



**PROJECT MANUAL  
FOR  
THE CONSTRUCTION OF**

*SOUTH OAK GROVE ESTATES  
SECTION SIX*

**City Project No. 102739  
IPRC No. IPRC20-0084  
FID Number: 30114-0200431-102739-E07685  
W-2712  
X-26580**

Betsy Price  
Mayor

David Cooke  
City Manager

Christopher P. Harder, P.E.  
Director, Water Department

David Johnson, P.E.  
Director, Transportation and Public Works Department

**Prepared for  
The City of Fort Worth**



*PACHECO KOCH CONSULTING ENGINEERS, INC  
4060 BRYANT IRVIN ROAD  
FORT WORTH, TX 76109  
TX REG. ENGINEERING FIRM F-469  
TX REG. SURVEYING FIRM LS-1019382*

**2020**



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<http://fortworthtexas.gov/tpw/contractors/>  
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**INVITATION TO BIDDERS**  
**DEVELOPER AWARDED CONTRACTS**  
**FOR PUBLICLY BID PROJECTS ONLY**

**RECEIPT OF BIDS**

Sealed bids for the construction of *WATER, SEWER, PAVING, DRAINAGE, AND STREET LIGHT IMPROVEMENTS TO SERVE SOUTH OAK GROVE ESTATES, SECTION SIX, City Project Number 102739*, will be received by the City of Fort Worth Purchasing Office until **1:30 P.M. CST, Thursday, January 14, 2021** as further described below:

City of Fort Worth  
Purchasing Division  
200 Texas Street  
Fort Worth, Texas 76102

Due to the COVID-19 Emergency declared by the City of Fort Worth and until the emergency declaration, as amended, is rescinded, bid submissions and bid opening shall be as follows:

Bids will be accepted by:

1. US Mail at the address above, or
2. By courier, FedEx or hand delivery from 8:30-1:30 on Thursdays only, at the South End Lobby of City Hall located at 200 Texas Street, Fort Worth, Texas 76102. A Purchasing Division staff person or the Project Manager will be available to accept the bid and provide a time stamped receipt; or
3. If the bidder desires to submit the bid on a day or time other than the designated Thursday, the bidder must contact the Purchasing Division during normal working hours at 817-392-2462 to make an appointment to meet a Purchasing Division employee at the South End Lobby of City Hall located at 200 Texas Street, Fort Worth, Texas 76102, where the bid(s) will be received and time/date stamped as above.

Bids will be opened publicly and read aloud at **2:00 P.M. CST on January 14, 2021** in the City Council Chambers and broadcast through live stream and CFW public television which can be accessed at <http://fortworthtexas.gov/fwtv/>. The general public will not be allowed in the City Council Chambers.

In addition, in lieu of delivering completed MBE forms for the Project to the Purchasing Office, bidders shall e-mail the completed MBE forms to the City Project Manager no later than 2:00 P.M. on the second City business day after the bid opening date, exclusive of the bid opening date.

**GENERAL DESCRIPTION OF WORK**

The major work will consist of the (approximate) following: 730 LF 8" DIP sanitary sewer and CCTV, 4,000 SY of 6" concrete pavement, 500 LF RCP and RCB, and 12 street light poles with associated conduit.

## **PREQUALIFICATION**

The improvements included in this Project must be performed by a contractor who is pre-qualified by the City at the time of bid opening. The procedures for qualification and pre-qualification are outlined in the Section 00 21 13 – INSTRUCTIONS TO BIDDERS.

## **DOCUMENT EXAMINATION AND PROCUREMENTS**

The Bidding and Contract Documents may be examined or obtained on-line by visiting the City's electronic document management and collaboration system at:

<http://www.fortworthtexas.gov/purchasing>

The Contract Documents may be downloaded, viewed, and printed by interested contractors and/or suppliers.

Copies of the Bidding and Contract Documents may be purchased from Pacheco Koch, 4060 Bryant Irvin Road, Fort Worth, TX 76109, Attn: Karen Doherty 817-412-7155. Call a minimum of 24 hours in advance to schedule pickup:

The cost of Bidding and Contract Documents is:

Set of Bidding and Contract Documents with full size drawings: \$300

Set of Bidding and Contract Documents with half size (if available) drawings: \$160

## **PREBID CONFERENCE**

A prebid conference may be held as discussed in Section 00 21 13 - INSTRUCTIONS TO BIDDERS at the following date and time via a web conferencing application:

**DATE: Tuesday January 5, 2021**

**TIME: 3:00 P.M. CST**

If a prebid conference will be held online via a web conferencing application, invitations will be distributed directly to those who have submitted Expressions of Interest in the Project to the City Project Manager and/or the Design Engineer. The presentation given at the prebid conference and any questions and answers provided at the prebid conference will be issued as an Addendum to the call for bids.

If a prebid conference is not being held, prospective bidders can e-mail questions or comments in accordance with Section 6 of the Instructions to Bidders referenced above to the Project manager(s) at the e-mail addresses listed below. Emailed questions will suffice as "questions in writing" and the requirement to formally mail questions is suspended. If necessary, Addenda will be issued pursuant to the Instructions to Bidders.

## **DEVELOPER/CITY'S RIGHT TO ACCEPT OR REJECT BIDS**

Developer and City reserves the right to waive irregularities and to accept or reject bids.

## **AWARD**

A contract will be awarded to the Bidder presenting the lowest price, qualifications and competencies considered.

## **INQUIRIES**

All inquiries relative to this procurement should be addressed to the following:

Attn: Ron Ramirez P.E., Pacheco Koch  
Email: rramirez@pkce.com  
Phone: 817-412-7155

AND/OR

Attn: Debbie J. Willhelm, P.E., City of Fort Worth  
Email: Debbie.Willhelm@fortworthtexas.gov  
Phone: 817-392-2481

## **EXPRESSION OF INTEREST**

To ensure bidders are kept up to date of any new information pertinent to this Project or the COVID19 emergency declaration, as amended, as it may relate to this Project, bidders are requested to email Expressions of Interest in this procurement to the City Project Manager and the Design Engineer. The email should include the bidder's company name, contact person, that individuals email address and phone number. All Addenda will be distributed directly to those who have expressed an interest in the procurement and will also be posted in the City of Fort Worth's purchasing website at:

<http://www.fortworthtexas.gov/purchasing>

## **PLAN HOLDERS**

To ensure you are kept up to date of any new information pertinent to this Project such as when an addenda is issued, download the Plan Holder Registration form to your computer, complete and email it to the City Project Manager or the Design Engineer.

The City Project Manager and design Engineer are responsible to upload the Plans Holder Registration form to the Plan Holders folder.

## **ADVERTISEMENT DATES**

December 24, 2020  
December 31, 2020

**END OF SECTION**

**SECTION 00 21 13 INSTRUCTIONS TO BIDDERS  
DEVELOPER AWARDED CONTRACTS  
FOR PUBLICLY BID PROJECTS ONLY**

**1. Defined Terms**

- 1.1. Certain additional terms used in these INSTRUCTIONS TO BIDDERS have the meanings indicated below which are applicable to both the singular and plural thereof.
- 1.1.1. Bidder: Any person, firm, partnership, company, association, or corporation acting directly through a duly authorized representative, submitting a bid for performing the work contemplated under the Contract Documents.
- 1.1.2. Successful Bidder: The responsible and responsive Bidder to whom Developer/City (on the basis of City's evaluation as hereinafter provided) makes an award.

**2. Copies of Bidding Documents**

- 2.1. Neither Developer/City nor Engineer shall assume any responsibility for errors or misinterpretations resulting from the Bidders use of incomplete sets of Bidding Documents.
- 2.2. Developer/City and Engineer in making copies of Bidding Documents available do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license or grant for any other use.

**3. Prequalification of Bidders (Prime Contractors and Subcontractors)**

- 3.1 All Bidders and their subcontractors are required to be prequalified for the work types requiring prequalification at the time of bidding. Bids received from contractors who are not prequalified (even if inadvertently opened) shall not be considered. Prequalification requirement work types and documentation are available by accessing all required files through the City's website at: <https://apps.fortworthtexas.gov/ProjectResources/>
- 3.1.1. Paving – Requirements document located at;  
Resources/Construction Documents/Contractor Prequalification/TPW Paving Contractor Prequalification Program
- 3.1.2. Roadway and Pedestrian Lighting – Requirements document located at;  
Resources/Construction Documents/Contractor Prequalification/TPW Roadway and Pedestrian Lighting Prequalification Program
- 3.1.3. Water and Sanitary Sewer – Requirements document located at;  
02 - Construction Documents/Contractor Prequalification/Water and Sanitary Sewer Contractor Prequalification Program

3.2. Each Bidder unless currently prequalified, must be prepared to submit to City within seven (7) calendar days prior to Bid opening, the documentation identified in Section 00 45 11, BIDDERS PREQUALIFICATIONS.

3.2.1. Submission of and/or questions related to prequalification should be addressed to the City contact as provided in Paragraph 6.1.

3.2.2. **TEMPORARY PROCEDURES DUE TO COVID-19:** A Bidder whose prequalification has expired during the time period where a valid emergency order is in place (federal, state, local) and for 30 days past the expiration of the emergency order with the furthest expiration date – by day and month, will not be automatically disqualified from having the Bidder's bid opened. A Bidder in this situation will have its bid opened and read aloud and will be allowed 5 business days (close of business on the 5<sup>th</sup> day) to submit a complete prequalification renewal package. Failure to timely submit, or submittal of an incomplete package, will render the Bidder's bid non-responsive. If the prequalification renewal documents show the Bidder as now not-qualified, the bid will be rendered non-responsive. A Bidder may not use this exception to seek a prequalification status greater than that which was in place of the date of expiration. A Bidder who seeks to increase its prequalification status must follow the traditional submittal/review process.

3.3. The City reserves the right to require any pre-qualified contractor who is the successful bidder(s) for a project to submit such additional information as the City, in its sole discretion may require, including but not limited to manpower and equipment records, information about key personnel to be assigned to the project, and construction schedule, to assist the City in evaluating and assessing the ability of the successful bidder(s) to deliver a quality product and successfully complete projects for the amount bid within the stipulated time frame. Failure to submit the additional information, if requested, may be grounds for rejecting the successful bidder as non-responsive.

3.4. In addition to prequalification, additional requirements for qualification may be required within various sections of the Contract Documents.

#### **4. Examination of Bidding and Contract Documents, Other Related Data, and Site**

4.1. Before submitting a Bid, each Bidder shall:

4.1.1. Examine and carefully study the Contract Documents and other related data identified in the Bidding Documents (including "technical data" referred to in Paragraph 4.2. below). No information given by Developer/City or any representative of the Developer/City other than that contained in the Contract Documents and officially promulgated addenda thereto, shall be binding upon the Developer/City.

4.1.2. Visit the site to become familiar with and satisfy Bidder as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work.

- 4.1.3. Consider federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work.
  - 4.1.4. Study all: (i) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in the Contract Documents as containing reliable "technical data" and (ii) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in the Contract Documents as containing reliable "technical data."
  - 4.1.5. Be advised that the Contract Documents on file with the City shall constitute all of the information which the City will furnish. All additional information and data which the City will supply after promulgation of the formal Contract Documents shall be issued in the form of written addenda and shall become part of the Contract Documents just as though such addenda were actually written into the original Contract Documents. No information given by the City other than that contained in the Contract Documents and officially promulgated addenda thereto, shall be binding upon the City.
  - 4.1.6. Perform independent research, investigations, tests, borings, and such other means as may be necessary to gain a complete knowledge of the conditions which will be encountered during the construction of the project. Bidder must fill all holes and clean up and restore the site to its former conditions upon completion of such explorations, investigations, tests and studies.
  - 4.1.7. Determine the difficulties of the Work and all attending circumstances affecting the cost of doing the Work, time required for its completion, and obtain all information required to make a proposal. Bidders shall rely exclusively and solely upon their own estimates, investigation, research, tests, explorations, and other data which are necessary for full and complete information upon which the proposal is to be based. It is understood that the submission of a proposal is prima-facie evidence that the Bidder has made the investigation, examinations and tests herein required. Claims for additional compensation due to variations between conditions actually encountered in construction and as indicated in the Contract Documents will not be allowed.
  - 4.1.8. Promptly notify Developer of all conflicts, errors, ambiguities or discrepancies in or between the Contract Documents and such other related documents. The Contractor shall not take advantage of any gross error or omission in the Contract Documents, and the Developer shall be permitted to make such corrections or interpretations as may be deemed necessary for fulfillment of the intent of the Contract Documents.
- 4.2. Reference is made to Section 00 73 00 – Supplementary Conditions for identification of:
- 4.2.1. those reports of explorations and tests of subsurface conditions at or contiguous to the site which have been utilized by Developer in preparation of the Contract Documents. The logs of Soil Borings, if any, on the plans are for general information only. Neither the Developer nor the Engineer guarantee that the data shown is representative of conditions which actually exist.



- 4.2.2. those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the site that have been utilized by Developer in preparation of the Contract Documents.
- 4.2.3. copies of such reports and drawings will be made available by City to any Bidder on request. Bidder is responsible for any interpretation or conclusion drawn from any "technical data" or any other data, interpretations, opinions or information.
- 4.3. The submission of a Bid will constitute an incontrovertible representation by Bidder (i) that Bidder has complied with every requirement of this Paragraph 4, (ii) that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods, techniques, sequences or procedures of construction (if any) that may be shown or indicated or expressly required by the Contract Documents, (iii) that Bidder has given Developer written notice of all conflicts, errors, ambiguities and discrepancies in the Contract Documents and the written resolutions thereof by Developer are acceptable to Bidder, and when said conflicts, etc., have not been resolved through the interpretations by Developer as described in Paragraph 6., and (iv) that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.
- 4.4. The provisions of this Paragraph 4, inclusive, do not apply to Asbestos, Polychlorinated biphenyls (PCBs), Petroleum, Hazardous Waste or Radioactive Material, unless specifically identified in the Contract Documents.

## **5. Availability of Lands for Work, Etc.**

- 5.1. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Developer.

## **6. Interpretations and Addenda**

- 6.1. All questions about the meaning or intent of the Bidding Documents are to be directed to Developer's/City's representative. Interpretations or clarifications considered necessary by Developer in response to such questions will be issued by Addenda delivered to all parties recorded by Developer as having received the Bidding Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect

Address questions to:

Attn: Ron Ramirez, Pacheco Koch  
Email: rramirez@pkce.com  
Phone: 817-412-7155  
AND/OR

Attn: Debbie Willhelm, City of Fort Worth  
Email: [Debbie.Willhem@fortworthtexas.gov](mailto:Debbie.Willhem@fortworthtexas.gov)  
Phone: 817-392-2481

- 6.2. Addenda may also be issued to modify the Bidding Documents as deemed advisable by Developer/City.
- 6.3. Addenda or clarifications may be posted via the City's document management and collaboration system site at <http://www.fortworthtexas.com/purchasing/>
- 6.4. A prebid conference may be held at the time and place indicated in the Advertisement or INVITATION TO BIDDERS. Representatives of Developer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Developer's representative will transmit to all prospective Bidders of record such Addenda as Developer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

#### **7. Contract Times**

The number of days within which, or the dates by which, Milestones are to be achieved in accordance with the General Requirements and the Work is to be completed and ready for Final Acceptance is set forth in the Agreement or incorporated therein by reference to the attached Bid Form.

#### **8. Liquidated Damages**

Provisions for liquidated damages are set forth in the Agreement.

#### **9. Substitute and "Or-Equal" Items**

The Contract, if awarded, will be on the basis of materials and equipment described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is indicated or specified in the Bidding Documents that a "substitute" or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to City, application for such acceptance will not be considered by City until after the Effective Date of the Agreement. The procedure for submission of any such application by Contractor and consideration by City is set forth in Section 01 25 00 of the General Requirements.

#### **10. Bid Form**

- 10.1. All blanks on the Bid Form must be completed by printing in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each Bid item, alternative, and unit price item listed therein. In the case of optional alternatives, the words "No Bid," "No Change," or "Not Applicable" may be entered legibly, in ink or type, for which the Bidder proposes to do the work contemplated or furnish materials required.

- 10.2. Bids by corporations shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed. The corporate name, address and state of incorporation shall be shown below the signature.
- 10.3. Bids by partnerships shall be executed in the partnership name and signed by a partner, whose title must appear under the signature accompanied by evidence of authority to sign. The official name and address of the partnership shall be shown below the signature.
- 10.4. Bids by limited liability companies shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The name and state of formation of the firm and the official address of the firm shall be shown.
- 10.5. Bids by individuals shall show the Bidder's name and official address.
- 10.6. Bids by joint ventures shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 10.7. All names shall be typed or printed in ink below the signature.
- 10.8. The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 10.9. Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 10.10. Evidence of authority to conduct business as a Nonresident Bidder in the state of Texas shall be provided in accordance with Section 00 43 37 – Vendor Compliance to State Law Non Resident Bidder.

## **11. Submission of Bids**

- 11.1. Bids shall be submitted on the prescribed Bid Form and proposal form, provided with the Bidding Documents, at the time and place indicated in the Advertisement or INVITATION TO BIDDERS, addressed to City of Fort Worth Project Manager, and shall be enclosed in an opaque sealed envelope, marked with the City Project Number, Project title, the name and address of Bidder, and accompanied by the Bid security, if required, and other required documents.

## **12. Modification and Withdrawal of Bids**

- 12.1. Bids cannot be withdrawn prior to the time set for bid opening. A request for withdrawal must be made in writing by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids. After all Bids not requested for withdrawal are opened and publicly read aloud, the Bids for which a withdrawal request has been properly filed may, at the option of the Developer/City, be returned unopened.

- 13.2 Bidders may modify their Bid by electronic communication at any time prior to the time set for the closing of Bid receipt.

### **13. Opening of Bids**

- 13.1. Bids will be opened and read aloud publicly at the place where Bids are to be submitted. An abstract of the amounts of the base Bids and major alternates (if any) will be made available to Bidders after the opening of Bids.

### **14. Bids to Remain Subject to Acceptance**

- 14.1. All Bids will remain subject to acceptance for the time period specified for Notice of Award and execution and delivery of a complete Agreement by Successful Bidder. Developer/City may, at their sole discretion, release any Bid and nullify the Bid security, if required, prior to that date.

### **15. Evaluation of Bids and Award of Contract**

- 15.1. Developer/City reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, nonresponsive, unbalanced or conditional Bids and to reject the Bid of any Bidder if Developer/City believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by City. Developer/City also reserves the right to waive informalities not involving price, contract time or changes in the Work with the Successful Bidder. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
  - 15.1.1. Any or all bids will be rejected if Developer/City has reason to believe that collusion exists among the Bidders, Bidder is an interested party to any litigation against Developer/City, Developer/City or Bidder may have a claim against the other or be engaged in litigation, Bidder is in arrears on any existing contract or has defaulted on a previous contract, Bidder has performed a prior contract in an unsatisfactory manner, or Bidder has uncompleted work which in the judgment of the Developer/City will prevent or hinder the prompt completion of additional work if awarded.
- 15.2. Developer/City may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Contract Documents or upon the request of the Developer/City. Developer/City also may consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.

- 15.3. Developer/City may conduct such investigations as Developer/City deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Developer's/City's satisfaction within the prescribed time.
- 15.4. If the Contract is to be awarded, it will be awarded to lowest responsible and responsive Bidder whose evaluation by Developer/City indicates that the award will be in the best interests of the Developer/City.
- 15.5. Failure or refusal to comply with the requirements may result in rejection of Bid.

## **16. Signing of Agreement**

- 16.1. When Developer issues a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement. The Contractor shall sign and deliver the required number of counterparts of the Agreement to Developer's representative with the required Bonds, Certificates of Insurance, and all other required documentation.

**END OF SECTION**

**SECTION 00 41 00**  
**DAP BID FORM FOR PUBLICLY BID PROJECTS ONLY**

TO: West River Homes Building, LLC  
830 Taylor St  
Fort Worth, TX 76102

FOR: Water, Sewer, Drainage, Paving, and Street Lighting to serve South Oak Grove Estates,  
Section Six

City Project        102739  
No.:

Units/Sections:        Unit I: Water Improvements  
                              Unit II: Sanitary Sewer Improvements  
                              Unit III: Drainage Improvements  
                              Unit IV: Paving Improvements  
                              Unit V: Street Lighting Improvements

**1. Enter Into Agreement**

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Developer in the form included in the Bidding Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

**2. BIDDER Acknowledgements and Certification**

- 2.1. In submitting this Bid, Bidder accepts all of the terms and conditions of the INVITATION TO BIDDERS and INSTRUCTIONS TO BIDDERS, including without limitation those dealing with the disposition of Bid Bond.
- 2.2. Bidder is aware of all costs to provide the required insurance, will do so pending contract award, and will provide a valid insurance certificate meeting all requirements in the construction contract.
- 2.3. Bidder certifies that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
- 2.4. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
- 2.5. Bidder has not solicited or induced any individual or entity to refrain from bidding.
- 2.6. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph:
  - a. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.

- b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Developer (b) to establish Bid prices at artificial non-competitive levels, or (c) to deprive Developer of the benefits of free and open competition.
- c. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Developer, a purpose of which is to establish Bid prices at artificial, non-competitive levels.
- d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

### 3. Prequalification

The Bidder acknowledges that the following work types must be performed only by prequalified contractors and subcontractors:

- a. Water Distribution, Development, 8-inch diameter and smaller
- b. Sewer Collection System, Development, 8-inch diameter and smaller
- c. Concrete Paving Construction/Reconstruction (Less than 15,000 square yards)
- d. Roadway and Pedestrian Lighting

### 4. Time of Completion

- 4.1. The Work will be complete for Final Acceptance within \_\_\_\_ working days after the date when the Contract Time commences to run as provided in the General Conditions.
- 4.2. Bidder accepts the provisions of the Agreement to liquidated damages, if applicable, in the event of failure to complete the Work {and/or achievement of Milestones} within the times specified in the Agreement.

### 5. Attached to this Bid

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

- a. This Bid Form, Section 00 41 00
- b. Proposal Form, Section 00 42 43
- c. Prequalification Statement, Section 00 45 12
- d. Any additional documents that may be required by Section 12 of the Instructions to Bidders
- e. Bidder pre-qualification application (optional)

### 6. Total Bid Amount

- 6.1. Bidder will complete the Work in accordance with the Contract Documents for the following bid amount. In the space provided below, please enter the total bid amount for this project. Only this figure will be read publicly by the City at the bid opening.
- 6.2. It is understood and agreed by the Bidder in signing this proposal that the total bid amount entered below is subject to verification and/or modification by multiplying the unit bid prices for each pay item by the respective estimated quantities shown in this proposal and then totaling all of the extended amounts.
- 6.3. TOTAL BID = \$ \_\_\_\_\_



**7. Bid Submittal**

This Bid is submitted on \_\_\_\_\_ by the entity named below

Respectfully submitted,

By: \_\_\_\_\_  
 (Signature)

\_\_\_\_\_  
 (Printed Name)

Title:  
 Company:  
 Address:

Receipt is acknowledged of the following Addenda:	Initial
Addendum No. 1	
Addendum No. 2	
Addendum No. 3	
Addendum No. 4	

State of Incorporation:  
 Email:  
 Phone:

**END OF SECTION**

**SECTION 00 42 43**  
Developer Awarded Projects - PROPOSAL FORM

**UNIT PRICE BID**

**Bidder's Application**

Project Item Information					Bidder's Proposal	
Bidlist Item No.	Description	Specification Section No.	Unit of Measure	Bid Quantity	Unit Price	Bid Value
<b><u>UNIT I: WATER IMPROVEMENTS</u></b>						
1	3305.0003 8" Waterline Lowering	33 05 12	EA	1		\$ -
2	3305.0101 Fire Hydrant Stem Extension	33 05 14	EA	1		\$ -
3	3305.0109 Trench Safety	33 05 10	LF	13		\$ -
4	3311.0141 6" Water Pipe	33 11 10	LF	13		\$ -
5	3312.0001 Fire Hydrant	33 12 40	EA	1		\$ -
6	3312.0117 Connection to Existing 4"-12" Water Main	33 12 25	EA	1		\$ -
7	3312.2003 1" Water Service	33 12 10	EA	2		\$ -
8	9999.0001 Automatic Flushing Device	00 00 00	EA	1		\$ -
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<b><u>TOTAL UNIT I: WATER IMPROVEMENTS</u></b>						

**SECTION 00 42 43**  
Developer Awarded Projects - PROPOSAL FORM

**UNIT PRICE BID**

**Bidder's Application**

Project Item Information					Bidder's Proposal	
Bidlist Item No.	Description	Specification Section No.	Unit of Measure	Bid Quantity	Unit Price	Bid Value
<b><u>UNIT II: SANITARY SEWER IMPROVEMENTS</u></b>						
1	0241.2103 8" Sewer Abandonment Plug	02 41 14	EA	1		\$ -
2	0241.2201 Remove 4' Sewer Manhole	02 41 14	EA	3		\$ -
3	3301.0001 Pre-CCTV Inspection	33 01 31	LF	1243		\$ -
4	3301.0002 Post-CCTV Inspection	33 01 31	LF	726		\$ -
5	3301.0101 Manhole Vacuum Testing	33 01 30	EA	5		\$ -
6	3305.0109 Trench Safety	33 05 10	LF	726		\$ -
7	3305.0116 Concrete Encasement for Utility Pipes	33 05 10	CY	45		\$ -
8	3305.0202 Imported Embedment/Backfill, CSS	33 05 10	CY	4		\$ -
9	3331.3106 4" DIP Sewer Service	33 31 50	EA	29		\$ -
10	3331.4119 8" DIP Sewer Pipe	33 11 10	LF	726		\$ -
11	3339.1001 4' Manhole	33 39 10	EA	1		\$ -
12	3339.1004 4' Shallow Manhole	33 39 10	EA	4		\$ -
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<b><u>TOTAL UNIT II: SANITARY SEWER IMPROVEMENTS</u></b>						

**SECTION 00 42 43**  
Developer Awarded Projects - PROPOSAL FORM

**UNIT PRICE BID**

**Bidder's Application**

Project Item Information					Bidder's Proposal	
Bidlist Item No.	Description	Specification Section No.	Unit of Measure	Bid Quantity	Unit Price	Bid Value
<b><u>UNIT III: DRAINAGE IMPROVEMENTS</u></b>						
1	0241.4003 Remove 20' Curb Inlet	02 41 14	EA	1		\$ -
2	3125.0101 SWPPP ≥ 1 acre	31 25 00	LS	1		\$ -
3	3137.9999 4" Articulated Conc. Block	31 37 00	SY	120		\$ -
4	3305.0109 Trench Safety	33 05 10	LF	499		\$ -
5	3341.1101 4x2 Box Culvert	33 41 10	LF	167		\$ -
6	3341.0201 21" RCP, Class III	33 41 10	LF	5		\$ -
7	3341.0402 42" RCP, Class III	33 41 10	LF	323		\$ -
8	3341.9999 2x2 Box Culvert	33 41 10	LF	4		\$ -
9	3349.0002 5' Storm Junction Box	33 49 10	EA	1		\$ -
10	3349.1009 42" Flared Headwall, 1 pipe	33 49 40	EA	1		\$ -
11	3349.5002 15' Curb Inlet	33 49 20	EA	1		\$ -
12	3349.5003 20' Curb Inlet	33 49 20	EA	2		\$ -
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<b><u>TOTAL UNIT III: DRAINAGE IMPROVEMENTS</u></b>						

**SECTION 00 42 43**  
Developer Awarded Projects - PROPOSAL FORM

**UNIT PRICE BID**

**Bidder's Application**

Project Item Information					Bidder's Proposal	
Bidlist Item No.	Description	Specification Section No.	Unit of Measure	Bid Quantity	Unit Price	Bid Value
<b>UNIT IV: PAVING IMPROVEMENTS</b>						
1	3123.0101 Unclassified Excavation by Plan	31 23 16	CY	1140		\$ -
2	3211.0400 Hydrated Lime	32 11 29	TN	71		\$ -
3	3211.0501 6" Lime Treatment	32 11 29	SY	3950		\$ -
4	3213.0101 6" Conc Pvmt	32 13 13	SY	3950		\$ -
5	3213.0301 4" Conc Sidewalk	32 13 20	SF	1433		\$ -
6	3213.0506 Barrier Free Ramp, Type P-1	32 13 20	EA	2		\$ -
7	3291.0100 Topsoil	32 91 19	CY	165		\$ -
8	3292.0100 Block Sod Placement	32 92 13	SY	987		\$ -
9	3441.9999 Permanent End of Road Barricade	00 00 00	LF	28		\$ -
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<b>TOTAL UNIT IV: PAVING IMPROVEMENTS</b>						

**SECTION 00 42 43**  
Developer Awarded Projects - PROPOSAL FORM

**UNIT PRICE BID**

**Bidder's Application**

Project Item Information					Bidder's Proposal	
Bidlist Item No.	Description	Specification Section No.	Unit of Measure	Bid Quantity	Unit Price	Bid Value
<b>UNIT V: STREET LIGHTING IMPROVEMENTS</b>						
1	2605.0111 FURNISH/INSTALL ELEC SERV PEDESTAL	26 05 00	EA	2		\$ -
2	2605.3014 2" CONDT RM (RISER)	26 05 33	LF	80		\$ -
3	2605.3015 2" CONDT PVC SCH 80 (T)	26 05 33	LF	2365		\$ -
4	2605.3016 2" CONDT PVC SCH 80 (B)	26 05 33	LF	70		\$ -
5	3441.1409 NO 8 INSULATED ELEC CONDR	34 41 10	LF	7410		\$ -
6	3441.1502 GROUND BOX TYPE B, W/APRON	34 41 10	EA	4		\$ -
7	3441.1645 FURNISH/INSTALL TYPE 33A ARM*	34 41 20	EA	12		\$ -
8	3441.3002 Rdwy Illum Assmby TY 8,11,D-25, and D-30	34 41 20	EA	12		\$ -
9	3441.3301 Rdwy Illum Foundation TY 1,2, and 4	34 41 20	EA	12		\$ -
10	3441.4003 Furnish/Install Alum Sign Ground Mount City	34 41 30	EA	1		\$ -
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<b>TOTAL UNIT V: STREET LIGHTING IMPROVEMENTS</b>						

**SECTION 00 42 43**  
Developer Awarded Projects - PROPOSAL FORM

**UNIT PRICE BID**

**Bidder's Application**

Project Item Information					Bidder's Proposal	
Bidlist Item No.	Description	Specification Section No.	Unit of Measure	Bid Quantity	Unit Price	Bid Value

**Bid Summary**

UNIT I: WATER IMPROVEMENTS	
UNIT II: SANITARY SEWER IMPROVEMENTS	
UNIT III: DRAINAGE IMPROVEMENTS	
UNIT IV: PAVING IMPROVEMENTS	
UNIT V: STREET LIGHTING IMPROVEMENTS	
<b>Total Construction Bid</b>	

**END OF SECTION**

## SECTION 00 45 11 BIDDERS PREQUALIFICATIONS

1. **Summary.** All contractors are required to be prequalified by the City prior to submitting bids. To be eligible to bid the contractor must submit Section 00 45 12, Prequalification Statement for the work type(s) listed with their Bid. Any contractor or subcontractor who is not prequalified for the work type(s) listed must submit Section 00 45 13, Bidder Prequalification Application in accordance with the requirements below.

The prequalification process will establish a bid limit based on a technical evaluation and financial analysis of the contractor. The information must be submitted seven (7) days prior to the date of the opening of bids. For example, a contractor wishing to submit bids on projects to be opened on the 7th of April must file the information by the 31st day of March in order to bid on these projects. In order to expedite and facilitate the approval of a Bidder's Prequalification Application, the following must accompany the submission.

- a. A complete set of audited or reviewed financial statements.
    - (1) Classified Balance Sheet
    - (2) Income Statement
    - (3) Statement of Cash Flows
    - (4) Statement of Retained Earnings
    - (5) Notes to the Financial Statements, if any
  - b. A certified copy of the firm's organizational documents (Corporate Charter, Articles of Incorporation, Articles of Organization, Certificate of Formation, LLC Regulations, Certificate of Limited Partnership Agreement).
  - c. A completed Bidder Prequalification Application.
    - (1) The firm's Texas Taxpayer Identification Number as issued by the Texas Comptroller of Public Accounts. To obtain a Texas Taxpayer Identification number visit the Texas Comptroller of Public Accounts online at the following web address [www.window.state.tx.us/taxpermit/](http://www.window.state.tx.us/taxpermit/) and fill out the application to apply for your Texas tax ID.
    - (2) The firm's e-mail address and fax number.
    - (3) The firm's DUNS number as issued by Dun & Bradstreet. This number is used by the City for required reporting on Federal Aid projects. The DUNS number may be obtained at [www.dnb.com](http://www.dnb.com).
  - d. Resumes reflecting the construction experience of the principles of the firm for firms submitting their initial prequalification. These resumes should include the size and scope of the work performed.
  - e. Other information as requested by the City.
- 
2. **Prequalification Requirements**
    - a. *Financial Statements.* Financial statement submission must be provided in accordance with the following:
      - (1) The City requires that the original Financial Statement or a certified copy be submitted for consideration.



- (2) To be satisfactory, the financial statements must be audited or reviewed by an independent, certified public accounting firm registered and in good standing in any state. Current Texas statutes also require that accounting firms performing audits or reviews on business entities within the State of Texas be properly licensed or registered with the Texas State Board of Public Accountancy.
  - (3) The accounting firm should state in the audit report or review whether the contractor is an individual, corporation, or limited liability company.
  - (4) Financial Statements must be presented in U.S. dollars at the current rate of exchange of the Balance Sheet date.
  - (5) The City will not recognize any certified public accountant as independent who is not, in fact, independent.
  - (6) The accountant's opinion on the financial statements of the contracting company should state that the audit or review has been conducted in accordance with auditing standards generally accepted in the United States of America. This must be stated in the accounting firm's opinion. It should: (1) express an unqualified opinion, or (2) express a qualified opinion on the statements taken as a whole.
  - (7) The City reserves the right to require a new statement at any time.
  - (8) The financial statement must be prepared as of the last day of any month, not more than one year old and must be on file with the City 16 months thereafter, in accordance with Paragraph 1.
  - (9) The City will determine a contractor's bidding capacity for the purposes of awarding contracts. Bidding capacity is determined by multiplying the positive net working capital (working capital = current assets – current liabilities) by a factor of 10. Only those statements reflecting a positive net working capital position will be considered satisfactory for prequalification purposes.
  - (10) In the case that a bidding date falls within the time a new financial statement is being prepared, the previous statement shall be updated with proper verification.
- b. *Bidder Prequalification Application.* A Bidder Prequalification Application must be submitted along with audited or reviewed financial statements by firms wishing to be eligible to bid on all classes of construction and maintenance projects. Incomplete Applications will be rejected.
- (1) In those schedules where there is nothing to report, the notation of "None" or "N/A" should be inserted.
  - (2) A minimum of five (5) references of related work must be provided.
  - (3) Submission of an equipment schedule which indicates equipment under the control of the Contractor and which is related to the type of work for which the Contractor is seeking prequalification. The schedule must include the manufacturer, model and general common description of each piece of equipment. Abbreviations or means of describing equipment other than provided above will not be accepted.

### **3. Eligibility to Bid**

- a. The City shall be the sole judge as to a contractor's prequalification.
- b. The City may reject, suspend, or modify any prequalification for failure by the contractor to demonstrate acceptable financial ability or performance.
- c. The City will issue a letter as to the status of the prequalification approval.

- d. If a contractor has a valid prequalification letter, the contractor will be eligible to bid the prequalified work types until the expiration date stated in the letter.

**END OF SECTION**

**SECTION 00 45 12**  
**DAP – PREQUALIFICATION STATEMENT**

Each Bidder is required to complete the information below by identifying the prequalified contractors and/or subcontractors whom they intend to utilize for the major work type(s) listed. In the “Major Work Type” box provide the complete major work type and actual description as provided by the Water Department for water and sewer and TPW for paving.

Major Work Type	Contractor/Subcontractor Company Name	Prequalification Expiration Date
Water Distribution, Development, 8-inch diameter and smaller	<Company Name Here or Blank>	<Date Here or Blank>
Sewer Collection System, Development, 8-inch diameter and smaller	<Company Name Here or Blank>	<Date Here or Blank>
Concrete Paving Construction/Reconstruction (LESS THAN 15,000 square yards)	<Company Name Here or Blank>	<Date Here or Blank>
Roadway and Pedestrian Lighting	<Company Name Here or Blank>	<Date Here or Blank>

The undersigned hereby certifies that the contractors and/or subcontractors described in the table above are currently prequalified for the work types listed.

**BIDDER:**

<Company Name Here>  
<Address Here>  
<Address Here or Blank>  
<City, State Zip Code Here>

BY: <Name of Principal>

\_\_\_\_\_  
(Signature)

TITLE: <Title Here>

DATE: <Date Here>

**END OF SECTION**

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**SECTION 00 45 26**

**CONTRACTOR COMPLIANCE WITH WORKER'S COMPENSATION LAW**

Pursuant to Texas Labor Code Section 406.096(a), as amended, Contractor certifies that it provides worker's compensation insurance coverage for all of its employees employed on City Project No. 102739. Contractor further certifies that, pursuant to Texas Labor Code, Section 406.096(b), as amended, it will provide to City its subcontractor's certificates of compliance with worker's compensation coverage.

**CONTRACTOR:**

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

Company (Please Print)

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

Address

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

City/State/Zip (Please Print)

THE STATE OF TEXAS §

COUNTY OF TARRANT §

BEFORE ME, the undersigned authority, on this day personally appeared \_\_\_\_\_, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the same as the act and deed of \_\_\_\_\_ for the purposes and consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public in and for the State of Texas

**END OF SECTION**

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**SECTION 00 52 43**  
**AGREEMENT**

**THIS AGREEMENT**, authorized on \_\_\_\_\_ is made by and between the Developer, (Insert Full Legal Name of Developer), authorized to do business in Texas (“Developer”) , and \_\_\_\_\_, authorized to do business in Texas, acting by and through its duly authorized representative, (“Contractor”).

Developer and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

**Article 1. WORK**

Contractor shall complete all Work as specified or indicated in the Contract Documents for the Project identified herein.

**Article 2. PROJECT**

The project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

SOUTH OAK GROVE ESTATES, SECTION SIX  
CPN 102739, FID# 30114-0200431-102739-E07685, W-2712, X-26580

**Article 3. CONTRACT TIME**

3.1 Time is of the essence.

All time limits for Milestones, if any, and Final Acceptance as stated in the Contract Documents are of the essence to this Contract.

3.2 Final Acceptance.

The Work will be complete for Final Acceptance within \_\_\_ working days after the date when the Contract Time commences to run as provided in Paragraph 12.04 of the Standard City Conditions of the Construction Contract for Developer Awarded Projects.

3.3 Liquidated damages

Contractor recognizes that time is of the essence of this Agreement and that Developer will suffer financial loss if the Work is not completed within the times specified in Paragraph 3.2 above, plus any extension thereof allowed in accordance with Article 10

30 of the Standard City Conditions of the Construction Contract for Developer Awarded  
31 Projects. The Contractor also recognizes the delays, expense and difficulties involved in  
32 proving in a legal proceeding the actual loss suffered by the Developer if the Work is not  
33 completed on time. Accordingly, instead of requiring any such proof, Contractor agrees  
34 that as liquidated damages for delay (but not as a penalty), Contractor shall pay  
35 Developer zero Dollars (\$0.00) for each day that expires after the time specified in  
36 Paragraph 3.2 for Final Acceptance until the City issues the Final Letter of Acceptance.

#### 37 **Article 4. CONTRACT PRICE**

38 Developer agrees to pay Contractor for performance of the Work in accordance with the  
39 Contract Documents an amount in current funds of  
40 \_\_\_\_\_ Dollars (\$\_\_\_\_\_).

#### 41 **Article 5. CONTRACT DOCUMENTS**

##### 42 5.1 CONTENTS:

43 A. The Contract Documents which comprise the entire agreement between Developer  
44 and Contractor concerning the Work consist of the following:

- 45 1. This Agreement.
- 46 2. Attachments to this Agreement:
  - 47 a. Bid Form (As provided by Developer)
    - 48 1) Proposal Form (DAP Version)
    - 49 2) Prequalification Statement
    - 50 3) State and Federal documents (*project specific*)
  - 51 b. Insurance ACORD Form(s)
  - 52 c. Payment Bond (DAP Version)
  - 53 d. Performance Bond (DAP Version)
  - 54 e. Maintenance Bond (DAP Version)
  - 55 f. Power of Attorney for the Bonds
  - 56 g. Worker's Compensation Affidavit
  - 57 h. MBE and/or SBE Commitment Form (If required)

58

- 59           3. Standard City General Conditions of the Construction Contract for Developer  
60           Awarded Projects.
- 61           4. Supplementary Conditions.
- 62           5. Specifications specifically made a part of the Contract Documents by attachment  
63           or, if not attached, as incorporated by reference and described in the Table of  
64           Contents of the Project’s Contract Documents.
- 65           6. Drawings.
- 66           7. Addenda.
- 67           8. Documentation submitted by Contractor prior to Notice of Award.
- 68           9. The following which may be delivered or issued after the Effective Date of the  
69           Agreement and, if issued, become an incorporated part of the Contract  
70           Documents:
- 71           a. Notice to Proceed.
- 72           b. Field Orders.
- 73           c. Change Orders.
- 74           d. Letter of Final Acceptance.
- 75
- 76

77 **Article 6. INDEMNIFICATION**

78 **6.1 Contractor covenants and agrees to indemnify, hold harmless and defend, at its own**  
79 **expense, the city, its officers, servants and employees, from and against any and all**  
80 **claims arising out of, or alleged to arise out of, the work and services to be performed by**  
81 **the contractor, its officers, agents, employees, subcontractors, licenses or invitees under**  
82 **this contract. This indemnification provision is specifically intended to operate and be**  
83 **effective even if it is alleged or proven that all or some of the damages being sought**  
84 **were caused, in whole or in part, by any act, omission or negligence of the city. This**  
85 **indemnity provision is intended to include, without limitation, indemnity for costs,**  
86 **expenses and legal fees incurred by the city in defending against such claims and causes**  
87 **of actions.**

88

89 **6.2 Contractor covenants and agrees to indemnify and hold harmless, at its own expense,**  
90 **the city, its officers, servants and employees, from and against any and all loss, damage**  
91 **or destruction of property of the city, arising out of, or alleged to arise out of, the work**  
92 **and services to be performed by the contractor, its officers, agents, employees,**  
93 **subcontractors, licensees or invitees under this contract. This indemnification provision**  
94 **is specifically intended to operate and be effective even if it is alleged or proven that all**  
95 **or some of the damages being sought were caused, in whole or in part, by any act,**  
96 **omission or negligence of the city.**

97

98 **Article 7. MISCELLANEOUS**

99 **7.1 Terms.**

100 Terms used in this Agreement are defined in Article 1 of the Standard City Conditions of  
101 the Construction Contract for Developer Awarded Projects.

102 **7.2 Assignment of Contract.**

103 This Agreement, including all of the Contract Documents may not be assigned by the  
104 Contractor without the advanced express written consent of the Developer.

105 **7.3 Successors and Assigns.**

106 Developer and Contractor each binds itself, its partners, successors, assigns and legal  
107 representatives to the other party hereto, in respect to all covenants, agreements and  
108 obligations contained in the Contract Documents.



109 7.4 Severability.

110 Any provision or part of the Contract Documents held to be unconstitutional, void or  
111 unenforceable by a court of competent jurisdiction shall be deemed stricken, and all  
112 remaining provisions shall continue to be valid and binding upon DEVELOPER and  
113 CONTRACTOR.

114 7.5 Governing Law and Venue.

115 This Agreement, including all of the Contract Documents is performable in the State of  
116 Texas. Venue shall be Tarrant County, Texas, or the United States District Court for the  
117 Northern District of Texas, Fort Worth Division.

118

119 7.6 Authority to Sign.

120 Contractor shall attach evidence of authority to sign Agreement, if other than duly  
121 authorized signatory of the Contractor.

122

123 IN WITNESS WHEREOF, Developer and Contractor have executed this Agreement in multiple  
124 counterparts.

125

126 This Agreement is effective as of the last date signed by the Parties ("Effective Date").

127

Contractor:

Developer:

\_\_\_\_\_

\_\_\_\_\_

By:

By:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
(Printed Name)

Title:

Title:

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

\_\_\_\_\_  
Company name:

Address:

Address:

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City/State/Zip:

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**SECTION 00 61 25**  
CERTIFICATE OF INSURANCE

*[Assembler: For Contract Document execution, remove this page and replace with standard ACORD Certificate of Insurance form.]*

**END OF SECTION**

**SECTION 00 62 13**

**PERFORMANCE BOND**

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**THE STATE OF TEXAS**

**§**

**§**

**KNOW ALL BY THESE PRESENTS:**

**COUNTY OF TARRANT**

**§**

*[Text in Blue is for information or guidance. Remove all blue text in the project final document.]*

That we, \_\_\_\_\_, known as  
“Principal” herein and \_\_\_\_\_, a corporate  
surety(sureties, if more than one) duly authorized to do business in the State of Texas, known as  
“Surety” herein (whether one or more), are held and firmly bound unto the Developer, (Insert  
Full Legal Name of Developer), authorized to do business in Texas (“Developer”) and the City of  
Fort Worth, a Texas municipal corporation (“City”), in the penal sum of,  
\_\_\_\_\_ Dollars (\$\_\_\_\_\_),  
lawful money of the United States, to be paid in Fort Worth, Tarrant County, Texas for the  
payment of which sum well and truly to be made jointly unto the Developer and the City as dual  
obligees, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly  
and severally, firmly by these presents.

**WHEREAS**, Developer and City have entered into an Agreement for the construction of  
community facilities in the City of Fort Worth by and through a Community Facilities Agreement,  
CFA Number CFA20-0027;and

**WHEREAS**, the Principal has entered into a certain written contract with the Developer awarded  
the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, which Contract is hereby referred to and made a  
part hereof for all purposes as if fully set forth herein, to furnish all materials, equipment labor  
and other accessories defined by law, in the prosecution of the Work, including any Change  
Orders, as provided for in said Contract designated as South Oak Grove Estates

**NOW, THEREFORE**, the condition of this obligation is such that if the said Principal shall  
faithfully perform it obligations under the Contract and shall in all respects duly and faithfully  
perform the Work, including Change Orders, under the Contract, according to the plans,

1 specifications, and contract documents therein referred to, and as well during any period of  
2 extension of the Contract that may be granted on the part of the Developer and/or City, then  
3 this obligation shall be and become null and void, otherwise to remain in full force and effect.

4 **PROVIDED FURTHER**, that if any legal action be filed on this Bond, venue shall lie in  
5 Tarrant County, Texas or the United States District Court for the Northern District of Texas, Fort  
6 Worth Division.

7 This bond is made and executed in compliance with the provisions of Chapter 2253 of  
8 the Texas Government Code, as amended, and all liabilities on this bond shall be determined in  
9 accordance with the provisions of said statute.

10 **IN WITNESS WHEREOF**, the Principal and the Surety have SIGNED and SEALED this  
11 instrument by duly authorized agents and officers on this the \_\_\_\_\_ day of \_\_\_\_\_  
12 \_\_\_\_\_, 20\_\_\_\_.

13 PRINCIPAL:

14 \_\_\_\_\_  
15 \_\_\_\_\_  
16 \_\_\_\_\_  
17 \_\_\_\_\_

18 BY:

19 \_\_\_\_\_  
20 \_\_\_\_\_

21 Signature

22 ATTEST:

23 \_\_\_\_\_  
24 \_\_\_\_\_  
25 \_\_\_\_\_

26 (Principal) Secretary

27 \_\_\_\_\_  
Name and Title

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Address:

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Witness as to Principal

SURETY:

\_\_\_\_\_

\_\_\_\_\_

BY:

\_\_\_\_\_

Signature

\_\_\_\_\_

Name and Title

Address:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Witness as to Surety

Telephone

Number:

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4 \*Note: If signed by an officer of the Surety Company, there must be on file a certified extract  
5 from the by-laws showing that this person has authority to sign such obligation. If  
6 Surety's physical address is different from its mailing address, both must be provided.

7

8 The date of the bond shall not be prior to the date the Contract is awarded.

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**SECTION 00 62 14**

**PAYMENT BOND**

**THE STATE OF TEXAS            §**  
**§            KNOW ALL BY THESE PRESENTS:**  
**COUNTY OF TARRANT           §**

That we, \_\_\_\_\_, known as  
"Principal" herein, and \_\_\_\_\_, a  
corporate surety ( or sureties if more than one), duly authorized to do business in the State of  
Texas, known as "Surety" herein (whether one or more), are held and firmly bound unto the  
Developer, (Insert Full Legal Name of Developer), authorized to do business in Texas  
"(Developer)", and the City of Fort Worth, a Texas municipal corporation ("City"), in the penal  
sum of \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_), lawful money of the United States, to be paid in Fort Worth,  
Tarrant County, Texas, for the payment of which sum well and truly be made jointly unto the  
Developer and the City as dual obligees, we bind ourselves, our heirs, executors, administrators,  
successors and assigns, jointly and severally, firmly by these presents:

**WHEREAS**, Developer and City have entered into an Agreement for the construction of  
community facilities in the City of Fort Worth, by and through a Community Facilities  
Agreement, CFA Number <CFA20-00XX>;and

**WHEREAS**, Principal has entered into a certain written Contract with Developer,  
awarded the \_\_\_\_\_day of \_\_\_\_\_, 20\_\_\_\_, which Contract is hereby  
referred to and made a part hereof for all purposes as if fully set forth herein, to furnish all  
materials, equipment, labor and other accessories as defined by law, in the prosecution of the  
Work as provided for in said Contract and designated as South Oak Grove Estates.

**NOW, THEREFORE**, THE CONDITION OF THIS OBLIGATION is such that if Principal shall  
pay all monies owing to any (and all) payment bond beneficiary (as defined in Chapter 2253 of



1 the Texas Government Code, as amended) in the prosecution of the Work under the Contract,  
2 then this obligation shall be and become null and void; otherwise to remain in full force and  
3 effect.

4 This bond is made and executed in compliance with the provisions of Chapter 2253 of  
5 the Texas Government Code, as amended, and all liabilities on this bond shall be determined in  
6 accordance with the provisions of said statute.

7 **IN WITNESS WHEREOF**, the Principal and Surety have each SIGNED and SEALED this  
8 instrument by duly authorized agents and officers on this the \_\_\_\_\_ day of  
9 \_\_\_\_\_, 20\_\_\_\_.

10

PRINCIPAL:

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

ATTEST:

BY: \_\_\_\_\_

Signature

\_\_\_\_\_  
(Principal) Secretary

\_\_\_\_\_  
Name and Title

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Witness as to Principal

SURETY:

\_\_\_\_\_

\_\_\_\_\_

ATTEST:

BY: \_\_\_\_\_

Signature

\_\_\_\_\_

(Surety) Secretary

\_\_\_\_\_

Name and Title

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

\_\_\_\_\_

\_\_\_\_\_

Witness as to Surety

\_\_\_\_\_

Telephone Number: \_\_\_\_\_

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2 Note: If signed by an officer of the Surety, there must be on file a certified extract from the  
3 bylaws showing that this person has authority to sign such obligation. If Surety's physical  
4 address is different from its mailing address, both must be provided.

5

6 The date of the bond shall not be prior to the date the Contract is awarded.

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**END OF SECTION**

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**SECTION 00 62 19**  
**MAINTENANCE BOND**

**THE STATE OF TEXAS**            §  
  §        **KNOW ALL BY THESE PRESENTS:**  
**COUNTY OF TARRANT**       §

That we \_\_\_\_\_, known as  
"Principal" herein and \_\_\_\_\_, a corporate surety  
(sureties, if more than one) duly authorized to do business in the State of Texas, known as  
"Surety" herein (whether one or more), are held and firmly bound unto the Developer, (Insert  
Full Legal Name of Developer), authorized to do business in Texas ("Developer") and the City of  
Fort Worth, a Texas municipal corporation ("City"), in the sum  
of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_),  
lawful money of the United States, to be paid in Fort Worth, Tarrant County, Texas, for payment  
of which sum well and truly be made jointly unto the Developer and the City as dual obligees  
and their successors, we bind ourselves, our heirs, executors, administrators, successors and  
assigns, jointly and severally, firmly by these presents.

**WHEREAS**, Developer and City have entered into an Agreement for the construction of  
community facilities in the City of Fort Worth by and through a Community Facilities Agreement,  
CFA Number <CFA20-00XX>;and

**WHEREAS**, the Principal has entered into a certain written contract with the Developer  
awarded the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, which Contract is  
hereby referred to and a made part hereof for all purposes as if fully set forth herein, to furnish  
all materials, equipment labor and other accessories as defined by law, in the prosecution of the  
Work, including any Work resulting from a duly authorized Change Order (collectively herein,  
the "Work") as provided for in said Contract and designated as South Oak Grove Estates; and

1           **WHEREAS**, Principal binds itself to use such materials and to so construct the Work in  
2 accordance with the plans, specifications and Contract Documents that the Work is and will  
3 remain free from defects in materials or workmanship for and during the period of **two (2) years**  
4 after the date of Final Acceptance of the Work by the City (“Maintenance Period”); and

5

6           **WHEREAS**, Principal binds itself to repair or reconstruct the Work in whole or in part upon  
7 receiving notice from the Developer and/or City of the need thereof at any time within the  
8 Maintenance Period.

9

10           **NOW THEREFORE**, the condition of this obligation is such that if Principal shall remedy  
11 any defective Work, for which timely notice was provided by Developer or City, to a completion  
12 satisfactory to the City, then this obligation shall become null and void; otherwise to remain in  
13 full force and effect.

14

15           **PROVIDED, HOWEVER**, if Principal shall fail so to repair or reconstruct any timely  
16 noticed defective Work, it is agreed that the Developer or City may cause any and all such  
17 defective Work to be repaired and/or reconstructed with all associated costs thereof being  
18 borne by the Principal and the Surety under this Maintenance Bond; and

19

20           **PROVIDED FURTHER**, that if any legal action be filed on this Bond, venue shall lie in  
21 Tarrant County, Texas or the United States District Court for the Northern District of Texas, Fort  
22 Worth Division; and

23

24           **PROVIDED FURTHER**, that this obligation shall be continuous in nature and successive  
25 recoveries may be had hereon for successive breaches.

26

1 **IN WITNESS WHEREOF**, the Principal and the Surety have each SIGNED and SEALED this  
2 instrument by duly authorized agents and officers on this the \_\_\_\_\_ day of \_\_\_\_\_  
3 \_\_\_\_\_, 20\_\_\_\_.

4

5

PRINCIPAL:

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\_\_\_\_\_

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\_\_\_\_\_

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BY:

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\_\_\_\_\_

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Signature

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ATTEST:

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\_\_\_\_\_

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18

(Principal) Secretary

Name and Title

19

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Address:

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Witness as to Principal

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SURETY:

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BY:

\_\_\_\_\_

Signature

\_\_\_\_\_

ATTEST:

Name and Title

\_\_\_\_\_

Address:

\_\_\_\_\_

(Surety) Secretary

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Witness as to Surety

Telephone

Number:

\_\_\_\_\_

\*Note: If signed by an officer of the Surety Company, there must be on file a certified extract from the by-laws showing that this person has authority to sign such obligation. If Surety's physical address is different from its mailing address, both must be provided.

The date of the bond shall not be prior to the date the Contract is awarded.

**SECTION 00 73 00**  
**SUPPLEMENTARY CONDITIONS**  
**TO**  
**GENERAL CONDITIONS**

**Supplementary Conditions**

These Supplementary Conditions modify and supplement provisions of the Contract Documents as indicated below. All provisions of the Contract Documents that are modified or supplemented remain in full force and effect as so modified or supplemented. All provisions of the Contract Documents which are not so modified or supplemented remain in full force and effect.

**Defined Terms**

The terms used in these Supplementary Conditions which are defined in the Contract Documents have the meaning assigned to them, unless specifically noted herein.

**Modifications and Supplements**

The following are instructions that modify or supplement specific paragraphs in the Contract Documents.

**SC-3.03B.2, “Resolving Discrepancies”**

Plans govern over Specifications.

**SC-4.01A**

Easement limits shown on the Drawing are approximate and were provided to establish a basis for bidding. Upon receiving the final easements descriptions, Contractor shall compare them to the lines shown on the Contract Drawings.

**SC-4.01A.1., “Availability of Lands”**

The following is a list of known outstanding right-of-way, and/or easements to be acquired, if any as of December 14, 2020:

**Outstanding Right-Of-Way, and/or Easements to Be Acquired**

PARCEL NUMBER	OWNER	TARGET DATE OF POSSESSION
<hr/>		
None		

The Contractor understands and agrees that the dates listed above are estimates only, are not guaranteed, and do not bind the Developer or City.

If Contractor considers the final easements provided to differ materially from the representations on the Contract Drawings, Contractor shall within five (5) Business Days and before proceeding with the Work, notify Developer or City in writing associated with the differing easement line locations.

**SC-4.01A.2, “Availability of Lands”**

**Utilities or obstructions to be removed, adjusted, and/or relocated**

The following is list of utilities and/or obstructions that have not been removed, adjusted, and/or relocated as of December 14, 2020

EXPECTED OWNER	UTILITY AND LOCATION	TARGET DATE OF ADJUSTMENT
NONE		

The Contractor understands and agrees that the dates listed above are estimates only, are not guaranteed, and do not bind the Developer or City.

**SC-4.02A., “Subsurface and Physical Conditions”**

The following are reports of explorations and tests of subsurface conditions at the site of the Work:

A Geotechnical Report No. W200710, dated May 1, 2020, prepared by Alpha Testing, Inc, a sub-consultant of Pacheco Koch Consulting Engineers, Inc., a consultant of the City, providing additional information on the physical and engineering properties of the subsurface materials on the subject site.

The following are drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the site of the Work:  
NONE

**SC-4.06A., “Hazardous Environmental Conditions at Site”**

The following are reports and drawings of existing hazardous environmental conditions known to the City:  
NONE

**SC-5.03A., “Certificates of Insurance”**

The entities listed below are "additional insureds as their interest may appear" including their respective officers, directors, agents and employees.

- (1) City of Fort Worth
- (2) Consultant: Pacheco Koch Consulting Engineers, Inc.
- (3) Other: West River Homes Building, LLC

**SC-5.04A., “Contractor’s Insurance”**

The limits of liability for the insurance required by Paragraph GC-5.04 shall provide the following coverages for not less than the following amounts or greater where required by laws and regulations:

**5.04A.** Workers' Compensation, under Paragraph GC-5.04A.

*Statutory limits*  
*Employer's liability*  
\$100,000 *each accident/occurrence*  
\$100,000 *Disease - each employee*  
\$500,000 *Disease - policy limit*

**SC-5.04B., “Contractor’s Insurance”**



**5.04B.** Commercial General Liability, under Paragraph GC-5.04B. Contractor's Liability Insurance under Paragraph GC-5.04B., which shall be on a per project basis covering the Contractor with minimum limits of:

*\$1,000,000 each occurrence*  
*\$2,000,000 aggregate limit*

The policy must have an endorsement (Amendment – Aggregate Limits of Insurance) making the General Aggregate Limits apply separately to each job site.

The Commercial General Liability Insurance policies shall provide “X”, “C”, and “U” coverage’s. Verification of such coverage must be shown in the Remarks Article of the Certificate of Insurance.

**SC 5.04C., “Contractor’s Insurance”**

**5.04C.** Automobile Liability, under Paragraph GC-5.04C. Contractor’s Liability Insurance under Paragraph GC-5.04C., which shall be in an amount not less than the following amounts:

- (1) **Automobile Liability** - a commercial business policy shall provide coverage on "Any Auto", defined as autos owned, hired and non-owned.

*\$1,000,000* each accident on a combined single limit basis. Split limits are acceptable if limits are at least:

*\$250,000 Bodily Injury per person /*  
*\$500,000 Bodily Injury per accident /*  
*\$250,000 Property Damage*

**SC-5.04D., “Contractor’s Insurance”**

The Contractor’s construction activities will require its employees, agents, subcontractors, equipment, and material deliveries to cross railroad properties and tracks. None.

The Contractor shall conduct its operations on railroad properties in such a manner as not to interfere with, hinder, or obstruct the railroad company in any manner whatsoever in the use or operation of its/their trains or other property. Such operations on railroad properties may require that Contractor to execute a “Right of Entry Agreement” with the particular railroad company or companies involved, and to this end the Contractor should satisfy itself as to the requirements of each railroad company and be prepared to execute the right-of-entry (if any) required by a railroad company. The requirements specified herein likewise relate to the Contractor’s use of private and/or construction access roads crossing said railroad company’s properties.

The Contractual Liability coverage required by Paragraph 5.04D of the General Conditions shall provide coverage for not less than the following amounts, issued by companies satisfactory to the City and to the Railroad Company for a term that continues for so long as the Contractor’s operations and work cross, occupy, or touch railroad property:

- (1) General Aggregate: N/A  
(2) Each Occurrence: N/A

\_\_\_ Required for this Contract                      X Not required for this Contract  
With respect to the above outlined insurance requirements, the following shall govern:

1. Where a single railroad company is involved, the Contractor shall provide one insurance policy in the name of the railroad company. However, if more than one grade separation or at-grade crossing is affected by the Project at entirely separate locations on the line or lines of the same railroad company, separate coverage may be required, each in the amount stated above.
2. Where more than one railroad company is operating on the same right-of-way or where several railroad companies are involved and operated on their own separate rights-of-way, the Contractor may be required to provide separate insurance policies in the name of each railroad company.
3. If, in addition to a grade separation or an at-grade crossing, other work or activity is proposed on a railroad company's right-of-way at a location entirely separate from the grade separation or at-grade crossing, insurance coverage for this work must be included in the policy covering the grade separation.
4. If no grade separation is involved but other work is proposed on a railroad company's right-of-way, all such other work may be covered in a single policy for that railroad, even though the work may be at two or more separate locations.

No work or activities on a railroad company's property to be performed by the Contractor shall be commenced until the Contractor has furnished the City with an original policy or policies of the insurance for each railroad company named, as required above. All such insurance must be approved by the City and each affected Railroad Company prior to the Contractor's beginning work.

The insurance specified above must be carried until all Work to be performed on the railroad right-of-way has been completed and the grade crossing, if any, is no longer used by the Contractor. In addition, insurance must be carried during all maintenance and/or repair work performed in the railroad right-of-way. Such insurance must name the railroad company as the insured, together with any tenant or lessee of the railroad company operating over tracks involved in the Project.

#### **SC-6.04., "Project Schedule"**

Project schedule shall be tier 2 for the project.

#### **SC-6.07., "Wage Rates"**

The following is the prevailing wage rate table(s) applicable to this project and is provided in the Appendixes:

A copy of the table is also available by accessing the City's website at:

**<https://apps.fortworthtexas.gov/ProjectResources/>**

You can access the file by following the directory path:  
02-Construction Documents/Specifications/Div00 – General Conditions

#### **SC-6.09., "Permits and Utilities"**

##### **SC-6.09A., "Contractor obtained permits and licenses"**

The following are known permits and/or licenses required by the Contract to be acquired by the Contractor:  
NONE

##### **SC-6.09B. "City obtained permits and licenses"**

The following are known permits and/or licenses required by the Contract to be acquired by the City:

Floodplain Development Permit

**SC-6.09C. “Outstanding permits and licenses”**

The following is a list of known outstanding permits and/or licenses to be acquired, if any as of December 15<sup>th</sup>, 2020:

**Outstanding Permits and/or Licenses to Be Acquired**

OWNER	PERMIT OR LICENSE AND LOCATION	TARGET DATE OF POSSESSION
City Acquired	Floodplain Development Permit	January 30th, 2021

**SC-7.02., “Coordination”**

The individuals or entities listed below have contracts with the City for the performance of other work at the Site:

NONE

**SC-8.01, “Communications to Contractor”**

NONE

**SC-9.01., “City’s Project Manager”**

The City’s Project Manager for this Contract is Debbie J. Willhelm, P.E., or his/her successor pursuant to **written notification from the Director of Development Services.**

**SC-13.03C., “Tests and Inspections”**

Rone Engineering Services, Ltd.

**SC-16.01C.1, “Methods and Procedures”**

NONE

**END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
1/22/2016	F. Griffin	SC-9.01., "City's Project Representative" wording changed to City's Project Manager.
3/9/2020	D.V. Magaña	SC-6.07, Updated the link such that files can be accessed via the City's website.

**STANDARD CITY CONDITIONS  
OF THE CONSTRUCTION CONTRACT  
FOR DEVELOPER AWARDED PROJECTS**

# STANDARD CITY CONDITIONS OF THE CONSTRUCTION CONTRACT FOR DEVELOPER AWARDED PROJECTS

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in these General Conditions or in other Contract Documents, the terms listed below have the meanings indicated which are applicable to both the singular and plural thereof, and words denoting gender shall include the masculine, feminine and neuter. Said terms are generally capitalized or written in italics, but not always. When used in a context consistent with the definition of a listed-defined term, the term shall have a meaning as defined below whether capitalized or italicized or otherwise. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Agreement* - The written instrument which is evidence of the agreement between Developer and Contractor covering the Work
  2. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
  3. *Business Day* – A business day is defined as a day that the City conducts normal business, generally Monday through Friday, except for federal or state holidays observed by the City.
  4. *Buzzsaw* – City’s on-line, electronic document management and collaboration system.
  5. *Calendar Day* – A day consisting of 24 hours measured from midnight to the next midnight.
  6. *City*— *The City of Fort Worth, Texas, a Texas home-rule municipal corporation, acting by, its governing body through its City Manager, his designee, or agents authorized pursuant to its duly authorized charter on his behalf.*
  7. *Community Facilities Agreement (CFA)* —*A Contract between the Developer and the City for the Construction of one or more following public facilities within the City public right-of-way or easement: Water, Sanitary Sewer, Street, Storm Drain, Street Light, and Street Signs. A CFA may include private facilities within the right-of-way dedicated as private right-of-way or easement on a recorded plat.*
  8. *Contract*—*The entire and integrated written document incorporating the Contract Documents between the Developer, Contractor, and/or City concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.*
  9. *Contract Documents*—*Those items that make up the contract and which must include the Agreement, and it’s attachments such as standard construction specifications, standard City Conditions, other general conditions of the Developer, including:*
    - a. An Agreement

- b. Attachments to the Agreement
    - i. Bid Form
    - ii. Vendor Compliance with State Law Non-Resident Bidder
    - iii. Prequalification Statement
  - c. Current Prevailing Wage Rates Table (if required by City)
  - d. Insurance Accord Form
  - e. Payment Bond
  - f. Performance Bond
  - g. Maintenance Bond
  - h. Power of Attorney for Bonds
  - i. Workers Compensation Affidavit
  - j. MWBE Commitment Form( If required by City)
  - k. General Conditions
  - l. Supplementary Conditions
  - m. The Standard City Conditions
  - n. Specifications specifically made part of the Contract Documents by attachment, if not attached, as incorporated by reference and described in the Table of Contents of the Project's Contract Documents
  - o. Drawings
  - p. Documentation submitted by contractor prior to Notice of Award.
  - q. The following which may be delivered or issued after the effective date if the Agreement and, if issued become an incorporated part of the Contract Documents
    - i. Notice to Proceed
    - ii. Field Orders
    - iii. Change Orders
    - iv. Letters of Final Acceptance
  - r. Approved Submittals, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
10. *Contractor—The individual or entity with whom Developer has entered into the Agreement.*
11. *Day or day – A day, unless otherwise defined, shall mean a Calendar Day.*
12. *Developer – An individual or entity that desires to make certain improvements within the City of Fort Worth*
13. *Drawings—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Submittals are not Drawings as so defined.*
14. *Engineer—The licensed professional engineer or engineering firm registered in the State of Texas performing professional services for the Developer.*
15. *Final Acceptance – The written notice given by the City to the Developer and/or Contractor that the Work specified in the Contract Documents has been completed to the satisfaction of the City.*

16. *Final Inspection* – *Inspection carried out by the City to verify that the Contractor has completed the Work, and each and every part or appurtenance thereof, fully, entirely, and in conformance with the Contract Documents.*
17. *General Requirements*—*A part of the Contract Documents between the Developer and a Contractor.*
18. *Laws and Regulations*—*Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.*
19. *Liens*—*Charges, security interests, or encumbrances upon Project funds, real property, or personal property.*
20. *Milestone*—*A principal event specified in the Contract Documents relating to an intermediate Contract Time prior to Final Acceptance of the Work.*
21. *Non-Participating Change Order*—*A document, which is prepared for and reviewed by the City, which is signed by Contractor, and Developer, and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.*
22. *Participating Change Order*—*A document, which is prepared for and approved by the City, which is signed by Contractor, Developer, and City and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.*
23. *Plans* – *See definition of Drawings.*
24. *Project Schedule*—*A schedule, prepared and maintained by Contractor, in accordance with the General Requirements, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Time.*
25. *Project*—*The Work to be performed under the Contract Documents.*
26. *Project Representative*—*The authorized representative of the City who will be assigned to the Site.*
27. *Public Meeting* – *An announced meeting conducted by the Developer to facilitate public participation and to assist the public in gaining an informed view of the Project.*
28. *Regular Working Hours* – *Hours beginning at 7:00 a.m. and ending at 6:00 p.m., Monday thru Friday (excluding legal holidays).*
29. *Samples*—*Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.*

30. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
31. *Site*—Lands or areas indicated in the Contract Documents as being furnished by City or Developer upon which the Work is to be performed, including rights-of-way, permits, and easements for access thereto, and such other lands furnished by City or Developer which are designated for the use of Contractor.
32. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto. Specifications may be specifically made a part of the Contract Documents by attachment or, if not attached, may be incorporated by reference as indicated in the Table of Contents (Division 00 00 00) of each Project.
33. *Standard City Conditions* – That part of the Contract Documents setting forth requirements of the City.
34. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
35. *Submittals*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
36. *Superintendent* – The representative of the Contractor who is available at all times and able to receive instructions from the City and/or Developer and to act for the Contractor.
37. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements the General Conditions.
38. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
39. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to, those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
40. *Weekend Working Hours* – Hours beginning at 9:00 a.m. and ending at 5:00 p.m., Saturday, Sunday or legal holiday, as approved in advance by the City.

41. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction including any Participating Change Order, Non-Participating Change Order, or Field Order, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
42. *Working Day* – A working day is defined as a day, not including Saturdays, Sundays, or legal holidays authorized by the City for contract purposes, in which weather or other conditions not under the control of the Contractor will permit the performance of the principal unit of work underway for a continuous period of not less than 7 hours between 7 a.m. and 6 p.m.

## 1.02 Terminology

- A. The words and terms discussed in Paragraph 1.02.B through D are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Defective*:
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
    - a. does not conform to the Contract Documents; or
    - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
    - c. has been damaged prior to City’s written acceptance.
- C. *Furnish, Install, Perform, Provide*:
1. The word “Furnish” or the word “Install” or the word “Perform” or the word “Provide” or the word “Supply,” or any combination or similar directive or usage thereof, shall mean furnishing and incorporating in the Work including all necessary labor, materials, equipment, and everything necessary to perform the Work indicated, unless specifically limited in the context used.
- D. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## **ARTICLE 2 – PRELIMINARY MATTERS**

### *2.01 Before Starting Construction*

*Baseline Schedules:* Submit to City in accordance with the Contract Documents, and prior to starting the Work. New schedules will be submitted to City when Participating Change Orders or Non-Participating Change Orders occur.

### *2.02 Preconstruction Conference*

Before any Work at the Site is started, the Contractor shall attend a Preconstruction Conference as specified in the Contract Documents.

### *2.03 Public Meeting*

Contractor may not mobilize any equipment, materials or resources to the Site prior to Contractor attending the Public Meeting as scheduled by the City.

## **ARTICLE 3 – CONTRACT DOCUMENTS AND AMENDING**

### *3.01 Reference Standards*

#### **A. Standards, Specifications, Codes, Laws, and Regulations**

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
2. No provision or instruction shall be effective to assign to City, or any of its officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

### *3.02 Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by a Participating Change Order or a Non-Participating Change Order.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work not involving a change in Contract Price or Contract Time, may be authorized, by one or more of the following ways:
  1. A Field Order;

1. City's or Engineer's review of a Submittal (subject to the provisions of Paragraph 5.16.C); or
2. City's written interpretation or clarification.

## **ARTICLE 4 – BONDS AND INSURANCE**

### *4.01 Licensed Sureties and Insurers*

All bonds and insurance required by the Contract Documents to be purchased and maintained by Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the State of Texas to issue bonds or insurance policies for the limits and coverage so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided Section 4.04.

### *4.02 Performance, Payment, and Maintenance Bonds*

- A. Contractor shall furnish performance and payment bonds in the name of Developer and City, in accordance with Texas Government Code Chapter 2253 or successor statute, each in an amount equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents.
- B. Contractor shall furnish maintenance bonds in the name of Developer and City in an amount equal to the Contract Price as security to protect the City against any defects in any portion of the Work described in the Contract Documents. Maintenance bonds shall remain in effect for two (2) years after the date of Final Acceptance by the City.
- C. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a sealed and dated power of attorney which shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- D. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in the State of Texas or it ceases to meet the requirements of Paragraph 4.02.C, Contractor shall promptly notify City and shall, within 30 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 4.01 and 4.02.C.

### *4.03 Certificates of Insurance*

Contractor shall deliver to Developer and City, with copies to each additional insured and loss payee identified in these Standard City Conditions certificates of insurance (and other evidence of insurance requested by City or any other additional insured) which Contractor is required to purchase and maintain.

1. The certificate of insurance shall document the City, as an “Additional Insured” on all liability policies.
2. The Contractor’s general liability insurance shall include a, “per project” or “per location”, endorsement, which shall be identified in the certificate of insurance provided to the City.
3. The certificate shall be signed by an agent authorized to bind coverage on behalf of the insured, be complete in its entirety, and show complete insurance carrier names as listed in the current A.M. Best Property & Casualty Guide
4. The insurers for all policies must be licensed and/or approved to do business in the State of Texas. Except for workers’ compensation, all insurers must have a minimum rating of A-: VII in the current A. M. Best Key Rating Guide or have reasonably equivalent financial strength and solvency to the satisfaction of Risk Management. If the rating is below that required, written approval of City is required.
5. All applicable policies shall include a Waiver of Subrogation (Rights of Recovery) in favor of the City. In addition, the Contractor agrees to waive all rights of subrogation against the Engineer (if applicable), and each additional insured identified in these Standard City Conditions. Failure of the City to demand such certificates or other evidence of full compliance with the insurance requirements or failure of the City to identify a deficiency from evidence that is provided shall not be construed as a waiver of Contractor’s obligation to maintain such lines of insurance coverage.
6. If insurance policies are not written for specified coverage limits, an Umbrella or Excess Liability insurance for any differences is required. Excess Liability shall follow form of the primary coverage.
7. Unless otherwise stated, all required insurance shall be written on the “occurrence basis”. If coverage is underwritten on a claims-made basis, the retroactive date shall be coincident with or prior to the date of the effective date of the agreement and the certificate of insurance shall state that the coverage is claims-made and the retroactive date. The insurance coverage shall be maintained for the duration of the Contract and for three (3) years following Final Acceptance provided under the Contract Documents or for the warranty period, whichever is longer. An annual certificate of insurance submitted to the City shall evidence such insurance coverage.
8. Policies shall have no exclusions by endorsements, which, neither nullify or amend, the required lines of coverage, nor decrease the limits of said coverage unless such endorsements are approved in writing by the City. In the event a Contract has been bid or executed and the exclusions are determined to be unacceptable or the City desires additional insurance coverage, and the City desires the contractor/engineer to obtain such coverage, the contract price shall be adjusted by the cost of the premium for such additional coverage plus 10%.
9. Any self-insured retention (SIR), in excess of \$25,000.00, affecting required insurance coverage shall be approved by the City in regards to asset value and stockholders' equity. In



lieu of traditional insurance, alternative coverage maintained through insurance pools or risk retention groups, must also be approved by City.

10. Any deductible in excess of \$5,000.00, for any policy that does not provide coverage on a first-dollar basis, must be acceptable to and approved by the City.
11. City, at its sole discretion, reserves the right to review the insurance requirements and to make reasonable adjustments to insurance coverage's and their limits when deemed necessary and prudent by the City based upon changes in statutory law, court decision or the claims history of the industry as well as of the contracting party to the City. The City shall be required to provide prior notice of 90 days, and the insurance adjustments shall be incorporated into the Work by Change Order.
12. City shall be entitled, upon written request and without expense, to receive copies of policies and endorsements thereto and may make any reasonable requests for deletion or revision or modifications of particular policy terms, conditions, limitations, or exclusions necessary to conform the policy and endorsements to the requirements of the Contract. Deletions, revisions, or modifications shall not be required where policy provisions are established by law or regulations binding upon either party or the underwriter on any such policies.
13. City shall not be responsible for the direct payment of insurance premium costs for Contractor's insurance.

#### 4.04 *Contractor's Insurance*

- A. *Workers Compensation and Employers' Liability.* Contractor shall purchase and maintain such insurance coverage with limits consistent with statutory benefits outlined in the Texas Workers' Compensation Act (Texas Labor Code, Ch. 406, as amended), and minimum limits for Employers' Liability as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed 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:
  1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
  2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees.
  3. The limits of liability for the insurance shall provide the following coverages for not less than the following amounts or greater where required by Laws and Regulations
    - a. Statutory limits
    - b. Employer's liability

- 1) \$100,000 each accident/occurrence
- 2) \$100,000 Disease - each employee
- 3) \$500,000 Disease - policy limit

B. **Commercial General Liability.** Coverage shall include but not be limited to covering liability (bodily injury or property damage) arising from: premises/operations, independent contractors, products/completed operations, personal injury, and liability under an insured contract. Insurance shall be provided on an occurrence basis, and as comprehensive as the current Insurance Services Office (ISO) policy. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to the City. The Commercial General Liability policy, shall have no exclusions by endorsements that would alter or nullify premises/operations, products/completed operations, contractual, personal injury, or advertising injury, which are normally contained with the policy, unless the City approves such exclusions in writing.

1. For construction projects that present a substantial completed operation exposure, the City may require the contractor to maintain completed operations coverage for a minimum of no less than three (3) years following the completion of the project
2. Contractor's Liability Insurance under this Section which shall be on a per project basis covering the Contractor with minimum limits of:
  - a. \$1,000,000 each occurrence
  - b. \$2,000,000 aggregate limit
3. The policy must have an endorsement (Amendment – Aggregate Limits of Insurance) making the General Aggregate Limits apply separately to each job site.
4. The Commercial General Liability Insurance policies shall provide “X”, “C”, and “U” coverage’s. Verification of such coverage must be shown in the Remarks Article of the Certificate of Insurance.

C. **Automobile Liability.** A commercial business auto policy shall provide coverage on “any auto”, defined as autos owned, hired and non-owned and provide indemnity for claims for damages because bodily injury or death of any person and or property damage arising out of the work, maintenance or use of any motor vehicle by the 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.

1. Automobile Liability, Contractor’s Liability Insurance under this Section, which shall be in an amount not less than the following amounts:
  - a. **Automobile Liability** - a commercial business policy shall provide coverage on "Any Auto", defined as autos owned, hired and non-owned.

- 1) \$1,000,000 each accident on a combined single limit basis. Split limits are acceptable if limits are at least:
- 2) \$250,000 Bodily Injury per person
- 3) \$500,000 Bodily Injury per accident /
- 4) \$100,000 Property Damage

D. *Railroad Protective Liability*. If any of the work or any warranty work is within the limits of railroad right-of-way, the Contractor shall comply with the following requirements:

1. The Contractor's construction activities will require its employees, agents, subcontractors, equipment, and material deliveries to cross railroad properties and tracks owned and operated by: \_\_\_\_\_  
*Write the name of the railroad company. (If none, then write none)*
2. The Contractor shall conduct its operations on railroad properties in such a manner as not to interfere with, hinder, or obstruct the railroad company in any manner whatsoever in the use or operation of its/their trains or other property. Such operations on railroad properties may require that Contractor to execute a "Right of Entry Agreement" with the particular railroad company or companies involved, and to this end the Contractor should satisfy itself as to the requirements of each railroad company and be prepared to execute the right-of-entry (if any) required by a railroad company. The requirements specified herein likewise relate to the Contractor's use of private and/or construction access roads crossing said railroad company's properties.
3. The Contractual Liability coverage required by Paragraph 5.04D of the General Conditions shall provide coverage for not less than the following amounts, issued by companies satisfactory to the City and to the Railroad Company for a term that continues for so long as the Contractor's operations and work cross, occupy, or touch railroad property:
  - a. General Aggregate: \_\_\_\_\_  
*Enter limits provided by Railroad Company (If none, write none)*
  - b. Each Occurrence: : \_\_\_\_\_  
*Enter limits provided by Railroad Company (If none, write none)*
4. With respect to the above outlined insurance requirements, the following shall govern:
  - a. Where a single railroad company is involved, the Contractor shall provide one insurance policy in the name of the railroad company. However, if more than one grade separation or at-grade crossing is affected by the Project at entirely separate locations on the line or lines of the same railroad company, separate coverage may be required, each in the amount stated above.
  - b. Where more than one railroad company is operating on the same right-of-way or where several railroad companies are involved and operated on their own separate rights-of-

way, the Contractor may be required to provide separate insurance policies in the name of each railroad company.

- c. If, in addition to a grade separation or an at-grade crossing, other work or activity is proposed on a railroad company's right-of-way at a location entirely separate from the grade separation or at-grade crossing, insurance coverage for this work must be included in the policy covering the grade separation.
  - d. If no grade separation is involved but other work is proposed on a railroad company's right-of-way, all such other work may be covered in a single policy for that railroad, even though the work may be at two or more separate locations.
5. No work or activities on a railroad company's property to be performed by the Contractor shall be commenced until the Contractor has furnished the City with an original policy or policies of the insurance for each railroad company named, as required above. All such insurance must be approved by the City and each affected Railroad Company prior to the Contractor's beginning work.
  6. The insurance specified above must be carried until all Work to be performed on the railroad right-of-way has been completed and the grade crossing, if any, is no longer used by the Contractor. In addition, insurance must be carried during all maintenance and/or repair work performed in the railroad right-of-way. Such insurance must name the railroad company as the insured, together with any tenant or lessee of the railroad company operating over tracks involved in the Project.
- E. *Notification of Policy Cancellation:* Contractor shall immediately notify City upon cancellation or other loss of insurance coverage. Contractor shall stop work until replacement insurance has been procured. There shall be no time credit for days not worked pursuant to this section.

#### 4.05 *Acceptance of Bonds and Insurance; Option to Replace*

If City has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the Contractor in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the Developer and City shall so notify the Contractor in writing within 10 Business Days after receipt of the certificates (or other evidence requested). Contractor shall provide to the City such additional information in respect of insurance provided as the Developer or City may reasonably request. If Contractor does not purchase or maintain all of the bonds and insurance required by the Contract Documents, the Developer or City shall notify the Contractor in writing of such failure prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

## **ARTICLE 5 – CONTRACTOR'S RESPONSIBILITIES**

### 5.01 *Supervision and Superintendent*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the

Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

- B. At all times during the progress of the Work, Contractor shall assign a competent, English-speaking, Superintendent who shall not be replaced without written notice to City. The Superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communication given to or received from the Superintendent shall be binding on Contractor.
- C. Contractor shall notify the City 24 hours prior to moving areas during the sequence of construction.

#### 5.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during Regular Working Hours. Contractor will not permit the performance of Work beyond Regular Working Hours or for Weekend Working Hours without City's written consent (which will not be unreasonably withheld). Written request (by letter or electronic communication) to perform Work:
  - 1. for beyond Regular Working Hours request must be made by noon at least two (2) Business Days prior
  - 2. for Weekend Working Hours request must be made by noon of the preceding Thursday
  - 3. for legal holidays request must be made by noon two Business Days prior to the legal holiday.

#### 5.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, Contractor required testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of City. If required by City, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment to be incorporated into the Work shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

5.04 *Project Schedule*

- A. Contractor shall adhere to the Project Schedule established in accordance with Paragraph 2.01 and the General Requirements as it may be adjusted from time to time as provided below.
1. Contractor shall submit to City for acceptance (to the extent indicated in Paragraph 2.01 and the General Requirements) proposed adjustments in the Project Schedule.
  2. Proposed adjustments in the Project Schedule that will change the Contract Time shall be submitted in accordance with the requirements of Article 9. Adjustments in Contract Time for projects with City participation shall be made by participating change orders.

5.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment of other Suppliers may be submitted to City for review under the circumstances described below.
1. *"Or-Equal" Items:* If in City's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by City as an "or-equal" item, in which case review and approval of the proposed item may, in City's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 5.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. City determines that:
      - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
      - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
      - 3) it has a proven record of performance and availability of responsive service; and
    - b. Contractor certifies that, if approved and incorporated into the Work:
      - 1) there will be no increase in cost to the City or increase in Contract Time; and

- 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in City's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 5.05.A.1, it may be submitted as a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow City to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by City from anyone other than Contractor.
- c. Contractor shall make written application to City for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application shall comply with Section 01 25 00 and:
  - 1) shall certify that the proposed substitute item will:
    - i. perform adequately the functions and achieve the results called for by the general design;
    - ii. be similar in substance to that specified;
    - iii. be suited to the same use as that specified; and
  - 2) will state:
    - i. the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of final completion on time;
    - ii. whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with City for other work on the Project) to adapt the design to the proposed substitute item;
    - iii. whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty; and
  - 3) will identify:
    - i. all variations of the proposed substitute item from that specified;
    - ii. available engineering, sales, maintenance, repair, and replacement services; and

- 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and Damage Claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by City. Contractor shall submit sufficient information to allow City, in City's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. Contractor shall make written application to City for review in the same manner as those provided in Paragraph 5.05.A.2.
- C. *City's Evaluation:* City will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 5.05.A and 5.05.B. City may require Contractor to furnish additional data about the proposed substitute. City will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until City's review is complete, which will be evidenced by a Change Order in the case of a substitute and an accepted Submittal for an "or-equal." City will advise Contractor in writing of its determination.
- D. *Special Guarantee:* City may require Contractor to furnish at Contractor's expense a special performance guarantee, warranty, or other surety with respect to any substitute. *Contractor shall indemnify and hold harmless City and anyone directly or indirectly employed by them from and against any and all claims, damages, losses and expenses (including attorneys fees) arising out of the use of substituted materials or equipment.*
- E. *City's Cost Reimbursement:* City will record City's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 5.05.A.2 and 5.05.B. Whether or not City approves a substitute so proposed or submitted by Contractor, Contractor may be required to reimburse City for evaluating each such proposed substitute. Contractor may also be required to reimburse City for the charges for making changes in the Contract Documents.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.
- G. *Substitute Reimbursement:* Costs (savings or charges) attributable to acceptance of a substitute shall be incorporated to the Contract by Participating Change Order.

#### 5.06 *Pre-Qualification of Bidders (Prime Contractors and Subcontractors)*

- A. The Contractor and any subcontractors are required to be prequalified for the work types requiring pre-qualification

#### 5.07 *Concerning Subcontractors, Suppliers, and Others*

- A. *Minority and Women Owned Business Enterprise Compliance:*



- Required for this Contract.  
(Check this box if there is any City Participation)
- Not Required for this Contract.

It is City policy to ensure the full and equitable participation by Minority and Women Business Enterprises (MWBE) in the procurement of goods and services on a contractual basis. If the Contract Documents provide for a MWBE goal, Contractor is required to comply with the intent of the City's MWBE Ordinance (as amended) by the following:

1. Contractor shall, upon request by City, provide complete and accurate information regarding actual work performed by a MWBE on the Contract and payment therefor.
  2. Contractor will not make additions, deletions, or substitutions of accepted MWBE without written consent of the City. Any unjustified change or deletion shall be a material breach of Contract and may result in debarment in accordance with the procedures outlined in the Ordinance.
  3. Contractor shall, upon request by City, allow an audit and/or examination of any books, records, or files in the possession of the Contractor that will substantiate the actual work performed by an MWBE. Material misrepresentation of any nature will be grounds for termination of the Contract. Any such misrepresentation may be grounds for disqualification of Contractor to bid on future contracts with the City for a period of not less than three years.
- B. Contractor shall be fully responsible to City for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between City and any such Subcontractor, Supplier or other individual or entity; nor
  2. shall create any obligation on the part of City to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- C. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- D. All Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work shall communicate with City through Contractor.
- E. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of these Contract

Documents, Contractor shall provide City contract numbers and reference numbers to the Subcontractors and/or Suppliers.

5.08 *Wage Rates*

- Required for this Contract.
- Not Required for this Contract.

- A. *Duty to pay Prevailing Wage Rates.* The Contractor shall comply with all requirements of Chapter 2258, Texas Government Code (as amended), including the payment of not less than the rates determined by the City Council of the City of Fort Worth to be the prevailing wage rates in accordance with Chapter 2258. Such prevailing wage rates are included in these Contract Documents.
- B. *Penalty for Violation.* A Contractor or any Subcontractor who does not pay the prevailing wage shall, upon demand made by the City, pay to the City \$60 for each worker employed for each calendar day or part of the day that the worker is paid less than the prevailing wage rates stipulated in these contract documents. This penalty shall be retained by the City to offset its administrative costs, pursuant to Texas Government Code 2258.023.
- C. *Complaints of Violations and City Determination of Good Cause.* On receipt of information, including a complaint by a worker, concerning an alleged violation of 2258.023, Texas Government Code, by a Contractor or Subcontractor, the City shall make an initial determination, before the 31st day after the date the City receives the information, as to whether good cause exists to believe that the violation occurred. The City shall notify in writing the Contractor or Subcontractor and any affected worker of its initial determination. Upon the City's determination that there is good cause to believe the Contractor or Subcontractor has violated Chapter 2258, the City shall retain the full amounts claimed by the claimant or claimants as the difference between wages paid and wages due under the prevailing wage rates, such amounts being subtracted from successive progress payments pending a final determination of the violation.
- D. *Arbitration Required if Violation Not Resolved.* An issue relating to an alleged violation of Section 2258.023, Texas Government Code, including a penalty owed to the City or an affected worker, shall be submitted to binding arbitration in accordance with the Texas General Arbitration Act (Article 224 et seq., Revised Statutes) if the Contractor or Subcontractor and any affected worker does not resolve the issue by agreement before the 15th day after the date the City makes its initial determination pursuant to Paragraph C above. If the persons required to arbitrate under this section do not agree on an arbitrator before the 11th day after the date that arbitration is required, a district court shall appoint an arbitrator on the petition of any of the persons. The City is not a party in the arbitration. The decision and award of the arbitrator is final and binding on all parties and may be enforced in any court of competent jurisdiction.
- E. *Records to be Maintained.* The Contractor and each Subcontractor shall, for a period of three (3) years following the date of acceptance of the work, maintain records that show (i) the name and

occupation of each worker employed by the Contractor in the construction of the Work provided for in this Contract; and (ii) the actual per diem wages paid to each worker. The records shall be open at all reasonable hours for inspection by the City. The provisions of Paragraph 6.23, Right to Audit, shall pertain to this inspection.

- F. *Progress Payments.* With each progress payment or payroll period, whichever is less, the Contractor shall submit an affidavit stating that the Contractor has complied with the requirements of Chapter 2258, Texas Government Code.
- G. *Posting of Wage Rates.* The Contractor shall post prevailing wage rates in a conspicuous place at all times.
- H. *Subcontractor Compliance.* The Contractor shall include in its subcontracts and/or shall otherwise require all of its Subcontractors to comply with Paragraphs A through G above.

#### 5.09 *Patent Fees and Royalties*

- A. *To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless City, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.*

#### 5.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, the City shall not be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.01.

#### 5.11 *Use of Site and Other Areas*

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

- 1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or

other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. At any time when, in the judgment of the City, the Contractor has obstructed or closed or is carrying on operations in a portion of a street, right-of-way, or easement greater than is necessary for proper execution of the Work, the City may require the Contractor to finish the section on which operations are in progress before work is commenced on any additional area of the Site.
  3. Should any Damage Claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly attempt to resolve the Damage Claim.
  4. *Pursuant to Paragraph 5.18, Contractor shall indemnify and hold harmless City, from and against all claims, costs, losses, and damages arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against City.*
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Site Maintenance Cleaning:* 24 hours after written notice is given to the Contractor that the clean-up on the job site is proceeding in a manner unsatisfactory to the City or Developer, if the Contractor fails to correct the unsatisfactory procedure, the City may take such direct action as the City deems appropriate to correct the clean-up deficiencies cited to the Contractor in the written notice (by letter or electronic communication), and shall be entitled to recover its cost in doing so. The City may withhold Final Acceptance until clean-up is complete and cost are recovered.
- D. *Final Site Cleaning:* Prior to Final Acceptance of the Work Contractor shall clean the Site and the Work and make it ready for utilization by City or adjacent property owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition or better all property disturbed by the Work.
- E. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 5.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site or in a place designated by the Contractor and approved by the City, one (1) record copy of all Drawings, Specifications, Addenda, Change Orders, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved

Samples and a counterpart of all accepted Submittals will be available to City for reference. Upon completion of the Work, these record documents, any operation and maintenance manuals, and Submittals will be delivered to City prior to Final Inspection. Contractor shall include accurate locations for buried and imbedded items.

### 5.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
1. all persons on the Site or who may be affected by the Work;
  2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of City's safety programs, if any.
- D. Contractor shall inform City of the specific requirements of Contractor's safety program, if any, with which City's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 5.13.A.2 or 5.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor.
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and City has accepted the Work.

### 5.14 *Safety Representative*

Contractor shall inform City in writing of Contractor's designated safety representative at the Site.

### 5.15 *Hazard Communication Programs*

Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers in accordance with Laws or Regulations.

### 5.16 *Submittals*

- A. Contractor shall submit required Submittals to City for review and acceptance. Each submittal will be identified as required by City.
1. Submit number of copies specified in the General Requirements.
  2. Data shown on the Submittals will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show City the services, materials, and equipment Contractor proposes to provide and to enable City to review the information for the limited purposes required by Paragraph 5.16.C.
  3. Submittals submitted as herein provided by Contractor and reviewed by City for conformance with the design concept shall be executed in conformity with the Contract Documents unless otherwise required by City.
  4. When Submittals are submitted for the purpose of showing the installation in greater detail, their review shall not excuse Contractor from requirements shown on the Drawings and Specifications.
  5. For-Information-Only submittals upon which the City is not expected to conduct review or take responsive action may be so identified in the Contract Documents.
  6. Submit required number of Samples specified in the Specifications.
  7. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as City may require to enable City to review the submittal for the limited purposes required by Paragraph 5.16.C.
- B. Where a Submittal is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to City's review and acceptance of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *City's Review:*
1. City will provide timely review of required Submittals in accordance with the Schedule of Submittals acceptable to City. City's review and acceptance will be only to determine if the items covered by the submittals 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. City's review and acceptance will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and acceptance of a separate item as such will not indicate approval of the assembly in which the item functions.
3. City's review and acceptance shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Section 01 33 00 and City has given written acceptance of each such variation by specific written notation thereof incorporated in or accompanying the Submittal. City's review and acceptance shall not relieve Contractor from responsibility for complying with the requirements of the Contract Documents.

5.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to City that all Work will be in accordance with the Contract Documents and will not be defective. City and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
  1. observations by City;
  2. recommendation or payment by City or Developer of any progress or final payment;
  3. the issuance of a certificate of Final Acceptance by City or any payment related thereto by City;
  4. use or occupancy of the Work or any part thereof by City;
  5. any review and acceptance of a Submittal by City;
  6. any inspection, test, or approval by others; or

7. any correction of defective Work by City.

- D. The Contractor shall remedy any defects or damages in the Work and pay for any damage to other work or property resulting therefrom which shall appear within a period of two (2) years from the date of Final Acceptance of the Work unless a longer period is specified and shall furnish a good and sufficient maintenance bond, complying with the requirements of Article 4.02.B. The City will give notice of observed defects with reasonable promptness.

#### 5.18 Indemnification

- A. Contractor covenants and agrees to indemnify, hold harmless and defend, at its own expense, the City, its officers, servants and employees, from and against any and all claims arising out of, or alleged to arise out of, the work and services to be performed by the Contractor, its officers, agents, employees, subcontractors, licenses or invitees under this Contract. **THIS INDEMNIFICATION PROVISION IS SPECIFICALLY INTENDED TO OPERATE AND BE EFFECTIVE EVEN IF IT IS ALLEGED OR PROVEN THAT ALL OR SOME OF THE DAMAGES BEING SOUGHT WERE CAUSED, IN WHOLE OR IN PART, BY ANY ACT, OMISSION OR NEGLIGENCE OF THE CITY.** This indemnity provision is intended to include, without limitation, indemnity for costs, expenses and legal fees incurred by the City in defending against such claims and causes of actions.
- B. Contractor covenants and agrees to indemnify and hold harmless, at its own expense, the City, its officers, servants and employees, from and against any and all loss, damage or destruction of property of the City, arising out of, or alleged to arise out of, the work and services to be performed by the Contractor, its officers, agents, employees, subcontractors, licensees or invitees under this Contract. **THIS INDEMNIFICATION PROVISION IS SPECIFICALLY INTENDED TO OPERATE AND BE EFFECTIVE EVEN IF IT IS ALLEGED OR PROVEN THAT ALL OR SOME OF THE DAMAGES BEING SOUGHT WERE CAUSED, IN WHOLE OR IN PART, BY ANY ACT, OMISSION OR NEGLIGENCE OF THE CITY.**

#### 5.19 Delegation of Professional Design Services

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, City will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such professional. Submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to City.



- C. City shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided City has specified to Contractor performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 5.19, City's review and acceptance of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. City's review and acceptance of Submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 5.16.C.

5.20 *Right to Audit:*

- A. The City reserves the right to audit all projects utilizing City funds
- B. The Contractor agrees that the City shall, until the expiration of three (3) years after final payment under this Contract, have access to and the right to examine and photocopy any directly pertinent books, documents, papers, and records of the Contractor involving transactions relating to this Contract. Contractor agrees that the City shall have access during Regular Working Hours to all necessary Contractor facilities and shall be provided adequate and appropriate work space in order to conduct audits in compliance with the provisions of this Paragraph. The City shall give Contractor reasonable advance notice of intended audits.
- C. Contractor further agrees to include in all its subcontracts hereunder a provision to the effect that the subcontractor agrees that the City shall, until the expiration of three (3) years after final payment under this Contract, have access to and the right to examine and photocopy any directly pertinent books, documents, papers, and records of such Subcontractor, involving transactions to the subcontract, and further, that City shall have access during Regular Working Hours to all Subcontractor facilities, and shall be provided adequate and appropriate work space in order to conduct audits in compliance with the provisions of this Paragraph. The City shall give Subcontractor reasonable advance notice of intended audits.
- D. Contractor and Subcontractor agree to photocopy such documents as may be requested by the City. The City agrees to reimburse Contractor for the cost of the copies as follows at the rate published in the Texas Administrative Code in effect as of the time copying is performed.

5.21 *Nondiscrimination*

- A. The City is responsible for operating Public Transportation Programs and implementing transit-related projects, which are funded in part with Federal financial assistance awarded by the U.S. Department of Transportation and the Federal Transit Administration (FTA), without discriminating against any person in the United States on the basis of race, color, or national origin.
- B. *Title VI, Civil Rights Act of 1964 as amended:* Contractor shall comply with the requirements of the Act and the Regulations as further defined in the Supplementary Conditions for any project receiving Federal assistance.

## **ARTICLE 6 – OTHER WORK AT THE SITE**

### *6.01 Related Work at Site*

- A. City may perform other work related to the Project at the Site with City's employees, or other City contractors, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then written notice thereof will be given to Contractor prior to starting any such other work; and
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and City, if City is performing other work with City's employees or other City contractors, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of City and the others whose work will be affected.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to City in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects in the work provided by others.

## **ARTICLE 7 – CITY'S RESPONSIBILITIES**

### *7.01 Inspections, Tests, and Approvals*

City's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 11.03.

### *7.02 Limitations on City's Responsibilities*

- A. The City shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. City will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- B. City will notify the Contractor of applicable safety plans pursuant to Paragraph 5.13.

### 7.03 *Compliance with Safety Program*

While at the Site, City's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which City has been informed pursuant to Paragraph 5.13.

## **ARTICLE 8 – CITY'S OBSERVATION STATUS DURING CONSTRUCTION**

### 8.01 *City's Project Representative*

City will provide one or more Project Representative(s) during the construction period. The duties and responsibilities and the limitations of authority of City's representative during construction are set forth in the Contract Documents.

- A. City's Project Representative will make visits to the Site at intervals appropriate to the various stages of construction as City deems necessary in order to observe the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, City's Project Representative will determine, in general, if the Work is proceeding in accordance with the Contract Documents. City's Project Representative will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. City's Project Representative's efforts will be directed toward providing City a greater degree of confidence that the completed Work will conform generally to the Contract Documents.
- B. City's Project Representative's visits and observations are subject to all the limitations on authority and responsibility in the Contract Documents.

### 8.02 *Authorized Variations in Work*

City's Project Representative may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on City Developer, and also on Contractor, who shall perform the Work involved promptly.

### 8.03 *Rejecting Defective Work*

City will have authority to reject Work which City's Project Representative believes to be defective, or will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. City will have authority to conduct special inspection or testing of the Work as provided in Article 11, whether or not the Work is fabricated, installed, or completed.

#### 8.04 *Determinations for Work Performed*

Contractor will determine the actual quantities and classifications of Work performed. City's Project Representative will review with Contractor the preliminary determinations on such matters before rendering a written recommendation. City's written decision will be final (except as modified to reflect changed factual conditions or more accurate data).

### **ARTICLE 9 – CHANGES IN THE WORK**

#### 9.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, City may, at any time or from time to time, order Extra Work. Upon notice of such Extra Work, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided). Extra Work shall be memorialized by a Participating Change Order which may or may not precede an order of Extra work.
- B. For minor changes of Work not requiring changes to Contract Time or Contract Price on a project with City participation, a Field Order may be issued by the City.

#### 9.02 *Notification to Surety*

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

### **ARTICLE 10 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIME**

#### 10.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Participating Change Order for projects with City participation.

#### 10.02 *Change of Contract Time*

- A. The Contract Time may only be changed by a Participating Change Order for projects with City participation.

#### 10.03 *Delays*

- A. If Contractor is delayed, City shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

## **ARTICLE 11 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

### *11.01 Notice of Defects*

Notice of all defective Work of which City has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

### *11.02 Access to Work*

City, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

### *11.03 Tests and Inspections*

- A. Contractor shall give City timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. If Contract Documents, Laws or Regulations of any public body having jurisdiction require any of the Work (or part thereof) to be inspected, tested, or approved, Contractor shall assume full responsibility for arranging and obtaining such independent inspections, tests, retests or approvals, pay all costs in connection therewith, and furnish City the required certificates of inspection or approval; excepting, however, those fees specifically identified in the Supplementary Conditions or any Texas Department of Licensure and Regulation (TDLR) inspections, which shall be paid as described in the Supplementary Conditions.
- C. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, re-tests, or approvals required for City's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, re-tests, or approvals shall be performed by organizations approved by City.
- D. City may arrange for the services of an independent testing laboratory ("Testing Lab") to perform any inspections or tests ("Testing") for any part of the Work, as determined solely by City.
  - 1. City will coordinate such Testing to the extent possible, with Contractor;
  - 2. Should any Testing under this Section 11.03 D result in a "fail", "did not pass" or other similar negative result, the Contractor shall be responsible for paying for any and all retests. Contractor's cancellation without cause of City initiated Testing shall be deemed a negative result and require a retest.

3. Any amounts owed for any retest under this Section 11.03 D shall be paid directly to the Testing Lab by Contractor. City will forward all invoices for retests to Developer/Contractor.
  4. If Contractor fails to pay the Testing Lab, City will not issue a letter of Final Acceptance until the Testing Lab is Paid
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of City, Contractor shall, if requested by City, uncover such Work for observation.

#### 11.04 *Uncovering Work*

- A. If any Work is covered contrary to the Contract Documents or specific instructions by the City, it must, if requested by City, be uncovered for City's observation and replaced at Contractor's expense.

#### 11.05 *City May Stop the Work*

If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, City may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of City to stop the Work shall not give rise to any duty on the part of City to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 11.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work pursuant to an acceptable schedule, whether or not fabricated, installed, or completed, or, if the Work has been rejected by City, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, additional testing, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others). Failure to require the removal of any defective Work shall not constitute acceptance of such Work.
- B. When correcting defective Work under the terms of this Paragraph 11.06 or Paragraph 11.07, Contractor shall take no action that would void or otherwise impair City's special warranty and guarantee, if any, on said Work.

#### 11.07 *Correction Period*

- A. If within two (2) years after the date of Final Acceptance (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract

Documents), any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by City or permitted by Laws and Regulations as contemplated in Paragraph 5.10.A is found to be defective, Contractor shall promptly, without cost to City and in accordance with City's written instructions:

1. repair such defective land or areas; or
  2. correct such defective Work; or
  3. if the defective Work has been rejected by City, remove it from the Project and replace it with Work that is not defective, and
  4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of City's written instructions, or in an emergency where delay would cause serious risk of loss or damage, City may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 11.07, the correction period hereunder with respect to such Work may be required to be extended for an additional period of one year after the end of the initial correction period. City shall provide 30 days written notice to Contractor and Developer should such additional warranty coverage be required. Contractor's obligations under this Paragraph 11.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 11.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

#### 11.08 *City May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from City to correct defective Work, or to remove and replace rejected Work as required by City in accordance with Paragraph 11.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, City may, after seven (7) days written notice to Contractor and the Developer, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 11.09, City shall proceed expeditiously. In connection with such corrective or remedial action, City may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment incorporated in the Work, stored at the Site or for which City has paid Contractor but which are

stored elsewhere. Contractor shall allow City, City's representatives, agents, consultants, employees, and City's other contractors, access to the Site to enable City to exercise the rights and remedies under this Paragraph.

- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) incurred or sustained by City in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and City shall be entitled to an appropriate decrease in the Contract Price.
- D. Contractor shall not be allowed an extension of the Contract Time because of any delay in the performance of the Work attributable to the exercise of City's rights and remedies under this Paragraph 11.09.

## **ARTICLE 12 – COMPLETION**

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

Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment will pass to City no later than the time of Final Acceptance and shall be free and clear of all Liens.

### *12.02 Partial Utilization*

- A. Prior to Final Acceptance of all the Work, City may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which City, determines constitutes a separately functioning and usable part of the Work that can be used by City for its intended purpose without significant interference with Contractor's performance of the remainder of the Work. City at any time may notify Contractor in writing to permit City to use or occupy any such part of the Work which City determines to be ready for its intended use, subject to the following conditions:
  - 1. Contractor at any time may notify City in writing that Contractor considers any such part of the Work ready for its intended use.
  - 2. Within a reasonable time after notification as enumerated in Paragraph 14.05.A.1, City and Contractor shall make an inspection of that part of the Work to determine its status of completion. If City does not consider that part of the Work to be substantially complete, City will notify Contractor in writing giving the reasons therefor.
  - 3. Partial Utilization will not constitute Final Acceptance by City.

### *12.03 Final Inspection*

- A. Upon written notice from Contractor that the entire Work is complete in accordance with the Contract Documents:



1. within 10 days, City will schedule a Final Inspection with Contractor.
2. City will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 12.04 *Final Acceptance*

- A. Upon completion by Contractor to City's satisfaction, of any additional Work identified in the Final Inspection, City will issue to Contractor a letter of Final Acceptance upon the satisfaction of the following:
1. All documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.03;
  2. consent of the surety, if any, to Final Acceptance;
  3. a list of all pending or released Damage Claims against City that Contractor believes are unsettled; and
  4. affidavits of payments and complete and legally effective releases or waivers (satisfactory to City) of all Lien rights arising out of or Liens filed in connection with the Work.
  5. after all Damage Claims have been resolved:
    - a. directly by the Contractor or;
    - b. Contractor provides evidence that the Damage Claim has been reported to Contractor's insurance provider for resolution.
  6. Issuing Final Acceptance by the City shall not relieve the Contractor of any guarantees or other requirements of the Contract Documents which specifically continue thereafter.

### **ARTICLE 13 – SUSPENSION OF WORK**

#### 13.01 *City May Suspend Work*

- A. At any time and without cause, City may suspend the Work or any portion thereof by written notice to Contractor and which may fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. During temporary suspension of the Work covered by these Contract Documents, for any reason, the City will stop contract time on City participation projects.
- B. Should the Contractor not be able to complete a portion of the Project due to causes beyond the control of and without the fault or negligence of the Contractor, and should it be determined by mutual consent of the Contractor and City that a solution to allow construction to proceed is not

available within a reasonable period of time, Contractor may request an extension in Contract Time, directly attributable to any such suspension.

- C. If it should become necessary to suspend the Work for an indefinite period, the Contractor shall store all materials in such a manner that they will not obstruct or impede the public unnecessarily nor become damaged in any way, and he shall take every precaution to prevent damage or deterioration of the work performed; he shall provide suitable drainage about the work, and erect temporary structures where necessary.

## **ARTICLE 14 – MISCELLANEOUS**

### *14.01 Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
  - 1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
  - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.
- B. Business address changes must be promptly made in writing to the other party.
- C. Whenever the Contract Documents specifies giving notice by electronic means such electronic notice shall be deemed sufficient upon confirmation of receipt by the receiving party.

### *14.02 Computation of Times*

When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday the next Working Day shall become the last day of the period.

### *14.03 Cumulative Remedies*

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

#### 14.04 *Survival of Obligations*

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

#### 14.05 *Headings*

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



- 1           b. Excavated and waste materials shall be stored in such a way as not to interfere
- 2           with the use of spaces that may be designated to be left free and unobstructed
- 3           and so as not to inconvenience occupants of adjacent property.
- 4           c. If the street is occupied by railroad tracks, the Work shall be carried on in such
- 5           manner as not to interfere with the operation of the railroad.
- 6           1) All Work shall be in accordance with railroad requirements set forth in
- 7           Division 0 as well as the railroad permit.

8       D. Work within Easements

- 9           1. Do not enter upon private property for any purpose without having previously
- 10          obtained permission from the owner of such property.
- 11          2. Do not store equipment or material on private property unless and until the
- 12          specified approval of the property owner has been secured in writing by the
- 13          Contractor and a copy furnished to the City.
- 14          3. Unless specifically provided otherwise, clear all rights-of-way or easements of
- 15          obstructions which must be removed to make possible proper prosecution of the
- 16          Work as a part of the project construction operations.
- 17          4. Preserve and use every precaution to prevent damage to, all trees, shrubbery, plants,
- 18          lawns, fences, culverts, curbing, and all other types of structures or improvements,
- 19          to all water, sewer, and gas lines, to all conduits, overhead pole lines, or
- 20          appurtenances thereof, including the construction of temporary fences and to all
- 21          other public or private property adjacent to the Work.
- 22          5. Notify the proper representatives of the owners or occupants of the public or private
- 23          lands of interest in lands which might be affected by the Work.
- 24           a. Such notice shall be made at least 48 hours in advance of the beginning of the
- 25           Work.
- 26           b. Notices shall be applicable to both public and private utility companies and any
- 27           corporation, company, individual, or other, either as owners or occupants,
- 28           whose land or interest in land might be affected by the Work.
- 29           c. Be responsible for all damage or injury to property of any character resulting
- 30           from any act, omission, neglect, or misconduct in the manner or method or
- 31           execution of the Work, or at any time due to defective work, material, or
- 32           equipment.
- 33          6. Fence
- 34           a. Restore all fences encountered and removed during construction of the Project
- 35           to the original or a better than original condition.
- 36           b. Erect temporary fencing in place of the fencing removed whenever the Work is
- 37           not in progress and when the site is vacated overnight, and/or at all times to
- 38           provide site security.
- 39           c. The cost for all fence work within easements, including removal, temporary
- 40           closures and replacement, shall be subsidiary to the various items bid in the
- 41           project proposal, unless a bid item is specifically provided in the proposal.

- 1 **1.5 SUBMITTALS [NOT USED]**
- 2 **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**
- 3 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**
- 4 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**
- 5 **1.9 QUALITY ASSURANCE [NOT USED]**
- 6 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**
- 7 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**
- 8 **1.12 WARRANTY [NOT USED]**

9 **PART 2 - PRODUCTS [NOT USED]**

10 **PART 3 - EXECUTION [NOT USED]**

11 **END OF SECTION**

12

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

13

**SECTION 01 25 00**  
**SUBSTITUTION PROCEDURES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. The procedure for requesting the approval of substitution of a product that is not equivalent to a product which is specified by descriptive or performance criteria or defined by reference to 1 or more of the following:
    - a. Name of manufacturer
    - b. Name of vendor
    - c. Trade name
    - d. Catalog number
  - 2. Substitutions are not "or-equals".
- B. Deviations from this City of Fort Worth Standard Specification
  - 1. None.
- C. Related Specification Sections include, but are not necessarily limited to:
  - 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
  - 2. Division 1 – General Requirements

**1.2 PRICE AND PAYMENT PROCEDURES**

- A. Measurement and Payment
  - 1. Work associated with this Item is considered subsidiary to the various items bid. No separate payment will be allowed for this Item.

**1.3 REFERENCES [NOT USED]**

**1.4 ADMINISTRATIVE REQUIREMENTS**

- A. Request for Substitution - General
  - 1. Within 30 days after award of Contract (unless noted otherwise), the City will consider formal requests from Contractor for substitution of products in place of those specified.
  - 2. Certain types of equipment and kinds of material are described in Specifications by means of references to names of manufacturers and vendors, trade names, or catalog numbers.
    - a. When this method of specifying is used, it is not intended to exclude from consideration other products bearing other manufacturer's or vendor's names, trade names, or catalog numbers, provided said products are "or-equals," as determined by City.
  - 3. Other types of equipment and kinds of material may be acceptable substitutions under the following conditions:
    - a. Or-equals are unavailable due to strike, discontinued production of products meeting specified requirements, or other factors beyond control of Contractor;
    - or,

- b. Contractor proposes a cost and/or time reduction incentive to the City.

## 1.5 SUBMITTALS

- A. See Request for Substitution Form (attached)
- B. Procedure for Requesting Substitution
  - 1. Substitution shall be considered only:
    - a. After award of Contract
    - b. Under the conditions stated herein
  - 2. Submit **3** copies of each written request for substitution, including:
    - a. Documentation
      - 1) Complete data substantiating compliance of proposed substitution with Contract Documents
      - 2) Data relating to changes in construction schedule, when a reduction is proposed
      - 3) Data relating to changes in cost
    - b. For products
      - 1) Product identification
        - a) Manufacturer's name
        - b) Telephone number and representative contact name
        - c) Specification Section or Drawing reference of originally specified product, including discrete name or tag number assigned to original product in the Contract Documents
      - 2) Manufacturer's literature clearly marked to show compliance of proposed product with Contract Documents
      - 3) Itemized comparison of original and proposed product addressing product characteristics including, but not necessarily limited to:
        - a) Size
        - b) Composition or materials of construction
        - c) Weight
        - d) Electrical or mechanical requirements
      - 4) Product experience
        - a) Location of past projects utilizing product
        - b) Name and telephone number of persons associated with referenced projects knowledgeable concerning proposed product
        - c) Available field data and reports associated with proposed product
      - 5) Samples
        - a) Provide at request of City.
        - b) Samples become the property of the City.
    - c. For construction methods:
      - 1) Detailed description of proposed method
      - 2) Illustration drawings
- C. Approval or Rejection
  - 1. Written approval or rejection of substitution given by the City
  - 2. City reserves the right to require proposed product to comply with color and pattern of specified product if necessary to secure design intent.
  - 3. In the event the substitution is approved, if a reduction in cost or time results, it will be documented by Change Order.



4. Substitution will be rejected if:
  - a. Submittal is not through the Contractor with his stamp of approval
  - b. Request is not made in accordance with this Specification Section
  - c. In the Developer's opinion, acceptance will require substantial revision of the original design
  - d. In the City's or Developer's opinion, substitution will not perform adequately the function consistent with the design intent

**1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

**1.7 CLOSEOUT SUBMITTALS [NOT USED]**

**1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

**1.9 QUALITY ASSURANCE**

- A. In making request for substitution or in using an approved product, the Contractor represents that the Contractor:
  1. Has investigated proposed product, and has determined that it is adequate or superior in all respects to that specified, and that it will perform function for which it is intended
  2. Will provide same guarantee for substitute item as for product specified
  3. Will coordinate installation of accepted substitution into Work, to include building modifications if necessary, making such changes as may be required for Work to be complete in all respects
  4. Waives all claims for additional costs related to substitution which subsequently arise

**1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

**1.11 FIELD [SITE] CONDITIONS [NOT USED]**

**1.12 WARRANTY [NOT USED]**

**PART 2 - PRODUCTS [NOT USED]**

**PART 3 - EXECUTION [NOT USED]**

**END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

**EXHIBIT A  
REQUEST FOR SUBSTITUTION FORM:**

TO: \_\_\_\_\_

PROJECT: \_\_\_\_\_ DATE: \_\_\_\_\_

We hereby submit for your consideration the following product instead of the specified item for the above project:

SECTION	PARAGRAPH	SPECIFIED ITEM
---------	-----------	----------------

Proposed Substitution: \_\_\_\_\_

Reason for Substitution: \_\_\_\_\_

Include complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installation.

Fill in Blanks Below:

A. Will the undersigned contractor pay for changes to the building design, including engineering and detailing costs caused by the requested substitution?

B. \_\_\_\_\_  
What effect does substitution have on other trades?

C. \_\_\_\_\_  
Differences between proposed substitution and specified item?

D. \_\_\_\_\_  
Differences in product cost or product delivery time?

E. \_\_\_\_\_  
Manufacturer's guarantees of the proposed and specified items are:

\_\_\_\_\_ Equal \_\_\_\_\_ Better (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted By: \_\_\_\_\_ For Use by City

Signature \_\_\_\_\_ as noted \_\_\_\_\_ Recommended \_\_\_\_\_ Recommended

Firm \_\_\_\_\_ \_\_\_\_\_ Not recommended \_\_\_\_\_ Received late

Address \_\_\_\_\_ By \_\_\_\_\_

Date \_\_\_\_\_ Date \_\_\_\_\_

Telephone \_\_\_\_\_ Remarks \_\_\_\_\_

For Use by City: \_\_\_\_\_

\_\_\_\_\_ Approved \_\_\_\_\_ Rejected

City \_\_\_\_\_ Date \_\_\_\_\_



- 1 e. Other City representatives
- 2 f. Others as appropriate
- 3 4. Preliminary Agenda may include:
- 4 a. Introduction of Project Personnel
- 5 b. General Description of Project
- 6 c. Status of right-of-way, utility clearances, easements or other pertinent permits
- 7 d. Contractor's work plan and schedule
- 8 e. Contract Time
- 9 f. Notice to Proceed
- 10 g. Construction Staking
- 11 h. Progress Payments
- 12 i. Extra Work and Change Order Procedures
- 13 j. Field Orders
- 14 k. Disposal Site Letter for Waste Material
- 15 l. Insurance Renewals
- 16 m. Payroll Certification
- 17 n. Material Certifications and Quality Control Testing
- 18 o. Public Safety and Convenience
- 19 p. Documentation of Pre-Construction Conditions
- 20 q. Weekend Work Notification
- 21 r. Legal Holidays
- 22 s. Trench Safety Plans
- 23 t. Confined Space Entry Standards
- 24 u. Coordination with the City's representative for operations of existing water
- 25 systems
- 26 v. Storm Water Pollution Prevention Plan
- 27 w. Coordination with other Contractors
- 28 x. Early Warning System
- 29 y. Contractor Evaluation
- 30 z. Special Conditions applicable to the project
- 31 aa. Damages Claims
- 32 bb. Submittal Procedures
- 33 cc. Substitution Procedures
- 34 dd. Correspondence Routing
- 35 ee. Record Drawings
- 36 ff. Temporary construction facilities
- 37 gg. MBE/SBE procedures
- 38 hh. Final Acceptance
- 39 ii. Final Payment
- 40 jj. Questions or Comments



**SECTION 01 32 33**  
**PRECONSTRUCTION VIDEO**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Administrative and procedural requirements for:
    - a. Preconstruction Videos
- B. Deviations from this City of Fort Worth Standard Specification
  - 1. Though not mandatory, it is highly recommended on infill developer projects.
- C. Related Specification Sections include, but are not necessarily limited to:
  - 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
  - 2. Division 1 – General Requirements

**1.2 PRICE AND PAYMENT PROCEDURES**

- A. Measurement and Payment
  - 1. Work associated with this Item is considered subsidiary to the various items bid.  
No separate payment will be allowed for this Item.

**1.3 REFERENCES [NOT USED]**

**1.4 ADMINISTRATIVE REQUIREMENTS**

- A. Preconstruction Video
  - 1. Produce a preconstruction video of the site/alignment, including all areas in the vicinity of and to be affected by construction.
    - a. Provide digital copy of video upon request by the City.
  - 2. Retain a copy of the preconstruction video until the end of the maintenance surety period.

**1.5 SUBMITTALS [NOT USED]**

**1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

**1.7 CLOSEOUT SUBMITTALS [NOT USED]**

**1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

**1.9 QUALITY ASSURANCE [NOT USED]**

**1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

**1.11 FIELD [SITE] CONDITIONS [NOT USED]**

**1.12 WARRANTY [NOT USED]**

**PART 2 - PRODUCTS [NOT USED]**

**PART 3 - EXECUTION [NOT USED]**

**END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

1 **SECTION 01 33 00**  
2 **DAP SUBMITTALS**

3 **PART 1 - GENERAL**

4 **1.1 SUMMARY**

5 A. Section Includes:

- 6 1. General methods and requirements of submissions applicable to the following  
7 Work-related submittals:
  - 8 a. Shop Drawings
  - 9 b. Product Data (including Standard Product List submittals)
  - 10 c. Samples
  - 11 d. Mock Ups

12 B. Deviations from this City of Fort Worth Standard Specification

- 13 1. None.

14 C. Related Specification Sections include, but are not necessarily limited to:

- 15 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
- 16 2. Division 1 – General Requirements

17 **1.2 PRICE AND PAYMENT PROCEDURES**

18 A. Measurement and Payment

- 19 1. Work associated with this Item is considered subsidiary to the various items bid.  
20 No separate payment will be allowed for this Item.

21 **1.3 REFERENCES [NOT USED]**

22 **1.4 ADMINISTRATIVE REQUIREMENTS**

23 A. Coordination



- 1 1. Notify the City in writing, at the time of submittal, of any deviations in the  
2 submittals from the requirements of the Contract Documents.
- 3 2. Coordination of Submittal Times
- 4 a. Prepare, prioritize and transmit each submittal sufficiently in advance of  
5 performing the related Work or other applicable activities, or within the time  
6 specified in the individual Work Sections, of the Specifications.
- 7 b. Contractor is responsible such that the installation will not be delayed by  
8 processing times including, but not limited to:
  - 9 a) Disapproval and resubmittal (if required)
  - 10 b) Coordination with other submittals
  - 11 c) Testing
  - 12 d) Purchasing
  - 13 e) Fabrication
  - 14 f) Delivery
  - 15 g) Similar sequenced activities
- 16 c. No extension of time will be authorized because of the Contractor's failure to  
17 transmit submittals sufficiently in advance of the Work.
- 18 d. Make submittals promptly in accordance with approved schedule, and in such  
19 sequence as to cause no delay in the Work or in the work of any other  
20 contractor.
- 21 B. Submittal Numbering
- 22 1. When submitting shop drawings or samples, utilize a 9-character submittal cross-  
23 reference identification numbering system in the following manner:
  - 24 a. Use the first 6 digits of the applicable Specification Section Number.
  - 25 b. For the next 2 digits number use numbers 01-99 to sequentially number each  
26 initial separate item or drawing submitted under each specific Section  
27 number.
  - 28 c. Last use a letter, A-Z, indicating the resubmission of the same drawing (i.e.  
29 A=2nd submission, B=3rd submission, C=4th submission, etc.). A typical  
30 submittal number would be as follows:

1

2

## 03 30 00-08-B

3

4

1) 03 30 00 is the Specification Section for Concrete

5

2) 08 is the eighth initial submittal under this Specification Section

6

3) B is the third submission (second resubmission) of that particular shop drawing

7

8

## C. Contractor Certification

9

1. Review shop drawings, product data and samples, including those by subcontractors, prior to submission to determine and verify the following:

10

11

a. Field measurements

12

b. Field construction criteria

13

c. Catalog numbers and similar data

14

d. Conformance with the Contract Documents

15

2. Provide each shop drawing, sample and product data submitted by the Contractor with a Certification Statement affixed including:

16

17

a. The Contractor's Company name

18

b. Signature of submittal reviewer

19

c. Certification Statement

20

1) "By this submittal, I hereby represent that I have determined and verified field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings."

21

22

23

24

## D. Submittal Format

25

1. Fold shop drawings larger than 8 ½ inches x 11 inches to 8 ½ inches x 11 inches.

26

2. Bind shop drawings and product data sheets together.

27

3. Order

- 1 a. Cover Sheet
- 2 1) Description of Packet
- 3 2) Contractor Certification
- 4 b. List of items / Table of Contents
- 5 c. Product Data /Shop Drawings/Samples /Calculations
- 6 E. Submittal Content
- 7 1. The date of submission and the dates of any previous submissions
- 8 2. The Project title and number
- 9 3. Contractor identification
- 10 4. The names of:
- 11 a. Contractor
- 12 b. Supplier
- 13 c. Manufacturer
- 14 5. Identification of the product, with the Specification Section number, page and
- 15 paragraph(s)
- 16 6. Field dimensions, clearly identified as such
- 17 7. Relation to adjacent or critical features of the Work or materials
- 18 8. Applicable standards, such as ASTM or Federal Specification numbers
- 19 9. Identification by highlighting of deviations from Contract Documents
- 20 10. Identification by highlighting of revisions on resubmittals
- 21 11. An 8-inch x 3-inch blank space for Contractor and City stamps
- 22 F. Shop Drawings
- 23 1. As specified in individual Work Sections includes, but is not necessarily limited to:
- 24 a. Custom-prepared data such as fabrication and erection/installation (working)
- 25 drawings

- 1           b. Scheduled information
- 2           c. Setting diagrams
- 3           d. Actual shopwork manufacturing instructions
- 4           e. Custom templates
- 5           f. Special wiring diagrams
- 6           g. Coordination drawings
- 7           h. Individual system or equipment inspection and test reports including:
  - 8               1) Performance curves and certifications
  - 9               i. As applicable to the Work
- 10          2. Details
  - 11           a. Relation of the various parts to the main members and lines of the structure
  - 12           b. Where correct fabrication of the Work depends upon field measurements
    - 13               1) Provide such measurements and note on the drawings prior to submitting
    - 14               for approval.
- 15          G. Product Data
  - 16           1. For submittals of product data for products included on the City's Standard
  - 17           Product List, clearly identify each item selected for use on the Project.
  - 18           2. For submittals of product data for products not included on the City's Standard
  - 19           Product List, submittal data may include, but is not necessarily limited to:
    - 20               a. Standard prepared data for manufactured products (sometimes referred to as
    - 21               catalog data)
      - 22                   1) Such as the manufacturer's product specification and installation
      - 23                   instructions
      - 24                   2) Availability of colors and patterns
      - 25                   3) Manufacturer's printed statements of compliances and applicability
      - 26                   4) Roughing-in diagrams and templates
      - 27                   5) Catalog cuts

- 1                   6) Product photographs
- 2                   7) Standard wiring diagrams
- 3                   8) Printed performance curves and operational-range diagrams
- 4                   9) Production or quality control inspection and test reports and certifications
- 5                   10) Mill reports
- 6                   11) Product operating and maintenance instructions and recommended
- 7                         spare-parts listing and printed product warranties
- 8                   12) As applicable to the Work

9           H. Samples

- 10           1. As specified in individual Sections, include, but are not necessarily limited to:
- 11                 a. Physical examples of the Work such as:
- 12                         1) Sections of manufactured or fabricated Work
- 13                         2) Small cuts or containers of materials
- 14                         3) Complete units of repetitively used products color/texture/pattern
- 15                                 swatches and range sets
- 16                         4) Specimens for coordination of visual effect
- 17                         5) Graphic symbols and units of Work to be used by the City for independent
- 18                                 inspection and testing, as applicable to the Work
- 19           I. Do not start Work requiring a shop drawing, sample or product data nor any material
- 20                         to be fabricated or installed prior to the approval or qualified approval of such item.
- 21                         1. Fabrication performed, materials purchased or on-site construction accomplished
- 22                                 which does not conform to approved shop drawings and data is at the Contractor's
- 23                                 risk.
- 24                         2. The City will not be liable for any expense or delay due to corrections or remedies
- 25                                 required to accomplish conformity.
- 26                         3. Complete project Work, materials, fabrication, and installations in conformance
- 27                                 with approved shop drawings, applicable samples, and product data.

- 1 J. Submittal Distribution
- 2 1. Electronic Distribution
- 3 a. Confirm development of Project directory for electronic submittals to be  
4 uploaded to City's Buzzsaw site, or another external FTP site approved by the  
5 City.
- 6 b. Shop Drawings
- 7 1) Upload submittal to designated project directory and notify appropriate  
8 City representatives via email of submittal posting.
- 9 2) Hard Copies
- 10 a) 3 copies for all submittals
- 11 b) If Contractor requires more than 1 hard copy of Shop Drawings  
12 returned, Contractor shall submit more than the number of copies  
13 listed above.
- 14 c. Product Data
- 15 1) Upload submittal to designated project directory and notify appropriate  
16 City representatives via email of submittal posting.
- 17 2) Hard Copies
- 18 a) 3 copies for all submittals
- 19 d. Samples
- 20 1) Distributed to the Project Representative
- 21 2. Hard Copy Distribution (if required in lieu of electronic distribution)
- 22 a. Shop Drawings
- 23 1) Distributed to the City
- 24 2) Copies
- 25 a) 8 copies for mechanical submittals
- 26 b) 7 copies for all other submittals
- 27 c) If Contractor requires more than 3 copies of Shop Drawings returned,  
28 Contractor shall submit more than the number of copies listed above.

- 1           b. Product Data
- 2                1) Distributed to the City
- 3                2) Copies
- 4                    a) 4 copies
- 5           c. Samples
- 6                1) Distributed to the Project Representative
- 7                2) Copies
- 8                    a) Submit the number stated in the respective Specification Sections.
- 9           3. Distribute reproductions of approved shop drawings and copies of approved
- 10           product data and samples, where required, to the job site file and elsewhere as
- 11           directed by the City.
- 12                a. Provide number of copies as directed by the City but not exceeding the
- 13                number previously specified.
- 14           K. Submittal Review
- 15                1. The review of shop drawings, data and samples will be for general conformance
- 16                with the design concept and Contract Documents. This is not to be construed as:
- 17                    a. Permitting any departure from the Contract requirements
- 18                    b. Relieving the Contractor of responsibility for any errors, including details,
- 19                    dimensions, and materials
- 20                    c. Approving departures from details furnished by the City, except as otherwise
- 21                    provided herein
- 22                2. The review and approval of shop drawings, samples or product data by the City
- 23                does not relieve the Contractor from his/her responsibility with regard to the
- 24                fulfillment of the terms of the Contract.
- 25                    a. All risks of error and omission are assumed by the Contractor, and the City will
- 26                    have no responsibility therefore.
- 27                3. The Contractor remains responsible for details and accuracy, for coordinating the
- 28                Work with all other associated work and trades, for selecting fabrication
- 29                processes, for techniques of assembly and for performing Work in a safe manner.

- 1           4. If the shop drawings, data or samples as submitted describe variations and show a  
2           departure from the Contract requirements which City finds to be in the interest of  
3           the City and to be so minor as not to involve a change in Contract Price or time for  
4           performance, the City may return the reviewed drawings without noting an  
5           exception.
- 6           5. Submittals will be returned to the Contractor under 1 of the following codes:
- 7           a. Code 1
- 8                 1) "NO EXCEPTIONS TAKEN" is assigned when there are no notations or  
9                 comments on the submittal.
- 10                a) When returned under this code the Contractor may release the  
11                equipment and/or material for manufacture.
- 12           b. Code 2
- 13                1) "EXCEPTIONS NOTED". This code is assigned when a confirmation of the  
14                notations and comments IS NOT required by the Contractor.
- 15                a) The Contractor may release the equipment or material for  
16                manufacture; however, all notations and comments must be  
17                incorporated into the final product.
- 18           c. Code 3
- 19                1) "EXCEPTIONS NOTED/RESUBMIT". This combination of codes is assigned  
20                when notations and comments are extensive enough to require a  
21                resubmittal of the package.
- 22                a) The Contractor may release the equipment or material for  
23                manufacture; however, all notations and comments must be  
24                incorporated into the final product.
- 25                b) This resubmittal is to address all comments, omissions and  
26                non-conforming items that were noted.
- 27                c) Resubmittal is to be received by the City within 15 Calendar Days of  
28                the date of the City's transmittal requiring the resubmittal.
- 29           d. Code 4
- 30                1) "NOT APPROVED" is assigned when the submittal does not meet the intent  
31                of the Contract Documents.



1 a) The Contractor must resubmit the entire package revised to bring the  
2 submittal into conformance.

3 b) It may be necessary to resubmit using a different  
4 manufacturer/vendor to meet the Contract Documents.

5 6. Resubmittals

6 a. Handled in the same manner as first submittals

7 1) Corrections other than requested by the City

8 2) Marked with revision triangle or other similar method

9 a) At Contractor's risk if not marked

10 b. Submittals for each item will be reviewed no more than twice at the City's  
11 expense.

12 1) All subsequent reviews will be performed at times convenient to the City  
13 and at the Contractor's expense, based on the City's or City  
14 Representative's then prevailing rates.

15 2) Provide Contractor reimbursement to the City within 30 Calendar Days for  
16 all such fees invoiced by the City.

17 c. The need for more than 1 resubmission or any other delay in obtaining City's  
18 review of submittals, will not entitle the Contractor to an extension of  
19 Contract Time.

20 7. Partial Submittals

21 a. City reserves the right to not review submittals deemed partial, at the City's  
22 discretion.

23 b. Submittals deemed by the City to be not complete will be returned to the  
24 Contractor, and will be considered "Not Approved" until resubmitted.

25 c. The City may at its option provide a list or mark the submittal directing the  
26 Contractor to the areas that are incomplete.

27 8. If the Contractor considers any correction indicated on the shop drawings to  
28 constitute a change to the Contract Documents, then written notice must be  
29 provided thereof to the Developer at least 7 Calendar Days prior to release for  
30 manufacture.

1           9. When the shop drawings have been completed to the satisfaction of the City, the  
2           Contractor may carry out the construction in accordance therewith and no further  
3           changes therein except upon written instructions from the City.

4           10. Each submittal, appropriately coded, will be returned within 30 Calendar Days  
5           following receipt of submittal by the City.

6           L. Mock ups

7           1. Mock Up units as specified in individual Sections, include, but are not necessarily  
8           limited to, complete units of the standard of acceptance for that type of Work to  
9           be used on the Project. Remove at the completion of the Work or when directed.

10          M. Qualifications

11          1. If specifically required in other Sections of these Specifications, submit a P.E.  
12          Certification for each item required.

13          N. Request for Information (RFI)

14          1. Contractor Request for additional information

15           a. Clarification or interpretation of the contract documents

16           b. When the Contractor believes there is a conflict between Contract Documents

17           c. When the Contractor believes there is a conflict between the Drawings and  
18           Specifications

19           1) Identify the conflict and request clarification

20          2. Sufficient information shall be attached to permit a written response without  
21          further information.

22

23

24

25

26          **1.5 SUBMITTALS [NOT USED]**

1 **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

2 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

3 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

4 **1.9 QUALITY ASSURANCE [NOT USED]**

5 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

6 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

7 **1.12 WARRANTY [NOT USED]**

8 **PART 2 - PRODUCTS [NOT USED]**

9 **PART 3 - EXECUTION [NOT USED]**

10 **END OF SECTION**

11

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
12/20/2012	D. Johnson	1.4.K.8. Working Days modified to Calendar Days

12



- 1 1. When work in the right-of-way which is under the jurisdiction of the Texas  
2 Department of Transportation (TxDOT):
  - 3 a. Notify the Texas Department of Transportation prior  
4 to commencing any work therein in accordance with the provisions of the  
5 permit
  - 6 b. All work performed in the TxDOT right-of-way shall  
7 be performed in compliance with and subject to approval from the Texas  
8 Department of Transportation
- 9 B. Work near High Voltage Lines
  - 10 1. Regulatory Requirements
    - 11 a. All Work near High Voltage Lines (more than 600  
12 volts measured between conductors or between a conductor and the ground)  
13 shall be in accordance with Health and Safety Code, Title 9, Subtitle A, Chapter  
14 752.
  - 15 2. Warning sign
    - 16 a. Provide sign of sufficient size meeting all OSHA  
17 requirements.
  - 18 3. Equipment operating within 10 feet of high voltage lines will require the following  
19 safety features
    - 20 a. Insulating cage-type of guard about the boom or arm
    - 21 b. Insulator links on the lift hook connections for back  
22 hoes or dippers
    - 23 c. Equipment must meet the safety requirements as set  
24 forth by OSHA and the safety requirements of the owner of the high voltage  
25 lines
  - 26 4. Work within 6 feet of high voltage electric lines
    - 27 a. Notification shall be given to:
      - 28 1) The power company (example: ONCOR)
        - 29 a) Maintain an accurate log of all such calls to power company and record  
30 action taken in each case.
      - 31 b. Coordination with power company
        - 32 1) After notification coordinate with the power company to:
          - 33 a) Erect temporary mechanical barriers, de-energize the lines, or raise or  
34 lower the lines
      - 35 c. No personnel may work within 6 feet of a high voltage  
36 line before the above requirements have been met.
  - 37 C. Confined Space Entry Program
    - 38 1. Provide and follow approved Confined Space Entry Program in accordance with  
39 OSHA requirements.
    - 40 2. Confined Spaces include:
      - 41 a. Manholes
      - 42 b. All other confined spaces in accordance with OSHA's  
43 Permit Required for Confined Spaces
  - 44 D. Use of Explosives, Drop Weight, Etc.
    - 45 1. When Contract Documents permit on the project the following will apply:
      - 46 a. Public Notification

- 1) Submit notice to City and proof of adequate insurance coverage, 24 hours prior to commencing.
- 2) Minimum 24 hour public notification in accordance with Section 01 31 13

E. Water Department Coordination

1. During the construction of this project, it will be necessary to deactivate, for a period of time, existing lines. The Contractor shall be required to coordinate with the Water Department to determine the best times for deactivating and activating those lines.
2. Coordinate any event that will require connecting to or the operation of an existing City water line system with the City's representative.
  - a. Coordination shall be in accordance with Section 33 12 25.
  - b. If needed, obtain a hydrant water meter from the Water Department for use during the life of named project.
  - c. In the event that a water valve on an existing live system be turned off and on to accommodate the construction of the project is required, coordinate this activity through the appropriate City representative.
    - 1) Do not operate water line valves of existing water system.
      - a) Failure to comply will render the Contractor in violation of Texas Penal Code Title 7, Chapter 28.03 (Criminal Mischief) and the Contractor will be prosecuted to the full extent of the law.
      - b) In addition, the Contractor will assume all liabilities and responsibilities as a result of these actions.

F. Public Notification Prior to Beginning Construction

1. Prior to beginning construction on any block in the project, on a block by block basis, prepare and deliver a notice or flyer of the pending construction to the front door of each residence or business that will be impacted by construction. The notice shall be prepared as follows:
  - a. Post notice or flyer 7 days prior to beginning any construction activity on each block in the project area.
    - 1) Prepare flyer on the Contractor's letterhead and include the following information:
      - a) Name of Project
      - b) City Project No (CPN)
      - c) Scope of Project (i.e. type of construction activity)
      - d) Actual construction duration within the block
      - e) Name of the contractor's foreman and phone number
      - f) Name of the City's inspector and phone number
      - g) City's after-hours phone number
    - 2) A sample of the 'pre-construction notification' flyer is attached as Exhibit A.
    - 3) Submit schedule showing the construction start and finish time for each block of the project to the inspector.
    - 4) Deliver flyer to the City Inspector for review prior to distribution.
  - b. No construction will be allowed to begin on any block until the flyer is delivered to all residents of the block.

G. Public Notification of Temporary Water Service Interruption during Construction

- 1 1. In the event it becomes necessary to temporarily shut down water service to  
2 residents or businesses during construction, prepare and deliver a notice or flyer of  
3 the pending interruption to the front door of each affected resident.
- 4 2. Prepared notice as follows:
  - 5 a. The notification or flyer shall be posted 24 hours prior  
6 to the temporary interruption.
  - 7 b. Prepare flyer on the contractor's letterhead and include  
8 the following information:
    - 9 1) Name of the project
    - 10 2) City Project Number
    - 11 3) Date of the interruption of service
    - 12 4) Period the interruption will take place
    - 13 5) Name of the contractor's foreman and phone number
    - 14 6) Name of the City's inspector and phone number
  - 15 c. A sample of the temporary water service interruption  
16 notification is attached as Exhibit B.
  - 17 d. Deliver a copy of the temporary interruption  
18 notification to the City inspector for review prior to being distributed.
  - 19 e. No interruption of water service can occur until the  
20 flyer has been delivered to all affected residents and businesses.
  - 21 f. Electronic versions of the sample flyers can be  
22 obtained from the Project Construction Inspector.
- 23 H. Coordination with United States Army Corps of Engineers (USACE)
  - 24 1. At locations in the Project where construction activities occur in areas where  
25 USACE permits are required, meet all requirements set forth in each designated  
26 permit.
- 27 I. Coordination within Railroad Permit Areas
  - 28 1. At locations in the project where construction activities occur in areas where  
29 railroad permits are required, meet all requirements set forth in each designated  
30 railroad permit. This includes, but is not limited to, provisions for:
    - 31 a. Flagmen
    - 32 b. Inspectors
    - 33 c. Safety training
    - 34 d. Additional insurance
    - 35 e. Insurance certificates
    - 36 f. Other employees required to protect the right-of-way  
37 and property of the Railroad Company from damage arising out of and/or from  
38 the construction of the project. Proper utility clearance procedures shall be  
39 used in accordance with the permit guidelines.
  - 40 2. Obtain any supplemental information needed to comply with the railroad's  
41 requirements.
- 42 J. Dust Control
  - 43 1. Use acceptable measures to control dust at the Site.
    - 44 a. If water is used to control dust, capture and properly  
45 dispose of waste water.
    - 46 b. If wet saw cutting is performed, capture and properly  
47 dispose of slurry.

- 1 K. Employee Parking
- 2 1. Provide parking for employees at locations approved by the City.
- 3 L. {Coordination with North Central Texas Council of Governments (NCTCOG) Clean
- 4 Construction Specification [if required for the project]
- 5 1. Comply with equipment, operational, reporting and enforcement requirements set
- 6 forth in NCTCOG's Clean Construction Specification.}

- 7 **1.4 SUBMITTALS [NOT USED]**
- 8 **1.5 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**
- 9 **1.6 CLOSEOUT SUBMITTALS [NOT USED]**
- 10 **1.7 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**
- 11 **1.8 QUALITY ASSURANCE [NOT USED]**
- 12 **1.9 DELIVERY, STORAGE, AND HANDLING [NOT USED]**
- 13 **1.10 FIELD [SITE] CONDITIONS [NOT USED]**
- 14 **1.11 WARRANTY [NOT USED]**

15 **PART 2 - PRODUCTS [NOT USED]**

16 **PART 3 - EXECUTION [NOT USED]**

17 **END OF SECTION**

18

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
8/31/2012	D. Johnson	1.3.B – Added requirement of compliance with Health and Safety Code, Title 9. Safety, Subtitle A. Public Safety, Chapter 752. High Voltage Overhead Lines.

19



**EXHIBIT A**

(To be printed on Contractor's Letterhead)

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

CPN No.: \_\_\_\_\_

Project Name:

Mapsco Location:

Limits of Construction:

# NOTICE OF CONSTRUCTION

**THIS IS TO INFORM YOU THAT UNDER A CONTRACT WITH THE CITY OF FORT WORTH, OUR COMPANY WILL WORK ON UTILITY LINES ON OR AROUND YOUR PROPERTY.**

**CONSTRUCTION WILL BEGIN APPROXIMATELY SEVEN DAYS FROM THE DATE OF THIS NOTICE.**

**IF YOU HAVE QUESTIONS ABOUT ACCESS, SECURITY, SAFETY OR ANY OTHER ISSUE, PLEASE CALL:**

**Mr. <CONTRACTOR'S SUPERINTENDENT> AT <TELEPHONE NO.>**

**OR**

**Mr. <CITY INSPECTOR> AT < TELEPHONE NO.>**

**AFTER 4:30 PM OR ON WEEKENDS, PLEASE CALL (817) 392 8306**

**PLEASE KEEP THIS FLYER HANDY WHEN YOU CALL**

1  
2

**EXHIBIT B**



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

**DOE NO. XXXX**  
**Project Name:**

**NOTICE OF TEMPORARY WATER SERVICE  
INTERRUPTION**

DUE TO UTILITY IMPROVEMENTS IN YOUR NEIGHBORHOOD, YOUR  
WATER SERVICE WILL BE INTERRUPTED ON \_\_\_\_\_  
BETWEEN THE HOURS OF \_\_\_\_\_ AND \_\_\_\_\_.

IF YOU HAVE QUESTIONS ABOUT THIS SHUT-OUT, PLEASE CALL:

MR. \_\_\_\_\_ AT \_\_\_\_\_  
(CONTRACTORS SUPERINTENDENT) (TELEPHONE NUMBER)

OR

MR. \_\_\_\_\_ AT \_\_\_\_\_  
(CITY INSPECTOR) (TELEPHONE NUMBER)

THIS INCONVENIENCE WILL BE AS SHORT AS POSSIBLE.

THANK YOU,

\_\_\_\_\_, CONTRACTOR

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**SECTION 01 45 23**  
**TESTING AND INSPECTION SERVICES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Testing and inspection services procedures and coordination
- B. Deviations from this City of Fort Worth Standard Specification
  - 1. None.
- C. Related Specification Sections include, but are not necessarily limited to:
  - 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
  - 2. Division 1 – General Requirements

**1.2 PRICE AND PAYMENT PROCEDURES**

- A. Measurement and Payment
  - 1. Work associated with this Item is considered subsidiary to the various Items bid. No separate payment will be allowed for this Item.
    - a. Contractor is responsible for performing, coordinating, and payment of all Quality Control testing.
    - b. City is responsible for performing and payment for first set of Quality Assurance testing.
      - 1) If the first Quality Assurance test performed by the City fails, the Contractor is responsible for payment of subsequent Quality Assurance testing until a passing test occurs.
        - a) Final acceptance will not be issued by City until all required payments for testing by Contractor have been paid in full.

**1.3 REFERENCES [NOT USED]**

**1.4 ADMINISTRATIVE REQUIREMENTS**

- A. Testing
  - 1. Complete testing in accordance with the Contract Documents.
  - 2. Coordination
    - a. When testing is required to be performed by the City, notify City, sufficiently in advance, when testing is needed.
    - b. When testing is required to be completed by the Contractor, notify City, sufficiently in advance, that testing will be performed.
  - 3. Distribution of Testing Reports
    - a. Electronic Distribution
      - 1) Confirm development of Project directory for electronic submittals to be uploaded to the City's document management system, or another form of distribution approved by the City.

- 2) Upload test reports to designated project directory and notify appropriate City representatives via email of submittal posting.
- 3) Hard Copies
  - a) 1 copy for all submittals submitted to the Project Representative
- b. Hard Copy Distribution (if required in lieu of electronic distribution)
  - 1) Tests performed by City
    - a) Distribute 1 hard copy to the Contractor
  - 2) Tests performed by the Contractor
    - a) Distribute 3 hard copies to City’s Project Representative
- 4. Provide City’s Project Representative with trip tickets for each delivered load of Concrete or Lime material including the following information:
  - a. Name of pit
  - b. Date of delivery
  - c. Material delivered

**B. Inspection**

- 1. Inspection or lack of inspection does not relieve the Contractor from obligation to perform work in accordance with the Contract Documents.

**1.5 SUBMITTALS [NOT USED]**

**1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

**1.7 CLOSEOUT SUBMITTALS [NOT USED]**

**1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

**1.9 QUALITY ASSURANCE [NOT USED]**

**1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

**1.11 FIELD [SITE] CONDITIONS [NOT USED]**

**1.12 WARRANTY [NOT USED]**

**PART 2 - PRODUCTS [NOT USED]**

**PART 3 - EXECUTION [NOT USED]**

**END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
03/20/2020	D.V. Magaña	Removed reference to Buzzsaw and noted that electronic submittals be uploaded through the City’s document management system.

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**SECTION 01 50 00**  
**TEMPORARY FACILITIES AND CONTROLS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

A. Section Includes:

1. Provide temporary facilities and controls needed for the Work including, but not necessarily limited to:
  - a. Temporary utilities
  - b. Sanitary facilities
  - c. Storage Sheds and Buildings
  - d. Dust control
  - e. Temporary fencing of the construction site

B. Deviations from this City of Fort Worth Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

**1.2 PRICE AND PAYMENT PROCEDURES**

A. Measurement and Payment

1. Work associated with this Item is considered subsidiary to the various Items bid. No separate payment will be allowed for this Item.

**1.3 REFERENCES [NOT USED]**

**1.4 ADMINISTRATIVE REQUIREMENTS**

A. Temporary Utilities

1. Obtaining Temporary Service
  - a. Make arrangements with utility service companies for temporary services.
  - b. Abide by rules and regulations of utility service companies or authorities having jurisdiction.
  - c. Be responsible for utility service costs until Work is approved for Final Acceptance.
    - 1) Included are fuel, power, light, heat and other utility services necessary for execution, completion, testing and initial operation of Work.
2. Water
  - a. Contractor to provide water required for and in connection with Work to be performed and for specified tests of piping, equipment, devices or other use as required for the completion of the Work.
  - b. Provide and maintain adequate supply of potable water for domestic consumption by Contractor personnel and City's Project Representatives.
  - c. Coordination
    - 1) Contact City 1 week before water for construction is desired

- 1 d. Contractor Payment for Construction Water
- 2 1) Obtain construction water meter from City for payment as billed by City's
- 3 established rates.
- 4 3. Electricity and Lighting
- 5 a. Provide and pay for electric powered service as required for Work, including
- 6 testing of Work.
- 7 1) Provide power for lighting, operation of equipment, or other use.
- 8 b. Electric power service includes temporary power service or generator to
- 9 maintain operations during scheduled shutdown.
- 10 4. Telephone
- 11 a. Provide emergency telephone service at Site for use by Contractor personnel
- 12 and others performing work or furnishing services at Site.
- 13 5. Temporary Heat and Ventilation
- 14 a. Provide temporary heat as necessary for protection or completion of Work.
- 15 b. Provide temporary heat and ventilation to assure safe working conditions.
- 16 B. Sanitary Facilities
- 17 1. Provide and maintain sanitary facilities for persons on Site.
- 18 a. Comply with regulations of State and local departments of health.
- 19 2. Enforce use of sanitary facilities by construction personnel at job site.
- 20 a. Enclose and anchor sanitary facilities.
- 21 b. No discharge will be allowed from these facilities.
- 22 c. Collect and store sewage and waste so as not to cause nuisance or health
- 23 problem.
- 24 d. Haul sewage and waste off-site at no less than weekly intervals and properly
- 25 dispose in accordance with applicable regulation.
- 26 3. Locate facilities near Work Site and keep clean and maintained throughout Project.
- 27 4. Remove facilities at completion of Project
- 28 C. Storage Sheds and Buildings
- 29 1. Provide adequately ventilated, watertight, weatherproof storage facilities with floor
- 30 above ground level for materials and equipment susceptible to weather damage.
- 31 2. Storage of materials not susceptible to weather damage may be on blocks off
- 32 ground.
- 33 3. Store materials in a neat and orderly manner.
- 34 a. Place materials and equipment to permit easy access for identification,
- 35 inspection and inventory.
- 36 4. Equip building with lockable doors and lighting, and provide electrical service for
- 37 equipment space heaters and heating or ventilation as necessary to provide storage
- 38 environments acceptable to specified manufacturers.
- 39 5. Fill and grade site for temporary structures to provide drainage away from
- 40 temporary and existing buildings.
- 41 6. Remove building from site prior to Final Acceptance.
- 42 D. Temporary Fencing
- 43 1. Provide and maintain for the duration or construction when required in contract
- 44 documents
- 45 E. Dust Control

- 1           1. Contractor is responsible for maintaining dust control through the duration of the  
2           project.  
3           a. Contractor remains on-call at all times  
4           b. Must respond in a timely manner  
5        F. Temporary Protection of Construction  
6           1. Contractor or subcontractors are responsible for protecting Work from damage due  
7           to weather.

8        **1.5 SUBMITTALS [NOT USED]**

9        **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

10       **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

11       **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

12       **1.9 QUALITY ASSURANCE [NOT USED]**

13       **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

14       **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

15       **1.12 WARRANTY [NOT USED]**

16       **PART 2 - PRODUCTS [NOT USED]**

17       **PART 3 - EXECUTION [NOT USED]**

18       **3.1 INSTALLERS [NOT USED]**

19       **3.2 EXAMINATION [NOT USED]**

20       **3.3 PREPARATION [NOT USED]**

21       **3.4 INSTALLATION**

22        A. Temporary Facilities

- 23           1. Maintain all temporary facilities for duration of construction activities as needed.

24       **3.5 [REPAIR] / [RESTORATION]**

25       **3.6 RE-INSTALLATION**

26       **3.7 FIELD [or] SITE QUALITY CONTROL [NOT USED]**

27       **3.8 SYSTEM STARTUP [NOT USED]**

28       **3.9 ADJUSTING [NOT USED]**

29       **3.10 CLEANING [NOT USED]**

30       **3.11 CLOSEOUT ACTIVITIES**

31        A. Temporary Facilities

- 1 1. Remove all temporary facilities and restore area after completion of the Work, to a  
2 condition equal to or better than prior to start of Work.

3 **3.12 PROTECTION [NOT USED]**

4 **3.13 MAINTENANCE [NOT USED]**

5 **3.14 ATTACHMENTS [NOT USED]**

6 **END OF SECTION**

7

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

8





- 1) Allow a minimum of 5 working days for permit review.
- 2) Contractor’s responsibility to coordinate review of Traffic Control plans for Street Use Permit, such that construction is not delayed.

C. Modification to Approved Traffic Control

- 1. Prior to installation traffic control:
  - a. Submit revised traffic control plans to City Department Transportation and Public Works Department.
    - 1) Revise Traffic Control plans in accordance with Section 34 71 13.
    - 2) Allow minimum 5 working days for review of revised Traffic Control.
    - 3) It is the Contractor’s responsibility to coordinate review of Traffic Control plans for Street Use Permit, such that construction is not delayed.

D. Removal of Street Sign

- 1. If it is determined that a street sign must be removed for construction, then contact City Transportation and Public Works Department, Signs and Markings Division to remove the sign.

E. Temporary Signage

- 1. In the case of regulatory signs, replace permanent sign with temporary sign meeting requirements of the latest edition of the Texas Manual on Uniform Traffic Control Devices (MUTCD).
- 2. Install temporary sign before the removal of permanent sign.
- 3. When construction is complete, to the extent that the permanent sign can be reinstalled, contact the City Transportation and Public Works Department, Signs and Markings Division, to reinstall the permanent sign.

F. Traffic Control Standards

- 1. Traffic Control Standards can be found on the City’s Buzzsaw website.

**1.5 SUBMITTALS [NOT USED]**

**1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

**1.7 CLOSEOUT SUBMITTALS [NOT USED]**

**1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

**1.9 QUALITY ASSURANCE [NOT USED]**

**1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

**1.11 FIELD [SITE] CONDITIONS [NOT USED]**

**1.12 WARRANTY [NOT USED]**

**PART 2 - PRODUCTS [NOT USED]**

**PART 3 - EXECUTION [NOT USED]**

**END OF SECTION**

1

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

2



1 B. Construction Activities resulting in:

- 2 1. Less than 1 acre of disturbance
- 3 a. Provide erosion and sediment control in accordance with Section 31 25 00 and
- 4 Drawings.
- 5 2. 1 to less than 5 acres of disturbance
- 6 a. Texas Pollutant Discharge Elimination System (TPDES) General Construction
- 7 Permit is required
- 8 b. Complete SWPPP in accordance with TCEQ requirements
- 9 1) TCEQ Small Construction Site Notice Required under general permit
- 10 TXR150000
- 11 a) Sign and post at job site
- 12 b) Prior to Preconstruction Meeting, send 1 copy to City Department of
- 13 Transportation and Public Works, Environmental Division, (817) 392-
- 14 6088.
- 15 2) Provide erosion and sediment control in accordance with:
- 16 a) Section 31 25 00
- 17 b) The Drawings
- 18 c) TXR150000 General Permit
- 19 d) SWPPP
- 20 e) TCEQ requirements
- 21 3. 5 acres or more of Disturbance
- 22 a. Texas Pollutant Discharge Elimination System (TPDES) General Construction
- 23 Permit is required
- 24 b. Complete SWPPP in accordance with TCEQ requirements
- 25 1) Prepare a TCEQ NOI form and submit to TCEQ along with required fee
- 26 a) Sign and post at job site
- 27 b) Send copy to City Department of Transportation and Public Works,
- 28 Environmental Division, (817) 392-6088.
- 29 2) TCEQ Notice of Change required if making changes or updates to NOI
- 30 3) Provide erosion and sediment control in accordance with:
- 31 a) Section 31 25 00
- 32 b) The Drawings
- 33 c) TXR150000 General Permit
- 34 d) SWPPP
- 35 e) TCEQ requirements
- 36 4) Once the project has been completed and all the closeout requirements of
- 37 TCEQ have been met a TCEQ Notice of Termination can be submitted.
- 38 a) Send copy to City Department of Transportation and Public Works,
- 39 Environmental Division, (817) 392-6088.

40 **1.5 SUBMITTALS**

41 A. SWPPP

- 42 1. Submit in accordance with Section 01 33 00, except as stated herein.
- 43 a. Prior to the Preconstruction Meeting, submit a draft copy of SWPPP to the City
- 44 as follows:
- 45 1) 1 copy to the City Project Manager
- 46 a) City Project Manager will forward to the City Department of
- 47 Transportation and Public Works, Environmental Division for review

- 1 B. Modified SWPPP  
2 1. If the SWPPP is revised during construction, resubmit modified SWPPP to the City  
3 in accordance with Section 01 33 00.

4 **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

5 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

6 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

7 **1.9 QUALITY ASSURANCE [NOT USED]**

8 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

9 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

10 **1.12 WARRANTY [NOT USED]**

11 **PART 2 - PRODUCTS [NOT USED]**

12 **PART 3 - EXECUTION [NOT USED]**

13 **END OF SECTION**

14

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

15

**SECTION 01 60 00**  
**PRODUCT REQUIREMENTS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. References for Product Requirements and City Standard Products List
- B. Deviations from this City of Fort Worth Standard Specification
  - 1. None.
- C. Related Specification Sections include, but are not necessarily limited to:
  - 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
  - 2. Division 1 – General Requirements

**1.2 PRICE AND PAYMENT PROCEDURES [NOT USED]**

**1.3 REFERENCES [NOT USED]**

**1.4 ADMINISTRATIVE REQUIREMENTS**

A list of City approved products for use is available through the City's website at: <https://apps.fortworthtexas.gov/ProjectResources/> and following the directory path: 02 - Construction Documents\Standard Products List

- A. Only products specifically included on City's Standard Product List in these Contract Documents shall be allowed for use on the Project.
  - 1. Any subsequently approved products will only be allowed for use upon specific approval by the City.
- B. Any specific product requirements in the Contract Documents supersede similar products included on the City's Standard Product List.
  - 1. The City reserves the right to not allow products to be used for certain projects even though the product is listed on the City's Standard Product List.
- C. Although a specific product is included on City's Standard Product List, not all products from that manufacturer are approved for use, including but not limited to, that manufacturer's standard product.
- D. See Section 01 33 00 for submittal requirements of Product Data included on City's Standard Product List.

**1.5 SUBMITTALS [NOT USED]**

**1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

**1.7 CLOSEOUT SUBMITTALS [NOT USED]**

**1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

**1.9 QUALITY ASSURANCE [NOT USED]**

SOUTH OAK GROVE ESTATES, SECTION SIX  
projects 102739

**1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

**1.11 FIELD [SITE] CONDITIONS [NOT USED]**

**1.12 WARRANTY [NOT USED]**

**PART 2 - PRODUCTS [NOT USED]**

**PART 3 - EXECUTION [NOT USED]**

**END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
10/12/12	D. Johnson	Modified Location of City's Standard Product List
4/7/2014	M.Domenech	Revised for DAP application
03/20/2020	D.V. Magaña	Removed reference to Buzzsaw and noted that the City approved products list is accessible through the City's website.



1 **1. SECTION 01 66 00**  
2 **PRODUCT STORAGE AND HANDLING REQUIREMENTS**

3 **PART 1 - GENERAL**

4 **1.1 SUMMARY**

5 A. Section Includes:

- 6 1. Scheduling of product delivery
- 7 2. Packaging of products for delivery
- 8 3. Protection of products against damage from:
  - 9 a. Handling
  - 10 b. Exposure to elements or harsh environments

11 B. Deviations from this City of Fort Worth Standard Specification

- 12 1. None.

13 C. Related Specification Sections include, but are not necessarily limited to:

- 14 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
- 15 2. Division 1 – General Requirements

16 **1.2 PRICE AND PAYMENT PROCEDURES**

17 A. Measurement and Payment

- 18 1. Work associated with this Item is considered subsidiary to the various Items bid.  
19 No separate payment will be allowed for this Item.

20 **1.3 REFERENCES [NOT USED]**

21 **1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]**

22 **1.5 SUBMITTALS [NOT USED]**

23 **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

24 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

25 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

26 **1.9 QUALITY ASSURANCE [NOT USED]**

27 **1.10 DELIVERY AND HANDLING**

28 A. Delivery Requirements

- 29 1. Schedule delivery of products or equipment as required to allow timely installation  
30 and to avoid prolonged storage.
- 31 2. Provide appropriate personnel and equipment to receive deliveries.
- 32 3. Delivery trucks will not be permitted to wait extended periods of time on the Site  
33 for personnel or equipment to receive the delivery.

- 1 4. Deliver products or equipment in manufacturer's original unbroken cartons or other  
2 containers designed and constructed to protect the contents from physical or  
3 environmental damage.
  - 4 5. Clearly and fully mark and identify as to manufacturer, item and installation  
5 location.
  - 6 6. Provide manufacturer's instructions for storage and handling.
- 7 B. Handling Requirements
- 8 1. Handle products or equipment in accordance with these Contract Documents and  
9 manufacturer's recommendations and instructions.
- 10 C. Storage Requirements
- 11 1. Store materials in accordance with manufacturer's recommendations and  
12 requirements of these Specifications.
  - 13 2. Make necessary provisions for safe storage of materials and equipment.
    - 14 a. Place loose soil materials and materials to be incorporated into Work to prevent  
15 damage to any part of Work or existing facilities and to maintain free access at  
16 all times to all parts of Work and to utility service company installations in  
17 vicinity of Work.
  - 18 3. Keep materials and equipment neatly and compactly stored in locations that will  
19 cause minimum inconvenience to other contractors, public travel, adjoining owners,  
20 tenants and occupants.
    - 21 a. Arrange storage to provide easy access for inspection.
  - 22 4. Restrict storage to areas available on construction site for storage of material and  
23 equipment as shown on Drawings, or approved by City's Project Representative.
  - 24 5. Provide off-site storage and protection when on-site storage is not adequate.
    - 25 a. Provide addresses of and access to off-site storage locations for inspection by  
26 City's Project Representative.
  - 27 6. Do not use lawns, grass plots or other private property for storage purposes without  
28 written permission of owner or other person in possession or control of premises.
  - 29 7. Store in manufacturers' unopened containers.
  - 30 8. Neatly, safely and compactly stack materials delivered and stored along line of  
31 Work to avoid inconvenience and damage to property owners and general public  
32 and maintain at least 3 feet from fire hydrant.
  - 33 9. Keep public and private driveways and street crossings open.
  - 34 10. Repair or replace damaged lawns, sidewalks, streets or other improvements to  
35 satisfaction of City's Project Representative.
    - 36 a. Total length which materials may be distributed along route of construction at  
37 one time is 1,000 linear feet, unless otherwise approved in writing by City's  
38 Project Representative.

1 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

2 **1.12 WARRANTY [NOT USED]**

3 **PART 2 - PRODUCTS [NOT USED]**

4 **PART 3 - EXECUTION**

5 **3.1 INSTALLERS [NOT USED]**

6 **3.2 EXAMINATION [NOT USED]**

7 **3.3 PREPARATION [NOT USED]**

8 **3.4 ERECTION [NOT USED]**

9 **3.5 REPAIR / RESTORATION [NOT USED]**

10 **3.6 RE-INSTALLATION [NOT USED]**

11 **3.7 FIELD [or] SITE QUALITY CONTROL**

12 A. Tests and Inspections

13 1. Inspect all products or equipment delivered to the site prior to unloading.

14 B. Non-Conforming Work

15 1. Reject all products or equipment that are damaged, used or in any other way  
16 unsatisfactory for use on the project.

17 **3.8 SYSTEM STARTUP [NOT USED]**

18 **3.9 ADJUSTING [NOT USED]**

19 **3.10 CLEANING [NOT USED]**

20 **3.11 CLOSEOUT ACTIVITIES [NOT USED]**

21 **3.12 PROTECTION**

22 A. Protect all products or equipment in accordance with manufacturer's written directions.

23 B. Store products or equipment in location to avoid physical damage to items while in  
24 storage.

25 C. Protect equipment from exposure to elements and keep thoroughly dry if required by  
26 the manufacturer.

27 **3.13 MAINTENANCE [NOT USED]**

28 **3.14 ATTACHMENTS [NOT USED]**

29 **END OF SECTION**

30

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
4/7/2014	M.Domenech	Revised for DAP application

1

**SECTION 01 70 00**  
**MOBILIZATION AND REMOBILIZATION**

**PART 1 - GENERAL**

**1.1 SUMMARY**

A. Section Includes:

1. Mobilization and Demobilization
  - a. Mobilization
    - 1) Transportation of Contractor's personnel, equipment, and operating supplies to the Site
    - 2) Establishment of necessary general facilities for the Contractor's operation at the Site
    - 3) Premiums paid for performance and payment bonds
    - 4) Transportation of Contractor's personnel, equipment, and operating supplies to another location within the designated Site
    - 5) Relocation of necessary general facilities for the Contractor's operation from 1 location to another location on the Site.
  - b. Demobilization
    - 1) Transportation of Contractor's personnel, equipment, and operating supplies away from the Site including disassembly
    - 2) Site Clean-up
    - 3) Removal of all buildings and/or other facilities assembled at the Site for this Contract
  - c. Mobilization and Demobilization do not include activities for specific items of work that are for which payment is provided elsewhere in the contract.
2. Remobilization
  - a. Remobilization for Suspension of Work specifically required in the Contract Documents or as required by City includes:
    - 1) Demobilization
      - a) Transportation of Contractor's personnel, equipment, and operating supplies from the Site including disassembly or temporarily securing equipment, supplies, and other facilities as designated by the Contract Documents necessary to suspend the Work.
      - b) Site Clean-up as designated in the Contract Documents
    - 2) Remobilization
      - a) Transportation of Contractor's personnel, equipment, and operating supplies to the Site necessary to resume the Work.
      - b) Establishment of necessary general facilities for the Contractor's operation at the Site necessary to resume the Work.
    - 3) No Payments will be made for:
      - a) Mobilization and Demobilization from one location to another on the Site in the normal progress of performing the Work.
      - b) Stand-by or idle time
      - c) Lost profits
3. Mobilizations and Demobilization for Miscellaneous Projects
  - a. Mobilization and Demobilization

- 1) Mobilization shall consist of the activities and cost on a Work Order basis necessary for:
    - a) Transportation of Contractor's personnel, equipment, and operating supplies to the Site for the issued Work Order.
    - b) Establishment of necessary general facilities for the Contractor's operation at the Site for the issued Work Order
  - 2) Demobilization shall consist of the activities and cost necessary for:
    - a) Transportation of Contractor's personnel, equipment, and operating supplies from the Site including disassembly for each issued Work Order
    - b) Site Clean-up for each issued Work Order
    - c) Removal of all buildings or other facilities assembled at the Site for each Work Oder
  - b. Mobilization and Demobilization do not include activities for specific items of work for which payment is provided elsewhere in the contract.
  4. Emergency Mobilizations and Demobilization for Miscellaneous Projects
    - a. A Mobilization for Miscellaneous Projects when directed by the City and the mobilization occurs within 24 hours of the issuance of the Work Order.
- B. Deviations from this City of Fort Worth Standard Specification
1. None.
- C. Related Specification Sections include, but are not necessarily limited to:
1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
  2. Division 1 – General Requirements

## 1.2 PRICE AND PAYMENT PROCEDURES

- A. Measurement and Payment
1. Mobilization and Demobilization
    - a. Measure
      - 1) This Item is considered subsidiary to the various Items bid.
    - b. Payment
      - 1) The work performed and materials furnished in accordance with this Item are subsidiary to the various Items bid and no other compensation will be allowed.
  2. Remobilization for suspension of Work as specifically required in the Contract Documents
    - a. Measurement
      - 1) Measurement for this Item shall be per each remobilization performed.
    - b. Payment
      - 1) The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price per each "Specified Remobilization" in accordance with Contract Documents.
    - c. The price shall include:
      - 1) Demobilization as described in Section 1.1.A.2.a.1)
      - 2) Remobilization as described in Section 1.1.A.2.a.2)
    - d. No payments will be made for standby, idle time, or lost profits associated this Item.

3. Remobilization for suspension of Work as required by City
  - a. Measurement and Payment
    - 1) This shall be submitted as a Contract Claim in accordance with Article 10 of Section 00 72 00.
    - 2) No payments will be made for standby, idle time, or lost profits associated with this Item.
4. Mobilizations and Demobilizations for Miscellaneous Projects
  - a. Measurement
    - 1) Measurement for this Item shall be for each Mobilization and Demobilization required by the Contract Documents
  - b. Payment
    - 1) The Work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price per each “Work Order Mobilization” in accordance with Contract Documents. Demobilization shall be considered subsidiary to mobilization and shall not be paid for separately.
  - c. The price shall include:
    - 1) Mobilization as described in Section 1.1.A.3.a.1)
    - 2) Demobilization as described in Section 1.1.A.3.a.2)
  - d. No payments will be made for standby, idle time, or lost profits associated this Item.
5. Emergency Mobilizations and Demobilizations for Miscellaneous Projects
  - a. Measurement
    - 1) Measurement for this Item shall be for each Mobilization and Demobilization required by the Contract Documents
  - b. Payment
    - 1) The Work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price per each “Work Order Emergency Mobilization” in accordance with Contract Documents. Demobilization shall be considered subsidiary to mobilization and shall not be paid for separately.
  - c. The price shall include
    - 1) Mobilization as described in Section 1.1.A.4.a)
    - 2) Demobilization as described in Section 1.1.A.3.a.2)
  - d. No payments will be made for standby, idle time, or lost profits associated this Item.

**1.3 REFERENCES [NOT USED]**

**1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]**

**1.5 SUBMITTALS [NOT USED]**

**1.6 INFORMATIONAL SUBMITTALS [NOT USED]**

**1.7 CLOSEOUT SUBMITTALS [NOT USED]**

**1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

**1.9 QUALITY ASSURANCE [NOT USED]**

**1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

**1.11 FIELD [SITE] CONDITIONS [NOT USED]**

**1.12 WARRANTY [NOT USED]**

**PART 2 - PRODUCTS [NOT USED]**

**PART 3 - EXECUTION [NOT USED]**

**END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
4/7/2014	M.Domenech	Revised for DAP application



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**SECTION 01 71 23**  
**CONSTRUCTION STAKING AND SURVEY**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Requirements for construction staking and construction survey
- B. Deviations from this City of Fort Worth Standard Specification
  - 1. **See Changes (Highlighted in Yellow).**
- C. Related Specification Sections include, but are not necessarily limited to:
  - 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
  - 2. Division 1 – General Requirements

**1.2 PRICE AND PAYMENT PROCEDURES**

- A. Measurement and Payment
  - 1. Construction Staking
    - a. Measurement
      - 1) This Item is considered subsidiary to the various Items bid.
    - b. Payment
      - 1) The work performed and the materials furnished in accordance with this Item are subsidiary to the various Items bid and no other compensation will be allowed.
  - 2. Construction Survey
    - a. Measurement
      - 1) This Item is considered subsidiary to the various Items bid.
    - b. Payment
      - 1) The work performed and the materials furnished in accordance with this Item are subsidiary to the various Items bid and no other compensation will be allowed.
  - 3. As-Built Survey
    - a. Measurement
      - 1) This Item is considered subsidiary to the various Items bid.
    - b. Payment
      - 1) The work performed and the materials furnished in accordance with this Item are subsidiary to the various Items bid and no other compensation will be allowed.

1 **1.3 REFERENCES**

2 A. Definitions

- 3 1. Construction Survey - The survey measurements made prior to or while  
4 construction is in progress to control elevation, horizontal position, dimensions and  
5 configuration of structures/improvements included in the Project Drawings.  
6 2. As-built Survey –The measurements made after the construction of the  
7 improvement features are complete to provide position coordinates for the features  
8 of a project.  
9 3. Construction Staking – The placement of stakes and markings to provide offsets  
10 and elevations to cut and fill in order to locate on the ground the designed  
11 structures/improvements included in the Project Drawings. Construction staking  
12 shall include staking easements and/or right of way if indicated on the plans.  
13 4. Survey “Field Checks” – Measurements made after construction staking is  
14 completed and before construction work begins to ensure that structures marked on  
15 the ground are accurately located per Project Drawings.

16 B. Technical References

- 17 1. City of Fort Worth – Construction Staking Standards (available on City’s Buzzsaw  
18 website) – 01 71 23.16.01\_ Attachment A\_Survey Staking Standards  
19 2. City of Fort Worth - Standard Survey Data Collector Library (fxl) files (available  
20 on City’s Buzzsaw website).  
21 3. Texas Department of Transportation (TxDOT) Survey Manual, latest revision  
22 4. Texas Society of Professional Land Surveyors (TSPS), Manual of Practice for Land  
23 Surveying in the State of Texas, Category 5  
24

25 **1.4 ADMINISTRATIVE REQUIREMENTS**

- 26 **A. The Contractor’s selection of a surveyor must comply with Texas Government**  
27 **Code 2254 (qualifications based selection) for this project.**

28 **1.5 SUBMITTALS**

- 29 A. Submittals, if required, shall be in accordance with Section 01 33 00.  
30 B. All submittals shall be received and reviewed by the City prior to delivery of work.

31 **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS**

32 A. Field Quality Control Submittals

- 33 1. Documentation verifying accuracy of field engineering work, including coordinate  
34 conversions if plans do not indicate grid or ground coordinates.  
35 2. Submit “Cut-Sheets” conforming to the standard template provided by the City  
36 (refer to 01 71 23.16.01 – Attachment A – Survey Staking Standards).  
37

38 **1.7 CLOSEOUT SUBMITTALS**

- 39 B. As-built Redline Drawing Submittal

- 1 1. Submit As-Built Survey Redline Drawings documenting the locations/elevations of  
2 constructed improvements signed and sealed by Registered Professional Land  
3 Surveyor (RPLS) responsible for the work (refer to 01 71 23.16.01 – Attachment A  
4 – Survey Staking Standards) .
- 5 2. Contractor shall submit the proposed as-built and completed redline drawing  
6 submittal one (1) week prior to scheduling the project final inspection for City  
7 review and comment. Revisions, if necessary, shall be made to the as-built redline  
8 drawings and resubmitted to the City prior to scheduling the construction final  
9 inspection.

## 10 1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

## 11 1.9 QUALITY ASSURANCE

### 12 A. Construction Staking

- 13 1. Construction staking will be performed by the Contractor.
- 14 2. Coordination
  - 15 a. Contact **City and Developer's Project Representative** at least one week in  
16 advance notifying the City of when Construction Staking is scheduled.
  - 17 b. It is the Contractor's responsibility to coordinate staking such that  
18 construction activities are not delayed or negatively impacted.
- 19 3. General
  - 20 a. Contractor is responsible for preserving and maintaining stakes. If **City**  
21 **surveyors or Developer's Project Representative** are required to re-stake for  
22 any reason, the Contractor will be responsible for costs to perform staking. If  
23 in the opinion of the City, a sufficient number of stakes or markings have been  
24 lost, destroyed disturbed or omitted that the contracted Work cannot take place  
25 then the Contractor will be required to stake or re-stake the deficient areas.

### 26 B. Construction Survey

- 27 1. Construction Survey will be performed by the Contractor.
- 28 2. Coordination
  - 29 a. Contractor to verify that horizontal and vertical control data established in the  
30 design survey and required for construction survey is available and in place.
- 31 3. General
  - 32 a. Construction survey will be performed in order to construct the work shown  
33 on the Construction Drawings and specified in the Contract Documents.
  - 34 b. For construction methods other than open cut, the Contractor shall perform  
35 construction survey and verify control data including, but not limited to, the  
36 following:
    - 37 1) Verification that established benchmarks and control are accurate.
    - 38 2) Use of Benchmarks to furnish and maintain all reference lines and grades  
39 for tunneling.
    - 40 3) Use of line and grades to establish the location of the pipe.
    - 41 4) Submit to the City copies of field notes used to establish all lines and  
42 grades, if requested, and allow the City to check guidance system setup prior  
43 to beginning each tunneling drive.
    - 44 5) Provide access for the City, if requested, to verify the guidance system and  
45 the line and grade of the carrier pipe.

- 6) The Contractor remains fully responsible for the accuracy of the work and correction of it, as required.
- 7) Monitor line and grade continuously during construction.
- 8) Record deviation with respect to design line and grade once at each pipe joint and submit daily records to the City.
- 9) If the installation does not meet the specified tolerances (as outlined in Sections 33 05 23 and/or 33 05 24), immediately notify the City and correct the installation in accordance with the Contract Documents.

C. As-Built Survey

1. Required As-Built Survey will be performed by the Contractor.
2. Coordination
  - a. Contractor is to coordinate with City to confirm which features require as-built surveying.
  - b. It is the Contractor's responsibility to coordinate the as-built survey and required measurements for items that are to be buried such that construction activities are not delayed or negatively impacted.
  - c. For sewer mains and water mains 12" and under in diameter, it is acceptable to physically measure depth and mark the location during the progress of construction and take as-built survey after the facility has been buried. The Contractor is responsible for the quality control needed to ensure accuracy.
3. General
  - a. The Contractor shall provide as-built survey including the elevation and location (and provide written documentation to the City) of construction features **during the progress of the construction** including the following:
    - 1) Water Lines
      - a) Top of pipe elevations and coordinates for waterlines at the following locations:
        - (1) Minimum every 250 linear feet, including
        - (2) Horizontal and vertical points of inflection, curvature, etc.
        - (3) Fire line tee
        - (4) Plugs, stub-outs, dead-end lines
        - (5) Casing pipe (each end) and all buried fittings
    - 2) Sanitary Sewer
      - a) Top of pipe elevations and coordinates for force mains and siphon sanitary sewer lines (non-gravity facilities) at the following locations:
        - (1) Minimum every 250 linear feet and any buried fittings
        - (2) Horizontal and vertical points of inflection, curvature, etc.
    - 3) Stormwater – Not Applicable
  - b. The Contractor shall provide as-built survey including the elevation and location (and provide written documentation to the City) of construction features **after the construction is completed** including the following:
    - 1) Manholes
      - a) Rim and flowline elevations and coordinates for each manhole
    - 2) Water Lines
      - a) Cathodic protection test stations
      - b) Sampling stations
      - c) Meter boxes/vaults (All sizes)

- d) Fire hydrants
- e) Valves (gate, butterfly, etc.)
- f) Air Release valves (Manhole rim and vent pipe)
- g) Blow off valves (Manhole rim and valve lid)
- h) Pressure plane valves
- i) Underground Vaults
  - (1) Rim and flowline elevations and coordinates for each Underground Vault.
- 3) Sanitary Sewer
  - a) Cleanouts
    - (1) Rim and flowline elevations and coordinates for each
  - b) Manholes and Junction Structures
    - (1) Rim and flowline elevations and coordinates for each manhole and junction structure.
- 4) Stormwater – Not Applicable

**1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

**1.11 FIELD [SITE] CONDITIONS [NOT USED]**

**1.12 WARRANTY**

**PART 2 - PRODUCTS**

- A. A construction survey will produce, but will not be limited to:
- 1. Recovery of relevant control points, points of curvature and points of intersection.
  - 2. Establish temporary horizontal and vertical control elevations (benchmarks) sufficiently permanent and located in a manner to be used throughout construction.
  - 3. The location of planned facilities, easements and improvements.
    - a. Establishing final line and grade stakes for piers, floors, grade beams, parking areas, utilities, streets, highways, tunnels, and other construction.
    - b. A record of revisions or corrections noted in an orderly manner for reference.
    - c. A drawing, when required by the client, indicating the horizontal and vertical location of facilities, easements and improvements, as built.
  - 4. Cut sheets shall be provided to the City inspector and Survey Superintendent for all construction staking projects. These cut sheets shall be on the standard city template which can be obtained from the Survey Superintendent (817-392-7925).
  - 5. Digital survey files in the following formats shall be acceptable:
    - a. AutoCAD (.dwg)
    - b. ESRI Shapefile (.shp)
    - c. CSV file (.csv), formatted with X and Y coordinates in separate columns (use standard templates, if available)
  - 6. Survey files shall include vertical and horizontal data tied to original project control and benchmarks, and shall include feature descriptions

**PART 3 - EXECUTION**

**3.1 INSTALLERS**

1 A. Tolerances:

- 2 1. The staked location of any improvement or facility should be as accurate as  
3 practical and necessary. The degree of precision required is dependent on many  
4 factors all of which must remain judgmental. The tolerances listed hereafter are  
5 based on generalities and, under certain circumstances, shall yield to specific  
6 requirements. The surveyor shall assess any situation by review of the overall plans  
7 and through consultation with responsible parties as to the need for specific  
8 tolerances.
- 9 a. Earthwork: Grades for earthwork or rough cut should not exceed 0.1 ft. vertical  
10 tolerance. Horizontal alignment for earthwork and rough cut should not exceed  
11 1.0 ft. tolerance.
- 12 b. Horizontal alignment on a structure shall be within .0.1ft tolerance.
- 13 c. Paving or concrete for streets, curbs, gutters, parking areas, drives, alleys and  
14 walkways shall be located within the confines of the site boundaries and,  
15 occasionally, along a boundary or any other restrictive line. Away from any  
16 restrictive line, these facilities should be staked with an accuracy producing no  
17 more than 0.05ft. tolerance from their specified locations.
- 18 d. Underground and overhead utilities, such as sewers, gas, water, telephone and  
19 electric lines, shall be located horizontally within their prescribed areas or  
20 easements. Within assigned areas, these utilities should be staked with an  
21 accuracy producing no more than 0.1 ft tolerance from a specified location.
- 22 e. The accuracy required for the vertical location of utilities varies widely. Many  
23 underground utilities require only a minimum cover and a tolerance of 0.1 ft.  
24 should be maintained. Underground and overhead utilities on planned profile,  
25 but not depending on gravity flow for performance, should not exceed 0.1 ft.  
26 tolerance.

27 B. Surveying instruments shall be kept in close adjustment according to manufacturer's  
28 specifications or in compliance to standards. The City reserves the right to request a  
29 calibration report at any time and recommends regular maintenance schedule be  
30 performed by a certified technician every 6 months.

- 31 1. Field measurements of angles and distances shall be done in such fashion as to  
32 satisfy the closures and tolerances expressed in Part 3.1.A.
- 33 2. Vertical locations shall be established from a pre-established benchmark and  
34 checked by closing to a different bench mark on the same datum.
- 35 3. Construction survey field work shall correspond to the client's plans. Irregularities  
36 or conflicts found shall be reported promptly to the City.
- 37 4. Revisions, corrections and other pertinent data shall be logged for future reference.

38  
39 **3.2 EXAMINATION [NOT USED]**

40 **3.3 PREPARATION [NOT USED]**

41 **3.4 APPLICATION**

42 **3.5 REPAIR / RESTORATION**

43 A. If the Contractor's work damages or destroys one or more of the control  
44 monuments/points set by the City or Developer's Project Representative, the monuments  
45 shall be adequately referenced for expedient restoration.

1. Notify **City or Developer’s Project Representative** if any control data needs to be restored or replaced due to damage caused during construction operations.
  - a. Contractor shall perform replacements and/or restorations.
  - b. The **City or Developer’s Project Representative** may require at any time a survey “Field Check” of any monument or benchmarks that are set be verified by the **City surveyors or Developer’s Project Representative** before further associated work can move forward.

**3.6 RE-INSTALLATION [NOT USED]**

**3.7 FIELD [or] SITE QUALITY CONTROL**

- A. It is the Contractor’s responsibility to maintain all stakes and control data placed by the **City or Developer’s Project Representative** in accordance with this Specification. This includes easements and right of way, if noted on the plans.
- B. Do not change or relocate stakes or control data without approval from the City.

**3.8 SYSTEM STARTUP**

- A. Survey Checks
  1. The City reserves the right to perform a Survey Check at any time deemed necessary.
  2. Checks by City personnel or 3<sup>rd</sup> party contracted surveyor are not intended to relieve the contractor of his/her responsibility for accuracy.

**3.9 ADJUSTING [NOT USED]**

**3.10 CLEANING [NOT USED]**

**3.11 CLOSEOUT ACTIVITIES [NOT USED]**

**3.12 PROTECTION [NOT USED]**

**3.13 MAINTENANCE [NOT USED]**

**3.14 ATTACHMENTS [NOT USED]**

**END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
8/31/2012	D. Johnson	
8/31/2017	M. Owen	Added instruction and modified measurement & payment under 1.2; added definitions and references under 1.3; modified 1.6; added 1.7 closeout submittal requirements; modified 1.9 Quality Assurance; added PART 2 – PRODUCTS ; Added 3.1 Installers; added 3.5 Repair/Restoration; and added 3.8 System Startup.
2/14/2018	M Owen	Removed “blue text”; revised measurement and payment sections for Construction Staking and As-Built Survey; added reference to selection compliance with TGC 2254; revised action and Closeout submittal requirements; added acceptable depth

		measurement criteria; revised list of items requiring as-built survey “during” and “after” construction; and revised acceptable digital survey file format
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Section 01 71 23.01 - Attachment A  
Survey Staking Standards

*February 2017*

These procedures are intended to provide a standard method for construction staking services associated with the City of Fort Worth projects. These are not to be considered all inclusive, but only as a general guideline. ***For projects on TXDOT right-of-way or through joint TXDOT participation, adherence to the TXDOT Survey Manual shall be followed and if a discrepancy arises, the TXDOT manual shall prevail.*** (<http://onlinemanuals.txdot.gov/txdotmanuals/ess/ess.pdf>)

If you have a unique circumstance, please consult with the project manager, inspector, or survey department at 817-392-7925.

## **Table of Contents**

- I. City of Fort Worth Contact Information
- II. Construction Colors
- III. Standard Staking Supplies
- IV. Survey Equipment, Control, and Datum Standards
- V. Water Staking
- VI. Sanitary Sewer Staking
- VII. Storm Staking
- VIII. Curb and Gutter Staking
- IX. Cut Sheets
- X. As-built Survey

## I. Survey Department Contact Information

Physical and mailing address:  
8851 Camp Bowie West Boulevard  
Suite 300  
Fort Worth, Texas 76116

Office: (817) 392-7925  
Survey Superintendent, direct line: (817) 392-8971

## II. Construction Colors

The following colors shall be used for staking or identifying features in the field. This includes flagging, paint of laths/stakes, paint of hubs, and any identification such as pin flags if necessary.

Utility	Color
PROPOSED EXCAVATION	WHITE
ALL ELECTRIC AND CONDUITS	RED
POTABLE WATER	BLUE
GAS OR OIL	YELLOW
TELEPHONE/FIBER OPTIC	ORANGE
SURVEY CONTROL POINTS, BENCHMARKS, PROPERTY CORNERS, RIGHT-OF-WAYS, AND ALL PAVING INCLUDING CURB, SIDEWALK, BUILDING CORNERS	PINK
SANITARY SEWER	GREEN
IRRIGATION AND RECLAIMED WATER	PURPLE

## III. Standard Staking Supplies

Item	Minimum size
Lath/Stake	36" tall
Wooden Hub (2"x2" min. square preferred)	6" tall
Pin Flags (2.5" x 3.5" preferred)	21" long
Guard Stakes	Not required
PK or Mag nails	1" long
Iron Rods (1/2" or greater diameter)	18" long
Survey Marking Paint	Water-based
Flagging	1" wide
Marking Whiskers (feathers)	6" long
Tacks (for marking hubs)	3/4" long

## IV. Survey Equipment, Control, and Datum Standards

### A. City Benchmarks

All city benchmarks can be found here: <http://fortworthtexas.gov/itsolutions/GIS/>  
Look for 'Zoning Maps'. Under 'Layers', expand 'Basemap Layers', and check on 'Benchmarks'.

### B. Conventional or Robotic Total Station Equipment

- I. A minimum of a 10 arc-second instrument is required.
- II. A copy of the latest calibration report may be requested by the City at any time. It is recommended that an instrument be calibrated by certified technician at least 1 occurrence every 6 months.

### C. Network/V.R.S. and static GPS Equipment

- I. It is critical that the surveyor verify the correct horizontal and vertical datum prior commencing work. A **site calibration** may be required and shall consist of at least 4 control points spaced evenly apart and in varying quadrants. Additional field checks of the horizontal and vertical accuracies shall be completed and the City may ask for a copy of the calibration report at any time.
- II. Network GPS such as the Western Data Systems or SmartNet systems may be used for staking of property/R.O.W, forced-main water lines, and rough-grade only. **No GPS staking for concrete, sanitary sewer, storm drain, final grade, or anything that needs vertical grading with a tolerance of 0.25' or less is allowed.**

### D. Control Points Set

- I. All control points set shall be accompanied by a lath with the appropriate Northing, Easting, and Elevation (if applicable) of the point set. Control points can be set rebar, 'X' in concrete, or any other appropriate item with a stable base and of a semi-permanent nature. A rebar cap is optional, but preferred if the cap is marked 'control point' or similar wording.
- II. Datasheets are required for all control points set.  
Datasheet should include:
  - A. Horizontal and Vertical Datum used, Example: N.A.D.83, North Central Zone 4202, NAVD 88 Elevations
  - B. Grid or ground distance. – If ground, provide scale factor used and base point coordinate, Example: C.S.F.=0.999125, Base point=North: 0, East=0
  - C. Geoid model used, Example: GEOID12A

**E. Preferred Grid Datum**

Although many plan sets can be in surface coordinates, the City’s preferred grid datum is listed below. Careful consideration must be taken to verify what datum each project is in prior to beginning work. It is essential the surveyor be familiar with coordinate transformations and how a grid/surface/assumed coordinate system affect a project.

Projected Coordinate

System: **NAD\_1983\_StatePlane\_Texas\_North\_Central\_FIPS\_4202\_Feet**  
Projection: Lambert\_Conformal\_Conic  
False\_Easting: 1968500.00000000  
False\_Northing: 6561666.66666667  
Central\_Meridian: -98.50000000  
Standard\_Parallel\_1: 32.13333333  
Standard\_Parallel\_2: 33.96666667  
Latitude\_Of\_Origin: 31.66666667  
Linear Unit: Foot\_US

Geographic Coordinate System: GCS\_North\_American\_1983  
Datum: D\_North\_American\_1983  
Prime Meridian: Greenwich  
Angular Unit: Degree

**Note:** Regardless of what datum each particular project is in, deliverables to the City must be converted/translated into this preferred grid datum. 1 copy of the deliverable should be in the project datum (whatever it may be) and 1 copy should be in the NAD83, TX North Central 4202 zone. [See Preferred File Naming Convention below](#)

**F. Preferred Deliverable Format**

.txt                    .csv                    .dwg                    .job

**G. Preferred Data Format**

**P,N,E,Z,D,N**

Point Number, Northing, Easting, Elevation, Description, Notes (if applicable)

**H. Preferred File Naming Convention**

This is the preferred format: City Project Number\_Description\_Datum.csv

Example for a project that has surface coordinates which must be translated:

**File 1:** C1234\_As-built of Water on Main Street\_Grid NAD83 TXSP 4202.csv

**File 2:** C1234\_As-built of Water on Main Street\_Project Specific Datum.csv

**Example Control Stakes**

FRONT BACK

NO FLAGGING REQUIRED  
IN LIEU OF PINK PAINTED LATH

CP #1 N=5000.00 E=5000.00

CONTROL POINT NUMBER  
DOUBLE SLASH MARK

COORDINATES

REBAR FLUSH WITH GROUND  
OR 'X' ETCHED IN CONCRETE

1016 EL. = 100.00'

POINT NUMBER  
DOUBLE SLASH MARK  
ELEVATION

V. Water Staking Standards

**A. Centerline Staking – Straight Line Tangents**

- I. Offset lath/stakes every 200' on even stations
  - II. Painted blue lath/stake only, no hub is required
  - III. Grade is to top of pipe (T/P) for 12" diameter pipes or smaller
  - IV. Grade to flow line (F/L) for 16" and larger diameter pipes
  - V. Grade should be 3.50' below the proposed top of curb line for 10" and smaller diameter pipes
  - VI. Grade should be 4.00' below the proposed top of curb line for 12" and larger diameter pipes
  - VII. Cut Sheets are required on all staking and a copy can be received from the survey superintendent
- Optional: Actual stakes shall consist of a 60D nail or hub set with a whisker*

**B. Centerline Staking - Curves**

- I. If arc length is greater than 100', POC (Point of Curvature) offset stakes should be set at a 25' interval
- II. Same grading guidelines as above
- III. Staking of radius points of greater than 100' may be omitted

**C. Water Meter Boxes**

- I. 7.0' perpendicular offset is preferred to the center of the box
- II. Center of the meter should be 3.0' behind the proposed face of curb
- III. Meter should be staked a minimum of 4.5' away from the edge of a driveway
- IV. Grade is to top of box and should be +0.06' higher than the proposed top of curb unless shown otherwise on the plans

**D. Fire Hydrants**

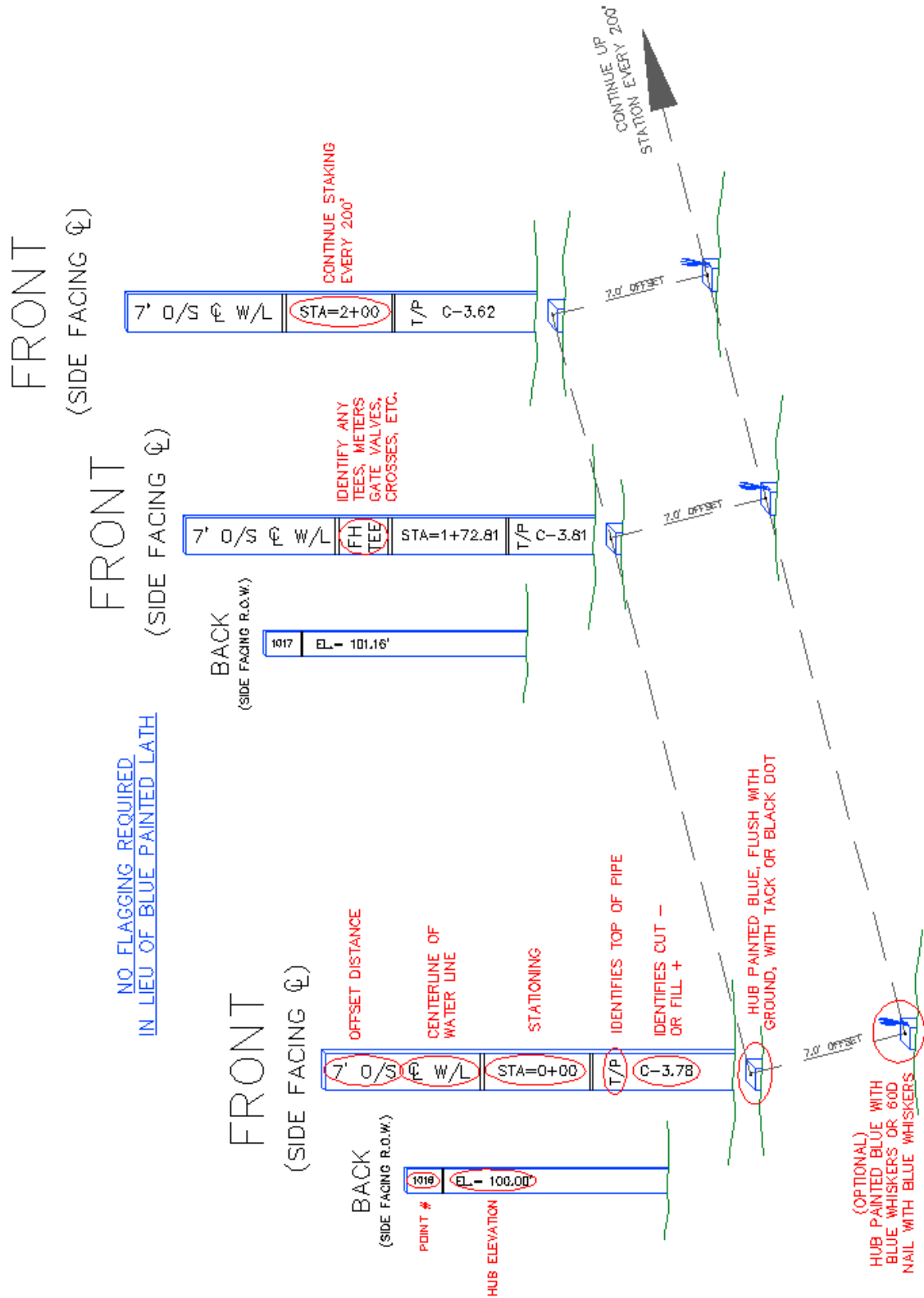
- I. Center of Hydrant should be 3.0' behind proposed face of curb
- II. Survey offset stake should be 7.0' from the center and perpendicular to the curb line or water main
- III. Grade of hydrants should be +0.30 higher than the adjacent top of curb

**E. Water Valves & Vaults**

- I. Offsets should be perpendicular to the proposed water main
- II. RIM grades should only be provided if on plans

**Example Water Stakes**





## VI. Sanitary Sewer Staking

**A. Centerline Staking – Straight Line Tangents**

- I. Inverts shall be field verified and compared against the plans before staking
- II. Painted green lath/stake **WITH** hub and tack or marker dot, no flagging required
- III. 1 offset stake between manholes if manholes are 400' or less apart
- IV. Offset stakes should be located at even distances and perpendicular to the centerline
- V. Grades will be per plan and the date of the plans used should be noted
- VI. If multiple lines are at one manhole, each line shall have a cut/fill and direction noted
- VII. Stakes at every grade break
- VIII. Cut sheets are required on all staking  
*Optional: Actual stakes shall consist of a 60D nail or hub set with a whisker*

**B. Centerline Staking – Curves**

- I. If arc length is greater than 100', POC (Point of Curvature) offset stakes should be set at a 25' interval
- II. Staking of radius points of greater than 100' may be omitted

**C. Sanitary Sewer Manholes**

- I. 2 offset stakes per manhole for the purpose of providing alignment to the contractor
- II. Flowline grade should be on the lath/stake for each flowline and direction noted
- III. RIM grade should only be on the stake when provided in the plans



## **VII. Storm Sewer & Inlet Staking**

### **A. Centerline Staking – Straight Line Tangents**

- I. 1 offset stake every 200' on even stations
- II. Grades are to flowline of pipe unless otherwise shown on plans
- III. Stakes at every grade break
- IV. Cut sheets are required on all staking  
*Optional: Actual stakes shall consist of a 60D nail or hub set with a whisker*

### **B. Centerline Staking – Curves**

- I. If arc length is greater than 100', POC (Point of Curvature) offset stakes should be set at a 25' interval
- II. Staking of radius points of greater than 100' may be omitted

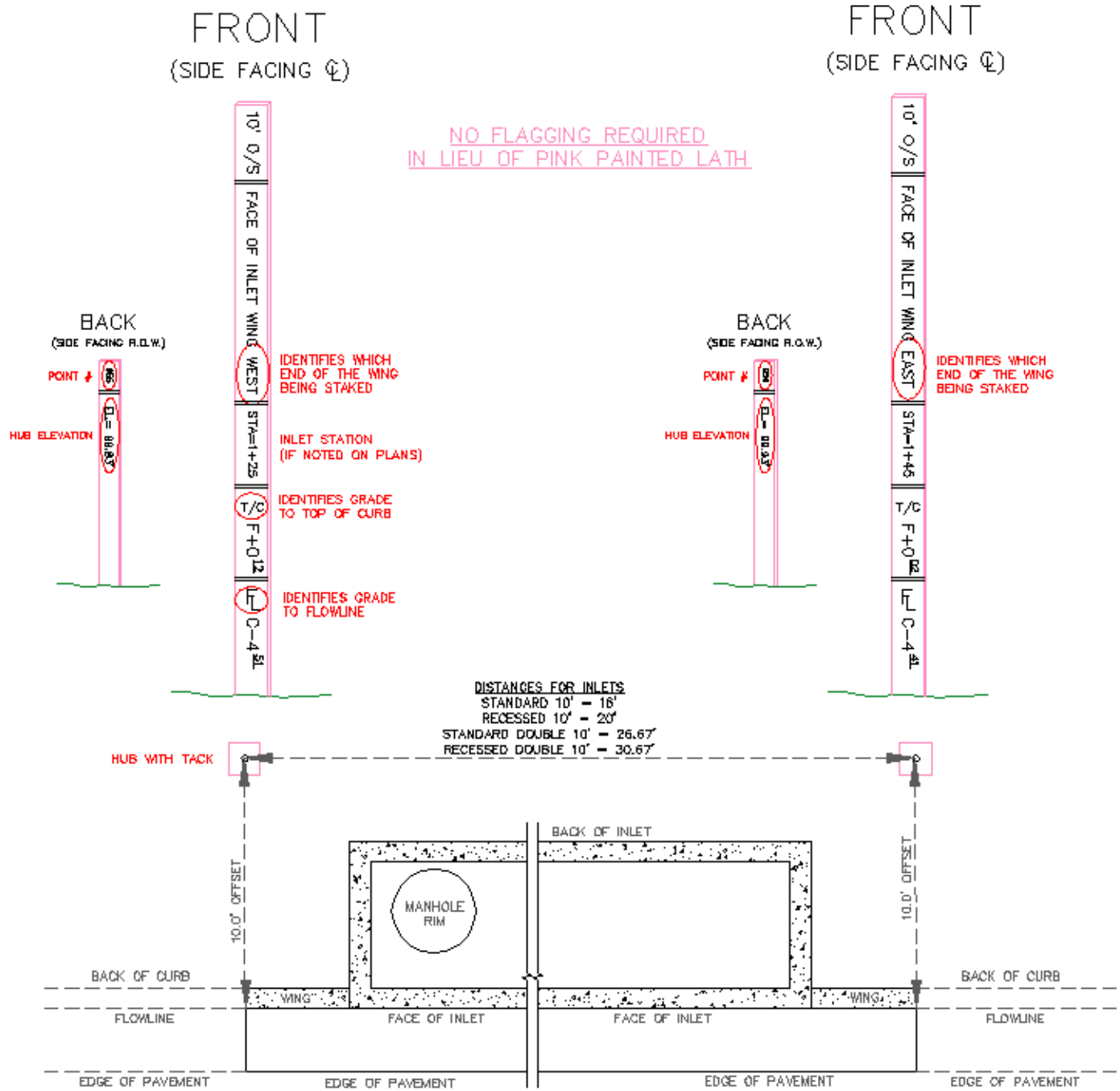
### **C. Storm Drain Inlets**

- I. Staking distances should be measured from end of wing
- II. Standard 10' Inlet = 16.00' total length
- III. Recessed 10' Inlet = 20.00' total length
- IV. Standard double 10' inlet = 26.67' total length
- V. Recessed double 10' inlet = 30.67' total length

### **D. Storm Drain Manholes**

- I. 2 offset stakes per manhole for the purpose of providing alignment to the contractor
- II. Flowline grade should be on the lath/stake for each flowline and direction noted
- III. RIM grade should only be on the stake when provided in the plans

## Example Storm Inlet Stakes



## **VIII. Curb and Gutter Staking**

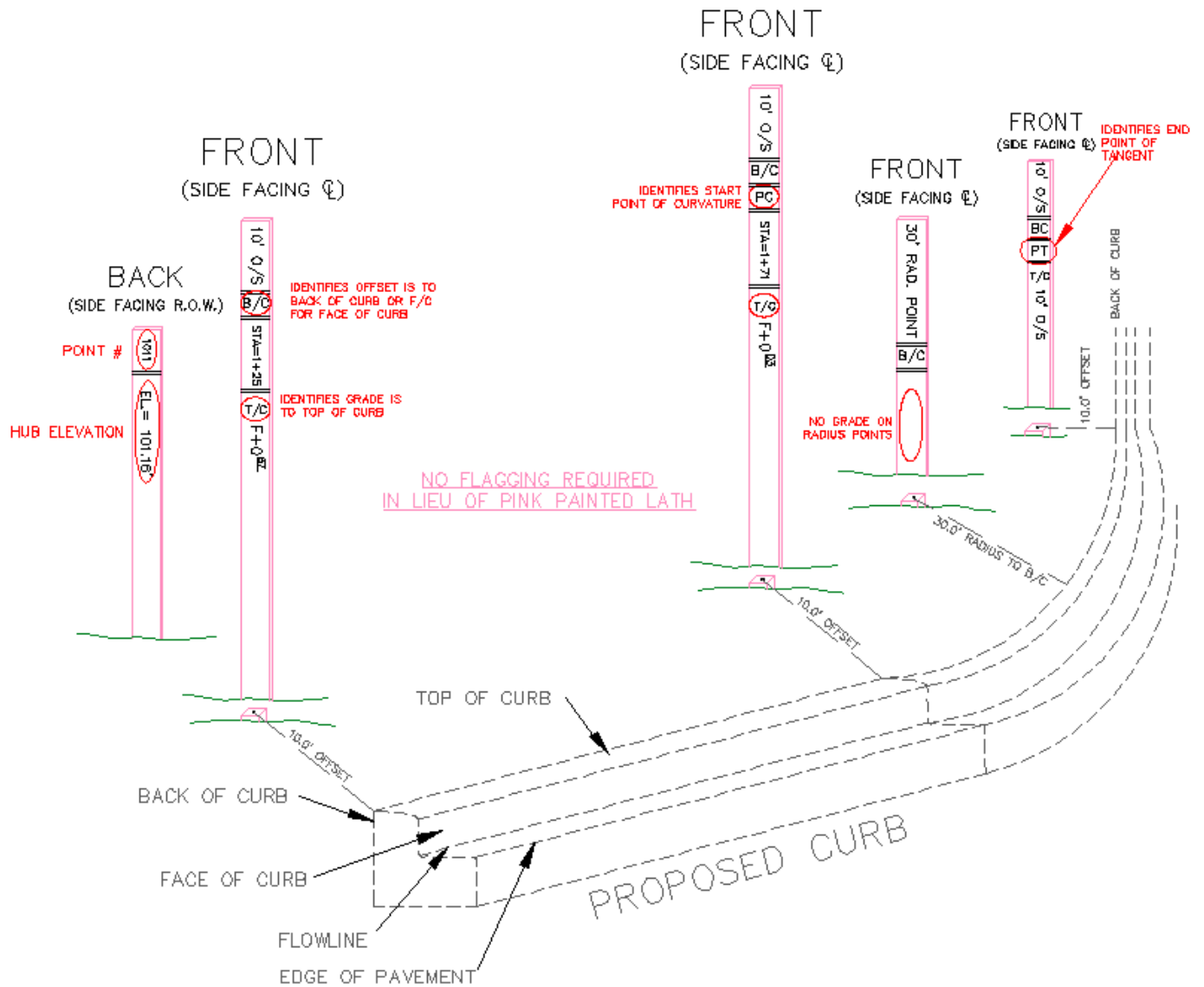
### **A. Centerline Staking – Straight Line Tangents**

- V. 1 offset stake every 50' on even stations
- VI. Grades are to top of curb unless otherwise shown on plans
- VII. Stakes at every grade break
- VIII. Cut sheets are required on all staking  
*Optional: Actual stakes shall consist of a 60D nail or hub set with a whisker*

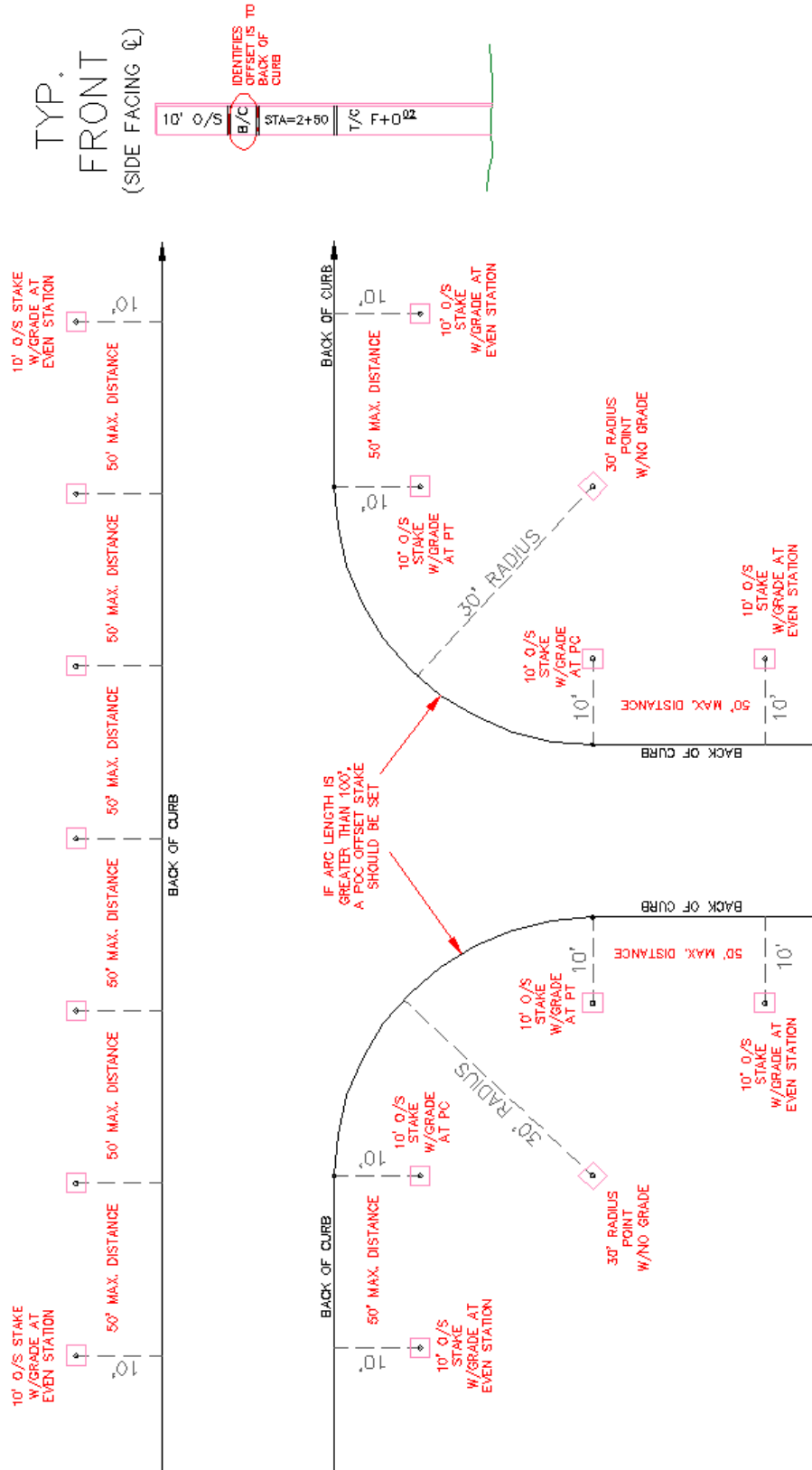
### **B. Centerline Staking – Curves**

- III. If arc length is greater than 100', POC (Point of Curvature) offset stakes should be set at a 25' interval
- IV. Staking of radius points of greater than 100' may be omitted

## Example Curb & Gutter Stakes



## Example Curb & Gutter Stakes at Intersection







## **X. As-built Survey**

### **A. Definition and Purpose**

The purpose of an as-built survey is to verify the asset was installed in the proper location and grade. Furthermore, the information gathered will be used to supplement the City's GIS data and must be in the proper format when submitted. **See section IV.**

As-built survey should include the following (additional items may be requested):

*Manholes*

*Top of pipe elevations every 250 feet*

*Horizontal and vertical points of inflection, curvature, etc. (All Fittings)*

*Cathodic protection test stations*

*Sampling stations*

*Meter boxes/vaults (All sizes)*

*Fire lines*

*Fire hydrants*

*Gate valves (rim and top of nut)*

*Plugs, stub-outs, dead-end lines*

*Air Release valves (Manhole rim and vent pipe)*

*Blow off valves (Manhole rim and valve lid)*

*Pressure plane valves*

*Cleaning wyes*

*Clean outs*

*Casing pipe (each end)*

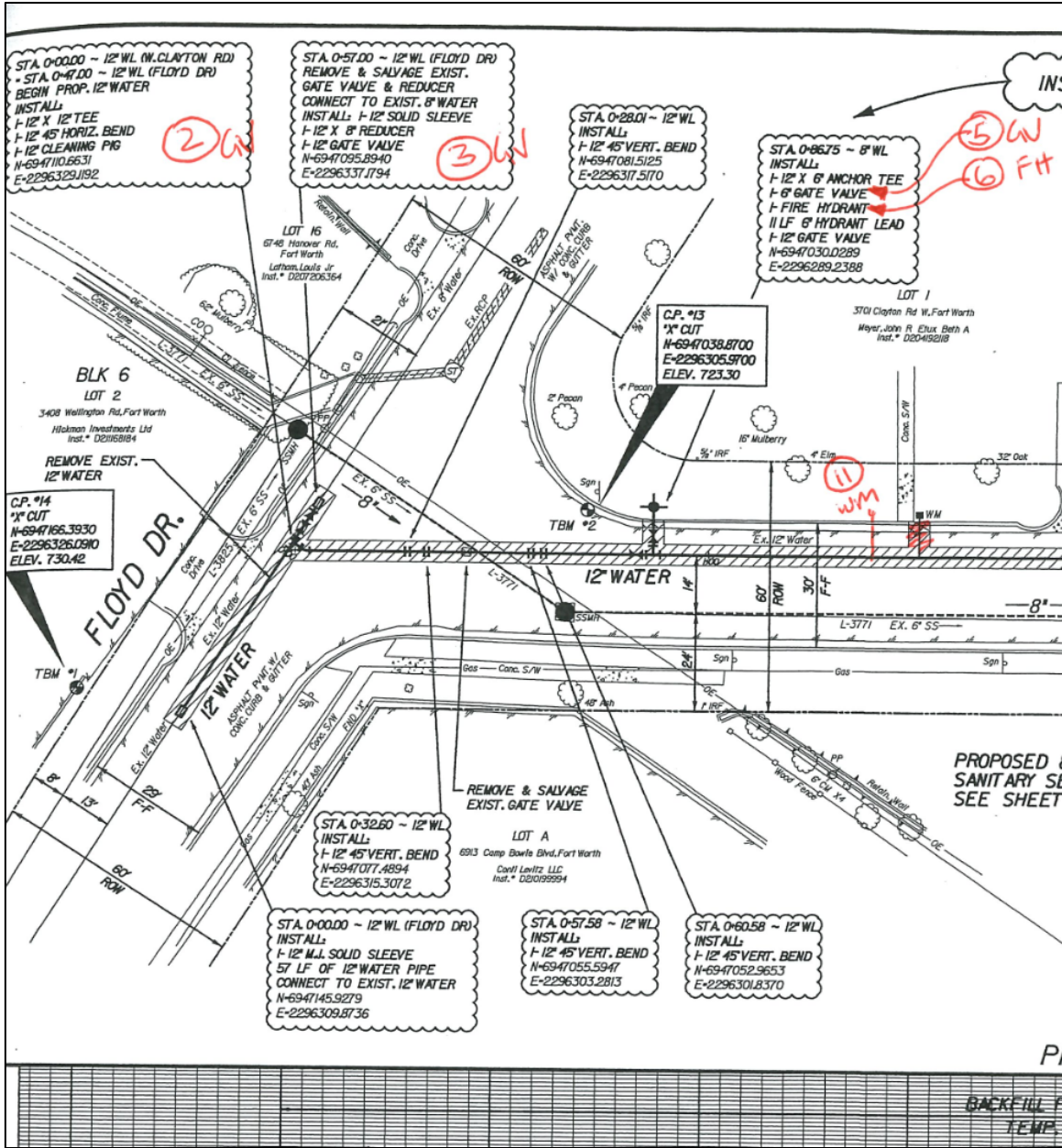
*Inverts of pipes*

*Turbo Meters*

**B. Example Deliverable**

A hand written red line by the field surveyor is acceptable in most cases. This should be a copy of the plans with the point number noted by each asset. If the asset is missing, then the surveyor should write “**NOT FOUND**” to notify the City.

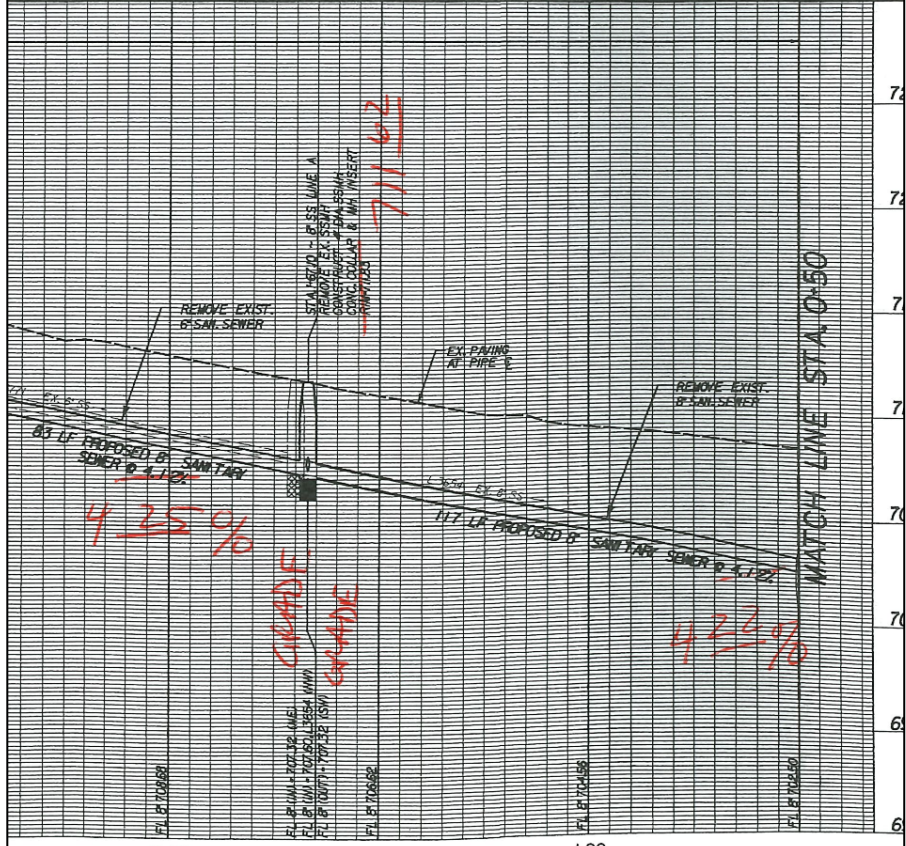
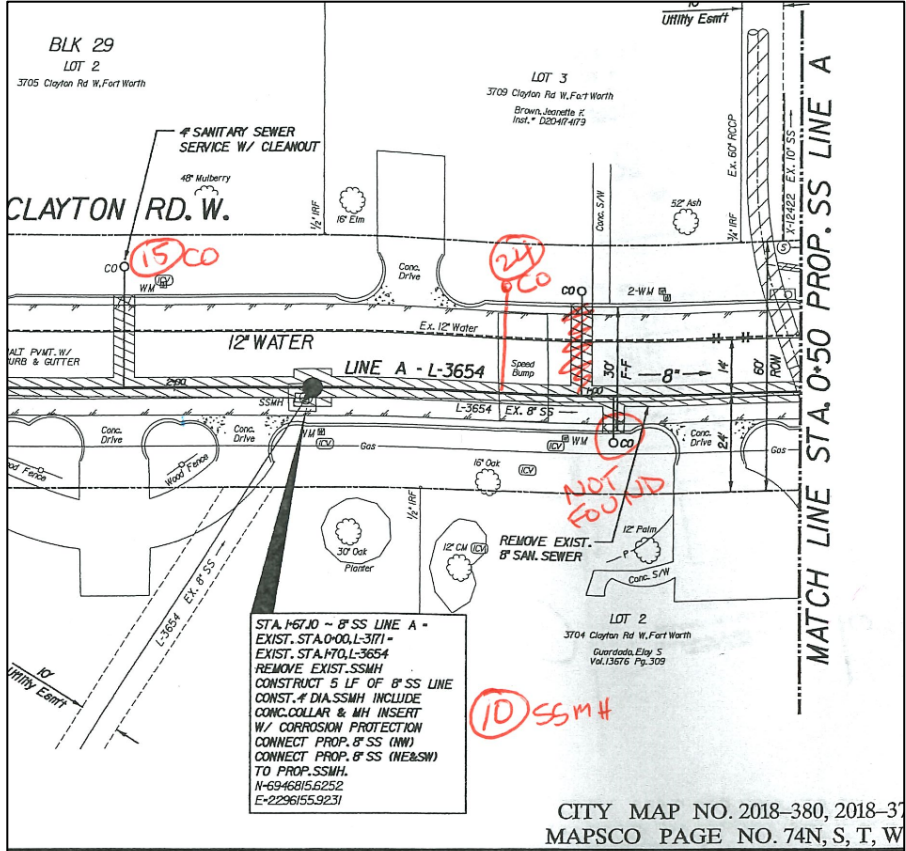













Obviously the .csv or .txt file cannot be signed/sealed by a surveyor in the format requested. This is just an example and all this information should be noted when delivered to the City so it is clear to what coordinate system the data is in.

POINT NO.	NORTHING	EASTING	ELEV.	DESCRIPTION	
1	6946257.189	2296079.165		726.09 SSMH RIM	HORIZONTAL COORDINATES IN N.A.D. 1983 TX. N. CENTRAL ZONE 4202
2	6946260.893	2296062.141		725.668 GV RIM	
3	6946307.399	2296038.306		726.85 GV RIM	
4	6946220.582	2296011.025		723.358 SSMH RIM	
5	6946195.23	2296015.116		722.123 GV RIM	
6	6946190.528	2296022.721		722.325 FH	
7	6946136.012	2295992.115		719.448 WM RIM	
8	6946002.267	2295919.133		713.331 WM RIM	
9	6946003.056	2295933.418		713.652 CO RIM	
10	6945984.677	2295880.52		711.662 SSMH RIM	VERTICAL COORDINATES IN N.A.D. 88
11	6945986.473	2295869.892		710.046 WM RIM	
12	6945895.077	2295860.962		707.72 WM RIM	
13	6945896.591	2295862.188		708.205 WM RIM	
14	6945934.286	2295841.925		709.467 WM RIM	
15	6945936.727	2295830.441		710.084 CO RIM	
16	6945835.678	2295799.707		707.774 SSMH RIM	
17	6945817.488	2295827.011		708.392 SSMH RIM	
18	6945759.776	2295758.643		711.218 SSMH RIM	
19	6945768.563	2295778.424		710.086 GV RIM	OR CALIBRATED TO CONTROL POINTS LISTED IN THE PLANS FOR SURFACE
20	6945743.318	2295788.392		710.631 GV RIM	
21	6945723.219	2295754.394		712.849 GV RIM	
22	6945682.21	2295744.22		716.686 WM RIM	
23	6945621.902	2295669.471		723.76 WM RIM	
24	6945643.407	2295736.03		719.737 CO RIM	
25	6945571.059	2295655.195		727.514 SSMH RIM	
26	6945539.498	2295667.803		729.123 WM RIM	
27	6945519.834	2295619.49		732.689 WM RIM	
28	6945417.879	2295580.27		740.521 WM RIM	P.P.L.S. STAMPED 
29	6945456.557	2295643.145		736.451 CO RIM	
30	6945387.356	2295597.101		740.756 GV RIM	
31	6945370.688	2295606.793		740.976 GV RIM	
32	6945383.53	2295610.559		740.408 FH	
33	6945321.228	2295551.105		746.34 WM RIM	
34	6945319.365	2295539.728		746.777 CO RIM	
35	6945242.289	2295570.715		748.454 WM RIM	
36	6945233.624	2295544.626		749.59 SSMH RIM	
37	6945206.483	2295529.305		751.058 WM RIM	ANY SURVEYOR 12/30/10
38	6945142.015	2295557.666		750.853 WM RIM	
39	6945113.445	2295520.335		751.871 WM RIM	
40	6945049.02	2295527.345		752.257 SSMH RIM	
41	6945041.024	2295552.675		751.79 WM RIM	
42	6945038.878	2295552.147		751.88 WM RIM	
43	6945006.397	2295518.135		752.615 WM RIM	
44	6944944.782	2295520.635		752.801 WM RIM	
45	6944943.432	2295556.479		752.156 WM RIM	
46	6944860.416	2295534.397		752.986 SSMH RIM	



**C. Other preferred as-built deliverable**

Some vendors have indicated that it is easier to deliver this information in a different format. Below is an example spreadsheet that is also acceptable and can be obtained by request from the survey superintendent.

		Project Name and Number - (Street Name)																			
		Valve Box				Water Main				Bends				Meter Boxes				Fire Hydrants			
Row	Column	Sta. #	GPS(Grid) Coordinates, Texas NC 4202	Nut Elevation	1/8" 250' Innominals	Sta. #	GPS(Grid) Coordinates, Texas NC 4202	Elevation(Z)	Sta. #	GPS(Grid) Coordinates, Texas NC 4202	Sta. #	GPS(Grid) Coordinates, Texas NC 4202	Hydrant Valve	GPS(Grid) Coordinates, Texas NC 4202	Nut Elevation						
1	A																				
2	B																				
3	C	0-20.05	N(Y)=6934779.6510' E(X)=2320950.1460'	718.103							0-31.22	N(Y)=6934791.0300' E(X)=2320951.9640'	0-31.42		718.555						
4	D	11-53.89	N(Y)=6935913.4620' E(X)=2320942.4830'	716.838							12-19.71	N(Y)=6935979.1580' E(X)=6935979.1580'	12-19.58		714.431						
5	E	11-92.87	N(Y)=6935952.6340' E(X)=2320966.6290'	717.489							20-98.76	N(Y)=6936849.9940' E(X)=2320960.4250'	20-90.25		704.241						
6	F	11-92.93	N(Y)=6935952.1510' E(X)=2320887.8260'	715.044								N(Y)=6937492.2430' E(X)=2320938.8970'	27-32.33		696.58						
7	G	12-15.17	N(Y)=6935974.7400' E(X)=2320942.3170'	715.001																	
8	H	20-51.69	N(Y)=6936811.2340' E(X)=2320935.9070'	704.155																	
9	I	27-35.00	N(Y)=6937494.5290' E(X)=2320930.5430'	697.071																	



1 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

2 **1.12 WARRANTY [NOT USED]**

3 **PART 2 - PRODUCTS**

4 **2.1 OWNER-FURNISHED [or] OWNER-SUPPLIED PRODUCTS [NOT USED]**

5 **2.2 MATERIALS**

6 A. Cleaning Agents

- 7 1. Compatible with surface being cleaned
- 8 2. New and uncontaminated
- 9 3. For manufactured surfaces
- 10 a. Material recommended by manufacturer

11 **2.3 ACCESSORIES [NOT USED]**

12 **2.4 SOURCE QUALITY CONTROL [NOT USED]**

13 **PART 3 - EXECUTION**

14 **3.1 INSTALLERS [NOT USED]**

15 **3.2 EXAMINATION [NOT USED]**

16 **3.3 PREPARATION [NOT USED]**

17 **3.4 APPLICATION [NOT USED]**

18 **3.5 REPAIR / RESTORATION [NOT USED]**

19 **3.6 RE-INSTALLATION [NOT USED]**

20 **3.7 FIELD [or] SITE QUALITY CONTROL [NOT USED]**

21 **3.8 SYSTEM STARTUP [NOT USED]**

22 **3.9 ADJUSTING [NOT USED]**

23 **3.10 CLEANING**

24 A. General

- 25 1. Prevent accumulation of wastes that create hazardous conditions.
- 26 2. Conduct cleaning and disposal operations to comply with laws and safety orders of  
27 governing authorities.
- 28 3. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in  
29 storm or sanitary drains or sewers.
- 30 4. Dispose of degradable debris at an approved solid waste disposal site.
- 31 5. Dispose of nondegradable debris at an approved solid waste disposal site or in an  
32 alternate manner approved by City and regulatory agencies.

- 1 6. Handle materials in a controlled manner with as few handlings as possible.
- 2 7. Thoroughly clean, sweep, wash and polish all Work and equipment associated with
- 3 this project.
- 4 8. Remove all signs of temporary construction and activities incidental to construction
- 5 of required permanent Work.
- 6 9. If project is not cleaned to the satisfaction of the City, the City reserves the right to
- 7 have the cleaning completed at the expense of the Contractor.
- 8 10. Do not burn on-site.

9 B. Intermediate Cleaning during Construction

- 10 1. Keep Work areas clean so as not to hinder health, safety or convenience of
- 11 personnel in existing facility operations.
- 12 2. At maximum weekly intervals, dispose of waste materials, debris and rubbish.
- 13 3. Confine construction debris daily in strategically located container(s):
- 14 a. Cover to prevent blowing by wind
- 15 b. Store debris away from construction or operational activities
- 16 c. Haul from site at a minimum of once per week
- 17 4. Vacuum clean interior areas when ready to receive finish painting.
- 18 a. Continue vacuum cleaning on an as-needed basis, until Final Acceptance.
- 19 5. Prior to storm events, thoroughly clean site of all loose or unsecured items, which
- 20 may become airborne or transported by flowing water during the storm.

21 C. Exterior (Site or Right of Way) Final Cleaning

- 22 1. Remove trash and debris containers from site.
- 23 a. Re-seed areas disturbed by location of trash and debris containers in accordance
- 24 with Section 32 92 13.
- 25 2. Sweep roadway to remove all rocks, pieces of asphalt, concrete or any other object
- 26 that may hinder or disrupt the flow of traffic along the roadway.
- 27 3. Clean any interior areas including, but not limited to, vaults, manholes, structures,
- 28 junction boxes and inlets.
- 29 4. If no longer required for maintenance of erosion facilities, and upon approval by
- 30 City, remove erosion control from site.
- 31 5. Clean signs, lights, signals, etc.

32 **3.11 CLOSEOUT ACTIVITIES [NOT USED]**

33 **3.12 PROTECTION [NOT USED]**

34 **3.13 MAINTENANCE [NOT USED]**

35 **3.14 ATTACHMENTS [NOT USED]**

36  
37  
38  
39  
40

1

**END OF SECTION**

2

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
4/7/2014	M.Domenech	Revised for DAP application

3



1 **1.6 INFORMATIONAL SUBMITTALS [NOT USED]**

2 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

3 **PART 2 - PRODUCTS [NOT USED]**

4 **PART 3 - EXECUTION**

5 **3.1 INSTALLERS [NOT USED]**

6 **3.2 EXAMINATION [NOT USED]**

7 **3.3 PREPARATION [NOT USED]**

8 **3.4 CLOSEOUT PROCEDURE**

9 A. Prior to requesting Final Inspection, submit:

- 10 1. Project Record Documents in accordance with Section 01 78 39  
11 2. Operation and Maintenance Data, if required, in accordance with Section 01 78 23

12 B. Prior to requesting Final Inspection, perform final cleaning in accordance with Section  
13 01 74 23.

14 C. Final Inspection

- 15 1. After final cleaning, provide notice to the City Project Representative that the Work  
16 is completed.  
17 a. The City will make an initial Final Inspection with the Contractor present.  
18 b. Upon completion of this inspection, the City will notify the Contractor, in  
19 writing within 10 business days, of any particulars in which this inspection  
20 reveals that the Work is defective or incomplete.
- 21 2. Upon receiving written notice from the City, immediately undertake the Work  
22 required to remedy deficiencies and complete the Work to the satisfaction of the  
23 City.
- 24 3. Upon completion of Work associated with the items listed in the City's written  
25 notice, inform the City, that the required Work has been completed. Upon receipt  
26 of this notice, the City, in the presence of the Contractor, will make a subsequent  
27 Final Inspection of the project.
- 28 4. Provide all special accessories required to place each item of equipment in full  
29 operation. These special accessory items include, but are not limited to:  
30 a. Specified spare parts  
31 b. Adequate oil and grease as required for the first lubrication of the equipment  
32 c. Initial fill up of all chemical tanks and fuel tanks  
33 d. Light bulbs  
34 e. Fuses  
35 f. Vault keys  
36 g. Handwheels  
37 h. Other expendable items as required for initial start-up and operation of all  
38 equipment

39 D. Notice of Project Completion





**SECTION 01 78 23**  
**OPERATION AND MAINTENANCE DATA**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Product data and related information appropriate for City's maintenance and operation of products furnished under Contract
  - 2. Such products may include, but are not limited to:
    - a. Traffic Controllers
    - b. Irrigation Controllers (to be operated by the City)
    - c. Butterfly Valves
- B. Deviations from this City of Fort Worth Standard Specification
  - 1. None.
- C. Related Specification Sections include, but are not necessarily limited to:
  - 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
  - 2. Division 1 – General Requirements

**1.2 PRICE AND PAYMENT PROCEDURES**

- A. Measurement and Payment
  - 1. Work associated with this Item is considered subsidiary to the various Items bid. No separate payment will be allowed for this Item.

**1.3 REFERENCES [NOT USED]**

**1.4 ADMINISTRATIVE REQUIREMENTS**

- A. Schedule
  - 1. Submit manuals in final form to the City within 30 calendar days of product shipment to the project site.

**1.5 SUBMITTALS**

- A. Submittals shall be in accordance with Section 01 33 00. All submittals shall be approved by the City prior to delivery.

**1.6 INFORMATIONAL SUBMITTALS**

- A. Submittal Form
  - 1. Prepare data in form of an instructional manual for use by City personnel.
  - 2. Format
    - a. Size: 8 ½ inches x 11 inches
    - b. Paper
      - 1) 40 pound minimum, white, for typed pages
      - 2) Holes reinforced with plastic, cloth or metal
    - c. Text: Manufacturer's printed data, or neatly typewritten

- d. Drawings
    - 1) Provide reinforced punched binder tab, bind in with text
    - 2) Reduce larger drawings and fold to size of text pages.
  - e. Provide fly-leaf for each separate product, or each piece of operating equipment.
    - 1) Provide typed description of product, and major component parts of equipment.
    - 2) Provide indexed tabs.
  - f. Cover
    - 1) Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS".
    - 2) List:
      - a) Title of Project
      - b) Identity of separate structure as applicable
      - c) Identity of general subject matter covered in the manual
3. Binders
- a. Commercial quality 3-ring binders with durable and cleanable plastic covers
  - b. When multiple binders are used, correlate the data into related consistent groupings.
4. If available, provide an electronic form of the O&M Manual.
- B. Manual Content
- 1. Neatly typewritten table of contents for each volume, arranged in systematic order
    - a. Contractor, name of responsible principal, address and telephone number
    - b. A list of each product required to be included, indexed to content of the volume
    - c. List, with each product:
      - 1) The name, address and telephone number of the subcontractor or installer
      - 2) A list of each product required to be included, indexed to content of the volume
      - 3) Identify area of responsibility of each
      - 4) Local source of supply for parts and replacement
    - d. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
  - 2. Product Data
    - a. Include only those sheets which are pertinent to the specific product.
    - b. Annotate each sheet to:
      - 1) Clearly identify specific product or part installed
      - 2) Clearly identify data applicable to installation
      - 3) Delete references to inapplicable information
  - 3. Drawings
    - a. Supplement product data with drawings as necessary to clearly illustrate:
      - 1) Relations of component parts of equipment and systems
      - 2) Control and flow diagrams
    - b. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
    - c. Do not use Project Record Drawings as maintenance drawings.
  - 4. Written text, as required to supplement product data for the particular installation:
    - a. Organize in consistent format under separate headings for different procedures.
    - b. Provide logical sequence of instructions of each procedure.

5. Copy of each warranty, bond and service contract issued
  - a. Provide information sheet for City personnel giving:
    - 1) Proper procedures in event of failure
    - 2) Instances which might affect validity of warranties or bonds
- C. Manual for Materials and Finishes
  1. Submit 5 copies of complete manual in final form.
  2. Content, for architectural products, applied materials and finishes:
    - a. Manufacturer's data, giving full information on products
      - 1) Catalog number, size, composition
      - 2) Color and texture designations
      - 3) Information required for reordering special manufactured products
    - b. Instructions for care and maintenance
      - 1) Manufacturer's recommendation for types of cleaning agents and methods
      - 2) Cautions against cleaning agents and methods which are detrimental to product
      - 3) Recommended schedule for cleaning and maintenance
  3. Content, for moisture protection and weather exposure products:
    - a. Manufacturer's data, giving full information on products
      - 1) Applicable standards
      - 2) Chemical composition
      - 3) Details of installation
    - b. Instructions for inspection, maintenance and repair
- D. Manual for Equipment and Systems
  1. Submit 5 copies of complete manual in final form.
  2. Content, for each unit of equipment and system, as appropriate:
    - a. Description of unit and component parts
      - 1) Function, normal operating characteristics and limiting conditions
      - 2) Performance curves, engineering data and tests
      - 3) Complete nomenclature and commercial number of replaceable parts
    - b. Operating procedures
      - 1) Start-up, break-in, routine and normal operating instructions
      - 2) Regulation, control, stopping, shut-down and emergency instructions
      - 3) Summer and winter operating instructions
      - 4) Special operating instructions
    - c. Maintenance procedures
      - 1) Routine operations
      - 2) Guide to "trouble shooting"
      - 3) Disassembly, repair and reassembly
      - 4) Alignment, adjusting and checking
    - d. Servicing and lubrication schedule
      - 1) List of lubricants required
    - e. Manufacturer's printed operating and maintenance instructions
    - f. Description of sequence of operation by control manufacturer
      - 1) Predicted life of parts subject to wear
      - 2) Items recommended to be stocked as spare parts
    - g. As installed control diagrams by controls manufacturer
    - h. Each contractor's coordination drawings
      - 1) As installed color coded piping diagrams

- i. Charts of valve tag numbers, with location and function of each valve
  - j. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage
  - k. Other data as required under pertinent Sections of Specifications
3. Content, for each electric and electronic system, as appropriate:
- a. Description of system and component parts
    - 1) Function, normal operating characteristics, and limiting conditions
    - 2) Performance curves, engineering data and tests
    - 3) Complete nomenclature and commercial number of replaceable parts
  - b. Circuit directories of panelboards
    - 1) Electrical service
    - 2) Controls
    - 3) Communications
  - c. As installed color coded wiring diagrams
  - d. Operating procedures
    - 1) Routine and normal operating instructions
    - 2) Sequences required
    - 3) Special operating instructions
  - e. Maintenance procedures
    - 1) Routine operations
    - 2) Guide to "trouble shooting"
    - 3) Disassembly, repair and reassembly
    - 4) Adjustment and checking
  - f. Manufacturer's printed operating and maintenance instructions
  - g. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage
  - h. Other data as required under pertinent Sections of Specifications
4. Prepare and include additional data when the need for such data becomes apparent during instruction of City's personnel.

#### **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

#### **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

#### **1.9 QUALITY ASSURANCE**

- A. Provide operation and maintenance data by personnel with the following criteria:
1. Trained and experienced in maintenance and operation of described products
  2. Skilled as technical writer to the extent required to communicate essential data
  3. Skilled as draftsman competent to prepare required drawings

**1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

**1.11 FIELD [SITE] CONDITIONS [NOT USED]**

**1.12 WARRANTY [NOT USED]**

**PART 2 - PRODUCTS [NOT USED]**

**PART 3 - EXECUTION [NOT USED]**

**END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
8/31/2012	D. Johnson	1.5.A.1 – title of section removed
4/7/2014	M.Domenech	Revised for DAP Application

**SECTION 01 78 39**  
**PROJECT RECORD DOCUMENTS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Work associated with the documenting the project and recording changes to project documents, including:
    - a. Record Drawings
    - b. Water Meter Service Reports
    - c. Sanitary Sewer Service Reports
    - d. Large Water Meter Reports
- B. Deviations from this City of Fort Worth Standard Specification
  - 1. None.
- C. Related Specification Sections include, but are not necessarily limited to:
  - 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
  - 2. Division 1 – General Requirements

**1.2 PRICE AND PAYMENT PROCEDURES**

- A. Measurement and Payment
  - 1. Work associated with this Item is considered subsidiary to the various Items bid. No separate payment will be allowed for this Item.

**1.3 REFERENCES [NOT USED]**

**1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]**

**1.5 SUBMITTALS**

- A. Prior to submitting a request for Final Inspection, deliver Project Record Documents to City's Project Representative.

**1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

**1.7 CLOSEOUT SUBMITTALS [NOT USED]**

**1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

**1.9 QUALITY ASSURANCE**

- A. Accuracy of Records
  - 1. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to show the change properly.
  - 2. Accuracy of records shall be such that future search for items shown in the Contract Documents may rely reasonably on information obtained from the approved Project Record Documents.

3. To facilitate accuracy of records, make entries within 24 hours after receipt of information that the change has occurred.
4. Provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive site measurement, investigation and examination.

#### **1.10 STORAGE AND HANDLING**

##### **A. Storage and Handling Requirements**

1. Maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the Work and transfer of all recorded data to the final Project Record Documents.
2. In the event of loss of recorded data, use means necessary to again secure the data to the City's approval.
  - a. In such case, provide replacements to the standards originally required by the Contract Documents.

#### **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

#### **1.12 WARRANTY [NOT USED]**

### **PART 2 - PRODUCTS**

#### **2.1 OWNER-FURNISHED [OR] OWNER-SUPPLIED PRODUCTS [NOT USED]**

#### **2.2 RECORD DOCUMENTS**

##### **A. Job set**

1. Promptly following receipt of the Notice to Proceed, secure from the City, at no charge to the Contractor, 1 complete set of all Documents comprising the Contract.

##### **B. Final Record Documents**

1. At a time nearing the completion of the Work and prior to Final Inspection, provide the City 1 complete set of all Final Record Drawings in the Contract.

#### **2.3 ACCESSORIES [NOT USED]**

#### **2.4 SOURCE QUALITY CONTROL [NOT USED]**

### **PART 3 - EXECUTION**

#### **3.1 INSTALLERS [NOT USED]**

#### **3.2 EXAMINATION [NOT USED]**

#### **3.3 PREPARATION [NOT USED]**

#### **3.4 MAINTENANCE DOCUMENTS**

##### **A. Maintenance of Job Set**

1. Immediately upon receipt of the job set, identify each of the Documents with the title, "RECORD DOCUMENTS - JOB SET".



2. Preservation
  - a. Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set.
  - b. Do not use the job set for any purpose except entry of new data and for review by the City, until start of transfer of data to final Project Record Documents.
  - c. Maintain the job set at the site of work.
3. Coordination with Construction Survey
  - a. At a minimum clearly mark any deviations from Contract Documents associated with installation of the infrastructure.
4. Making entries on Drawings
  - a. Record any deviations from Contract Documents.
  - b. Use an erasable colored pencil (not ink or indelible pencil), clearly describe the change by graphic line and note as required.
  - c. Date all entries.
  - d. Call attention to the entry by a "cloud" drawn around the area or areas affected.
  - e. In the event of overlapping changes, use different colors for the overlapping changes.
5. Conversion of schematic layouts
  - a. In some cases on the Drawings, arrangements of conduits, circuits, piping, ducts, and similar items, are shown schematically and are not intended to portray precise physical layout.
    - 1) Final physical arrangement is determined by the Contractor, subject to the City's approval.
    - 2) However, design of future modifications of the facility may require accurate information as to the final physical layout of items which are shown only schematically on the Drawings.
  - b. Show on the job set of Record Drawings, by dimension accurate to within 1 inch, the centerline of each run of items.
    - 1) Final physical arrangement is determined by the Contractor, subject to the City's approval.
    - 2) Show, by symbol or note, the vertical location of the Item ("under slab", "in ceiling plenum", "exposed", and the like).
    - 3) Make all identification sufficiently descriptive that it may be related reliably to the Specifications.
  - c. The City may waive the requirements for conversion of schematic layouts where, in the City's judgment, conversion serves no useful purpose. However, do not rely upon waivers being issued except as specifically issued in writing by the City.

## B. Final Project Record Documents

1. Transfer of data to Drawings
  - a. Carefully transfer change data shown on the job set of Record Drawings to the corresponding final documents, coordinating the changes as required.
  - b. Clearly indicate at each affected detail and other Drawing a full description of changes made during construction, and the actual location of items.
  - c. Call attention to each entry by drawing a "cloud" around the area or areas affected.

- d. Make changes neatly, consistently and with the proper media to assure longevity and clear reproduction.
- 2. Transfer of data to other Documents
  - a. If the Documents, other than Drawings, have been kept clean during progress of the Work, and if entries thereon have been orderly to the approval of the City, the job set of those Documents, other than Drawings, will be accepted as final Record Documents.
  - b. If any such Document is not so approved by the City, secure a new copy of that Document from the City at the City's usual charge for reproduction and handling, and carefully transfer the change data to the new copy to the approval of the City.

- 3.5 REPAIR / RESTORATION [NOT USED]**
- 3.6 RE-INSTALLATION [NOT USED]**
- 3.7 FIELD [OR] SITE QUALITY CONTROL [NOT USED]**
- 3.8 SYSTEM STARTUP [NOT USED]**
- 3.9 ADJUSTING [NOT USED]**
- 3.10 CLEANING [NOT USED]**
- 3.11 CLOSEOUT ACTIVITIES [NOT USED]**
- 3.12 PROTECTION [NOT USED]**
- 3.13 MAINTENANCE [NOT USED]**
- 3.14 ATTACHMENTS [NOT USED]**

**END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
4/7/2014	M.Domenech	Revised for DAP Application

## APPENDIX

GR-01 60 00	Product Requirements
GC-4.02	Subsurface and Physical Conditions
GC-6.07	Wage Rates
GC-6.09	Permits and Utilities

# **GR-01 60 00 Product Requirements**

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**CITY OF FORT WORTH  
WATER DEPARTMENT  
STANDARD PRODUCT LIST**

**Updated: April 12, 2019**

The Fort Worth Water Department's Standard Products List has been developed to minimize the submittal review of products which meet the Fort Worth Water Department's Standard Specifications during utility construction projects. When Technical Specifications for specific products, are included as part of the Construction Contract Documents, the requirements of the Technical Specification will override the Fort Worth Water Department's Standard Specifications and the Fort Worth Water Department's Standard Products List and approval of the specific products will be based on the requirements of the Technical Specification whether or not the specific product meets the Fort Worth Water Department's Standard Specifications or is on the Fort Worth Water Department's Standard Products List.

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**CITY OF FORT WORTH  
WATER DEPARTMENT  
STANDARD PRODUCT LIST**

Updated: 04/12/2019

Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water &amp; Sewer - Manholes &amp; Bases/Components 33-39-10 (Rev 2/3/16)</b>						
07/23/97	33 05 13	Urethane Hydrophilic Waterstop	Asahi Kogyo K.K.	Adeka Ultra-Seal P-201	ASTM D2240/D412/D792	
04/26/00	33 05 13	Offset Joint for 4' Diam. MH	Hanson Concrete Products	Drawing No. 35-0048-001		
04/26/00	33 05 13	Profile Gasket for 4' Diam. MH.	Press-Seal Gasket Corp.	250-4G Gasket	ASTM C-443/C-361	SS MH
1/26/99	33 05 13	HDPE Manhole Adjustment Rings	Ladtech, Inc	HDPE Adjustment Ring		Non-traffic area
5/13/05	33 05 13	Manhole External Wrap	Canusa - CPS	WrapidSeal Manhole Encapsulation System		



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water &amp; Sewer - Manholes &amp; Bases/Fiberglass 33-39-13 (1/8/13)</b>						
1/26/99	33 39 13	Fiberglass Manhole	Fluid Containment, Inc.	Flowtite	ASTM 3753	Non-traffic area
08/30/06	33 39 13	Fiberglass Manhole	L.F. Manufacturing			Non-traffic area



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Updated: 04/12/2019

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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
	<b>Water &amp; Sewer - Manholes &amp; Bases/Frames &amp; Covers/Rectangular 33-05-13 (Rev 2/3/16)</b>					
*	33 05 13	Manhole Frames and Covers	Western Iron Works, Bass & Hays Foundry	1001		24"x40" WD



**CITY OF FORT WORTH  
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Updated: 04/12/2019

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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water &amp; Sewer - Manholes &amp; Bases/Frames &amp; Covers/Standard (Round) 33-05-13 (Rev 2/3/16)</b>						
*	33 05 13	Manhole Frames and Covers	Western Iron Works, Bass & Hays Foundry	30024		24" Dia.
*	33 05 13	Manhole Frames and Covers	McKinley Iron Works Inc.	A 24 AM		24" Dia.
08/24/18	33 05 13	Manhole Frames and Covers	Neenah Foundry	R-1272	ASTM A48 & AASHTO M306	24" Dia.
08/24/18	33 05 13	Manhole Frames and Covers	Neenah Foundry	R- 165-LM (Hinged)	ASTM A48 & AASHTO M306	24" Dia.
08/24/18	33 05 13	Manhole Frames and Covers	Neenah Foundry	NF 1274	ASTM A48 & AASHTO M306	30" Dia.
08/24/18	33 05 13	Manhole Frames and Covers	Neenah Foundry	R-1743-LM (Hinged)	ASTM A48 & AASHTO M306	30" dia.
	33 05 13	Manhole Frames and Covers	Sigma Corporation	MH-144N		
	33 05 13	Manhole Frames and Covers	Sigma Corporation	MH-143N		
	33 05 13	Manhole Frames and Covers	Pont-A-Mousson	GTS-STD		24" dia.
	33 05 13	Manhole Frames and Covers	Neenah Casting			24" dia.
10/31/06	33 05 13	Manhole Frames and Covers (Hinged)	Powerseal	Hinged Ductile Iron Manhole	ASTM A536	24" Dia.
7/25/03	33 05 13	Manhole Frames and Covers	Saint-Gobain Pipelines (Pamrex/rexus)	RE32-R8FS		30" Dia.
01/31/06	33 05 13	30" DI MH Ring and Cover	East Jordan Iron Works	V1432-2 and V1483 Designs	AASHTO M306-04	30" Dia.
11/02/10	33 05 13	30" DI MH Ring and Cover	Sigma Corporation	MH1651FWN & MH16502		30" Dia
07/19/11	33 05 13	30" DI MH Ring and Cover	Star Pipe Products	MH32FTWSS-DC		30" Dia
08/10/11	33 05 13	30" DI MH Ring and Cover	Accucast	220700 Heavy Duty with Gasket Ring		30" Dia
10/14/13	33 05 13	30" DI MH Ring and Cover (Hinged & Lockable)	East Jordan Iron Works	30" ERGO XL Assembly with Cam Lock/MPIC/T-Gasket	ASSHTO M105 & ASTM A536	30" Dia
06/01/17	34 05 13	30" DI MH Ring and Cover (Hinged & Lockable) CI	SIP Industries	2280 (32")	ASTM A 48	30" Dia.
08/24/17	33 05 13.01	30" DI MH Ring and Cover (Hinge & Lock) Composite	SewperCover	SCDH 3000, Std. Dbl Hinge Non-Metalic Ring and Cover w/Lock HD/FRP Composite		30" Dia.



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water &amp; Sewer - Manholes &amp; Bases/Frames &amp; Covers/Water Tight &amp; Pressure Tight 33-05-13 (Rev 2/3/16)</b>						
*	33 05 13	Manhole Frames and Covers	Pont-A-Mousson	Pamtight		24" Dia.
*	33 05 13	Manhole Frames and Covers	Neenah Casting			24" Dia.
*	33 05 13	Manhole Frames and Covers	Western Iron Works,Bass & Hays Foundry	300-24P		24" Dia.
*	33 05 13	Manhole Frames and Covers	McKinley Iron Works Inc.	WPA24AM		24" Dia.
03/08/00	33 05 13	Manhole Frames and Covers	Accucast	RC-2100	ASTM A 48	24" Dia.
04/20/01	33 05 13	Manhole Frames and Covers	(SIP)Serampore Industries Private Ltd.	300-24-23.75 Ring and Cover	ASTM A 48	24" Dia.



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water &amp; Sewer - Manholes &amp; Bases/Precast Concrete (Rev 1/8/13)</b>						
*	33 39 10	Manhole, Precast Concrete	Hydro Conduit Corp	SPL Item #49	ASTM C 478	48"
*	33 39 10	Manhole, Precast Concrete	Wall Concrete Pipe Co. Inc.		ASTM C-443	48"
*	33 39 10	Manhole, Precast Concrete	Forterra(formerly Gifford-Hill, Hanson )		ASTM C 478	48"
04/26/00	33 39 10	MH, Single Offset Seal Joint	Forterra(formerly Gifford-Hill, Hanson )	Type F Dwg 35-0048-001	ASTM C 478	48" Diam MH
09/23/96	33 39 10	Manhole, Precast Concrete	Concrete Product Inc.	48" I.D. Manhole w/ 32" Cone	ASTM C 478	48" w/32" cone
05/08/18	33 39 10	Manhole, Precast Concrete	The Turner Company	48", 60" I.D. Manhole w/ 32" Cone	ASTM C 478	48", 60"
10/27/06	33 39 10	Manhole, Precast Concrete	Oldcastle Precast Inc.	48" I.D. Manhole w/ 24" Cone	ASTM C 478	48" Diam w 24" Ring
06/09/10	33 39 10	Manhole, Precast (Reinforce Polymer)Concrete	US Composite Pipe	Reinforced Polymer Concrete	ASTM C-76	48" to 72"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b><u>Water &amp; Sewer - Manholes &amp; Bases/Rehab Systems/Cementitious</u></b>						
*	E1-14	Manhole Rehab Systems	Quadex			
04/23/01	E1-14	Manhole Rehab Systems	Standard Cement Materials, Inc.	Reliner MSP		
	E1-14	Manhole Rehab Systems	AP/M Permaform			
4/20/01	E1-14	Manhole Rehab System	Strong Company	Strong Seal MS2A Rehab System		
5/12/03	E1-14	Manhole Rehab System (Liner)	Poly-triplex Technologies	MH repair product to stop infiltration	ASTM D5813	
08/30/06		General Concrete Repair	FlexKrete Technologies	Vinyl Polyester Repair Product		Misc. Use



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water &amp; Sewer - Manholes &amp; Bases/Rehab Systems/NonCementitious</b>						
05/20/96	E1-14	Manhole Rehab Systems	Sprayroq.	Spray Wall Polyurethane Coating	ASTM D639/D790	
*	E1-14	Manhole Rehab Systems	Sun Coast			
12/14/01		Coating for Corrosion protection(Exterior)	ERTECH	Series 20230 and 2100 (Asphatic Emulsion)		For Exterior Coating of Concrete Structures Only
01/31/06		Coatings for Corrosion Protection	Chesterton	Arc 791, S1HB, S1, S2	Acid Resistance Test	Sewer Applications
8/28/2006		Coatings for Corrosion Protection	Warren Environmental	S-301 and M-301		Sewer Applications
08/30/06		Coatings for Corrosion Protection	Citadel	SLS-30 Solids Epoxy		Sewer Applications
03/19/18	33 05 16, 33 39 10, 33 39 20	Coating for Corrosion protection(Exterior)	Sherwin Williams	RR&C Dampproofing Non-Fibered Spray Grade (Asphatic Emulsion)		For Exterior Coating of Concrete Structures Only





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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water &amp; Sewer - Manhole Inserts - Field Operations Use Only (Rev 2/3/16)</b>						
*	33 05 13	Manhole Insert	Knutson Enterprises	Made to Order - Plastic	ASTM D 1248	For 24" dia.
*	33 05 13	Manhole Insert	South Western Packaging	Made to Order - Plastic	ASTM D 1248	For 24" dia.
*	33 05 13	Manhole Insert	Noflow-Inflow	Made to Order - Plastic	ASTM D 1248	For 24" dia.
09/23/96	33 05 13	Manhole Insert	Southwestern Packing & Seals, Inc.	LifeSaver - Stainless Steel		For 24" dia.
09/23/96	33 05 13	Manhole Insert	Southwestern Packing & Seals, Inc.	TetherLok - Stainless Steel		For 24" dia

\* From Original Standard Products List



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water &amp; Sewer - Pipe Casing Spacers 33-05-24 (07/01/13)</b>						
11/04/02		Steel Band Casing Spacers	Advanced Products and Systems, Inc.	Carbon Steel Spacers, Model SI		
02/02/93		Stainless Steel Casing Spacer	Advanced Products and Systems, Inc.	Stainless Steel Spacer, Model SSI		
04/22/87		Casing Spacers	Cascade Waterworks Manufacturing	Casing Spacers		
09/14/10		Stainless Steel Casing Spacer	Pipeline Seal and Insulator	Stainless Steel Casing Spacer		Up to 48"
09/14/10		Coated Steel Casin Spacers	Pipeline Seal and Insulator	Coated Steel Casin Spacers		Up to 48"
05/10/11		Stainless Steel Casing Spacer	Powerseal	4810 Powerchock		Up to 48"
03/19/18		Casing Spacers	BWM	SS-12 Casing Spacer(Stainless Steel)		
03/19/18		Casing Spacers	BWM	FB-12 Casing Spacer (Coated Carbon Steel) for Non_pressure Pipe and Grouted Casing		



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Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
	<b>Water &amp; Sewer - Pipes/Ductile Iron 33-11-10(1/8/13)</b>					
*	33 11 10	Ductile Iron Pipe	Griffin Pipe Products, Co.	Super Bell-Tite Ductile Iron Pressure Pipe,	AWWA C150, C151	3" thru 24"
08/24/18	33 11 10	Ductile Iron Pipe	American Ductile Iron Pipe Co.	American Fastite Pipe (Bell Spigot)	AWWA C150, C151	4" thru 30"
08/24/18	33 11 10	Ductile Iron Pipe	American Ductile Iron Pipe Co.	American Flex Ring (Restrained Joint)	AWWA C150, C151	4" thru 30"
*	33 11 10	Ductile Iron Pipe	U.S. Pipe and Foundry Co.		AWWA C150, C151	
*	33 11 10	Ductile Iron Pipe	McWane Cast Iron Pipe Co.		AWWA C150, C151	



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<u>Water &amp; Sewer - Utility Line Marker (08/24/2018)</u>				



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<b><u>Sewer - Coatings/Epoxy 33-39-60 (01/08/13)</u></b>				
02/25/02		Epoxy Lining System	Sauereisen, Inc	SewerGard 210RS	LA County #210-1.33	
12/14/01		Epoxy Lining System	Ertech Technical Coatings	Ertech 2030 and 2100 Series		
04/14/05		Interior Ductile Iron Pipe Coating	Induron	Protecto 401	ASTM B-117	Ductile Iron Pipe Only
01/31/06		Coatings for Corrosion Protection	Chesterton	Arc 791, S1HB, S1, S2	Acid Resistance Test	Sewer Applications
8/28/2006		Coatings for Corrosion Protection	Warren Environmental	S-301 and M-301		Sewer Applications



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<u>Sewer - Coatings/Polyurethane</u>				



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<b><u>Sewer - Combination Air Valves</u></b>				
05/25/18	33-31-70	Air Release Valve	A.R.I. USA, Inc.	D025LTP02(Composite Body)		2"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
	<b><u>Sewer - Pipes/Concrete</u></b>					
*	E1-04	Conc. Pipe, Reinforced	Wall Concrete Pipe Co. Inc.		ASTM C 76	
*	E1-04	Conc. Pipe, Reinforced	Hydro Conduit Corporation	Class III T&G, SPL Item #77	ASTM C 76	
*	E1-04	Conc. Pipe, Reinforced	Hanson Concrete Products	<del>SPL Item #95-Manhole, #98-Pipe</del>	ASTM C 76	
*	E1-04	Conc. Pipe, Reinforced	Concrete Pipe & Products Co. Inc.		ASTM C 76	





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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<b>Sewer - Pipe Enlargment System (Method)33-31-23 (01/18/13)</b>				
		PIM System	PIM Corporation	Polyethylene	PIM Corp., Piscata Way, N.J.	Approved Previously
		McConnell Systems	McLat Construction	Polyethylene	Houston, Texas	Approved Previously
		TRS Systems	Trenchless Replacement System	Polyethylene	Calgary, Canada	Approved Previously



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Sewer - Pipe/Fiberglass Reinforced Pipe 33-31-13(1/8/13)</b>						
7/21/97	33 31 13	Cent. Cast Fiberglass	Hobas Pipe USA, Inc.	Hobas Pipe (Non-Pressure)	ASTM D3262/D3754	
03/22/10	33 31 13	Fiberglass Pipe	Ameron	Bondstrand RPMP Pipe	ASTM D3262/D3754	
10/30/03		Glass-Fiber Reinforced Polymer Pipe	Thompson Pipe Group	Flowtite	ASTM D3262/D3754	
4/14/05		Polymer Modified Concrete Pipe	Amitech USA	Meyer Polycrete Pipe	ASTM C33, A276, F477	8" to 102", Class V
06/09/10	E1-9	Reinforced Polymer Concrete Pipe	US Composite Pipe	Reinforced Polymer Concrete Pipe	ASTM C-76	



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<b><u>Sewer - Pipes/HDPE 33-31-23(1/8/13)</u></b>				
*		High-density polyethylene pipe	Phillips Driscopipe, Inc.	Opticore Ductile Polyethylene Pipe	ASTM D 1248	8"
*		High-density polyethylene pipe	Plexco Inc.		ASTM D 1248	8"
*		High-density polyethylene pipe	Polly Pipe, Inc.		ASTM D 1248	8"
		High-density polyethylene pipe	CSR Hydro Conduit/Pipeline Systems	McConnell Pipe Enlargement	ASTM D 1248	



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
	<b><u>Sewer - Pipes/PVC (Pressure Sewer) 33-11-12 (4/1/13)</u></b>					
12/02/11	33-11-12	DR-14 PVC Pressure Pipe	Pipeline Jetstream	PVC Pressure Pipe	AWWA C900	4" thru 12"
10/22/14	33-11-12	DR-14 PVC Pressure Pipe	Royal Building Products	Royal Seal PVC Pressure Pipe	AWWA C900	4" thru 12"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
	<b>Sewer - Pipes/PVC* 33-31-20 (7/1/13)</b>					
*	33-31-20	PVC Sewer Pipe	Certain-Teed Products Corp		ASTM D 3034	4" thru 15"
*	33-31-20	PVC Sewer Pipe	Napco Manufacturing Corp		ASTM D 3034, D 1784	4" & 8"
*	33-31-20	PVC Sewer Pipe	J-M Manufacturing Co., Inc. (JM Eagle)		ASTM D 3034	4" - 15"
12/23/97*	33-31-20	PVC Sewer Pipe	Diamond Plastics Corporation	SDR-26 and SDR-35	ASTM F 789, ASTM D 3034	4" thru 15"
*	33-31-20	PVC Sewer Pipe	Lamson Vylon Pipe		ASTM F 789	4" thru 15"
	33-31-20	PVC Sewer Pipe	Royal Building Products	Royal Seal Solid Wall Pipe SDR 26 & 35	ASTM 3034	4" thru 15"
01/18/18	33-31-20	PVC Sewer Pipe	Vinyltech PVC Pipe	Gravity Sewer	ASTM D3034	4" thru 15"
11/11/98	33-31-20	PVC Sewer Pipe	Diamond Plastics Corporation	"S" Gravity Sewer Pipe	ASTM F 679	18" to 27"
*	33-31-20	PVC Sewer Pipe	J-M Manufacturing Co, Inc. (JM Eagle)		ASTM F 679	18" - 27"
09/11/12	33-31-20	PVC Sewer Pipe	Pipelife Jet Stream	SDR-26 and SDR-35	ASTM F-679	18"
05/06/05	33-31-20	PVC Solid Wall Pipe	Diamond Plastics Corporation		PS 46 ASTM F-679	18" to 48"
04/27/06	33-31-20	PVC Sewer Fittings	Harco	SDR-26 and SDR-35 Gasket Fittings	ASTM D-3034, D-1784, etc	4" - 15"
*	33-31-20	PVC Sewer Fittings	Plastic Trends, In.c	Gasketed PVC Sewer Main Fittings	ASTM D 3034	
11/17/99	E100-2	Closed Profile PVC Pipe	Diamond Plastics Corporation		ASTM 1803/F794	18" to 48"
3/19/2018	33 31 20	PVC Sewer Pipe	Pipelife Jet Stream	SDR 35	ASTM F679	18"- 24"
3/19/2018	33 31 20	PVC Sewer Pipe	Pipelife Jet Stream	SDR 26	ASTM D3034	4"- 15"
3/29/2019	33 31 20	Gasketed Fittings (PVC)	GPK Products, Inc.	SDR 26	ASTM D3034/F-679	4"- 15"

\* From Original Standard Products List



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<b><u>Sewer - Pipes/Rehab/CIPP 33-31-12 (01/18/13)</u></b>				
*		Cured in Place Pipe	Insituform Texark, Inc		ASTM F 1216	
05/03/99		Cured in Place Pipe	National Envirotech Group	National Liner, (SPL) Item #27	ASTM F-1216/D-5813	
05/29/96		Cured in Place Pipe	Reynolds Inc/Inliner Technolgy (Inliner USA)	Inliner Technology	ASTM F 1216	

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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<b><u>Sewer - Pipes/Rehab/Fold &amp; Form</u></b>				
*		Fold and Form Pipe	Cullum Pipe Systems, Inc.			
11/03/98		Fold and Form Pipe	Insituform Technologies, Inc.	Insituform "NuPipe"	ASTM F-1504	
		Fold and Form Pipe	American Pipe & Plastics, Inc.			Demo. Purpose Only
12/04/00		Fold and Form Pipe	Ultraliner	Ultraliner PVC Alloy Pipeliner	ASTM F-1504, 1871, 1867	
06/09/03		Fold and Form Pipe	Miller Pipeline Corp.	EX Method	ASTM F-1504, F-1947	Up to 18" diameter



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<b><u>Sewer - Pipes/Open Profile Large Diameter</u></b>				
09/26/91	E100-2	PVC Sewer Pipe, Ribbed	Lamson Vylon Pipe	Carlton Vylon H.C. Closed Profile Pipe,	ASTM F 679	18" to 48"
09/26/91	E100-2	PVC Sewer Pipe, Ribbed	Extrusion Technologies, Inc.	Ultra-Rib Open Profile Sewer Pipe	ASTM F 679	18" to 48"
	E100-2	PVC Sewer Pipe, Ribbed	Uponor ETI Company			
11/10/10	(E100-2)	Polypropylene (PP) Sewer Pipe, Double Wall	Advanced Drainage Systems (ADS)	SaniTite HP Double Wall (Corrugated)	ASTM F 2736	24"-30"
11/10/10	(E100-2)	Polypropylene (PP) Sewer Pipe, Triple Wall	Advanced Drainage Systems (ADS)	SaniTite HP Triple Wall Pipe	ASTM F 2764	30" to 60"
05/16/11		Steel Reinforced Polyethylene Pipe	ConTech Construction Products	Durmaxx	ASTM F 2562	24" to 72"





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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water - Appurtenances 33-12-10 (07/01/13)</b>						
01/18/18	33-12-10	Double Strap Saddle	Romac	202NS Nylon Coated	AWWA C800	1"-2" SVC, up to 24" Pipe
08/28/02		Double Strap Saddle	Smith Blair	#317 Nylon Coated Double Strap Saddle		
07/23/12	33-12-10	Double Strap Service Saddle	Mueller Company	DR2S Double (SS) Strap DI Saddle	AWWA C800	1"-2" SVC, up to 24" Pipe
10/27/87		Curb Stops-Ball Meter Valves	McDonald	6100M,6100MT & 610MT		3/4" and 1"
10/27/87		Curb Stops-Ball Meter Valves	McDonald	4603B, 4604B, 6100M, 6100TM and 6101M		1½" and 2"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Ford Meter Box Co., Inc.	FB600-7NL, FB1600-7-NL, FV23-777-W-NL, L22-77NL	AWWA C800	2"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Ford Meter Box Co., Inc.	FB600-6-NL, FB1600-6-NL, FV23-666-W-NL, L22-66NL	AWWA C800	1-1/2"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Ford Meter Box Co., Inc.	FB600-4-NL, FB1600-4-NL, B11-444-WR-NL, B22444-WR-NL, L28-44NL	AWWA C800	1"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Mueller Co., Ltd.	B-25000N, B-24277N-3, B-20200N-3, H-15000N, , H-1552N, H142276N	AWWA C800, ANSF 61, ANSI/NSF 372	2"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Mueller Co., Ltd.	B-25000N, B-20200N-3, B-24277N-3,H-15000N, H-14276N, H-15525N	AWWA C800, ANSF 61, ANSI/NSF 372	1-1/2"
5/25/2018	33-12-10	Curb Stops-Ball Meter Valves	Mueller Co., Ltd.	B-25000N, B-20200N-3,H-15000N, H-15530N	AWWA C800, ANSF 61, ANSI/NSF 372	1"
01/26/00		Coated Tapping Saddle with Double SS Straps	JCM Industries, Inc.	#406 Double Band SS Saddle		1"-2" Taps on up to 12"
0/5/21/12	33-12-25	Tapping Sleeve (Coated Steel)	JCM Industries, Inc.	412 Tapping Sleeve ESS	AWWA C-223	Up to 30" w/12" Out
05/10/11		Tapping Sleeve (Stainless Steel)	Powerseal	3490AS (Flange) & 3490MJ		4"-8" and 16"
02/29/12	33-12-25	Tapping Sleeve (Coated Steel)	Romac	FTS 240	AWWA C-223	Up to 42" w/24" Out
02/29/12	33-12-25	Tapping Sleeve (Stainless Steel)	Romac	SST Stainless Steel	AWWA C-223	Up to 24" w/12" Out
02/29/12	33-12-25	Tapping Sleeve (Stainless Steel)	Romac	SST III Stainless Steel	AWWA C-223	Up to 30" w/12" Out
05/10/11		Joint Repair Clamp	Powerseal	3232 Bell Joint Repair Clamp		4" to 30"
		Plastic Meter Box w/Composite Lid	DFW Plastics Inc.	DFW37C-12-1EPAF FTW		
		Plastic Meter Box w/Composite Lid	DFW Plastics Inc.	DFW39C-12-1EPAF FTW		
08/30/06		Plastic Meter Box w/Composite Lid	DFW Plastics Inc.	DFW65C-14-1EPAF FTW		Class "A"
		Concrete Meter Box	Bass & Hays	CMB37-B12 1118 LID-9		
		Concrete Meter Box	Bass & Hays	CMB-18-Dual 1416 LID-9		
		Concrete Meter Box	Bass & Hays	CMB65-B65 1527 LID-9		

\* From Original Standard Products List



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<u>Water - Bolts, Nuts, and Gaskets 33-11-05 (01/08/13)</u>				



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
	<b>Water - Combination Air Release 33-31-70 (01/08/13)</b>					
*	E1-11	Combination Air Release Valve	GA Industries, Inc.	Empire Air and Vacuum Valve, Model 935	ASTM A 126 Class B, ASTM A 240 - float, ASTM A 307 - Cover Bolts	1" & 2"
*	E1-11	Combination Air Release Valve	Multiplex Manufacturing Co.	Crispin Air and Vacuum Valves, Model No.		1/2", 1" & 2"
*	E1-11	Combination Air Release Valve	Valve and Primer Corp.	APCO #143C, #145C and #147C		1", 2" & 3"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water - Dry Barrel Fire Hydrants 33-12-40 (01/15/14)</b>						
10/01/87	E-1-12	Dry Barrel Fire Hydrant	American-Darling Valve	Drawing Nos. 90-18608, 94-18560	AWWA C-502	
03/31/88	E-1-12	Dry Barrel Fire Hydrant	American Darling Valve	Shop Drawing No. 94-18791	AWWA C-502	
09/30/87	E-1-12	Dry Barrel Fire Hydrant	Clow Corporation	Shop Drawing No. D-19895	AWWA C-502	
01/12/93	E-1-12	Dry Barrel Fire Hydrant	American AVK Company	Model 2700	AWWA C-502	
08/24/88	E-1-12	Dry Barrel Fire Hydrant	Clow Corporation	Drawings D20435, D20436, B20506	AWWA C-502	
	E-1-12	Dry Barrel Fire Hydrant	ITT Kennedy Valve	Shop Drawing No. D-80783FW	AWWA C-502	
09/24/87	E-1-12	Dry Barrel Fire Hydrant	M&H Valve Company	Shop Drawing No. 13476	AWWA C-502	
10/14/87	E-1-12	Dry Barrel Fire Hydrant	Mueller Company	Shop Drawings No. 6461 A-423 Centurion	AWWA C-502	
01/15/88	E1-12	Dry Barrel Fire Hydrant	Mueller Company	Shop Drawing FH-12 A-423 Super Centurion 200	AWWA C-502	
10/09/87	E-1-12	Dry Barrel Fire Hydrant	U.S. Pipe & Foundry	Shop Drawing No. 960250	AWWA C-502	
09/16/87	E-1-12	Dry Barrel Fire Hydrant	Waterous Company	Shop Drawing No. SK740803	AWWA C-502	
08/12/16	33-12-40	Dry Barrel Fire Hydrant	EJ (East Jordan Iron Works)	WaterMaster 5CD250		



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water - Meters</b>						
02/05/93	E101-5	Detector Check Meter	Ames Company	Model 1000 Detector Check Valve	AWWA C550	4" - 10"
08/05/04		Magnetic Drive Vertical Turbine	Hersey	Magnetic Drive Vertical	AWWA C701, Class 1	3/4" - 6"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water - Pipes/PVC (Pressure Water) 33-31-70 (01/08/13)</b>						
01/18/18	33-11-12	PVC Pressure Pipe	Vinyltech PVC Pipe		AWWA C900, AWWA C605, ASTM D1784	4"-12"
3/19/2018	33 11 12	PVC Pressure Pipe	Pipelife Jet Stream	DR14	AWWA C900	4"-12"
3/19/2018	33 11 12	PVC Pressure Pipe	Pipelife Jet Stream	DR18	AWWA C900	16"-24"
5/25/2018	33 11 12	PVC Pressure Pipe	Diamond Plastics Corporation	DR 14	AWWA C900	4"-12"
5/25/2018	33 11 12	PVC Pressure Pipe	Diamond Plastics Corporation	Trans 21, DR 14, DR 18	AWWA C900	16"-24"
12/6/2018	33 11 12	PVC Pressure Pipe	J-M Manufacturing Co., Inc d/b/a JM Eagle	DR 14 "Blue Brute"	AWWA C900-16 UL 1285 ANSI/NSF 61 FM 1612	4"-12"
12/6/2018	33 11 12	PVC Pressure Pipe	J-M Manufacturing Co., Inc d/b/a JM Eagle	DR 18 "Blue Brute"	AWWA C900-16 UL 1285 ANSI/NSF 61 FM 1612	16"-24"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water - Pipes/Valves &amp; Fittings/Ductile Iron Fittings 33-11-11 (01/08/13)</b>						
07/23/92	E1-07	Ductile Iron Fittings	Star Pipe Products, Inc.	Mechanical Joint Fittings	AWWA C153 & C110	
*	E1-07	Ductile Iron Fittings	Griffin Pipe Products, Co.	Mechanical Joint Fittings	AWWA C 110	
*	E1-07	Ductile Iron Fittings	McWane/Tyler Pipe/ Union Utilities Division	Mechanical Joint Fittings, SSB Class 350	AWWA C 153, C 110, C 111	
08/11/98	E1-07	Ductile Iron Fittings	Sigma, Co.	Mechanical Joint Fittings, SSB Class 351	AWWA C 153, C 110, C 112	
02/26/14	E1-07	MJ Fittings	Accucast	Class 350 C-153 MJ Fittings	AWWA C153	4"-12"
05/14/98	E1-07	Ductile Iron Joint Restraints	Ford Meter Box Co./Uni-Flange	Uni-Flange Series 1400	AWWA C111/C153	4" to 36"
05/14/98	E1-24	PVC Joint Restraints	Ford Meter Box Co./Uni-Flange	Uni-Flange Series 1500 Circle-Lock	AWWA C111/C153	4" to 24"
11/09/04	E1-07	Ductile Iron Joint Restraints	One Bolt, Inc.	One Bolt Restrained Joint Fitting	AWWA C111/C116/C153	4" to 12"
02/29/12	33-11-11	Ductile Iron Pipe Mechanical Joint Restraint	EBAA Iron, Inc.	Megalug Series 1100 (for DI Pipe)	AWWA C111/C116/C153	4" to 42"
02/29/12	33-11-11	PVC Pipe Mechanical Joint Restraint	EBAA Iron, Inc.	Megalug Series 2000 (for PVC Pipe)	AWWA C111/C116/C153	4" to 24"
08/05/04	E1-07	Mechanical Joint Retainer Glands(PVC)	Sigma, Co.	Sigma One-Lok SLC4 - SLC10	AWWA C111/C153	4" to 10"
03/06/19	33-11-11	Mechanical Joint Retainer Glands(PVC)	Sigma, Co.	Sigma One-Lok SLCS4 - SLCS12	AWWA C111/C153	4" to 12"
08/05/04	E1-07	Mechanical Joint Retainer Glands(PVC)	Sigma, Co.	Sigma One-Lok SLCE	AWWA C111/C153	12" to 24"
08/10/98	E1-07	MJ Fittings(DIP)	Sigma, Co.	Sigma One-Lok SLDE	AWWA C153	4" - 24"
10/12/10	E1-24	Interior Restrained Joint System	S & B Technical Products	Bulldog System ( Diamond Lok 21 & JM Eagle	ASTM F-1624	4" to 12"
08/16/06	E1-07	Mechanical Joint Fittings	SIP Industries(Serampore)	Mechanical Joint Fittings	AWWA C153	4" to 24"
11/07/16	33-11-11	Mechanical Joint Retainer Glands	Star Pipe Products, Inc.	PVC Stargrip Series 4000	ASTM A536 AWWA C111	
11/07/16	33-11-11	Mechanical Joint Retainer Glands	Star Pipe Products, Inc.	DIP Stargrip Series 3000	ASTM A536 AWWA C111	
03/19/18	33-11-11	Mechanical Joint Retainer Glands	SIP Industries(Serampore)	EZ Grip Joint Restraint (EZD) Black For DIP	ASTM A536 AWWA C111	3"-48"
03/19/18	33-11-11	Mechanical Joint Retainer Glands	SIP Industries(Serampore)	EZ Grip Joint Restraint (EZD) Red for C900 DR14 PVC Pipe	ASTM A536 AWWA C111	4"-12"
03/19/18	33-11-11	Mechanical Joint Retainer Glands	SIP Industries(Serampore)	EZ Grip Joint Restraint (EZD) Red for C900 DR18 PVC Pipe	ASTM A536 AWWA C111	16"-24"

\* From Original Standard Products List



**CITY OF FORT WORTH  
WATER DEPARTMENT  
STANDARD PRODUCT LIST**

Updated: 04/12/2019

Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water - Pipes/Valves &amp; Fittings/Resilient Seated Gate Valve* 33-12-20 (05/13/15)</b>						
		Resilient Wedged Gate Valve w/no Gears	American Flow Control	Series 2500 Drawing # 94-20247		16"
12/13/02		Resilient Wedge Gate Valve	American Flow Control	Series 2530 and Series 2536	AWWA C515	30" and 36"
08/31/99		Resilient Wedge Gate Valve	American Flow Control	Series 2520 & 2524 (SD 94-20255)	AWWA C515	20" and 24"
05/18/99		Resilient Wedge Gate Valve	American Flow Control	Series 2516 (SD 94-20247)	AWWA C515	16"
10/24/00	E1-26	Resilient Wedge Gate Valve	American Flow Control	Series 2500 (Ductile Iron)	AWWA C515	4" to 12"
08/05/04		Resilient Wedge Gate Valve	American Flow Control	42" and 48" AFC 2500	AWWA C515	42" and 48"
05/23/91	E1-26	Resilient Wedge Gate Valve	American AVK Company	American AVK Resilient Seaded GV	AWWA C509	4" to 12"
01/24/02	E1-26	Resilient Wedge Gate Valve	American AVK Company			20" and smaller
*	E1-26	Resilient Seated Gate Valve	Kennedy			4" - 12"
*	E1-26	Resilient Seated Gate Valve	M&H			4" - 12"
*	E1-26	Resilient Seated Gate Valve	Mueller Co.			4" - 12"
11/08/99		Resilient Wedge Gate Valve	Mueller Co.	Series A2361 (SD 6647)	AWWA C515	16"
01/23/03		Resilient Wedge Gate Valve	Mueller Co.	Series A2360 for 18"-24" (SD 6709)	AWWA C515	24" and smaller
05/13/05		Resilient Wedge Gate Valve	Mueller Co.	Mueller 30" & 36", C-515	AWWA C515	30" and 36"
01/31/06		Resilient Wedge Gate Valve	Mueller Co.	Mueller 42" & 48", C-515	AWWA C515	42" and 48"
01/28/88	E1-26	Resilient Wedge Gate Valve	Clow Valve Co.		AWWA C509	4" - 12"
10/04/94		Resilient Wedge Gate Valve	Clow Valve Co.	16" RS GV (SD D-20995)	AWWA C515	16"
11/08/99	E1-26	Resilient Wedge Gate Valve	Clow Valve Co.	Clow RW Valve (SD D-21652)	AWWA C515	24" and smaller
11/29/04		Resilient Wedge Gate Valve	Clow Valve Co.	Clow 30" & 36" C-515	AWWA C515	30" and 36" (Note 3)
11/30/12		Resilient Wedge Gate Valve	Clow Valve Co.	Clow Valve Model 2638	AWWA C515	24" to 48" (Note 3)
05/08/91	E1-26	Resilient Seated Gate Valve	Stockham Valves & Fittings		AWWA C 509, ANSI 420 - stem, ASTM A 276 Type 304 - Bolts & nuts	4" - 12"
*	E1-26	Resilient Seated Gate Valve	U.S. Pipe and Foundry Co.	Metroseal 250, requirements SPL #74		3" to 16"
10/26/16	33-12-20	Resilient Seated Gate Valve	EJ (East Jordan Iron Works)	EJ FlowMaster Gate Valve & Boxes		
08/24/18		Matco Gate Valve	Matco-Norca	225 MR	AWWA/ANSI C115/An21.15	4" to 16"

\* From Original Standard Products List





**CITY OF FORT WORTH  
WATER DEPARTMENT  
STANDARD PRODUCT LIST**

Updated: 04/12/2019

Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b>Water - Pipes/Valves &amp; Fittings/Rubber Seated Butterfly Valve 33-12-21 (07/10/14)</b>						
*	E1-30	Rubber Seated Butterfly Valve	Henry Pratt Co.		AWWA C-504	24"
*	E1-30	Rubber Seated Butterfly Valve	Mueller Co.		AWWA C-504	24"and smaller
1/11/99	E1-30	Rubber Seated Butterfly Valve	Dezurik Valves Co.		AWWA C-504	24" and larger
06/12/03	E1-30	Valmatic American Butterfly Valve	Valmatic Valve and Manufacturing Corp.	Valmatic American Butterfly Valve.	AWWA C-504	Up to 84" diameter
04/06/07	E1-30	Rubber Seated Butterfly Valve	M&H Valve	M&H Style 4500 & 1450	AWWA C-504	24" to 48"
03/19/18	33 12 21	Rubber Seated Butterfly Valve	G. A. Industries (Golden Anderson)	AWWA C504 Butterfly Valve	AWWA C-504	30"-54"



**CITY OF FORT WORTH  
WATER DEPARTMENT  
STANDARD PRODUCT LIST**

Updated: 04/12/2019

Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
	<b>Water - Polyethylene Encasement 33-11-10 (01/08/13)</b>					
05/12/05	E1-13	Polyethylene Encasment	Flexsol Packaging	Fulton Enterprises	AWWA C105	8 mil LLD
05/12/05	E1-13	Polyethylene Encasment	Mountain States Plastics (MSP) and AEP Ind.	Standard Hardware	AWWA C105	8 mil LLD
05/12/05	E1-13	Polyethylene Encasment	AEP Industries	Bullstrong by Cowtown Bolt & Gasket	AWWA C105	8 mil LLD



**CITY OF FORT WORTH  
WATER DEPARTMENT  
STANDARD PRODUCT LIST**

Updated: 04/12/2019

Note: All water or sewer pipe larger than 15 inch diameter shall be approved for use by the Water Department on a project specific basis. Special bedding may be required for some pipes.

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<u>Water - Sampling Station</u>				
3/12/96		Water Sampling Station	Water Plus	B20 Water Sampling Station		



**CITY OF FORT WORTH  
 TRANSPORTATION & PUBLIC WORKS DEPARTMENT  
 STORMWATER MANAGEMENT DIVISION  
 STANDARD PRODUCT LIST**

Updated: 04/03/2019

Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
<b><u>Storm Sewer - Manholes &amp; Bases/Frames &amp; Covers/Standard (Round) 33-05-13 (Rev 11/28/18)</u></b>						
9/28/2018	33 05 13	Manhole Frames and Covers	AccuCast (Govind Steel Company, LTD)	MHRC #220605	ASTM A48 AASHTO M306	**24" Dia
9/28/2018	33 05 13	Manhole Cover	Neenah Foundry	NF-1274-T91	ASTM A48 AASHTO M306	32" Dia
9/28/2018	33 05 13	Manhole Frames and Covers	Neenah Foundry	NF-1743-LM (Hinged)	ASTM A48 AASHTO M306	32" Dia
9/28/2018	33 05 13	Manhole Frame	Neenah Foundry	NF-1930-30	ASTM A48 AASHTO M306	32.25" Dia
9/28/2018	33 05 13	Manhole Frames and Covers	Neenah Foundry	R-1743-HV	ASTM A48 AASHTO M306	32" Dia
4/3/2019	33 05 13	Manhole Frames and Covers	SIP Industries ++	2279ST	ASTM A48 AASHTO M306	**24" Dia
4/3/2019	33 05 13	Manhole Frames and Covers	SIP Industries ++	2280ST	ASTM A48 AASHTO M306	32" Dia

\*\*Note: All new development and new installation manhole lids shall meet the minimum 30-inch opening requirement as specified in City Specification 33 05 13. Any smaller opening sizes will only be allowed for existing manholes that require replacement frames and covers.

++ Portions of this product is not made within the United States

## **GC-4.02 SUBSURFACE AND PHYSICAL CONDITIONS**

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**GEOTECHNICAL EXPLORATION**

**on**

**SOUTH OAK GROVE PAVEMENT**  
Sandalwood Drive and Anglewood Court  
Fort Worth, Texas  
ALPHA Report No. W200710  
May 1, 2020

Prepared for:

**TEETOP PROPERTIES, LLC**  
3121 Halbert Street  
Fort Worth, Texas 76112  
Attention: Mr. Nathan Poteet

Prepared By:

**ALPHA  TESTING**  
**WHERE IT ALL BEGINS**

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May 1, 2020

**Tetop Properties, LLC**  
3121 Halbert Street  
Fort Worth, Texas 76112

Attention: Mr. Nathan Poteet

Re: Geotechnical Exploration  
**South Oak Grove Pavement**  
Sandalwood Drive and Anglewood Court  
Fort Worth, Texas  
ALPHA Report No. W200710

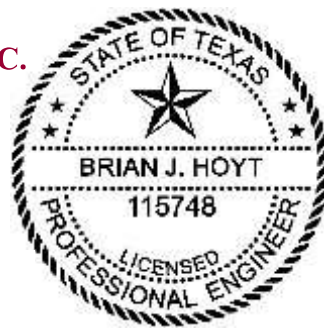
Attached is the report of the geotechnical exploration performed for the project referenced above. This study was authorized by Mr. Nathan Poteet on February 27, 2020 performed in accordance with ALPHA Proposal No. 76096-rev1, dated February 26, 2020.

This report contains results of field explorations and laboratory testing and an engineering interpretation of these with respect to available project characteristics. The results and analyses were used to develop design information to aid in design of new pavement.

ALPHA TESTING, INC. appreciates the opportunity to be of service on this project. If we can be of further assistance, such as providing materials testing services during construction, please contact our office.

Sincerely,

**ALPHA TESTING, INC.**



May 1, 2020

Handwritten signature of Kimberly Fyffe in black ink.

Kimberly Fyffe  
Geotechnical Project Manager

Handwritten signature of Brian J. Hoyt in black ink.

Brian J. Hoyt, P.E.  
Geotechnical Department Manager

BJH/KLF/en  
Copy: (1) Client



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On

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#### APPENDIX

A-1	Methods of Field Exploration Boring Location Plan – Figure 1
B-1	Methods of Laboratory Testing Mechanical Lime Series – Figure 2 WinPAS Analysis Logs of Borings Key to Soil Symbols and Classifications

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## **1.0 PURPOSE AND SCOPE**

The purpose of this geotechnical exploration is for ALPHA TESTING, INC. (ALPHA) to evaluate for the Teetop Properties, LLC (Client) some of the physical and engineering properties of subsurface materials at selected locations on the subject site with respect to formulation of appropriate geotechnical design parameters for pavement sections. The field exploration was accomplished by securing subsurface samples from widely spaced test borings performed on site. Engineering analyses were performed from results of the field exploration and results of laboratory tests performed on representative samples.

Also included are general comments pertaining to reasonably anticipated construction problems and recommendations concerning earthwork and quality control testing during construction. This information can be used to evaluate subsurface conditions and to aid in ascertaining construction meets project specifications.

Recommendations provided in this report were developed from information obtained from the test borings depicting subsurface conditions only at the specific boring locations and at the particular time designated on the logs. Subsurface conditions at other locations may differ from those observed at the boring locations, and subsurface conditions at boring locations may vary at different times of the year. The scope of work may not fully define the variability of subsurface materials and conditions that are present on the site.

The nature and extent of variations between the borings and other locations on site may not become evident until construction. If significant variations then appear evident, our office should be contacted to re-evaluate our recommendations after performing on-site observations and possibly other tests.

## **2.0 PROJECT CHARACTERISTICS**

It is proposed to construct residential streets within the planned subdivision (South Oak Grove), generally located east of Copperwood Lane in Fort Worth, Texas. A site plan illustrating the general outline of the property is provided as Figure 1, the Boring Location Plan, in the Appendix.

At the time the field exploration was performed, the site generally consisted of a vacant tract of land with scattered to moderate tree cover. Historical aerial images available from Google Earth indicate excavation/grading previously occurred on the site. We understand the site was partially developed and utilities were installed. No other information regarding other earthwork activities or site development was provided to us. Review of topographical maps available at [www.dfwmaps.com](http://www.dfwmaps.com) indicates the site generally slopes down towards the southeast about 4 ft (Approximate Elev. 676 ft to Elev. 672 ft).

Grading plans were not provided for this study. For the purpose of our analysis we have assumed grading will consist of maximum cuts and fills of 2 ft.



### **3.0 FIELD EXPLORATION**

Subsurface conditions on the site were explored by drilling a total of four (4) test borings to a depth of about 10 ft each. The borings were performed in general accordance with ASTM D 420 using standard rotary drilling equipment. The approximate location of each test boring is shown on the Boring Location Plan, Figure 1, enclosed in the Appendix of this report. Details of drilling and sampling operations are briefly summarized in Methods of Field Exploration, Section A-1 of the Appendix.

Subsurface types encountered during the field exploration are presented on the Log of Boring sheets included in the Appendix. The boring logs contain our Field Technician's and Engineer's interpretations of conditions believed to exist between actual samples retrieved. Therefore, the boring logs contain both factual and interpretive information. Lines delineating subsurface strata on the boring logs are approximate and the actual transition between strata may be gradual.

### **4.0 LABORATORY TESTS**

Selected samples of the subsurface materials were tested in the laboratory to evaluate their engineering properties as a basis in providing recommendations for pavement design and earthwork construction. The following laboratory tests were performed to facilitate pavement section recommendations:

- Moisture Content (ASTM D 2216)
- Atterberg-Limits (ASTM D 4318)
- Unconfined Compressive Strength (ASTM D 2166)
- Sulfate Content (TX-145-E Part II)
- Lime Series (Plasticity Index vs. Lime Content)

A brief description of testing procedures used in the laboratory can be found in Methods of Laboratory Testing, Section B-1 of the Appendix. Individual test results are presented on the Log of Boring sheets or summary data sheet enclosed in the Appendix.

### **5.0 GENERAL SUBSURFACE CONDITIONS**

Based on geological atlas maps available from the Bureau of Economic Geology, published by the University of Texas at Austin, the site lies within the Grayson Marl and Main Street Limestone formation, mapped as undivided. This formation generally consists of interbedded marl (limey shale) and limestone. Residual soils associated with this formation generally consist of clay soils with moderate to very high shrink-swell potential.

Subsurface conditions encountered in the borings generally consisted of clay, sandy clay and/or gravelly clay extending to the 10 ft boring termination depth. The upper 4 ft of soil encountered in Boring 1 was visually classified as fill material. More detailed stratigraphic information is presented on the attached Log of Boring sheets.

Most of the materials encountered in the borings are considered relatively impermeable and are expected to have a slow response to water movement. Therefore, several days of observation would be required to evaluate actual groundwater levels within the depths explored. Also, the



groundwater level at the site is anticipated to fluctuate seasonally depending on the amount of rainfall, prevailing weather conditions and subsurface drainage characteristics.

Free groundwater was not encountered in the borings. However, it is common to encounter seasonal groundwater in fill materials or from fractures within the clayey matrix, particularly during or after periods of precipitation. If more detailed groundwater information is required, monitoring wells or piezometers can be installed.

Further details concerning subsurface materials and conditions encountered can be obtained from the Log of Boring sheet provided in the Appendix.

## **6.0 DESIGN RECOMMENDATIONS**

The following design recommendations were developed on the basis of the previously described Project Characteristics (Section 2.0) and General Subsurface Conditions (Section 5.0) and in accordance with the minimum requirements from the City of Fort Worth Department of Transportation & Public Works Pavement Design Manual (2015). If project criteria should change, our office should conduct a review to determine if modifications to the recommendations are required. Further, it is recommended our office be provided with a copy of the final plans and specifications for review prior to construction.

The following design criteria given in this report were developed assuming maximum cuts and fills of less than 2 ft will be required to achieve final grade. Cutting and filling in the streets greater than 2 ft can alter the recommended design parameters. Therefore, it is recommended our office be contacted before performing other cutting and filling on site.

Table A contains a summary of pavement section requirements for proposed new streets at the subject project, according to the City of Fort Worth, Department of Transportation and Public Works, Pavement Design Manual dated January 29, 2015.

<b>TABLE A</b>			
<b>Summary of Pavement Section Requirements</b>			
<b>Street Classification</b>	<b>Residential – Urban</b>	<b>Collector</b>	<b>Arterial</b>
PCC Pavement Thickness (in) placed on lime stabilized subgrade soil	6	7½	10
28 day Concrete Compressive Strength (psi)	3,600	3,600	3,600
Subgrade Treatment	6 inches Lime	8 inches Lime	8 inches Lime
Application Rate (lbs per sq yd)	30	30	30
Reinforcing Bar No.	3	3	4
Reinforcing Bar Spacing (in)	18	18	18



### **6.1. Existing Fill Material**

Existing fill was encountered to a depth of about 4 ft below the ground surface in Boring 1. In addition, historical aerial images indicate earthwork activities were previously performed across the site. We expect this fill was placed under compaction testing and supervision during previous development of the site. However, it is not known if this fill was placed under engineering supervision with compaction records. If compaction records for this fill cannot be obtained, the existing fill should be considered as uncontrolled fill. Uncontrolled fill is subject to risk of under-compacted zones resulting in failures of weak soil and/or indeterminate levels of settlement. If indeterminate settlement of pavement is not acceptable, any existing uncontrolled fill should be removed from below the pavement and replaced with engineered fill in accordance with Section 7.2. The excavated materials may be suitable for reuse as engineered fill provided they are free of organics, boulders, rubble, and other debris.

The lateral extent, depth and nature of the existing fill are not known. Test pits could be performed prior to construction to verify the presence, lateral extent, depth, and nature of the existing fill materials. ALPHA would be pleased to provide this service if desired.

### **6.2. Pavement Subgrade Preparation**

Assuming maximum cuts and fills of less than 2 ft to achieve final grade elevations, it is expected the pavement subgrade could consist of clay soils or similar onsite materials used for grading the site. Since the subgrade conditions and required treatments could vary along the proposed road alignment, ALPHA should be retained to observe construction to verify conditions are as expected. Also, we should be provided with the final grading plan for review prior to construction to verify or modify in writing the recommendations contained in this report.

The exposed clayey surface soils should be scarified to a depth of 6 inches and 8 inches for Residential Urban and Collector/Arterial streets, respectively and mixed with a minimum 30 lbs per sq yard of hydrated lime (by dry soil weight) in conformance with TxDOT Standard Specifications Item 260. The recommended application rate is the minimum required by the City of Fort Worth. The results of a lime series tests performed on a representative clay sample are attached (Figure 2).

We recommend lime stabilization procedures extend at least 1 ft beyond the edge of the pavement to reduce effects of seasonal shrinking and swelling upon the extreme edges of pavement. The soil-lime mixture should be compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of 0 to 4 percentage points above the mixture's optimum moisture content. In all areas where hydrated lime is used to stabilize subgrade soil, routine Atterberg-limit tests should be performed to verify the resulting plasticity index of the soil-lime mixture is at/or below 15.

Mechanical lime stabilization of the pavement subgrade soil will not prevent normal seasonal movement of the underlying untreated materials. Preliminary estimates indicate pavement and other flatwork constructed at final grades as could experience soil-related potential seasonal movements about 3 to 6 inches. Deeper borings will be required if a more detailed estimate of potential movements is desired.



California Bearing Ratio (CBR) tests were not performed for this specific project. However, based on our experience with similar soils, we expect CBR values for the natural clay soils encountered in the borings could be about 2 to 3. Following improvement with lime, the CBR value for the lime stabilized clayey soils is expected to be at least 10.

### **6.3. Portland Cement Concrete Pavement Section**

Using the 1993 AASHTO pavement design procedures (WinPAS computer program distributed by American Concrete Pavement Association), the following design parameters were used in analyses of the PCC pavement section.

- Compressive strength of concrete 3,600 psi at 28 days
- Modulus of Elasticity 4,000,000 psi
- Modulus of Rupture 620 psi
- Modulus of Subgrade Reaction\* 280 pci
- Load Transfer Co-efficient 3.0
- Drainage Coefficient 1.0
- Initial PSI 4.5
- Terminal PSI for
 

2.0	(Residential Urban)
2.25	(Collector)
2.5	(Arterial)
- Standard Deviation 0.39
- Reliability 85 percent

\*Subgrade prepared with lime stabilization as discussed in Section 6.2.

Using the Street Classification of “Residential-Urban” as described in the referenced Fort Worth Pavement Design Manual, it is estimated annual traffic volume will be about 35,000 Equivalent Single Axle Loads (ESALs) in one direction over a 25-year design life with 0.5 percent annual traffic growth. Based on this, we estimate the cumulative ESALs over the design life of the Residential Urban street pavement to be about 930,000.

Using the Street Classification of “Collector” as described in the referenced Fort Worth Pavement Design Manual, the annual traffic volume will be about 100,000 Equivalent Single Axle Loads (ESALs) in one direction over a 25-year design life with 1.5 percent annual traffic growth. Based on this, we estimate the cumulative ESALs over the design life of the pavement to be about 3,000,000.

Using the Street Classification of “Arterial” as described in the referenced Fort Worth Pavement Design Manual, the annual traffic volume will be about 300,000 Equivalent Single Axle Loads (ESALs) in one direction over a 30-year design life with 2.5 percent annual traffic growth. Based on this, we estimate the cumulative ESALs over the design life of the pavement to be about 13,000,000.

If the actual expected traffic volume is different than used for our analysis herein, our office should be provided with the actual expected traffic volume so that we can re-evaluate our recommendations.



Based on the subgrade preparations recommended herein, the projected traffic volume and stated design parameters, a minimum 6-inch section of Portland cement concrete is required for Residential Urban classified streets, a minimum 7½-inch section of Portland cement concrete is required for Collector classified streets and a minimum 10-inch section of Portland cement concrete is required for Arterial classified streets at this project.

PCC should have a minimum 3,600 psi compressive strength at 28 days. The concrete section should be placed over a properly prepared subgrade as discussed herein. Concrete should be designed with  $5 \pm 1$  percent entrained air. Reinforcing steel for concrete pavement should be in accordance with Table 4.1 of the referenced Pavement Design Manual. Joints and saw-cutting in concrete should be in accordance with Section Four of the referenced Pavement Design Manual.

#### **6.4. Soluble Sulfates**

Three (3) samples obtained from the borings were tested for soluble sulfate concentrations. Result of the laboratory testing (TxDOT Test Method TEX-145-E Part II) is provided in Table B.

<b>TABLE B Soluble Sulfates</b>			
<b>Boring No.</b>	<b>Depth, ft</b>	<b>Material Type</b>	<b>Soluble Sulfate, mg/Kg (ppm)</b>
1	4-6	Dark Brown Clay	13
2	4-6	Dark Brown Clay	52
3	4-6	Brown Clay	262

Based on the results of laboratory testing, the soluble sulfate content measured in the samples tested is considered relatively low (<3,000 ppm). It should be noted that concentrations of soluble sulfates in soil are typically very localized and concentrations in other areas of the site could vary significantly. Therefore, it is recommended sulfate sampling/testing be performed during construction. During construction experienced geotechnical personnel should make close observations for possible sulfate reactions.

#### **6.5. Drainage Considerations**

Adequate drainage should be provided to reduce seasonal variations in the moisture content of subgrade soils. Final grades within 5 ft of the pavement should be adjusted to slope away from the pavement at a minimum slope of 2 percent or a suitable storm sewer should be in place to remove surface water. **Maintaining positive surface drainage throughout the life of the pavement is essential.**

### **7.0 GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS**

Variations in subsurface conditions could be encountered during construction. To permit correlation between test boring data and actual subsurface conditions encountered during construction, it is recommended a registered Professional Engineering firm be retained to observe construction procedures and materials.





Some construction problems, particularly degree or magnitude, cannot be anticipated until the course of construction. The recommendations offered in the following paragraphs are intended not to limit or preclude other conceivable solutions, but rather to provide our observations based on our experience and understanding of the project characteristics and subsurface conditions encountered in the boring.

### **7.1. Site Preparation and Grading**

Existing fill was encountered to a depth of about 4 ft below the ground surface in Boring 4. Although not encountered in the borings, existing fill materials can contain organics, boulders, rubble, and other debris which could be encountered during site grading and general excavation. The earthwork and excavation contracts should contain provision for removal of unsuitable materials in the existing fill. Test pit excavations performed prior to construction can be used to evaluate the depth, extent and composition of existing fill at this site. ALPHA would be pleased to provide this service if desired.

All areas supporting the pavement, flatwork and areas to receive new fill (if any) should be properly prepared.

- After completion of the necessary stripping, clearing, and excavating and prior to placing any required fill, the exposed subgrade should be carefully evaluated by probing and testing. Any undesirable material (debris, organic material, wet, soft, or loose soil) still in place should be removed.
- The exposed subgrade should be further evaluated by proof-rolling with a heavy pneumatic tired roller, loaded dump truck or similar equipment weighing approximately 25 tons to check for pockets of soft or loose material hidden beneath a thin crust of possibly better soil. Proof-rolling procedures should be observed routinely by a Professional Engineer, or his designated representative. Unsuitable subgrade exposed during the proof-roll should be removed and replaced with well-compacted material as outlined in Section 7.2.
- Prior to placement of any fill, the exposed subgrade should then be scarified to a minimum depth of 6 inches and re-compacted as outlined in Section 7.2.

If fill is to be placed on existing slopes (natural or constructed) steeper than six horizontal to one vertical (6:1), the fill materials should be benched into the existing slopes in such a manner as to provide a minimum bench-key width of five (5) feet. This should provide a good contact between the existing soils and new fill materials, reduce potential sliding planes, and allow relatively horizontal lift placements.

Even if fill is properly compacted as recommended below, fills in excess of about 10 ft are still subject to settlements over time of up to about 1 to 2 percent of the total fill thickness. This should be considered when designing pavements over utility lines.

Slope stability analysis of embankments (natural or constructed) was not within the scope of this study.



The contractor is responsible for designing any excavation slopes, temporary sheeting or shoring. Design of these structures should include any imposed surface surcharges. Construction site safety is the sole responsibility of the contractor, who shall also be solely responsible for the means, methods and sequencing of construction operations. The contractor should also be aware that slope height, slope inclination or excavation depths (including utility trench excavations) should in no case exceed those specified in local, state and/or federal safety regulations, such as OSHA Health and Safety Standard for Excavations, 29 CFR Part 1926, or successor regulations. Stockpiles should be placed well away from the edge of the excavation and their heights should be controlled so they do not surcharge the sides of the excavation. Surface drainage should be carefully controlled to prevent flow of water over the slopes and/or into the excavations. Construction slopes should be closely observed for signs of mass movement, including tension cracks near the crest or bulging at the toe. If potential stability problems are observed, a geotechnical engineer should be contacted immediately. Shoring, bracing or underpinning required for the project (if any) should be designed by a professional engineer registered in the State of Texas.

Due to the nature of the clayey and sandy soils found near the surface at the boring, traffic of heavy equipment (including heavy compaction equipment) may create pumping and general deterioration of shallow soils. Therefore, some construction difficulties should be anticipated during periods when these soils are saturated.

### **7.2. Fill Compaction**

The following recommendations pertain to general fill compaction. The final pavement subgrade should be compacted as recommended in Section 6.2.

Clays with a plasticity index equal to or greater than 25 should be compacted to a dry density between 95 and 100 percent of standard Proctor maximum dry density (ASTM D 698). The compacted moisture content of the clays during placement should be within the range of 2 to 5 percentage points above optimum.

Clays with a plasticity index less than 25 should be compacted to a dry density of at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of 1 percentage point below to 3 percentage points above the material's optimum moisture content.

Clayey materials used as fill should be processed and the largest particle or clod should be less than 6 inches prior to compaction.

Compaction should be accomplished by placing fill in about 8-inch thick loose lifts and compacting each lift to at least the specified minimum dry density. Field density and moisture content tests should be performed on each lift.

### **7.3. Utilities**

In cases where utility lines are more than 10 ft deep, the fill/backfill below 10 ft should be compacted to at least 100 percent of standard Proctor maximum dry density (ASTM D 698) and within -2 to +2 percentage points of the material's optimum moisture content. The portion of the fill/backfill shallower than 10 ft should be compacted as previously outlined. Density tests should be performed on each lift (maximum 12-inch thick) and should be performed as the trench is being backfilled.





*Even if fill is properly compacted, fills in excess of about 10 ft are still subject to settlements over time of up to about 1 to 2 percent of the total fill thickness. This should be considered when designing pavement over utility lines and/or other areas with deep fill.*

If utility trenches or other excavations extend to or beyond a depth of 5 ft below construction grade, the contractor or others shall be required to develop an excavation safety plan to protect personnel entering the excavation or excavation vicinity. The collection of specific geotechnical data and the development of such a plan, which could include designs for sloping and benching or various types of temporary shoring, is beyond the scope of this study. Any such designs and safety plans shall be developed in accordance with current OSHA guidelines and other applicable industry standards.

#### **7.4. Groundwater**

Groundwater was not encountered in the borings. However, based on our experience with similar soils, shallow groundwater seepage could be encountered in excavations for pavement, utility conduits and other general excavations at this site. The risk of encountering seepage increases with the depth of excavation and during or after periods of precipitation. Standard sump pits and pumping may be adequate to control minor seepage on a local basis in relatively shallow excavations.

In any areas where cuts are made, attention should be given to possible seasonal water seepage that could occur through natural cracks and fissures in the newly exposed stratigraphy. In these areas, subsurface drains may be required to intercept seasonal groundwater seepage. The need for these or other de-watering devices should be carefully addressed during construction. Our office could be contacted to visually observe the final grades to evaluate the need for such drains.

#### **8.0 LIMITATIONS**

Professional services provided in this geotechnical exploration were performed, findings obtained, and recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. The scope of services provided herein does not include an environmental assessment of the site or investigation for the presence or absence of hazardous materials in the soil, surface water or groundwater. ALPHA, upon written request, can be retained to provide same.

ALPHA TESTING, INC. is not responsible for conclusions, opinions or recommendations made by others based on this data. Information contained in this report is intended for the exclusive use of the Client (and their designated design representatives) and is related solely to design of the specific structures outlined in Section 2.0. No party other than the Client (and their designated design representatives) shall use or rely upon this report in any manner whatsoever unless such party shall have obtained ALPHA's written acceptance of such intended use. Any such third party using this report after obtaining ALPHA's written acceptance shall be bound by the limitations and limitations of liability contained herein, including ALPHA's liability being limited to the fee paid to it for this report. Recommendations presented in this report should not be used for design of any other structures except those specifically described in this report. In all areas of this report in which ALPHA may provide additional services in requested to do so in writing, it is presumed that such requests have not been made if not evidenced by a written



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document accepted by ALPHA. Further, subsurface conditions can change with passage of time. Recommendations contained herein are not considered applicable for an extended period of time after the completion date of this report. It is recommended our office be contacted for a review of the contents of this report for construction commencing more than one (1) year after completion of this report. Non-compliance with any of these requirements by the Client or anyone else shall release ALPHA from any liability resulting from the use of, or reliance upon, this report.

Recommendations provided in this report are based on our understanding of information provided by the Client about characteristics of the project. If the Client notes any deviation from the facts about project characteristics, our office should be contacted immediately since this may materially alter the recommendations. Further, ALPHA TESTING, INC. is not responsible for damages resulting from workmanship of designers or contractors and it is recommended the Owner retain qualified personnel, such as a Geotechnical Engineering firm, to verify construction is performed in accordance with plans and specifications.



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# APPENDIX

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## **A-1 METHODS OF FIELD EXPLORATION**

Using standard rotary drilling equipment, four (4) test borings were performed for this geotechnical exploration at the approximate locations shown on the Boring Location Plan, Figure 1. The test boring locations were selected by the Client and adjusted by ALPHA to avoid conflicts with utilities where necessary/possible. The borings were staked by using a handheld GPS unit or pacing/taping and estimating right angles from landmarks which could be identified in the field and as shown on the site plan provided during this study. The locations of the test borings shown on the Boring Location Plan are considered accurate only to the degree implied by the method used to locate the borings.

Relatively undisturbed samples of the cohesive subsurface materials were obtained by hydraulically pressing 3-inch O.D. thin-wall sampling tubes into the underlying soils at a depth of about 1 ft (ASTM D 1587). The samples were removed from the sampling tubes in the field and evaluated visually. Representative portions of the samples were sealed in a plastic bag for use in future visual evaluated and possible testing in the laboratory.

The boring logs are included in the Appendix of this report. The logs show visual descriptions of subsurface strata encountered using the Unified Soil Classification System. Sampling information, pertinent field data, and field observations are also included. Samples not consumed by testing will be retained in our laboratory for at least 14 days and then discarded unless the Client requests otherwise.

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GEOTECHNICAL EXPLORATION  
 SOUTH OAK GROVE PAVEMENT  
 SANDALWOOD DRIVE AND ANGLEWOOD COURT  
 FORT WORTH, TEXAS  
 ALPHA PROJECT NO. W200710

**ALPHA TESTING**  
 WHERE IT ALL BEGINS

**FIGURE 1**  
 BORING LOCATION PLAN

 APPROXIMATE BORING LOCATION



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**B-1 METHODS OF LABORATORY TESTING**

Representative samples were evaluated and classified by a qualified member of the Geotechnical Division and the boring logs were edited as necessary. To aid in classifying the subsurface materials and to determine the general engineering characteristics, natural moisture content tests (ASTM D 2216), Atterberg-limit tests (ASTM D 4318), percent passing sieve No. 200 (ASTM D 422), and dry unit weight determinations were performed on selected samples. In addition, unconfined compressive strength tests (ASTM D 2166) and pocket-penetrometer tests were conducted on selected soil samples to evaluate soil shear strength. Results of the laboratory tests described above are provided on the Log of Boring sheets.

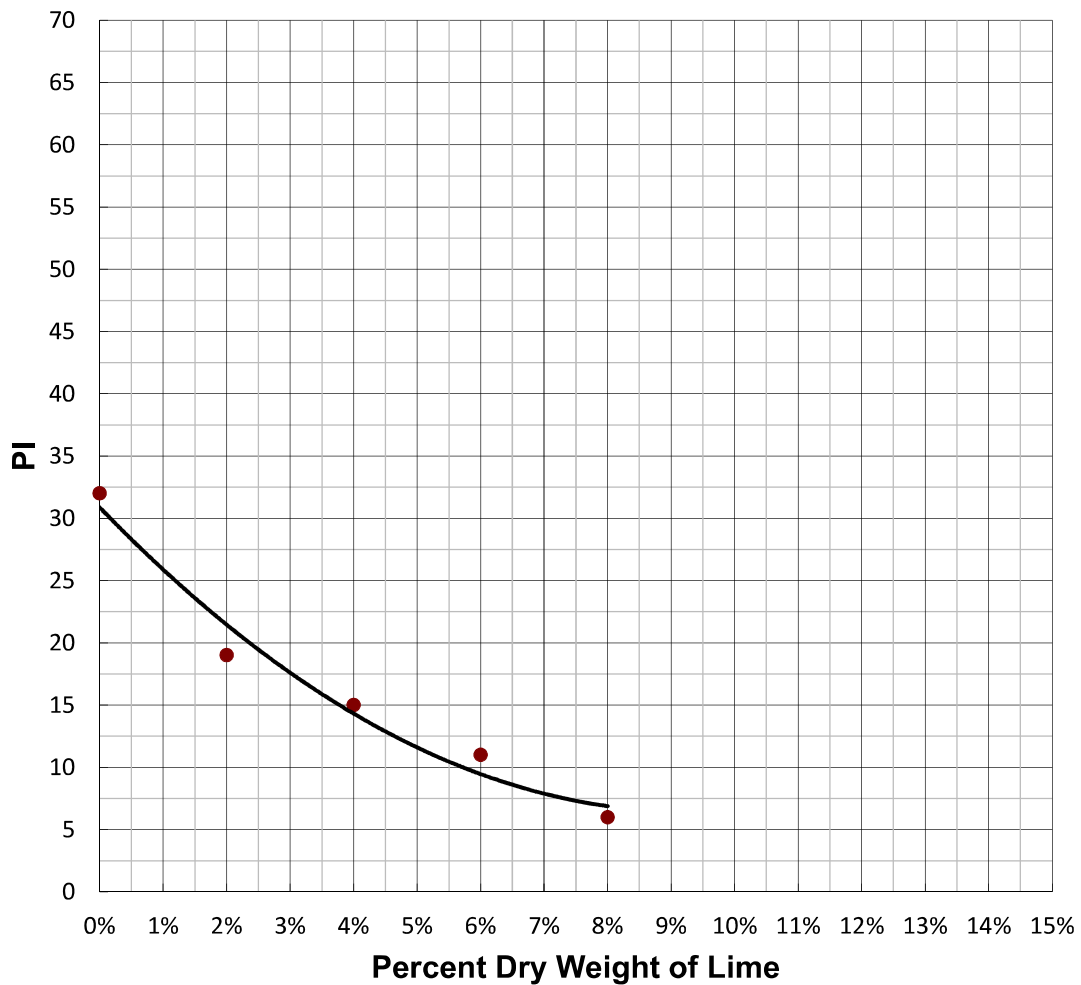
A lime series test was also performed on a composite sample of soils retrieved from the upper 2 ft of the borings, using the Atterberg Limits method. Results of the lime series test is shown as Figure 2.

**REPORT OF MECHANICAL LIME SERIES RESULTS**

**Project No:** W200710

**Date:** 04/30/20

<b>% Lime</b>	0%	2%	4%	6%	8%
<b>PI</b>	32	19	15	11	6



**FIGURE 2**

# WinPAS

Pavement Thickness Design According to  
**1993 AASHTO Guide for Design of Pavements Structures**  
American Concrete Pavement Association

## Rigid Design Inputs

Agency: City of Fort Worth  
Company: Alpha Testing Inc.  
Contractor:  
Project Description: Residential Pavement Analysis  
Location: Fort Worth, TX

## Rigid Pavement Design/Evaluation

<b>PCC Thickness</b>	5.91 inches	<b>Load Transfer, J</b>	3.00
<b>Design ESALs</b>	930,000	<b>Mod. Subgrade Reaction, k</b>	280 psi/in
<b>Reliability</b>	85.00 percent	<b>Drainage Coefficient, Cd</b>	1.00
<b>Overall Deviation</b>	0.39	<b>Initial Serviceability</b>	4.50
<b>Modulus of Rupture</b>	620 psi	<b>Terminal Serviceability</b>	2.00
<b>Modulus of Elasticity</b>	4,000,000 psi		

### Modulus of Subgrade Reaction (k-value) Determination

<b>Resilient Modulus of the Subgrade</b>	0.0 psi
<b>Resilient Modulus of the Subbase</b>	0.0 psi
<b>Subbase Thickness</b>	0.00 inches
<b>Depth to Rigid Foundation</b>	0.00 feet
<b>Loss of Support Value (0,1,2,3)</b>	0.0

<b>Modulus of Subgrade Reaction</b>	280.00 psi/in
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# WinPAS

Pavement Thickness Design According to  
**1993 AASHTO Guide for Design of Pavements Structures**  
American Concrete Pavement Association

## Rigid Design Inputs

Agency: City of Fort Worth  
Company: Alpha Testing Inc.  
Contractor:  
Project Description: Collector Pavement Analysis  
Location: Fort Worth, TX

## Rigid Pavement Design/Evaluation

PCC Thickness	7.52 inches	Load Transfer, J	3.00
Design ESALs	3,000,000	Mod. Subgrade Reaction, k	280 psi/in
Reliability	85.00 percent	Drainage Coefficient, Cd	1.00
Overall Deviation	0.39	Initial Serviceability	4.50
Modulus of Rupture	620 psi	Terminal Serviceability	2.25
Modulus of Elasticity	4,000,000 psi		

### Modulus of Subgrade Reaction (k-value) Determination

Resilient Modulus of the Subgrade	0.0 psi
Resilient Modulus of the Subbase	0.0 psi
Subbase Thickness	0.00 inches
Depth to Rigid Foundation	0.00 feet
Loss of Support Value (0,1,2,3)	0.0

Modulus of Subgrade Reaction	280.00 psi/in
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# WinPAS

Pavement Thickness Design According to  
**1993 AASHTO Guide for Design of Pavements Structures**  
American Concrete Pavement Association

## Rigid Design Inputs

Agency: City of Fort Worth  
Company: Alpha Testing Inc.  
Contractor:  
Project Description: Arterial Pavement Analysis  
Location: Fort Worth, TX

## Rigid Pavement Design/Evaluation

<b>PCC Thickness</b>	9.87 inches	<b>Load Transfer, J</b>	3.00
<b>Design ESALs</b>	13,000,000	<b>Mod. Subgrade Reaction, k</b>	280 psi/in
<b>Reliability</b>	85.00 percent	<b>Drainage Coefficient, Cd</b>	1.00
<b>Overall Deviation</b>	0.39	<b>Initial Serviceability</b>	4.50
<b>Modulus of Rupture</b>	620 psi	<b>Terminal Serviceability</b>	2.50
<b>Modulus of Elasticity</b>	4,000,000 psi		

## Modulus of Subgrade Reaction (k-value) Determination

<b>Resilient Modulus of the Subgrade</b>	0.0 psi
<b>Resilient Modulus of the Subbase</b>	0.0 psi
<b>Subbase Thickness</b>	0.00 inches
<b>Depth to Rigid Foundation</b>	0.00 feet
<b>Loss of Support Value (0,1,2,3)</b>	0.0

<b>Modulus of Subgrade Reaction</b>	280.00 psi/in
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



























**KEY TO SOIL SYMBOLS  
AND CLASSIFICATIONS**

SOIL & ROCK SYMBOLS

	(CH), High Plasticity CLAY
	(CL), Low Plasticity CLAY
	(SC), CLAYEY SAND
	(SP), Poorly Graded SAND
	(SW), Well Graded SAND
	(SM), SILTY SAND
	(ML), SILT
	(MH), Elastic SILT
	LIMESTONE
	SHALE / MARL
	SANDSTONE
	(GP), Poorly Graded GRAVEL
	(GW), Well Graded GRAVEL
	(GC), CLAYEY GRAVEL
	(GM), SILTY GRAVEL
	(OL), ORGANIC SILT
	(OH), ORGANIC CLAY
	FILL

SAMPLING SYMBOLS

	SHELBY TUBE (3" OD except where noted otherwise)
	SPLIT SPOON (2" OD except where noted otherwise)
	AUGER SAMPLE
	TEXAS CONE PENETRATION
	ROCK CORE (2" ID except where noted otherwise)

RELATIVE DENSITY OF COHESIONLESS SOILS (blows/ft)

VERY LOOSE	0 TO 4
LOOSE	5 TO 10
MEDIUM	11 TO 30
DENSE	31 TO 50
VERY DENSE	OVER 50

SHEAR STRENGTH OF COHESIVE SOILS (tsf)

VERY SOFT	LESS THAN 0.25
SOFT	0.25 TO 0.50
FIRM	0.50 TO 1.00
STIFF	1.00 TO 2.00
VERY STIFF	2.00 TO 4.00
HARD	OVER 4.00

RELATIVE DEGREE OF PLASTICITY (PI)

LOW	4 TO 15
MEDIUM	16 TO 25
HIGH	26 TO 35
VERY HIGH	OVER 35

RELATIVE PROPORTIONS (%)

TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	36 TO 50

PARTICLE SIZE IDENTIFICATION (DIAMETER)

BOULDERS	8.0" OR LARGER
COBBLES	3.0" TO 8.0"
COARSE GRAVEL	0.75" TO 3.0"
FINE GRAVEL	5.0 mm TO 3.0"
COURSE SAND	2.0 mm TO 5.0 mm
MEDIUM SAND	0.4 mm TO 5.0 mm
FINE SAND	0.07 mm TO 0.4 mm
SILT	0.002 mm TO 0.07 mm
CLAY	LESS THAN 0.002 mm

## **GC-6.07 WAGE RATES**

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**2013 PREVAILING WAGE RATES**  
(Heavy and Highway Construction Projects)

<b>CLASSIFICATION DESCRIPTION</b>	<b>Wage Rate</b>
Asphalt Distributor Operator	\$ 15.32
Asphalt Paving Machine Operator	\$ 13.99
Asphalt Raker	\$ 12.69
Broom or Sweeper Operator	\$ 11.74
Concrete Finisher, Paving and Structures	\$ 14.12
Concrete Pavement Finishing Machine Operator	\$ 16.05
Concrete Saw Operator	\$ 14.48
Crane Operator, Hydraulic 80 tons or less	\$ 18.12
Crane Operator, Lattice Boom 80 Tons or Less	\$ 17.27
Crane Operator, Lattice Boom Over 80 Tons	\$ 20.52
Crawler Tractor Operator	\$ 14.07
Electrician	\$ 19.80
Excavator Operator, 50,000 pounds or less	\$ 17.19
Excavator Operator, Over 50,000 pounds	\$ 16.99
Flagger	\$ 10.06
Form Builder/Setter, Structures	\$ 13.84
Form Setter, Paving & Curb	\$ 13.16
Foundation Drill Operator, Crawler Mounted	\$ 17.99
Foundation Drill Operator, Truck Mounted	\$ 21.07
Front End Loader Operator, 3 CY or Less	\$ 13.69
Front End Loader Operator, Over 3 CY	\$ 14.72
Laborer, Common	\$ 10.72
Laborer, Utility	\$ 12.32
Loader/Backhoe Operator	\$ 15.18
Mechanic	\$ 17.68
Milling Machine Operator	\$ 14.32
Motor Grader Operator, Fine Grade	\$ 17.19
Motor Grader Operator, Rough	\$ 16.02
Off Road Hauler	\$ 12.25
Pavement Marking Machine Operator	\$ 13.63
Pipelayer	\$ 13.24
Reclaimer/Pulverizer Operator	\$ 11.01
Reinforcing Steel Worker	\$ 16.18
Roller Operator, Asphalt	\$ 13.08
Roller Operator, Other	\$ 11.51
Scraper Operator	\$ 12.96
Servicer	\$ 14.58
Small Slipform Machine Operator	\$ 15.96
Spreader Box Operator	\$ 14.73
Truck Driver Lowboy-Float	\$ 16.24
Truck Driver Transit-Mix	\$ 14.14
Truck Driver, Single Axle	\$ 12.31
Truck Driver, Single or Tandem Axle Dump Truck	\$ 12.62
Truck Driver, Tandem Axle Tractor with Semi Trailer	\$ 12.86
Welder	\$ 14.84
Work Zone Barricade Servicer	\$ 11.68

The Davis-Bacon Act prevailing wage rates shown for Heavy and Highway construction projects were determined by the United States Department of Labor and current as of September 2013. The titles and descriptions for the classifications listed are detailed in the AGC of Texas' Standard Job Classifications and Descriptions for Highway, Heavy, Utilities, and Industrial Construction in Texas.

## **GC-6.09 PERMITS AND UTILITIES**

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