



**PROJECT MANUAL
FOR
THE CONSTRUCTION OF
WATER, PAVING, DRAINAGE, AND LIGHTING IMPROVEMENTS
TO SERVE
OAK GROVE ROAD**

**IPRC20-0127
CITY PROJECT NO. 102802
FID 30114-0200431-102802-E07685
FILE NO. W-2796
X-26673**

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**Prepared for
The City of Fort Worth**
Transportation and Public Works Department
2020

Prepared by:

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Technical Specifications listed below are included for this Project by reference and can be viewed/downloaded from the City's website at:

<http://fortworthtexas.gov/tpw/contractors/>
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Technical Specifications listed below are TxDOT Specifications Needed for the Construction of the TxDOT Bid Items. See TxDOT Website for Specifications

TxDOT Standard Specifications: Adopted by the Texas Department of Transportation November 1, 2014.
Standard specifications are incorporated into the contract by reference.

Found Online at: <ftp://ftp.dot.state.tx.us/pub/txdot-info/des/spec-book-1114.pdf>

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SECTION 00 11 13
INVITATION TO BIDDERS
DEVELOPER AWARDED CONTRACTS
FOR PUBLICLY BID PROJECTS ONLY

RECEIPT OF BIDS

Sealed bids for the construction of *WATER, STORM DRAIN, PAVING, AND STREET LIGHT IMPROVEMENTS TO SERVE OAK GROVE ROAD FROM ENON AVENUE TO JOEL EAST ROAD*, City Project Number 102802, 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Due to the COVID-19 Emergency declared by the City of Fort Worth and until the emergency declaration, as amended, is rescinded, bid submissions and bid opening shall be as follows: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: 10,800 SY asphalt roadway removal, 27,000 SY of 10" concrete pavement, 2,650 LF RCP pipe (18" to 36"), 995 LF RCB (4X3 to 7X4), street lighting, 400 LF 12" waterline, and reroute 130 LF 30" water main.

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 Kimley-Horn and Associates, Inc., 801 Cherry St, Unit #11, Suite 1300, Fort Worth, TX 76102, 817-335-6511 on or after December 21, 2020. 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: \$150

Set of Bidding and Contract Documents with half size (if available) drawings: \$100

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: 1:30 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: Cody Brewer, P.E., Kimley-Horn
Email: Cody.Brewer@kimley-horn.com
Phone: 817-339-2269

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 21, 2020
December 28, 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 5th 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: Cody Brewer, P.E., Kimley-Horn
Email: Cody.Brewer@kimley-horn.com
Phone: 817-339-2269

AND/OR

Attn: Debbie J. Willhelm, P.E., City of Fort Worth
Email: Debbie.Willhelm@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
<https://www.fortworthtexas.gov/departments/finance/purchasing/bids/manual-bids/devserv/2020/102802>

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 BID
Publicly Bid Developer Awarded Projects - BID FORM

TO: Carter Park East Land, LLC
1717 McKinney Avenue, Suite 1900
Dallas, TX 75202

FOR: Water, Paving, Drainage, and Street Lighting improvements to serve
Oak Grove Road between Joel East Road to Enon Avenue

City Project No.: 102802

Units/Sections: UNIT I: WATER 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 any thing 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 Transmission, Development, 42-inch and smaller
- b. Concrete Paving Construction, Reconstruction (15,000 SY & Greater)
- c. Asphalt Paving Construction, Reconstruction (less than 15,000 SY)
- d. Roadway and Pedestrian Lighting

4. Time of Completion

- 4.1. Bidder agrees to complete WORK for FINAL ACCEPTANCE within # days 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 as to liquidated damages 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. MBE Forms
- d. Prequalification Statement, Section 00 45 12
- e. Any additional documents that may be required by Section 12 of the Instructions to Bidders
- f. 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 Month Day, Year by the entity named below.

Respectfully submitted,

By: _____
(Signature)

Printed Name Here

(Printed Name)

Title: Title Here

Company: Company Name Here

Corporate Seal:

Address: Address Here
Address Here or Space
City, State Zip Code Here

State of Incorporation: State Here

Email: Your Email Address Here

Phone: Your Phone Number Here

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

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
UNIT I: WATER IMPROVEMENTS						
1	0171.0102 As-Built Survey	01 71 23	LS	1		\$ -
2	0241.1020 Remove 30" Water Line	02 41 14	LF	130		\$ -
3	3305.0102 Cathodic Protection Test Station Adjustment	33 05 14	EA	6		\$ -
4	3305.0103 Exploratory Excavation of Existing Utilities	33 05 30	EA	4		\$ -
5	3305.0107 Manhole - Minor Adjustment	33 05 14	EA	5		\$ -
6	3305.0108 Miscellaneous Structure Adjustment - STA 86+20	33 05 14	EA	1		\$ -
7	3305.0108 Miscellaneous Structure Adjustment - STA 119+00	33 05 14	EA	1		\$ -
8	3305.0109 Trench Safety	33 05 10	LF	546		\$ -
9	3305.0111 Valve Box Adjustment	33 12 40	EA	4		\$ -
10	3305.0114 Manhole Adjustment, Major w/ Cover	33 05 14	EA	10		\$ -
11	3305.0116 Concrete Encasement for Utility Pipes	33 05 10	CY	2		\$ -
12	3305.1008 48" Casing By Open Cut	33 05 22	LF	20		\$ -
13	3305.2008 30" Water Carrier Pipe	33 05 24	LF	20		\$ -
14	3311.0001 Ductile Iron Water Fittings w/ Restraint	33 11 11	TON	1.1		\$ -
15	3311.0451 12" DIP Water	33 11 10	LF	31		\$ -
16	3311.0457 12" DIP Water, CLSM Backfill	33 11 10	LF	14		\$ -
17	3311.0461 12" PVC Water Pipe	33 11 12	LF	385		\$ -
18	3311.0775 30" Concrete AWWA C303 Water Pipe, CSS Back	33 11 13	LF	110		\$ -
19	3312.0106 Connection to Existing 16" Water Main	33 12 25	EA	1		\$ -
20	3312.0109 Connection to Existing 30" Water Main	33 12 25	EA	2		\$ -
21	3312.0117 Connection to Existing 4"-12" Water Main	33 12 25	EA	1		\$ -
22	3312.3005 12" Gate Valve	33 12 20	EA	2		\$ -
23	3312.4114 16" x 12" Tapping Sleeve & Valve	33 12 25	EA	1		\$ -
TOTAL UNIT I: WATER IMPROVEMENTS						

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
UNIT III: DRAINAGE IMPROVEMENTS						
1	0171.0101 Construction Staking	01 71 23	LS	1		\$ -
2	0171.0102 As-Built Survey	01 71 23	LS	1		\$ -
3	0241.3106 30" Storm Abandonment Plug	02 41 14	EA	1		\$ -
4	0241.3108 36" Storm Abandonment Plug	02 41 14	EA	1		\$ -
5	3137.0104 Medium Stone Riprap, dry	31 37 00	SY	271		\$ -
6	3301.0012 Post CCTV Inspection of Storm Drain	33 01 31	LF	4,855		\$ -
7	3305.0109 Trench Safety	33 05 10	LF	4,730		\$ -
8	3305.1107 42" Casing By Other Than Open Cut	33 05 22	LF	60		\$ -
9	3341.0103 18" RCP, Class III	33 41 10	LF	49		\$ -
10	3341.0201 21" RCP, Class III	33 41 10	LF	8		\$ -
11	3341.0205 24" RCP, Class III	33 41 10	LF	1,408		\$ -
12	3341.0302 30" RCP, Class III	33 41 10	LF	209		\$ -
13	3341.0309 36" RCP, Class III	33 41 10	LF	976		\$ -
14	3341.1102 4x3 Box Culvert	33 41 10	LF	483		\$ -
15	3341.1202 5x4 Box Culvert	33 41 10	LF	422		\$ -
16	3341.1402 7x4 Box Culvert	33 41 10	LF	90		\$ -
17	3349.0001 4' Storm Junction Box	33 49 10	EA	4		\$ -
18	3349.0003 6' Storm Junction Box	33 49 10	EA	1		\$ -
19	3349.0104 4' Stacked Manhole	33 49 10	EA	6		\$ -
20	3349.1000 Headwall, Box Culvert	33 49 40	CY	1		\$ -
21	3349.1105 30" Flared Headwall, 2 pipes	33 49 40	EA	1		\$ -
22	3349.5001 10' Curb Inlet	33 49 20	EA	1		\$ -
23	3349.6001 10' Recessed Inlet	33 49 20	EA	2		\$ -
24	3349.6002 15' Recessed Inlet	33 49 20	EA	1		\$ -
25	3349.6003 20' Recessed Inlet	33 49 20	EA	1		\$ -
26	3349.8001 10' Type 2 Inlet	33 49 20	EA	4		\$ -
27	3349.8002 15' Type 2 Inlet	33 49 20	EA	1		\$ -
28	3349.8003 20' Type 2 Inlet	33 49 20	EA	1		\$ -
29	9999.0004 8x3 Box Culvert	33 41 10	LF	1,210		\$ -
30	420 6029 CL C CONC (CAP)	TxDOT 420	CY	1		\$ -
TOTAL UNIT III: DRAINAGE IMPROVEMENTS						

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
UNIT IV: PAVING IMPROVEMENTS						
1	0171.0101 Construction Staking	01 71 23	LS	1		\$ -
2	0171.0102 As-Built Survey	01 71 23	LS	1		\$ -
3	0241.0100 Remove Sidewalk	02 41 13	SF	99		\$ -
4	0241.0401 Remove Concrete Drive	02 41 13	SF	7824		\$ -
5	0241.0500 Remove Fence	02 41 13	LF	4117		\$ -
6	0241.0800 Remove Rip Rap	02 41 13	SF	372		\$ -
7	0241.0550 Remove Guardrail	02 41 13	LF	87		\$ -
8	0241.4401 Remove Headwall/SET	02 41 14	EA	3		\$ -
9	0241.1100 Remove Asphalt Pvmnt	02 41 13	SY	10761		\$ -
10	0241.1300 Remove Conc Curb&Gutter	02 41 15	LF	20		\$ -
11	0241.3018 Remove 33" Storm Line	02 41 14	LF	160		\$ -
12	3110.0101 Site Clearing	31 10 00	LS	1		\$ -
13	3110.0102 6"-12" Tree Removal	31 10 00	EA	3		\$ -
14	3123.0101 Unclassified Excavation by Plan	31 23 16	CY	5500		\$ -
15	3124.0101 Embankment by Plan	31 24 00	CY	5500		\$ -
16	3123.0103 Borrow by Plan	31 23 23	CY	6500		\$ -
17	3125.0101 SWPPP ≥ 1 acre	31 25 00	LS	1		\$ -
18	3211.0111 4" Flexible base, type A, GR-1	32 11 23	SY	464		\$ -
19	3211.0502 8" Lime Treatment (54 LBS/SY)	32 11 29	SY	33199		\$ -
20	3211.0400 Hydrated Lime	32 11 29	TN	896		\$ -
21	3212.0302 2" Asphalt Pvmnt Type D	32 12 16	SY	95		\$ -
22	3212.0505 8" Asphalt Base Type B	32 12 16	SY	95		\$ -
23	3213.0105 10" Conc Pvmnt (4,000 PSI)	32 13 13	SY	27221		\$ -
24	3213.0403 8" Concrete Driveway	32 13 20	SF	25788		\$ -
25	3213.0301 4" Conc Sidewalk	32 13 20	SF	68566		\$ -
26	3212.0311 4" Conc Sidewalk, Adjacent to Curb	32 13 20	SF	6071		\$ -
27	3213.0506 Barrier Free Ramp, Type P-1	32 13 20	EA	2		\$ -
28	3217.0001 4" SLD Pvmnt Marking HAS (W)	32 17 23	LF	665		\$ -
29	3217.0002 4" SLD Pvmnt Marking HAS (Y)	32 17 23	LF	10433		\$ -
30	3217.0201 8" SLD Pvmnt Marking HAS (W)	32 17 23	LF	1144		\$ -
31	3217.0202 8" SLD Pvmnt Marking HAS (Y)	32 17 23	LF	48		\$ -
32	3217.0004 4" BRK Pvmnt Marking HAS (Y)	32 17 23	LF	2440		\$ -
33	3217.0003 4" BRK Pvmnt Marking HAS (W)	32 17 23	LF	2390		\$ -
34	3217.0501 24" SLD Pvmnt Marking HAE (W)	33 17 23	LF	22		\$ -
35	3217.2102 REFL Raised Marker TY 1-C	32 17 23	EA	272		\$ -
36	3217.2103 REFL Raised Marker TY II-A-A	32 17 23	EA	246		\$ -
37	3217.4301 Remove 4" Pvmnt Marking	32 17 23	LF	6356		\$ -
38	3217.4303 Remove 8" Pvmnt Marking	32 17 23	LF	1225		\$ -
39	3217.4307 Remove Raised Marker	32 17 23	EA	160		\$ -
40	3291.0100 Topsoil	32 91 19	CY	2221		\$ -
41	3292.0100 Block Sod Placement	32 92 13	SY	13329		\$ -
42	3441.4110 Remove and Reinstall Sign Panel and Post	34 41 30	EA	2		\$ -
43	3441.4003 Furnish/Install Alum Sign Ground Mount City Std.	34 41 30	EA	5		\$ -
44	3471.0001 Traffic Control	34 71 13	MO	12		\$ -
45	3471.0002 Portable Message Sign	34 71 13	WK	50		\$ -
46	3471.0003 Traffic Control Details	35 71 13	EA	2		\$ -
47	9999.0001 Remove Gravel Drive	02 41 13	SF	6592		\$ -
48	450 6052 RAIL (HANDRAIL)(TY F)	TxDOT 450	LF	179		\$ -
TOTAL UNIT IV: PAVING IMPROVEMENTS						

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
UNIT V: STREET LIGHTING IMPROVEMENTS						
1	2605.3014 2" CONDT RM (Riser)	26 05 33	LF	60		\$ -
2	2605.3015 2" CONDT PVC SCH 80 (T)	26 05 33	LF	7,400		\$ -
3	2605.3016 2" CONDT PVC SCH 80 (B)	26 05 33	LF	1,240		\$ -
4	3305.0103 Exploratory Excavation of Existing Utilities	33 05 30	EA	100		\$ -
5	3441.1408 NO 6 Insulated Elec Condr	34 41 10	LF	30,520		\$ -
6	3441.1413 NO 6 Bare Elec Condr SLD	34 41 10	LF	7,990		\$ -
7	3441.1502 Ground Box Type B, w/Apron	34 41 10	EA	23		\$ -
8	3441.1645 Furnish/Install Type 33A Arm	34 41 11	EA	41		\$ -
9	3441.1772 Furnish/Install 240-480 Volt Single Phase Metered	34 41 11	EA	2		\$ -
10	3441.3051 Furnish/Install LED Lighting Fixture (137 Watt ATB)	34 41 11	EA	41		\$ -
11	3441.3302 Rdwy Illum Foundation TY 3,5,6, and 8	34 41 20	EA	41		\$ -
12	3441.3352 Furnish/Install Rdway Illum TY 18 Pole	34 41 20	EA	41		\$ -
TOTAL UNIT V: STREET LIGHTING IMPROVEMENTS						

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 III: DRAINAGE IMPROVEMENTS	
UNIT IV: PAVING IMPROVEMENTS	
UNIT V: STREET LIGHTING IMPROVEMENTS	
Total Construction Bid	

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/ 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.
- 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 Transmission, Development, 42-inches and smaller	<Company Name Here or Blank>	<Date Here or Blank>
Concrete Paving Construction, Reconstruction (15,000 SY & Greater)	<Company Name Here or Blank>	<Date Here or Blank>
Asphalt Paving Construction, Reconstruction (less than 15,000 SY)	<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



SECTION 00 45 13
BIDDER PREQUALIFICATION APPLICATION

Date of Balance Sheet _____,

Mark only one:

Name under which you wish to qualify

- | | |
|--------------------------|---------------------------|
| <input type="checkbox"/> | Individual |
| <input type="checkbox"/> | Limited Partnership |
| <input type="checkbox"/> | General Partnership |
| <input type="checkbox"/> | Corporation |
| <input type="checkbox"/> | Limited Liability Company |

Post Office Box

City

State

Zip Code

Street Address (required)

City

State

Zip Code

() _____
Telephone

() _____
Fax

Email

Texas Taxpayer Identification No.

Federal Employers Identification No.

DUNS No. (if applicable)

MAIL THIS QUESTIONNAIRE ALONG WITH FINANCIAL STATEMENTS TO:
CITY OF FORT WORTH TEXAS
1000 THROCKMORTON STREET
FORT WORTH, TEXAS 76102-6311
AND MARK THE ENVELOPE: "BIDDER PREQUALIFICATION APPLICATION"

BUSINESS CLASSIFICATION

The following should be completed in order that we may properly classify your firm:

(Check the block(s) which are applicable – Block 3 is to be left blank if Block 1 and/or Block 2 is checked)

- ☐ Has fewer than 100 employees
and/or
☐ Has less than \$6,000,000.00 in annual gross receipts
OR
☐ Does not meet the criteria for being designated a small business as provided in Section 2006.001 of the Texas Government Code.

The classification of your firm as a small or large business is not a factor in determining eligibility to become prequalified.

MAJOR WORK CATEGORIES

Water Department

- ☐ Augur Boring - 24-inch diameter casing and less
- ☐ Augur Boring - Greater than 24-inch diameter casing and greater
- ☐ Tunneling – 36-Inches – 60 –inches, and 350 LF or less
- ☐ Tunneling - 36-Inches – 60 –inches, and greater than 350 LF
- ☐ Tunneling – 66” and greater, 350 LF and greater
- ☐ Tunneling – 66” and greater, 350 LF or Less
- ☐ Cathodic Protection
- ☐ Water Distribution, Development, 8-inch diameter and smaller
- ☐ Water Distribution, Urban and Renewal, 8-inch diameter and smaller
- ☐ Water Distribution, Development, 12-inch diameter and smaller
- ☐ Water Distribution, Urban and Renewal, 12-inch diameter and smaller
- ☐ Water Transmission, Development, 24-inches and smaller
- ☐ Water Transmission, Urban/Renewal, 24-inches and smaller
- ☐ Water Transmission, Development, 42-inches and smaller
- ☐ Water Transmission, Urban/Renewal, 42-inches and smaller
- ☐ Water Transmission, Development, All Sizes
- ☐ Water Transmission, Urban/Renewal, All Sizes
- ☐ Sewer Bypass Pumping, 18-inches and smaller
- ☐ Sewer Bypass Pumping, 18-inches – 36-inches
- ☐ Sewer Bypass Pumping 42-inches and larger
- ☐ CCTV, 8-inches and smaller
- ☐ CCTV, 12-inches and smaller
- ☐ CCTV, 18-inches and smaller
- ☐ CCTV, 24-inches and smaller
- ☐ CCTV, 42-inches and smaller
- ☐ CCTV, 48-inches and smaller

MAJOR WORK CATEGORIES, CONTINUED

- ☐ Sewer CIPP, 12-inches and smaller
- ☐ Sewer CIPP, 24-inches and smaller
- ☐ Sewer CIPP, 42-inches and smaller
- ☐ Sewer CIPP, All Sizes
- ☐ Sewer Collection System, Development, 8-inches and smaller
- ☐ Sewer Collection System, Urban/Renewal, 8-inches and smaller
- ☐ Sewer Collection System, Development, 12-inches and smaller
- ☐ Sewer Collection System, Urban/Renewal, 12-inches and smaller
- ☐ Sewer Interceptors, Development, 24-inches and smaller
- ☐ Sewer Interceptors, Urban/Renewal, 24-inches and smaller
- ☐ Sewer Interceptors, Development, 42-inches and smaller
- ☐ Sewer Interceptors, Urban/Renewal, 42-inches and smaller
- ☐ Sewer Interceptors, Development, 48-inches and smaller
- ☐ Sewer Interceptors, Urban/Renewal, 48-inches and smaller
- ☐ Sewer Pipe Enlargement 12-inches and smaller
- ☐ Sewer Pipe Enlargement 24-inches and smaller
- ☐ Sewer Pipe Enlargement, All Sizes
- ☐ Sewer Cleaning , 24-inches and smaller
- ☐ Sewer Cleaning , 42-inches and smaller
- ☐ Sewer Cleaning , All Sizes
- ☐ Sewer Cleaning, 8-inches and smaller
- ☐ Sewer Cleaning, 12-inches and smaller
- ☐ Sewer Siphons 12-inches or less
- ☐ Sewer Siphons 24-inches or less
- ☐ Sewer Siphons 42-inches or less
- ☐ Sewer Siphons All Sizes

Transportation Public Works

- ☐ Asphalt Paving Construction/Reconstruction (LESS THAN 15,000 square yards)
- ☐ Asphalt Paving Construction/Reconstruction (15,000 square yards and GREATER)
- ☐ Asphalt Paving Heavy Maintenance (UNDER \$1,000,000)
- ☐ Asphalt Paving Heavy Maintenance (\$1,000,000 and OVER)
- ☐ Concrete Paving Construction/Reconstruction (LESS THAN 15,000 square yards)
- ☐ Concrete Paving Construction/Reconstruction (15,000 square yards and GREATER)
- ☐ Roadway and Pedestrian Lighting

1. List equipment you do not own but which is available by renting

DESCRIPTION OF EQUIPMENT	NAME AND DETAILED ADDRESS OF OWNER

2. How many years has your organization been in business as a general contractor under your present name? _____

List previous business names: _____

3. How many years of experience in _____ construction work has your organization had:

(a) As a General Contractor: _____ (b) As a Sub-Contractor: _____

4. *What projects has your organization completed in Texas and elsewhere?

CONTRACT AMOUNT	CLASS OF WORK	DATE COMPLETED	LOCATION CITY-COUNTY- STATE	NAME AND DETAILED ADDRESS OF OFFICIAL TO WHOM YOU REFER

*If requalifying only show work performed since last statement.

5. Have you ever failed to complete any work awarded to you? _____

If so, where and why? _____

6. Has any officer or owner of your organization ever been an officer of another organization that failed to complete a contract? _____

If so, state the name of the individual, other organization and reason. _____

7. Has any officer or owner of your organization ever failed to complete a contract executed in his/her name? _____

If so, state the name of the individual, name of owner and reason. _____

8. In what other lines of business are you financially interested? _____

9. Have you ever performed any work for the City? _____
If so, when and to whom do you refer? _____

10. State names and detailed addresses of all producers from whom you have purchased principal materials during the last three years.

NAME OF FIRM OR COMPANY	DETAILED ADDRESS

11. Give the names of any affiliates or relatives currently debarred by the City. Indicate your relationship to this person or firm. _____

12. What is the construction experience of the principal individuals in your organization?

NAME	PRESENT POSITION OR OFFICE	YEARS OF EXPERIENCE	MAGNITUDE AND TYPE OF WORK	IN WHAT CAPACITY

13. If any owner, officer, director, or stockholder of your firm is an employee of the City, or shares the same household with a City employee, please list the name of the City employee and the relationship. In addition, list any City employee who is the spouse, child, or parent of an owner, officer, stockholder, or director who does not live in the same household but who receives care and assistance from that person as a direct result of a documented medical condition. This includes foster children or those related by adoption or marriage. _____

CORPORATION BLOCK	PARTNERSHIP BLOCK
If a corporation:	If a partnership:
Date of Incorporation _____	State of Organization _____
Charter/File No. _____	Date of organization _____
President _____	Is partnership general, limited, or registered limited liability partnership?
Vice Presidents _____	File No. (if Limited Partnership) _____
_____	General Partners/Officers _____
_____	_____
_____	_____
Secretary _____	Limited Partners (if applicable)
Treasurer _____	_____
LIMITED LIABILITY COMPANY BLOCK	_____
If a corporation:	_____
State of Incorporation _____	_____
Date of organization _____	_____
File No. _____	Individuals authorized to sign for Partnership
Officers or Managers (with titles, if any) _____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Except for limited partners, the individuals listed in the blocks above are presumed to have full signature authority for your firm unless otherwise advised. Should you wish to grant signature authority for additional individuals, please attach a certified copy of the corporate resolution, corporate minutes, partnership agreement, power of attorney or other legal documentation which grants this authority.

14. Equipment

\$ _____

			TOTAL
ITEM	QUANTITY	ITEM DESCRIPTION	BALANCE SHEET VALUE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
		Various-	
		TOTAL	

Similar types of equipment may be lumped together. If your firm has more than 30 types of equipment, you may show these 30 types and show the remainder as "various". The City, by allowing you to show only 30 types of equipment, reserves the right to request a complete, detailed list of all your equipment.

The equipment list is a representation of equipment under the control of the firm and which is related to the type of work for which the firm is seeking qualification. In the description include, the manufacturer, model, and general common description of each.

BIDDER PREQUALIFICATION AFFIDAVIT

STATE OF _____
COUNTY OF _____

The undersigned hereby declares that the foregoing is a true statement of the financial condition of the entity herein first named, as of the date herein first given; that this statement is for the express purpose of inducing the party to whom it is submitted to award the submitter a contract; and that the accountant who prepared the balance sheet accompanying this report as well as any depository, vendor or any other agency herein named is hereby authorized to supply each party with any information, while this statement is in force, necessary to verify said statement.

_____, being duly sworn, deposes and says that he/she is the _____ of _____, the entity described in and which executed the foregoing statement that he/she is familiar with the books of the said entity showing its financial condition; that the foregoing financial statement taken from the books of the said entity as of the date thereof and that the answers to the questions of the foregoing Bidder Prequalification Application are correct and true as of the date of this affidavit.

Firm Name: _____

Signature: _____

Sworn to before me this
_____ day of _____, _____

Notary Public

Notary Public must not be an officer, director, or stockholder or relative thereof.

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. 102802. 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:

Company By: _____
(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

LANGUAGE FOR COMMUNITY FACILITY AGREEMENTS (CFAs) APPLICABLE TO EXISTING CFA'S NEGOTIATED PRIOR TO JANUARY 1, 2021:

The **Minority Business Enterprise (MBE)** goal on this CFA for the City-funded portion is:

10%.

MBE/SBE PARTICIPATION

If the total dollar value of the City-funded portion of a contract is \$50,000.01 or more, then a minority business enterprise (MBE) or small business enterprise (SBE) subcontracting goal is applicable.

STATEMENT

It is the desire of the City of Fort Worth to ensure the full and equitable participation by MBEs or SBEs in the procurement of all goods and services.

Offerors are strongly encouraged to comply with the intent of the City's Business Diversity Enterprise Ordinance.

MBE or SBEs listed toward meeting the project goal must be located in the six (6) county marketplace at the time of bid or the business has a Significant Business Presence in the Marketplace. Marketplace is the geographic area of Tarrant, Dallas, Denton, Johnson, Parker, and Wise counties.

Prime contractors must identify by tier level of all subcontractors/suppliers. Tier: means the level of subcontracting below the prime contractor/consultant i.e. a direct payment from the prime contractor to a subcontractor is considered 1st tier, a payment by a subcontractor to its supplier is considered 2nd tier. The prime contractor is responsible to provide proof of payment of all tiered subcontractors identified as an MBE or SBE and counting those dollars towards meeting the contract goal.

ALL MBEs or SBEs MUST BE CERTIFIED BEFORE CONTRACT AWARD.

Certification means those firms, located within the Marketplace, that have been determined to be a bonafide minority business enterprises or small business enterprises by the North Central Texas Regional Certification Agency (NCTRCA) and the Dallas/Fort Worth Minority Supplier Development Council (D/FW MSDC).

Contractor should contact the City's Business Equity Division at DVIN_BEOffice@fortworthtexas.gov or call (817) 392-2674 to assist with information on tracking and reporting MBE/SBE participation, and to obtain a certified MBE or SBE listing.



TEMPORARY REVISION 4/6/2020 (COVID-19)

City of Fort Worth

Minority Business Enterprise Specifications

SPECIAL INSTRUCTIONS FOR OFFERORS

APPLICATION OF POLICY

If the total dollar value of the contract is \$50,000.01 or more, then a MBE subcontracting goal is applicable.

POLICY STATEMENT

It is the policy of the City of Fort Worth to ensure the full and equitable participation by Minority Business Enterprises (MBE) in the procurement of all goods and services. All requirements and regulations stated in the City's current Business Diversity Enterprise Ordinance applies to this bid.

MBE PROJECT GOALS

The City's MBE goal on this project is _____% of the base bid value of the contract.

Note: If both MBE and SBE subcontracting goals are established for this project, then an Offeror must submit both a MBE Utilization Form and a SBE Utilization Form to be deemed responsive.

COMPLIANCE TO BID SPECIFICATIONS

On City contracts \$50,000.01 or more where a MBE subcontracting goal is applied, Offerors are required to comply with the intent of the City's Business Diversity Enterprise Ordinance by one of the following:

1. Meet or exceed the above stated MBE goal through MBE subcontracting participation, or
2. Meet or exceed the above stated MBE goal through MBE Joint Venture participation, or;
3. Good Faith Effort documentation, or;
4. Prime Waiver documentation.

SUBMITTAL OF REQUIRED DOCUMENTATION

The applicable documents **must** be received by the by the assigned City of Fort Worth Project Manager or Department Designee, within the following times allocated, in order for the entire bid to be considered responsive to the specifications. **The Offeror shall EMAIL the MBE documentation to the assigned City of Fort Worth Project Manager or Department Designee. A faxed copy will not be accepted.**

1. Subcontractor Utilization Form, if goal is met or exceeded:	received no later than 2:00 p.m., on the second City business day after the bid opening date, exclusive of the bid opening date.
2. Good Faith Effort and Subcontractor Utilization Form, if participation is less than stated goal:	received no later than 2:00 p.m., on the second City business day after the bid opening date, exclusive of the bid opening date.
3. Good Faith Effort and Subcontractor Utilization Form, if no MBE participation:	received no later than 2:00 p.m., on the second City business day after the bid opening date, exclusive of the bid opening date.
4. Prime Contractor Waiver Form, if you will perform all subcontracting/supplier work:	received no later than 2:00 p.m., on the second City business day after the bid opening date, exclusive of the bid opening date.
5. Joint Venture Form, if goal is met or exceeded:	received no later than 2:00 p.m., on the second City business day after the bid opening date, exclusive of the bid opening date.

FAILURE TO COMPLY WITH THE CITY'S BUSINESS DIVERSITY ENTERPRISE ORDINANCE, WILL RESULT IN THE BID BEING CONSIDERED NON-RESPONSIVE TO SPECIFICATIONS.

FAILURE TO SUBMIT THE REQUIRED MBE DOCUMENTATION WILL RESULT IN THE BID BEING CONSIDERED NON-RESPONSIVE. A SECOND FAILURE WILL RESULT IN THE OFFEROR BEING DISQUALIFIED FOR A PERIOD OF ONE YEAR. THREE FAILURES IN A FIVE YEAR PERIOD WILL RESULT IN A DISQUALIFICATION PERIOD OF THREE YEARS.

Any questions, please contact the Office of Business Diversity at (817) 392-2674.



**City of Fort Worth
Office of Business Diversity
MBE Subcontractors/Suppliers Utilization Form**

OFFEROR COMPANY NAME:		Check applicable box to describe Offeror's Certification	
PROJECT NAME:		M/W/DBE	NON-M/W/DBE
		BID DATE	
City's MBE Project Goal: %	Offeror's MBE Project Commitment: %	PROJECT NUMBER	

Identify all subcontractors/suppliers you will use on this project

Failure to complete this form, in its entirety with requested documentation, and received by the Purchasing Division no later than 2:00 p.m. on the second City business day after bid opening, exclusive of bid opening date, will result in the bid being considered non-responsive to bid specifications.

The undersigned Offeror agrees to enter into a formal agreement with the MBE firm(s) listed in this utilization schedule, conditioned upon execution of a contract with the City of Fort Worth. The intentional and/or knowing misrepresentation of facts is grounds for consideration of disqualification and will result in the bid being considered non-responsive to bid specifications.

MBEs listed toward meeting the project goal must be located in the six (6) county marketplace at the time of bid or the business has a Significant Business Presence in the Marketplace. Marketplace is the geographic area of **Tarrant, Dallas, Denton, Johnson, Parker, and Wise counties.**

Prime contractors must identify by tier level of all subcontractors/suppliers. Tier: means the level of subcontracting below the prime contractor/consultant i.e. a direct payment from the prime contractor to a subcontractor is considered 1st tier, a payment by a subcontractor to its supplier is considered 2nd tier. The prime contractor is responsible to provide proof of payment of all tiered subcontractors identified as a MBE and counting those dollars towards meeting the contract committed goal.

ALL MBEs MUST BE CERTIFIED BEFORE CONTRACT AWARD.

Certification means those firms, located within the Marketplace, that have been determined to be a bonafide minority business enterprise by the North Central Texas Regional Certification Agency (NCTRCA) and the Dallas/Fort Worth Minority Supplier Development Council (D/FW MSDC).

If hauling services are utilized, the Offeror will be given credit as long as the MBE listed owns and operates at least one fully licensed and operational truck to be used on the contract. The MBE may lease trucks from another MBE firm, including MBE owner-operated, and receive full MBE credit. The MBE may lease trucks from non-MBEs, including owner-operated, but will only receive credit for the fees and commissions earned by the MBE as outlined in the lease agreement.

Offerors are required to identify **ALL** subcontractors/suppliers, regardless of status; i.e., **Minority and non-MBEs**. MBE firms are to be listed first, use additional sheets if necessary. Please note that only certified MBEs will be counted to meet an **MBE** goal.

SUBCONTRACTOR/SUPPLIER Company Name Address Telephone/Fax Email Contact Person	T i e r	M B E	W B E	N o n M B E	Detail Subcontracting Work	Detail Supplies Purchased	Dollar Amount



Offerors are required to identify **ALL** subcontractors/suppliers, regardless of status; i.e., **Minority and non-MBEs**. MBE firms are to be listed first, use additional sheets if necessary. Please note that only certified MBEs will be counted to meet an **MBE** goal.

SUBCONTRACTOR/SUPPLIER Company Name Address Telephone/Fax Email Contact Person	T i e r	M B E	W B E	N o n M B E	Detail Subcontracting Work	Detail Supplies Purchased	Dollar Amount



Total Dollar Amount of MBE Subcontractors/Suppliers	\$
Total Dollar Amount of Non-MBE Subcontractors/Suppliers	\$
TOTAL DOLLAR AMOUNT OF ALL SUBCONTRACTORS/SUPPLIERS	\$

The Offeror will not make additions, deletions, or substitutions to this certified list without the prior approval of the Office of Business Diversity through the submittal of a ***Request for Approval of Change/Addition form***. Any unjustified change or deletion shall be a material breach of contract and may result in debarment in accord with the procedures outlined in the ordinance. The Offeror shall submit a detailed explanation of how the requested change/addition or deletion will affect the committed MBE goal. If the detail explanation is not submitted, it will affect the final compliance determination.

By affixing a signature to this form, the Offeror further agrees to provide, directly to the City upon request, complete and accurate information regarding actual work performed by all subcontractors, including MBE(s) and any special arrangements with MBEs. The Offeror also agrees to allow an audit and/or examination of any books, records and files held by their company. The Offeror agrees to allow the transmission of interviews with owners, principals, officers, employees and applicable subcontractors/suppliers participating on the contract that will substantiate the actual work performed by the MBE(s) on this contract, by an authorized officer or employee of the City. Any intentional and/or knowing misrepresentation of facts will be grounds for terminating the contract or debarment from City work for a period of not less than three (3) years and for initiating action under Federal, State or Local laws concerning false statements. Any failure to comply with this ordinance creates a material breach of the contract and may result in a determination of an irresponsible Offeror and debarment from participating in City work for a period of time not less than one (1) year.

Authorized Signature

Printed Signature

Title

Contact Name/Title (if different)

Company Name

Telephone and/or Fax

Address

E-mail Address

City/State/Zip

Date



City of Fort Worth
Minority Business Enterprise Specifications
Prime Contractor Waiver Form

OFFEROR COMPANY NAME:		Check applicable box to describe Offeror's Certification	
		<input type="checkbox"/> M/W/DBE	<input type="checkbox"/> NON-M/W/DBE
PROJECT NAME:		BID DATE	
City's MBE Project Goal: %	Offeror's MBE Project Commitment: %	PROJECT NUMBER	

If both answers to this form are **YES**, do not complete ATTACHMENT 1C (Good Faith Effort Form). All questions on this form must be completed and a detailed explanation provided, if applicable. If the answer to either question is **NO**, then you must complete ATTACHMENT 1C. This form is only applicable if **both** answers are yes.

Failure to complete this form in its entirety and be received by the Purchasing Division no later than 2:00 p.m., on the second City business day after bid opening, exclusive of the bid opening date, will result in the bid being considered non-responsive to bid specifications.

Will you perform this entire contract without subcontractors?	<input type="checkbox"/> YES
If yes, please provide a detailed explanation that proves based on the size and scope of this project, this is your normal business practice and provide an operational profile of your business.	<input type="checkbox"/> NO
Will you perform this entire contract without suppliers?	<input type="checkbox"/> YES
If yes, please provide a detailed explanation that proves based on the size and scope of this project, this is your normal business practice and provide an inventory profile of your business.	<input type="checkbox"/> NO

The Offeror further agrees to provide, directly to the City upon request, complete and accurate information regarding actual work performed by all subcontractors, including MBE(s) on this contract, the payment thereof and any proposed changes to the original MBE(s) arrangements submitted with this bid. The Offeror also agrees to allow an audit and/or examination of any books, records and files held by their company that will substantiate the actual work performed by the MBEs on this contract, by an authorized officer or employee of the City. Any intentional and/or knowing misrepresentation of facts will be grounds for terminating the contract or debarment from City work for a period of not less than three (3) years and for initiating action under Federal, State or Local laws concerning false statements. Any failure to comply with this ordinance creates a material breach of contract and may result in a determination of an irresponsible Offeror and barred from participating in City work for a period of time not less than one (1) year.

Authorized Signature

Printed Signature

Title

Contact Name (if different)

Company Name

Phone Number

Fax Number

Address

Email Address

City/State/Zip

Date



**City of Fort Worth
Minority Business Enterprise
MBE Good Faith Effort Form**

OFFEROR COMPANY NAME:		Check applicable box to describe Offeror's Certification	
PROJECT NAME:		<input type="checkbox"/> M/W/DBE	<input type="checkbox"/> NON-M/W/DBE
		BID DATE	
City's MBE Project Goal: %	Offeror's MBE Project Commitment: %	PROJECT NUMBER	

If the Offeror did not meet or exceed the MBE subcontracting goal for this project, the Offeror must complete this form.

If the Offeror's method of compliance with the MBE goal is based upon demonstration of a "good faith effort", the Offeror will have the burden of correctly and accurately preparing and submitting the documentation required by the City. Compliance with each item, 1 thru 11 below, shall satisfy the Good Faith Effort requirement absent proof of fraud, intentional and/or knowing misrepresentation of the facts or intentional discrimination by the Offeror.

Failure to complete this form, in its entirety with supporting documentation, and received by the Purchasing Division no later than 2:00 p.m. on the second City business day after bid opening, exclusive of bid opening date, will result in the bid being considered non-responsive to bid specifications.

- 1.) Please list each and every subcontracting and/or supplier opportunity for the completion of this project, regardless of whether it is to be provided by a MBE or non-MBE. **(DO NOT LIST NAMES OF FIRMS)** On all projects, the Offeror must list each subcontracting and or supplier opportunity regardless of tier.

(Use additional sheets, if necessary)

List of Subcontracting Opportunities	List of Supplier Opportunities

2.) Obtain a current (not more than two (2) months old from the bid open date) list of MBE subcontractors and/or suppliers from the City's Office of Business Diversity.

Yes

Date of Listing _____

No

3.) Did you solicit bids from MBE firms, within the subcontracting and/or supplier areas previously listed, at least ten calendar days prior to bid opening by mail, exclusive of the day the bids are opened?

Yes (If yes, attach MBE mail listing to include name of firm and address and a dated copy of letter mailed.)

No

4.) Did you solicit bids from MBE firms, within the subcontracting and/or supplier areas previously listed, at least ten calendar days prior to bid opening by telephone, exclusive of the day the bids are opened?

Yes (If yes, attach list to include name of MBE firm, person contacted, phone number and date and time of contact.)

No

5.) Did you solicit bids from MBE firms, within the subcontracting and/or supplier areas previously listed, at least ten calendar days prior to bid opening by facsimile (fax), exclusive of the day the bids are opened?

Yes (If yes, attach list to include name of MBE firm, fax number and date and time of contact. In addition, if the fax is returned as undeliverable, then that "undeliverable confirmation" received must be printed directly from the facsimile for proper documentation. Failure to submit confirmation and/or "undeliverable confirmation" documentation may render the GFE non-responsive.)

No

6.) Did you solicit bids from MBE firms, within the subcontracting and/or supplier areas previously listed, at least ten calendar days prior to bid opening by email, exclusive of the day the bids are opened?

Yes (If yes, attach email confirmation to include name of MBE firm, date and time. In addition, if an email is returned as undeliverable, then that "undeliverable message" receipt must be printed directly from the email system for proper documentation. Failure to submit confirmation and/or "undeliverable message" documentation may render the GFE non-responsive.)

No

NOTE: The four methods identified above are acceptable for soliciting bids, and each selected method must be applied to the applicable contract. The Offeror must document that either at least two attempts were made using two of the four methods or that at least one successful contact was made using one of the four methods in order to be deemed responsive to the Good Faith Effort requirement.

NOTE: The Offeror must contact the entire MBE list specific to each subcontracting and supplier opportunity to be in compliance with questions 3 thru 6.

7.) Did you provide plans and specifications to potential MBEs?

Yes

No

8.) Did you provide the information regarding the location of plans and specifications in order to assist the MBEs?

Yes

No

9.) Did you prepare a quotation for the MBEs to bid on goods/services specific to their skill set?

(If yes, attach all copies of quotations.)

Yes

No

10.) Was the contact information on any of the listings not valid?

(If yes, attach the information that was not valid in order for the Office of Business Diversity to address the corrections needed.)

Yes

No

11.) Submit documentation if MBE quotes were rejected. The documentation submitted should be in the forms of an affidavit, include a detailed explanation of why the MBE was rejected and any supporting documentation the Offeror wishes to be considered by the City. In the event of a bona fide dispute concerning quotes, the Offeror will provide for confidential *in-camera* access to an inspection of any relevant documentation by City personnel.

(Please use additional sheets, if necessary, and attach.)

Company Name	Telephone	Contact Person	Scope of Work	Reason for Rejection

ADDITIONAL INFORMATION:

Please provide additional information you feel will further explain your good and honest efforts to obtain MBE participation on this project.

The Offeror further agrees to provide, directly to the City upon request, complete and accurate information regarding actual work performed on this contract, the payment thereof and any proposed changes to the original arrangements submitted with this bid. The Offeror also agrees to allow an audit and/or examination of any books, records and files held by their company that will substantiate the actual work performed on this contract, by an authorized officer or employee of the City.

Any intentional and/or knowing misrepresentation of facts will be grounds for terminating the contract or debarment from City work for a period of not less than three (3) years and for initiating action under Federal, State or Local laws concerning false statements. Any failure to comply with this ordinance shall create a material breach of contract and may result in a determination of an irresponsible Offeror and debarment from participating in City work for a period of time not less than one (1) year.

The undersigned certifies that the information provided and the MBE(s) listed was/were contacted in good faith. It is understood that any MBE(s) listed in Attachment 1C will be contacted and the reasons for not using them will be verified by the City's Office of Business Diversity.

Authorized Signature

Printed Signature

Title

Contact Name and Title (if different)

Company Name

Phone Number

Fax Number

Address

Email Address

City/State/Zip

Date

Office of Business Diversity
Email: mwbeoffice@fortworthtexas.gov
Phone: (817) 392-2674



CITY OF FORT WORTH
MBE Joint Venture Eligibility Form
All questions must be answered; use "N/A" if not applicable.

Name of City project: _____

A joint venture form must be completed on each project

RFP/Bid/Project Number: _____

1. Joint venture information:

Joint Venture Name:			
Joint Venture Address: <i>(If applicable)</i>			
Telephone:	Facsimile:	E-mail	
Cellular:			
Identify the firms that comprise the joint venture: <i>Please attach extra sheets if additional space is required to provide detailed explanations of work to be performed by each firm comprising the joint venture</i>			
MBE firm name:		Non-MBE firm name:	
Business Address:		Business Address:	
City, State, Zip:		City, State, Zip:	
Telephone	E-mail	Telephone	E-mail
Cellular	Facsimile	Cellular	Facsimile
Certification Status:			
Name of Certifying Agency:			

2. Scope of work performed by the Joint Venture:

Describe the scope of work of the MBE:	Describe the scope of work of the non-MBE:

3. What is the percentage of MBE participation on this joint venture that you wish to be counted toward meeting the project goal? _____

4. Attach a copy of the joint venture agreement.

5. List components of ownership of joint venture: *(Do not complete if this information is described in joint venture agreement)*

Profit and loss sharing:	
Capital contributions, including equipment:	
Other applicable ownership interests:	

6. Identify by name, race, sex and firm those individuals (with titles) who are responsible for the day-to-day management and decision making of the joint venture:

Financial decisions (to include Account Payable and Receivable):	
Management decisions: a. Estimating	
b. Marketing and Sales	
c. Hiring and Firing of management personnel	
d. Purchasing of major equipment and/or supplies	
Supervision of field operations	

The City's Office of Business Diversity will review your joint venture submission and will have final approval of the MBE percentage applied toward the goal for the project listed on this form.

NOTE:

From and after the date of project award, if any of the participants, the individually defined scopes of work or the dollar amounts/percentages change from the originally approved information, then the participants must inform the City's Office of Business Diversity immediately for approval. Any unjustified change or deletion shall be a material breach of contract and may result in debarment in accord with the procedures outlined in the City's BDE Ordinance.

AFFIDAVIT

The undersigned affirms that the foregoing statements are true and correct and include all material information necessary to identify and explain the terms and operation of the joint venture. Furthermore, the undersigned shall agree to provide to the joint venture the stated scope of work, decision-making responsibilities and payments herein.

The City also reserves the right to request any additional information deemed necessary to determine if the joint venture is eligible. Failure to cooperate and/or provide requested information within the time specified is grounds for termination of the eligibility process.

The undersigned agree to permit audits, interviews with owners and examination of the books, records and files of the joint venture by any authorized representatives of the City of Fort Worth. Failure to comply with this provision shall result in the termination of any contract, which may be awarded under the provisions of this joint venture's eligibility and may initiate action under Federal, State and/or Local laws/ordinances concerning false statements or willful misrepresentation of facts.

Name of MBE firm	Name of non-MBE firm
Printed Name of Owner	Printed Name of Owner
Signature of Owner	Signature of Owner
Printed Name of Owner	Printed Name of Owner
Signature of Owner	Signature of Owner
Title	Title
Date	Date

Notarization

State of _____ County of _____

On this _____ day of _____, 20 ____, before me appeared

_____ and _____

to me personally known and who, being duly sworn, did execute the foregoing affidavit and did state that they were properly authorized to execute this affidavit and did so as their free act and deed.

Notary Public _____
Print Name

Notary Public _____
Signature

Commission Expires _____

(seal)

SECTION 00 52 43

AGREEMENT

THIS AGREEMENT, authorized on _____ is made by and between the Developer, Carter Park East Land, LLC, 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:

WATER, STORM DRAIN, PAVING, AND STREET LIGHT IMPROVEMENTS TO SERVE OAK GROVE ROAD.

CPN 102802

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 of the Standard City Conditions of the Construction Contract for Developer Awarded Projects. The Contractor also recognizes the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by the Developer if the Work is not completed on time. Accordingly, instead of requiring any such proof , Contractor agrees that as liquidated damages for delay (but not as a penalty), Contractor shall pay Developer One Thousand Two Hundred Fifty Dollars and Zero Cents, (\$1,250.00) for each day that expires after the time specified in Paragraph 3.2 for Final Acceptance until the City issues the Final Letter of Acceptance.

Article 4. CONTRACT PRICE

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

Article 5. CONTRACT DOCUMENTS

5.1 CONTENTS:

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

1. This Agreement.
2. Attachments to this Agreement:
 - a. Bid Form (As provided by Developer)
 - 1) Proposal Form (DAP Version)
 - 2) Prequalification Statement
 - 3) State and Federal documents (*project specific*)
 - b. Insurance ACORD Form(s)
 - c. Payment Bond (DAP Version)
 - d. Performance Bond (DAP Version)
 - e. Maintenance Bond (DAP Version)
 - f. Power of Attorney for the Bonds
 - g. Worker's Compensation Affidavit
 - h. MBE and/or SBE Commitment Form (If required)
3. Standard City General Conditions of the Construction Contract for Developer Awarded Projects.
4. Supplementary Conditions.
5. Specifications specifically made a part of the Contract Documents by attachment or, if not attached, as incorporated by reference and described in the Table of Contents of the Project's Contract Documents.
6. Drawings.
7. Addenda.
8. Documentation submitted by Contractor prior to Notice of Award.
9. The following which may be delivered or issued after the Effective Date of the Agreement and, if issued, become an incorporated part of the Contract Documents:
 - a. Notice to Proceed.
 - b. Field Orders.
 - c. Change Orders.
 - d. Letter of Final Acceptance.

Article 6. INDEMNIFICATION

6.1 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.

6.2 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.

Article 7. MISCELLANEOUS

7.1 Terms.

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

7.2 Assignment of Contract.

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

7.3 Successors and Assigns.

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

7.4 Severability.

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

7.5 Governing Law and Venue.

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

117

118 7.6 Authority to Sign.

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

121

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

124

125 This Agreement is effective as of the last date signed by the Parties (“Effective Date”).

126

Contractor:

Developer:

By: _____

By: _____

(Signature)

(Signature)

(Printed Name)

(Printed Name)

Title:

Title:

Company Name:

Company name:

Address:

Address:

City/State/Zip:

City/State/Zip:

Date

Date

127

SECTION 00 61 25
CERTIFICATE OF INSURANCE

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END OF SECTION

SECTION 00 62 13
PERFORMANCE 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, Carter
Park East Land, LLC, 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 _____ ;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 *WATER, STORM DRAINAGE, PAVING,*
AND STREET LIGHT IMPROVEMENTS TO SERVE OAK GROVE ROAD.

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

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

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

IN WITNESS WHEREOF, the Principal and the Surety have SIGNED and SEALED this instrument by duly authorized agents and officers on this the _____ day of _____, 20____.

ATTEST:

(Principal) Secretary

Witness as to Principal

Witness as to Surety

PRINCIPAL:

BY: _____
Signature

Name and Title

Address: _____

SURETY:

BY: _____
Signature

Name and Title

Address: _____

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 62 14
PAYMENT BOND

THE STATE OF TEXAS
COUNTY OF TARRANT

§
§
§

KNOW ALL BY THESE PRESENTS:

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, Carter Park East Land, LLC, 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 _____;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 *WATER, STORM DRAIN, PAVING,*
AND STREET LIGHT IMPROVEMENTS TO SERVE OAK GROVE ROAD.

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

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

IN WITNESS WHEREOF, the Principal and Surety have each SIGNED and SEALED this instrument by duly authorized agents and officers on this the _____ day of _____, 20____.

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: _____

Note: If signed by an officer of the Surety, there must be on file a certified extract from the bylaws 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.

END OF SECTION

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, Carter
Park East Land, LLC, 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 _____; 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 *WATER, STORM DRAINAGE,*
PAVING, AND STREET LIGHT IMPROVEMENTS TO SERVE OAK GROVE ROAD; and

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

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

4
5 **NOW THEREFORE**, the condition of this obligation is such that if Principal shall
6 remedy any defective Work, for which timely notice was provided by Developer or City, to a
7 completion satisfactory to the City, then this obligation shall become null and void; otherwise to
8 remain in full force and effect.

9
10 **PROVIDED, HOWEVER**, if Principal shall fail so to repair or reconstruct any timely
11 noticed defective Work, it is agreed that the Developer or City may cause any and all such
12 defective Work to be repaired and/or reconstructed with all associated costs thereof being borne
13 by the Principal and the Surety under this Maintenance Bond; and

14
15 **PROVIDED FURTHER**, that if any legal action be filed on this Bond, venue shall lie in
16 Tarrant County, Texas or the United States District Court for the Northern District of Texas, Fort
17 Worth Division; and

18
19 **PROVIDED FURTHER**, that this obligation shall be continuous in nature and
20 successive recoveries may be had hereon for successive breaches.

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____.

PRINCIPAL:

BY: _____
Signature

ATTEST:

(Principal) Secretary

Name and Title

Address: _____

Witness as to Principal

SURETY:

BY: _____
Signature

ATTEST:

(Surety) Secretary

Name and Title

Address: _____

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 Standard City Conditions that are modified or supplemented remain in full force and effect as so modified or supplemented. All provisions 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 :

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

PARCEL NUMBER	OWNER	TARGET DATE OF POSSESSION
06256392	7550 OAK GROVE (FORT WORTH) OWNER LLC	01/01/2021
06256392	7550 OAK GROVE (FORT WORTH) OWNER LLC	01/01/2021
06256392	7550 OAK GROVE (FORT WORTH) OWNER LLC	01/01/2021
07280688	AGGELLAN COMMERCIAL REIT US LP	01/01/2021

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

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 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 *November 2020*:

EXPECTED OWNER	UTILITY AND LOCATION	TARGET DATE OF ADJUSTMENT
Oncor	Power Pole	05/17/2020
AT&T	Duct Bank	05/17/2020

The Contractor understands and agrees that the dates listed above are estimates only, are not guaranteed, and do not bind the 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. 95205149, dated November 20, 2020, prepared by Terracon Consultants, Inc.

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: **Kimley-Horn and Associates, Inc**
- (3) Other: Carter Park East Land, 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:

\$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 3 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:

Street Use Permit for Traffic Control

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:
Tree Removal 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 *November 2020*:

Outstanding Permits and/or Licenses to Be Acquired

OWNER	PERMIT OR LICENSE AND LOCATION	TARGET DATE OF POSSESSION
Tree Removal Permit	Oak Grove Road Right-Of-Way south of Joel East Road and north of Enon Avenue	02/01/2020

SC-7.02., “Coordination”

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

Vendor	Scope of Work	Coordination Authority
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”

Terracon Consultants, Inc.

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.

SECTION 01 11 00
SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Summary of Work to be performed in accordance with the Contract Documents

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. Work Covered by Contract Documents

1. Work is to include furnishing all labor, materials, and equipment, and performing all Work necessary for this construction project as detailed in the Drawings and Specifications.

B. Subsidiary Work

1. Any and all Work specifically governed by documentary requirements for the project, such as conditions imposed by the Drawings or Contract Documents in which no specific item for bid has been provided for in the Proposal and the item is not a typical unit bid item included on the standard bid item list, then the item shall be considered as a subsidiary item of Work, the cost of which shall be included in the price bid in the Proposal for various bid items.

C. Use of Premises

1. Coordinate uses of premises under direction of the City.
2. Assume full responsibility for protection and safekeeping of materials and equipment stored on the Site.
3. Use and occupy only portions of the public streets and alleys, or other public places or other rights-of-way as provided for in the ordinances of the City, as shown in the Contract Documents, or as may be specifically authorized in writing by the City.
 - a. A reasonable amount of tools, materials, and equipment for construction purposes may be stored in such space, but no more than is necessary to avoid delay in the construction operations.

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

D. Work within Easements

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

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

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?

Submitted By: _____ For Use by City

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.

Signature _____ as noted	____ Recommended	Recommended Address
		By
Firm _____	____ Not recommended	Received late
_____	_____	_____
_____	Remarks _____	
_____	Date _____	
_____	Telephone _____	_____

For Use by City:

_Approved _ Rejected City _____ Date _____

SECTION 01 31 19

PRECONSTRUCTION MEETING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Provisions for the preconstruction meeting to be held prior to the start of Work to clarify construction contract administration procedures
- 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. Coordination
 - 1. Attend preconstruction meeting.
 - 2. Representatives of Contractor, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
 - 3. Meeting administered by City may be tape recorded.
 - a. If recorded, tapes will be used to prepare minutes and retained by City for future reference.
- B. Preconstruction Meeting
 - 1. A preconstruction meeting will be held within 14 days after the delivery of the distribution package to the City.
 - a. The meeting will be scheduled and administered by the City.
 - 2. The Project Representative will preside at the meeting, prepare the notes of the meeting and distribute copies of same to all participants who so request by fully completing the attendance form to be circulated at the beginning of the meeting.
 - 3. Attendance shall include:
 - a. Developer and Consultant
 - b. Contractor's project manager
 - c. Contractor's superintendent

- d. Any subcontractor or supplier representatives whom the Contractor may desire to invite or the City may request
 - e. Other City representatives
 - f. Others as appropriate
4. Preliminary Agenda may include:
- a. Introduction of Project Personnel
 - b. General Description of Project
 - c. Status of right-of-way, utility clearances, easements or other pertinent permits
 - d. Contractor's work plan and schedule
 - e. Contract Time
 - f. Notice to Proceed
 - g. Construction Staking
 - h. Progress Payments
 - i. Extra Work and Change Order Procedures
 - j. Field Orders
 - k. Disposal Site Letter for Waste Material
 - l. Insurance Renewals
 - m. Payroll Certification
 - n. Material Certifications and Quality Control Testing
 - o. Public Safety and Convenience
 - p. Documentation of Pre-Construction Conditions
 - q. Weekend Work Notification
 - r. Legal Holidays
 - s. Trench Safety Plans
 - t. Confined Space Entry Standards
 - u. Coordination with the City's representative for operations of existing water systems
 - v. Storm Water Pollution Prevention Plan
 - w. Coordination with other Contractors
 - x. Early Warning System
 - y. Contractor Evaluation
 - z. Special Conditions applicable to the project
 - aa. Damages Claims bb. Submittal Procedures cc. Substitution Procedures dd. Correspondence Routing ee. Record Drawings ff. Temporary construction facilities gg. MBE/SBE procedures hh. Final Acceptance ii. Final Payment jj. Questions or Comments

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

SECTION 01 31 20 PROJECT MEETINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Provisions for project meetings throughout the construction period to enable orderly review of the progress of the Work and to provide for systematic discussion of potential problems
- B. Deviations 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. 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. Coordination
 - 1. Schedule, attend and administer as specified, periodic progress meetings, and specially called meetings throughout progress of the Work.
 - 2. Representatives of Contractor, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
 - 3. Meetings administered by **Developer** may be tape recorded.
 - a. If recorded, tapes will be used to prepare minutes and retained by **Developer** for future reference.
 - 4. Meetings, in addition to those specified in this Section, may be held when requested by the City, Engineer, Contractor, or Developer.
- B. Progress Meetings
 - 1. **Formal project coordination meetings will be held periodically. Meetings will be scheduled and administered by Project Representative. Project Representative shall be Developer or Developer's Engineer.**
 - 2. Additional progress meetings to discuss specific topics will be conducted on an asneeded basis. Such additional meetings shall include, but not be limited to:
 - a. Coordinating shutdowns
 - b. Installation of piping and equipment
 - c. Coordination between other construction projects

- d. Resolution of construction issues
- e. Equipment approval
- 3. The Project Representative will preside at progress meetings, prepare the notes of the meeting and distribute copies of the same to all participants who so request by fully completing the attendance form to be circulated at the beginning of each meeting.
- 4. Attendance shall include:
 - a. Contractor's project manager
 - b. Contractor's superintendent
 - c. Any subcontractor or supplier representatives whom the Contractor may desire to invite or the City may request
 - d. Engineer's representatives
 - e. City's representatives
 - f. Others, as requested by the Project Representative
- 5. Preliminary Agenda may include:
 - a. Review of Work progress since previous meeting
 - b. Field observations, problems, conflicts
 - c. Items which impede construction schedule
 - d. Review of off-site fabrication, delivery schedules
 - e. Review of construction interfacing and sequencing requirements with other construction contracts
 - f. Corrective measures and procedures to regain projected schedule
 - g. Revisions to construction schedule
 - h. Progress, schedule, during succeeding Work period
 - i. Coordination of schedules
 - j. Review submittal schedules
 - k. Maintenance of quality standards
 - l. Pending changes and substitutions
 - m. Review proposed changes for:
 - 1) Effect on construction schedule and on completion date
 - 2) Effect on other contracts of the Project
 - n. Review Record Documents
 - o. Review monthly pay request
 - p. Review status of Requests for Information
- 6. Meeting Schedule
 - a. Progress meetings will be held periodically as determined by the Project Representative.
 - 1) Additional meetings may be held at the request of the:
 - a) City
 - b) Engineer
 - c) Contractor
- 7. Meeting Location
 - a. The Developer will establish a meeting location.
 - 1) To the extent practicable, meetings will be held at the Site.

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

SECTION 01 32 16 CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. General requirements for the preparation, submittal, updating, status reporting and management of the Construction Progress Schedule
 - 2. Specific requirements are presented in the City of Fort Worth Schedule Guidance Document
- 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

- A. Definitions
 - 1. Schedule Tiers
 - a. **Tier 1** - No schedule submittal required by contract. Small, brief duration projects
 - b. **Tier 2** - No schedule submittal required by contract, but will require some milestone dates. Small, brief duration projects
 - c. **Tier 3** - Schedule submittal required by contract as described in the Specification and herein. Majority of City projects, including all bond program projects
 - d. **Tier 4** - Schedule submittal required by contract as described in the Specification and herein. Large and/or complex projects with long durations
 - 1) Examples: large water pump station project and associated pipeline with interconnection to another governmental entity
 - e. **Tier 5** - Schedule submittal required by contract as described in the Specification and herein. Large and/or very complex projects with long durations, high public visibility
 - 1) Examples might include a water or wastewater treatment plant
 - 2. **Baseline Schedule** - Initial schedule submitted before work begins that will serve as the baseline for measuring progress and departures from the schedule.

3. **Progress Schedule** - Monthly submittal of a progress schedule documenting progress on the project and any changes anticipated.
4. **Schedule Narrative** - Concise narrative of the schedule including schedule changes, expected delays, key schedule issues, critical path items, etc

B. Reference Standards

1. City of Fort Worth Schedule Guidance Document

1.4 ADMINISTRATIVE REQUIREMENTS

A. Baseline Schedule

1. General

- a. Prepare a cost-loaded baseline Schedule using approved software and the Critical Path Method (CPM) as required in the City of Fort Worth Schedule Guidance Document.
- b. Review the draft cost-loaded baseline Schedule with the City to demonstrate understanding of the work to be performed and known issues and constraints related to the schedule.
- c. Designate an authorized representative (Project Scheduler) responsible for developing and updating the schedule and preparing reports.

B. Progress Schedule

1. Update the progress Schedule monthly as required in the City of Fort Worth Schedule Guidance Document.
2. Prepare the Schedule Narrative to accompany the monthly progress Schedule.
3. Change Orders
 - a. Incorporate approved change orders, resulting in a change of contract time, in the baseline Schedule in accordance with City of Fort Worth Schedule Guidance Document.

C. Responsibility for Schedule Compliance

1. Whenever it becomes apparent from the current progress Schedule and CPM Status Report that delays to the critical path have resulted and the Contract completion date will not be met, or when so directed by the City, make some or all of the following actions at no additional cost to the City
 - a. Submit a Recovery Plan to the City for approval revised baseline Schedule outlining:
 - 1) A written statement of the steps intended to take to remove or arrest the delay to the critical path in the approved schedule
 - 2) Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work and return current Schedule to meet projected baseline completion dates
 - 3) Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate the backlog of work
 - 4) Reschedule activities to achieve maximum practical concurrency of accomplishment of activities, and comply with the revised schedule

2. If no written statement of the steps intended to take is submitted when so requested by the City, the City may direct the Contractor to increase the level of effort in manpower (trades), equipment and work schedule (overtime, weekend and holiday work, etc.) to be employed by the Contractor in order to remove or arrest the delay to the critical path in the approved schedule.
 - a. No additional cost for such work will be considered.
- D. The Contract completion time will be adjusted only for causes specified in this Contract.
 - a. Requests for an extension of any Contract completion date must be supplemented with the following:
 - 1) Furnish justification and supporting evidence as the City may deem necessary to determine whether the requested extension of time is entitled under the provisions of this Contract.
 - a) The City will, after receipt of such justification and supporting evidence, make findings of fact and will advise the Contractor, in writing thereof.
 - 2) If the City finds that the requested extension of time is entitled, the City's determination as to the total number of days allowed for the extensions shall be based upon the approved total baseline schedule and on all data relevant to the extension.
 - a) Such data shall be included in the next updating of the Progress schedule.
 - b) Actual delays in activities which, according to the Baseline schedule, do not affect any Contract completion date shown by the critical path in the network will not be the basis for a change therein.
2. Submit each request for change in Contract completion date to the City within 30 days after the beginning of the delay for which a time extension is requested but before the date of final payment under this Contract.
 - a. No time extension will be granted for requests which are not submitted within the foregoing time limit.
 - b. From time to time, it may be necessary for the Contract schedule or completion time to be adjusted by the City to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the City or its representatives, and other unforeseeable conditions which may indicate schedule adjustments or completion time extensions.
 - 1) Under such conditions, the City will direct the Contractor to reschedule the work or Contract completion time to reflect the changed conditions and the Contractor shall revise his schedule accordingly.
 - a) No additional compensation will be made to the Contractor for such schedule changes except for unavoidable overall contract time extensions beyond the actual completion of unaffected work, in which case the Contractor shall take all possible action to minimize any time extension and any additional cost to the City.
 - b) Available float time in the Baseline schedule may be used by the City as well as by the Contractor.
3. Float or slack time is defined as the amount of time between the earliest start date and the latest start date or between the earliest finish date and the latest finish date of a chain of activities on the Baseline Schedule.

- a. Float or slack time is not for the exclusive use or benefit of either the Contractor or the City.
- b. Proceed with work according to early start dates, and the City shall have the right to reserve and apportion float time according to the needs of the project.
- c. Acknowledge and agree that actual delays, affecting paths of activities containing float time, will not have any effect upon contract completion times, providing that the actual delay does not exceed the float time associated with those activities.

E. Coordinating Schedule with Other Contract Schedules

1. Where work is to be performed under this Contract concurrently with or contingent upon work performed on the same facilities or area under other contracts, the Baseline Schedule shall be coordinated with the schedules of the other contracts.
 - a. Obtain the schedules of the other appropriate contracts from the City for the preparation and updating of Baseline schedule and make the required changes in his schedule when indicated by changes in corresponding schedules.
2. In case of interference between the operations of different contractors, the City will determine the work priority of each contractor and the sequence of work necessary to expedite the completion of the entire Project.
 - a. In such cases, the decision of the City shall be accepted as final.
 - b. The temporary delay of any work due to such circumstances shall not be considered as justification for claims for additional compensation.

1.5 SUBMITTALS

A. Baseline Schedule

1. Submit Schedule in native file format and pdf format as required in the City of Fort Worth Schedule Guidance Document. a. Native file format includes:
 - 1) Primavera (P6 or Primavera Contractor)
2. Submit draft baseline Schedule to City prior to the pre-construction meeting and bring in hard copy to the meeting for review and discussion.

B. Progress Schedule

1. Submit progress Schedule in native file format and pdf format as required in the City of Fort Worth Schedule Guidance Document.
2. Submit progress Schedule monthly no later than the last day of the month.

C. Schedule Narrative

1. Submit the schedule narrative in pdf format as required in the City of Fort Worth Schedule Guidance Document.
2. Submit schedule narrative monthly no later than the last day of the month.

D. Submittal Process

1. The City administers and manages schedules through Buzzsaw.
2. Contractor shall submit documents as required in the City of Fort Worth Schedule Guidance Document.
3. Once the project has been completed and Final Acceptance has been issued by the City, no further progress schedules are required.

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. The person preparing and revising the construction Progress Schedule shall be experienced in the preparation of schedules of similar complexity.
- B. Schedule and supporting documents addressed in this Specification shall be prepared, updated and revised to accurately reflect the performance of the construction.
- C. Contractor is responsible for the quality of all submittals in this section meeting the standard of care for the construction industry for similar projects.

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

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. 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. 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

SECTION 01 33 00

DAP SUBMITTALS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. General methods and requirements of submissions applicable to the following
Work-related submittals: a. Shop Drawings
b. Product Data (including Standard Product List submittals)
c. Samples
d. Mock Ups
- 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. Coordination
 - 1. Notify the City in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents.
 - 2. Coordination of Submittal Times
 - a. Prepare, prioritize and transmit each submittal sufficiently in advance of performing the related Work or other applicable activities, or within the time specified in the individual Work Sections, of the Specifications.
 - b. Contractor is responsible such that the installation will not be delayed by processing times including, but not limited to:
 - a) Disapproval and resubmittal (if required)
 - b) Coordination with other submittals
 - c) Testing
 - d) Purchasing
 - e) Fabrication
 - f) Delivery
 - g) Similar sequenced activities

- c. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the Work.
- d. Make submittals promptly in accordance with approved schedule, and in such sequence as to cause no delay in the Work or in the work of any other contractor.

B. Submittal Numbering

- 1. When submitting shop drawings or samples, utilize a 9-character submittal crossreference identification numbering system in the following manner:
 - a. Use the first 6 digits of the applicable Specification Section Number.
 - b. For the next 2 digits number use numbers 01-99 to sequentially number each initial separate item or drawing submitted under each specific Section number.
 - c. Last use a letter, A-Z, indicating the resubmission of the same drawing (i.e. A=2nd submission, B=3rd submission, C=4th submission, etc.). A typical submittal number would be as follows:

03 30 00-08-B

- 1) 03 30 00 is the Specification Section for Concrete
- 2) 08 is the eighth initial submittal under this Specification Section
- 3) B is the third submission (second resubmission) of that particular shop drawing

C. Contractor Certification

- 1. Review shop drawings, product data and samples, including those by subcontractors, prior to submission to determine and verify the following:
 - a. Field measurements
 - b. Field construction criteria
 - c. Catalog numbers and similar data
 - d. Conformance with the Contract Documents
- 2. Provide each shop drawing, sample and product data submitted by the Contractor with a Certification Statement affixed including:
 - a. The Contractor's Company name
 - b. Signature of submittal reviewer
 - c. Certification Statement
 - 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."

D. Submittal Format

- 1. Fold shop drawings larger than 8 ½ inches x 11 inches to 8 ½ inches x 11 inches.
- 2. Bind shop drawings and product data sheets together.
- 3. Order
 - a. Cover Sheet
 - 1) Description of Packet
 - 2) Contractor Certification

- b. List of items / Table of Contents
- c. Product Data /Shop Drawings/Samples /Calculations

E. Submittal Content

1. The date of submission and the dates of any previous submissions
2. The Project title and number
3. Contractor identification
4. The names of:
 - a. Contractor
 - b. Supplier
 - c. Manufacturer
5. Identification of the product, with the Specification Section number, page and paragraph(s)
6. Field dimensions, clearly identified as such
7. Relation to adjacent or critical features of the Work or materials
8. Applicable standards, such as ASTM or Federal Specification numbers
9. Identification by highlighting of deviations from Contract Documents
10. Identification by highlighting of revisions on resubmittals
11. An 8-inch x 3-inch blank space for Contractor and City stamps

F. Shop Drawings

1. As specified in individual Work Sections includes, but is not necessarily limited to:
 - a. Custom-prepared data such as fabrication and erection/installation (working) drawings
 - b. Scheduled information
 - c. Setting diagrams
 - d. Actual shopwork manufacturing instructions
 - e. Custom templates
 - f. Special wiring diagrams
 - g. Coordination drawings
 - h. Individual system or equipment inspection and test reports including:
 - 1) Performance curves and certifications
 - i. As applicable to the Work
2. Details
 - a. Relation of the various parts to the main members and lines of the structure
 - b. Where correct fabrication of the Work depends upon field measurements
 - 1) Provide such measurements and note on the drawings prior to submitting for approval.

G. Product Data

1. For submittals of product data for products included on the City's Standard Product List, clearly identify each item selected for use on the Project.
2. For submittals of product data for products not included on the City's Standard Product List, submittal data may include, but is not necessarily limited to:
 - a. Standard prepared data for manufactured products (sometimes referred to as catalog data)

- 1) Such as the manufacturer's product specification and installation instructions
- 2) Availability of colors and patterns
- 3) Manufacturer's printed statements of compliances and applicability
- 4) Roughing-in diagrams and templates
- 5) Catalog cuts
- 6) Product photographs
- 7) Standard wiring diagrams
- 8) Printed performance curves and operational-range diagrams
- 9) Production or quality control inspection and test reports and certifications
- 10) Mill reports
- 11) Product operating and maintenance instructions and recommended spare-parts listing and printed product warranties
- 12) As applicable to the Work

H. Samples

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

J. Submittal Distribution

1. Electronic Distribution
 - a. Confirm development of Project directory for electronic submittals to be uploaded to City's Buzzsaw site, or another external FTP site approved by the City.
 - b. Shop Drawings
 - 1) Upload submittal to designated project directory and notify appropriate City representatives via email of submittal posting.
 - 2) Hard Copies
 - a) 3 copies for all submittals

- b) If Contractor requires more than 1 hard copy of Shop Drawings returned, Contractor shall submit more than the number of copies listed above.
 - c. Product Data
 - 1) Upload submittal to designated project directory and notify appropriate City representatives via email of submittal posting.
 - 2) Hard Copies
 - a) 3 copies for all submittals
 - d. Samples
 - 1) Distributed to the Project Representative
- 2. Hard Copy Distribution (if required in lieu of electronic distribution)
 - a. Shop Drawings
 - 1) Distributed to the City
 - 2) Copies
 - a) 8 copies for mechanical submittals
 - b) 7 copies for all other submittals
 - c) If Contractor requires more than 3 copies of Shop Drawings returned, Contractor shall submit more than the number of copies listed above.
 - b. Product Data
 - 1) Distributed to the City
 - 2) Copies
 - a) 4 copies
 - c. Samples
 - 1) Distributed to the Project Representative
 - 2) Copies
 - a) Submit the number stated in the respective Specification Sections.
- 3. Distribute reproductions of approved shop drawings and copies of approved product data and samples, where required, to the job site file and elsewhere as directed by the City.
 - a. Provide number of copies as directed by the City but not exceeding the number previously specified.

K. Submittal Review

- 1. The review of shop drawings, data and samples will be for general conformance with the design concept and Contract Documents. This is not to be construed as:
 - a. Permitting any departure from the Contract requirements
 - b. Relieving the Contractor of responsibility for any errors, including details, dimensions, and materials
 - c. Approving departures from details furnished by the City, except as otherwise provided herein
- 2. The review and approval of shop drawings, samples or product data by the City does not relieve the Contractor from his/her responsibility with regard to the fulfillment of the terms of the Contract.
 - a. All risks of error and omission are assumed by the Contractor, and the City will have no responsibility therefore.

3. The Contractor remains responsible for details and accuracy, for coordinating the Work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly and for performing Work in a safe manner.
4. If the shop drawings, data or samples as submitted describe variations and show a departure from the Contract requirements which City finds to be in the interest of the City and to be so minor as not to involve a change in Contract Price or time for performance, the City may return the reviewed drawings without noting an exception.
5. Submittals will be returned to the Contractor under 1 of the following codes:
 - a. Code 1
 - 1) "NO EXCEPTIONS TAKEN" is assigned when there are no notations or comments on the submittal.
 - a) When returned under this code the Contractor may release the equipment and/or material for manufacture.
 - b. Code 2
 - 1) "EXCEPTIONS NOTED". This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor.
 - a) The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.
 - c. Code 3
 - 1) "EXCEPTIONS NOTED/RESUBMIT". This combination of codes is assigned when notations and comments are extensive enough to require a resubmittal of the package.
 - a) The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.
 - b) This resubmittal is to address all comments, omissions and non-conforming items that were noted.
 - c) Resubmittal is to be received by the City within 15 Calendar Days of the date of the City's transmittal requiring the resubmittal.
 - d. Code 4
 - 1) "NOT APPROVED" is assigned when the submittal does not meet the intent of the Contract Documents.
 - a) The Contractor must resubmit the entire package revised to bring the submittal into conformance.
 - b) It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.
6. Resubmittals
 - a. Handled in the same manner as first submittals
 - 1) Corrections other than requested by the City
 - 2) Marked with revision triangle or other similar method
 - a) At Contractor's risk if not marked
 - b. Submittals for each item will be reviewed no more than twice at the City's expense.

- 1) All subsequent reviews will be performed at times convenient to the City and at the Contractor's expense, based on the City's or City Representative's then prevailing rates.
 - 2) Provide Contractor reimbursement to the City within 30 Calendar Days for all such fees invoiced by the City.
 - c. The need for more than 1 resubmission or any other delay in obtaining City's review of submittals, will not entitle the Contractor to an extension of Contract Time.
7. Partial Submittals
- a. City reserves the right to not review submittals deemed partial, at the City's discretion.
 - b. Submittals deemed by the City to be not complete will be returned to the Contractor, and will be considered "Not Approved" until resubmitted.
 - c. The City may at its option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.
8. If the Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, then written notice must be provided thereof to the Developer at least 7 Calendar Days prior to release for manufacture.
9. When the shop drawings have been completed to the satisfaction of the City, the Contractor may carry out the construction in accordance therewith and no further changes therein except upon written instructions from the City.
10. Each submittal, appropriately coded, will be returned within 30 Calendar Days following receipt of submittal by the City.
- L. Mock ups
1. Mock Up units as specified in individual Sections, include, but are not necessarily limited to, complete units of the standard of acceptance for that type of Work to be used on the Project. Remove at the completion of the Work or when directed.
- M. Qualifications
1. If specifically required in other Sections of these Specifications, submit a P.E. Certification for each item required.
- N. Request for Information (RFI)
1. Contractor Request for additional information
 - a. Clarification or interpretation of the contract documents
 - b. When the Contractor believes there is a conflict between Contract Documents
 - c. When the Contractor believes there is a conflict between the Drawings and Specifications
 - 1) Identify the conflict and request clarification
 2. Sufficient information shall be attached to permit a written response without further information.

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
12/20/2012	D. Johnson	1.4.K.8. Working Days modified to Calendar Days

SECTION 01 35 13
SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. The procedures for special project circumstances that includes, but is not limited to:
 - a. Coordination with the Texas Department of Transportation
 - b. Work near High Voltage Lines
 - c. Confined Space Entry Program
 - d. Air Pollution Watch Days
 - e. Use of Explosives, Drop Weight, Etc.
 - f. Water Department Notification
 - g. Public Notification Prior to Beginning Construction
 - h. Coordination with United States Army Corps of Engineers
 - i. Coordination within Railroad permits areas
 - j. Dust Control
 - k. Employee Parking

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
3. Section 33 12 25 – Connection to Existing Water Mains

1.2 REFERENCES

A. Reference Standards

1. Reference standards cited in this Specification refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification, unless a date is specifically cited.
2. Health and Safety Code, Title 9. Safety, Subtitle A. Public Safety, Chapter 752. High Voltage Overhead Lines.
3. North Central Texas Council of Governments (NCTCOG) – Clean Construction Specification

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination with the Texas Department of Transportation

1. When work in the right-of-way which is under the jurisdiction of the Texas Department of Transportation (TxDOT):
 - a. Notify the Texas Department of Transportation prior to commencing any work therein in accordance with the provisions of the permit

- b. All work performed in the TxDOT right-of-way shall be performed in compliance with and subject to approval from the Texas Department of Transportation

B. Work near High Voltage Lines

1. Regulatory Requirements

- a. All Work near High Voltage Lines (more than 600 volts measured between conductors or between a conductor and the ground) shall be in accordance with Health and Safety Code, Title 9, Subtitle A, Chapter 752.

2. Warning sign

- a. Provide sign of sufficient size meeting all OSHA requirements.

3. Equipment operating within 10 feet of high voltage lines will require the following safety features

- a. Insulating cage-type of guard about the boom or arm
- b. Insulator links on the lift hook connections for back hoes or dippers
- c. Equipment must meet the safety requirements as set forth by OSHA and the safety requirements of the owner of the high voltage lines

4. Work within 6 feet of high voltage electric lines

- a. Notification shall be given to:

1) The power company (example: ONCOR)

- a) Maintain an accurate log of all such calls to power company and record action taken in each case.

- b. Coordination with power company

1) After notification coordinate with the power company to:

- a) Erect temporary mechanical barriers, de-energize the lines, or raise or lower the lines

- c. No personnel may work within 6 feet of a high voltage line before the above requirements have been met.

C. Confined Space Entry Program

1. Provide and follow approved Confined Space Entry Program in accordance with OSHA requirements.

2. Confined Spaces include:

- a. Manholes
- b. All other confined spaces in accordance with OSHA's Permit Required for Confined Spaces

D. Use of Explosives, Drop Weight, Etc.

1. When Contract Documents permit on the project the following will apply:

- 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. In the event it becomes necessary to temporarily shut down water service to residents or businesses during construction, prepare and deliver a notice or flyer of the pending interruption to the front door of each affected resident.
2. Prepared notice as follows:
 - a. The notification or flyer shall be posted 24 hours prior to the temporary interruption.
 - b. Prepare flyer on the contractor's letterhead and include the following information:
 - 1) Name of the project
 - 2) City Project Number

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

- 1 **1.4 SUBMITTALS [NOT USED]**
- 2 **1.5 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**
- 3 **1.6 CLOSEOUT SUBMITTALS [NOT USED]**
- 4 **1.7 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**
- 5 **1.8 QUALITY ASSURANCE [NOT USED]**
- 6 **1.9 DELIVERY, STORAGE, AND HANDLING [NOT USED]**
- 7 **1.10 FIELD [SITE] CONDITIONS [NOT USED]**
- 8 **1.11 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
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.

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

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

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.

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
- d. Contractor Payment for Construction Water
 - 1) Obtain construction water meter from City for payment as billed by City's established rates.
- 3. Electricity and Lighting
 - a. Provide and pay for electric powered service as required for Work, including testing of Work.
 - 1) Provide power for lighting, operation of equipment, or other use.
 - b. Electric power service includes temporary power service or generator to maintain operations during scheduled shutdown.
- 4. Telephone
 - a. Provide emergency telephone service at Site for use by Contractor personnel and others performing work or furnishing services at Site.
- 5. Temporary Heat and Ventilation
 - a. Provide temporary heat as necessary for protection or completion of Work.
 - b. Provide temporary heat and ventilation to assure safe working conditions.
- B. Sanitary Facilities
 - 1. Provide and maintain sanitary facilities for persons on Site.
 - a. Comply with regulations of State and local departments of health.
 - 2. Enforce use of sanitary facilities by construction personnel at job site.
 - a. Enclose and anchor sanitary facilities.
 - b. No discharge will be allowed from these facilities.
 - c. Collect and store sewage and waste so as not to cause nuisance or health problem.
 - d. Haul sewage and waste off-site at no less than weekly intervals and properly dispose in accordance with applicable regulation.
 - 3. Locate facilities near Work Site and keep clean and maintained throughout Project.
 - 4. Remove facilities at completion of Project
- C. Storage Sheds and Buildings
 - 1. Provide adequately ventilated, watertight, weatherproof storage facilities with floor above ground level for materials and equipment susceptible to weather damage.
 - 2. Storage of materials not susceptible to weather damage may be on blocks off ground.
 - 3. Store materials in a neat and orderly manner.
 - a. Place materials and equipment to permit easy access for identification, inspection and inventory.
 - 4. Equip building with lockable doors and lighting, and provide electrical service for equipment space heaters and heating or ventilation as necessary to provide storage environments acceptable to specified manufacturers.
 - 5. Fill and grade site for temporary structures to provide drainage away from temporary and existing buildings.
 - 6. Remove building from site prior to Final Acceptance.

D. Temporary Fencing

1. Provide and maintain for the duration or construction when required in contract documents

E. Dust Control

1. Contractor is responsible for maintaining dust control through the duration of the project.
 - a. Contractor remains on-call at all times
 - b. Must respond in a timely manner

F. Temporary Protection of Construction

1. Contractor or subcontractors are responsible for protecting Work from damage due to weather.

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]

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 INSTALLATION

A. Temporary Facilities

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

3.5 [REPAIR] / [RESTORATION]

3.6 RE-INSTALLATION

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

A. Temporary Facilities

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

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

SECTION 01 55 26
STREET USE PERMIT AND MODIFICATIONS TO TRAFFIC CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Administrative procedures for:
 - a. Street Use Permit
 - b. Modification of approved traffic control
 - c. Removal of Street Signs
- 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
 - 3. Section 34 71 13 – Traffic Control

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

- A. Reference Standards
 - 1. Reference standards cited in this specification refer to the current reference standard published at the time of the latest revision date logged at the end of this specification, unless a date is specifically cited.
 - 2. Texas Manual on Uniform Traffic Control Devices (TMUTCD).

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Traffic Control
 - 1. General
 - a. When traffic control plans are included in the Drawings, provide Traffic Control in accordance with Drawings and Section 34 71 13.
 - b. When traffic control plans are not included in the Drawings, prepare traffic control plans in accordance with Section 34 71 13 and submit to City for review.
 - 1) Allow minimum 10 working days for review of proposed Traffic Control.
- B. Street Use Permit
 - 1. Prior to installation of Traffic Control, a City Street Use Permit is required.

- a. To obtain Street Use Permit, submit Traffic Control Plans to City Transportation and Public Works Department.
 - 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

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

SECTION 01 57 13

STORM WATER POLLUTION PREVENTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Procedures for Storm Water Pollution Prevention Plans
- 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
 - 3. Section 31 25 00 – Erosion and Sediment Control

1.2 PRICE AND PAYMENT PROCEDURES

- A. Measurement and Payment
 - 1. Construction Activities resulting in less than 1 acre of disturbance
 - a. Work associated with this Item is considered subsidiary to the various Items bid. No separate payment will be allowed for this Item.
 - 2. Construction Activities resulting in greater than 1 acre of disturbance
 - a. Measurement and Payment shall be in accordance with Section 31 25 00.

1.3 REFERENCES

- A. Abbreviations and Acronyms
 - 1. Notice of Intent: NOI
 - 2. Notice of Termination: NOT
 - 3. Storm Water Pollution Prevention Plan: SWPPP
 - 4. Texas Commission on Environmental Quality: TCEQ
 - 5. Notice of Change: NOC
- A. Reference Standards
 - 1. Reference standards cited in this Specification refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification, unless a date is specifically cited.
 - 2. Integrated Storm Management (iSWM) Technical Manual for Construction Controls

1.4 ADMINISTRATIVE REQUIREMENTS

- A. General

1. Contractor is responsible for resolution and payment of any fines issued associated with compliance to Stormwater Pollution Prevention Plan.
- B. Construction Activities resulting in:
 1. Less than 1 acre of disturbance
 - a. Provide erosion and sediment control in accordance with Section 31 25 00 and Drawings.
 2. 1 to less than 5 acres of disturbance
 - a. Texas Pollutant Discharge Elimination System (TPDES) General Construction Permit is required
 - b. Complete SWPPP in accordance with TCEQ requirements
 - 1) TCEQ Small Construction Site Notice Required under general permit TXR150000
 - a) Sign and post at job site
 - b) Prior to Preconstruction Meeting, send 1 copy to City Department of Transportation and Public Works, Environmental Division, (817) 3926088.
 - 2) Provide erosion and sediment control in accordance with:
 - a) Section 31 25 00
 - b) The Drawings
 - c) TXR150000 General Permit
 - d) SWPPP
 - e) TCEQ requirements
 3. 5 acres or more of Disturbance
 - a. Texas Pollutant Discharge Elimination System (TPDES) General Construction Permit is required
 - b. Complete SWPPP in accordance with TCEQ requirements
 - 1) Prepare a TCEQ NOI form and submit to TCEQ along with required fee
 - a) Sign and post at job site
 - b) Send copy to City Department of Transportation and Public Works, Environmental Division, (817) 392-6088.
 - 2) TCEQ Notice of Change required if making changes or updates to NOI 3) Provide erosion and sediment control in accordance with:
 - a) Section 31 25 00
 - b) The Drawings
 - c) TXR150000 General Permit
 - d) SWPPP
 - e) TCEQ requirements
 - 4) Once the project has been completed and all the closeout requirements of TCEQ have been met a TCEQ Notice of Termination can be submitted.
 - a) Send copy to City Department of Transportation and Public Works, Environmental Division, (817) 392-6088.

1.5 SUBMITTALS

A. SWPPP

1. Submit in accordance with Section 01 33 00, except as stated herein.

a. Prior to the Preconstruction Meeting, submit a draft copy of SWPPP to the City as follows:

1) 1 copy to the City Project Manager

a) City Project Manager will forward to the City Department of Transportation and Public Works, Environmental Division for review

B. Modified SWPPP

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

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

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]

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.

SECTION 01 66 00
PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Scheduling of product delivery
 - 2. Packaging of products for delivery
 - 3. Protection of products against damage from:
 - a. Handling
 - b. Exposure to elements or harsh environments
- 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 [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 AND HANDLING

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

4. Deliver products or equipment in manufacturer's original unbroken cartons or other containers designed and constructed to protect the contents from physical or environmental damage.
5. Clearly and fully mark and identify as to manufacturer, item and installation location.
6. Provide manufacturer's instructions for storage and handling.

B. Handling Requirements

1. Handle products or equipment in accordance with these Contract Documents and manufacturer's recommendations and instructions.

C. Storage Requirements

1. Store materials in accordance with manufacturer's recommendations and requirements of these Specifications.
2. Make necessary provisions for safe storage of materials and equipment.
 - a. Place loose soil materials and materials to be incorporated into Work to prevent damage to any part of Work or existing facilities and to maintain free access at all times to all parts of Work and to utility service company installations in vicinity of Work.
3. Keep materials and equipment neatly and compactly stored in locations that will cause minimum inconvenience to other contractors, public travel, adjoining owners, tenants and occupants.
 - a. Arrange storage to provide easy access for inspection.
4. Restrict storage to areas available on construction site for storage of material and equipment as shown on Drawings, or approved by City's Project Representative.
5. Provide off-site storage and protection when on-site storage is not adequate.
 - a. Provide addresses of and access to off-site storage locations for inspection by City's Project Representative.
6. Do not use lawns, grass plots or other private property for storage purposes without written permission of owner or other person in possession or control of premises.
7. Store in manufacturers' unopened containers.
8. Neatly, safely and compactly stack materials delivered and stored along line of Work to avoid inconvenience and damage to property owners and general public and maintain at least 3 feet from fire hydrant.
9. Keep public and private driveways and street crossings open.
10. Repair or replace damaged lawns, sidewalks, streets or other improvements to satisfaction of City's Project Representative.
 - a. Total length which materials may be distributed along route of construction at one time is 1,000 linear feet, unless otherwise approved in writing by City's Project Representative.

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 ERECTION [NOT USED]

3.5 REPAIR / RESTORATION [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD _[or] SITE QUALITY CONTROL

A. Tests and Inspections

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

B. Non-Conforming Work

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

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

- A. Protect all products or equipment in accordance with manufacturer's written directions.
- B. Store products or equipment in location to avoid physical damage to items while in storage.
- C. Protect equipment from exposure to elements and keep thoroughly dry if required by the manufacturer.

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

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 Order
 - 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

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) Measurement for this Item shall be by lump sum.
 - b. Payment
 - 1) The work performed and the materials furnished in accordance with this Item shall be paid for at the lump sum price bid for “Construction Staking”.
 - 2) Payment for “Construction Staking” shall be made in partial payments prorated by work completed compared to total work included in the lump sum item.
 - c. The price bid shall include, but not be limited to the following:
 - 1) Verification of control data provided by **Developer’s Engineer.**
 - 2) Placement, maintenance and replacement of required stakes and markings in the field.
 - 3) Preparation and submittal of construction staking documentation in the form of “cut sheets” using the City’s standard template.
 - 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) Measurement for this Item shall be by lump sum.
 - b. Payment

- 1) The work performed and the materials furnished in accordance with this Item shall be paid for at the lump sum price bid for “As-Built Survey”.
- 2) Payment for “Construction Staking” shall be made in partial payments prorated by work completed compared to total work included in the lump sum item.
- c. The price bid shall include, but not be limited to the following:
 - 1) Field measurements and survey shots to identify location of completed facilities.
 - 2) Documentation and submittal of as-built survey data onto contractor redline plans and digital survey files.

1.3 REFERENCES

A. Definitions

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

B. Technical References

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

1.4 ADMINISTRATIVE REQUIREMENTS

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

1.5 SUBMITTALS

A. Submittals, if required, shall be in accordance with Section 01 33 00.

- B. All submittals shall be received and reviewed by the City prior to delivery of work.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

A. Field Quality Control Submittals

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

1.7 CLOSEOUT SUBMITTALS

B. As-built Redline Drawing Submittal

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

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE

A. Construction Staking

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

B. Construction Survey

1. Construction Survey will be performed by the Contractor.
2. Coordination
 - a. Contractor to verify that horizontal and vertical control data established in the design survey and required for construction survey is available and in place.
3. General

- a. Construction survey will be performed in order to construct the work shown on the Construction Drawings and specified in the Contract Documents.
- b. For construction methods other than open cut, the Contractor shall perform construction survey and verify control data including, but not limited to, the following:
 - 1) Verification that established benchmarks and control are accurate.
 - 2) Use of Benchmarks to furnish and maintain all reference lines and grades for tunneling.
 - 3) Use of line and grades to establish the location of the pipe.
 - 4) Submit to the City copies of field notes used to establish all lines and grades, if requested, and allow the City to check guidance system setup prior to beginning each tunneling drive.
 - 5) Provide access for the City, if requested, to verify the guidance system and 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 Developer's Engineer** 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 **Developer's Engineer** to confirm which features require asbuilt 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

A. Tolerances:

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

should be maintained. Underground and overhead utilities on planned profile, but not depending on gravity flow for performance, should not exceed 0.1 ft. tolerance.

- B. Surveying instruments shall be kept in close adjustment according to manufacturer's specifications or in compliance to standards. The City and Developer reserves the right to request a calibration report at any time and recommends regular maintenance schedule be performed by a certified technician every 6 months.
1. Field measurements of angles and distances shall be done in such fashion as to satisfy the closures and tolerances expressed in Part 3.1.A.
 2. Vertical locations shall be established from a pre-established benchmark and checked by closing to a different bench mark on the same datum.
 3. Construction survey field work shall correspond to the client's plans. Irregularities or conflicts found shall be reported promptly to the Developer's Engineer.
 4. Revisions, corrections and other pertinent data shall be logged for future reference.

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 APPLICATION

3.5 REPAIR / RESTORATION

- A. If the Contractor's work damages or destroys one or more of the control monuments/points set by the City, the monuments shall be adequately referenced for expedient restoration.
1. Notify City 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 may require at any time a survey "Field Check" of any monument or benchmarks that are set be verified by the City surveyors 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 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 and Developer's Engineer reserves the right to perform a Survey Check at any time deemed necessary.

2. Checks by City personnel and Developer's Engineer or 3rd 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



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

O:\Specs-Stds Governance Process\Temporary Spec Files\Capital Delivery\Cap Delivery Div 01\01 71

23.16.01_Attachment A_Survey Staking Standards.docx

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

CONTROL POINT NUMBER

DOUBLE SLASH MARK

COORDINATES

CP #1

|||

N=5000.00 E=5000.00

REBAR FLUSH WITH GROUND
OR 'X' ETCHED IN CONCRETE

POINT NUMBER

DOUBLE SLASH MARK

ELEVATION

1016

|||

EL. = 100.00'

V. Water Staking Standards

O:\Specs-Stds Governance Process\Temporary Spec Files\Capital Delivery\Cap Delivery Div 01\01 71
23.16.01_Attachment A_Survey Staking Standards.docx

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

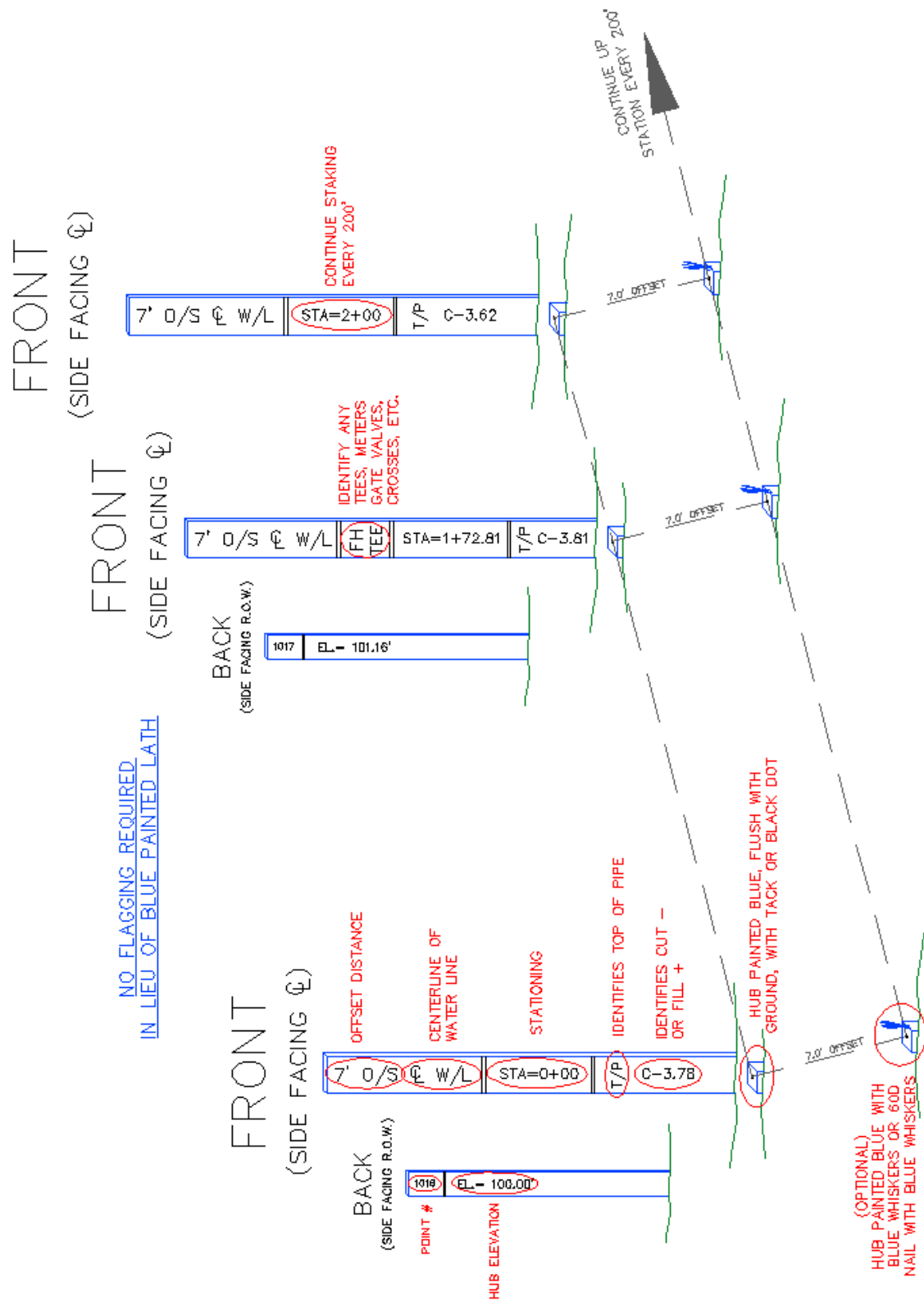
D. Fire Hydrants

- 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

O:\Specs-Stds Governance Process\Temporary Spec Files\Capital Delivery\Cap Delivery Div 01\01 71

23.16.01_Attachment A_Survey Staking Standards.docx

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*

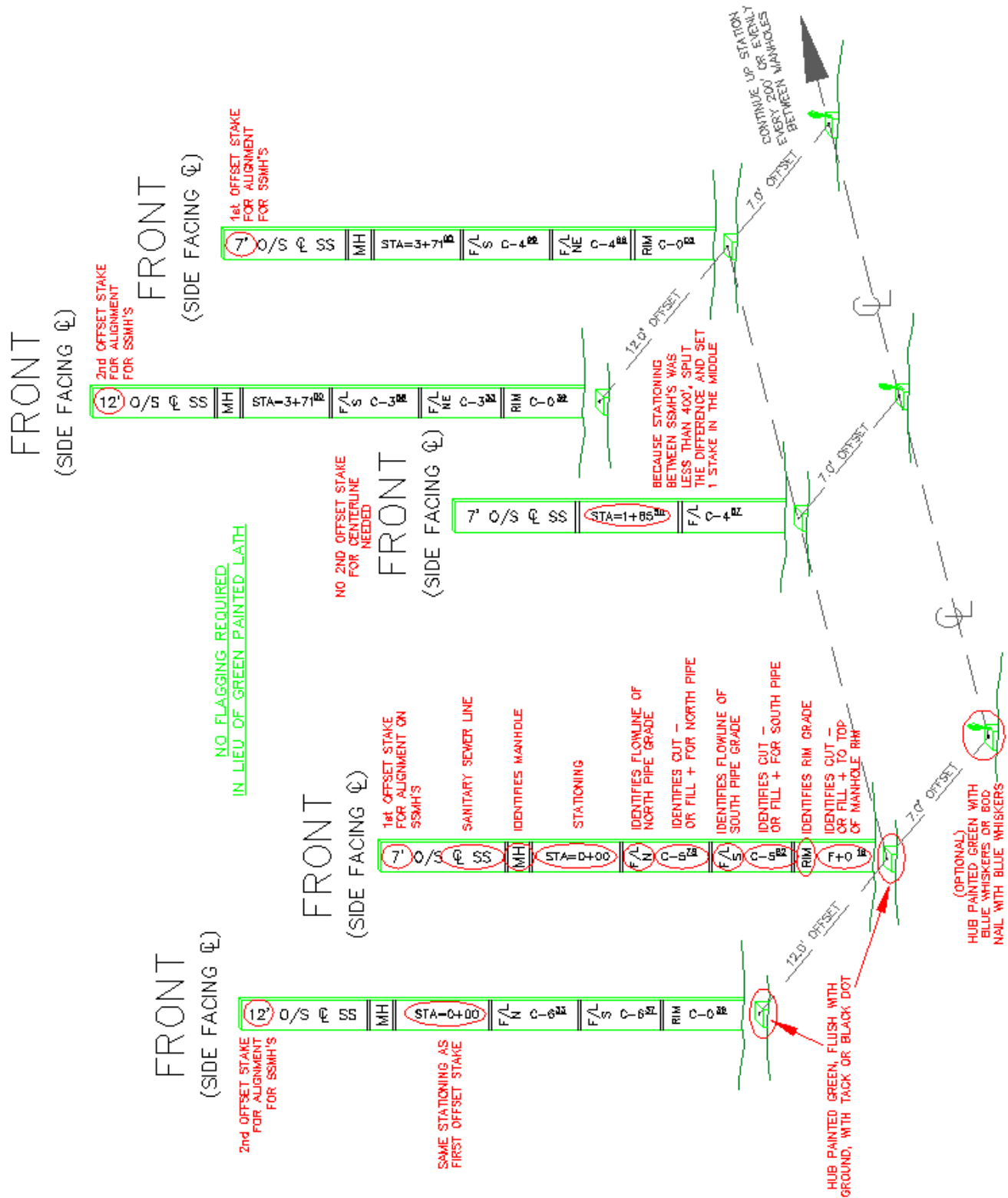
B. Centerline Staking – Curves

- 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

Example Sanitary Sewer Stakes



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

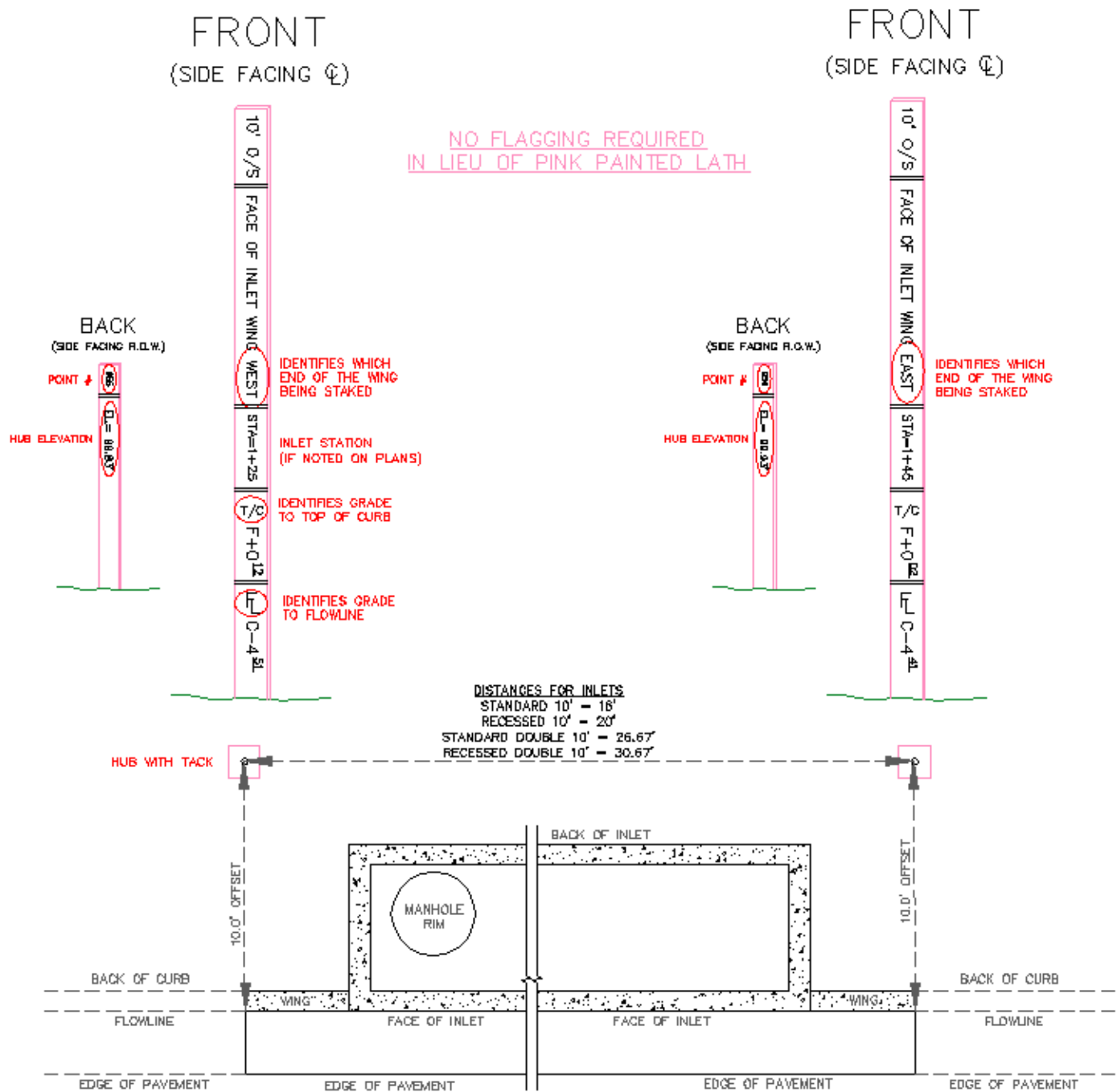
C. Storm Drain Inlets

- 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

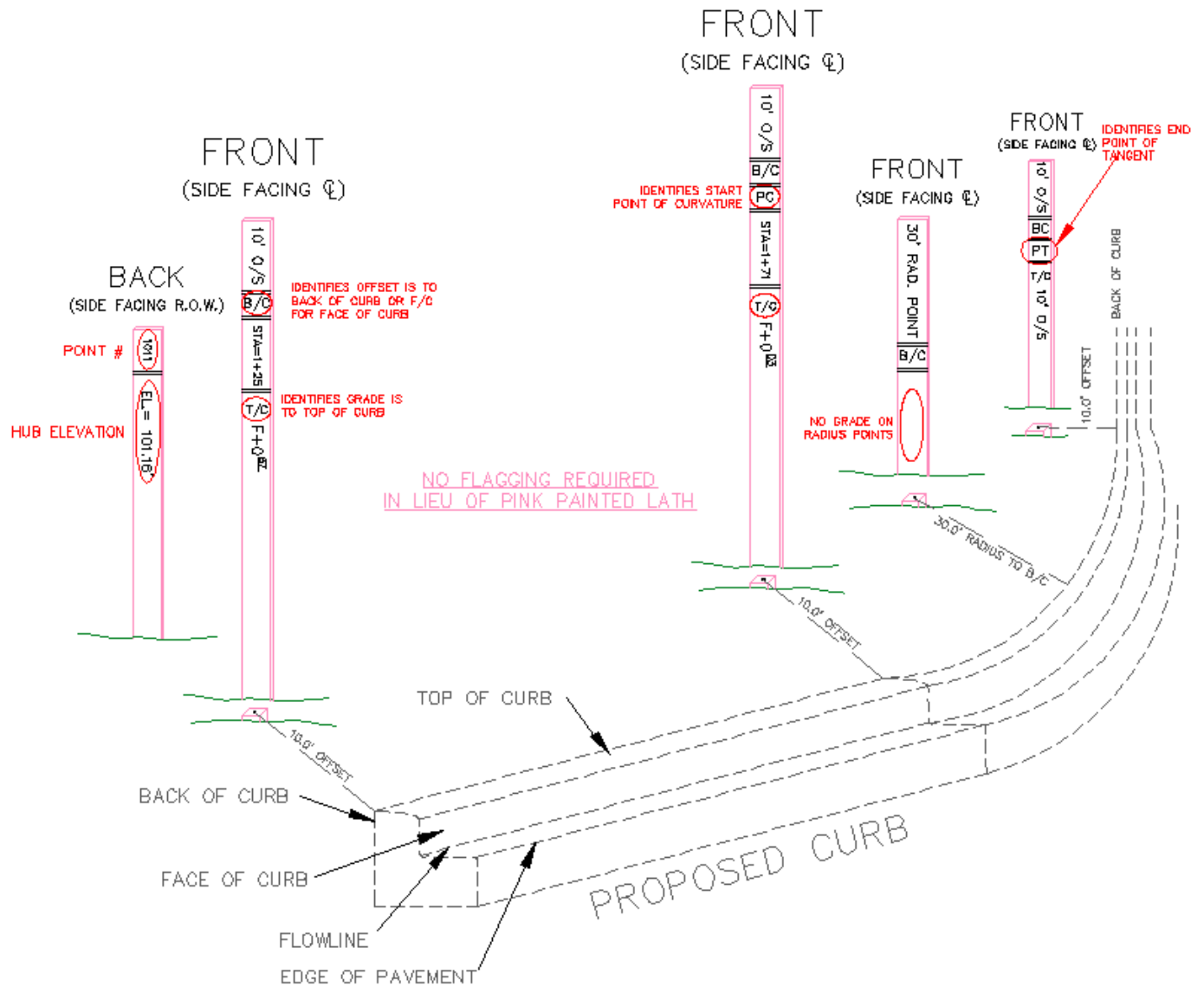
A. Centerline Staking – Straight Line Tangents

- 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

IX. Cut Sheets

- A. Date of field work
- B. Staking Method (GPS, total station)
- C. Project Name
- D. City Project Number (Example: C01234)
- E. Location (Address, cross streets, GPS coordinate)
- F. Survey company name
- G. Crew chief name

H. A blank template can be obtained from the survey superintendent (see item I above)

Standard City Cut Sheet

Date: _____

City Project
Number: _____
Project Name: _____

Staking Method: ☐ GPS ☐ TOTAL STATION ☐ OTHER

CONSULTANT/CONTRACTOR _____
SURVEY CREW INITIALS _____

ALL GRADES ARE TO FLOWLINE OR TOP OF CURB UNLESS OTHERWISE NOTED.

[illegible]

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

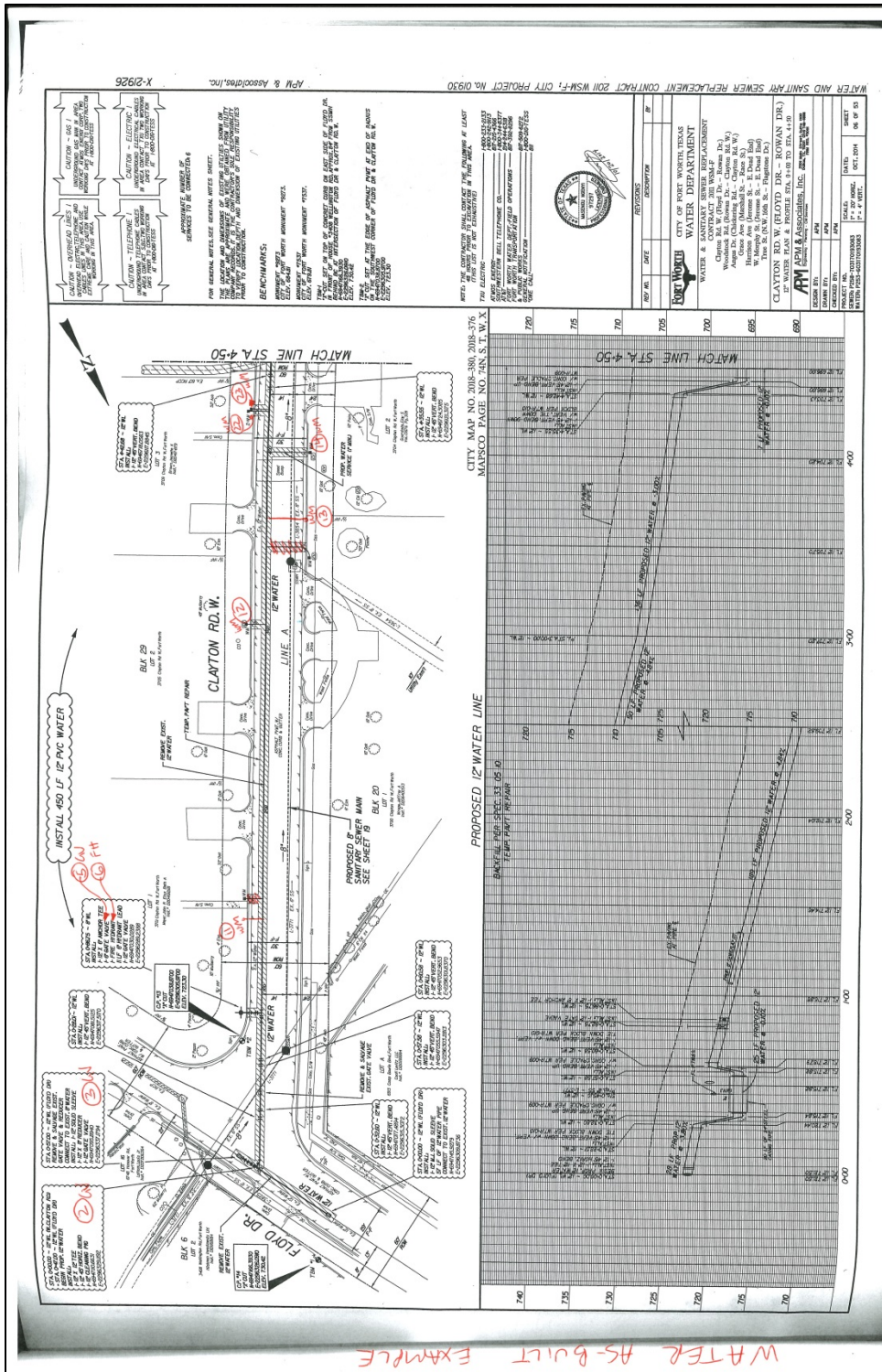
Casing pipe (each end)

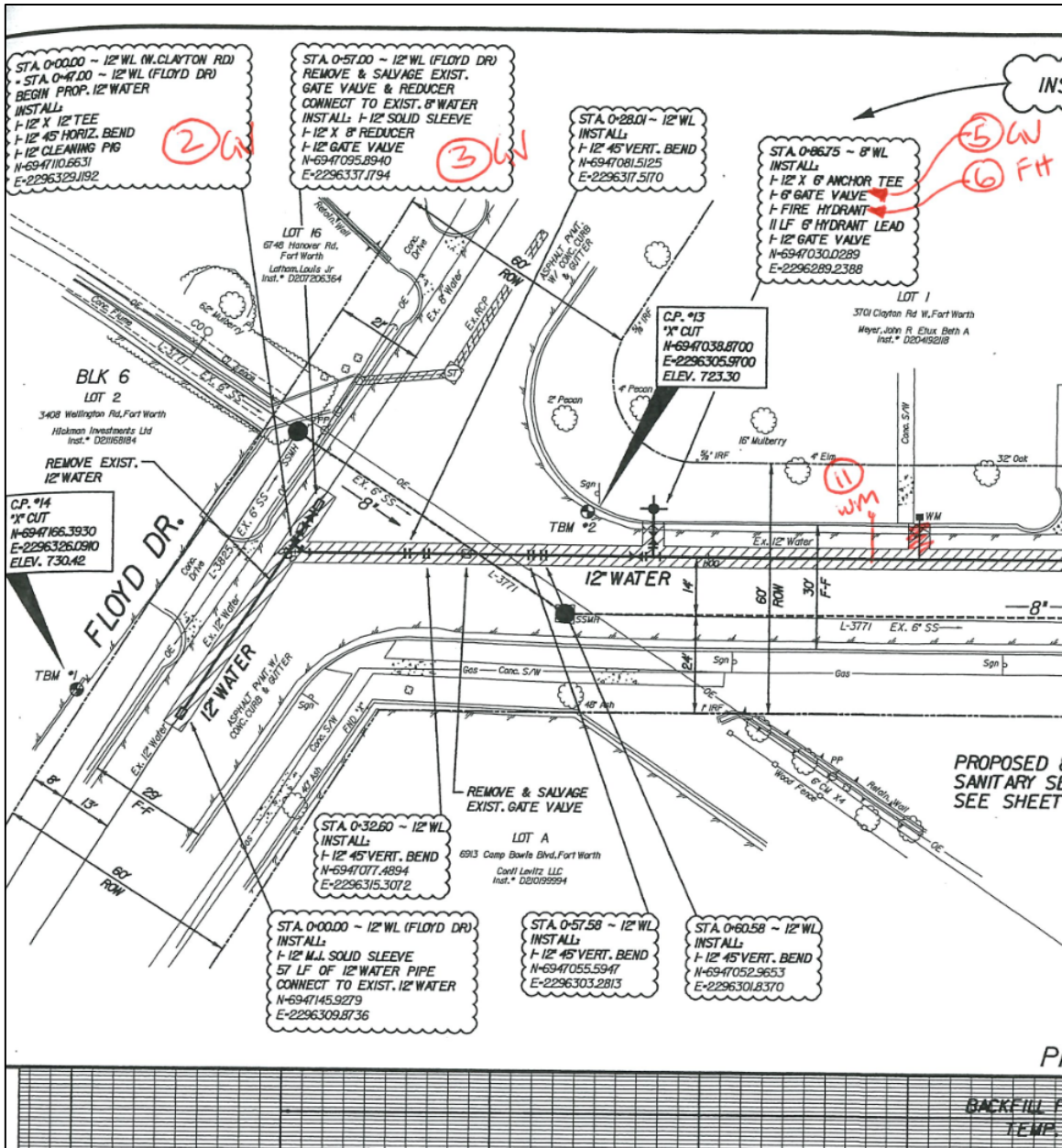
Inverts of pipes

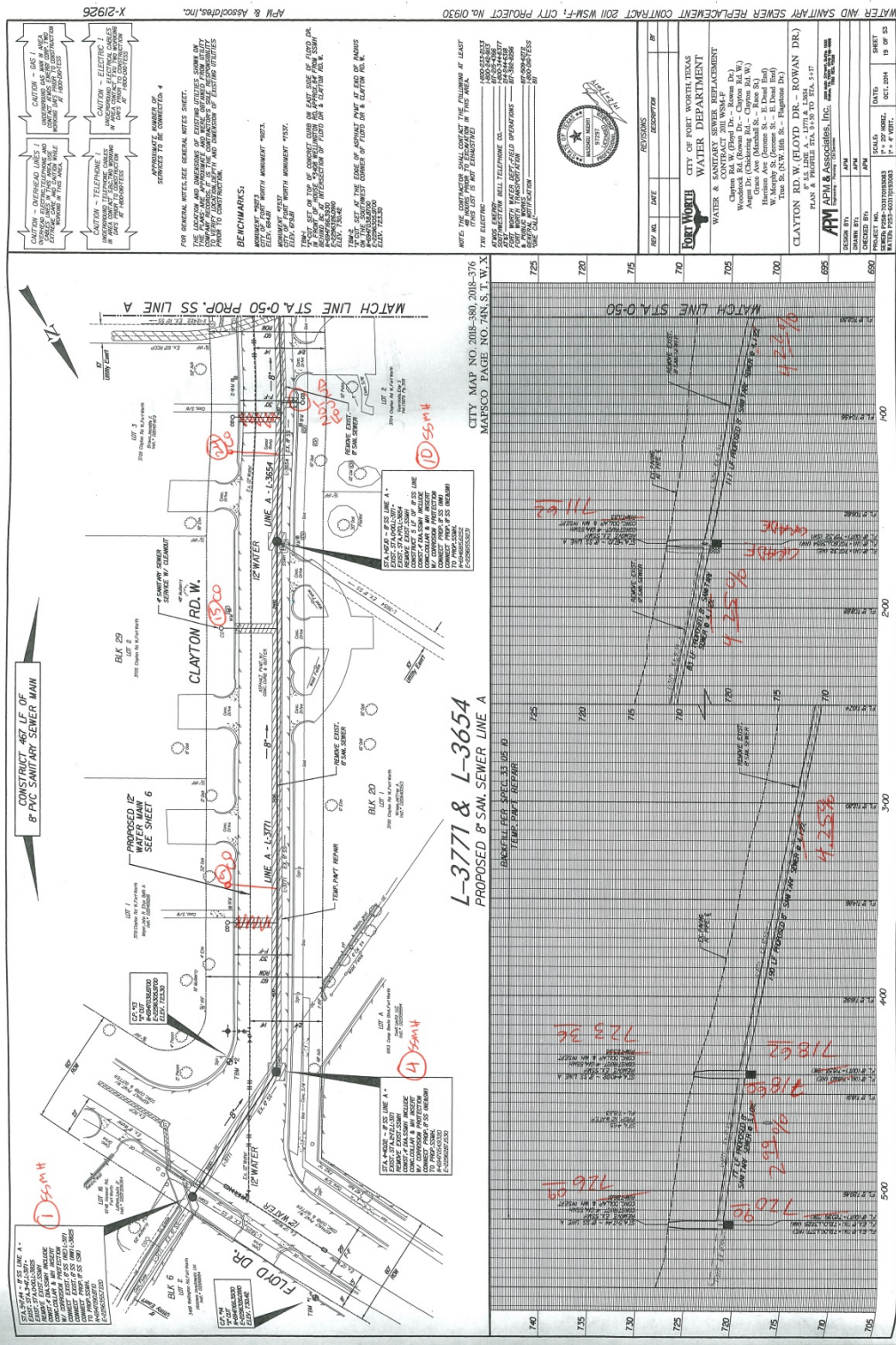
Turbo Meters

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
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	TX. N. CENTRAL ZONE 4202
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	VERTICAL COORDINATES IN N.A.D. 88
19	6945768.563	2295778.424		710.086 GV RIM	
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	OR CALIBRATED TO CONTROL POINTS LISTED IN THE PLANS FOR SURFACE
27	6945519.834	2295619.49		732.689 WM RIM	
28	6945417.879	2295580.27		740.521 WM RIM	
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	P.P.L.S. STAMPED 
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	
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	ANY SURVEYOR 12/30/10
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.

N31															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
	Valve Box			Water Main		Bends		Meter Boxes		Fire Hydrants					
	GPS(Grid) Coordinates, Texas NC 4202	Nut Elevation	172-292' intervals		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															
2															
3															
4															
5															
6															
7															
8															
9															
10															
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SECTION 01 74 23 CLEANING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Intermediate and final cleaning for Work not including special cleaning of closed systems specified elsewhere
- 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
 - 3. Section 32 92 13 – Hydro-Mulching, Seeding and Sodding

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. Scheduling
 - 1. Schedule cleaning operations so that dust and other contaminants disturbed by cleaning process will not fall on newly painted surfaces.
 - 2. Schedule final cleaning upon completion of Work and immediately prior to final inspection.

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 STORAGE, AND HANDLING

- A. Storage and Handling Requirements
 - 1. Store cleaning products and cleaning wastes in containers specifically designed for those materials.

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 MATERIALS

A. Cleaning Agents

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

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 APPLICATION [NOT USED]

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

A. General

1. Prevent accumulation of wastes that create hazardous conditions.
2. Conduct cleaning and disposal operations to comply with laws and safety orders of governing authorities.
3. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains or sewers.
4. Dispose of degradable debris at an approved solid waste disposal site.

5. Dispose of nondegradable debris at an approved solid waste disposal site or in an alternate manner approved by City and regulatory agencies.
6. Handle materials in a controlled manner with as few handlings as possible.
7. Thoroughly clean, sweep, wash and polish all Work and equipment associated with this project.
8. Remove all signs of temporary construction and activities incidental to construction of required permanent Work.
9. If project is not cleaned to the satisfaction of the City, the City reserves the right to have the cleaning completed at the expense of the Contractor.
10. Do not burn on-site.

B. Intermediate Cleaning during Construction

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

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

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

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

SECTION 01 77 19 CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. The procedure for closing out a contract
- 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. Guarantees, Bonds and Affidavits
 - 1. No application for final payment will be accepted until all guarantees, bonds, certificates, licenses and affidavits required for Work or equipment as specified are satisfactorily filed with the City.
- B. Release of Liens or Claims
 - 1. No application for final payment will be accepted until satisfactory evidence of release of liens has been submitted to the City.

1.5 SUBMITTALS

- A. Submit all required documentation to City's Project Representative.

1.6 INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 CLOSEOUT PROCEDURE

- A. Prior to requesting Final Inspection, submit:
 - 1. Project Record Documents in accordance with Section 01 78 39
 - 2. Operation and Maintenance Data, if required, in accordance with Section 01 78 23
- B. Prior to requesting Final Inspection, perform final cleaning in accordance with Section 01 74 23.
- C. Final Inspection
 - 1. After final cleaning, provide notice to the City Project Representative that the Work is completed.
 - a. The City will make an initial Final Inspection with the Contractor present.
 - b. Upon completion of this inspection, the City will notify the Contractor, in writing within 10 business days, of any particulars in which this inspection reveals that the Work is defective or incomplete.
 - 2. Upon receiving written notice from the City, immediately undertake the Work required to remedy deficiencies and complete the Work to the satisfaction of the City.
 - 3. Upon completion of Work associated with the items listed in the City's written notice, inform the City, that the required Work has been completed. Upon receipt of this notice, the City, in the presence of the Contractor, will make a subsequent Final Inspection of the project.
 - 4. Provide all special accessories required to place each item of equipment in full operation. These special accessory items include, but are not limited to:
 - a. Specified spare parts
 - b. Adequate oil and grease as required for the first lubrication of the equipment
 - c. Initial fill up of all chemical tanks and fuel tanks
 - d. Light bulbs
 - e. Fuses
 - f. Vault keys
 - g. Handwheels
 - h. Other expendable items as required for initial start-up and operation of all equipment
- D. Notice of Project Completion
 - 1. Once the City Project Representative finds the Work subsequent to Final Inspection to be satisfactory, the City will issue a Notice of Project Completion (Green Sheet).
- E. Supporting Documentation
 - 1. Coordinate with the City Project Representative to complete the following additional forms:
 - a. Final Payment Request
 - b. Statement of Contract Time

- c. Affidavit of Payment and Release of Liens
- d. Consent of Surety to Final Payment
- e. Pipe Report (if required)
- f. Contractor's Evaluation of City
- g. Performance Evaluation of Contractor

F. Letter of Final Acceptance

1. Upon review and acceptance of Notice of Project Completion and Supporting Documentation, in accordance with General Conditions, City will issue Letter of Final Acceptance and release the Final Payment Request for payment.

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

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.
 - f. 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.
 - g. 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

SECTION 31 23 16
UNCLASSIFIED EXCAVATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavate areas as shown on the Drawings or as directed. Removal of materials encountered to the lines, grades, and typical sections shown on the Drawings and removal from site. Excavations may include construction of
 - a. Roadways
 - b. Drainage Channels
 - c. Site Excavation
 - d. Excavation for Structures
 - e. Or any other operation involving the excavation of on-site materials

B. Deviations from this City of Fort Worth Standard Specification

1. Identified Measurement and Payment

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
3. Section 31 23 23 – Borrow
4. Section 31 24 00 – Embankments

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Excavation by Plan Quantity

a. Measurement

- 1) Measurement for this Item shall be by the cubic yard in its final position using the average end area method. Limits of measurement are shown on the Drawings.
- 2) When measured by the cubic yard in its final position, this is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 11.04 of the General Conditions. Additional measurements or calculations will be made if adjustments of quantities are required.

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 bid per cubic yard of “Unclassified Excavation by Plan”. No additional compensation will be allowed for rock or shrinkage/swell factors, as these are the Contractor’s responsibility.

c. The price bid shall include:

- 1) Excavation
- 2) Excavation Safety
- 3) Drying

- 4) Dust Control
- 5) Reworking or replacing the over excavated material in rock cuts
- 6) Hauling
- 7) Disposal of excess material not used elsewhere onsite
- 8) Scarification
- 9) Clean-up

1.3 REFERENCES [NOT USED]

A. Definitions

1. Unclassified Excavation – Without regard to materials, all excavations shall be considered unclassified and shall include all materials excavated. Any reference to Rock or other materials on the Drawings or in the specifications is solely for the City and the Contractor's information and is not to be taken as a classification of the excavation.

1.4 ADMINSTRATIVE REQUIREMENTS

- #### **A. The Contractor will provide the City with a Disposal Letter in accordance to Division 01.**

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

A. Excavation Safety

1. The Contractor shall be solely responsible for making all excavations in a safe manner.
2. All excavation and related sheeting and bracing shall comply with the requirements of OSHA excavation safety standards 29 CFR part 1926 and state requirements.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Storage

1. Within Existing Rights-of-Way (ROW)
 - a. Soil may be stored within existing ROW, easements or temporary construction easements, unless specifically disallowed in the Contract Documents.
 - b. Do not block drainage ways, inlets or driveways.
 - c. Provide erosion control in accordance with Section 31 25 00.
 - d. When the Work is performed in active traffic areas, store materials only in areas barricaded as provided in the traffic control plans.
 - e. In non-paved areas, do not store material on the root zone of any trees or in landscaped areas.
2. Designated Storage Areas
 - a. If the Contract Documents do not allow the storage of spoils within the ROW, easement or temporary construction easement, then secure and maintain an adequate storage location.

- b. Provide an affidavit that rights have been secured to store the materials on private property.
- c. Provide erosion control in accordance with Section 31 25 00.
- d. Do not block drainage ways.

1.11 FIELD CONDITIONS

A. Existing Conditions

- 1. Any data which has been or may be provided on subsurface conditions is not intended as a representation or warranty of accuracy or continuity between soils. It is expressly understood that neither the City nor the Engineer will be responsible for interpretations or conclusions drawn there from by the Contractor.
- 2. Data is made available for the convenience of the Contractor.

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS [NOT USED]

2.1 OWNER-FURNISHED [NOT USED]

2.2 PRODUCT TYPES AND MATERIALS

A. Materials

- 1. Unacceptable Fill Material
 - a. In-situ soils classified as ML, MH, PT, OL or OH in accordance with ASTM D2487

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 CONSTRUCTION

- A. Accept ownership of unsuitable or excess material and dispose of material off-site accordance with local, state, and federal regulations at locations.
- B. Excavations shall be performed in the dry, and kept free from water, snow and ice during construction with the exception of water that is applied for dust control.
- C. Separate Unacceptable Fill Material from other materials, remove from the Site and properly dispose according to disposal plan.
- D. Maintain drainage in the excavated area to avoid damage to the roadway sections and proposed or existing structures.
- E. Correct any damage to the subgrade caused by weather, at no additional cost to the City.
- F. Shape slopes to avoid loosening material below or outside the proposed grades. Remove and dispose of slides as directed.

G. Rock Cuts

1. Excavate to finish grades.
2. In the event of over excavation due to contractor error below the lines and grades established in the Drawings, use approved embankment material compacted in accordance with Section 31 24 00 to replace the over excavated at no additional cost to City.

H. Earth Cuts

1. Excavate to finish subgrade
2. In the event of over excavation due to contractor error below the lines and grades established in the Drawings, use approved embankment material compacted in accordance with Section 31 24 00 to replace the over excavated at no additional cost to City.
3. Manipulate and compact subgrade in accordance with Section 31 24 00.

3.5 REPAIR [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD QUALITY CONTROL

A. Subgrade Tolerances

1. Excavate to within 0.1 foot in all directions.
2. In areas of over excavation, Contractor provides fill material approved by the City at no expense to the City.

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
12/20/2012	D. Johnson	1.2 - Measurement and Payment Section modified; Blue Text added for clarification
1/28/13	D. Johnson	1.2 – Modified Bid Item names in payment section to differentiate between Payment Methods on bid list.

SECTION 31 23 23
BORROW

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Furnish, place and compact Borrow material for grading.

B. Deviations from this City of Fort Worth Standard Specification

1. Identified Measurement and Payment

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
3. Section 31 23 16 – Unclassified Excavation
4. Section 31 24 00 – Embankments

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Borrow by Plan Quantity

a. Measurement

- 1) Measurement for this Item shall be by the cubic yard in its final position using the average end area method. Limits of measurement are shown on the Drawings.
- 2) When measured by the cubic yard in its final position, this is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 11.04 of the General Conditions. Additional measurements or calculations will be made if adjustments of quantities are required.

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 bid per cubic yard of “Borrow by Plan” for the various borrow materials. No additional compensation will be allowed for rock or shrinkage/swell factors, as these are the Contractor’s responsibility.

c. The price bid shall include:

- 1) Transporting or hauling material
- 2) Furnishing, placing, compacting and finishing Borrow
- 3) Construction Water
- 4) Dust Control
- 5) Clean-up
- 6) Proof Rolling
- 7) Disposal of excess or waste material
- 8) Reworking or replacement of undercut material

1.3 REFERENCES

A. Reference Standards

1. Reference standards cited in this Specification refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification, unless a date is specifically cited.
2. ASTM Standards
 - a. ASTM D2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
 - b. ASTM D4318-10, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
 - c. ASTM D6913, Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis
 - d. ASTM D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³)

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]

1.5 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00.
- B. All submittals shall be approved by the City prior to construction.
- C. Submit laboratory tests reports for each soil borrow source used to supply general borrow and select fill materials.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

A. Shop Drawings

1. Stockpiled Borrow material
 - a. Provide a description of the storage of the delivered Borrow material only if the Contract Documents do not allow storage of materials in the right-of-way of the easement.

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE

- A. Borrow material shall be tested prior to delivery to the Site.
 1. Provide Proctor Test results, Gradation and Atterberg Limits for Borrow material from each source.
 - a. All testing listed above shall be performed in terms of ASTM D698, ASTM D6913 and ASTM D4318-10 respectively.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Delivery

1. Coordinate all deliveries and haul-off.

B. Storage

1. Within Existing Rights-of-Way (ROW)

- a. Borrow materials may be stored within existing ROW, easements or temporary construction easements, unless specifically disallowed in the Contract Documents.
 - b. Do not block drainage ways, inlets or driveways.
 - c. Provide erosion control in accordance with Section 31 25 00.
 - d. Store materials only in areas barricaded as provided in the traffic control plans.
 - e. In non-paved areas, do not store material on the root zone of any trees or in landscaped areas.
2. Designated Storage Areas
 - a. If the Contract Documents do not allow the storage of Borrow materials within the ROW, easement or temporary construction easement, then secure and maintain an adequate storage location.
 - b. Provide an affidavit that rights have been secured to store the materials on private property.
 - c. Provide erosion control in accordance with Section 31 25 00.
 - d. Do not block drainage ways.
 - e. Only materials used for 1 working day will be allowed to be stored in the work zone.

1.11 FIELD CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS

2.1 OWNER-FURNISHED [NOT USED]

2.2 PRODUCT TYPES AND MATERIALS

A. Borrow

1. Additional soil beneath pavements, roadways, foundations and other structures required to achieve the elevations shown on the Drawings.
2. Acceptable Fill Material
 - a. In-situ or imported soils classified as CL, CH, SC or GC in accordance with ASTM D2487
 - b. Free from deleterious materials, boulders over 6 inches in size and organics
 - c. Can be placed free from voids
 - d. Must have 20 percent passing the number 200 sieve
3. Blended Fill Material
 - a. In-situ soils classified as SP, SM, GP or GM in accordance with ASTM D2487
 - b. Blended with in-situ or imported Acceptable Fill material to meet the requirements of an Acceptable Fill Material
 - c. Free from deleterious materials, boulders over 6 inches in size and organics
 - d. Must have 20 percent passing the number 200 sieve
4. Select Fill
 - a. Classified as SC or CL in accordance with ASTM D2487
 - b. Liquid limit less than 35
 - c. Plasticity index between 8 and 20
5. Cement Stabilized Sand (CSS)

- a. Sand or silty sand
- b. Free of clay or plastic material
- c. Minimum of 4 percent cement content of Type I/II portland cement
- d. 100 to 150 psi compressive strength at 2 days in accordance with ASTM D1633, Method A
- e. 200 to 250 psi compressive strength at 23 days in accordance with ASTM D1633, Method A
- f. Mix in a stationary pug mill, weigh-batch or continuous mixing plant

2.3 ASSEMBLY OR FABRICATION TOLERANCES [NOT USED]

2.4 ACCESSORIES [NOT USED]

2.5 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 INSTALLATION

A. All Borrow placement shall be performed in accordance to Section 31 24 00.

3.5 REPAIR [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD QUALITY CONTROL

A. Field quality control will be performed in accordance to Section 31 24 00.

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
12/20/2012	D. Johnson	1.2 - Measurement and Payment Section modified; Blue Text added for clarification

1/28/13	D. Johnson	1.2 – Modified Bid Item names in payment section to differentiate between Payment Methods on bid list.

1

SECTION 31 24 00
EMBANKMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Transporting and placement of Acceptable Fill Material within the boundaries of the Site for construction of:
 - a. Roadways
 - b. Embankments
 - c. Drainage Channels
 - d. Site Grading
 - e. Any other operation involving the placement of on-site materials

B. Deviations from this City of Fort Worth Standard Specification

1. Identified Measurement and Payment

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
3. Section 31 23 16 – Unclassified Excavation
4. Section 31 23 23 – Borrow

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Embankments by Plan Quantity

a. Measurement

- 1) Measurement for this Item shall be by the cubic yard in its final position using the average end area method. Limits of measurement are shown on the Drawings.
- 2) When measured by the cubic yard in its final position, this is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 11.04 of the General Conditions. Additional measurements or calculations will be made if adjustments of quantities are required.

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 bid per cubic yard of “Embankment by Plan”. No additional compensation will be allowed for rock or shrinkage/swell factors, as these are the Contractor’s responsibility.

c. The price bid shall include:

- 1) Transporting or hauling material
- 2) Placing, compacting, and finishing Embankment
- 3) Construction Water
- 4) Dust Control

- 5) Clean-up
- 6) Proof Rolling
- 7) Disposal of excess materials
- 8) Reworking or replacement of undercut material

1.3 REFERENCES

A. Reference Standards

1. Reference standards cited in this specification refer to the current reference standard published at the time of the latest revision date logged at the end of this specification, unless a date is specifically cited.
2. ASTM Standards
 - a. ASTM D4318-10, Test Procedure for Determining Liquid Limit, Plastic Limit, and Plasticity Index of Soils
 - b. ASTM D4943-08, Standard Test Method for Shrinkage Factors of Soils by the Wax Method
 - c. ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort
 - d. ASTM D1557-09, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
 - e. ASTM D7382-08, Standard Test for Determination of Maximum Dry Unit Weight and Water Content Range for Effective Compaction of Granular Soils Using a Vibrating Hammer
 - f. ASTM D1556-07, Standard Test for Density and Unit Weight of Soil In-Place by the Sand Cone Method

1.4 ADMINISTRATIVE REQUIREMENTS

A. Sequencing

1. Sequence work such that calls of proctors are complete in accordance with ASTM D698 prior to commencement of construction activities.

1.5 SUBMITTALS

A. Submittals shall be in accordance with Section 01 33 00.

B. All submittals shall be approved by the City prior to construction

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

A. Shop Drawings

1. Stockpiled material
 - a. Provide a description of the storage of the excavated material only if the Contract Documents do not allow storage of materials in the right-of-way or the easement

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

A. Storage

1. Within Existing Rights-of-Way (ROW)

- a. Soil may be stored within existing ROW, easements or temporary construction easements, unless specifically disallowed in the Contract Documents.
- b. Do not block drainage ways, inlets or driveways.
- c. Provide erosion control in accordance with Section 31 25 00.
- d. When the Work is performed in active traffic areas, store materials only in areas barricaded as provided in the traffic control plans.
- e. In non-paved areas, do not store material on the root zone of any trees or in landscaped areas.

2. Designated Storage Areas

- a. If the Contract Documents do not allow the storage within the ROW, easement or temporary construction easement, then secure and maintain an adequate storage location.
- b. Provide an affidavit that rights have been secured to store the materials on private property.
- c. Provide erosion control in accordance with Section 31 25 00.
- d. Do not block drainage ways.

1.11 FIELD CONDITIONS

A. Existing Conditions

1. Any data which has been or may be provided on subsurface conditions is not intended as a representation or warranty of accuracy or continuity between soils. It is expressly understood that neither the City nor the Engineer will be responsible for interpretations or conclusions drawn there from by the Contractor.
2. Data is made available for the convenience of the Contractor.

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS

2.1 OWNER-FURNISHED [NOT USED]

2.2 PRODUCT TYPES AND MATERIALS

A. Materials

1. Acceptable Fill Material

- a. In-situ or imported soils classified as CL, CH, SC or GC in accordance with ASTM D2487
- b. Free from deleterious materials, boulders over 6 inches in size and organics
- c. Can be placed free from voids
- d. Must have 20 percent passing the number 200 sieve

2. Blended Fill Material
 - a. In-situ soils classified as GW, GP, GM, SW, SP, or SM in accordance with ASTM D2487
 - b. Blended with in-situ or imported acceptable backfill material to meet the requirements of an Acceptable Backfill Material
 - c. Free from deleterious materials, boulders over 6 inches in size and organics
 - d. Must have 20 percent passing the number 200 sieve
3. Unacceptable Fill Material
 - a. In-situ soils classified as ML, MH, PT, OL or OH in accordance with ASTM D2487
4. Select Fill
 - a. Classified as SC or CL in accordance with ASTM D2487
 - b. Liquid limit less than 35
 - c. Plasticity index between 8 and 20

2.3 ASSEMBLY OR FABRICATION TOLERANCES [NOT USED]

2.4 ACCESSORIES [NOT USED]

2.5 SOURCE QUALITY CONTROL [NOT USED]

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION

A. Protection of In-Place Conditions

1. Pavement
 - a. Conduct activities in such a way that does not damage existing pavement that is designated to remain.
 - b. Repair or replace any pavement damaged due to the negligence of the contractor outside the limits designated for pavement removal at no additional cost
2. Trees
 - a. When operating outside of existing ROW, stake permanent and temporary construction easements.
 - b. Restrict all construction activities to the designated easements and ROW.
 - c. Flag and protect all trees designated to remain in accordance with Section 31 10 00.
 - d. Conduct embankments in a manner such that there is no damage to the tree canopy.
 - e. Prune or trim tree limbs as specifically allowed by the Drawings or as specifically allowed by the City.
 - 1) Pruning or trimming may only be accomplished with equipment specifically designed for tree pruning or trimming.
3. Above ground Structures
 - a. Protect all above ground structures adjacent to the construction.

4. Traffic
 - a. Maintain existing traffic, except as modified by the traffic control plan, and in accordance with Section 34 71 13.
 - b. Do not block access to driveways or alleys for extended periods of time unless:
 - 1) Alternative access has been provided
 - 2) Proper notification has been provided to the property owner or resident
 - 3) It is specifically allowed in the traffic control plan

3.4 INSTALLATION

A. Embankments General

1. Placing and Compacting Embankment Material
 - a. Perform fill operation in an orderly and systematic manner using equipment in proper sequence to meet the compaction requirements
 - b. Scarify and loosen the unpaved surface areas, except rock, to a depth of at least 6 inches, unless otherwise shown on the Drawings
 - c. Place fill on surfaces free from trees, stumps, roots, vegetation, or other deleterious materials
 - d. Bench slopes before placing material.
 - e. Begin filling in the lowest section or the toe of the work area
 - f. When fill is placed directly or upon older fill, remove debris and any loose material and proof roll existing surface.
 - g. After spreading the loose lifts to the required thickness and adjusting its moisture content as necessary, simultaneously recompact scarified material with the placed embankment material.
 - h. Roll with sufficient number passes to achieve the minimum required compaction.
 - i. Provide water sprinkled as necessary to achieve required moisture levels for specified compaction
 - j. Do not add additional lifts until the entire previous lift is properly compacted.
2. Surface Water Control
 - a. Grade surface horizontally but provide with sufficient longitudinal and transverse slope to allow for runoff of surface water from every point.
 - b. Conduct fills so that no obstruction to drainage from any other sections of fill is created.
 - c. Install temporary dewatering sumps in low areas during filling where excess amounts of runoff collect.
 - d. Compact uniformly throughout. Keep surfaces of fill reasonably smooth and free from humps and hollows that would prevent proper uniform compaction.
 - e. Do not place fill during or shortly after rain events which prevent proper work placement of the material and compaction
 - f. Prior to resuming compaction operations, remove muddy material off the surface to expose firm and compacted materials

B. Embankments for Roads

1. Only Acceptable Fill Material will be allowed for roadways
2. Embankments for roadbeds shall be constructed in layers approximately parallel to the finished grade of the street
3. Construct generally to conform to the cross section of the subgrade section as shown in the Drawings.

4. Establish grade and shape to the typical sections shown on the Drawings
5. Maintain finished sections of embankment to the grade and compaction requirements until the project is accepted.

C. Earth Embankments

1. Earth embankment is mainly composed of material other than rock. Construct embankments in successive layers, evenly distributing materials in lengths suited for sprinkling and rolling.
2. Rock or Concrete
 - a. Obtain approval from the City prior to incorporating rock and broken concrete produced by the construction project in the lower layers of the embankment.
 - b. No Rock or Concrete will be permitted in embankments in any location where future utilities are anticipated.
 - c. When the size of approved rock or broken concrete exceeds the layer thickness place the rock and concrete outside the limits of the proposed structure or pavement. Cut and remove all exposed reinforcing steel from the broken concrete.
3. Move the material dumped in piles or windrows by blading or by similar methods and incorporate it into uniform layers.
4. Featheredge or mix abutting layers of dissimilar material for at least 100 feet to ensure there are no abrupt changes in the material.
5. Break down clods or lumps of material and mix embankment until a uniform material is attained.

D. Rock Embankments

1. Rock embankment is mainly composed of rock.
2. Rock Embankments for roadways are only allowed when specifically designated on the Drawings.
3. Construct rock embankments in successive layers for the full width of the roadway cross-section with a depth of 18-inches or less.
4. The layer depth for large rock sizes shall not exceed a depth of 18-inches in any case. Fill voids created by the large stone matrix with smaller stones during the placement and filling operations.
5. Ensure the depth of the embankment layer is greater than the maximum dimension of any rock.
6. Do not place rock greater than 18-inches in its maximum dimension.
7. Construct the final layer with graded material so that the density and uniformity is in accordance compaction requirements.
8. The upper or final layer of rock embankments shall contain no material larger than 4 inches in their maximum dimension.

E. Density

1. Compact each layer until the maximum dry density as determined by ASTM D698 is achieved.
 - a. Not Under Roadway or Structure:
 - 1) areas to be compacted in the open, not beneath any structure, pavement, flatwork, or is a minimum of 1 foot outside of the edge of any structure, edge of pavement, or back of curb.

- a) Compact each layer to a minimum of 90 percent Standard Proctor Density.
- b. Embankments under future paving:
 - 1) Compact each layer to a minimum of 95 percent standard proctor density with a moisture content not to exceed +4 percent or -2 percent of optimum moisture or as indicated on the Drawings
- c. Embankments under structures:
 - 1) Compacted each layer as indicated on the Drawings

F. Maintenance of Moisture and Reworking

- 1. Maintain the density and moisture content once all requirements are met.
- 2. For soils with a PI greater than 15, maintain the moisture content no lower than 4 percentage points below optimum.
- 3. Rework the material to obtain the specified compaction when the material loses the required stability, density, moisture, or finish.
- 4. Alter the compaction methods and procedures on subsequent work to obtain specified density as directed by the City.

3.5 REPAIR [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD QUALITY CONTROL

A. Field Tests and Inspections

- 1. Proctors
 - a. The City will perform Proctors in accordance with ASTM D698.
 - b. Test results will generally be available to within 4 calendar days and distributed to:
 - 1) Contractor
 - 2) City Project Manager
 - 3) City Inspector
 - 4) Engineer
 - c. Notify the City if the characteristic of the soil changes.
 - d. City will perform new proctors for varying soils:
 - 1) When indicated in the geotechnical investigation in the Appendix
 - 2) If notified by the Contractor
 - 3) At the convenience of the City
 - e. Embankments where different soil types are present and are blended, the proctors shall be based on the mixture of those soils.
- 2. Proof Rolling
 - a. Embankments under Future Pavement
 - 1) City Project Representative must be on-site during proof rolling operations.
 - 2) Use equipment that will apply sufficient load to identify soft spots that rut or pump.
 - a) Acceptable equipment includes fully loaded single-axle water truck with a 1500 gallon capacity.
 - 3) Make at least 2 passes with the proof roller (down and back = 1 pass).
 - 4) Offset each trip by at most 1 tire width.
 - 5) If an unstable or non-uniform area is found, correct the area.

- 6) Correct
 - a) Soft spots that rut or pump greater than 3/4 inch.
 - b) Areas that are unstable or non-uniform
- 7) If a non-uniform area is found then correct the area.
- b. Embankments Not Under Future Paving
 - 1) No Proof Rolling is required.
3. Density Testing of Embankments
 - a. Density Test shall be in conformance with ASTM D2922.
 - b. For Embankments under future pavement:
 - 1) The City will perform density testing twice per working day when compaction operations are being conducted.
 - 2) The testing lab shall take a minimum of 3 density tests, but the number of test shall be appropriate for the area being compacted.
 - 3) Testing shall be representative of the current lift being compacted.
 - 4) Special attention should be placed on edge conditions.
 - c. For Embankments not under future pavement or structures:
 - 1) The City will perform density testing once working day when compaction operations are being conducted.
 - 2) The testing lab shall take a minimum of 3 density tests.
 - 3) Testing shall be representative of the current lift being compacted.
 - d. Make the area where the embankment is being placed available for testing.
 - e. The City will determine the location of the test.
 - f. The City testing lab will provide results to Contractor and the City's Inspector upon completion of the testing.
 - g. A formal report will be posted to the City's Buzzsaw site within 48 hours.
 - h. Test reports shall include:
 - 1) Location of test by station number
 - 2) Time and date of test
 - 3) Depth of testing
 - 4) Field moisture
 - 5) Dry density
 - 6) Proctor identifier
 - 7) Percent Proctor Density

B. Non-Conforming Work

1. All non-conforming work shall be removed and replaced.

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

1

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
12/20/2012	D. Johnson	1.2 – Added possible measurement and payment procedures and Blue text for instructions on how the methods should be applied 2.2.2.a added GW and SW material classifications
1/28/13	D. Johnson	1.2 – Modified Bid Item names in payment section to differentiate between Payment Methods on bid list.

2

APPENDIX

GC-4.01 Availability of Lands

GC-4.02 Subsurface and Physical Conditions

GC-6.06.D Minority and Women Owned Business Enterprise Compliance

GC-6.07 Wage Rates

GC-6.09 Permits and Utilities

GR-01 60 00 Product Requirements

GC-4.01 Availability of Lands

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NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

**CPN 102802 Oak Grove Road
Parcel # 1
7605 Oak Grove Road
Lot A3B, Block 8, Carter Industrial Park Addition**

**THE STATE OF TEXAS §
 §
COUNTY OF TARRANT §**

RIGHT-OF-WAY EASEMENT

THAT Aptus Dallas TX Industrial, L.P., hereinafter referred to as “Grantor”, for and in consideration of Ten Dollars (\$10.00) and other valuable consideration paid by the City of Fort Worth, a municipal corporation of Tarrant County, Texas, receipt of which is hereby acknowledged, does **Grant, Bargain, and Convey** to said City, its successors and assigns, the use, passage in and along the Property (“Property”) situated in Tarrant County, Texas, hereinafter described in the attached Exhibits “A” and “B”. Grantor does hereby acknowledge and agree that this conveyance to City includes the right of the City to permit the public to use the Property as a public right-of way. Grantor also hereby acknowledges and agrees that this conveyance to City includes the right of the City to construct and install sidewalks and to permit utilities to be situated within the Property as required by the City or by law. “Utilities” includes but are not limited to: water facilities, sewer facilities, gas facilities electric facilities, telecommunication facilities, drainage facilities and other utilities as defined by law.

It is intended by these presents to convey a **right-of-way** to the said City of Fort Worth to maintain and construct the **right-of-way** improvements, with the usual rights of ingress and egress in the necessary use of such **right-of-way**, in and along said Property.

TO HAVE AND TO HOLD the above described Property, together with, all and singular, the rights and appurtenances thereto in anywise belonging, unto the said City of Fort Worth, its successors and assigns, forever. Grantor does hereby bind itself, it's heirs, successors and assigns, to warrant and forever defend, all and singular, the said premises unto the said City of Fort Worth, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof.

[SIGNATURES APPEAR ON THE FOLLOWING PAGE]

HERETO WITNESS MY HAND this the _____ day of _____, 2020.

GRANTOR(S):

GRANTEE: City of Fort Worth

By (Signature): _____

(Print Name) _____, Title _____

APPROVED AS TO FORM AND LEGALITY

(Signature) _____

(Print Name) _____, Title _____

THE STATE OF TEXAS §
§
COUNTY OF TARRANT §

ACKNOWLEDGMENT

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged to me that the same was the act of _____ and that he/she executed the same as the act of said _____ 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

ACKNOWLEDGEMENT

STATE OF TEXAS §

COUNTY OF TARRANT §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, _____ of the City of Fort Worth, known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged to me that the same was the act of the City of Fort Worth and that he/she executed the same as the act of the City of Fort Worth 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

LEGAL DESCRIPTION

RIGHT-OF-WAY DEDICATION

BEING a 8,964 square foot (0.2058 acre) tract of land situated in the Elizabeth Teague Survey, Abstract No. 1544, City of Fort Worth, Tarrant County, Texas; said tract being part of Block 8, Carter Industrial Park, an addition to the City of Fort Worth according to the plat recorded in Volume 388-31, Page 52 of the Plat Records of Tarrant County, Texas; said tract being part of Tract 2 described in Special Warranty Deed to Aptus Dallas TX Industrial, L.P. recorded in Instrument No. D205006749 of the Official Public Records of Tarrant County, Texas; said tract being more particularly described as follows:

BEGINNING at a 5/8-inch iron rod with "CARTER BURGESS" cap found in the west right-of-way line of Oak Grove Road (a variable width right-of-way); said point also being the southeast corner of said Tract 2;

THENCE South 89°28'55" West, departing the said west line of Oak Grove Road, a distance of 15.40 feet to a 5/8-inch iron rod with "KHA" cap set for corner;

THENCE North 0°29'25" West, a distance of 567.47 feet to a 5/8-inch iron rod with "KHA" cap set for corner in the north line of said Tract 2; from said point a 1/2-inch iron rod found for the southeast corner of Lot 4, Block 7, Carter Industrial Park, an addition to the City of Fort Worth according to the plat recorded in Cabinet A, Slide 5373 of said Plat Records bears South 89°28'55" West, a distance of 4.65 feet;

THENCE North 89°28'55" East, along the said north line of Tract 2, a distance of 25.31 feet to a point for corner in the said west line of Oak Grove Road;

THENCE along the said west line of Oak Grove Road, the following three (3) calls:

South 0°29'56" East, a distance of 25.10 feet to a point for corner;

South 89°18'55" West, a distance of 10.00 feet to a point for corner;


South 0°29'56" East, a distance of 542.34 feet to the **POINT OF BEGINNING** and containing 8,964 square feet or 0.2058 acres of land, more or less.

NOTES

Bearing system based on the Texas Coordinate System of 1983(2011 adjustment), North Central Zone (4202) with an applied combined scale factor of 1.00012. A survey plat of even survey date herewith accompanies this metes & bounds description.

The undersigned, Registered Professional Land Surveyor, hereby certifies that the foregoing description accurately sets out the metes and bounds of the right-of-way tract.

RIGHT-OF-WAY DEDICATION
PART OF BLOCK 8
CARTER INDUSTRIAL PARK
ELIZABETH TEAGUE,
ABSTRACT NO. 1544
CITY OF FORT WORTH
TARRANT COUNTY, TEXAS


MICHAEL C. BILLINGSLEY
REGISTERED PROFESSIONAL
LAND SURVEYOR NO. 6558
801 CHERRY STREET,
UNIT 11 SUITE 1300
FORT WORTH, TEXAS 76102
PH. 817-335-6511
michael.billingsley@kimley-horn.com

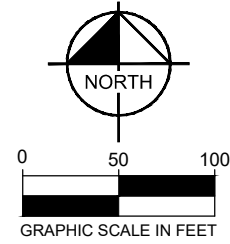
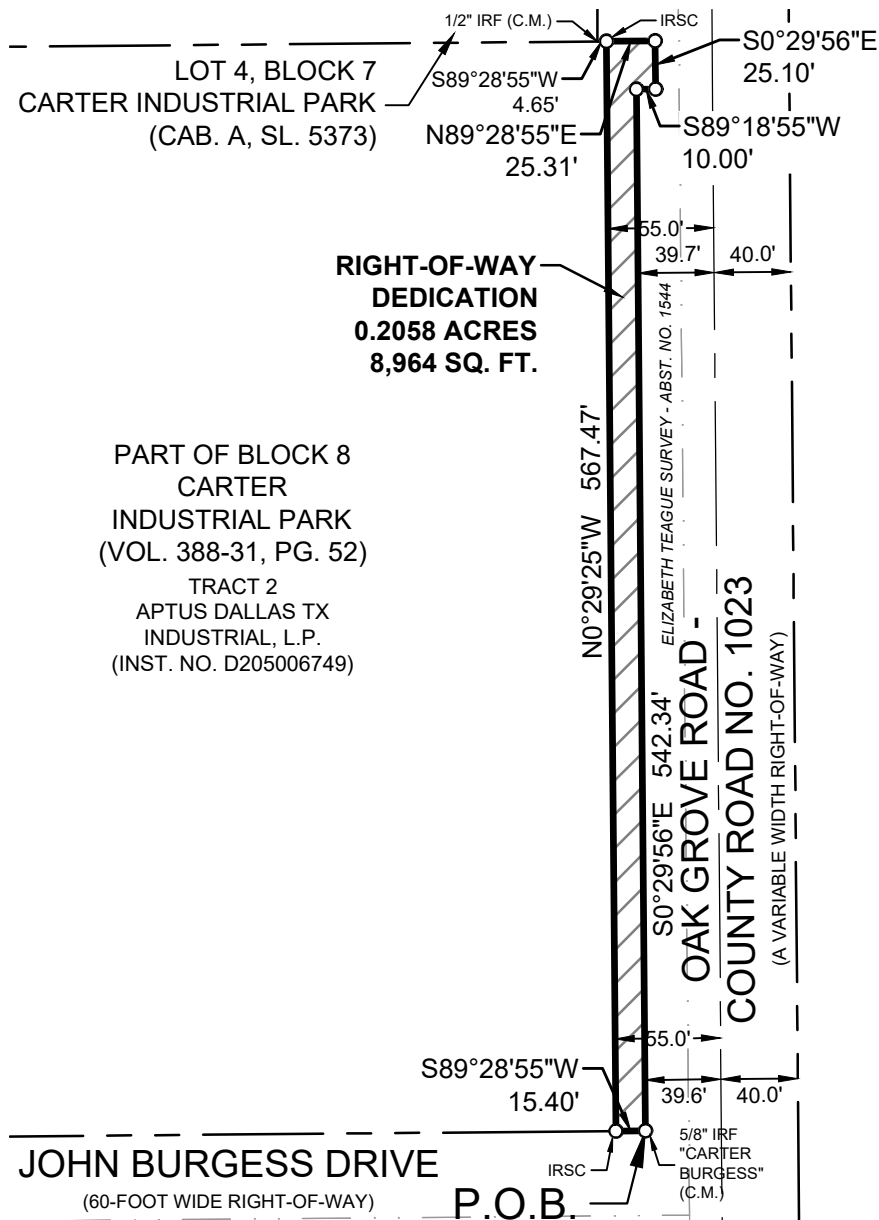


Kimley»Horn

801 Cherry Street, Unit 11, # 1300
Fort Worth, Texas 76102 FIRM # 10194040

Tel. No. (817) 335-6511
www.kimley-horn.com

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
N/A	MCB	JDW	6/5/2020	061298201	1 OF 2



PART OF "SECOND TRACT"
AMON G. CARTER FOUNDATION
(VOL. 8793, PG. 1057)
(INST. NO. D205244839)


LEGEND

P.O.B. = POINT OF BEGINNING
IRSC = 5/8" IRON ROD W/ "KHA" CAP SET
IRF = IRON ROD FOUND
C.M. = CONTROLLING MONUMENT

NOTES
Bearing system based on the Texas Coordinate System of 1983(2011 adjustment), North Central Zone (4202) with an applied combined scale factor of 1.00012. A survey plat of even survey date herewith accompanies this metes & bounds description.

The undersigned, Registered Professional Land Surveyor, hereby certifies that the foregoing description accurately sets out the metes and bounds of the right-of-way tract.

RIGHT-OF-WAY DEDICATION
PART OF BLOCK 8
CARTER INDUSTRIAL PARK
ELIZABETH TEAGUE,
ABSTRACT NO. 1544
CITY OF FORT WORTH
TARRANT COUNTY, TEXAS


MICHAEL C. BILLINGSLEY
REGISTERED PROFESSIONAL
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FORT WORTH, TEXAS 76102
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michael.billingsley@kimley-horn.com



Kimley»Horn
801 Cherry Street, Unit 11, # 1300
Fort Worth, Texas 76102 FIRM # 10194040
Tel. No. (817) 335-6511
www.kimley-horn.com

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 100'	MCB	JDW	6/5/2020	061298201	2 OF 2

Oak Grove Road CPN 102802¹
Parcel # 01
7550 Oak Grove Road
Lot A2, Block 7, Carter Industrial Park Addition

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

CITY OF FORT WORTH
DRAINAGE FACILITY EASEMENT

DATE: November 18, 2020

GRANTOR: **7550 OAK GROVE RD (FORT WORTH) OWNER, LLC**

GRANTOR'S MAILING ADDRESS (including County):
4700 Wilshire Blvd.
Los Angeles, Los Angeles County, CA 90010

GRANTEE: **CITY OF FORT WORTH**

GRANTEE'S MAILING ADDRESS (including County):
200 TEXAS ST.
FORT WORTH, TARRANT COUNTY, TX 76102

CONSIDERATION: Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged.

EASEMENT PROPERTY: Being more particularly described in the attached Exhibits "A" and "B".

Grantor, for the consideration paid to Grantor and other good and valuable consideration, hereby grants, sells, and conveys to Grantee, its successors and assigns, an exclusive, perpetual easement for the construction, operation, maintenance, replacement, upgrade, and repair of a Permanent Drainage Facility, hereafter referred to as "Facility". The Facility includes all incidental underground and aboveground attachments, equipment and appurtenances, including, but not limited to manholes, pipelines, junction boxes, inlets,

¹ Note to Draft: Please confirm this is Tract 3 of Parcel 1 of Lot 2R; deeded to Grantor per Instrument D220061667.

flumes, headwalls, wingwalls, slope pavement, gabions, rock rip-rap, drop structures and access ramps, and other erosion control measures in, upon, under and across a portion of the Easement Property and more fully described in Exhibits "A" and "B" attached hereto and incorporated herein for all pertinent purposes, together with the right and privilege at any and all times to enter the Easement Property, or any part thereof, for the purpose of constructing, operating, maintaining, replacing, upgrading, and repairing said Facility. In no event shall Grantor (I) use the Easement Property in any manner which interferes in any material way or is inconsistent with the rights granted hereunder, or (II) erect or permit to be erected within the Easement Property a permanent structure or building, including, but not limited to, monument sign, pole sign, billboard, brick or masonry fences or walls or other structures that require a building permit, or any structure not requiring a building permit but which may threaten the structural integrity or capacity of the Facility and its appurtenances. Grantee shall be obligated to restore and repair the Easement Property at Grantee's sole cost and expense, including, but not limited to the restoration of any sidewalks, driveways, and similar surface improvements located upon or adjacent to the Easement Property which may have been removed, relocated, altered, damaged, or destroyed as a result of the Grantee's use of the Easement Property granted hereunder provided, however, that Grantee shall not be obligated to restore or replace irrigation systems or other improvements installed by Grantor in violation of the provisions and intended use of this Easement Property.

TO HAVE AND TO HOLD the above-described Easement Property, together with all and singular the rights and appurtenances thereto in anyway belonging unto Grantee, and Grantee's successors and assigns forever; and Grantor does hereby bind itself and its successors and assigns to warrant and forever defend all and singular the Easement unto Grantee, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same, or any part thereof.

When the context requires, singular nouns and pronouns include the plural.

[SIGNATURES APPEAR ON THE FOLLOWING PAGE]

GRANTOR

**7550 OAK GROVE RD (FORT WORTH)
OWNER, LLC**, a Delaware limited liability
company

By:_____

Name:_____

Title:_____

**THE STATE OF TEXAS §
 §
COUNTY OF TARRANT §**

ACKNOWLEDGMENT

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged to me that the same was the act of _____ and that he/she executed the same as the act of said _____ 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

GRANTEE: City of Fort Worth

By (Signature): _____

(Print Name) _____, Title _____

APPROVED AS TO FORM AND LEGALITY

(Signature) _____

(Print Name) _____, Title _____

ACKNOWLEDGEMENT

STATE OF TEXAS §

COUNTY OF TARRANT §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, _____ of the City of Fort Worth, known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged to me that the same was the act of the City of Fort Worth and that he/she executed the same as the act of the City of Fort Worth 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

ADDENDUM TO DRAINAGE FACILITY EASEMENT

This Addendum to Drainage Facility Easement (“Addendum”) is attached to and hereby incorporated into that certain CITY OF FORT WORTH DRAINAGE FACILITY EASEMENT (“Easement”) dated as of November 18, 2020 by 7550 OAK GROVE RD (FORT WORTH) OWNER, LLC in favor of City of Fort Worth. Capitalized terms used but not defined in this Addendum have the meaning set forth in the Easement.

Grantee covenants that the Facility will be designed to accommodate the volume of storm water runoff reasonably anticipated from the balance of the property owned by Grantor adjacent to the Easement Property and in a way not to interfere or impact such property.

Grantee, at Grantee’s cost, shall at all times keep and maintain the Facility in a manner consistent with the purposes specified in the Easement and shall maintain and repair the Facility in good condition and free of obstructions.

Grantor reserves to itself, its tenants, successors and assigns, the right to continue to use the Easement Property for any uses and purposes which do not unreasonably interfere with the use thereof by Grantee, in fulfilling the purposes for which the Easement is granted. Grantee shall not exercise its easement rights so as to interfere with Grantor’s use of the Easement Property in any manner or to any degree greater than is reasonably necessary to accomplish the purposes for which the Easement is granted. Grantee shall abide by the reasonable requirements of Grantor in connection with activities on the Easement Property, provided that no such requirement shall impair Grantee’s ability to reasonably exercise the rights granted under the Easement for the purposes for which such rights are granted.

Grantee shall indemnify, defend and hold harmless Grantor (and its successors and assigns) with respect to the Facility and Easement Property, from and against any and all claims, suits, losses, liability, costs, and expenses suffered or incurred by any of such indemnified parties that directly or indirectly results from any use of the Easement or exercise of any rights or obligations thereunder by Grantee or any of Grantee’s contractors, licensees, guests, invitees, grantees, employees, representatives, successors and assigns.

[SIGNATURES APPEAR ON THE FOLLOWING PAGE]

GRANTOR

**7550 OAK GROVE RD (FORT WORTH)
OWNER, LLC**, a Delaware limited liability
company

By: _____
Name: _____
Title: _____

**THE STATE OF TEXAS §
 §
COUNTY OF TARRANT §**

ACKNOWLEDGMENT

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged to me that the same was the act of _____ and that he/she executed the same as the act of said _____ 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

GRANTEE: City of Fort Worth

By (Signature): _____

(Print Name) _____, Title _____

APPROVED AS TO FORM AND LEGALITY

(Signature) _____

(Print Name) _____, Title _____

ACKNOWLEDGEMENT

STATE OF TEXAS §

COUNTY OF TARRANT §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, _____ of the City of Fort Worth, known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged to me that the same was the act of the City of Fort Worth and that he/she executed the same as the act of the City of Fort Worth 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

**LEGAL DESCRIPTION
DRAINAGE EASEMENT**

BEING a 875 square foot (0.0201 acre) tract of land situated in the Elizabeth Teague Survey, Abstract No. 1544, City of Fort Worth, Tarrant County, Texas; said tract being part of Block 7, Carter Industrial Park, an addition to the City of Fort Worth according to the plat recorded in Volume 388-31, Page 52 of the Plat Records of Tarrant County, Texas; and being more particularly described as follows:

BEGINNING at a point in the west right-of-way line of Oak Grove Road (a variable width right-of-way); from said point a 1/2-inch iron rod with a yellow cap stamped "BRITTAIN & CRAWFORD" found for the northeast corner of Lot 5, Block 7, Carter Industrial Park, an addition to the City of Fort Worth according to the plat recorded in Cabinet A, Slide 5373 of the said Plat Records of Tarrant County, Texas bears North 89°29'04" West, a distance of 5.29 feet;

THENCE South 89°29'04" West, along the north line of Lot 5, Block 7, Carter Industrial Park, an addition to the City of Fort Worth according to the plat recorded in Cabinet A, Slide 5373 of the said Plat Records of Tarrant County, Texas, a distance of 25.00 feet to a point for corner;

THENCE North 0°29'25" West, departing the said north line of Lot 5, Block 7, a distance of 35.00 feet to a point for corner;

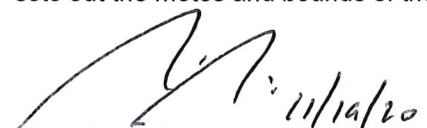
THENCE North 89°29'59" East, a distance of 25.00 feet to a point for corner; from said point a 1-inch iron rod found in the west right-of-way line of Oak Grove Road (a variable width right-of-way) bears North 8°37'51" East, 96.37 feet;

THENCE South 0°29'25" East, a distance of 34.99 feet to the **POINT OF BEGINNING** and containing 875 square feet or 0.0201 acres of land, more or less.

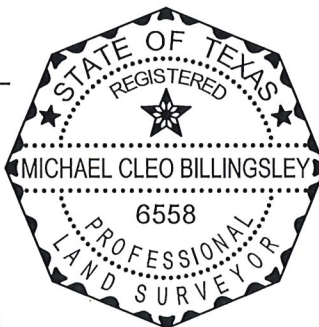
NOTES

Bearing system based on the Texas Coordinate System of 1983(2011 adjustment), North Central Zone (4202) with an applied combined scale factor of 1.00012. A survey plat of even survey date herewith accompanies this metes & bounds description.

The undersigned, Registered Professional Land Surveyor, hereby certifies that the foregoing description accurately sets out the metes and bounds of the easement tract.

 11/14/20

MICHAEL C. BILLINGSLEY
REGISTERED PROFESSIONAL
LAND SURVEYOR NO. 6558
801 CHERRY STREET,
UNIT 11 SUITE 1300
FORT WORTH, TEXAS 76102
PH. 817-335-6511
michael.billingsley@kimley-horn.com



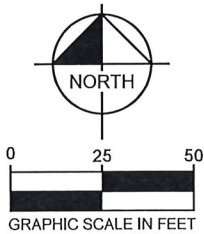
**DRAINAGE EASEMENT
PART OF LOT A2, BLOCK 7
CARTER INDUSTRIAL PARK
ELIZABETH TEAGUE,
ABSTRACT NO. 1544
CITY OF FORT WORTH
TARRANT COUNTY, TEXAS**

Kimley»Horn

801 Cherry Street, Unit 11, # 1300
Fort Worth, Texas 76102 FIRM # 10194040

Tel. No. (817) 335-6511
www.kimley-horn.com

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
N/A	CRG	MCB	7/29/2020	061298201	1 OF 2



LOT 8, BLOCK 7
CARTER INDUSTRIAL PARK
(INST. NO. D219252891)

PART OF BLOCK 7
CARTER INDUSTRIAL PARK
(VOL. 388-31, PG. 52)

DRAINAGE EASEMENT
0.0201 ACRES
875 SQ. FT.

LOT 5, BLOCK 7
CARTER INDUSTRIAL PARK
(CAB. A, SL. 5373)

LEGEND

P.O.B. = POINT OF BEGINNING
IRSC = 5/8" IRON ROD W/ "KHA" CAP SET
IRF = IRON ROD FOUND
C.M. = CONTROLLING MONUMENT

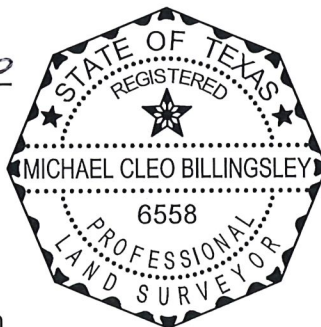
NOTES

Bearing system based on the Texas Coordinate System of 1983(2011 adjustment), North Central Zone (4202) with an applied combined scale factor of 1.00012. A survey plat of even survey date herewith accompanies this metes & bounds description.

The undersigned, Registered Professional Land Surveyor, hereby certifies that this plat of survey accurately sets out the metes and bounds of the easement tract.

[Signature] 11/19/20

MICHAEL C. BILLINGSLEY
REGISTERED PROFESSIONAL
LAND SURVEYOR NO. 6558
801 CHERRY STREET,
UNIT 11 SUITE 1300
FORT WORTH, TEXAS 76102
PH. 817-335-6511
michael.billingsley@kimley-horn.com



DRAINAGE EASEMENT
PART OF BLOCK 7
CARTER INDUSTRIAL PARK
ELIZABETH TEAGUE,
ABSTRACT NO. 1544
CITY OF FORT WORTH
TARRANT COUNTY, TEXAS

Kimley»Horn

801 Cherry Street, Unit 11, # 1300
Fort Worth, Texas 76102 FIRM # 10194040

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www.kimley-horn.com

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 50'	CRG	MCB	7/29/2020	061298201	2 OF 2

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

**CPN 102802 Oak Grove Road¹
Parcel # 1
7550 Oak Grove Road
Part of Block 7 Carter Industrial Park Addition
Vol. 388-31, Pg 52**

**THE STATE OF TEXAS §
 §
COUNTY OF TARRANT §**

RIGHT-OF-WAY EASEMENT

THAT 7550 OAK GROVE RD (FORT WORTH) OWNER, LLC, hereinafter referred to as “Grantor”, for and in consideration of Ten Dollars (\$10.00) and other valuable consideration paid by the City of Fort Worth, a municipal corporation of Tarrant County, Texas (“Grantee”), receipt of which is hereby acknowledged, does **Grant, Bargain, and Convey** to said City, its successors and assigns, the use, passage in and along the Property (“Property”) situated in Tarrant County, Texas, hereinafter described in the attached Exhibits “A” and “B”. Grantor does hereby acknowledge and agree that this conveyance to City includes the right of the City to permit the public to use the Property as a public right-of way. Grantor also hereby acknowledges and agrees that this conveyance to City includes the right of the City to construct and install sidewalks and to permit utilities to be situated within the Property as required by the City or by law; provided, however, that Grantee, at Grantee’s cost, shall at all times maintain and repair such sidewalks and utilities in good condition and free of obstructions, and Grantee shall indemnify, defend and hold harmless Grantor (and its successors and assigns) with respect to this Right of Way Easement, from and against any and all claims, suits, losses, liability, costs, and expenses suffered or incurred by any of such indemnified parties that directly or indirectly results from any use of the such sidewalks or Utilities or the exercise of any rights or obligations hereunder by Grantee or any of Grantee’s contractors, licensees, guests, invitees, grantees, employees, representatives, successors and assigns. “Utilities” includes but are not limited to: water facilities, sewer facilities, gas facilities electric facilities, telecommunication facilities, drainage facilities and other utilities as defined by law.

It is intended by these presents to convey a **right-of-way** to the said City of Fort Worth to maintain and construct the **right-of-way** improvements, with the usual rights of ingress and egress in the necessary use of such **right-of-way**, in and along said Property.

TO HAVE AND TO HOLD the above described Property, together with, all and singular, the rights and appurtenances thereto in anywise belonging, unto the said City of Fort Worth, its successors and assigns, forever. Grantor does hereby bind itself, it’s heirs, successors and assigns, to warrant and

¹ Note to Draft: Please confirm this is Tract 3 of Parcel 1 of Lot 2R; deeded to Grantor per Instrument D220061667.

forever defend, all and singular, the said premises unto the said City of Fort Worth, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof.

[SIGNATURES APPEAR ON THE FOLLOWING PAGE]

HERETO WITNESS MY HAND this the _____ day of _____, 2020.

GRANTOR:

**7550 OAK GROVE RD (FORT WORTH)
OWNER, LLC**, a Delaware limited liability
company

By: _____
Name: _____
Title: _____

**THE STATE OF TEXAS §
 §
COUNTY OF TARRANT §**

ACKNOWLEDGMENT

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged to me that the same was the act of _____ and that he/she executed the same as the act of said _____ the purposes and consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this _____ day of _____, 20__.

GRANTEE: City of Fort Worth

By (Signature): _____

(Print Name) _____, Title _____

APPROVED AS TO FORM AND LEGALITY

(Signature) _____

(Print Name) _____, Title _____

THE STATE OF TEXAS §
§
COUNTY OF TARRANT §

ACKNOWLEDGMENT

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged to me that the same was the act of _____ and that he/she executed the same as the act of said _____ 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

ACKNOWLEDGEMENT

STATE OF TEXAS §
COUNTY OF TARRANT §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this _____ day personally appeared _____, _____ of the City of Fort Worth, known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged to me that the same was the act of the City of Fort Worth and that he/she executed the same as the act of the City of Fort Worth 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

LEGAL DESCRIPTION

RIGHT-OF-WAY DEDICATION

BEING a 1,953 square foot (0.0448 acre) tract of land situated in the Elizabeth Teague Survey, Abstract No. 1544, City of Fort Worth, Tarrant County, Texas; said tract being part of Block 7, Carter Industrial Park, an addition to the City of Fort Worth according to the plat recorded in Volume 388-31, Page 52 of the Plat Records of Tarrant County, Texas; said tract being part of Tract 3 described in Special Warranty Deed to 7550 Oak Grove Rd (Fort Worth) Owner, LLC recorded in Instrument No. D2020061667 of the Official Public Records of Tarrant County, Texas; said tract being more particularly described as follows:

BEGINNING at a point for corner in the west right-of-way line of Oak Grove Road (a variable width right-of-way) said point being the southeast corner of said Tract 3;

THENCE South 89°29'04" West, along the south line of said Tract 3, a distance of 15.00 feet to a 5/8-inch iron rod with "KHA" cap set for corner; from said point a 1/2-inch iron rod with "BRITTAIN CRAWFORD" cap found for the northeast corner of Lot 5, Block 7, Carter Industrial Park, an addition to the City of Fort Worth according to the plat recorded in Cabinet A, Slide 5373 of said Plat Records bears South 89°29'04" West, a distance of 4.74;

THENCE North 0°29'25" West, departing the said south line of Tract 3, a distance of 130.17 feet to a 5/8-inch iron rod with "KHA" cap set for corner in the north line of said Tract 3;

THENCE North 89°03'04" East, along the said north line of Tract 3, a distance of 15.00 feet to a 1-inch iron rod found for corner in the said west line of Oak Grove Road;


THENCE South 0°29'25" East, along the said west line of Oak Grove Road, a distance of 130.29 feet to the **POINT OF BEGINNING** and containing 1,953 square feet or 0.0448 acres of land, more or less.

NOTES

Bearing system based on the Texas Coordinate System of 1983(2011 adjustment), North Central Zone (4202) with an applied combined scale factor of 1.00012. A survey plat of even survey date herewith accompanies this metes & bounds description.

The undersigned, Registered Professional Land Surveyor, hereby certifies that the foregoing description accurately sets out the metes and bounds of the right-of-way tract.

RIGHT-OF-WAY DEDICATION
PART OF BLOCK 7
CARTER INDUSTRIAL PARK
ELIZABETH TEAGUE,
ABSTRACT NO. 1544
CITY OF FORT WORTH
TARRANT COUNTY, TEXAS


MICHAEL C. BILLINGSLEY
REGISTERED PROFESSIONAL
LAND SURVEYOR NO. 6558
801 CHERRY STREET,
UNIT 11 SUITE 1300
FORT WORTH, TEXAS 76102
PH. 817-335-6511
michael.billingsley@kimley-horn.com



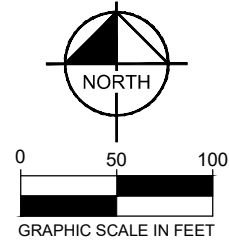
Kimley»Horn

801 Cherry Street, Unit 11, # 1300
Fort Worth, Texas 76102 FIRM # 10194040

Tel. No. (817) 335-6511
www.kimley-horn.com

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
N/A	MCB	JDW	6/5/2020	061298201	1 OF 2

LOT 8, BLOCK 7
CARTER INDUSTRIAL PARK
(INST. NO. D219252891)

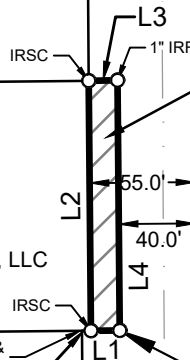


PART OF BLOCK 7
CARTER INDUSTRIAL PARK
(VOL. 388-31, PG. 52)

TRACT 3
7550 OAK GROVE RD (FORT WORTH) OWNER, LLC
(INST. NO. D220061667)

1/2" IRF W/ YELLOW CAP "BRITTAIN &
CRAWFORD"
S89°29'04"W
4.74'

LOT 5, BLOCK 7
CARTER INDUSTRIAL PARK
(CAB. A, SL. 5373)



**RIGHT-OF-WAY
DEDICATION
0.0448 ACRES
1,953 SQ. FT.**

LINE TABLE		
NO.	BEARING	LENGTH
L1	S89°29'04"W	15.00'
L2	N00°29'25"W	130.17'
L3	N89°03'04"E	15.00'
L4	S00°29'25"E	130.29'

PART OF "SECOND TRACT"
AMON G. CARTER FOUNDATION
(VOL. 8793, PG. 1057)
(INST. NO. D205244839)

LEGEND

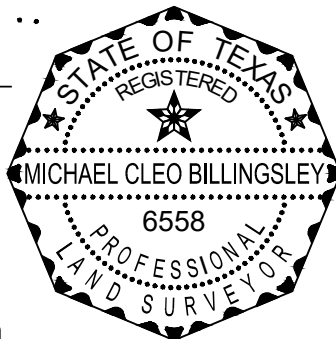
P.O.B. = POINT OF BEGINNING
IRSC = 5/8" IRON ROD W/ "KHA" CAP SET
IRF = IRON ROD FOUND
C.M. = CONTROLLING MONUMENT

NOTES

Bearing system based on the Texas Coordinate System of 1983(2011 adjustment), North Central Zone (4202) with an applied combined scale factor of 1.00012. A survey plat of even survey date herewith accompanies this metes & bounds description.

The undersigned, Registered Professional Land Surveyor, hereby certifies that the foregoing description accurately sets out the metes and bounds of the right-of-way tract.

MICHAEL C. BILLINGSLEY
REGISTERED PROFESSIONAL
LAND SURVEYOR NO. 6558
801 CHERRY STREET,
UNIT 11 SUITE 1300
FORT WORTH, TEXAS 76102
PH. 817-335-6511
michael.billingsley@kimley-horn.com



**RIGHT-OF-WAY DEDICATION
PART OF BLOCK 7
CARTER INDUSTRIAL PARK
ELIZABETH TEAGUE,
ABSTRACT NO. 1544
CITY OF FORT WORTH
TARRANT COUNTY, TEXAS**

Kimley»Horn

801 Cherry Street, Unit 11, # 1300
Fort Worth, Texas 76102 FIRM # 10194040

Tel. No. (817) 335-6511
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Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 100'	MCB	JDW	6/5/2020	061298201	2 OF 2

Oak Grove Road CPN 102802
Parcel # 01
7550 Oak Grove Road
Lot A2, Block 7, Carter Industrial Park Addition¹

CITY OF FORT WORTH
TEMPORARY RIGHT OF ENTRY

STATE OF TEXAS §

§ **KNOW ALL BY THESE PRESENTS**

COUNTY OF TARRANT §

That the undersigned, hereinafter referred to as “Grantor”, does by these presents grant and convey to the City of Fort Worth, TX, herein after referred to as “Grantee” a temporary right of entry onto the portion of the property described as Block 7, Lot A2, Carter Industrial Park Addition as shown on the deed recorded in Volume _____ Page _____ Tarrant County Deed Records and plat recorded in Cabinet _____ Slide _____ Page _____, Tarrant County Plat Records a/k/a _____, Fort Worth, Tarrant County, Texas, hereinafter referred to as the “Property”, which portion is described on Exhibit A attached hereto, for the purpose of **constructing a driveway approach**. Upon execution of this agreement, Grantor will grant Grantee and its contractors access to the Property for the purpose stated herein until the earlier of (i) December 31, 2021 and (ii) such time as the project is completed and approved by the Grantee, at which time the above described temporary right of entry becomes void. At the request of Grantor, Grantor and Grantee shall, at Grantee’s cost and expense execute and record a mutually acceptable instrument evidencing the termination of this Temporary Right of Way.

Grantee shall indemnify, defend and hold Grantor harmless from and against any and all claims, causes of action, lawsuits, reasonable attorneys’ fees, administrative proceedings and/or damages incurred by Grantor and arising out of or resulting from Grantee’s exercise of the rights granted herein; provided however, such indemnity shall not apply to Grantor’s breach of this Temporary Right of Way or the gross negligence or willful misconduct of Grantor.

This Right of Entry shall include the right of Grantee and its employees, agents, representatives, or contractors to access the aforementioned property.

Grantor reserves to itself, its tenants, successors and assigns, the right to continue to use the Property for any uses and purposes which do not unreasonably interfere with the use thereof by Grantee, in fulfilling the purposes for which this Temporary Right of Way is granted. Grantee shall abide by the reasonable requirements of Grantor in connection with Grantee’s work, provided that no such requirement shall impair Grantee’s ability to reasonably exercise the rights granted hereunder for the purposes for which such rights are granted.

¹ Note to Draft: Please confirm this is Tract 3 of Parcel 1 of Lot 2R; deeded to Grantor per Instrument D220061667.

Grantee shall not have the right to assign this Temporary Right of Way without the prior written consent of Grantor.

Grantor and Grantee agree and acknowledge that there are no intended third party beneficiaries of this Temporary Right of Way nor any of the rights and privileges conferred herein.

TO HAVE AND TO HOLD the above described right of entry, together with all and singular, the rights and appurtenances thereto, anywise belonging unto the said Grantee, is successors and assigns, for the purposes set forth above.

Grantee shall restore the Property to the condition it was in immediately prior to accessing the Property under this Temporary Right of Entry.

EXECUTED this the _____ day of _____, 2020.

GRANTOR: 7550 OAK GROVE RD (FORT WORTH) OWNER, LLC

GRANTOR: **7550 OAK GROVE RD (FORT WORTH)**
OWNER, LLC, a Delaware limited liability
company _____

By: _____
Name: _____
Title: _____

THE STATE OF _____ §
COUNTY OF _____ §

This instrument was acknowledged before me on _____,
2020, by _____, _____ of _____, a
_____, on behalf of said _____.

Notary Public, State of _____

Exhibit A

LEGAL DESCRIPTION
TEMPORARY RIGHT OF ENTRY AREA

BEING a 5,340 square foot (0.1226 acre) tract of land situated in the Elizabeth Teague Survey, Abstract No. 1544, City of Fort Worth, Tarrant County, Texas; said tract being part of Block 7, Carter Industrial Park, an addition to the City of Fort Worth according to the plat recorded in Volume 388-31, Page 52 of the Plat Records of Tarrant County, Texas; and being more particularly described as follows:

COMMENCING at a 1/2-inch iron rod with a yellow cap labeled "BRITTAIN & CRAWFORD" found for the northeast corner of Lot 5, Block 7, Carter Industrial Park, an addition to the City of Fort Worth according to the plat recorded in Cabinet A, Slide 5373 of said Plat Records of Tarrant County, Texas;

THENCE South 89°29'04" West, along the north line of said Lot 5, Block 7, a distance of 20.06 feet to the **POINT OF BEGINNING**;

THENCE South 89°29'04" West, along the north line of said Lot 5, Block 7, a distance of 22.74 feet to a point for corner;

THENCE North 0°29'45" West, departing the said north line of Lot 5, Block 7, a distance of 130.16 feet to a point for corner in the south line of Lot 8, Block 7, Carter Industrial Park, an addition to the City of Fort Worth according to the plat recorded in Instrument No. D219252891 of the Official Public Records of Tarrant County, Texas;

THENCE North 89°27'45" East, a distance of 47.75 feet to a point for corner; from said point a 1-inch iron rod found bears North 89°27'10" East a distance of 15.00 feet;

THENCE South 0°29'25" East, a distance of 95.18 feet to a point for corner;

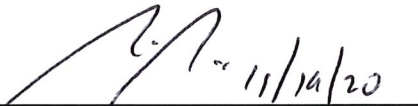
THENCE South 89°29'59" West, a distance of 25.00 feet to a point for corner;

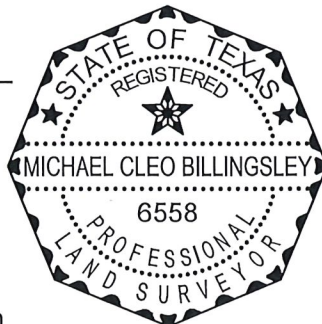
THENCE South 0°29'25" East, a distance of 35.00 feet to the **POINT OF BEGINNING** and containing 5,340 square feet or 0.1226 acres of land, more or less.

NOTES

Bearing system based on the Texas Coordinate System of 1983(2011 adjustment), North Central Zone (4202) with an applied combined scale factor of 1.00012. A survey plat of even survey date herewith accompanies this metes & bounds description.

The undersigned, Registered Professional Land Surveyor, hereby certifies that this plat of survey accurately sets out the metes and bounds of the right of entry area.


MICHAEL C. BILLINGSLEY
REGISTERED PROFESSIONAL
LAND SURVEYOR NO. 6558
801 CHERRY STREET,
UNIT 11 SUITE 1300
FORT WORTH, TEXAS 76102
PH. 817-335-6511
michael.billingsley@kimley-horn.com



TEMPORARY
RIGHT OF ENTRY AREA
PART OF BLOCK 7
CARTER INDUSTRIAL PARK
ELIZABETH TEAGUE,
ABSTRACT NO. 1544
CITY OF FORT WORTH
TARRANT COUNTY, TEXAS

Kimley»Horn

801 Cherry Street, Unit 11, # 1300
Fort Worth, Texas 76102 FIRM # 10194040

Tel. No. (817) 335-6511
www.kimley-horn.com

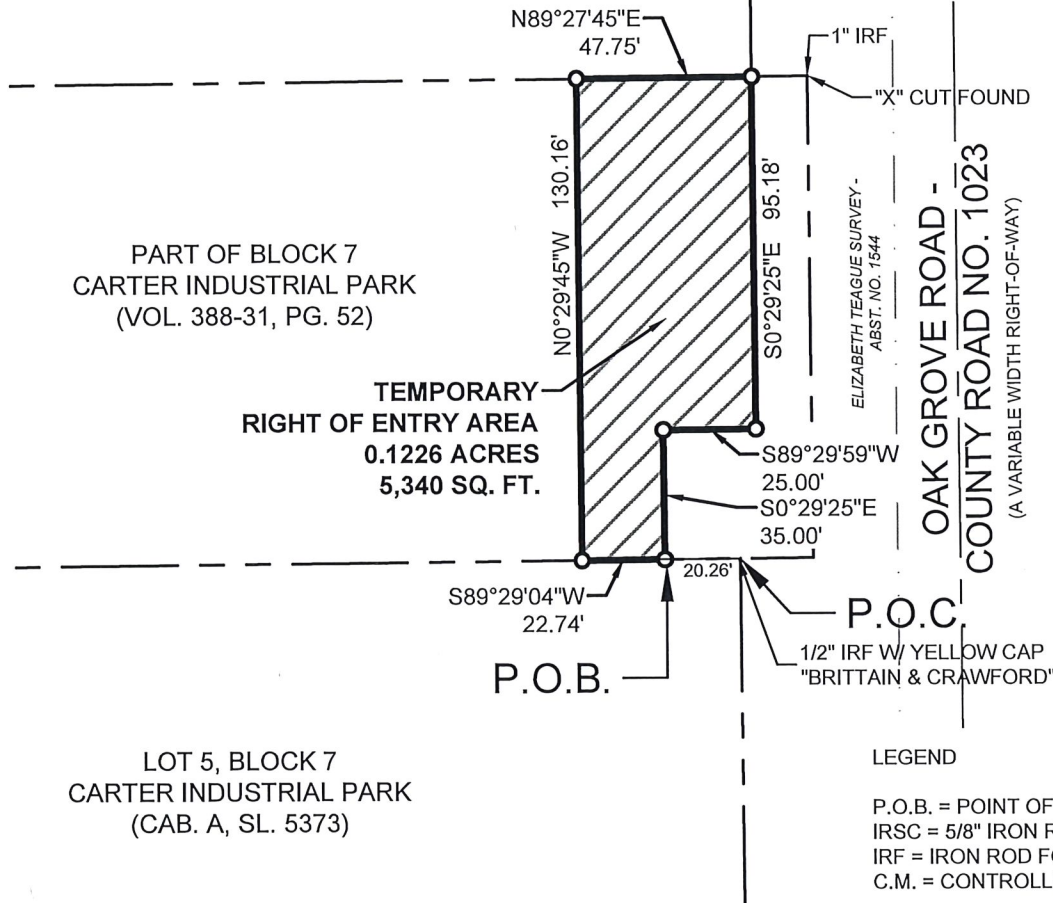
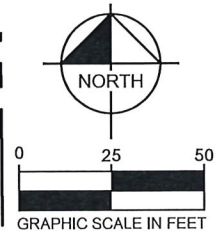
Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
N/A	CRG	MCB	11/19/2020	061298201	1 OF 2

LOT 8, BLOCK 7
CARTER INDUSTRIAL PARK
(INST. NO. D219252891)

PART OF BLOCK 7
CARTER INDUSTRIAL PARK
(VOL. 388-31, PG. 52)

TEMPORARY
RIGHT OF ENTRY AREA
0.1226 ACRES
5,340 SQ. FT.

LOT 5, BLOCK 7
CARTER INDUSTRIAL PARK
(CAB. A, SL. 5373)



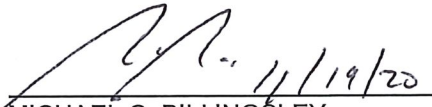
LEGEND

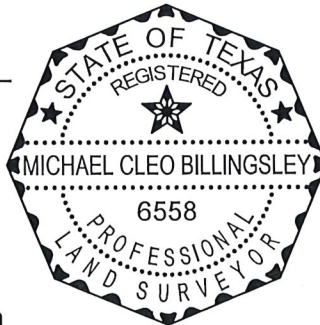
P.O.B. = POINT OF BEGINNING
IRSC = 5/8" IRON ROD W/ "KHA" CAP SET
IRF = IRON ROD FOUND
C.M. = CONTROLLING MONUMENT

NOTES

Bearing system based on the Texas Coordinate System of 1983(2011 adjustment), North Central Zone (4202) with an applied combined scale factor of 1.00012. A survey plat of even survey date herewith accompanies this metes & bounds description.

The undersigned, Registered Professional Land Surveyor, hereby certifies that this plat of survey accurately sets out the metes and bounds of the right of entry area.


MICHAEL C. BILLINGSLEY
REGISTERED PROFESSIONAL
LAND SURVEYOR NO. 6558
801 CHERRY STREET,
UNIT 11 SUITE 1300
FORT WORTH, TEXAS 76102
PH. 817-335-6511
michael.billingsley@kimley-horn.com



TEMPORARY
RIGHT OF ENTRY AREA
PART OF LOT A2, BLOCK 7
CARTER INDUSTRIAL PARK
ELIZABETH TEAGUE,
ABSTRACT NO. 1544
CITY OF FORT WORTH
TARRANT COUNTY, TEXAS

Kimley»Horn

801 Cherry Street, Unit 11, # 1300
Fort Worth, Texas 76102

FIRM # 10194040

Tel. No. (817) 335-6511
www.kimley-horn.com

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 50'	CRG	MCB	11/19/2020	061298201	2 OF 2

GC-4.02 Subsurface and Physical Conditions

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Geotechnical Engineering Report

**Oak Grove Road Improvement
Fort Worth, Texas**

November 20, 2020

Terracon Project No. 95205149

Prepared for:

Carter Park East Land, LLC
Dallas, Texas

Prepared by:

Terracon Consultants, Inc.
Fort Worth, Texas



November 20, 2020

Carter Park East Land, LLC
3819 Maple Avenue
Dallas, Texas 75219



Attn: Mr. Matthew E. Colter, Vice President

Re: Geotechnical Engineering Report
Oak Grove Road Improvement
Oak Grove Road and Joel East Road
Fort Worth, Texas
Terracon Project No. 95205149

Dear Mr. Colter:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. P95205149 dated September 24, 2020. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of pavement for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

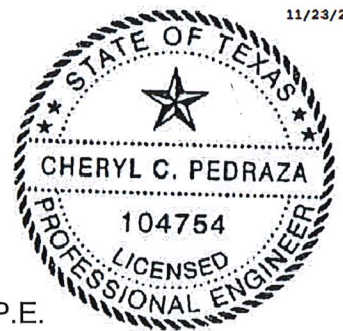
Terracon Consultants, Inc.

A handwritten signature in black ink, appearing to read "Sushanta Bhushal".

Sushanta Bhushal, E.I.T.
Senior Staff Engineer

A handwritten signature in black ink, appearing to read "Cheryl C. Pedraza".

Cheryl C. Pedraza, P.E.
Geotechnical Department Manager



11/23/2020

cc: D. Tyler Baucom / Rob Riner Companies (tbaucom@robriner.com)

REPORT TOPICS

INTRODUCTION.....	1
SITE CONDITIONS.....	1
PROJECT DESCRIPTION.....	2
GEOTECHNICAL CHARACTERIZATION.....	2
ENGINEERING RECOMMENDATION	3
GENERAL COMMENTS.....	8
FIGURES	9

Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the **GeoReport** logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS
SUPPORTING INFORMATION

Note: Refer to each individual Attachment for a listing of contents.

Geotechnical Engineering Report

Oak Grove Road Improvement

Oak Grove Road and Joel East Road

Fort Worth, Texas

Terracon Project No. 95205149

November 20, 2020

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed Oak Grove Road Improvement project to be located at Oak Grove Road and Joel East Road in Fort Worth, Texas. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil (and rock) conditions
- Groundwater conditions
- Site preparation and earthwork
- Pavement design and construction

The geotechnical engineering Scope of Services for this project included the advancement of eleven test borings to depth of about 10 feet below existing site grades.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs and as separate graphs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located at along Oak Grove Road just south of Joel East Road in Fort Worth, Texas. 32.6456°N, 97.3042°W and 32.6310°N, 97.3043°W (approximate) See Site Location
Existing Improvements	Oak grove road with underground utilities and easements
Current Ground Cover	Various: asphalt, concrete and few trees along the east of Oak Grove Rd

Item	Description
Existing Topography	Based on the provided information proposed improvement area ground surface elevation ranges from about 684 ft to 697 feet.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and no comments have been made by the design group/client and our final understanding of the project conditions is as follows:

Item	Description
Project Description	<p>We understand that the stretch of the Oak Grove Road (approximately 5300 lineal feet between Joel East Road and Enon Avenue) will be improved. Proposed improvement will consist of the addition of lanes, for a total of up to 5 lanes and a concrete sidewalk. Provided information indicates that the existing asphalt pavement (both lanes) between Albertsons Drive and Enon Avenue will be demolished and the existing asphalt pavement present in the north bound lane between Joel East Road and Albertson Drive will be demolished as part of the proposed improvement.</p> <p>The road will be classified as an arterial road by the City of Fort.</p>
Pavements	The majority of the planned roadway will be Portland cement concrete paving in accordance with the City of Fort Worth Pavement Design Manual dated January 29, 2015. The road will be classified as an arterial by the City of Fort Worth. We understand that a portion of the roadway at a transition near Enon Road will be asphalt paving.
Traffic (per the city of Fort Worth Pavement Design Manual)	Annual ESALs: 300,000 (Arterial)
Site Grading	Based on the provided civil design drawings, we have anticipated that up to 4 feet of fill and 2 feet of cut will be required to generate the finished grades.

GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at

each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** section and the GeoModel can be found in the **Figures** section of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	Fill	Flexible base material
2	Clay	Fat and lean clay
3	Weathered Bedrock	Tan limestone with clay layers and seams

Groundwater Conditions

The boreholes were observed while drilling and after completion for the presence and level of groundwater. The water levels observed in the boreholes can be found on the boring logs in **Exploration Results** and are summarized below.

Groundwater was not observed in the boring while drilling, or for the short duration the borings could remain open. However, this does not necessarily mean the borings terminated above groundwater, or the water levels summarized above are stable groundwater levels. Due to the low permeability of the soils encountered in the borings, a relatively long period may be necessary for a groundwater level to develop and stabilize in a borehole. Long term observations in piezometers or observation wells sealed from the influence of surface water are often required to define groundwater levels in materials of this type.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

ENGINEERING RECOMMENDATION

We understand that the stretch of the Oak Grove Road (approximately 5300 lineal feet between Joel East Road and Enon Avenue) will be improved. The road will be classified as an arterial by the City of Fort Worth. Eleven soil borings were extended to a depth of about 10 feet along the sides of the Oak Grove Road planned roadway construction.

General Site Grading

We understand that up to 4 feet of fill and 2 feet of cut will be required to generate the finished grades. Based on the conditions encountered in the borings, excavations will encounter fat and lean clays.

During excavations, applicable OSHA standards should be followed based on soil types and noted consistencies. The soils will need to be sloped or braced during construction. A fill against excavated slopes should be placed in relatively horizontal lifts. When placing fill on existing slopes that are steeper than about 6H:1V, the fill should be benched into the slope. This breaks up potential slide planes and permits relatively horizontal lift placement. Any lift that becomes desiccated, rutted, or disturbed should be reworked prior to placing a subsequent lift.

The on-site soils free of rock greater than 4 inches in maximum dimension are suitable for use in general site grading. Imported material should be a clean clay soil (free of deleterious materials and debris) with a liquid limit less than 65 percent and no rock greater than 4 inches in maximum dimension.

Site preparation for the proposed project should include removing existing vegetation and site improvements (pavements and utilities) and any other unsuitable surface materials from the areas of new construction. Prior to placing any fill, the areas to receive fill will need to be stripped and grubbed. The subgrade should then be proofrolled. Any soft or pumping areas should be excavated to firm ground and properly backfilled. The subgrade should be scarified to a minimum depth of 8 inches and uniformly compacted as discussed in section **Compaction Requirements**. The fill materials should then be spread in loose, relatively horizontal lifts, less than 9 inches in thickness, and uniformly compacted to the same criteria. If filling is suspended and the subgrade becomes desiccated or rutted, it should be reworked prior to placement of a subsequent lift.

Compaction Requirement

Recommendations for compaction are presented in the following table. We recommend that engineered fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved.

ITEM	DESCRIPTION
Subgrade preparation to receive fill	Surface scarified to a minimum depth of 8 inches
Maximum lift thickness	9 inches or less loose lift thickness

General site fills and lime treated subgrades	A minimum of 95% maximum standard Proctor dry density (ASTM D698) in the range of -1 to +4 percentage points of optimum moisture content
---	--

Lime/Sulfate Induced Heave

Sulfate tests performed at the time of our investigation indicated sulfates content less than 100 ppm. When the sulfate concentrations are less than 3,000 ppm, the subgrade soils are considered to be suitable for lime treatment in the conventional manner using a single lime application. Imported fill material should be tested for soluble sulfate to evaluate the suitability of soils for lime stabilization.

Pavement Subgrade Preparation

Subgrade materials encountered consisted of clay soils. These soils are subject to loss of support with the moisture increases that can occur beneath paving. The clay soils react with hydrated lime, which serves to improve and maintain their support value. Lime treatment is recommended beneath pavement sections. We recommend that a minimum of 9 percent lime by dry weight be used to treat the subgrade soils at this site. The lime should be thoroughly mixed and blended with the top 8 inches of the subgrade (TxDOT Item 260).

The lime modified subgrade should be uniformly compacted as discussed in section **Compaction Requirements**. Pavement subgrades should be protected from traffic or ponding water. They should be moist cured until the pavement is placed.

We understand that in the area of the planned box culvert there is only 12 inches of clearance between the box culvert and top of pavement. In this area, the pavement subgrade should consist of at least 2 inches of flexible base material to be placed between the pavement and culvert. Flexible base material should meet requirement of TxDOT Item 247, Type A, Grade 5. Flexible base material should be compacted at minimum of 95% of maximum standard Proctor dry density (ASTM D698) in the range of -2 to +2 percentage points of the optimum moisture content.

Site grading is generally accomplished early in the construction phase. However, as construction proceeds, the subgrade may be disturbed due to utility excavations, construction traffic, desiccation, or rainfall. As a result, the pavement subgrade may not be suitable for pavement construction and corrective action will be required. The subgrade should be carefully evaluated at the time of pavement construction for signs of disturbance or excessive rutting or overexcavation within the areas of near surface drain pipes. If disturbance has occurred, pavement subgrade areas should be reworked, moisture conditioned, and properly compacted to the recommendations in this report immediately prior to paving.

Geotechnical Engineering Report

Oak Grove Road Improvement ■ Fort Worth, Texas
November 20, 2020 ■ Terracon Project No. 95205149



Support characteristics of subgrade for pavement design do not account for shrink/swell movements of an expansive clay subgrade, such as soils encountered on this project. Thus, the pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to shrink/swell related movement of the subgrade. At the time of our field operations on November 13, 2020, the overburden soils were at a dry state. Our laboratory absorption swell test results were as high as 8.3% for samples tested. Based on the Plasticity Index (PI) of the soils, the potential vertical rise (PVR) of the site soils is estimated to be on the order of 4 to 5 inches. The PVR is estimated utilizing the TxDOT method TEX-124-E and based on dry soil conditions.

Pavement Design Parameters

Pavement design for this project is based on procedures outlined by AASHTO for concrete paved roads and pavement design parameters prescribed by the City of Fort Worth's Pavement Design Manual (dated January 29, 2015).

The following input parameters were used in the concrete pavement section analysis for an arterial road.

Input Parameters for Arterial Roads	Value
Annual ESALs / Total ESALs	300,000 / 13,000,000
Growth factor	2.5%
Design life	30 years
Initial serviceability, P_0	4.5
Terminal serviceability, P_t	2.5
Reliability, R	90%
Overall standard deviation, S_0	0.39
Load transfer ("J" factor)	3.0
Drainage coefficient	1.0
Modulus of elasticity of concrete	4,000 ksi
Modulus of rupture of concrete	620 psi
Modulus of reaction of subgrade soil	200 pci

If the pavements are subject to heavier loading and higher traffic counts than the assumed values, this office should be notified and provided with the information, so that we may review these pavement sections and make revisions if necessary.

Roadway Pavement Sections

Pavement sections were calculated using the AASHTO 1993 design method for the assumptions and design parameters discussed above. A pavement section is presented below for an arterial road that consists of Portland cement concrete supported on a lime modified subgrade.

Arterial Road (Portland cement concrete)	
Pavement section	Thickness (inch)
Portland cement concrete	10
Lime modified subgrade, TxDOT Item 260	8
Total pavement thickness	18

The concrete should have a minimum 28-day compressive strength of 4,000 psi and a modulus of rupture of 620 psi. It should contain a minimum of 4.5 ± 1.5 percent entrained air.

We understand that it is planned to use an asphalt section in a transition area near Enon road. A pavement section is presented below for the transitional pavement.

Asphalt Concrete Pavement near Transition	
Pavement section	Thickness (inch)
Asphalt surface course Type D	2
Asphalt base course -Type B	8
Lime modified subgrade, TxDOT Item 260	8
Total pavement thickness	18

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

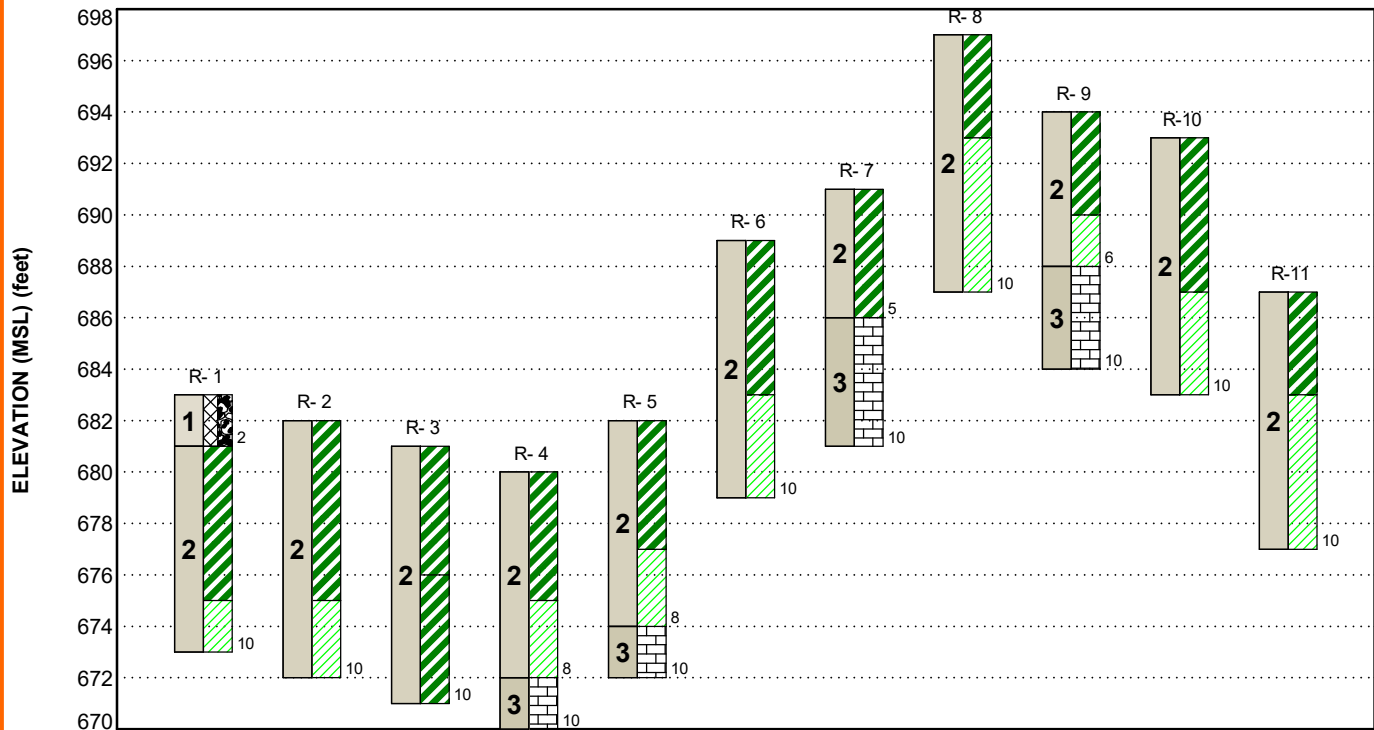
Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client, and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

FIGURES

Contents:

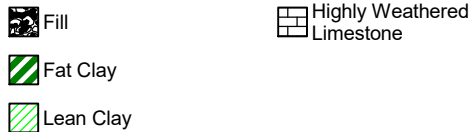
GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Fill	Flexible base material
2	Clay	Fat and lean clay
3	Highly Weathered Bedrock	Tan limestone

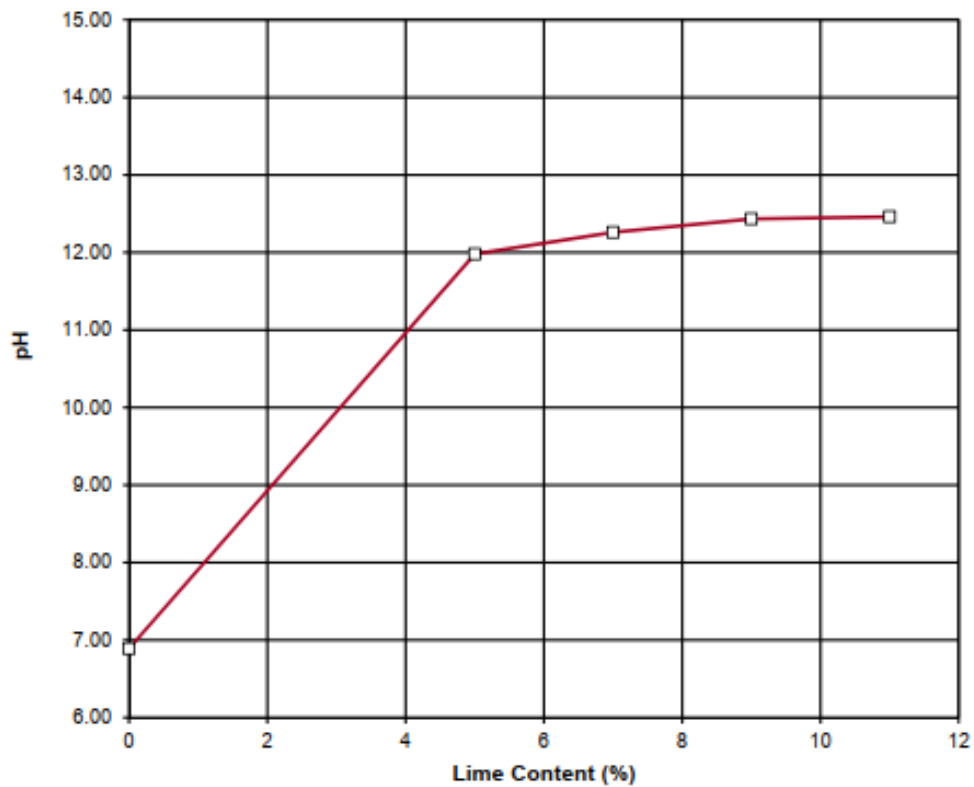
LEGEND



NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

LIME SERIES



Sample: R-8, 0-2'
 Soil Description: Dark brown fat clay
 Liquid Limit: 72 %
 Plastic Limit: 25 %
 Plasticity Index: 47
 Passing No. 200: %
Optimum Lime Application Rate: 9%

Lime Content (%)	pH
0.0	6.89
5.0	11.98
7.0	12.26
9.0	12.43
11.0	12.46

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Number of Borings	Boring Depth (feet)	Boring Location
11	10	Oak Grove Road

Boring Layout and Elevations: Unless otherwise noted, Terracon personnel provided the boring layout. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ± 10 feet) and approximate elevations were obtained by interpolation from the provided drawing (Grading Plan, Sheet # 17 through 19, date 11/13/2020, and drawn by Kimley Horn). If elevations and a more precise boring layout are desired, we recommend borings be surveyed following completion of fieldwork.

Subsurface Exploration Procedures: We advance the borings with a truck-mounted, rotary drill rig using continuous flight augers (solid stem and/or hollow stem as necessary depending on soil conditions). Five samples are obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the thin-walled tube sampling procedure, a thin-walled tube is pushed hydraulically into the soil to obtain a relatively undisturbed sample. The samples were placed in appropriate container, taken to our laboratory for testing, and classified under the direction of a geotechnical engineer. In addition, we observe and record groundwater levels during drilling and sampling. For safety purposes, all borings are backfilled with auger cuttings after their completion.

Our exploration team prepares field boring logs as part of the standard drilling operations. These field logs include visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs are prepared from the field logs. The final boring logs represent the geotechnical engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil and rock strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- Water (Moisture) Content of Soil
- Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- Standard Test Method for Particle Size Analysis of Soils

Geotechnical Engineering Report

Oak Grove Road Improvement ■ Fort Worth, Texas

November 20, 2020 ■ Terracon Project No. 95205149



- Material Finer than 75- μ m (No. 200) Sieve
- Absorption Swell Tests
- Soil Lime Testing
- Soluble Sulfates

Absorption swell tests are performed on selected samples. These tests are used to quantitatively evaluate volume change potential at in-situ moisture levels. Selected samples are also tested for soluble sulfates. The results of these tests are presented in the tables below.

SWELL TEST RESULTS

Boring No.	Depth (feet)	Liquid Limit (%)	Plasticity Index (%)	Initial Moisture (%)	Final Moisture (%)	Surcharge (psf)	Swell (%)
R-2	2-4	71	47	20.4	25.3	375	6.1
R-6	4-6	63	42	22.9	24.0	625	0.9
R-10	4-6	63	42	14.6	21.7	625	8.3

SUMMARY OF SOLUBLE SULFATES TESTS

Boring No.	Depth (ft)	Soluble Sulfates (ppm)
R-2	2-4	<100
R-4	2-4	<100
R-6	2-4	<100
R-8	0-2	<100
R-10	0-2	<100
R-11	0-2	<100

SITE LOCATION AND EXPLORATION PLANS

Contents:

Site Location Plan

Exploration Plan

Note: All attachments are one page unless noted above.

SITE LOCATION

Oak Grove Road Improvement ■ Fort Worth, Texas
November 20, 2020 ■ Terracon Project No. 95205149

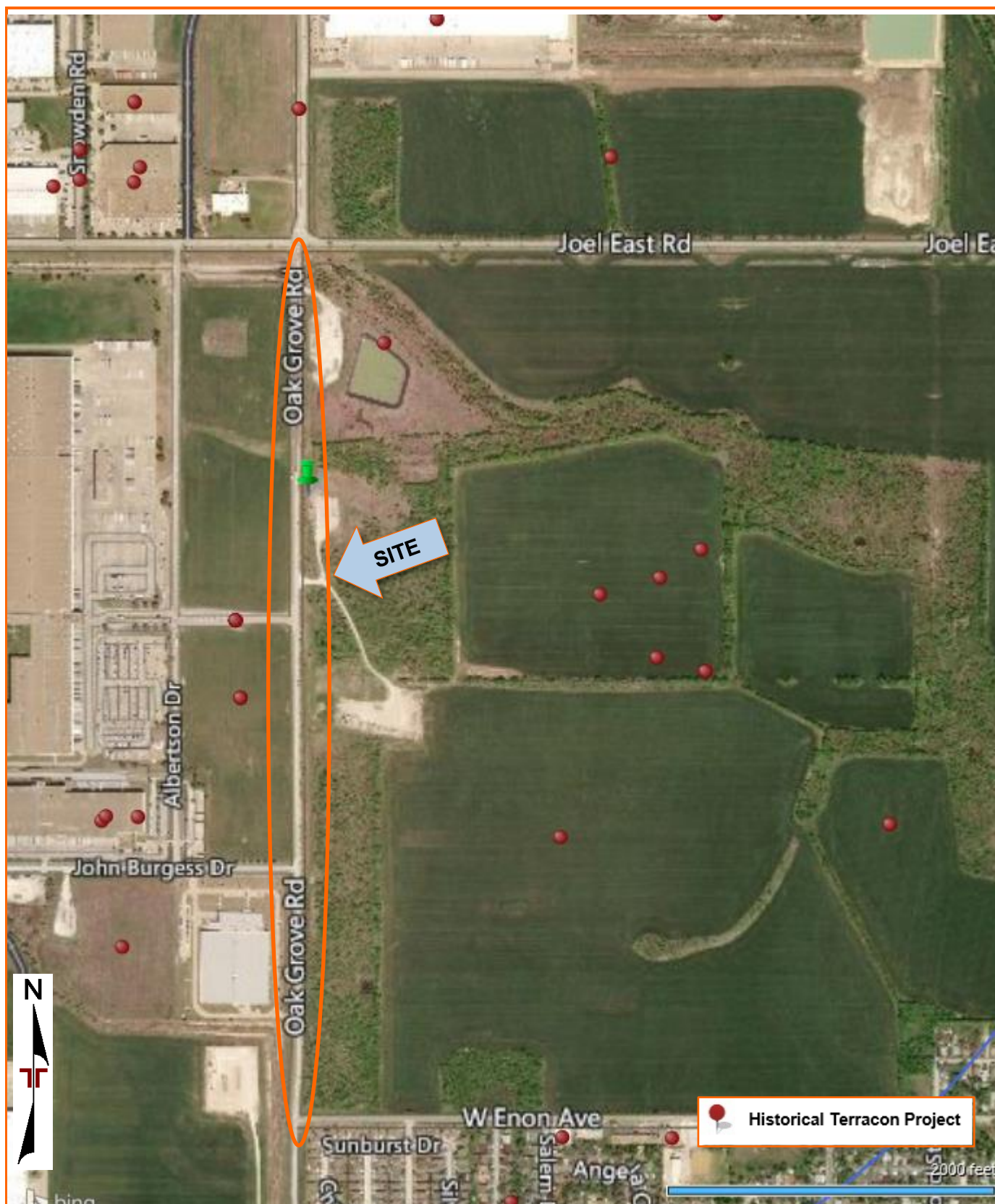


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN

Oak Grove Road Improvement ■ Fort Worth, Texas
November 20, 2020 ■ Terracon Project No. 95205149

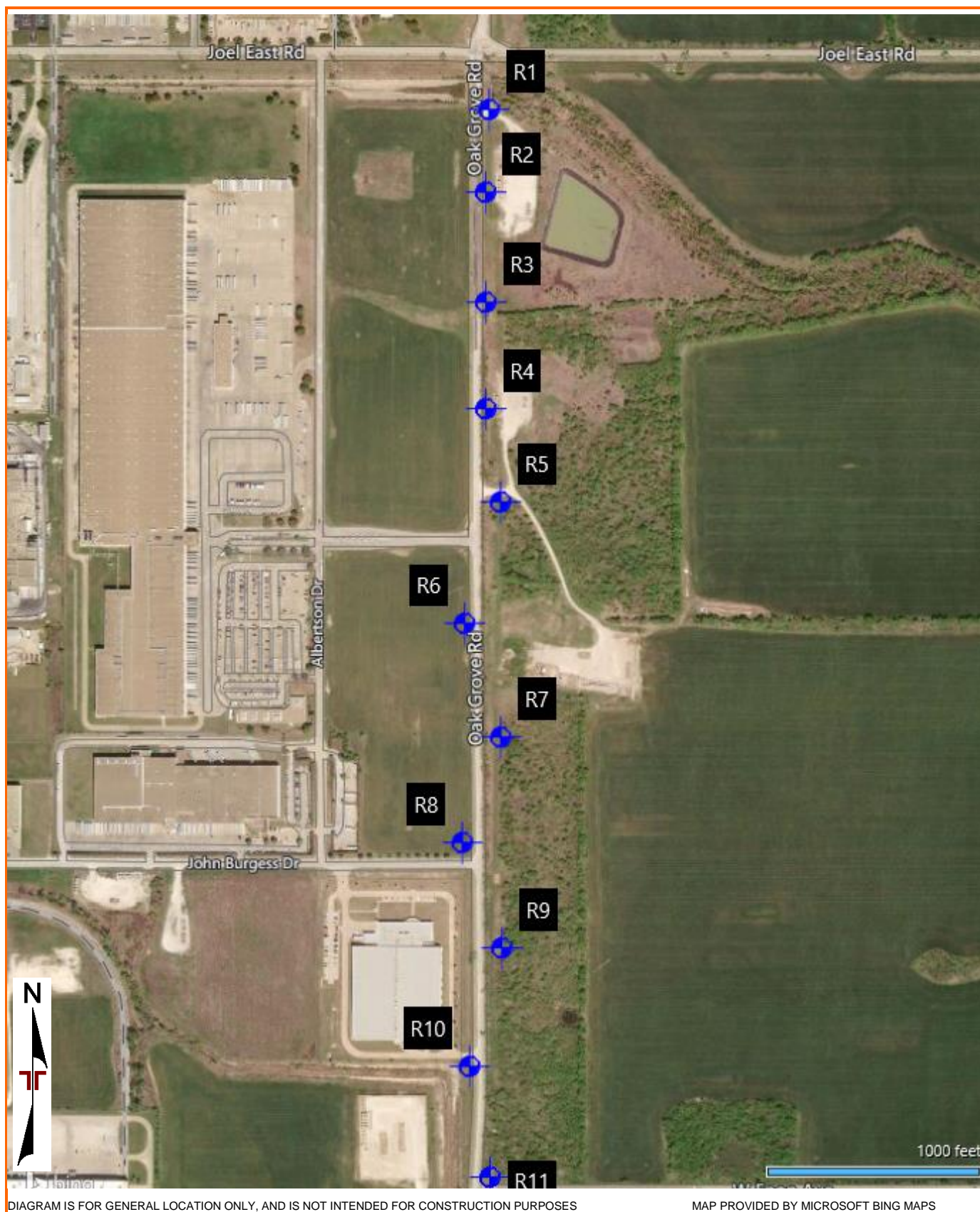


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION RESULTS

Contents:

Boring Logs (R-1 through R-11)

Note: All attachments are one page unless noted above.

BORING LOG NO. R- 1

Page 1 of 1

PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.6449° Longitude: -97.3041° Approximate Surface Elev.: 683 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
1		FILL - FLEXIBLE BASE MATERIAL	2.0			-				3.3			
2		FAT CLAY (CH) , dark brown, very stiff to hard	5			3.5 (HP)				30.5		75-27-48	
						4.5 (HP)				29.5			
						3.5 (HP)							
						4.5 (HP)							
		LEAN CLAY (CL) , tan, hard	8.0										
			10.0										
		Boring Terminated at 10 Feet	10										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 95205149 OAK GROVE ROAD IM.GPJ TERRACON_DATATEMPLATE.GDT 11/20/20

BORING LOG NO. R- 2

Page 1 of 1

PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.6439° Longitude: -97.3042° Approximate Surface Elev.: 682 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
2		FAT CLAY (CH) , dark brown, hard	5			4.5+ (HP)				22.2			
						4.5+ (HP)				20.4		71-24-47	82
						4.5+ (HP)				21.1			
						4.5+ (HP)							
						4.5+ (HP)							
		LEAN CLAY (CL) , tan, hard	7.0										
			10.0										
		Boring Terminated at 10 Feet	10										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 95205149 OAK GROVE ROAD IM.GPJ TERRACON_DATATEMPLATE.GDT 11/20/20


BORING LOG NO. R- 3

Page 1 of 1

PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.6425° Longitude: -97.3042° Approximate Surface Elev.: 681 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
2		FAT CLAY (CH) , dark brown, hard FAT CLAY (CH) , dark brown, very stiff	5			4.5+ (HP)				24.0		72-26-46	
						4.5+ (HP)				24.4			
						3.5 (HP)				25.6			
						3.5 (HP)							
						3.5 (HP)							
		Boring Terminated at 10 Feet	10										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 95205149 OAK GROVE ROAD IM.GPJ TERRACON_DATATEMPLATE.GDT 11/20/20




BORING LOG NO. R- 4

Page 1 of 1

PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION	See Exploration Plan	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS	PERCENT FINES
		Latitude: 32.6411° Longitude: -97.3042°						Approximate Surface Elev.: 680 (Ft.) +/-		LL-PL-PI				
DEPTH		ELEVATION (Ft.)												
2		FAT CLAY (CH) , dark brown, hard		5			4.5 (HP)				20.7		77-27-50	
							4.5 (HP)				18.8			
		5.0	675+/-				4.5+ (HP)				17.8			
							4.5+ (HP)							
3		LEAN CLAY (CL) , with sand, tan, hard												
		8.0	672+/-											
3		LIMESTONE , with clay seams, tan		10										
		10.0 670+/-												
		Boring Terminated at 10 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 95205149 OAK GROVE ROAD IM.GPJ TERRACON DATATEMPLATE.GDT 11/20/20

BORING LOG NO. R- 5

Page 1 of 1

PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.6399° Longitude: -97.3039° Approximate Surface Elev.: 682 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
2		FAT CLAY (CH) , dark brown, hard				4.5+ (HP)				24.0			
						4.5+ (HP)				20.2		79-28-51	
		5.0 677+/-	5			3.5 (HP)				15.5			
		LEAN CLAY (CL) , with sand, tan, very stiff				3.5 (HP)							
3		8.0 674+/-											
		LIMESTONE , with clay seams, tan											
		10.0 672+/-	10			100/1.5"							
Boring Terminated at 10 Feet													

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

BORING LOG NO. R- 6

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PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.6383° Longitude: -97.3045° Approximate Surface Elev.: 689 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
2		FAT CLAY (CH) , dark brown, very stiff to hard LEAN CLAY (CL) , tan, hard	5			4.5 (HP)				18.0		63-21-42	
						4.0 (HP)				19.5			
						4.5+ (HP)				22.9			
						4.5+ (HP)							
						4.5+ (HP)							
		Boring Terminated at 10 Feet	10										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 95205149 OAK GROVE ROAD IM.GPJ TERRACON_DATATEMPLATE.GDT 11/20/20


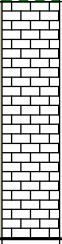
BORING LOG NO. R- 7

Page 1 of 1

PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.6369° Longitude: -97.3039° Approximate Surface Elev.: 691 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
2		FAT CLAY (CH) , dark brown, hard				4.5+ (HP)				24.2		66-24-42	
						4.5+ (HP)				17.0			
						4.5+ (HP)				8.4			
3		LIMESTONE , with clay layers and seams, tan	5										
						100/1.5"							
		Boring Terminated at 10 Feet	10										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 95205149 OAK GROVE ROAD IM.GPJ TERRACON_DATATEMPLATE.GDT 11/20/20

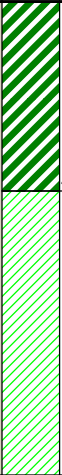
BORING LOG NO. R- 8

Page 1 of 1

PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.6355° Longitude: -97.3045° Approximate Surface Elev.: 697 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
2		FAT CLAY (CH) , dark brown, hard	5			4.5+ (HP)				21.5		72-25-47	
		4.0 693+/-				4.5+ (HP)				15.1			
		LEAN CLAY (CL) , tan, hard				4.5+ (HP)				11.3			
						4.5+ (HP)							
		10.0 687+/-				4.5 (HP)							
		Boring Terminated at 10 Feet	10										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 95205149 OAK GROVE ROAD IM.GPJ TERRACON_DATATEMPLATE.GDT 11/20/20

BORING LOG NO. R- 9

Page 1 of 1

PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.6342° Longitude: -97.304° Approximate Surface Elev.: 694 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
2		FAT CLAY (CH) , dark brown, hard	4.0 690+/-			4.5+ (HP)				24.0		61-21-40	
						4.5+ (HP)				15.8			
		LEAN CLAY (CL) , brown, hard				4.5+ (HP)				9.0			
3		LIMESTONE , with clay layers and seams, tan	6.0 688+/-										
						100/2.5"							
		Boring Terminated at 10 Feet	10										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

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BORING LOG NO. R-10

Page 1 of 1

PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.6327° Longitude: -97.3044° Approximate Surface Elev.: 693 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
2		FAT CLAY (CH) , dark brown, hard	5			4.5+ (HP)				11.5		63-21-42	
						4.5+ (HP)				12.2			
						4.5+ (HP)				14.6			
						4.5+ (HP)							
						4.5+ (HP)							
						4.5+ (HP)							
		LEAN CLAY (CL) , with sand, tan, hard											
		Boring Terminated at 10 Feet	10										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 95205149 OAK GROVE ROAD IM.GPJ TERRACON_DATATEMPLATE.GDT 11/20/20

BORING LOG NO. R-11

Page 1 of 1

PROJECT: Oak Grove Road Improvement

CLIENT: Carter Park East Land LLC
Dallas, TX

SITE: Oak Grove Road and Joel East Road
Fort Worth, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.6313° Longitude: -97.3041° Approximate Surface Elev.: 687 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
2		FAT CLAY (CH) , dark brown, hard	4.0 5 10.0			4.5+ (HP)				16.9		54-19-35	
						4.5+ (HP)				18.0			
		LEAN CLAY (CL) , with sand, tan, hard				4.5+ (HP)				11.6			
						4.5+ (HP)							
						4.5+ (HP)							
		Boring Terminated at 10 Feet	10										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Ground surface elevation estimated from the civil drawing provided by Kimley Horn

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater not encountered during drilling

Terracon
2501 E Loop 820 N
Fort Worth, TX

Boring Started: 11-13-2020

Boring Completed: 11-13-2020

Drill Rig: Truck

Driller: Gedco

Project No.: 95205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 95205149 OAK GROVE ROAD IM.GPJ TERRACON_DATATEMPLATE.GDT 11/20/20

SUPPORTING INFORMATION

Contents:

General Notes

Unified Soil Classification System

Note: All attachments are one page unless noted above.

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A					Soil Classification	
					Group Symbol	Group Name ^B
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	Cu ≥ 4 and 1 ≤ Cc ≤ 3 ^E	GW	Well-graded gravel ^F	
			Cu < 4 and/or [Cc<1 or Cc>3.0] ^E	GP	Poorly graded gravel ^F	
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{F, G, H}	
			Fines classify as CL or CH	GC	Clayey gravel ^{F, G, H}	
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	Cu ≥ 6 and 1 ≤ Cc ≤ 3 ^E	SW	Well-graded sand ^I	
			Cu < 6 and/or [Cc<1 or Cc>3.0] ^E	SP	Poorly graded sand ^I	
		Sands with Fines: More than 12% fines ^D	Fines classify as ML or MH	SM	Silty sand ^{G, H, I}	
			Fines classify as CL or CH	SC	Clayey sand ^{G, H, I}	
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	PI > 7 and plots on or above “A”	CL	Lean clay ^{K, L, M}	
			PI < 4 or plots below “A” line ^J	ML	Silt ^{K, L, M}	
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay ^{K, L, M, N}
			Liquid limit - not dried			Organic silt ^{K, L, M, O}
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above “A” line	CH	Fat clay ^{K, L, M}	
			PI plots below “A” line	MH	Elastic Silt ^{K, L, M}	
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay ^{K, L, M, P}
			Liquid limit - not dried			Organic silt ^{K, L, M, Q}
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat	

^A Based on the material passing the 3-inch (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

$$E \quad Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

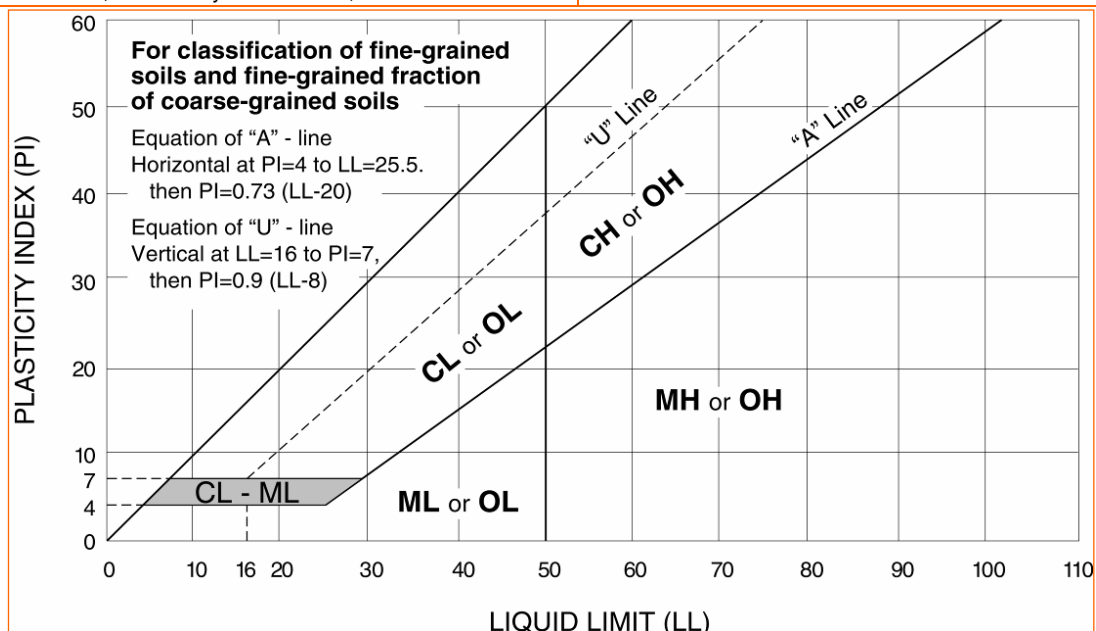
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.










^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



SAMPLING	WATER LEVEL	FIELD TESTS
 Auger Cuttings  Rock Core  Grab Sample  Shelby Tube  Standard Penetration Test  Texas Cone Penetrometer	 Water Initially Encountered  Water Level After a Specified Period of Time  Water Level After a Specified Period of Time <p>Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination for groundwater levels is not possible with short term water level observations.</p>	N Standard Penetration Test Resistance (Blows/Ft) (HP) Hand Penetrometer (T) Torvane (DCP) Dynamic Cone Penetrometer UC Unconfined Compressive Strength (PID) Photo-Ionization Detector (OVA) Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel, or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS		CONSISTENCY OF FINE-GRAINED SOILS		
(More than 50% retained on No. 200 sieve.)		(50% or more passing the No. 200 sieve.)		
Density determined by Standard Penetration Resistance		Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	Standard Penetration or N-value Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength Qu, (tsf)	Standard Penetration or N-value Blows/Ft.
Very Loose	0 - 3	Very Soft	Less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.5	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.5 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	>50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	>4.00	>30

RELATIVE PROPORTIONS OF SAND AND GRAVEL		RELATIVE PROPORTIONS OF FINES	
Descriptive Term(s) of other constituents	Percent of Dry Weight	Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	<15	Trace	<5
With	15 - 29	With	5 - 12
Modifier	>30	Modifier	>12

GRAIN SIZE TERMINOLOGY		PLASTICITY DESCRIPTION	
Major Component of Sample	Particle Size	Term	Plasticity Index
Boulders	Over 12 in. (300 mm)	Non-plastic	0
Cobbles	12 in. to 3 in. (300 mm to 75 mm)	Low	1 - 10
Gravel	3 in. to #4 sieve (75mm to 4.75mm)	Medium	11 - 30
Sand	#4 to #200 sieve (4.75mm to 0.075mm)	High	>30
Silt or Clay	Passing #200 sieve (0.075mm)		

GC-6.06.D Minority and Women Owned Business Enterprise Compliance

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GC-6.07 Wage Rates

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2013 PREVAILING WAGE RATES
(Heavy and Highway Construction Projects)

CLASSIFICATION DESCRIPTION	Wage Rate
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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GR-01 60 00 Product Requirements

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CITY OF FORT WORTH
WATER DEPARTMENT
STANDARD PRODUCT LIST

Updated: October 21, 2020

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: 10/21/2020

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
Water & Sewer - Manholes & Bases/Components 33-39-10 (Rev 2/3/16)						
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
		<u>Water & Sewer - Manholes & Bases/Fiberglass 33-39-13 (1/8/13)</u>				
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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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		Water & Sewer - Manholes & Bases/Frames & Covers/Rectangular 33-05-13 (Rev 2/3/16)				
*	33 05 13	Manhole Frames and Covers	Western Iron Works, Bass & Hays Foundry	1001		24"x40" WD



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water & Sewer - Manholes & Bases/Frames & Covers/Standard (Round) 33-05-13 (Rev 2/3/16)						
*	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" Dia. 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" Dia. MH Ring and Cover	Sigma Corporation	MH1651FWN & MH16502		30" Dia
07/19/11	33 05 13	30" Dia. MH Ring and Cover	Star Pipe Products	MH32FTWSS-DC		30" Dia
08/10/11	33 05 13	30" Dia. MH Ring and Cover	Accucast	220700 Heavy Duty with Gasket Ring		30" Dia
10/14/13	33 05 13	30" Dia. 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" Dia. MH Ring and Cover (Hinged & Lockable) CI	SIP Industries	2280 (32")	ASTM A 48	30" Dia.
09/16/19	33 05 13.10	30" Dia. MH Ring and Cover	Composite Access Products, L.P.	CAP-ONE-30-FTW, Composite, w/ Lock w/o Hing		30" Dia.



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water & Sewer - Manholes & Bases/Frames & Covers/Water Tight & Pressure Tight 33-05-13 (Rev 2/3/16)						
*	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
Water & Sewer - Manholes & Bases/Precast Concrete (Rev 1/8/13)						
*	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"
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"
09/06/19	33 39 20	Manhole, Precast Concrete	Forterra Pipe and Precast	60" & 72" I.D. Manhole w/32" Cone	ASTM C-76	60" & 72"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water & Sewer - Manholes & Bases/Rehab Systems/Cementitious						
*	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
Water & Sewer - Manholes & Bases/Rehab Systems/NonCementitious						
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
	<u>Water & Sewer - Manhole Inserts - Field Operations Use Only (Rev 2/3/16)</u>					
*	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



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water & Sewer - Pipe Casing Spacers 33-05-24 (07/01/13)						
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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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		Water & Sewer - Pipes/Ductile Iron 33-11-10(1/8/13)				
*	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 & Sewer - Utility Line Marker (08/24/2018)</u>				



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<u>Sewer - Coatings/Epoxy 33-39-60 (01/08/13)</u>				
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
		<u>Sewer - Combination Air Valves</u>				
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
		<u>Sewer - Pipes/Concrete</u>				
*	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	SPL Item #95-Manhole, #98-Pipe	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
		<u>Sewer - Pipe Enlargment System (Method)33-31-23 (01/18/13)</u>				
		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
		Sewer - Pipe/Fiberglass Reinforced Pipe 33-31-13(1/8/13)				
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
		<u>Sewer - Pipes/HDPE 33-31-23(1/8/13)</u>				
*		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
		<u>Sewer - Pipes/PVC (Pressure Sewer) 33-11-12 (4/1/13)</u>				
12/02/11	33-11-12	DR-14 PVC Pressure Pipe	Pipelife 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
	<u>Sewer - Pipes/PVC* 33-31-20 (7/1/13)</u>					
*	33-31-20	PVC Sewer Pipe	J-M Manufacturing Co., Inc. (JM Eagle)	SDR-26	ASTM D 3034	4" - 15"
12/23/97*	33-31-20	PVC Sewer Pipe	Diamond Plastics Corporation	SDR-26	ASTM D 3034	4" thru 15"
*	33-31-20	PVC Sewer Pipe	Lamson Vylon Pipe		ASTM F 789	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)	SDR 26/35 PS 115/46	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	SDR 26/35 PS 115/46	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	
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"
10/21/2020	33 31 20	PVC Sewer Pipe	NAPCO	SDR 26	ASTM D3034	4" - 15"
10/22/2020	33 31 20	PVC Sewer Pipe	Sanderson Pipe Corp.	SDR 26	ASTM D3034	4"- 15"
10/21/2020	33 31 20	PVC Sewer Pipe	NAPCO	SDR 26/35 PS 115/46	ASTM F-679	18"- 36"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<u>Sewer - Pipes/Rehab/CIPP 33-31-12 (01/18/13)</u>				
*		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
		<u>Sewer - Pipes/Rehab/Fold & Form</u>				
*		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
		<u>Sewer - Pipes/Open Profile Large Diameter</u>				
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
Water - Appurtenances 33-12-10 (07/01/13)						
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		



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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
		<u>Water - Combination Air Release 33-31-70 (01/08/13)</u>				
*	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
Water - Dry Barrel Fire Hydrants 33-12-40 (01/15/14)						
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
	Water - Meters					
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
Water - Pipes/PVC (Pressure Water) 33-31-70 (01/08/13)						
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"
9/6/2019	33 11 12	PVC Pressure Pipe	Underground Solutions Inc.	DR14 Fusible PVC	AWWA C900	4" - 8"
9/6/2019	33 11 12	PVC Pressure Pipe	NAPCO	DR18	AWWA C900	16" - 24"
9/6/2019	33 11 12	PVC Pressure Pipe	NAPCO	DR14	AWWA C900	4"- 12"
9/6/2019	33 11 12	PVC Pressure Pipe	Sanderson Pipe Corp.	DR14	AWWA C900	4"- 12"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water - Pipes/Valves & Fittings/Ductile Iron Fittings 33-11-11 (01/08/13)						
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 Technicial 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"



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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
Water - Pipes/Valves & Fittings/Resilient Seated Gate Valve* 33-12-20 (05/13/15)						
		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"



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WATER DEPARTMENT
STANDARD PRODUCT LIST**

Updated: 10/21/2020

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
	Water - Pipes/Valves & Fittings/Rubber Seated Butterfly Valve 33-12-21 (07/10/14)					
*	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"

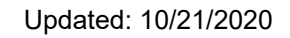


**CITY OF FORT WORTH
WATER DEPARTMENT
STANDARD PRODUCT LIST**

Updated: 10/21/2020

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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		Water - Polyethylene Encasement 33-11-10 (01/08/13)				
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
09/06/19	33-11-11	Polyethylene Encasment	Northtown Products Inc.	PE Encasement fro DIP	AWWA C105	8 mil LLD



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
WATER DEPARTMENT
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Approval	Spec No.	Classification	Manufacturer	Model No.	National Spec	Size
		<u>Water - Automatic Flusher</u>				
10/21/20		Automated Flushing System	Mueller Hydroguard	HG6-A-IN-2-BRN-LPRR(Portable) HG2-A-IN--2-PVC-018-LPLG(Permanent)		



**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
<u>Storm Sewer - Manholes & Bases/Frames & Covers/Standard (Round) 33-05-13 (Rev 11/28/18)</u>						
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