Service lines must conform to NSF/ANSI Standard 61.

2.03 VALVES AND FITTINGS

- A. Corporation stops, ball straight stops and angle ball curb stops must meet AWWA C800, ASTM B88 and NSF/ANSI Standard 61.
- B. Valves must be 125 psi WSP, 200 psi WOG rated and identified on the valve body.
- C. Valve must have the manufacturer’s trademark and no lead (NL) permanently stamped or cast on the valve.
- D. Flared or compression fittings must meet AWWA C800 and NSF/ANSI Standard 61.
- E. All brass components in contact with potable water must be made from alloys in accordance with ASTM B584 with a maximum lead content of 0.25 percent by weight.

F. Approved Manufacturers:

1. Mueller Co.
2. The Ford Meter Box Company, Inc.
3. Approved Equal.

2.04 WATER METER CANS AND BOXES

A. For 5/8-inch through 1-inch diameter meters:

1. Meter Can:
 - a. Meter can must be round with dimensions of approximately 14 inches wide by 18 inches deep.
 - b. Can must be constructed of PVC with a +/- 2 inches base footing and +/- 2 inches lip molded into the top of the can.
 - c. Can must have PVC ribbing of some other type of structural support around the circumference of the can.
 - d. Can must be H20 load rated.
2. Lid:
 - a. Lid must be made of PVC.
 - b. Lid must be compatible with Automatic Meter Reading (AMR).
 - c. Lid must have a minimum 3/4-inch wide AMR mount measuring 8 inches by 5.5 inches to accommodate the AMR system.
 - d. Lid must be H20 load rated.
 - e. Lid must have S lock and S bolt installed.
 - f. Lid must have "Water" and "Name of City" molded into the lid.
3. Approved Manufacturer/Model:
 - a. DFW/Model DFW1814F-1SDA Star Seg.

B. For 1-1/2-inch through 2-inch diameter meters:

1. Meter Box:
 - a. Meter can must be rectangular with dimensions of approximately 14 inches wide by 16 inches long by 12 inches deep.
 - b. Box must be constructed of PVC with a +/- 2-inch base footing and +/-2-inch lip molded into the top of the can.
 - c. Box must be H20 load rated.
2. Lid:
 - a. Lid must be made of PVC.
 - b. Lid must be compatible with Automatic Meter Reading (AMR).

- c. Lid must have a minimum 3/4-inch wide AMR mount measuring 8 inches by 5.5 inches to accommodate the AMR system.
 - d. Lid must be H20 load rated.
 - e. Lid must have S lock and S bolt installed.
 - f. Lid must have “Water” and “Name of City” molded into the lid.
3. Approved Manufacturer/Model:
- a. DFW/Model 1324C-1SA.

3.00 EXECUTION

3.01 INSTALLATION

- A. Make service connections in accordance with AWWA M23/M41 and the instructions from the saddle manufacturer. Use a service clamp or saddle to connect 2-inch and smaller services to PVC pipe sizes 4 to 16 inches. Use a ductile iron tapped tee to connect 3-inch and larger service connections.
- B. Water service connections must consist of a corporation stop, curb stop, saddles, ball valves, tubing of appropriate length, service clamps when required and a meter box. Copper tubing must match the meter size on all service connections greater than or equal to 1-inch diameter.
- C. Contractor must field verify the required tubing lengths prior to construction.
- D. All service lines must have a minimum of 30 inches of cover from finished grade. Service lines must be embedded similar to the main water line.
- E. When installing service lines, a tracer wire must be installed and electrically connected to the main water line tracer wire. The electrical connection must be properly installed with a waterproof connection. The tracer wire must have at least 2 feet of slack within the meter box to allow connection to locate equipment. Termination will be made with a waterproof connector.
- F. Water service transfer must consist of transferring existing service lines to new service lines. Transfers must be made after the new service line has been put into service.
- G. Connections for copper service tubing must be completed using copper sweated or brass fittings. Union adaptors must be used at ends of copper lines and at connections to equipment so that piping can be disconnected without unsoldering joints.
- H. Before sweating copper joints, copper must be cleaned to bright metal with emery cloth and treated with flux meeting NSF/ANSI Standard 61.
- I. Copper may be attached via sweated flare or compression fittings.
- J. Service lines must be continuous and no splices will be allowed.
- K. Service lines which cross paved streets may be installed at the Contractor’s option by boring or jacking operations.
- L. Bending of tubing must be accomplished using bending tools. Kinks, dents, flats or crimps will not be permitted.

3.02 TAPS

- A. Taps must be in accordance with applicable AWWA standards.
- B. Taps must be placed at 45-degree angle position.
- C. All castings must be smooth, free from burrs, scales, blisters, sand holes, and defects of every nature which would make them unfit for the use in which they are intended.
- D. When more than one tap is necessary, the taps must be staggered at least 18 inches apart and not in a straight line.
- E. Taps must not be made on a curved sections of piping.

3.03 ABANDONMENT OF SERVICE LINES

- A. Contractor must cut, plug or cap existing service lines that are being replaced.
- B. Corporation stop for an abandoned service line tapped on a ferrous main must be removed, and the tap at the main be plugged with a brass plug. For a non-ferrous main, the corporation stop must not be removed from the main. Corporation stop must be closed and a flared cap must be installed on the corporation stop.

3.04 MARKING

- A. If there is a curb adjacent to the water service, the curb must be marked with the letter “W” in green paint at the point where the service pipe passed under the curb. “W” must be made with a stencil of size approved by the Owner. Paint must be as specified in Section 09 96 00 “High-Performance Coatings.”

3.05 FIELD QUALITY CONTROL

- A. Upon completion of installation of the equipment, an acceptance test to verify the satisfactory operation of each unit must be conducted. The test must be conducted in a manner approved by and in the presence of the OPT. The unit must be checked for general operation and leakage. The unit must perform in a manner acceptable to the OPT before final acceptance will be made.

END OF SECTION

33 39 13 SANITARY UTILITY SEWAGE MANHOLES, FRAMES AND COVERS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Provide labor, materials, equipment and incidentals necessary to construct manholes and cleanouts complete with covers, fittings, and other appurtenances, in accordance with the details and/or called out in the Drawings.

1.02 QUALITY ASSURANCE

- A. Polymer Concrete Manholes:
 - 1. Certification from manufacturer that polymer concrete manhole design meets or exceeds the load and strength requirements of ASTM C478 and ASTM C857, reinforced in accordance with ASTM C478 or ACI 440.1R.
 - 2. Proof of independent chemical resistance testing conducted in accordance with ASTM C267.
 - 3. Manufacturer must provide references of 10 previous polymer concrete projects including scope in the last 5 years performed with both the owner and contractor for reference and review.

1.03 SUBMITTALS

- A. Submittals must be in accordance with Section 01 33 00 “Document Management” and must include:
 - 1. Shop Drawings:
 - a. Drawings and data covering manhole sections. These drawings must include manhole designation matching the plans, invert elevations and diameters for each manhole.
 - b. Concrete batch mix for cast-in-place sections must be submitted as a Shop Drawing.
 - 2. Product Data:
 - a. Manhole cover and ring.
 - b. Engineer to include other products as specified.
 - 3. Polymer Concrete Manholes:
 - a. Certification from the manufacturer that polymer concrete manhole design meets or exceeds the load and strength requirements of ASTM C478 and ASTM C857, reinforced in accordance with ASTM C478 or ACI 440.1R.

1.04 STANDARDS

A. Applicable provisions of the following standards apply as if written here in their entirety:

1. ASTM International (ASTM) Standards:

ASTM A48	Specification for Gray Iron Castings
ASTM C267	Test Methods for Chemical Resistance of Mortars, Grouts, and Monolithic Surfacing and Polymer Concretes
ASTM C443	Standard Specification for Joints for Concrete Pipe and Manholes using Rubber Gaskets
ASTM C478	Specification for Precast Reinforced Concrete Manhole Sections
ASTM C497	Test Methods for Concrete Pipe, Manhole Sections, or Tile
ASTM C579	Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic, Surfacing, and Polymer Concretes
ASTM C857	Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
ASTM D2240	Test Method for Rubber Property - Durometer Hardness
ASTM C76	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
ASTM C33	Concrete Aggregates
ASTM C990	Specification for Joints for Concrete Pipe, Manholes and Precast Box Sections using Preformed Flexible Joint Sealants
ASTM C923	Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals
ASTM D6783	Specification for Polymer Concrete Pipe

2. American Concrete Institute (ACI) Standards:

ACI 440-1R-15	Guide for the Design and Construction of Structural Concrete Reinforced with Fiber-Reinforced Polymer (FRP) Bars
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3. American National Standards Institute (ANSI) Standards:

ANSI A21.10	American National Standard for Gray Iron and Ductile Iron Fittings, 3 through 48 Inches for Water and Other Liquids
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1.05 DELIVERY AND STORAGE

- A. Do not deliver precast concrete section to the Site until representative concrete control cylinders have attained a strength of at least 80 percent of the specified minimum.
- B. Inspect precast concrete sections upon delivery and reject any cracked or otherwise visibly defective units.

2.00 PRODUCTS

2.01 MATERIALS

A. Concrete and Mortar:

1. Concrete, mortar and non-shrink grout for all cast-in-place manholes and/or bases must be as specified in **Section 03 30 00 "Cast-In-Place Concrete.**
2. The minimum compressive strength for concrete is 3000 psi.

2.02 MANUFACTURED PRODUCTS

A. Precast Concrete Manholes:

1. Above the manhole base, manholes must be constructed with precast concrete rubber gasket sections in accordance with ASTM C478 pipe as detailed in the Drawings using materials as specified below.
2. Material must be a non-shrink, non-metallic cement-based grout.
3. Rubber Gaskets: Neoprene or other synthetic, 40 plus or minus 5 hardness when measured by ASTM D2240, Type A durometer.
4. Precast Cone: Precast cone must be concentric.
5. Manhole steps must not be furnished for wastewater manholes.
6. All ASTM C478 pipe must be machine made by a process that must provide for uniform placement of zero slump concrete in the form and compaction by mechanical devices which must assure a dense concrete in the finished product, except that reducer cones may be wet-cast.
7. Aggregates for the concrete must comply with the requirements of ASTM C33, with the additional requirement that the aggregate must have a minimum of 50 percent of calcium carbonate equivalent.
8. Minimum wall thicknesses for the manhole risers must be as listed under Wall "B" in the ASTM C76 "Class Tables."
9. Approved Manufacturers:
 - a. Rinker Materials.
 - b. CSR Hydroconduit.
 - c. Approved equal.

B. Polymer Concrete Manholes:

1. Riser Sections:
 - a. Provide base riser section with monolithic floors, unless shown otherwise in the Drawings.
 - b. Provide riser sections joined with bell and spigot/ship-lap design seamed with butyl mastic (ASTM C990) and or rubber gaskets (ASTM C443) so that on assembly, manhole base, riser and top section make a continuous and uniform manhole

structure. Joints shall meet the testing requirements without the use of an external joint wrap.

- c. Construct riser sections for polymer concrete manholes from standard polymer concrete manhole sections of the diameter indicated in the Drawings. Use various lengths of polymer concrete manhole sections in combination to provide the correct height with the fewest joints. Lifting inserts shall not fully penetrate the wall.
2. Resin: The manufacturer must use only polyester or vinyl ester resin systems designed for use with this particular application. Resin additives such as curing agents, pigments, dyes, fillers and thixotropic agents, when used, must not be detrimental to the manhole. Minimum resin content shall not be less than 7 percent by weight.
3. Aggregate: All aggregate, sand and quartz powder must meet the requirement of ASTM C33, where applicable. Limestone aggregates shall not be used.
4. Polymer concrete must have a minimum compressive strength of 9000 psi when measured in accordance with ASTM C497.
5. Elastomeric Gaskets: Gaskets must be suitable for the service intended and must meet the requirements of ASTM C443. Assembled joints shall meet the testing requirements of ASTM C443 without the use of an external joint wrap. Pipe to manhole connections shall be accomplished with connectors meeting ASTM C923 for both materials and performance requirements. Proof of connector testing can be requested from connector manufacturer.
6. Marking and Identification: Each manhole must be marked with the manufacturer's name and production date.
7. Invert Channel: Construct invert channels to provide smooth flow transition with minimal disruption of flow at pipe to manhole connections. Polymer bench and channel are to be constructed with all polymer concrete material. Extended ballast slab for buoyancy concerns can be addressed with cementitious concrete material.
8. Manholes must be reinforced per ASTM C478 or ACI 440.1R and designed to withstand all live loads and dead loads as described in the Drawings. Manhole wall thickness must be designed to resist hydrostatic pressures with a minimum safety factor of 2.0 for full depth conditions from grade to invert.
9. Materials needed for grouting and patching must be a polyester mortar compound provided by the manufacturer or as approved by the manufacturer.
10. Approved Manufacturers:
 - a. Armorock Polymer Concrete.
 - b. U.S. Composite Pipe, Inc. (a division of Thompson Pipe Group).
 - c. Approved equal.
- C. Metallic Manhole Rings and Covers:
 1. Manhole rings and covers must be made of gray iron castings, ASTM A48, Class No. 30.
 2. A minimum of four 316 stainless steel anchor bolts for the ring are required for the connection to manholes. A minimum of five stud bolts for anchoring of the waterproof lid must be of 316 stainless steel.

3. Castings must be clean, sound, and free of blow or sand holes or other defects.
 4. Lids must have pick slots.
 5. Minimum manhole ring and cover inside diameter (clear opening) is 30 inches.
 6. Ring depth must be a minimum of 6 inches.
 7. Lid and ring must be designed for HS-20 traffic loading.
 8. Water-tight lids must be bolted using 316 stainless steel bolts to ring with neoprene gaskets within flood plain areas and as indicated in the Drawings.
 9. Approved Manufacturers:
 - a. EJ.
 - b. Neenah Foundry, Co.
 - c. Calcutta Foundry, Ltd.
 - d. Shree Ram Foundry.
 - e. SIP Industrial Products, Ltd.
 - f. Victory Iron Works, Ltd.
 - g. Approved equal.
- D. Non-Metallic Manhole Rings and Covers:
1. All rings and covers must be made from high strength nonmetallic fiber reinforced polymer/composite materials. The material must be a resin thermoset matrix that can be reinforced with continuous filament engineered fabrics, fiber rovings, short fiber filaments, or equivalent nonmetallic reinforcing structure(s). Sealing gaskets must be bonded to the frame continuously at the interface with the cover to reduce wear, shock, noise, malodors and infiltration.
 2. Rings and covers intended for traffic service must be capable of withstanding AASHTO M306: Proof Testing (includes items such as frames, covers, etc.).
 3. Fabricate rings and covers to conform to shapes, dimensions, and with wording or logos shown in the Drawings.
 4. Molding Process:
 - a. Before the moldings are removed from the molding operation, they must be thoroughly de-flashed and cleaned at the parting lines, holes, notches and all exposed edges.
 - b. If using a lock or latch, these must be independent of the method used to open the cover to ensure the cover can be opened in the event of lock or latch failure.
 - c. Covers and frames must be compression molded under high pressures (>0.5 tons/sq. inch of x-y surface area) and high temperatures (>200 deg F).
 - d. Metal reinforcements or metal hinges molded within the composite will not be permitted. Small non-stress bearing pieces of metal may be encapsulated or attached.

5. All rings and covers must be molded and assembled in the United States in accordance with the requirements of AASHTO M306.
 6. Covers must be provided with a positive sealing mechanism utilizing 316 stainless steel hardware with nuts molded in or attached at pre-molded designated points of the frame and must be Teflon coated. Other equivalent locking mechanisms must be approved by the Engineer.
 7. Composite covers must be detectable by metal detectors.
 8. Composite covers must be furnished with two concealed pick holes molded with 316 stainless steel inserts. An additional 316 stainless steel lifting clip must be molded into the top of the cover to facilitate removal and replacement.
 9. Composite covers must have provisions for 316 stainless steel threaded inserts molded into the bottom surface to accommodate monitoring and remote transmission sensors and antenna utilized by the utility. Antenna placed on the bottom side must have the capability to transmit through the cover without the need to drill and install antenna on the upper surface.
 10. Markings: Covers and frames must have the following molded into the substrate of the cover:
 - a. Name (or abbreviation) of molder.
 - b. Country of origin.
 - c. Molding date.
 - d. Indication that material is non-metallic.
 11. Approved Manufacturers:
 - a. Composite Access Products, L.P.
 - b. Approved equal.
- E. Manhole Grade Adjustment Rings:
1. Concrete Manhole Grade Rings:
 - a. Grade adjustment rings must be pre-cast, reinforced concrete in conformance to ASTM C478.
 - b. Mortar concrete grade rings using 1 part Portland cement and 2 parts sand and sufficient potable water to produce a working mixture.
 - c. Coat all exposed concrete surfaces per 09 96 01 "Concrete Protective Coatings."
 2. HDPE and EPP Manhole Grade Rings:
 - a. Grade adjustment rings must be made of high-density polyethylene (HDPE) meeting ASTM D4976 or expanded polypropylene meeting ASTM D3575 and ASTM D4819-13.
 - b. Provide adhesive/sealant between each ring per the manufacturer's requirements.
 - c. Approved Manufacturers:
 - 1). Ladtech, Inc.

2). PRO-RING by Cretex Specialty Products.

F. Wastewater Manhole Internal Drop:

1. Internal drop for wastewater manholes must consist of a fiberglass reinforced resin bowl in combination with a PVC drop pipe.
2. Bowl and pipe must be attached to manhole using manufacturer provided 316 stainless steel hardware with epoxy anchors.
3. Drop pipe must be ASTM D3034, SDR35 PVC pipe.
4. Provide 316 stainless steel bracket extensions as required for manhole ID changes.
5. Approved Manufacturers:
 - a. Duran, Inc. – Reliner Drop Bowl.
 - b. Approved equal.

G. Cleanout Fittings:

1. Pipe fittings must be ductile iron and must conform to ANSI A21.10 with a minimum pressure rating of 250 psi.
2. The cleanout casting must conform to ASTM A48, Class 30.
3. Ductile iron fittings must be lined with factory installed Protecto 401 Ceramic Epoxy Lining by Induron or American Polybond Plus (fusion bonded epoxy and fusion bonded polyethylene) or an approved equal. Lining primers, applications and thicknesses must be in accordance with manufacturer's recommendations for sanitary sewer applications.

H. Pipe Connections:

1. Field connections to FRP manholes to pipe penetration must use a compression fit into the cored wall of the RFP liner and use stainless steel bands to secure the gasketed connection to the pipe.
2. Approved Manufacturers:
 - a. ADS – Insert-a-Tee.
 - b. Trelleborg – Kor-N-Seal.
 - c. Approved equal.

I. Manhole Vent:

1. Vent is to be constructed of aluminum with an epoxy powder coating that is resistant to hydrogen sulfide gases. Vent is to include 1/4-inch by 1/4-inch 316 stainless steel screen. All hardware is to be 316 stainless steel.
2. As indicated in the Drawings, provide vents equipped with an inverted check valve. Check valve must automatically seal the vent pipe to prevent inflow of water into the lines when submerged and automatically reset when not submerged. Float must be constructed of 316 stainless steel.
3. As indicated in the Drawings, provide vents equipped with odor control canisters equipped with filter media designed to scrub H2S odors.

4. Ductile iron pipe and fittings must be lined with factory installed Protecto 401 Ceramic Epoxy Lining by Enduron or American Polybond Plus (fusion bonded epoxy and fusion bonded polyethylene) or approved equal.
 5. Coat vents, valves, and above grade ductile iron pipe and fittings per 09 96 00 “High-Performance Coatings.”
 6. Approved Manufacturers:
 - a. Wager Company.
 - b. Approved equal.
- J. Manhole Cover Infiltration Insert:
1. The insert must be constructed of an HDPE or 316 stainless steel body with a neoprene gasket.
 2. Insert must be equipped with a manufacturer installed gas relief valve designed to release pressure within the manhole, with minimal water inflow back into the manhole.
 3. Insert must be equipped with a handle to allow for easy removal of the insert. All hardware must be 316 stainless steel.
 4. Approved Manufacturers:
 - a. Rainstopper.
 - b. Approved equal.
- K. Manhole Scrubber Insert:
1. Components must be manufactured from corrosion proof material suitable for atmospheres containing hydrogen sulphide and dilute sulphuric acid as well as other gases associated with wastewater collection systems and be filled with dry media capable of effective control of odors associated with such gases.
 2. The body must be made from Acrylonitrile Butadiene Styrene plastic that meets the Federal Standards of LP 1183 and can pass the following ASTM test requirements: D256, D638, D790, D792, D785, D648. The thickness must not be less than 3/32 inch nor greater than 6/32 inch. The body must be manufactured to the dimensions as shown in the Drawings to allow easy installation in the manhole frame.
 3. The gasket must be made of closed-cell Neoprene. The gasket must have a pressure sensitive adhesive on one side and be placed under the insert rim by the manufacturer. The adhesive must be compatible with the body material so as to form a long-lasting bond in either wet or dry conditions of use.
 4. The insert must have two lift straps attached to its body. Lift straps must be made of 1-inch width polyester nylon and must be seared on all cut ends to prevent unraveling or deterioration. Lift straps must be attached to insert body by means of a 3/16-inch stainless steel rivet.
 5. The insert media must remove H₂S and malodorous compounds from the air stream via H₂S Converting/Oxidizing/Polishing media. The H₂S converting/Oxidizing/Polishing media capacities must not be diminished by ambient humidity.

6. The manhole scrubber must be manufactured to fit the manhole frame rim from which it hangs.
 7. Approved Manufacturers:
 - a. Syneco Systems Incorporated – Peacemaker Manhole Scrubber.
 - b. Approved equal.
- L. Chimney Seals:
1. Chimney seals consist of a flexible internal or external rubber sleeve, interlocking extensions and stainless steel expansion bands.
 2. The seal must remain flexible, allowing repeated vertical movement of the frame of not less than 2 inches and/or repeated horizontal movements of not less than 1/2 inch.
 3. The sleeve portion of the seal must be either double or triple pleated with a minimum unexpanded vertical height of either 8 or 10 inches respectively. The sleeve and extension must have a minimum thickness of 3/16 inch and must be made from a high-quality rubber compound conforming to the applicable requirements of ASTM C923, with a minimum 1500-psi tensile strength, a maximum 18 percent compression set and a hardness (durometer) of 48 plus or minus 5.
 4. The bands must be integrally formed from 16 gauge stainless steel conforming to ASTM A240, Type 316, with no welded attachments, and must have a minimum adjustment range of 2 diameter inches and a positive locking mechanism.
 5. All hardware used for this mechanism must be 316 stainless steel.
 6. Product must have a minimum 25-year manufacturer's warranty.
 7. Approved Manufacturers:
 - a. Cretex Specialty Products.
 - b. Approved Equal.

3.00 EXECUTION

3.01 INSTALLATION

- A. Manhole Sizing: Manhole diameters are to be as indicated in the Drawings and as indicated below. If there is a conflict between the Drawings and these requirements, the larger manhole diameter will be required.
1. Pipe Diameters 18 Inches and Smaller: Provide 48-inch inside diameter manholes.
 2. Pipe Diameters greater than 18 inches and less than 30 Inches: Provide 60-inch inside diameter manholes.
 3. Pipe Diameters 30 Inches and Larger: Provide 72-inch inside diameter manholes.
- B. Foundation Support: Manholes must be founded on stable subgrade. Precast base units must be founded on a minimum 6-inch-thick layer of compacted coarse aggregate bedding. A pipe section with a prefabricated tee manhole and half the length of the adjoining pipe sections on each side must be founded on a minimum 6-inch layer of Class A concrete. The cradle is to extend to the trench walls and to the spring line of the pipe.

C. Manhole Base:

1. Tee Manhole Base: The applicable details as indicated in the Drawings apply. Form and place the base of the manholes under and around the existing carrier pipe to form a flat platform above the top of the pipe to receive the pre-cast circular manhole sections. After the manhole has been completed, entry to the pipe area must be made by saw-cutting a section from the top of the pipe. Any debris resulting from this operation must be completely removed from the interior of the pipe.
2. Precast Manhole Base: The applicable details as indicated in the Drawings apply. Place the manhole base at an elevation that allows the invert to match the pipe flowline.
 - a. The precast manhole base must form a watertight seal with the bottom of the manhole. This may be accomplished by placing a continuous 1-inch ring of epoxy grout or using a rubber gasket at the joint of the manhole and manhole base or other pre-approved methods.
3. Cast-in-place Manhole Base: The applicable details as indicated in the Drawings apply. Form and place the manhole base at an elevation that allows the invert to match the pipe flowline.

- D. Inverts: Construct invert channels to provide a smooth waterway with no disruption of flow at the connection between the pipe and manhole. The channel depth at the point where a pipe connects to the manhole wall, for pipes 24 inches in diameter and smaller, must be a minimum of $\frac{3}{4}$ of the diameter of the pipe, with the top of the channel being a smooth transition between the inlet and outlet pipe connections. For manholes connecting to larger pipe diameters, the channel depth must be equal to the full pipe diameter. Changes in flow direction must be constructed using smooth, long radius sweeps. Inlet and outlet pipe grades must be carried through the centerline of the manhole with a minimum slope of 2.5 percent between the inlet and outlet pipe inverts or 0.10 feet, whichever is greater. Where wastewater lines enter the manhole above the outlet flowline, the invert must be filleted to the flowline of the manhole.
- E. Manhole Rings and Covers: Securely anchor the base of the manhole ring into a 6-inch minimum thick precast concrete ring as indicated and set on top of concentric manhole cone as a unit.
- F. Non-Metallic Manhole Rings and Covers: Install composite frames and covers according to approved Shop Drawings, instructions in related specifications and details, and written installation instructions from manufacturer. Set units accurately at required locations to proper alignment and elevation. Keep units plumb, level, true, and free of trash. Measure location accurately from established lines and grades. Brace or anchor frames temporarily in form work until permanently set.
- G. All adjustments to the manhole lid and cover must be completed prior to the placement of final roadway surface and/or final grading.
- H. Cleanouts: Provide a cleanout at the ends of all sewer lines unless a manhole is provided at that point. Construct cleanouts in accordance with the details shown in the Drawings.
- I. Drop Manholes: Install a drop manhole piping assembly in all cases where the distance between the incoming pipe and the floor of the manhole is 2 feet or more. External drop assemblies must be encased in concrete as indicated in the Drawings.

3.02 GROUTING

- A. Use the mortar for grouting within 40 minutes after mixing. Discard mortar which has begun to take an initial set. Do not mix mortar with additional cement or new mortar.

3.03 CORROSION PROTECTION

- A. All exposed concrete surfaces on the interior of the manhole, including concrete grade rings must be coated as indicated in section 09 96 01 "Concrete Protective Coatings".
- B. If the manhole is to be in an area where water infiltration through the concrete is expected and/or if required by the interior lining being provided, install an exterior waterproofing coating.

3.04 FIELD QUALITY CONTROL

- A. Manhole Testing:
 - 1. Test manholes for leakage separately and independently of the wastewater lines by hydrostatic exfiltration testing, vacuum testing or other approved methods acceptable to TCEQ. Test manholes after installation with all connections (existing and /or proposed) in place. Plug lift holes with an approved non-shrink grout prior to testing. Install drop-connections and gas sealing connections prior to testing.
 - 2. Vacuum Test: Temporarily plug lines entering the manhole with the plugs braced to prevent them from being drawn into the manhole. Install plugs in the lines beyond drop-connections, gas sealing connections, etc. Place the test head inside the frame at the top of the manhole and inflate in accordance with the manufacturer's recommendations. Draw a vacuum of 10 inches of mercury, then turn off the vacuum pump. Read the level of vacuum after the required test time with the valve closed. The manhole will pass the test if the drop in the level is less than 1 inch of mercury (final vacuum greater than 9 inches of mercury). The required test time for 48-, 60-, and 72-inch manholes with depths up to 30 feet is 2 minutes. Test times for manholes of greater size and depths will be determined by the Engineer.
 - 3. Manhole Repairs: Manholes will be accepted in accordance with the criteria above. Repair any manhole which fails the initial test with non-shrink grout or other suitable material as determined for the material from which the manhole is constructed. Retest the manhole as described above until a successful test is achieved. Remove all temporary plugs and grout after a successful test.
 - 4. Repair all hydrostatic leaks in the structure prior to applying the liner system.

END OF SECTION

Schedule of Testing

In-Place Density & Concrete-Asphalt Testing

Embankment (Cuts & Fills): Fill; each 1,000 sq. yd. or 350 lin. ft., min 1 per lift
Cut; each 500 lin. ft.

Untreated Base Courses: Each 1,000 sq. yd., min 1 per lift

Treated Sub-grade and Base Courses: In-Place Density; 1,000 sq. yd. or days production, min 1 per lift., Gradation; Each 500 sq. yd., Depth Checks; Each 500 sq. yd

Asphalt: In-Place Density; 2,000 ton Lot – 4 equal Sub Lots per Lot, 1 per Sub Lot
Thickness; 3 per Lot

Non Structural Concrete: Compressive Strength; 1 set test cylinders (4) per 150 cu. yds or days production., Slump, Entrained Air, and Temperature of Concrete; Each per 150 cu. yds or days production

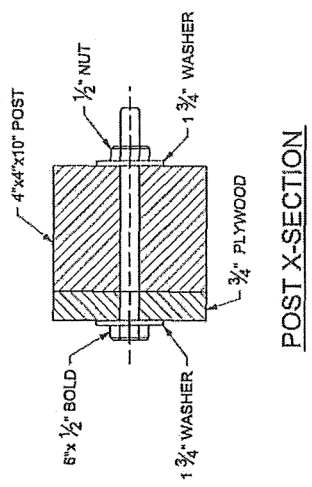
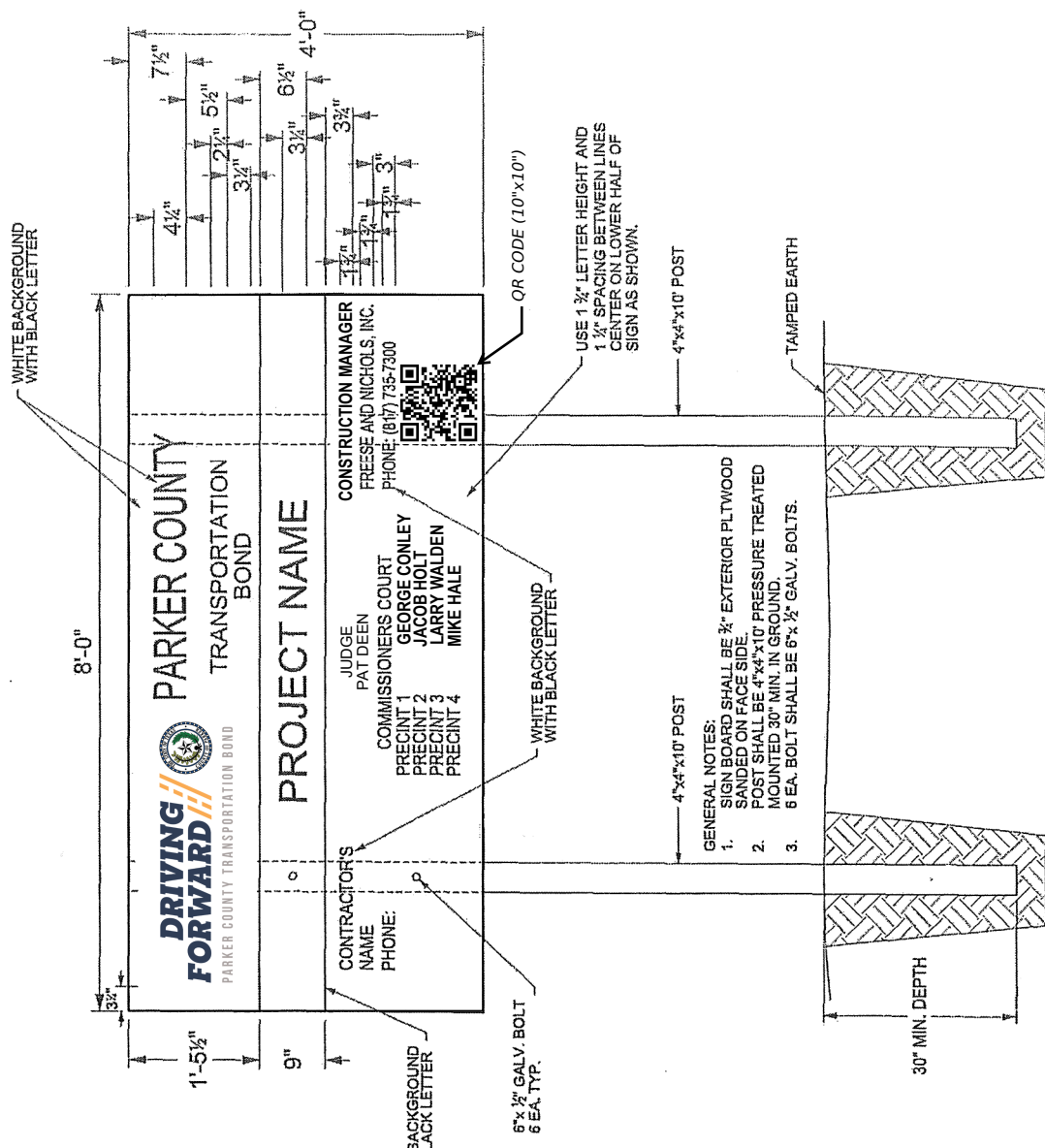
Structural Concrete: Compressive Strength; 1 set test cylinders (4) per 50 cu. yds or days production., Slump, Entrained Air, and Temperature of Concrete; Each per 50 cu. yds or days production

The above testing schedule shall supersede the following testing requirements. All work not listed above shall be tested in accordance with the TxDOT Guide Schedule of Sampling and Testing for Design-Bid-Build Projects, May 28, 2025, which can be downloaded at

<https://www.txdot.gov/content/dam/docs/division/mtd/design-bid-build-guide-schedule-may-2025.pdf>



LOGO ENLARGEMENT



STANDARD BOND PROGRAM PROJECT SIGN DETAIL