

THE CITY OF SCHERTZ TEXAS

WATERLINE REPLACEMENT:
I.H. 35 ~ SCHERTZ PARKWAY TO PLAZA DRIVE
#12-ENG-37-C-03



FORD ENGINEERING INC
AUGUST 29, 2012
FEI PROJECT NO. 1124.84 12



CITY OF SCHERTZ, 10 COMMERCIAL PLACE, SCHERTZ, TEXAS 78154

CONTRACT DOCUMENTS

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The City of Schertz Standard Specifications and Technical Specifications for construction dated March 2011 or latest edition applicable to this project are to be utilized. These specifications are available from the City of Schertz Public Works Department or from the City of Schertz Web Site.

TECHNICAL SPECIFICATIONS

DIVISION 1 GENERAL REQUIREMENTS

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| 01110 | Summary of Work <u>INCLUDED HEREIN</u> |
| 01145 | Use of Premises |
| 01255 | Change Order Procedures |
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| 01330 | Submittal Procedures |
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| 01610 | Basic Product Requirements |
| 01630 | Product Substitution Procedures |
| 01725 | Field Surveying |
| 01731 | Cutting and Patching |
| 01732 | Procedures for Water Valve Assistance (with Attachments) |
| 01740 | Site Restoration |
| 01755 | Starting Systems |
| 01770 | Closeout Procedures |
| 01782 | Operation and Maintenance Data |
| 01785 | Project Record Documents |

DIVISION 2 SITEWORK

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| 02081 | Cast-in-Place Concrete Manholes |
| 02082 | Pre-cast Concrete Manholes |
| 02083 | Fiberglass Manholes |
| 02084 | Frames, Grates, Rings, and Covers |
| 02085 | Valve Boxes, Meter Boxes, and Meter Valves |
| 02086 | Adjusting Manholes, Inlets, and Valve Boxes to Grade |
| 02221 | Removing Existing Pavements and Structures |
| 02222 | Abandonment of Sewer |
| 02233 | Clearing and Grubbing |
| 2260 | Trench Safety System |
| 2261 | Channel Excavation |
| 02315 | Roadway Excavation |
| 02316 | Excavation and Backfill for Structures |
| 02317 | Excavation and Backfill for Utilities |
| 02319 | Borrow |
| 02320 | Utility Backfill Materials |
| 02321 | Cement Stabilized Sand |
| 02330 | Embankment |
| 02447 | Auguring Pipe and Conduit |
| 02448 | Pipe and Casing Auguring for Sewers |
| 02465 | Drilled Shaft Foundations |
| 02476 | Caisson for Lift Station |
| 02501 | Ductile Iron Pipe and Fittings |
| 02502 | Steel Pipe and Fittings |
| 02503 | Copper Tubing |
| 02505 | High Density Polyethylene (HDPE) Solid and Profile Wall Pipe |
| 02506 | Polyvinyl Chloride Pipe |
| 02511 | Water Lines |
| 02512 | Water Tap and Service Line Installation |
| 02513 | Wet Connections |

| | |
|-------|--|
| 02514 | Disinfection of Water Lines |
| 02515 | Hydrostatic Testing of Pipelines |
| 02516 | Cut, Plug and Abandonment of Water Lines |
| 02518 | Steel Pipe and Fittings for Large Diameter Water Lines |
| 02520 | Fire Hydrants |
| 02521 | Gate Valves |
| 02522 | Butterfly Valves |
| 02523 | Pressure Reducing Valves |
| 02524 | Air Release and Vacuum Relief Valves |
| 02525 | Tapping Sleeves and Valves |
| 02527 | Polyurethane Coatings on Steel or Ductile Iron Pipe |
| 02528 | Polyethylene Wrap |
| 02531 | Gravity Sanitary Sewers |
| 02532 | Sanitary Sewer Force Mains |
| 02533 | Acceptance Testing for Sanitary Sewers |
| 02534 | Sanitary Sewer Service Stubs or Reconnections |
| 02611 | Reinforced Concrete Pipe |
| 02612 | Pre-cast Reinforced Concrete Box Sewers |
| 02621 | Geotextile for Drainage Structures |
| 02631 | Storm Sewers |
| 02632 | Cast-In-Place Inlets, Headwalls and Wingwalls |
| 02633 | Pre-cast Concrete Inlets, Headwalls and Wingwalls |
| 02642 | Corrugated Metal Pipe |
| 02711 | Asphalt Treated Base |
| 02712 | Cement Stabilized Base Course |
| 02713 | Flexible Base |
| 02714 | Flexible Base Course for Temporary Roads, Detours, Shoulders, and Driveways |
| 02716 | Geogrid Reinforcement for Payments |
| 02741 | Asphaltic Concrete Pavement |
| 02742 | Prime Coat |

| | |
|-------|---|
| 02743 | Tack Coat |
| 02751 | Concrete Paving |
| 02752 | Concrete Pavement Joints |
| 02753 | Concrete Pavement Curing |
| 02754 | Concrete Driveways |
| 02761 | Colored Concrete for Medians and Sidewalks |
| 02762 | Blast Cleaning of Pavement |
| 02764 | Raised Pavement Markers |
| 02765 | Temporary and Removable ReflectORIZED Pavement Markings |
| 02767 | Thermoplastic Pavement Markings |
| 02771 | Curb, Curb and Gutter, and Headers |
| 02772 | Concrete Medians and Directional Islands |
| 02775 | Concrete Sidewalks |
| 02811 | Landscape Irrigation |
| 02893 | Traffic Signal Construction |
| 02911 | Topsoil |
| 02915 | Tree Planting |
| 02921 | Hydromulch |
| 02922 | Sodding |
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DIVISION 3 CONCRETE

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DIVISION 5 METALS

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CITY OF SCHERTZ INVITATION TO BID

The City of Schertz is accepting sealed bids for the construction of **“WATERLINE REPLACEMENT: I.H. 35 ~ SCHERTZ PARKWAY TO PLAZA DRIVE”**:

Sealed bids should be received by the Director of Purchasing and Asset Management located at 10 Commercial Place, Building #1, Schertz, Texas 78154 **by 10:00 a.m. (CST) on October 4, 2012** via hand delivery. ****No fax or E-mail bids will be accepted.** Sealed Bids will then be opened and read aloud in the City of Schertz Public Works Conference Room located at 10 Commercial Place, Building #2, Schertz, Texas 78154. Sealed Bids must be submitted with one (1) original and four (4) copies and be clearly marked in a sealed envelope as **“WATERLINE REPLACEMENT: I.H. 35 ~SCHERTZ PARKWAY TO PLAZA DRIVE #12-ENG-37-C-03”**. Bids submitted after the aforementioned date and time will not be accepted.

Interested vendors/contractors may attend a Pre-Bid meeting on September 25, 2012 at 10:00 AM (CST) in the City of Schertz Public Works Conference Room located at 10 Commercial Place, Building #2, Schertz, Texas 78154. Contractors must obtain copies of the contract documents, plans, and specifications from Ford Engineering, Inc., 10927 Wye Drive, Suite 104, San Antonio, Texas 78217. A non-refundable fee of \$100 (One hundred dollars) is required to obtain a copy of the plans. **ONLY CHECKS ACCEPTED.** Questions in reference to Bid procedures may be directed to the Purchasing Department, 210-619-1160, or questions in reference to the Project may be directed to Mark Hill, Ford Engineering, at 210-590-4777.

All documents, including Addendums to this project will be placed on the City of Schertz website at www.schertz.com/Purchasing.

The City of Schertz reserves the right to reject any or all bids and to select the bid deemed in the best interest of the City of Schertz from among those received.

INSTRUCTIONS TO BIDDERS

1. Sealed bids, **one original and four copies**, will be received by The City of Schertz, Texas, at the place and the time specified in the Invitation to Bidders. No bids may be withdrawn after the scheduled bid opening time without the written consent of the City Purchasing Manager. All bids received after the time set for the bid opening will be returned unopened.
2. Each bid must be accompanied by Certified or Cashier's Check or an approved Bid Bond in the amount of not less than five percent (5%) of the total bid, payable without recourse to the City of Schertz, Texas. Surety shall provide a copy of the Power of Attorney authorizing the Executing Agent the authority to execute the bid bond documents and bind the Surety to the bid bond conditions. Surety shall also provide evidence that the Surety is authorized to provide service in the State of Texas at the amount on the bid bond. Contractor agrees that bid bonds shall be with insurance companies or sureties that are A.M. Best Rated "B+" or better. Bid Bonds, Certified or Cashier's checks will be retained for the first, second, and third lowest bidders until the contract is executed.
3. Bids must be submitted on the proposal form attached and shall be sealed in an envelope plainly marked on the outside with job number, the date and time of the bid opening, and the name of material or services bid on. Samples, when required, must be submitted within the time specified at no expense to the City of Schertz. If not destroyed or used up during testing, samples will be returned upon request at the Bidder's expense.
4. Bids will be prepared in accordance with the following:
 - (a) The Bidder shall thoroughly examine the drawings, specifications, schedule, instructions and all other documents.
 - (b) Bidder shall make all investigations necessary to inform himself thoroughly regarding plant and facilities for delivery of material and equipment as required by the bid conditions. No plea of ignorance by the Bidder of conditions that exist, or that may hereafter exist, as a result of failure or omission on the part of the Bidder to make the necessary examinations and investigations to fulfill in every detail the requirements of the contract documents, will be accepted as the basis for varying the requirements of the City of Schertz or the compensation to the Contractor.
5. Bids will be prepared in accordance with the following:
 - (a) The Bidder shall furnish all information required by the bid form. The Bidder shall print or type his name and manually sign the schedule and each continuation sheet on which any entry is made
 - (b) Pursuant to Section 151.311 of the Texas Tax Code, as amended, in order for the CITY to continue to benefit from its status as a State Sales and Use Tax Exempt Organization, construction contracts must be awarded on a "separated contract" basis. A "separated

contract" is one that distinguishes the value of the tangible personal property (materials such as pipe, bricks, lumber, concrete, paint, etc.) to be incorporated into the project from the total contract price. Under the "separated contract" format, the contractor in effect becomes a "seller" to the City of Schertz of materials that are to be physically incorporated into the project realty. As a "seller", the contractor will issue a "Texas Certificate of Resale" to the supplier in lieu of paying the sales tax on materials at the time of purchase. The contractor will also issue a "Certificate of Exemption" to the supplier demonstrating that the personal property is being purchased for resale and that the resale is to a department of the City of Schertz, which is a sales tax exempt entity. Contractors should be careful to consult the most recent guidelines of the State Comptroller of Public Accounts regarding the sales tax status of supplies and equipment that are used and consumed during project work but that are not physically incorporated into the project realty. Contractors that have questions about this law are asked to inquire with the State Comptroller of Public Accounts, Tax Administration Division, State of Texas, Austin, Texas 78774 (512) 463-4934. Bidders will not include any federal taxes in bid prices since the City of Schertz, is exempt from payment of such taxes. "Texas Certificates of Exemption", "Texas Certificates of Resale" and "Texas Sales Tax Permits" are forms available to the contractor through the regional offices of the State Comptroller of Public Accounts.

6. Any catalogue or manufacturer's reference used in describing an item is merely descriptive and not restrictive unless otherwise noted, and is used only to indicate type and quality of material. When items proposed differ in any way from those specified, Bidders are required to state exactly what they intend to furnish. Otherwise, they shall be required to furnish the items as specified.
7. The work shall be done and completed in accordance with the following Contract Documents as furnished by the City of Schertz:

- The Invitation to Bidders
- The Instructions to Bidders
- The Proposal
- The Payment Bond
- The Performance Bond
- The General Conditions of the Contract
- The Special Conditions of the Contract
- The Construction Specifications
- The Standard Drawings
- Addenda
- Change Orders

8. The successful Bidder will be required to execute the standard City of Schertz Contract Agreement, Performance and Payment Bonds as outlined in the General Conditions. These forms will be prepared and furnished by the City of Schertz. Surety shall provide a copy of the Power of Attorney authorizing the Executing Agent the authority to execute the bond documents and bind the Surety to the bond conditions. Surety shall also provide evidence that the Surety is authorized to provide service in the State of Texas at the amount on the Bond. Contractor agrees that all Performance and Payment Bonds required shall be with insurance companies or sureties that are A.M. Best Rated "B+" or better. If the contract amount does not exceed \$25,000.00, then the Performance and Payment Bonds will not be required.

9. In all cases, the written unit price in the proposal shall govern. Where there is an error in the extension, the City of Schertz will extend the written unit price and make any corrections necessary. Any error will be corrected, and the correct amount will be the basis for determining the bid position.
10. Bidders are advised that estimated quantities of anticipated requirements during the contract period are not calculated with certainty. It is the policy of the City of Schertz, however, as a matter of prudent buying and contracting, to establish in advance of actual purchase or performance of the work, the price of the work which is anticipated, and the price on certain items calculated on the maximum number of a particular item which it might need during a contract period. Bidders are advised that during such period, the City of Schertz may determine not to purchase any of the items or may delete any or all of the work listed in a bid proposal or invitation. Under such a contract, the City of Schertz's only commitment is to purchase the items from or proceed with the work by the successful Bidder at the price bid if the City of Schertz should, in fact, decide to purchase such items during the contract period or proceed with such work as proposed. On all bids, the City of Schertz reserves the right to reject a bid, which in the City of Schertz's judgment is "unbalanced." An "unbalanced bid" is defined as one in which a particular item or a class of items is bid at a figure sufficiently less than or higher than either general market price or Bidder's cost, so as to make the Bidder low on the overall bid but high on a significant number of other items. The City of Schertz reserves the right to exercise its judgment and reject such a bid as unqualified. If such an unbalanced bid is nevertheless accepted by the City of Schertz and the contract awarded, the City of Schertz reserves the right to delete any or all of such items from the purchases to be made or work to be done.
11. The City of Schertz will provide all necessary rights-of-way or easements for the project.
12. No owner, stockholder, partner, officer, or employee of the Bidder, or any person who has a financial interest in this contract in any way, whether direct or indirect, shall be an officer or employee of the City of Schertz at the time of bidding on this contract, or during the life of this contract. Any violations of this provision will render the bid or contract void.
13. The Contractor will establish a local address and telephone number and file that information with the City Purchasing Manager prior to starting work. The Contractor's local address and telephone number will be maintained until the work is completed and accepted by the owner.
14. In case of ambiguity, duplication or obscurity in the bids, the City of Schertz reserves the right to construe and apply the meaning thereof. City of Schertz reserves the right to reject any and all bids and to waive formalities.
15. The City of Schertz reserves the right, subject to the Contractor's approval, to extend, any annual contract for an additional period of not more than one year, subject to the same terms and conditions as enumerated in the invitation and instruction to Bidders and at a price or prices not to exceed the prices quoted.
16. It is anticipated that the contract will be awarded within **60** days after bid opening to the lowest responsible Bidder whose bid, conforming to the invitation for bids, is most advantageous to the City of Schertz. Bidders are advised that the awarding of contracts on a bid basis is a requirement

of state law and city charter. The purposes of such requirements are: (1) to prevent the historic abuses of negotiated purchases; (2) to enable the City of Schertz to use its purchasing power to buy at the lowest possible prices for the benefit of the system and the public; and (3) to enable the City of Schertz to award the contract to other than the low Bidder when, in the City of Schertz's judgment, the low Bidder is not qualified. Bidders are advised that it is not the intention of the City of Schertz, necessarily, to award contracts on the basis of differences in the bids other than differences in basic "price of the item." The City of Schertz reserves the right to take whichever action as may, in the judgment of the City of Schertz, to be its best interest as follows:

- (1) Reject all bids:
- (2) Award the bids by the drawing of lots; or
- (3) Award the bids on the basis of differences other than price.

Bidders are advised that the awarding of bids is a matter solely within the jurisdiction of the City of Schertz. In the event a Bidder wishes to protest the award recommended by the Engineer, the City of Schertz invites such Bidder to notify the management of the City of Schertz and to appear at a meeting of the Schertz City Council for a public hearing prior to the award. The City of Schertz reserves the right to accept any items or groups of items in this bid. Execution of written acceptance of a bid by the City of Schertz shall constitute an award.

17. The City of Schertz may reject the apparent low Bidder when: (a) the Bidder misstates or conceals any material fact in the bid, or if (b) the Bidder does not conform with the law or the bid, or if (c) the bid is conditional, or if (d) the bid is unbalanced, or when (e) the lowest Bidder is not, in the City of Schertz's judgment, qualified, or when (f) the lowest bid is not, in the City of Schertz's judgment, the lowest and best bid, or if (g) the Bidder fails to acknowledge in the final bid price of the proposal and include signed copies thereof, any and all addenda issued prior to bid opening. As a courtesy to Bidders, every attempt will be made by the City of Schertz to notify Bidders of any and all addenda issued; however, it is the full responsibility of each Bidder to verify the existence of and include with their proposal, any and all addenda issued by the City of Schertz. The City of Schertz reserves the right to reject any and all bids, to accept any bids, or parts thereof, considered by the City of Schertz to be to its best interest, and to waive formalities or irregularities.
18. Before submitting a bid, the Bidder should examine carefully the Proposal, Plans, Specifications, Special Conditions, General Conditions, and the form of the contract to be entered into for the work contemplated. He shall examine the site of the work and satisfy himself as to the conditions which will be encountered relating to the character, quality and quantity of work to be performed and materials to be furnished. Such examinations shall include the arrangement and condition of existing structures and facilities, the procedure necessary for maintenance of uninterrupted operation of existing facilities, the availability and cost of labor, and facilities for transportation, handling and storage of materials and equipment.

The submission of a bid by the Bidder shall be conclusive evidence that he has complied with these requirements. The borings, profiles, existing underground utilities, and water elevations shown on the plans were obtained for the use of the City of Schertz in the preparation of the plans, and the Bidder is hereby cautioned that the City of Schertz neither assumes nor implies any responsibility for the accuracy of this data.

19. The Bidder in preparing his proposal, shall take cognizance of the difficulty of distinguishing between boulders and large rock, the difficulty of accurately classifying all material encountered in making the subsurface investigations, the possible erosion of stream channels and banks after survey data has been obtained, and the unreliability of water elevations other than those for the date recorded. Claims for additional compensation due to variations between conditions actually encountered during construction and as indicated in the plans will not be allowed.
20. All contracts in excess of \$100,000 with contractors or suppliers having 15 or more employees will include the clauses listed below:
 - (a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will assure that employees or applicants for employment are treated in a fair and equitable manner in such actions which shall include but not be limited to the following: Employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The Contractor will post in conspicuous places for the benefit of the employee and applicants for employment notices setting forth the provisions of this nondiscrimination clause.
 - (b) Upon request, the Contractor will furnish to the City of Schertz all information and reports and will permit access to the books, records, and accounts for the purposes of an investigation to ascertain compliance with rules and regulations set forth by this organization.
 - (c) If a Contractor is found not to be in compliance with the nondiscrimination clause of this contract, the contract may be canceled, terminated, or suspended in all or in part and the Contractor may be debarred from further contracts with the City of Schertz .
 - (d) All Bidders or prospective Contractors or Subcontractors will be required to submit a statement in writing signed by an authorized official or agent in behalf of the company to the effect that the signer's practices and policies do not discriminate on the grounds of race, color, religion, sex, or national origin.

The Contractor shall comply with all provisions of Executive Order 11246, Equal Employment Opportunity, dated 24 September 1965 or as amended and with Section 3 of the Housing and Urban Development Act of 1968 covering opportunities for business and lower financed HUD assisted projects.

21. Approval of Plans and/or Specifications by the Engineer shall not constitute an assumption of liability by the City of Schertz or the Engineer for any inaccuracy of computation or deficiency of design therein.
22. Bidder shall not offer, confer, or agree to confer any benefit or gift to any City of Schertz Employee, Officer, or Council Member of the City of Schertz.

23. To assist the City of Schertz in performing the bidder evaluation and subsequent recommendation of award, the apparent low bidder shall submit the following items within seven (7) days of the bid opening:
- (a) Financial resources, i.e., Dunn & Bradstreet report or similar.
 - (b) An information packet on company showing experience, organization and equipment.
 - (c) A statement regarding ability to complete the project within the schedule, taking into account existing commitments.
 - (d) Record of performance on three (3) similar projects completed within the last 5 years including name of project, amount of project, project duration, name, address, and telephone number of contact person for each project.

BID PROPOSAL

PROPOSAL of _____, a corporation

A partnership consisting of _____

An individual doing business as _____

TO THE CITY OF SCHERTZ:

Pursuant to Instructions and Invitations to Bidders, the undersigned proposes to furnish all labor and materials as specified and perform the work required for the WATERLINE REPLACEMENT: I.H. 35 ~ SCHERTZ PARKWAY TO PLAZA DRIVE, Project No. 1124.8412 in accordance with the Plans and Specifications for the following prices to wit:

BASE BID UNIT PRICES FOR:

| ITEM NO. | ITEM DESCRIPTION (UNIT PRICE TO BE WRITTEN IN WORDS) | UNIT | QTY | UNIT PRICE IN FIGURES | TOTAL IN FIGURES |
|----------|--|------|---------|-----------------------|------------------|
| 1 | TPDES -Storm Water Pollution Prevention Plan _____ Dollars and _____ Cents | ls | 1 | \$ _____ | \$ _____ |
| 2 | Mobilization _____ Dollars and _____ Cents | ls | 1 | \$ _____ | \$ _____ |
| 3 | Traffic Control and Regulation _____ Dollars and _____ Cents | ls | 1 | \$ _____ | \$ _____ |
| 4 | Site Restoration (Utility Construction) _____ Dollars and _____ Cents | lf | 1657.79 | \$ _____ | \$ _____ |

Water Line Replacement:

I.H. 35 ~ Schertz Pkwy. to Plaza Dr.

| ITEM NO. | ITEM DESCRIPTION (UNIT PRICE TO BE WRITTEN IN WORDS) | UNIT | QTY | UNIT PRICE IN FIGURES | TOTAL IN FIGURES |
|----------|---|------|---------|-----------------------|------------------|
| 5 | Remove Misc. Concrete (All Thicknesses) _____ Dollars and _____ Cents | sy | 35.6 | \$ _____ | \$ _____ |
| 6 | Water Pipe (Ductile Iron) (Class 250) _____ Dollars and _____ Cents | lf | 1657.79 | \$ _____ | \$ _____ |
| 7 | Water Tap (1 in) (single) (short side) _____ Dollars and _____ Cents | ea | 1 | \$ _____ | \$ _____ |
| 8 | Water Tie-In (Complete) (12 in) _____ Dollars and _____ Cents | ea | 1 | \$ _____ | \$ _____ |
| 9 | Water Tie-In (Complete) (16 in) _____ Dollars and _____ Cents | ea | 1 | \$ _____ | \$ _____ |
| 10 | Water Cut, Plug, Abandon (16 in) _____ Dollars and _____ Cents | ea | 2 | \$ _____ | \$ _____ |
| 11 | Fire Hydrant Assembly (Complete) _____ Dollars and _____ Cents | ea | 3 | \$ _____ | \$ _____ |

Water Line Replacement:

I.H. 35 ~ Schertz Pkwy. to Plaza Dr.

| ITEM NO. | ITEM DESCRIPTION (UNIT PRICE TO BE WRITTEN IN WORDS) | UNIT | QTY | UNIT PRICE IN FIGURES | TOTAL IN FIGURES |
|----------|--|------|------|-----------------------|------------------|
| 12 | Salvage Fire Hydrant _____ Dollars and _____ Cents | ea | 3 | \$ _____ | \$ _____ |
| 13 | Blow Off Valve (2 in) (Complete) (Temp) _____ Dollars and _____ Cents | ea | 2 | \$ _____ | \$ _____ |
| 14 | Butterfly Valve (Complete) (16 in) _____ Dollars and _____ Cents | ea | 1 | \$ _____ | \$ _____ |
| 15 | Air/Vacuum Release Valve (Complete) (2") _____ Dollars and _____ Cents | ea | 1 | \$ _____ | \$ _____ |
| 16 | Concrete Riprap (5 in) _____ Dollars and _____ Cents | sy | 23.8 | \$ _____ | \$ _____ |

TOTAL BASE BID

\$ _____

1. Complete the additional requirements of the Proposal which are included on the following pages.
2. Bidder must return pages P-1 through P-5 with this bid. Any and all Addenda which are issued by the City of Schertz with appropriate signatures acknowledging receipt shall be attached to and made part of this bid.
3. The Work included in this bid shall be Substantially Complete as defined in the General Conditions within **90 calendar days from the issuance of the Notice to Proceed.**

ADDITIONAL BIDDER INFORMATION

Complete the additional requirements of the Proposal. All blanks must be filled in for the bid to be considered responsive. If a question is not applicable, put the words "not applicable" in the space provided.

1. What similar public works projects has your company completed?

| Owner | Owner' Phone Number | Project Description | Date Completed | Contract Amount |
|-------|---------------------|---------------------|----------------|-----------------|
| | | | | |
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| | | | | |
| | | | | |
| | | | | |

Water Line Replacement:

I.H. 35 ~ Schertz Pkwy. to Plaza Dr.

PROPOSAL

Accompanying this proposal is a Bid Bond or Certified or Cashier's, Check on a State or National Bank payable to the Order of the City of Schertz, Texas for _____ dollars (\$_____), which amount represents five percent (5%) of the total bid price. Said bond or check is to be returned to the bidder unless the proposal is accepted and the bidder fails to execute and file a contract within 10 calendar days after the award of the Contract, in which case the check shall become the property of said City of Schertz, Texas, and shall be considered as payment for damages due to delay and other inconveniences suffered by said City of Schertz, Texas due to the failure of the bidder to execute the contract. The City of Schertz, Texas reserves the right to reject any and all bids.

It is anticipated that the Owner will act on this proposal within **30** calendar days after the bid opening. Upon acceptance and award of the contract to the undersigned by the Owner, the undersigned shall execute standard City of Schertz, Texas Contract Documents and make Performance and Payment Bonds for the full amount of the contract within **10** calendar days after the award of the Contract to secure proper compliance with the terms and provisions of the contract, to insure and guarantee the work until final completion and acceptance, and the guarantee period stipulated, and to guarantee payment of all lawful claims for labor performed and materials furnished in the fulfillment of the contract.

It is anticipated that the Owner will provide written Authorization to Proceed within **10** days after the award of the Contract.

The Contractor hereby agrees to commence work under this Contract immediately after issuance by the City of Schertz, Texas of the written Authorization to Proceed and to complete the work within **90 calendar days** from the Notice to Proceed. Under no circumstances shall the work commence prior to Contractor's receipt of City of Schertz, Texas issued, written Authorization to Proceed.

The undersigned certifies that the bid prices contained in the proposal have been carefully checked and are submitted as correct and final.

In completing the work contained in this proposal the undersigned certifies that bidder's practices and policies do not discriminate on the grounds of race, color, religion, sex or national origin and that the bidder will affirmatively cooperate in the implementation of these policies and practices.

Signed

Company Name _____

Authorized Company Signature _____

Name Printed _____

Address _____

City, State, Zip _____

Telephone _____

CONTRACT

STATE OF TEXAS §
COUNTY OF GUADALUPE § KNOW ALL MEN BY THESE PRESENTS:

That this Agreement made and entered into this _____ day of _____, A.D., 2012, by and between **THE CITY OF SCHERTZ, COUNTY OF GUADALUPE, STATE OF TEXAS**, Acting through its Contracting Officer, First Party, hereinafter termed the Owner, and, _____ of the City of _____, County of _____, State of _____, Second Party, hereinafter termed the Contractor.

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned to be made and performed by said First Party, (Owner), the said Second Party, (Contractor), hereby agrees with the First Party to commence and complete the construction of certain improvements at the prices set forth in the Contractor's Proposal for the City of Schertz Job No _____ the same being designated as **WATERLINE REPLACEMENT: I.H. 35 ~ SCHERTZ PARKWAY TO PLAZA DRIVE.**

The Contractor shall perform all work shown on the Plans and described in the Specifications and shall meet all requirements of this Agreement. The General and Special Conditions of the Agreement, and such Orders and Agreements for Extra Work as may subsequently be entered by the above named parties to this Agreement.

The Contractor shall not offer, confer or agree to confer any benefit or gift to any City of Schertz employee.

The Contractor hereby agrees to commence work under this Contract within seven (7) days after issuance by the CITY of the written Authorization To Proceed. Under no circumstances shall the work commence prior to the Contractor's receipt of the CITY's issued, written Authorization To Proceed. Computation of Contract Time will begin upon actual commencement of Work by the Contractor during the seven (7) calendar day period referenced above, or upon the eighth (8th) calendar day (assuming the eighth day is a day upon which Work may lawfully and Contractually be performed), *whichever occurs first*. All work specified in these Contract Documents shall be completed within **90** calendar days.

It is agreed and understood by the Owner and the Contractor that the provisions of Article 2368a, Vernon's Annotated Civil Statutes of Texas apply to this contract. The terms of the aforementioned state law are incorporated herein by reference. Contractor and Owner Agree that as a public body, Owner is authorized by such state law to negotiate change orders up to and including the amount of \$25,000.00 acting by and through its duly designated administrative officer. It is agreed and understood that any change orders which increase the work of the contract in excess of 25% of the bid contract price, must be subject of a supplemental agreement approved by the City Council of Schertz, or its designee, as in case of original contracts. The work of the contract may be decreased over 25% with the consent of the Contractor.

The Owner agrees to pay the Contractor in current funds, and to make payments on account, for the performance of the work in accordance with the Contract, at the prices set forth in the Contractor's Proposal, subject to additions and deductions, all as provided in the General Conditions of the Agreement.

The following documents, together with this Contract, comprise the Agreement, and they are as fully a part thereof as if herein repeated in full:

- The Invitation to Bidders
- The Instructions to Bidders
- The Proposal
- The Payment Bond
- The Performance Bond
- The General Conditions of the Contract
- The Special Conditions of the Contract
- The Construction Specifications
- The Standard Drawings
- Addenda
- Change Orders

The Plans designated **WATERLINE REPLACEMENT: I.H. 35 ~ SCHERTZ PARKWAY TO PLAZA DRIVE, Sheets 1-10** inclusive.

In witness thereof of the Parties of these presents have executed this Agreement in the Year and day of first above written.

CITY OF SCHERTZ
OWNER

By _____
City Manager

Contractor

By _____

Title _____

Contractor hereby acknowledges and understands that this Contract is subject to Section 151.311 of the Texas Tax Code, as amended. The following amount of money represents that part of the total contract price representative of the value of tangible personal property which is to be incorporated into the project realty, or which is otherwise exempt from taxation under Section 151.311 of said Code: \$_____

STATUTORY PERFORMANCE BOND
Pursuant to Vernon's Texas Government Code
Title 10, Chapter 2253. as amended
(Penalty of this Bond must be 100% of Contract Award)

KNOW ALL MEN BY THESE PRESENTS:

That _____ (hereinafter called "Principal"), as Principal, and _____ a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____, and authorized under the laws of the State of Texas to act as surety, on bonds for principals (hereinafter called "Surety"), are held and firmly, bound unto **THE CITY OF SCHERTZ, GUADALUPE COUNTY, TEXAS** (hereinafter called "Owner/Obligee"), in the amount of _____ Dollars (\$ _____), for the payment whereof. Principal and Surety, firmly bind themselves, and their heirs, administrators executors. successors and assigns, jointly, and. severally, by these presents:

WHEREAS, principal has entered into a certain written contract with the Owner/Obligee, dated the _____ day of _____, 2012, consisting of _____ (hereinafter called "the Contract"), which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal shall faithfully perform the work in accordance with the plans, specifications and contract documents, then this obligation shall be void, otherwise to remain in full force and effect.

NOW, THEREFORE, IF Principal shall repair any and all defects in said work occasioned by and resulting from defect in materials furnished by, or workmanship of, Principal in performance of the work covered by the Contract, occurring during a period of within 12 months from the date of the Contract Completion Certification, therein this obligation shall be null and void: otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 10, Chapter 2253, as amended, of the Texas Government Code, and all liabilities on this bond shall be determined in accordance with the provisions of this Chapter, to the same extent as if it were copied at length herein.

Surety, for value received, stipulates and agrees that no change, extension of time, or other waiver or amendment of the terms of the Contract or to the work thereunder, nor any change in the method or amount of payments stipulated to be made by Owner/Obligee under the Contract, shall relieve Surety of its obligations hereunder, and Surety, hereby waives notice of any such change, extension of time, waiver or amendment of the terms of the Contract or to the work thereunder. The bond shall be automatically extended in time, without formal and separate amendment, to cover full and faithful performance of the Contract in the event of modification of the Contract regardless of the length of time involved.

IN WITNESS THEREOF, Principal and Surety have signed and sealed this instrument on the _____ day of _____, 2012.

| | |
|---------------|---------------|
| Principal | Surety |
| By _____ | By _____ |
| Title _____ | Title _____ |
| Address _____ | Address _____ |

Name, Address and Telephone of Resident Agent of Surety:

STATUTORY PAYMENT BOND
Pursuant to Vernon's Texas Government Code
Title 10, Chapter 2253. as amended
(Penalty of this Bond must be 100% of Contract Award)

KNOW ALL MEN BY THESE PRESENTS:

That _____ (hereinafter called "Principal"), as Principal, and _____ a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____, and authorized under the laws of the State of Texas to act as surety, on bonds for principals (hereinafter called "**Surety**"), are held and firmly, bound unto **THE CITY OF SCHERTZ, GUADALUPE COUNTY, TEXAS** (hereinafter called "**Owner/Obligee**"), in the amount of _____ Dollars (\$ _____), for the payment whereof. Principal and Surety, firmly bind themselves, and their heirs, administrators executors, successors and assigns, jointly, and. severally, by these presents:

WHEREAS, principal has entered into a certain written contract with the Owner/Obligee, dated the _____ day of _____, 2012, consisting of _____ (hereinafter called "the Contract"), which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal shall faithfully pay in full all claimants supplying labor and material to Principal or to a subcontractor in the prosecution of the work provided for in the terms of the Contract Documents, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 10, Chapter 2253, as amended, of the Texas Government Code, and all liabilities on this bond shall be determined in accordance with the provisions of this Chapter, to the same extent as if it were copied at length herein.

Surety, for value received, stipulates and agrees that no change, extension of time, or other waiver or amendment of the terms of the Contract or to the work thereunder, nor any change in the method or amount of payments stipulated to be made by Owner/Obligee under the Contract, shall relieve Surety of its obligations hereunder, and Surety, hereby waives notice of any such change, extension of time, waiver or amendment of the terms of the Contract or to the work thereunder. The bond shall be automatically extended in time, without formal and separate amendment, to cover full and faithful performance of the Contract in the event of modification of the Contract regardless of the length of time involved.

IN WITNESS THEREOF, Principal and Surety have signed and sealed this instrument on the _____ day of _____, 2012.

| | |
|---------------|---------------|
| _____ | _____ |
| Principal | Surety |
| By _____ | By _____ |
| Title _____ | Title _____ |
| Address _____ | Address _____ |
| _____ | _____ |

Name, Address and Telephone of Resident Agent of Surety:

GENERAL CONDITIONS

ARTICLE 1. CONTRACT DEFINITIONS:

Wherever in these General Conditions or in other parts of the Contract Documents, the following terms, or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

1. ACPA - American Concrete Pipe Association.
2. ANSI - American National Standards Institute,
3. ASTM - American Society for Testing Materials.
4. AUTHORIZATION TO PROCEED - (Work Project Authorization) A written notice given by OWNER to CONTRACTOR establishing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR's obligations under the Contract Documents.
5. AWWA - American Water Works Association.
6. BIDDER - An individual, partnership, corporation, etc., submitting a proposal.
7. CITY COUNCIL - The duly elected members of the council of the City of Schertz, Texas.
8. CONDITIONAL LETTER OF APPROVAL - The date certified in writing by the OWNER when the Construction of the Project is sufficiently completed in accordance with the Contract Documents.
9. CONSTRUCTION OBSERVER/INSPECTOR - "COI", The authorized representative of the OWNER assigned by the OWNER to observe and inspect any or all parts of the Project and the materials to be used therein.
10. CONSULTANT - A person registered as a professional engineer pursuant to Article 3271a, Vernon's Texas Civil Statutes employed to provide professional engineering services and having overall responsibility for the design of a project or a significant portion thereof, together with administrative supervision of any subconsultants Consultant may retain. The term "Consultant", unless the context clearly indicates otherwise, means an engineer in private practice retained for a specific project under a contractual agreement with the OWNER.
11. CONTRACT - The signatory Agreement (Standard Form) between the OWNER and the CONTRACTOR governing the furnishing of material and performance of the Work. The Contract will include the Contract Documents.
12. CONTRACT DOCUMENTS - The Contract Documents consist of Bidding Documents such as: the Advertisement or Invitation to Bid, the Instructions to Bidders, the CONTRACTOR's completed Bid Proposal form, the Addenda, the Contract, the Conditions of the Contract (General, Supplemental and Special Conditions), the Plans, the Specifications, the Change Orders, the Payment and Performance Bonds.
 - (a) The Contract Documents form the complete CONTRACT, which represents the entire and integrated agreement between the OWNER and the CONTRACTOR and supersedes all prior negotiations, representations or agreements, either written or oral.

13. CONTRACT SUM - The total compensation payable to the CONTRACTOR for performing the Work as originally contracted or as subsequently adjusted by Change Orders.
14. CONTRACT TIME - The total time allowed the CONTRACTOR for completion of the Work. Contract Time will commence as per paragraph 8.1 and shall include the number of days set forth in the Contract plus any extended days granted under the provisions of Paragraph 6.1.
15. CONTRACTOR - The individual, partnership, corporation, etc., contracting with the OWNER to complete the Work.
16. ENGINEER - The person, firm or corporation named as such in the Agreement.
17. CHANGE ORDER - A written order issued by the OWNER to the CONTRACTOR authorizing additions, deletions, or revisions to the Work to be performed by CONTRACTOR within the general scope of construction services outlined in the Contract Documents.
18. HAZARDOUS MATERIAL(s)/SUBSTANCE - Pursuant to Section 26.263 of the Water Code hazardous material means any material/substance designated as such by the administrator of the Environmental Protection Agency pursuant to the Comprehensive Environmental Response Compensation and Liability Act (42 U.S.C. Sec. 9601 et seq.) regulated pursuant to Section 311 of the Federal Clean Water Act (33 U.S.C. Sec. 1321 et seq.) or designated by the Commission.
19. INSTRUCTIONS TO BIDDERS - OWNER Instructions of a general nature outlining the duties and responsibilities of a prospective bidder.
20. LABORATORY - The testing laboratories of the OWNER or any other testing laboratory that may be designated or approved by the OWNER.
21. MAJOR BID ITEM - Any individual Bid Item submitted by CONTRACTOR that constitutes five percent (5%) minimum of the total Contract Sum proposed by the successful low bidder CONTRACTOR or, the dollar amount shown in the Special Conditions as constituting a "Major Bid Item", whichever is less. In spite of the general criteria above, the OWNER and Consultant reserve the right to identify or exclude specific Bid Items as being "Major", in the Special Conditions for each Project.
22. MINORITY BUSINESS ENTERPRISE - (hereinafter referred to as MBE) a corporation, partnership, sole proprietorship or any other such legal entity which is owned, operated and controlled by a minority group member(s) who, when combined, have 51 percent ownership. The minority group member(s) must have operational and managerial control, interest in capital and earnings commensurate with the percentage of minority ownership. For purposes of the SMWBP, the following are recognized as minority groups:
 1. African-Americans - persons having origins in any of the black racial groups of Africa as well as those identified as Jamaican, Trinidadian or West Indian.
 2. Hispanic Americans - persons of Mexican, Puerto Rican, Cuban, Spanish, or Central or South America origin.
 3. American Indians - persons having no less than 1/16 percentage origin in any of the American Indian tribes, as recognized by the U.S. Department of the Interior, Bureau of Indian Affairs and as demonstrated by possession of personal tribal documents.
 4. Asian-Pacific Americans - persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent or the Pacific Islands.
 5. Asian-Indian Americans - includes persons whose origins are from India, Pakistan, Bangladesh and Sri Lanka.

6. Disabled Individual - persons (1) with one or more disabilities as defined by the Americans with Disabilities Act (ADA) and amendments thereto, (2) having a record of such disabilities and (3) regarded as having such disabilities.
23. MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets catch basins, curbs, gutters, ditches, man-made channels or storm drains:
 1. Owned or operated by a State, City, town, borough, county, district association or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial waters, storm water or other wastes including special districts under State law such as a sewer district, flood control district or drainage district or similar entity or a designated and approved management agency under Section 208 of the Clean Water Act that discharges to water of the United States;
 2. Designated or used for collection or conveying storm water.
 3. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.
 24. NEMA - National Electrical Manufacturers Association.
 25. NFPA - National Fire Protection Association
 26. NON-HAZARDOUS MATERIAL(S)/SUBSTANCES - Any material(s)/substance which is not designated as hazardous pursuant to Definition 18 herein and the continued presence of such on the site is determined by the OWNER's representative not to be detrimental to the completion of the Project.
 27. OWNER – City of Schertz, Texas.
 28. OWNER'S REPRESENTATIVE - The duly authorized representative of the OWNER.
 29. PAYMENT BOND - The security furnished by the CONTRACTOR, through the Surety, in the full amount of the Contract Sum for the protection of all persons supplying labor and material in the prosecution of the Work who properly follow statutory requirements for perfecting claims against such security. If the contract amount does not exceed \$25,000, a Payment Bond is not required.
 30. PERFORMANCE BOND - The security furnished by the CONTRACTOR, through the Surety, in the full amount of the Contract Sum as a guaranty that the Work will be faithfully performed and completed and that the OWNER will be saved harmless from all costs and damages which the OWNER may suffer by reason of the CONTRACTOR's default or failure to perform the Work. If the contract amount does not exceed \$25,000, a Performance Bond is not required.
 31. PLANS - The Plans, drawings, details and supplemental drawings, or reproductions thereof, produced and sealed by the ENGINEER and approved by the OWNER, showing the location, character, dimensions and details of the Work and which are a part of the Contract. Plans include standard details issued and sealed by the Engineer or his representative.
 32. PROJECT - Work site and Work elements with all appurtenances and construction to be performed thereon under the Contract.
 33. PROPOSAL - The offer of the bidder, made out on the prescribed forms, giving prices for performing the work described in the plans and specifications.
 34. SAMPLES - Physical examples furnished by the CONTRACTOR to OWNER to illustrate intended or anticipated materials, equipment or workmanship, and to assist OWNER and ENGINEER in the establishment of workmanship and quality standards by which the Work will be judged.

35. SEPARATED CONTRACT - A contract in which the agreed contract price is divided into a separately stated agreed contract price for materials and a separately stated agreed contract price for skill and labor. If prices of materials and labor are separately stated the fact that the charges are added together and a sum total given is irrelevant. Cost-plus contracts are generally regarded as separated contracts.
36. SEQUENCE OF CONSTRUCTION - The logical and proper order in which the CONTRACTOR shall accomplish the Work by OWNER directed stages and phases, as shown in the Contract Documents, unless OWNER orders otherwise by a properly executed Change Order.
37. SHOP DRAWINGS - Drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are furnished by the CONTRACTOR and prepared by CONTRACTOR, first-tier or sub-tier subcontractors, manufacturer, supplier or distributor, and which illustrates and details some portion of the Work.
38. SMALL, MINORITY AND WOMAN BUSINESS - (hereinafter referred to as SMWB) includes all those business enterprises inclusive of sole proprietorships, partnerships, corporations and all other such legal entities that are either classified as small, or are owned, operated and controlled by minority group members, women, or disabled individuals.
39. SMALL BUSINESS ENTERPRISE - (hereinafter referred to as SBE) a corporation, partnership, sole proprietorship or other such legal entity which is independently owned and operated and which is less than 20 percent of the U.S. Small Business Administration (SBA) size standard for a small business, except in cases where the reduced definition drops below \$1 million average gross receipts (as based on three years of sales) or less than 100 employees.
40. SPECIFICATIONS - The specific instructions to the CONTRACTOR as to the requirements for materials, equipment, certain construction procedures, standards and quality of workmanship for the Work and performance of related services and forming a part of the Contract.
41. SUBSTANTIAL COMPLETION - When construction of the project or a specified part thereof is sufficiently completed in accordance with the Contract Documents so that the Project, or specified part thereof could be utilized for the OWNER's purposes for which it is intended.
42. SUPERINTENDENT - The on project site representative of the CONTRACTOR authorized to communicate with the OWNER's representative, pursuant to the terms of the contract. The Superintendent or his designee shall supervise and direct the construction Work.
43. SUPPLEMENTARY CONDITIONS - The part of the Contract Documents, which amends or supplements these General Conditions.
44. SURETY - The corporate body licensed to conduct business in the State of Texas that provides assurance that the CONTRACTOR, or his substitute will faithfully perform the Work covered by the Contract and make payment of any due, unpaid, eligible labor and supply claims arising thereunder.
45. THD TEST METHOD - (TX DOT) Materials and Test Division manual outlining testing methods and procedures.
46. UNDERGROUND FACILITIES - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments and appurtenances thereto, and any encasement containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, sewage and drainage removal, traffic or other control systems.
47. UNIT PRICE WORK - Work to be paid for by OWNER on the basis of CONTRACTOR quoted unit prices in the Bid Proposal based upon OWNER estimated quantities.

- 48. WAGE RATES - The general prevailing wage rate as established by the City Council of the City of Schertz.
- 49. WOMAN BUSINESS ENTERPRISE - (hereinafter referred to as WBE) a corporation, partnership, sole proprietorship or any other such legal entity which is owned, operated and controlled by women who, when combined, have 51 percent ownership. The women must have operational and managerial control interest in capital and earnings commensurate with the percentage of women Ownership.
- 50. WORK - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of CONTRACTOR performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.
- 51. WRITTEN NOTICE - Shall be considered to have been duly given if delivered in person to an authorized representative of the CONTRACTOR or OWNER, or to an officer of the corporation for whom it is intended, or if delivered at, or sent by registered or certified mail to the last business address known to the person who gives the notice.

ARTICLE II. LEGAL RELATIONSHIPS AND RESPONSIBILITIES

- 2.1 LEGAL RESPONSIBILITIES - The CONTRACTOR in the performance of the Work shall comply with all pertinent Ordinances of the City of Schertz, Texas (OWNER), Laws of the State of Texas, and of the United States, including Rules and Regulations of the United States Department of Labor, pertaining to Occupational Safety and Health Administration standards as presently existing or as may hereinafter be modified or amended.
 - 1. Where construction projects cross or run along state highways, the CONTRACTOR shall comply with governing Texas Department of Transportation Regulations as outlined in State Permits for each crossing. In cases where State Regulations do not apply, City Regulations shall be binding.
 - 2. Where construction projects cross or run along country roads, the CONTRACTOR shall comply with governing County Public Works Regulations as outlined in the County Permit for each crossing.
- 2.2 GENERAL UNDERSTANDING - CONTRACTOR at his own cost and expense shall furnish all supervision, tools, implements, machinery, labor, materials and accessories, such as are necessary and proper for the purpose, and secure all required permits and licenses, and shall at his own cost and expense construct build and complete, in a good, first class, substantial and workmanlike manner, the structures, work and improvements herein described and/or referred to in the Contract Documents.
- 2.3 INDEMNIFICATION - CONTRACTOR shall protect the public and OWNER fully by taking reasonable precaution to safeguard persons from death or bodily injury and to safeguard property of any nature whatsoever from damage. Where any dangerous condition or nuisance exists in and around construction sites, equipment and supply storage areas and other areas in anyway connected with the performance of this contract, the CONTRACTOR shall provide and maintain reasonable warning of such danger or nuisance. The CONTRACTOR shall not create excavation, obstructions, or any dangerous condition or nuisance of any nature whatsoever in connection with the performance of this contract unless necessary to its performance, and in that event the CONTRACTOR shall provide and maintain at all times reasonable means of warning of any danger or nuisance created. The duties of the CONTRACTOR in this section shall be nondelegable, and the CONTRACTOR's compliance with the specific recommendations and requirements of the City of Schertz, as to the means of warning shall not excuse the CONTRACTOR from the faithful performance of these duties should such recommendations and requirements not be adequate or reasonable under the circumstances.

In order to protect OWNER from the CONTRACTOR's failure to perform any of the foregoing duties or any of the terms of this contract, the CONTRACTOR shall indemnify and save harmless OWNER and its agents and employees from, all losses, damages, judgments, decrees, and expenses or costs of any nature whatsoever, arising out of or in anyway connected with any claims or actions at law or in equity, brought against OWNER, and its agents and employees for the death or injury to persons or for damage to property caused, or allegedly caused, by any willing acts, negligence, nuisance, or breach of any term or condition of this contract in connection with work to be performed pursuant to said contract, by the CONTRACTOR, his agents, subcontractors, or employees. The CONTRACTOR shall furthermore indemnify and save harmless OWNER and its agents and employees from all demands of subcontractors, workmen, materialmen, or suppliers of machinery and parts thereof, equipment power tools, and supplies incurred in connection with work to be performed under this contract. Property of any description, including property held by OWNER, which shall be damaged in the performance of this contract by the CONTRACTOR, his agents, employees, subcontractors or their employees and subcontractors shall be restored to its condition prior to damage by the CONTRACTOR at the CONTRACTOR's expense.

SUCH INDEMNITY SHALL APPLY WHERE THE CLAIMS, LOSSES, DAMAGES, CAUSES OF ACTION, SUITS, JUDGEMENTS, DECREES, OR LIABILITY ARISE IN PART FROM THE NEGLIGENCE OF OWNER. IT IS THE EXPRESS INTENTION OF THE CONTRACTOR AND OWNER THAT THE INDEMNITY PROVIDED FOR IN THIS PARAGRAPH IS INDEMNITY BY CONTRACTOR, TO INDEMNIFY AND PROTECT OWNER FROM THE CONSEQUENCES OF THEIR OWN NEGLIGENCE, WHERE THE NEGLIGENCE IS A CONCURRING CAUSE OF THE INJURY, DEATH, OR DAMAGE. FURTHERMORE, THE INDEMNITY PROVIDED FOR IN THIS PARAGRAPH SHALL HAVE NO APPLICATION TO ANY CLAIM, LOSS, DEATH OR DAMAGE THAT RESULTS FROM THE SOLE NEGLIGENCE OF OWNER UNMIXED WITH THE FAULT OF ANY PERSON OR ENTITY.

In any claims against OWNER or its agents or employees by CONTRACTOR, any employee of CONTRACTOR, any subcontractor, anyone directly or indirectly employed by CONTRACTOR, or any subcontractor or anyone for whose acts any of them may be liable, the indemnification obligation under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any subcontractor under workers' compensation acts, disability benefit acts of other employer's benefit acts.

- 2.4 ROYALTIES AND PATENTS - The CONTRACTOR shall pay all royalties and license fees, and defend all suits or claim for infringement of any patent rights and shall save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for all such royalties and license fees and loss when a particular design or process, or the product of a particular manufacturer or manufacturers is specified; provided, however, if the CONTRACTOR has reason to believe the design, process or product specified constitutes an infringement of a patent, he shall be responsible for such royalties, license fees and loss unless he promptly gives such information to the OWNER.
- 2.5 NO WAIVER OF OWNER RIGHTS - Unless specifically and unambiguously set out in the Contract Documents at the time of bid opening, no observation/inspection or approval by said OWNER or any COI, officer, employee or other representative of the OWNER, or any order, measurement or certificate by said OWNER, or any estimate or payment by the OWNER for any part of said Work, or material or method or equipment, or any extension of time, or any possession of the Work, at any time shall operate as a waiver of any provision or obligation of this Contract or any right or power herein given or reserved to said OWNER, or of any right to claim any indemnity or damages for patent or latent defects in the work or otherwise as herein provided for; nor shall any OWNER waiver of any CONTRACTOR breach of this Contract be deemed as a waiver of any other or subsequent CONTRACTOR breach; and every OWNER right or remedy under the Contract Documents shall be cumulative, and in addition to all other OWNER rights and remedies.
- 2.6 INTEREST IN OWNER CONTRACT PROHIBITED - No officer or employee of the OWNER shall have a financial interest, direct or indirect, in any contract with the OWNER, or shall be financially interested, directly, in the sale to the OWNER of any land, materials, supplies or service, except on

behalf of the OWNER as an officer or employee. This prohibition extends to City boards and commissions other than those, which are purely advisory.

- 2.7 PREVAILING WAGE RATES (Only if required by Supplemental General Conditions) - On this Contract_full compliance with Article 5159a, Revised Civil Statutes of Texas, as amended, requiring that not less than the general prevailing wage rate (basic hourly and fringe, if applicable) for Work of a similar character, as has been established by the appropriate governmental agency, and a copy of the most recent wage rates and all other administrative policies as incorporated into the Contract Documents, shall be required.
1. Payrolls will be reviewed by the OWNER and the CONTRACTOR will be notified of any discrepancies noted. Any discrepancy in the payrolls may be cause for withholding periodic, interim or final payment to the CONTRACTOR until such discrepancies are properly corrected.
- 2.8 EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS/NONDISCRIMINATION CLAUSE – The City of Schertz highly encourages CONTRACTOR’s to implement Affirmative Action practices in their employment programs. This means CONTRACTOR should not discriminate against any employee or applicant for employment because of race, color, national origin religion, sex, age, handicap or political belief or affiliation.
- 2.9 SMALL, MINORITY, AND WOMEN BUSINESS PROGRAM (SMWBP) REQUIREMENTS – The City of Schertz highly encourages CONTRACTOR’s to form joint ventures and/or provide subcontract opportunities to small, minority and woman firms.
- 2.10 STATE SALES TAX - The OWNER qualifies for exemption from state and local sales tax and will furnish the CONTRACTOR with a tax exemption certificate. It is the CONTRACTOR's responsibility to claim exemption from payment of applicable state and local sales taxes by complying with such procedures as may be prescribed by the State Comptroller of Public Accounts. The Contract separates the cost of materials and tangible equipment from skill, labor and other associated costs of construction. This is in accordance with the Texas Tax Code to allow tax exemption on the Contract price for materials. Certain construction equipment that is owned or rented by the CONTRACTOR may be subject to State and Local Sales Tax.

ARTICLE III. CONTRACT DOCUMENTS & BONDS

- 3.1 PLANS AND SPECIFICATIONS - The Plans and the accompanying Specifications are essential parts of the Contract and a requirement occurring in one is as binding as though occurring in all. They are intended to be cumulative and complementary and to provide for a complete Work. In cases of disagreement, figured dimensions shall govern over scaled dimensions, detailed Plan Drawings and accompanying notations shall govern over General Plan Drawings, and Special Conditions shall govern over Specifications, Plan Drawings and General Conditions.
- 3.2 INTENT OF THE CONTRACT DOCUMENTS is to describe a functionally complete Project (or integral component part thereof) to be constructed in accordance with the Contract Documents. Any work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied by CONTRACTOR whether or not specifically called for by OWNER or it's ENGINEER. When words, which have a well-known technical or trade meaning are used to describe work, materials or equipment such words shall be interpreted in accordance with that meaning. Where phrases "directed by", "ordered by" or "to the satisfaction of" "the ENGINEER" or "the OWNER's Construction Observer/Inspector" (COI) or "the OWNER's Representative occur, it is to be understood that the directions, orders, or instructions to which they relate are within the scope of, and authorized by the Contract Documents. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or Laws or Regulations in effect at the time of opening of Bids except as may be otherwise specifically stated.

- 3.3 DISCREPANCY IN CONTRACT DOCUMENTS - If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to ENGINEER or OWNER in writing at once and before proceeding with the Work affected thereby and shall obtain a prompt written interpretation or clarification from ENGINEER; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.
- 3.4 PLANS AND SPECIFICATIONS AT THE WORK SITE - The CONTRACTOR shall maintain at the Work site at least one copy of all Plans Specifications, Addenda, approved Shop Drawings and Change Orders, in good order and marked to record all changes to the Plans and/or existing physical conditions made during construction.
1. RECORD DRAWINGS - Each month, as the Work progresses and before monthly payment is made, the CONTRACTOR shall present to the ENGINEER, for review, the current as-built drawings.
 2. Prior to the final payment to the CONTRACTOR, the CONTRACTOR who has control of the Work and is in a position to know how the Project was constructed, shall submit to the ENGINEER, within 10 days after Final Acceptance of the Project, a set of clearly marked Plans and related documents suitable for ENGINEER's use in preparing OWNER's final "Record Drawings" on reproducible mylar for the OWNER's permanent file.
- 3.5 PERFORMANCE BOND - CONTRACTOR shall furnish Performance Bond in favor of OWNER in an amount equal to 100% of the total construction cost under this Contract. Total construction cost are defined as the entire cost of materials and their installation, and include, but are not limited to, the cost of labor, equipment, supplies, materials and additional construction costs. The Performance Bond shall: (1) guarantee the completion of the entire construction herein identified in conformity with the Plans and Specification approved by OWNER, and (2) guarantee the work against defects in workmanship and materials for a period of twelve (12) months after acceptance of the work by the City of Schertz. The bond shall have corporate Sureties that are licensed to conduct business in Texas. CONTRACTOR agrees that all Performance Bonds required by this Section 3.5 shall be with insurance companies or sureties that are A.M. Best Rated "B+" or better. If the surety on any bond furnished by the CONTRACTOR to the OWNER is declared bankrupt or becomes insolvent, or has its right to do business revoked in the State of Texas, then the CONTRACTOR will have ten (10) days to substitute another bond and surety therefor which shall be acceptable to OWNER and which shall be at the expense of the CONTRACTOR.
- 3.6 PAYMENT BOND - CONTRACTOR shall furnish Payment Bond in favor of OWNER in an amount equal to 100% of the total construction cost under this Contract. Total construction costs are defined as the entire cost of materials and their installation, and include, but are not limited to, the cost of labor, equipment, supplies, materials and additional construction costs. The Payment Bond shall be security for the payment of all persons supplying labor and material in the prosecution of the Work provided for in the Contract Documents. The bonds shall have corporate Sureties that are licensed to conduct business in Texas. CONTRACTOR agrees that all Payment Bonds required by this Section 3.6 shall be with insurance companies or sureties that are A.M. Best Rated "B+" or better. If the surety on any bond furnished by the CONTRACTOR to the OWNER is declared bankrupt or becomes insolvent, or has its right to do business revoked in the State of Texas, then the CONTRACTOR will have ten (10) days to substitute another bond and surety therefor which shall be acceptable to OWNER and which shall be at the expense of the CONTRACTOR.
- 3.7 CONTRACTOR AND SURETIES STILL BOUND - No assignment, transfer or subletting, without the written consent of OWNER, and no order of OWNER for or approval of any alterations or modifications in said Specifications, Plans, or Work, and no change in the requirements or order for extra work made by the OWNER as provided in this Contract, shall ever in any manner release or diminish the responsibility of CONTRACTOR or any Surety on any bond of CONTRACTOR, but on the contrary, such responsibility shall extend to and comprehend all such changes and other matters. If any Surety upon any bond furnished in connection with the Contract becomes insolvent, or otherwise not authorized to do business in this State, the CONTRACTOR shall within ten (10) days furnish

equivalent substitute forms of security while seeking substitute bonding, to protect the interests of the OWNER and of persons supplying labor or materials in the prosecution of the Work contemplated by the Contract, or may be liable for breach of Contract and default termination.

ARTICLE IV. CONTRACT ADMINISTRATION

4.1 GENERAL ADMINISTRATION - The ENGINEER will provide general administration of the Contract during construction in accordance with the ENGINEER's scope of work as defined in the ENGINEER's Contract with the OWNER.

1. The ENGINEER has the authority to act on behalf of the OWNER to the extent provided in the Construction Contract Documents. The ENGINEER will advise and consult with the OWNER. The OWNER's instruction to the CONTRACTOR may be issued through the ENGINEER but the OWNER reserves the right to issue instructions directly to the CONTRACTOR through other designated OWNER representatives. CONTRACTOR understands that OWNER may modify the authority of such ENGINEER as provided in the terms of its contract relationship with the ENGINEER, and the OWNER shall, in such event be vested with powers formerly exercised by such ENGINEER, provided written notice of such modification shall be immediately served on the CONTRACTOR. Nothing herein shall authorize independent agreements between CONTRACTOR and such ENGINEER, nor shall the ENGINEER be deemed to have a legal relationship with the CONTRACTOR.
2. All oral instructions shall be confirmed expeditiously in writing with copies furnished the ENGINEER, the OWNER's designated representatives, and the CONTRACTOR by the party issuing the oral instruction.
3. Upon the ENGINEER's written recommendation, the OWNER shall have the final authority to reject Work performed by the CONTRACTOR which does not meet the requirements of the contract and to order such Work repaired, removed, or replaced in accordance with Paragraph 5.11.

4.2 ACCESS TO AND OBSERVATION/INSPECTION OF THE WORK The CONTRACTOR shall provide sufficient, safe and proper facilities at all reasonable times for the observation/inspection of the Work by the duly authorized representative of the OWNER. The ENGINEER and the OWNER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress of the executed Work and to determine if the Work is proceeding in accordance with the Contract Documents.

1. On the basis of such visits and on-site observations as an experienced and qualified design professional, ENGINEER will keep OWNER informed of the progress of the Work and will guard OWNER against defects and deficiencies in the Work which are the responsibility of the CONTRACTOR to prevent and/or cure.
2. No Approval of any phase of the construction Project by any of the OWNER's representatives or observer/inspectors shall relieve the CONTRACTOR from full compliance with the Contract Documents regarding the ultimate Work product. Any additional cost, damages, or delays occasioned by patent or latent defects in the Work, and/or failure to meet the requirements of the Contract Documents, at any Project phase, shall be borne by the CONTRACTOR.

4.3 ASSIGNMENTS AND SUBLETTING - CONTRACTOR shall not assign, transfer, convey, sublet or otherwise dispose of this Contract, or any portion thereof, or any right, title or interest in, to or under the same, without the previous written consent of the OWNER. CONTRACTOR shall not assign by power of attorney or otherwise any of the monies or other considerations to become due and payable by the OWNER under this Contract, without the previous written consent of the OWNER. The CONTRACTOR shall notify the OWNER, by written notification by certified mail to the OWNER, that such assignment, transfer, conveyance or subletting, or other disposition of this contract or any portion thereof, or any right title or interest in, to or under the same, is contemplated. If the

CONTRACTOR does not receive written approval of such contemplated action by the OWNER, within thirty days of receipt of such initial request by the OWNER, such contemplated assignment transfer, conveyance or subletting, or other disposition of this contract or any portion thereof, or any right, title or interest in, to, or under the same, shall be deemed disapproved. In no event shall the OWNER be liable in excess of the consideration of this Contract in the case of any such assignment, transfer, conveyance or subletting of the Work or performance which is subject hereof.

1. The OWNER reserves the right to withhold any monthly payment hereafter provided for in the event of an assignment or subletting of a portion of the work without the previous consent and knowledge of the OWNER and by reserving such right the OWNER shall not be deemed to have waived its right to declare a full breach of this Contract for CONTRACTOR's failure to comply with provisions hereof, such remedy being alternative only and exercisable at the option of the OWNER.

4.4 SUBCONTRACTORS - The CONTRACTOR shall upon executing the Contract, notify the OWNER in writing of the names of all proposed first tier subcontractors for the Work.

1. SUBCONTRACTUAL RELATIONS:

By an appropriate written agreement, the CONTRACTOR shall require each subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the CONTRACTOR by the terms of the Contract Documents, and to assume toward the CONTRACTOR all the obligations and responsibilities which the CONTRACTOR, by these Documents, assumes toward the OWNER and the ENGINEER. Said agreement shall preserve and protect the rights of the OWNER and the ENGINEER under the Contract Documents with respect to the Work to be performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, the benefit of all rights, remedies and redress against the CONTRACTOR that the CONTRACTOR, by these Documents, has against the OWNER. Where appropriate, the CONTRACTOR shall require each Subcontractor to enter into similar agreements with his Sub-subcontractors, The CONTRACTOR shall make available to each proposed Subcontractor, prior to the execution of the Subcontract copies of the Contract Documents to which the Subcontractor will be bound by this paragraph and identify to the Subcontractor any terms and conditions of the proposed Subcontract which may be at variance with the Contract documents. Each Subcontractor shall similarly make copies of such Documents available to his Sub-subcontractor.

4.6 SEPARATE CONTRACTS

1. The OWNER reserves the right to let other contracts in connection with this Work. The CONTRACTOR shall afford other CONTRACTOR's reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his Work with their work.
2. When separate contracts are awarded for different portions of the Project, "the CONTRACTOR" in the Contract Documents in each case shall be the CONTRACTOR who executes each separate Contract. This CONTRACTOR shall properly connect and coordinate his Work with the work of other CONTRACTOR's. If any part of this CONTRACTOR's Work depends for proper execution or proper results on the work of any other separate CONTRACTOR, this CONTRACTOR shall inspect and promptly report in writing to the ENGINEER and OWNER's Representative any discrepancies or defects he may find in the work of any separate CONTRACTOR that render it unsuitable to achieve proper connection, execution and results. Failure of this CONTRACTOR to so inspect and report obvious discrepancies or defects shall constitute an acceptance of the other CONTRACTOR's work as fit and proper to receive this CONTRACTOR's Work, except as to defects which may develop in the other separate CONTRACTOR's work after the execution of this CONTRACTOR's work.
3. Should this CONTRACTOR negligently cause damage to the work or property of any separate CONTRACTOR on the Project, this CONTRACTOR shall, upon due notice, endeavor to settle with such other CONTRACTOR by agreement. A reciprocal clause shall be placed in the Contract

Documents between the OWNER and the separate CONTRACTOR if involving other OWNER work. If such separate CONTRACTOR sues the OWNER and/or its agents on account of any damage alleged to have been so sustained, the OWNER and/or its agents shall notify this CONTRACTOR who shall defend the OWNER's and/or its agents' interests and CONTRACTOR's own interests in such proceedings and pay all attorney fees, and costs in connection therewith, and if any judgment against the OWNER results therefrom, this CONTRACTOR shall pay or satisfy that judgment.

4.8 CONTRACT TERMINATION

1. **TERMINATION BY CONTRACTOR** - If the Work is stopped by OWNER for a period of ninety (90) consecutive days (working or calendar days depending upon the type of Contract entered into) under an order of any court or other public authority having jurisdiction, or as a result of an act of a higher governmental authority, such as a declaration of a national emergency making materials unavailable, through no act or fault of the CONTRACTOR or a subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the CONTRACTOR, then the CONTRACTOR may upon ten (10) additional days written notice to the OWNER and the ENGINEER, terminate the Contract and recover from the OWNER payment for all Work previously executed and for any loss sustained upon any materials, equipment, tools, construction equipment and machinery, including reasonable profit and damages related to the Work stoppage. If the Work is re-commenced during the ten (10) day notice period, the CONTRACTOR may not terminate the Contract.
2. **TERMINATION BY OWNER** - If the CONTRACTOR is adjudged as bankrupt, or if he makes a general assignment for the benefit of his creditors, without the consent of the OWNER or if a receiver is appointed on account of his insolvency, or if he persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction pertaining to the Work, or otherwise is guilty of a substantial violation of a provision of the Contract Documents warranting OWNER default of CONTRACTOR, then the OWNER may, without prejudice to any right or remedy and after giving the CONTRACTOR and his Surety, if any, ten (10) days written notice, terminate the employment of the CONTRACTOR and/or take possession of the site and of all materials, and may upon order of a court of competent jurisdiction take possession of equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR. Should the Surety fail to pursue completion of the Work with reasonable speed, the OWNER may arrange for completion of the Work and deduct the cost thereof from the unpaid Contract sum remaining, including the cost of additional OWNER administration and ENGINEER services made necessary by such default or neglect, in which event no further payment shall then be made by the OWNER until all cost of completing the Work shall have been paid.
3. In the event that OWNER shall be prevented from completing performance of its obligations under this Contract by an act of God or other occurrence whatsoever which is beyond the control of OWNER, then OWNER shall be excused from any further performance of its obligation and undertakings.
4. If the unpaid balance of the Contract sum exceeds the costs of finishing the Work, including compensation for the ENGINEER's additional services made necessary thereby, such excess shall be paid to the CONTRACTOR. If such costs exceed the unpaid balance, the CONTRACTOR or his surety shall pay the difference to the OWNER. This obligation for payment shall survive the termination of the Contract.

4.9 SUSPENSION OF WORK BY OWNER

1. The OWNER may suspend said Work either partially or totally by his written order whenever, in his opinion, the interest of the OWNER requires the suspension of such Work. In the event that the OWNER suspends Project Work, the CONTRACTOR hereby acknowledges and agrees that so long as the total suspension(s) is (are) for a period not to exceed ten (10) cumulative days

(working or calendar days, depending upon the type of Contract entered into) accruing throughout the entire Contract Time, that the CONTRACTOR is not entitled to request a negotiated adjustment of the Contract Sum nor an extension of the Contract Time. Such right to suspend Project Work for periods not to exceed ten (10) cumulative days (working or calendar days depending upon the type of Contract entered into) accruing throughout the entire Contract Time without compensation to the CONTRACTOR, is expressly reserved by the OWNER.

2. Any total suspension of Project Work by the OWNER that extends beyond ten (10) cumulative days (working or calendar days depending upon the type of Contract entered into) accrued throughout the entire Contract Time, shall entitle the CONTRACTOR to request either a negotiated adjustment of Contract Sum or an extension of Contract Time, or both, as directly attributable to such extended total suspension of Project Work.
3. Any partial suspension of the Work by the OWNER that extends beyond the mutually determined point in time when the ten (10) cumulative days (working or calendar days depending upon the type of Contract entered into) accruing throughout the entire Contract Time, are effectively exceeded, shall entitle the CONTRACTOR to request either a negotiated adjustment of Contract Sum or an extension of Contract Time, or both, as directly attributable to such extended partial suspension of Project Work.
 - a. In the event that the OWNER partially suspends the Work in such a manner that some work is able to continue, the CONTRACTOR and OWNER hereby agree to discuss the impact of the partial suspensions upon dependent Contract Work, and to mutually determine when the ten (10) cumulative days (working or calendar days depending upon the type of Contract entered into) accruing throughout the entire Contract Time and expressly reserved by the OWNER without compensation to the CONTRACTOR, would effectively be exceeded.
 - b. The OWNER's Representative shall have the right to stop the Work whenever such stoppage may be necessary to insure proper execution of the Contract. Such temporary stoppage shall be followed by a Written Order as outlined in Paragraph 4.10.1.
4. The OWNER and the Representative of OWNER shall at any time during the Contract Time have the right to suspend or stop the Work under Section 4.9.1 or Section 4.9.3.2, when the COI of OWNER or any other authorized representative of the OWNER reasonably believes that there exists any dangerous condition, nuisance or safety risk to workers, the general public or property on the site or on property adjacent thereto. Notwithstanding the foregoing provisions of section 4.9, the CONTRACTOR shall not be entitled to any adjustment of the Contract Sum or extension of the Contract Time relating to any suspension of the Work by the OWNER or the Representative of OWNER for any safety reasons under this Section 4.9.4 and the OWNER shall have no other liability of any kind to the CONTRACTOR with respect to any suspension of the Work for safety reasons under this Section 4.9.4.
5. The OWNER and the Representative of OWNER shall at any time during the Contract Time have the right to suspend or stop the Work under Section 4.9.1 or Section 4.9.3.2 when the Representative of OWNER reasonably believes that there exists on the site any environmental condition which could reasonably be expected to result in any liability, costs or expense to the OWNER or the CONTRACTOR arising under any laws, statutes, ordinances, rules and regulations ("Laws") of any governmental, quasi-governmental or regulatory authority which relate to the transportation, storage, placement handling, treatment discharge, generation, production, removal, or disposal (collectively, "Treatment") of any waste, petroleum product (including without limitation, gasoline and diesel fuel), waste products, or any other substance, the Treatment of which is regulated by any Laws (collectively, "Waste"). Notwithstanding the foregoing provisions of section 4.9, the CONTRACTOR shall not be entitled to any adjustment of the Contract Sum or extension of the Contract Time relating to any suspension of the Work by the OWNER or the Representative of OWNER for environmental reasons under this Section 4.9.5., and the OWNER shall have no other liability of any kind to the CONTRACTOR with respect to any suspension of the Work for environmental reasons under this Section 4.9.5. At all

times during the performance of the work by the CONTRACTOR under this Contract the CONTRACTOR will comply with all Laws which relate to the Treatment of any Waste. The CONTRACTOR agrees to (a) give notice to the OWNER immediately upon CONTRACTOR's acquiring knowledge of the existence of any Waste on the site with a full description thereof, (b) promptly comply with any Laws applicable to the CONTRACTOR or the site requiring the removal treatment or disposal of such Waste and provide OWNER with satisfactory evidence with such compliance and (c) provide OWNER within thirty (30) days after demand by OWNER with a bond, letter of credit or similar financial assurance evidencing to the OWNER's satisfaction that adequate funds are available to pay the costs of removing, treating and disposing of such waste.

- 4.10 PROTECTION OF PRIVATE PROPERTY - The OWNER has secured right-of-way and easements, as shown on the plans, to be occupied by the finished construction, with only such additional temporary construction easements as shown for use by the CONTRACTOR in carrying out his Work. The CONTRACTOR shall take proper measures to protect all property within all construction easements, and adjacent or adjoining property which might be injured by any process of construction; and, in case of any injury or damage, he shall restore at his own expense the damaged property to a condition equal to or better than that existing before such injury or damage was done, or he shall make good such injury or damage in a manner acceptable to the private or public owner.
1. The CONTRACTOR shall correct customer complaints for such items as (but not limited to) driveway access, mailboxes, privacy fences, public safety hazards, public nuisances, water and sewer services as specified by the OWNER's Representative.
 2. The CONTRACTOR shall not, except upon procuring written consent from proper private parties, enter or occupy with men, tools, materials, or equipment any privately owned land except for those on easements provided herein by OWNER.

ARTICLE V. CONTRACT RESPONSIBILITIES

- 5.1 OWNER-CONTRACTOR OBLIGATIONS - The OWNER and the CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. The CONTRACTOR shall not assign the Contract or sublet it as a whole without the prior written consent of the OWNER, nor shall the CONTRACTOR assign any monies due or to become due to him hereunder, without the prior written consent of the OWNER and in the manner established in Section 4.4 herein.
- 5.2 OWNER'S RESPONSIBILITY - Projects contracted through other outside entities and containing utility work by OWNER shall be managed by the other entity with support by OWNER personnel. CONTRACTOR shall report directly to the other entity. Utility projects contracted through OWNER, which contain secondary street work, shall be managed by OWNER with support by other entity personnel. CONTRACTOR shall report directly to OWNER.
1. The design of this Project was performed by a professionally licensed engineer who is an authorized representative of the OWNER, who will exercise the authority and functions of the OWNER as the Project ENGINEER in the following respects:
 - a. Staking the Work for construction as indicated in Section 5.16.
 - b. Checking of shop drawings furnished by the CONTRACTOR in compliance with Paragraph 5.13 herein.
 - c. Consultation and advice during construction and rendering those decisions requiring interpretation of the Plans and Specifications.
 - d. Review of the monthly and final quantity and pay estimates as prepared by CONTRACTOR.

- e. Provide the OWNER with a final set of "Record Drawings" on reproducible Mylar prepared from monthly CONTRACTOR's submittal of marked Plans in accordance with Paragraph 3.4. 1.
 - f. Review laboratory, mill and shop tests of materials and equipment for general compliance with the Plans and Specifications.
 - g. Observation/inspection of the authorized construction, administration for the OWNER, and review of all Work performed for general compliance with the Plans and Specifications.
 - h. Conduct final observation/inspection.
 - i. Determine acceptability of the finally completed Work.
2. Unless otherwise directed in the contract documents, sampling and testing of materials, laboratory inspection of materials and processes shall be performed at the expense of the OWNER in a commercial testing laboratory designated by the OWNER. The CONTRACTOR shall furnish reasonable assistance and material required of him by the OWNER's Representative in obtaining Samples at the expense of the CONTRACTOR.
 - a. All Work on integral components of the Project, (e.g. such as precasting members, steel fabrications, large pump testing, etc.), performed outside of Guadalupe County shall be regulated as follows: Sampling and testing of materials, laboratory inspection of materials and processes shall be performed at the expense of the CONTRACTOR or Supplier by an independent commercial laboratory approved by OWNER or his duly authorized representative. All test reports and shop drawings shall be submitted to the OWNER or his Representative and shall be signed and sealed by a Registered Professional Engineer. All structural members shall be marked or stamped individually with an identifying number for the purpose of cross-referencing all reports.

5.3 CONTRACTOR'S RESPONSIBILITIES

1. The CONTRACTOR shall supervise and direct the Work using the best skill and attention. The CONTRACTOR shall be solely responsible for all construction means, methods, techniques, sequences and procedures, and for the implementation of safety precautions and for coordinating all portions of the Work under this Contract.
2. In connection with the OWNER's visual observation/inspection of the Work or materials testing contemplated herein, it is clearly understood that the CONTRACTOR is responsible for performing quality control inspection and testing services to assure Project compliance with Contract Documents. The CONTRACTOR shall give the OWNER's Representative reasonable advanced notice of the readiness of any Work for observation/inspection, and when practicable, twenty-four (24) hours notice. If any underground Work is performed without the proper prior notification to the OWNER's Representative, it shall be uncovered for observation/inspection and properly restored at the CONTRACTOR's expense.
3. If the CONTRACTOR, in the course of the Work, finds any discrepancies between the Plans and the physical conditions of the locality, or any errors or omissions in the Plans or the layout as given by survey points and instructions, he shall immediately inform the ENGINEER in writing, and the ENGINEER shall promptly investigate the same. Any Work impacted by the discrepancy performed by CONTRACTOR after such discovery, until authorized, will be done at the CONTRACTOR's risk and/or expense.
4. Contractor's Risk - CONTRACTOR shall be responsible for the complete and timely, performance of the Work under this Contract and compliance with the Contract Documents. CONTRACTOR shall be responsible for the safe storage and inventory control of all materials on the project site and/or within off-site storage facilities either owned or leased by the CONTRACTOR, if any. CONTRACTOR shall protect materials and Work from all theft, loss, vandalism, or damage from any cause whatsoever until final Project completion by

CONTRACTOR and acceptance by OWNER; and shall deliver said Work and improvements to the OWNER in a completed and acceptable condition in accordance with the Contract Documents.

5. It is the intention of the OWNER to be sensitive to the needs and concerns of the citizenry. It is the CONTRACTOR's responsibility to adhere to this policy to the best of his ability. The CONTRACTOR, subcontractor and his employees should, whenever possible, address citizen inquiries about the project, provide names and numbers of OWNER personnel, relay citizen complaints, and provide continuous access to the citizen's property.
- 5.4 SUPERINTENDENT - The CONTRACTOR shall keep on-site for this Project during its progress a competent Superintendent or a designee and any necessary assistants, all satisfactory to the OWNER. Any Superintendent designee shall be identified in writing to the OWNER or his duly authorized representative, promptly after OWNER issued written Authorization to Proceed. The Superintendent or appointed designee shall represent the CONTRACTOR and all directions given to either of them shall be binding. Other Oral directions from the OWNER's representatives involving critical situations or Work elements shall be immediately confirmed in writing by OWNER to the CONTRACTOR. OWNER shall confirm other oral directions on written request in each case. The CONTRACTOR shall give sufficient supervision to the Work, using the best skill and attention.
- 5.5 INCIDENTAL WORK, CONNECTIONS AND PASSAGEWAYS - The CONTRACTOR shall perform all incidental Work necessary to complete this Contract, including, but not by way of limitation, the following: Shall make and provide all suitable reconnections with existing improvements as are necessarily incidental to the proper completion of the Project; shall provide passageways or leave open such thoroughfares in the Work area as may be reasonably required by OWNER and shall protect and guard same at CONTRACTOR's own risk, and shall continuously maintain the Work area in a clean, safe and workmanlike manner.
- 5.6 CONDITIONS AT SITE
 1. CONTRACTOR declares that prior to the submission of the Bid Proposal on this Contract, the CONTRACTOR has thoroughly examined the locations of the Work to be performed, has become familiar with typical local geophysical conditions at or near this Project, and has read and has thoroughly understood the "Contract Documents" and any other document made available prior to the bid opening, as they may relate to the physical conditions prevalent or likely to be encountered in the performance of the Work at such location(s). CONTRACTOR, by the performance of the above, hereby generally acknowledges that such "Contract Documents" are not obviously deficient and will enable the CONTRACTOR to accomplish the proper performance of the Work at the Project site.
 2. The CONTRACTOR shall promptly, and before such discovered conditions and/or structures are disturbed, notify the OWNER in writing of (1) subsurface or latent physical and/or structural conditions at the site differing materially from those indicated in the Plans, Specifications, and other Contract Documents or (2) newly discovered, unknown physical conditions at the site of an unusual nature differing materially from those geophysical conditions typically encountered in the type Work being performed and generally being recognized as not indigenous to the local environs. The OWNER, or designated representative, shall promptly investigate the reported physical and/or structural conditions, and shall determine whether or not the physical and/or structural conditions do materially so differ and thereby cause an increase or decrease in the CONTRACTOR's cost of, and/or the time required for performance of any part of the Work under this Contract. In the event that the OWNER reasonably determines that the physical and/or structural conditions do materially so differ, a negotiated, equitable, adjustment shall be made to either the Contract Time or Contract Sum or both, and a Contract Change Order shall be promptly issued in writing accordingly.
 - a. No claim of the CONTRACTOR under this clause shall be allowed unless the CONTRACTOR has given the written notice called for above, prior to disturbing the discovered conditions and/or structures.

- b. No claim by the CONTRACTOR for an equitable adjustment hereunder shall be allowed if claimed by the CONTRACTOR after final payment as defined in Section 7.4 herein has been made by the OWNER under the terms of this Contract.

5.7 CONTRACTOR'S INSURANCE REQUIREMENTS

1. Commencing on the date of this Contract, the CONTRACTOR shall, at CONTRACTOR's expense, purchase, maintain and keep in force such insurance as will protect the CONTRACTOR, OWNER and OWNER employees and agents from claims which may arise out of or result from operations under this Contract, whether such operations are performed individually, by any subcontractor, supplier or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable, including, without limitation, the following:

- a. Workers' Compensation (WC) insurance that will protect the CONTRACTOR, OWNER and OWNER employees and agents from claims under statutory Workers' Compensation laws, disability laws or such other employee benefit laws and that will fulfill the requirements of the jurisdiction in which the work is to be performed. This insurance will be endorsed to provide coverage for multiple jurisdictions and other such indicated coverage (U.W. Longshoremen and Harbor Workers' Admiralty, etc.) as may be applicable. The CONTRACTOR shall provide to OWNER proof of Worker's Compensation Insurance for all persons involved in each project.
- b. Employers' Liability (EL) insurance that will protect the CONTRACTOR, OWNER and OWNER employees and agents for damages because of bodily injury, sickness, disease of vendor's employees apart from that imposed by Workers' Compensation laws. This employer' liability insurance shall have a minimum limit of liability of not less than:

| | |
|---------------|--|
| \$ 500,000.00 | Bodily Injury by Accident |
| \$ 500,000.00 | Bodily Injury by Disease - Each Employee |
| \$ 500,000.00 | Bodily Injury by Disease - Policy Limit |

- c. COMMERCIAL LIABILITY (CL) insurance that will cover the entire scope of work and protect the CONTRACTOR, OWNER and OWNER employees and agents from claims for damages because of bodily injury, personal injury, sickness or death and insurance that will protect the CONTRACTOR, OWNER and OWNER employees and agents from claims for damages to or destruction of tangible property of others, including loss of use thereof. This coverage shall include Broad Form Property Damage and shall cover independent CONTRACTORS and shall not include any exclusions relating to blasting, explosion, collapse of buildings or damage to underground property where applicable.

The minimum limits of liability shall be:

| | |
|----------------|---|
| \$2,000,000.00 | General Aggregate |
| \$1,000,000.00 | Occurrence Limit |
| \$1,000,000.00 | Products/Completed Operations Aggregate |
| \$1,000,000.00 | Personal and Advertising Injury |
| \$ 50,000.00 | Fire Legal Liability |
| \$ 5,000.00 | Medical Expense |
| \$1,000,000.00 | Contractual Liability |

- d. Comprehensive Automobile Liability (AL) insurance that will protect the CONTRACTOR, OWNER and OWNER employees and agents from claims for damages arising out of the maintenance, operation, or use of any OWNER, non-owned or hired vehicles. Minimum limits of liability for bodily injury and property damage combined shall be not less than \$1,000,000.00 each occurrence.
- e. An Umbrella Liability (UL) insurance in the amount of \$2,000,000.00. This policy shall be of an "Occurrence" type and the limit of liability shall be concurrent with and in excess of the

EL, CL, and AL insurance coverage described in paragraphs 5.7.1.b, 5.7.1.c, and 5.7.1.d of this contract.

- f. An OWNER and CONTRACTOR Protective Liability Insurance policy which insures OWNER and OWNER employees and agents with the same coverage specified in paragraph 5.7.1.c.
 - g. In the event, the project contracted for herein requires the building of structures or facilities used for storage, housing equipment or the occupancy of personnel, the CONTRACTOR shall provide Physical Damage Insurance on Builder's Risk Form which insures OWNER for damages to all Property Purchased for, or Assigned to, the Project commencing on the start date through completion. Policy limits shall be in an amount equal to the total construction cost contracted herewith. The policy form shall be an All Risk Builders' Risk form and shall include the flood and earthquake endorsements.
2. Contractor shall issue a waiver of subrogation in favor the OWNER with respect to coverage described in paragraphs 5.7.1.a and 5.7.1.b. CONTRACTOR shall name OWNER as an additional insured with respect to coverage described in paragraphs 5.7.1.c and 5.7.1.d.
 3. CONTRACTOR shall be liable for all Subcontractor's insurance coverage appropriate to their scope of Work, and in the event a Subcontractor is not insured with respect to any and all insurance required by law, including, but not limited to, Automobile Insurance and Workers' Compensation Insurance, then the CONTRACTOR shall endorse the Subcontractor onto the applicable CONTRACTOR policies as another named insured.
 4. The insurance that is required under this Section 5.7 shall be written so that OWNER will be notified in writing in the event of cancellation, restrictive endorsement or non-renewal at least thirty (30) days prior to such action. Certificates of Insurance on the form attached to this Contract shall be filed with the OWNER prior to the execution of this Contract. CONTRACTOR shall be responsible for obtaining Certificates of Insurance from all Subcontractors and upon request, furnish copies to OWNER.
 5. CONTRACTOR is responsible for all deductibles under all of the insurance policies required by this section.
 6. The stated limits of insurance required by this section are MINIMUM ONLY and it shall be CONTRACTORS responsibility to determine what limits are adequate and the length of time the coverage shall be maintained. The minimum limits may be basic policy limits or any combination of basic limits and umbrella limits. The CONTRACTOR is fully responsible for all losses arising out of, resulting from or connected with the construction, and installation of the Facilities, and in support of its operations under this Contract and those of its subcontractors, whether or not said losses are covered by insurance. The OWNER acceptance of Certificates of Insurance that in any respect do not comply with the requirements of this Section 5.7 does not release the CONTRACTOR from compliance herewith. CONTRACTOR shall and will cause Subcontractors to carry any and all insurance required by law, including, but not limited to, Automobile Insurance and Workers' Compensation Insurance.
 7. CONTRACTOR shall and will cause Subcontractors to issue a waiver of subrogation in favor the OWNER and the CITY OF SCHERTZ with respect to coverage described in paragraphs 5.7.1.a and 5.7.1.b. CONTRACTOR shall and will cause Subcontractors to name OWNER as an additional insured with respect to coverage described in paragraph 5.7.1.d. CONTRACTOR agrees that all insurance policies required by this Section 5.7 shall be with insurance companies, firms or entities that are A.M. Best Rated "A-" or better. All insurance policies shall be of an "Occurrence" type.

5.8 SURVIVAL

Any and all representations, conditions and warranties made by CONTRACTOR under this Contract including, without limitation, the provisions of Sections 5.7.1.c, 5.7.1.d and 5.7.1.e of this Contract are

of the essence of this Contract and shall survive the execution and delivery of it, and all statements contained in any document required by the OWNER whether delivered at the time of the execution, or at a later date shall constitute representations and warranties hereunder.

5.9 MATERIALS & WORKMANSHIP

1. **MATERIALS** - Unless otherwise specified, all materials incorporated in the permanent Work shall be new, and both workmanship and materials shall be of good quality in accordance with Specifications. The CONTRACTOR shall, if required, furnish satisfactory evidence as to the supply or manufacture, and quality of materials supplied.
2. **USE OF MATERIALS WITHIN THE RIGHT-OF-WAY** - The CONTRACTOR, with the approval of the OWNER's Representative and/or Engineer, may use in the Work any suitable stone, gravel, or sand found in the excavation that otherwise meets or exceeds Contract Specifications. The CONTRACTOR shall not over excavate any material from within the right-of-way, which is not within the excavation limits, if any, as may be indicated by the lines and grades, without written authorization from the OWNER.
3. **SALVAGEABLE MATERIAL** - Salvageable material as determined by the Specifications or the OWNER's Representative shall remain the property of the OWNER and shall be relocated and stored at the job site by CONTRACTOR as directed by the OWNER's Representative unless stated elsewhere in the Specifications.
4. **DISPOSAL OF NON-HAZARDOUS WASTE MATERIAL/SUBSTANCES** - The CONTRACTOR shall be responsible for disposing of all non-hazardous material as the term is defined in Article 1 herein including old concrete or any other non-hazardous material which is required to be removed from the project. Such material shall not be deposited in any sanitary sewer, creek, river, water course or municipal separate, storm sewer system (MS4) as the term is defined herein.
5. **DISPOSAL OF HAZARDOUS MATERIAL/SUBSTANCES** - The CONTRACTOR shall be responsible for disposing of all hazardous materials/substances, as that term is defined in Article I herein in accordance with all applicable Federal, State and local laws, and in accordance with any specific instructions set out in the plans and specification herein.
6. **RECLAMATION OF LOW AREAS** - The CONTRACTOR may undertake the reclamation of low areas with the prior approval of the OWNER.
7. **BLOCKAGE OF THE MS4** - The CONTRACTOR shall comply with the provisions of the appropriate City Ordinances. In no event shall the CONTRACTOR block any portion of the MS4 with fill. Should any blockage occur the CONTRACTOR shall remove such fill, at CONTRACTOR's expense, as directed by the OWNER "COI".

5.10 TESTING - The OWNER or the ENGINEER may require special inspection, testing or approval of material or Work for determining compliance with the requirements of the Contract Documents. Upon OWNER-authorized direction of the ENGINEER the CONTRACTOR shall promptly arrange for such special testing, inspection or approval procedure. Should the material or Work fail to comply with the requirements of the Contract Documents, the CONTRACTOR shall bear all costs of the special testing, inspection or approval as well as the cost of replacement of any unsatisfactory material or Work as provided by Paragraph 5.11, otherwise, should the Work prove not defective, the OWNER shall bear such costs and an appropriate Change Order shall be issued. The costs of routine testing required by the OWNER shall be borne by the OWNER, as provided by Paragraph 5.2.3.

5.11 REMOVAL OF DEFECTIVE WORK - If any materials furnished under this Contract fails to perform in the manner such material is expected to perform in accordance with ordinary usage, the CONTRACTOR shall proceed to remove from the Project at his sole expense all such materials, whether worked or unworked, and to remove all portions of the condemned Work.

5.12 EOUAL MATERIALS - It is not the intent of these Specifications to unreasonably limit materials to the product of any particular manufacturer or supplier. Where definite materials, equipment and/or fixtures have been specified by name, manufacturer or catalog number, it has been done so as to set a definite standard and/or a reference for comparison as to quality, application, physical conformity, and other characteristics. It is not the intention to discriminate against or prevent any dealer, jobber or manufacturer from furnishing materials, equipment, and/or fixtures that meet or exceed the characteristics of the specified items. CONTRACTOR's substitution of materials, equipment and/or fixtures shall not be made without prior written approval from the ENGINEER and the OWNER.

5.13 SHOP DRAWINGS AND SAMPLES

1. Contractor shall reasonably check and verify all field measurements and after complying with applicable procedures specified in the Contract Documents, CONTRACTOR shall submit (in accordance with the CONTRACTOR's schedule of Shop Drawing submissions submitted to the OWNER and ENGINEER for information purposes); to ENGINEER for review and approval or for other appropriate action, six (6) copies, of all Shop Drawings bearing a stamp or specific written indication that CONTRACTOR has satisfied the CONTRACTOR's responsibilities under the Contract Documents with respect to his review of his submissions. All CONTRACTOR submissions will be clearly identified as required by the ENGINEER. The CONTRACTOR data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable ENGINEER to review the information.
2. Contractor shall also promptly submit to ENGINEER for review and approval any Samples required by the Contract Documents. All Samples will be accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission identity of materials, suppliers, and other pertinent data such as catalog numbers, and use for which intended.
 - 2.1 Before CONTRACTOR's submission of each Shop Drawing or sample, CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.
 - 2.2 At the time of each CONTRACTOR submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific CONTRACTOR notation to be made on each Shop Drawing submitted to ENGINEER for review, approval, or other appropriate action highlighting each such variation.
 - 2.3 Shop drawings for alternate designs not shown in the plans shall be reviewed and approved by the Engineer and shall not be implemented without an approved Change Order.
3. ENGINEER will review, approve, or take other appropriate action with the Shop Drawings and samples with reasonable promptness so as to cause no delay in the Work. ENGINEER's review, approval, or other appropriate action regarding CONTRACTOR's submissions will be only to check conformity with the design concept of the Project and for compliance with the information contained in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate component item will not indicate approval of the assembly into which the item is functionally integrated. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings to the CONTRACTOR. CONTRACTOR may be required to resubmit as required revised Shop Drawings or Samples for

further review and approval. Contractor shall direct specific attention in writing to any new revisions not specified by CONTRACTOR on previous CONTRACTOR submissions.

4. ENGINEER's review, approval, or other appropriate action regarding Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission as required by Paragraph 5.13.2.2 and ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for CONTRACTOR errors or omissions in the Shop Drawing submissions or from CONTRACTOR's responsibility to comply with the provisions of Paragraph 5.13.2.1.
5. Where ENGINEER requires by written request an approved CONTRACTOR Shop Drawing or Sample, any related Work performed by CONTRACTOR prior to ENGINEER's review and approval of the affected submission will be at the risk of CONTRACTOR.

5.14 PROGRESS SCHEDULE

1. The CONTRACTOR shall provide a Construction Progress Schedule to the OWNER within ten (10) calendar days after receipt of the Authorization to Proceed. The schedule shall show the order in which the CONTRACTOR proposes to carry out the Work in accordance with the final approved phasing plan, and the anticipated start and completion dates of each phase of the Work. The schedule shall be in the form of a time scaled Work progress chart to indicate the percentage of Work scheduled for completion at various critical milestones.
2. If the CONTRACTOR's operations are materially affected by changes in the Plans or in the amount of Work, or if he has failed to comply with the anticipated progress, the CONTRACTOR shall submit a revised schedule reflecting the change in progress, within ten (10) calendar days of the occurrence of such event. The schedule may also be revised by the CONTRACTOR in response to the reasonable request of the OWNER.
3. The Construction Progress Schedule will be used as the basis for establishing the critical items of Work and analyzing the Contract Time in relation to Work progress.
4. The CONTRACTOR shall submit in conjunction with his monthly request for payment, a copy of the current adjusted Construction Progress Schedule showing the progress of the Work to date. If OWNER determines that the CONTRACTOR is not maintaining his anticipated progress, then the OWNER may withhold approval of the monthly progress payment as outlined in Paragraph 7.3.

5.15 SEQUENCE OF WORK

1. PHASES OF CONSTRUCTION - The CONTRACTOR shall perform the Work as outlined in the Contract Documents, or as shown on the Plans. The CONTRACTOR may submit to OWNER a revised CONTRACTOR Phasing Plan prior to start of construction for review by the OWNER. If the OWNER determines that the revised CONTRACTOR's Phasing Plan is not acceptable as being in the best interest of the OWNER, then the CONTRACTOR shall proceed with the Work in accordance with the OWNER's Phasing Plan at no additional cost to the OWNER.
2. DETOUR ROUTES - A detour route for through traffic as determined by the OWNER may be included in the Plans where the proposed construction is located within the limits of a street designated as "Collector", "Secondary" or "Primary". The CONTRACTOR shall not begin construction of the Project or close any streets until adequate barricades and detour signs have been provided, erected and maintained in accordance with the detour route and details shown on the Plans. The CONTRACTOR shall notify the OWNER's Representative forty-eight (48) hours in advance of closing any street to through traffic. Local traffic shall be permitted the use of streets under construction where feasible.

5.16 CONSTRUCTION STAKES

1. The CONTRACTOR will be supplied with one set of construction stakes delineating the Project and appropriate benchmark information. Detailed transfers of elevation, line and grades to structures and other features of the Work shall be the responsibility of the CONTRACTOR.
2. WATER MAINS - Construction stakes will consist of a single line of stakes with guard stakes showing the stationing, and offset of PI, PC and PT of the pipe alignment.
3. STREETS - Construction stakes will consist of a single line of offset hubs at PC and PT of horizontal and vertical curves and at special features with guard stakes showing the stationing. Hubs will be offset as per contractor's preference within the Right of Way..
4. SANITARY AND STORM SEWERS - Construction stakes will consist of a single line of offset hubs at manhole locations and at other special features with guard stakes showing the stationing, the offset.
5. STRUCTURES – Construction stakes will consist of property corners and one benchmark on the site.
6. LASER BEAMS - The use of Laser Beams for vertical control of water mains and sanitary sewers shall be required and the CONTRACTOR shall make available to the OWNER's Representative a level and rod of sufficient sensitivity to accurately determine differences in elevation between points 300 feet apart with one instrument set-up.
7. CONTRACTOR'S RESPONSIBILITY - When the construction stakes have been set, the preservation of such stakes as to position, elevation and marking shall become the responsibility of the CONTRACTOR. Should any of the original stakes be destroyed by the CONTRACTOR's operations, or by any other non-OWNER related third parties or means whatsoever, the replacement of such stakes by ENGINEER and/or Engineer will be at the expense of the CONTRACTOR. Prompt payment by CONTRACTOR to ENGINEER for replacement staking is expected and OWNER may withhold periodic or final payments to CONTRACTOR to secure said payment.

5.17 PUBLIC UTILITIES

1. OWNER's Responsibility:

The OWNER shall cause to be sent a set of plans to the utilities listed on the plans. The OWNER shall request that the utilities review such plans and specifications to determine and/or verify the location of any utilities within the project site. The utility shall further be requested to communicate in writing the results of such review to the OWNER.

2. Contractor's Responsibility:

- a. The CONTRACTOR is hereby required to become familiar with all the existing utility structures, lines and mains that are known to exist and may be encountered within and/or adjacent to the limits of the work covered by the Contract. While the existence and location of underground utilities indicated on the Plans are taken from the most current utility records available to the OWNER and/or Engineer, the CONTRACTOR understands and acknowledges that the notation of such underground utilities on the Plans does not constitute a guarantee by the OWNER or ENGINEER. CONTRACTOR further understands and acknowledges that OWNER and ENGINEER are under no obligation to indicate the location of private service lines on the Plans.
- b. The CONTRACTOR shall go to the Project site and locate and verify any utilities indicated on the Plans prior to the Commencement of Work. The CONTRACTOR shall further investigate the possible location of any private service lines prior to the Commencement of Work. To facilitate this obligation on the part of CONTRACTOR, the CONTRACTOR shall

communicate with the utilities listed on the plans, call for locations and subsequently visit the project site with a qualified utility representative of each utility listed on the plans, prior to the Commencement of Work. The information resulting from such on-site investigations shall govern over the information notation on the Plans, when and if a conflict between such information arises. In the event such investigations on the part of CONTRACTOR result in a utility location adjustment CONTRACTOR shall not commence work until the completion of such adjustment has been completed.

- c. The CONTRACTOR acknowledges and agrees that maintaining continuity of utility service to utility customers is critical.
 - d. The CONTRACTOR shall be responsible for protecting the integrity of all utilities (public or private) either shown on the Plans or discovered during the CONTRACTOR investigations required in paragraph 5.17.2.b herein. Such method of protection shall first be reviewed and approved by the affected utility.
 - e. The CONTRACTOR shall be responsible for any damages to any utilities (public or private) either shown on the Plans or discovered during CONTRACTOR investigations acquired in paragraph 5.17.2.b herein. Any existing utilities shown on the plans or discovered during CONTRACTOR investigations set out herein which cannot be relocated shall be protected by the CONTRACTOR as part of the original Bid Proposal Price submitted by CONTRACTOR. The CONTRACTOR shall pay for temporary relocation of utilities for the CONTRACTOR's convenience.
 - f. Contractor shall be responsible for damage to utilities not shown on the Plans and not discovered during CONTRACTOR's investigations required in paragraph 5.17.2.b herein when the existence of such a utility or the suspected existence of such a utility should have been anticipated and investigated by the CONTRACTOR, based upon certain physical manifestations observed during the course of construction or other tangible evidence which constitutes common knowledge in the construction industry of the probable existence of a utility. A CONTRACTOR shall not be responsible for damages to utilities not shown on the Plans and not discovered during CONTRACTOR's investigation required herein when, in accordance with the common knowledge in the construction industry, the existence of such utility could not reasonably be anticipated.
3. Temporary clearance of high voltage (600 volts and above) and overhead electrical lines is required prior to the operation of equipment within 10 feet of such lines (Texas Health and Safety Code, sections 752.003 and 752.006). The CONTRACTOR shall bear the expense to obtain the necessary temporary clearance from the high voltage line operator or utility company. Temporary clearance shall be a temporary barrier separating and preventing contact of material, equipment persons, communications with high voltage electrical lines, or temporary de-energizing and grounding or temporary relocation, or raising of the lines.
 4. In the case of sewer, water, gas, electric, telephone, cablevision cable, or any other utility shown on the Plans and/or discovered during the CONTRACTOR's investigations required in paragraph 5.17.2.b herein, the CONTRACTOR will use care in excavating over, under and around such lines and will provide all necessary temporary bridging during construction so as to maintain continuous service of the utility line. The CONTRACTOR shall backfill around the main and complete his construction operations in such a manner as to leave the utility line firmly and securely bedded in its original position without damage to any protective coatings.
 5. In instances where gas or water mains are exposed during construction, the utility company owning or operating the service shall be given at least twenty-four (24) hours notice by the CONTRACTOR prior to backfilling in order that the protective coating on the mains may be inspected and/or repaired by utility company.
 6. BRACING AND SUPPORTING - In areas where utilities are known to be near the project site, and could be damaged by soil movement, slips or cave-ins, the CONTRACTOR shall take all

precautions necessary to protect such utilities from damage and shall pay for the repair of any such damages caused by CONTRACTOR failure to properly protect the utility.

- 5.18 SUBSURFACE CONDITIONS - Reports of explorations and tests of subsurface conditions at the construction site, where applicable, are available for review. The OWNER in order to generally forecast soil conditions at various depths to assist the ENGINEER in designing the Project procured these reports. The logs and descriptive data are NOT PART OF THE CONTRACT DOCUMENTS but are made available for the general information of bidders and neither the OWNER nor the ENGINEER assumes any obligation or responsibility, either specific or implied, for the accuracy or completeness of any information contained therein. Sub-surface conditions along and across the Project site may vary significantly from those shown on the test reports.
- 5.19 WORKING HOURS - No Work, with the exception of such items as curing of concrete, maintenance of barricades, etc., will be allowed by the OWNER between the hours of 6:00 p.m. and 7:00 a.m. of the following day, unless directed by OWNER or requested in writing by CONTRACTOR and approved by the OWNER.
- 5.20 USE OF CITY STREETS RIGHT OF WAY - The CONTRACTOR shall confine the movements of all steel tracked equipment to the limits of the Project and any such equipment will not be allowed to use City streets unless being transported on pneumatic tired vehicles. Any damage to existing City streets caused by the CONTRACTOR's equipment shall be repaired by CONTRACTOR at his own expense upon direction, and in the manner prescribed by City's specifications and the OWNER's "COI".
- 5.21 DAMAGES TO CITY STREETS caused by the CONTRACTOR, within the limits of the project but not within the current phase being constructed, shall be repaired by the CONTRACTOR at his own expense upon direction by the OWNER's "COI".
- 5.22 SANITARY PROVISIONS - The CONTRACTOR shall provide and maintain in a neat, sanitary condition, rest room facilities for the use of his employees and authorized on-site visitors as may be necessary to comply with the requirements and regulations of the City Health Department and of the State Department of Health.
- 5.23 DUST CONTROL - The CONTRACTOR will apply appropriate amounts of water (or other appropriate substance), to the area under construction and on detours as required to maintain sufficient moisture content in the surface layer for dust control.
- 5.24 USE OF EXPLOSIVES - The CONTRACTOR may not employ the use of explosives on this project.
- 5.25 WATER - Unless otherwise provided for in the specifications or Special Conditions, the responsibility shall be upon the CONTRACTOR to provide and maintain an adequate supply of water for construction and on-site domestic consumption. Any connections and piping that the CONTRACTOR deems necessary for providing and maintaining an adequate water supply to the jobsite shall be installed at his expense and at locations approved by the OWNER's Representative. Before final Project acceptance, all temporary connections and piping installed by the CONTRACTOR in accordance with this paragraph shall be removed in a manner satisfactory to the OWNER.
- 5.26 ELECTRICITY - All electric current required by the CONTRACTOR at the jobsite shall be procured by CONTRACTOR. All necessary meters, switches, connections and wiring shall be installed at locations approved by the OWNER. Before final acceptance, all meters, switches, connections and wiring installed by the CONTRACTOR pursuant to this paragraph shall be removed in a manner satisfactory to the OWNER's "COI".
- 5.27 CLEANING
1. The CONTRACTOR shall at all times keep the Project premises safe and free from accumulation of waste materials or rubbish caused by the Work under this Contract.
 2. Upon completion of the Work, and prior to the OWNER's final inspection, the CONTRACTOR shall present the premises in a neat and clean condition, prepared for acceptance by OWNER.

3. Prior to final acceptance of the Work, CONTRACTOR shall reasonably restore the Project site to its pre-Project condition (accounting for such restoration concerns as cosmetic appearance, landscaping, drainage gradients, accessibility, etc.) to the extent permitted by the Project improvements. All of this incidental Work to be performed by CONTRACTOR to the satisfaction of the OWNER.

5.28 ACCESS REQUIREMENTS - The CONTRACTOR shall provide access to residents and businesses affected by the construction of this project to the greatest extent possible.

5.29 SAFETY PRECAUTIONS AND PROGRAMS

1. In the performance of this Contract the CONTRACTOR shall protect the public and the OWNER by taking reasonable precaution to safeguard persons from death or bodily injury and to safeguard property of any nature whatsoever from damage. Where any dangerous condition or nuisance exists in and around construction sites, equipment and supply storage that are in any manner connected with the performance of this Contract, the CONTRACTOR shall provide and maintain reasonable warning of such danger or nuisance. The CONTRACTOR shall not create any dangerous condition or nuisance of any nature whatsoever in connection with the performance of this Contract including, but not limited to, excavations and obstructions, unless necessary to its performance, and in that event the CONTRACTOR shall provide and maintain at all times reasonable means of warning of any danger or nuisance so created. The duties of the CONTRACTOR in this paragraph shall be nondelegable and the CONTRACTOR'S compliance with the specific recommendation and requirements of OWNER as to the means of warning shall not excuse the CONTRACTOR from the faithful performance of these duties should such recommendations and requirements not be adequate or reasonable under the circumstances. The CONTRACTOR shall take reasonable precautions for the safety of and shall provide protection to prevent damage, injury, or loss to:
 - 1.1 All employees on the Work, and all other persons who may reasonably be foreseen to be affected by the Work.
 - 1.2 All the Work and all materials to be incorporated at street crossings, along proposed detour routes, and at material stockpiles. Where directed by the Vice President of Engineering or his duly authorized representative, the CONTRACTOR shall provide and maintain suitable warning signs, barricades and lights, in accordance with the details included in the Contract Documents, to direct traffic around the Work in progress and to assure the safety of the public. The CONTRACTOR shall provide adequate warning signs, barricades, lights and, where necessary, flagmen for the Project or portions of the Project within which operations are being prosecuted in any one day or which will be closed over night.
 - 1.3 Other property at the site or adjacent thereto including but not limited to, trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
2. The CONTRACTOR shall comply with the U.S. Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (Public Law 91-596 and all subsequent amendments) and under Section 107 of the Contract Work Hours and Safety Standards Act (Public Law 91-54 and all subsequent amendments). This project is subject to all of the Safety and Health Regulations (CFR 29, Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974 and CFR 29, Part 1910 and all subsequent amendments, General Industry Safety and Health Regulations Identified As Applicable to Construction. CONTRACTOR shall be knowledgeable with the requirements of these regulations and any amendments thereto.
3. Trench excavation protection shall be accomplished as required by the most current provisions of part 1926 subpart P - Excavations, of the Occupational Safety and Health's Standards and interpretations and as further defined in the note(s) on the Plans and other Contract Documents.

4. In any emergency affecting the safety of persons or property, the CONTRACTOR shall act to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the CONTRACTOR resulting from emergency Work shall be considered by OWNER in accordance with Articles VI and VIII for Completion Time.
5. The CONTRACTOR shall provide, at the site, such equipment and medical facilities as are necessary to supply first aid service to anyone who may be injured in connection with the Work. Such equipment shall comply with the most current regulations of the Occupational Safety and Health Administration of the United States Department of Labor.
6. The CONTRACTOR must promptly report in writing to the OWNER all accidents whatsoever arising out of, or in connection with, the performance of the Work whether on or adjacent to the site which caused death, personal injury, or property damage, giving full details and any statements of witnesses. In addition, if death, serious injury, or serious damage is caused, the accident then shall be reported immediately by telephone or messenger to the OWNER.
7. OWNER requires all CONTRACTOR job sites shall be immediately accessible to appropriate local, State and Federal agency safety officials.

ARTICLE VI. CONTRACT CHANGES

- 6.1 Change Orders - The Contract Sum and/or the Contract Time may be increased or decreased only by written Change Order. A Change Order signed by the CONTRACTOR indicates his acceptance and approval thereof including the adjustment in the Contract Sum and/or the Contract Time.

Any compensation paid in conjunction with the terms of a Change Order shall comprise total compensation due the CONTRACTOR for the work or the change defined in the Change Order. By signing the Change Order, the CONTRACTOR acknowledges that the stipulated compensation includes payment for the Work of Change plus all payment for the interruption of schedules, stop work orders, extended overhead, delay, or any other impact, claim or ripple effect and by such signing specifically waives any reservation or claim for additional compensation in respect to the subject of the Change Order. Except as modified by Change Order, all Work performed under a Change Order shall be completed in accordance with these Contract Documents.

- 6.2 The OWNER, without invalidating the Contract, may order changes in the Work within the general scope of the Contract and applicable law consisting of additions, deletions or other revisions and the Contract Sum and/or the Contract Time will be adjusted accordingly. All such changes in the Work shall be authorized by written Change Order and shall be performed by CONTRACTOR under the applicable provisions of the Contract Documents.

1. Major Changes In The Work - any significant change in a Major Bid Item constitutes a major change in The Work and shall be implemented by a Change Order that shall be binding on the OWNER and CONTRACTOR. A significant change shall be defined as follows:
 - a) An increase or decrease of twenty-five percent (25%) or more in the number of units of each Major Bid Item as included in the ENGINEER's estimated quantities included in the Bid Documents;
 - b) An increase or decrease of twenty percent (20%) or more in the dollar value of a lump sum, Major Bid Item. Any change in the Contract Sum resulting from a major change in the work, which reflects among other things, quantity changes, market price changes, and any quantity or volume discounts that might apply, shall be determined as specified in Para. 6.4.
2. Minor Changes In The Work - The OWNER's Representative will have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be implemented by a written directive and shall be binding on the OWNER and CONTRACTOR. The CONTRACTOR shall carry out any written directive promptly.

a) If the CONTRACTOR does not agree with the OWNER's Representative that a minor change in the work will result in no adjustment in Contract Sum or Contract Time, he must so notify the OWNER in writing, within seven (7) calendar days of issuance of the written directive and prior to beginning any disputed work. If the CONTRACTOR fails to file such written notification he shall waive his rights to file a claim under this section.

6.3 The entire cost of extra Work resulting from Change Orders including the incremental cost of extra Work resulting from any prior Change Orders, modifications, or additions so ordered, shall not cumulatively exceed twenty-five percent (25%) of the original Contract Sum, and provided further that the price is agreed upon in writing by OWNER and CONTRACTOR before materials are furnished or the Work is done.

6.4 Changes or Credits for the Work covered by an approved Change Order shall be determined by one or a combination of the following methods:

1. UNIT PRICE - Submitted by the CONTRACTOR in the original CONTRACTOR Bid Proposal as part of the base bid or as a designated additive or deductive alternate, and if agreed to by the CONTRACTOR and the OWNER, appropriately adjusted either upward or downward to reflect any increases or decreases in the amount of labor, material or equipment as they relate to Major Bid Items.
2. AGREED CONTRACT CHANGES - Lump Sum Agreement between OWNER and CONTRACTOR as to the price, quantity and time for changes in the Work. The CONTRACTOR shall submit an itemized, estimated cost breakdown together with supporting data. This itemized breakdown shall be in accordance with the requirements established in Article 6.4.3.
3. FORCE ACCOUNT - If no Agreed Contract Change or unit price can be reached after good faith negotiations between the OWNER and CONTRACTOR, the OWNER may direct the Work be performed by the CONTRACTOR on a Force Account basis, and payment by the OWNER shall be upon the basis of Actual Cost of the Work as specified in Paragraph 6.4.3.1 plus the participation allowances as specified in Paragraph 6.4.4.

3.1 ACTUAL COST OF THE WORK. - Actual Cost incurred by the CONTRACTOR to perform the additional Work. CONTRACTOR shall provide a complete breakdown of the actual costs to the OWNER on a daily basis as follows:

- a. Labor including Foremen
- b. Materials comprising the Work
- c. The CONTRACTOR's actual incremental Ownership or rental cost of equipment during the time of use on the extra Work. (Rental cost may be based on current Southwest Regional AGC, Association of Equipment Distributors regional computations or equivalent)
- d. Power and consumable supplies for the operation of power equipment
- e. Insurance, any extra bond premiums, Social Security and unemployment contributions, and benefits.

4. PARTICIPATION ALLOWANCE

| <u>Participant</u> | <u>Overhead</u> | <u>Profit</u> | <u>Commission</u> |
|--|-----------------|---------------|-------------------|
| To CONTRACTOR on his Project on Work performed by other than his own forces: | 0% | 0% | 5% |

To first tier Subcontractor on Work

| | | | |
|---|-----|-----|----|
| performed by his subtier Subcontractors: | 0% | 0% | 5% |
| To CONTRACTOR and/or the first tier | | | |
| Subcontractors for that portion of the Work | | | |
| performed with their own respective forces: | 10% | 10% | 0% |

Not more than four categories of percentages, not to exceed the maximum percentages shown above, will be allowed regardless of the number of subtier subcontractors: For proposals covering both increases and decreases in the amount of the Contract the application of overhead and profit percentages shall be on the net increase in Actual Costs for the CONTRACTOR or Subcontractor performing the Work. However, where the CONTRACTOR or first tier Subcontractor receives proposals for additive and deductive amounts from separate subtier subcontractors, the commission shall be allowed on the added amounts prior to subtraction of the credit amounts. The cost of such extra Work shall be added to the Contract Sum by a Written Change Order as specified in Paragraph 6.1.

6.5 DELETION OF WORK - The OWNER may, pursuant to State Statute, unilaterally order the CONTRACTOR to omit up to twenty-five percent (25%) of the original Contract Sum and associated Work, as specified in Paragraph 6.2.

6.6 CLAIMS FOR ADDITIONAL COSTS

1. If the CONTRACTOR pursues a claim for an increase in the Contract Sum prior to final Contract Settlement, he shall give the OWNER written notice thereof with a simultaneous information copy to the ENGINEER within thirty (30) days after the CONTRACTOR knows, or should have known, of the events giving rise to such CONTRACTOR claim This notice shall be presented in writing to the OWNER and ENGINEER by the CONTRACTOR before proceeding to execute the disputed Work, except in an emergency endangering life or property in which case the CONTRACTOR shall proceed in accordance with Paragraph 5.29.4. No such CONTRACTOR claim shall be valid unless the CONTRACTOR follows the procedure outlined herein. If the OWNER and the CONTRACTOR cannot agree on the amount of the adjustment in the Contract Sum, if any, it shall be determined by administrative procedures as provided by Article X. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.
2. If the CONTRACTOR claims that additional cost will be incurred because of, (1) any written OWNER or ENGINEER interpretation of the Contract Documents, (2) any order by the OWNER to stop the Work pursuant to Paragraph 4.10.1 where the CONTRACTOR was not at fault, (3) any written order involving a perceived minor change in the Work issued pursuant to Paragraph 6.2.2, the CONTRACTOR shall make such claim as provided in Paragraph 6.6. 1.

ARTICLE VII. CONTRACT PAYMENTS

7.1 ESTIMATED QUANTITIES AND MEASUREMENT - The estimated quantities of the various elements of Work to be done and material to be furnished are approximate only and are provided by ENGINEER and OWNER as a basis for OWNER comparison of proposals and award of Contract. It is expressly understood and agreed by OWNER and CONTRACTOR that the actual amounts of Work to be done and material to be furnished may differ somewhat from these estimates. Unless specified differently elsewhere, the quantities of Work actually performed by Contractor will be computed on the basis of measurements taken by the OWNER's representatives, and these measurements shall be final and binding on CONTRACTOR.

7.2 PROGRESS PAYMENTS - During the latter part of each month as the Work progresses on all OWNER Contracts regardless of Contract Sum, said OWNER, or his designated representatives, and CONTRACTOR shall determine either the cost of the labor and materials or quantities incorporated into the Work during that month and actual invoiced cost of CONTRACTOR acquired materials stored on the Project site, and/or within off-site storage facilities either owned or leased by the CONTRACTOR. Upon receipt of a complete and mathematically accurate Construction Estimate Certification Form from the CONTRACTOR, the OWNER shall make payments to CONTRACTOR within thirty (30) calendar days on Contracts totaling four hundred thousand (\$400,000.00) dollars or

less, based upon such cost determination and at the Contract unit prices in a sum equivalent to ninety percent (90%) of each such invoice. The remaining ten percent (10%) retainage shall be held by the OWNER until the final Contract Settlement. However, where the Contract amount exceeds four hundred thousand dollars (\$400,000.00), installments shall be paid to CONTRACTOR at the rate of ninety-five percent (95%) of each monthly invoice within thirty (30) calendar days of OWNER receipt of a complete and mathematically accurate Construction Estimate Certification Form from the CONTRACTOR, and the retainage held until final Contract Settlement shall be five percent (5%). OWNER's payment of installments shall not in any way be deemed to be a final acceptance of any part of the Work by OWNER, and will not prejudice OWNER in the final settlement of Contract account nor relieve the CONTRACTOR from completion of the Work as herein provided.

7.3 WITHHOLDING OF PAYMENT - In the event that the OWNER discovers evidence of CONTRACTOR and/or Work noncompliance with the Contract Documents subsequent to approval of the Construction Estimate Certification Form, the OWNER may revoke or otherwise amend that part of any Construction Estimate Certification Form to such extent as may be necessary to withhold monies to protect the OWNER from loss on account of:

- 1) Defective Work not remedied by CONTRACTOR.
- 2) Persistent and uncured CONTRACTOR non-compliance with the administrative provisions of the Contract Documents.
- 3) Damage to Work of another CONTRACTOR.
- 4) Liquidated Damages assessed by OWNER for CONTRACTOR failure to maintain scheduled progress in accordance with interim progress milestones, if any are specified in the Contract Documents, and/or CONTRACTOR failure to meet final completion date.
- 5) Receipt of written notice by the OWNER of CONTRACTOR's unpaid bills, as stipulated in Article 5472a, V.T.C.S., if the CONTRACTOR has not provided a payment bond and only if the Contract Sum does not exceed \$25,000.00. Any funds so withheld by OWNER shall be released to the CONTRACTOR if he furnishes either a special indemnity bond to OWNER securing release of lien as provided in Article 5472b-1, V.T.C.S., or CONTRACTOR proof of payment of disputed bills.
- 6) "Indemnification" as provided for in Paragraph 2.3.

When the above CONTRACTOR deficiencies are cured, OWNER will make payment for amounts withheld because of the deficiencies within (30) thirty calendar days.

7.4 FINAL PAYMENT - CONTRACTOR shall not be entitled to receive payment of any sum in excess of the cumulative amounts paid upon such monthly invoices as outlined above until forty-five (45) calendar days after OWNER transmittal of the Letter of Conditional Approval and not before all the stipulations, requirements and provisions of this Contract are faithfully performed and complied with by CONTRACTOR, and unless and until said structures, Work and improvements shall be entirely completed, and delivered to, and accepted by the OWNER in accordance with the Contract Documents. Completion, delivery and acceptance of the Work is evidenced by the Final Certificate of Acceptance issued by the OWNER and such Certificate of Acceptance is approved by the OWNER or his designated representative. The OWNER shall prepare the final invoice as the basis for final Contract settlement. OWNER may deduct from the amount of such final invoice and retain any and all sums which are to be deducted by OWNER or paid or allowed by CONTRACTOR to OWNER, or which are to be retained by OWNER for reasons previously stated in Paragraph 7.3.

1. NOTARIZED AFFIDAVIT - Before final payment for the work by the OWNER, the CONTRACTOR shall submit to the OWNER a notarized affidavit in duplicate stating under oath that all subcontractors, vendors, and other persons or firms who have furnished or performed labor or furnished materials for the work have been fully paid or satisfactorily secured. Such affidavit shall bear or be accompanied by a statement, signed by the surety company who provided the Payment Bond for the work, to the effect that said surety company consents to final payment to the CONTRACTOR being made by the OWNER.

7.5 OWNER TO FINALLY DETERMINE ALL AMOUNTS PAYABLE OR CHARGEABLE - It is expressly understood and agreed by CONTRACTOR that subject only to the prices, terms and provisions specifically set forth in the Contract Documents including Change Orders, the written estimates and Certificates of the OWNER shall be final in fixing and determining amounts payable or chargeable hereunder to CONTRACTOR by OWNER as required by the other terms and conditions hereof. Also, in case of controversy, the monthly construction estimates and Certificates of Final Acceptance shall be final in fixing and determining all sums to be deducted and retained by OWNER for reasons as stated in Paragraph 7.3, out of any funds otherwise estimated as payable to CONTRACTOR by OWNER.

7.6 CLAIMS BY THIRD PARTIES FOR LABOR OR MATERIALS

1. Contractor hereby agrees to promptly pay all persons supplying labor, services and materials in the prosecution of the Work provided for in this Contract and any and all duly authorized modifications or Change Orders of said Contract that may hereafter be made, and shall fully indemnify and hold harmless the OWNER and its agents against any and all claims, liens, suits or actions asserted by any person, persons, firm or corporation on account of labor, materials or services furnished such CONTRACTOR during the prosecution of the Work herein undertaken. CONTRACTOR shall execute a payment bond in accordance with other sections governing same herein for this purpose. Before the OWNER shall be obligated to pay any amount to CONTRACTOR on final Contract settlement, CONTRACTOR shall execute a sworn, written and notarized statement on an affidavit form to be supplied by the OWNER Director of Finance and filed with the OWNER, along with a "consent of surety" letter endorsing final payment to CONTRACTOR, evidencing that all labor employed and all equipment and materials incorporated into the Construction of the Work have been either fully paid for by CONTRACTOR and Subcontractors, or that any pending disputes over payment are being properly addressed by the surety.
2. Suppliers, any subcontractors, and persons claiming to have performed any labor, or to have supplied any equipment and materials toward the performance of this Contract, and who claim not to have received proper compensation from the CONTRACTOR or Subcontractors for same, shall be instructed by OWNER and CONTRACTOR that written and documented claims must be sent directly to the CONTRACTOR and his Surety in accordance with Article 5160, V.T.C.S. The OWNER will furnish to claimants, in accordance with such Article, a copy of the CONTRACTOR's Payment Bond and surety's address as provided therein upon claimants written request. The OWNER shall further furnish a statement to claimants that Claimants are cautioned that no legal or equitable lien exists on the OWNER funds yet unpaid to the CONTRACTOR, and that reliance on notices sent only to the OWNER may result in loss of claimant's rights to timely perfect recovery against the CONTRACTOR and/or his Surety. The OWNER is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no such responsibility because of any unauthorized representation by any agent or employee of OWNER to the contrary.

ARTICLE VIII. CONTRACT COMPLETION TIME

8.1 COMMENCEMENT OF WORK - The Work called for in this Contract shall be commenced by CONTRACTOR within seven (7) calendar days after issuance by the OWNER of the written Authorization To Proceed. Under no circumstances shall the Work commence prior to CONTRACTOR's receipt of OWNER issued, written Authorization To Proceed. Computation of Contract Time will begin upon actual commencement of Work by the CONTRACTOR during the seven (7) calendar day period referenced above, or upon the eighth (8th) calendar day (assuming the eighth calendar day is a day upon which Work may lawfully and Contractually be performed), whichever occurs first.

8.2 COMPLETION OF WORK - After commencement of Work as outlined in Paragraph 8.1, the CONTRACTOR shall prosecute the Work continuously, diligently and uninterrupted throughout the Contract Time period, during which period of time CONTRACTOR, all subcontractors and suppliers are bound and obligated at all times to employ sufficient Work force and supervisory diligence to

complete said structures, Work and improvements, and to deliver same over to the OWNER in a timely acceptable, completed, undamaged and clean condition. The time of beginning, rate of progress and time of completion of said Work are hereby declared by OWNER and understood by CONTRACTOR to be "OF THE ESSENCE" to this Contract. The OWNER may suspend said Work either partially or totally as provided for in Paragraph 4.8 and 4.9.

8.3 WORKING DAY/CALENDAR DAY CONTRACT

1. WORKING DAY is defined as a day, not including Sundays or OWNER Designated Holidays, on which the weather or other jobsite conditions not under the control of the CONTRACTOR will permit the performance of this Contract Work for a continuous period of not less than seven (7) hours between 7:00 a.m. and 6:00 p.m. If the CONTRACTOR elects to perform Work on Saturday, the CONTRACTOR will be charged a Working Day, if weather or other jobsite conditions permit continuous Work operation for seven (7) or more hours. Nothing in this Paragraph shall be construed as prohibiting the CONTRACTOR from working on Saturdays if so desired and gives OWNER' or his duly authorized representative at least the prerequisite forty-eight (48) hours written notice of intent to perform Work on Saturday so that OWNER's representatives may be scheduled to observe/inspect said Work. Work on Sundays or OWNER Designated Holidays will not be permitted except in cases of extreme emergency, and then only with the written permission of the OWNER or his duly authorized representative. If Sunday or OWNER Designated Holiday Work is permitted, Contract Time will be charged on the same basis as computing regular Working Days and the OWNER Representative average salary costs at time and one half will be charged to the CONTRACTOR. Should the Work be delayed necessarily by any damage that may happen thereto by any unusual, unavoidable accident or by the condition of the weather, or by action of the elements, or by any general strike of employees, or by shortage of materials, or by any injunction, restraining order or other court of competent jurisdiction action, CONTRACTOR shall have no claim for any adjustment of the Contract Sum on account of such delay, but Working Days will not be charged by OWNER during the period of any such delays.
2. CALENDAR DAY - Unless herein otherwise expressly defined, shall mean a calendar day or days of 24 hours each from midnight to the next consecutive midnight. Work on Sundays or OWNER Designated Holidays will not be permitted except in cases of extreme emergency, and then only with the written permission of the OWNER or his duly authorized representative. If Sunday or OWNER Designated Holiday Work is permitted, the OWNER representative average salary costs @ time and one half will be charged to the CONTRACTOR. Nothing in this Paragraph shall be construed as prohibiting the CONTRACTOR from working on Saturdays if so desired and gives OWNER' or his duly authorized representative at least the prerequisite forty-eight (48) hours written notice of intent to perform Work on Saturday so that OWNER's representatives may be scheduled to observe/inspect said Work.

- 8.4 FAILURE TO COMPLETE WORK ON TIME - If the CONTRACTOR fails to complete the Contract in the time specified by OWNER in the Contract Documents and agreed to by CONTRACTOR through execution of this Contract, Contract Time charges will continue to be made for each Working or Calendar Day (depending upon which type Contract is entered into) thereafter. The time set forth in the Contract for the completion of the Work is an ESSENTIAL ELEMENT of the Contract. For each Working or Calendar Day that any Work shall not be complete, after the expiration of the Working or Calendar Days specified in the Contract, (to include Working or Calendar Days charged for correction of CONTRACTOR deficiencies found during the final inspection), plus, any extended days allowed by OWNER, the amount of liquidated damages assessed per day as stipulated in the Contract will be deducted from the money owed or to become due the CONTRACTOR, not as a penalty but as liquidated damages owed the OWNER for extended expenses, loss and public inconvenience resulting from CONTRACTOR's failure to complete said Work within the Time CONTRACTOR agreed to by execution of this Contract. CONTRACTOR and OWNER agree that such liquidated damages as are set prior to the Contract execution are for projected reasonable costs that are otherwise difficult for either Party to forecast and will be incurred by the OWNER due to CONTRACTOR completion beyond the number of Working or Calendar Days calculated herein by the OWNER.

- 8.5 CONTRACT TIME STATEMENT - The OWNER, or authorized representative shall furnish a "Contract Time Statement" to the CONTRACTOR after the end of each calendar month, showing the number of

Working or Calendar Days charged by OWNER and of such non-chargeable Days credited to the CONTRACTOR during each month. Such statement shall become final and binding upon the CONTRACTOR without exception, unless CONTRACTOR notifies the OWNER, in writing of any Contract Time Statement discrepancies claimed by the twentieth (20th) calendar day following OWNER issuance date on the Contract Time Statement

- 8.6 Liquidated Damages for Failure to Complete on Time - The CONTRACTOR agrees that time is of essence of this contract and that for each day of delay beyond the number of days herein agreed upon for the completion of work herein specified and contracted for, after due allowance for such extension of time as is provided for under the provisions of the proceeding paragraph, the OWNER may withhold permanently for the CONTRACTOR's total compensation, not as a penalty but as liquidated damages, the sum per day given in the following schedule:

AMOUNT OF LIQUIDATED DAMAGE

| Amount of Contract | | Damages Per Day |
|--------------------|----------------|-----------------|
| Less than | \$ 50,000 | \$ 50.00 |
| \$ 50,001 | to \$ 100,000 | \$100.00 |
| \$ 100,001 | to \$ 250,000 | \$150.00 |
| \$ 250,001 | to \$ 500,000 | \$200.00 |
| \$ 500,001 | to \$ 750,000 | \$250.00 |
| \$ 750,001 | to \$1,000,000 | \$300.00 |
| \$1,000,001 | to \$1,500,000 | \$350.00 |
| \$1,500,001 | to \$2,000,000 | \$400.00 |
| \$2,000,001 | to \$2,500,000 | \$450.00 |
| \$2,500,001 | \$3,000,000 | \$500.00 |
| \$3,000,001 | \$3,500,000 | \$550.00 |
| \$3,500,001 | and over | \$600.00 |

ARTICLE IX. PROJECT COMPLETION AND ACCEPTANCE

9.1 FINAL ACCEPTANCE of the Project will be considered only after all stipulations, requirements and provisions of this Contract are faithfully completed and the Project is delivered to the OWNER by CONTRACTOR in an acceptable condition for the intended use by OWNER. In the event that all major Contract pay items are complete and only minor clean-up operations remain for Contract completion, the OWNER has the discretionary authority to issue a Letter of Conditional Approval. Should the OWNER or his duly authorized representative's Letter of Conditional Approval contain conditions for the final Acceptance of the Work, Contract Time will continue to be charged against the CONTRACTOR until such conditions have been corrected to the satisfaction of the OWNER.

- 1 OWNER may at any time request CONTRACTOR in writing to permit OWNER to beneficially occupy any such part of the Work which OWNER believes to be ready for its intended use, substantially complete and ready for Final Acceptance. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER and ENGINEER that said part of the Work is substantially complete and request OWNER to issue a Letter of Conditional Approval or Final Acceptance for that part of the Work. Within a reasonable time after such request, OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the completed and Finally Accepted Work to determine its status of completion. Warranties on that part of the Work beneficially occupied by OWNER will commence upon issuance of the Letter of Conditional Approval. Any Work items remaining to be completed and Finally Accepted as outlined in the Letter of Conditional Approval will have Warranty commencement upon completion and Final Acceptance by OWNER.
2. OWNER may at any time request CONTRACTOR in writing to permit OWNER to take over operation of any such OWNER part of the Work although it is not Substantially Complete. A copy of such request will be sent to the Engineer and within a reasonable time thereafter, OWNER, CONTRACTOR, Engineer and ENGINEER shall make an inspection of that part of the Work

affected by the request to determine its status of completion and will jointly prepare a list of the items remaining to be completed or corrected before Final Acceptance. If CONTRACTOR does not object in writing to OWNER, Engineer and ENGINEER that such part of the Work is not ready for separate operation by OWNER, or that separate operation by OWNER will significantly interfere with CONTRACTOR's remaining operations, OWNER will finalize the list of items to be completed or corrected and will deliver such list to CONTRACTOR together with a written recommendation as to the division of responsibilities pending Final Acceptance with respect to security, operation, safety, maintenance, warranties, utilities, insurance, and retainage for that part of the Work taken over for operation by OWNER. During such operation, OWNER shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related Work.

- 9.2 PARTIAL ACCEPTANCE by OWNER for beneficial occupancy of any completed part of the Work, which has specifically been identified in the Contract Documents as being eligible for early OWNER Acceptance, or which OWNER, ENGINEER and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Final Acceptance of the total Work subject to the following:
- 9.3 Warranty/Correction Period - During a period of 12 months from and after the date of the final acceptance by the OWNER of the work embraced by this contract, the CONTRACTOR shall make all needed repairs arising out of defective workmanship or materials, or both, which in the judgment of the OWNER shall become necessary during such period. If within 3 days after the receipt of a notice in writing to the CONTRACTOR or his agent the CONTRACTOR shall neglect to make or to undertake with due diligence the aforesaid repairs, the OWNER is hereby authorized to make such repairs at the CONTRACTOR's expense. In case of an emergency where, in the judgment of the OWNER, delay would cause a serious loss or damage, repairs may be made without notice being sent to the CONTRACTOR, and the CONTRACTOR shall pay the cost thereof.

ARTICLE X. DISPUTES:

- 10.1 GENERAL - Prior to any anticipated litigation between the OWNER and the CONTRACTOR, both hereby agree that disputed matters shall first be submitted to OWNER administrative appellate procedures as described below:
1. Except as otherwise provided in this Contract, any dispute concerning a question of fact arising under this Contract which is not disposed of by mutual agreement shall be initially decided by the ENGINEER who shall reduce his decision to writing and promptly mail or otherwise furnish a copy thereof to the CONTRACTOR. The decision of the ENGINEER shall be final and conclusive unless within thirty (30) calendar days from the date of issuance of such decision by ENGINEER the CONTRACTOR mails or otherwise furnishes to the OWNER a written notice of appeal addressed to the OWNER, whose appellate decision shall be the final and conclusive OWNER decision. In connection with any appeal under this Article, the CONTRACTOR shall be afforded an opportunity to be heard and to offer evidence in support of the appeal to persons to be promptly appointed by the OWNER to review such disputed matters. The OWNER will also be allowed to present information supporting OWNER's position.
 2. Pending final OWNER decision after a dispute hearing, the CONTRACTOR shall proceed diligently with the performance of the Contract and in accordance with the OWNER'S decision. Neither the OWNER nor the CONTRACTOR is precluded from resorting to litigation or other remedy at law nor in equity to perfect a legal filing prior to the expiration of an applicable statute of limitations or after this OWNER administrative review process is completed.

ARTICLE XI. SUPPLEMENTAL AND SPECIAL CONDITIONS

- 11.1 GENERAL - When the Work contemplated by the OWNER is of such a character that the foregoing Standard General Conditions of the Contract cannot adequately cover necessary and additional

contractual provisions, the Contract Documents may include Supplemental and Special Conditions as described below:

1. SUPPLEMENTAL CONDITIONS shall describe any additional procedures and requirements of Contract administration to be followed by the CONTRACTOR, OWNER, and OWNER representatives. Supplemental Conditions may expand upon matters covered by the Standard General Conditions, where necessary.
 2. SPECIAL CONDITIONS shall relate to terms, conditions and procedures related to a particular project and be unique to that project.
- 11.2 FUNDED PROJECTS - On State or Federally funded projects, the OWNER may waive, suspend or modify any Article in these General Conditions which conflicts with any State or Federal statute, rule, regulation or procedure, where such waiver, suspension or modification is essential to receipt by the OWNER of such State or Federal funds for the Project. In the case of any project financed in whole or in part by State or Federal funds, any Contract standards or provisions required by the enabling State or Federal statute, or any State or Federal rules, regulations or procedures adopted pursuant thereto that conflict with, or preempt these local Standard General Conditions, shall be controlling.

SPECIAL CONDITIONS TO THE GENERAL SPECIFICATIONS

GENERAL CONDITIONS: ARTICLE V. CONTRACT RESPONSIBILITIES

Replace Items 5.2.1a with the Item below

5.2.1a Staking the Work for construction as indicated in Section 5.16.

Replace Items 5.16.1-7 with the Items below

5.16 CONSTRUCTION STAKES

1. The CONTRACTOR will be supplied with one set of construction stakes delineating the Project and appropriate benchmark information. Detailed transfers of elevation, line and grades to structures and other features of the Work shall be the responsibility of the CONTRACTOR.
2. WATER MAINS - Construction stakes will consist of a single line of stakes with guard stakes showing the stationing, and offset of PI, PC and PT of the pipe alignment.
3. STREETS - Construction stakes will consist of a single line of offset hubs at PC and PT of horizontal and vertical curves and at special features with guard stakes showing the stationing. Hubs will offset as per contractor's preference within the Right of Way..
4. SANITARY AND STORM SEWERS - Construction stakes will consist of a single line of offset hubs at manhole locations and at other special features with guard stakes showing the stationing, the offset.
5. STRUCTURES – Construction stakes will consist of property corners and one benchmark on the site.
6. LASER BEAMS - The use of Laser Beams for vertical control of water mains and sanitary sewers shall be required and the CONTRACTOR shall make available to the OWNER's Representative a level and rod of sufficient sensitivity to accurately determine differences in elevation between points 300 feet apart with one instrument set-up.
7. CONTRACTOR'S RESPONSIBILITY - When the construction stakes have been set, the preservation of such stakes as to position, elevation and marking shall become the responsibility of the CONTRACTOR. Should any of the original stakes be destroyed by the CONTRACTOR's operations, or by any other non-OWNER related third parties or means whatsoever, the replacement of such stakes by ENGINEER and/or Engineer will be at the expense of the CONTRACTOR. Prompt payment by CONTRACTOR to ENGINEER for replacement staking is expected and OWNER may withhold periodic or final payments to CONTRACTOR to secure said payment.

Section 01110

SUMMARY OF WORK

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Summary of the Work including work by the City, City-furnished Products, work sequence, future work, Contractor use of Premises, special conditions for substantial completion and City occupancy.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. The project will consist of, but not limited to, the installation of a approximately 1658 linear feet of 16-inch waterline along IH-35 from Schertz Parkway to Plaza Drive. The waterline will be replaced in-place, with salvaged pipe disposed of by the contractor..
 - 1. All work within the TxDOT right of way will be performed in accordance to the TxDOT permit. All secondary backfill within the TxDOT right of way will be flowable fill per TxDOT specification 401, "Flowable Fill", 2004.
 - 2. The Contactor will be responsible for a storm water pollution prevention plan and posting of the TPDES Construction Notice on the job site, as per Schertz Technical Section 01410.
 - 3. The contractor will be responsible for a traffic control plan, as per Schertz Technical Section 01555.
 - 4. Miscellaneous site and other work necessary or incidental for completion of the project
- B. Provide materials, labor, equipment and superintendence for the construction of the drainage, road, and/or utility improvements in accordance with these Technical Specifications, Project Plans, and Contract Documents. Contractor's responsibility includes, but is not limited to, construction sequencing in accordance with the Contract Documents, quality control of workmanship and materials, handling of all material, handling and disposal of all waste material, and compliance with all regulatory standards governing the work

1.03 ALTERNATES

- A. From the following list of Alternates, amount included in Contract Price for only those Alternates accepted by the City and listed in Notice of Award:

- 1. NONE

1.05 CITY-FURNISHED PRODUCTS

- A. Items Furnished by the City for Installation and final connection by Contractor: Water meter.

- B. Contractor's Responsibilities:

- 1. Arrange and pay for Product delivery to the site.
 - 2. Receive and unload Products at the site; jointly with the City, inspect for completeness or damage if required by City.
 - 3. Handle, store, Install, and finish Products.
 - 4. Repair or replace damaged items.

1.05 WORK SEQUENCE

- A. Construct work in stages to provide proper coordination with work by others. Coordinate the construction schedule and operations with the OWNER's representative. Reference to General Conditions Item 5.15, Sequence of Work.

- B. Construct the Work in Phases during the construction period, coordinate construction schedule and operations with the City:

- 1. Take photographs or video of existing site prior to any construction activities, including clearing, grading, etc.
 - 2. Set up traffic detour and Phase I traffic control and detour. Maintain a minimum of one way access (into subdivision) at all times.
 - 3. Establish erosion control measures.
 - 4. Installation of waterline
 - 5. Testing and clean-up

- C. For projects with no Phases, do not disturb more than 50% of total project linear feet of disturbed right-of-way and easement until site restored in accordance with Section 01740 – Site Restoration.

- D. Coordination of the Work: Refer to Section 01312 - Coordination and Meetings.
- E. Contract time for this project shall be **90** calendar days

1.06 CONTRACTOR USE OF PREMISES

- A. Comply with procedures for access to the site and Contractor's use of rights-of-way as specified in Section 01145 - Use of Premises.
- B. Construction Operations: Limited to the City's rights-of-way provided by the City and areas shown or described in the Contract documents.
- C. Utility Outages and Shutdown: Provide a minimum of 48 hours notice to the City and private utility companies (when applicable), excluding weekends and holidays, in advance of required utility shutdown. Coordinate all work as required.

1.07 STREET CUT ORDINANCE

- A. Comply with the latest City of Schertz details.
- B. Quantities are included for street cut pavement repair and replacement in applicable Specification sections for Unit Price contracts.
- C. Include payment for street cut pavement repair and replacement in lump sum bid for Stipulated Price contracts.

1.08 WARRANTY

- A. Comply with warranty requirements in accordance with General Conditions.

1.09 ADDITIONAL CONDITIONS FOR SUBSTANTIAL COMPLETION

- A. In addition to requirements outlined in the General Conditions, for Contractor to be substantially complete with the Work and call for inspection by Public Works to confirm, the following conditions must be met or completed:
 - 1. All testing shall be completed and accepted by Public Works.
 - 2. Permanent erosion control measures are in place and cleanup complete
 - 3. *All pay items complete.*

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

SECTION 01145

USE OF PREMISES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General use of the site including properties inside and outside of rights-of-way, work affecting road, ramps, streets and driveways and notification to adjacent occupants.

1.02 RIGHTS-OF-WAY

- A. Confine access, and operations and storage areas to rights-of-way provided by the City as stipulated in General Conditions; trespassing on abutting lands or other lands in the area is not allowed.
- B. Make arrangements, at no cost to the City, for temporary use of private properties. Contractor and Surety shall indemnify and hold harmless the City against claims or demands arising from such use of properties outside of rights-of-way. Submit a copy of agreements between private property owners and Contractor prior to use of the area. Agreements between private property owners and Contractor shall be notarized or bear the signatures of two witnesses.
- C. Obtain written permission from City of Schertz Parks and Recreation Department for storage of materials on esplanades and other areas within rights-of-way under that department's jurisdiction. Submit copies of written permission prior to use of the area.
- D. Restrict total length of distributed materials along the route of construction to 1,000 linear feet unless otherwise approved in writing by Public Works.

1.03 PROPERTIES OUTSIDE OF RIGHTS-OF-WAY

- A. Do not alter the condition of properties adjacent to and along rights-of-way.
- B. Do not use ways, means, methods, techniques, sequences, or procedures that result in damage to properties or improvements.
- C. Restore damaged properties outside of rights-of-ways at no cost to the City.

1.04 USE OF SITE

- A. Obtain approvals from governing authorities prior to impeding or closing public roads and streets. Do not close more than two consecutive intersections at one time.

- B. Notify Public Works and Emergency Services at least five working days prior to closing a street or street crossing. Obtain permits for street closures in advance.
- C. Maintain 10-foot-wide minimum access lanes for emergency vehicles including access to fire hydrants.
- D. Avoid obstructing drainage ditches or inlets. When obstruction is unavoidable due to requirements of the Work, provide grading and temporary drainage structures to maintain unimpeded flow.
- E. Locate and protect private lawn sprinkler systems that may exist within the site. Repair or replace damaged systems to condition existing at start of the Work, or better.
- F. Conform to daily clean-up requirements of Article 5 of General Conditions.
- G. Beware of overhead power lines existing in area and in close proximity of the Project. When 10 feet of clearance between energized overhead power line and construction-related activity cannot be maintained, request Power Company de-energize or move conflicting overhead power line. Contact schedule, coordinate, and pay costs associated with de-energizing or moving conflicting overhead power lines. When there is no separate pay item for this effort, include these costs in various items of bid that make such work necessary.

1.05 NOTIFICATION TO ADJACENT OCCUPANTS

- A. Notify individual occupants in areas to be effected by the Work of proposed construction and time schedule. Notify not less than 72 hours or more than two weeks prior to work performed within 200 feet of homes or businesses. Follow form and content of sample door hanger provided by Public Works.
- B. Include in notification nature of the Work, and names and telephone numbers of two company representatives for resident contact available on 24-hour call.
- C. Submit proposed notification to Public Works for approval.

1.06 PUBLIC, TEMPORARY, AND CONSTRUCTION ROADS AND RAMPS

- A. Construct and maintain temporary detours, ramps, and roads to provide for normal public traffic flow when it is necessary to close public roads or streets.
- B. Provide mats or other means to prevent overloading or damage to existing roadways from tracked equipment, large tandem axle trucks or equipment that will damage the existing roadway surfaces.

- C. Construct and maintain access roads and parking areas as specified in Section 01504 - Temporary Facilities and Controls.

1.07 EXCAVATION IN STREETS AND DRIVEWAYS

- A. Avoid hindering or inconveniencing public travel on streets or intersecting alleys for more than two blocks at any one time, except by permission of Public Works.
- B. Obtain Public Works approval when nature of the Work requires closure of an entire street. Permits required for street closure are Contractor's responsibility. Avoid unnecessary inconvenience to abutting property owners.
- C. Remove surplus materials and debris and open each block for public use, as work in that block is complete.
- D. Acceptance of any portion of the Work will not be based on return of street to public use.
- E. Avoid obstructing driveways or entrances to private property.
- F. Provide temporary crossings or complete excavation and backfill in one continuous operation to minimize duration of obstruction when excavation is required across drives or entrances.
- G. Provide barricades and signs in accordance with Section VI of the State of Texas Manual on Uniform Traffic Control Devices.

1.08 TRAFFIC CONTROL

- A. Comply with traffic regulation as specified in Section 01555 - Traffic Control and Regulation.

1.09 SURFACE RESTORATION

- A. Restore the site to the condition existing before construction, or better.
- B. Repair paved areas per the requirements of Section 02951 - Pavement Repair and Resurfacing.
- C. Repair damaged turf areas, level with bank run sand conforming to Section 02317 - Excavation and Backfill for Utilities, or topsoil conforming to Section 02911 - Topsoil, and re-sod in accordance with Section 02922 - Sodding. Water and level newly sodded areas with adjoining turf using appropriate steel wheel rollers for sodding. Do not use spot sodding or sprigging.

1.10 LIMITS OF CONSTRUCTION

- A. Confine operations to lands within construction work limits shown on Drawings. Unless otherwise noted on Drawings adhere to the following:
1. Where utility alignment is within esplanade, and construction limits are shown on Drawings to extend to edge of esplanade, keep equipment, materials, stockpiles a minimum of five feet from back of curb.
 2. Where construction limits shown on Drawings extend to property line, keep sidewalks free of equipment, materials, and stockpiles.

1.11 EQUIPMENT AND MATERIAL SALVAGE

- A. Upon completion of the Work, carefully remove salvageable equipment and material. Deliver them to City of Schertz as directed by Public Works. Dispose of equipment offsite at no additional cost to the City when Public Works deems equipment unfit for further use.

PART2 PRODUCTS - Not Used

PART3 EXECUTION - Not Used

END OF SECTION

SECTION 01255

CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for processing Change Orders, including:
1. Assignment of a responsible individual for approval and communication of change in the Work;
 2. Documentation of change in Contract Price and Contract Time;
 3. Change procedures, using proposals and Modifications;
 4. Execution of Change Orders;
 5. Correlation of Contractor submittals.

1.02 REFERENCES

- A. Blue Book is defined as the Rental Rate Blue Book for Construction Equipment (a.k.a. Date Quest Blue Book).
- B. Rental Rate is defined as the full-unadjusted base rental rate for the appropriate item of construction equipment.

1.03 RESPONSIBLE INDIVIDUAL

- A. Provide a letter indicating the name and address of the individual authorized to execute Modifications, and who will be responsible for informing others in Contractor's employ and Subcontractors of changes to the Work. Provide this information at the pre-construction meeting.

1.04 DOCUMENTATION OF CHANGE IN CONTRACT PRICE AND CONTRACT TIME.

- A. Maintain detailed records of changes in the Work. Provide full information required for identification and evaluation of proposed changes, and substantiate costs of changes in the Work.
- B. Document each proposal for change in the Contract Price or Contract Time with sufficient data to allow evaluation of proposal.
- C. Include the following minimum information on proposals:

1. Quantities of items in original Bid Form with additions, reductions, deletions, and substitutions.
 2. Quantities and cost of items in original Schedule of Values with additions, reductions, deletions and substitutions.
 3. Provide Unit Prices for new items, with supporting information, for inclusion in Schedule of Unit Price Work.
 4. Justification for changes in Contract Time.
 5. Additional data upon request.
- D. For changes in the Work performed on a time-and-material basis, provide the following additional information:
1. Quantities and description of Products.
 2. Taxes, insurance and bonds.
 3. Overhead and profit as noted in General Conditions.
 4. Dates, times and by who work was performed.
 5. Time records and certified copies of applicable payrolls.
 6. Invoices and receipts for Products, rental equipment, and subcontracts, similarly documented.
- E. For changes in the Work performed on a time-and-materials basis, rental equipment is paid as follows:
1. Actual invoice cost for duration of time required to complete extra work without markup for overhead and profit. When extra work comprises only a portion of a rental invoice where equipment would otherwise be on site, compute hourly equipment rate by dividing the actual monthly invoice by 176. One day equals eight hours and one week equals 40 hours.
 2. Do not exceed estimated operating costs given in Blue Book for items of equipment. Overhead and profit will be allowed on the operating cost.
- F. For changes in the Work performed on a time-and-materials basis using Contractor-owned equipment, use Blue Book rates as follows:

1. Contractor-owned equipment will be paid at the Blue Book Rental Rate for the duration of time required to complete extra work without markup for overhead and profit. Utilized lowest cost combination of hourly, daily, weekly, or weekly rates. Use 150 percent of Rental Rate for double shifts, one extra shift per day, and 200 percent of Rental Rate for more than two shifts per day. Standby rates shall be 50 percent of appropriate Rental Rate shown in Blue Book. No other rate adjustments apply.
2. Do not exceed estimated operating costs given in Blue Book. Overhead and profit will be allowed on operating costs. Operating costs will not be allowed for equipment on standby.

1.05 CHANGE PROCEDURES

- A. Changes to Contract Price or Contract Time can only be made by issuance of Change Order. Changes will be in accordance with requirements of General Conditions.
- B. Public Works will advise of Minor Changes in the Work as authorized.
- C. Request clarification of Drawings, Specifications, Contract documents or other information by Request for Information. Response by Public Works to Requests for Information does not authorize Contractor to perform tasks outside scope of work. Changes must be authorized as described in this Section.

1.06 PROPOSALS AND CONTRACT MODIFICATIONS

- A. Public Works may issue Request for Proposal, which includes a detailed description of the proposed change with supplementary or revised Drawing and Specifications. Public Works may also request a proposal in response to a Request for Information. Prepare and submit the proposal within seven days or as specified in request.
- B. Submit requests for Contract changes to Public Works describing proposed change and its full effect on the Work, with a statement describing reason for change and effect on Contract Price and Contract time including full documentation.
- C. Design Consultant may review Change Orders.

1.07 WORK CHANGE DIRECTIVE

- A. Public Works may issue a signed Work Change Directive instructing Contractor to proceed with a change in the Work. Work Change Directive will subsequently be incorporated into a Change Order.
- B. Work Change Directives will describe changes in the Work and designate the method of determining change in Contract Price or Contract Time.
- C. Proceed promptly to execute changes in the Work in accordance with the Work Change Directive.

1.08 STIPULATED PRICE CHANGE ORDER

- A. A Stipulated Price Change Order will be based on an accepted proposal.

1.09 UNIT PRICE CHANGE ORDER

- A. Where Unit Prices for affected items of the Work are included in Bid Form, the Change Order will be based on Unit Prices, subject to Articles 7 and 9 of General Conditions.
- B. Where Unit Prices of the Work are not pre-determined in Bid Form, the Work Change Directive or accepted proposal will specify the Unit Prices to be used.

1.10 TIME-AND-MATERIAL CHANGE ORDER

- A. Provide itemized account and supporting data after completion of change, within time limits indicated for claims in General Conditions.
- B. Public Works will determine the change allowable in Contract Price and Contract Time as provided in General Conditions.
- C. Maintain detailed records for work done on time-and-material basis as specified in Paragraph 1.04 above.
- D. Provide full information required for evaluation of changes and substantiate costs for changes in the Work.

1.11 EXECUTION OF CHANGE DOCUMENTATION

- A. Public Works will issue Change Orders, Work Change Directives, or Minor Change in the Work for signatures of Parties as described in General Conditions.

1.12 CORRELATION OF CONTRACTOR SUBMITTALS

- A. For Stipulated Price Contracts, promptly revise Schedule of Values and Application for Payment forms to record authorized Change Orders as separate line item.
- B. For Unit Price Contracts, the next monthly estimate of the Work after acceptance of a Change Order will be revised to include new items not previously included with appropriate Unit Prices.
- C. Promptly revise progress schedules to reflect change in Contract Time, and to adjust time for other items of work affected by the change, and resubmit for review.
- D. Promptly enter changes to on-site and record copies of Drawings, Specifications or Contract Documents as required in Section 01785-Project Record Documents.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used.

3.01

END OF SECTION

SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for measurement and payment plus conditions for nonconformance assessment and nonpayment for rejected Products.

1.02 AUTHORITY

- A. Measurement methods delineated in Specification sections are intended to complement criteria of this Section. In event of conflict, requirements of the Specification section shall govern.
- B. Public Works will take all measurements and compute quantities accordingly.
- C. Assist by providing necessary equipment, workers, and survey personnel.
- D. Measurement and Payment paragraphs are included only in those Specification sections of Division 01 where direct payment will be made. Include costs in the total bid price for those Specification sections in Division 01 that do not contain Measurement and Payment paragraphs.

1.03 UNIT QUANTITIES SPECIFIED

- A. Quantity and measurement estimates stated in the Agreement are for contract purposes only. Quantities and measurements supplied are placed in the Work and verified by Public Works will determine payment as stated in Article 9 of General Conditions.
- B. When actual work required greater or lesser quantities than those quantities indicated in Bid Form, provide required quantities at Unit Prices contracted, except as otherwise stated in Article 9 of General Conditions.

1.04 MEASUREMENT OF QUANTITIES

- A. Measurement by Weight: Reinforcing steel, rolled or other metal shapes are measured by CRSI or AISC Manual of Steel Construction weights. Welded assemblies are measured by CRSI or AISC Manual of Steel Construction or scale weights.
- B. Measurement by Volume:

1. Stockpile: Measured by cubic dimension using mean length, width, and height or thickness.
 2. Excavation and Embankment Materials: Measured by cubic dimension using average end area method.
- C. Measurement by Area: Measured by square dimension using mean length and width or radius.
- D. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.
- E. Stipulated Price Measurement: By unit designated in the Agreement.
- F. Other: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.
- G. Measurement by Each: Measured by each instance or item provided.
- H. Measurement by Lump Sum: Measure includes all associated work.

1.05 PAYMENT

- A. Payment includes full compensation for all required supervision, labor, products, tools, equipment, plant, transportation, services, and incidentals; and erection, application or installation of an item of the Work; and Contractor's overhead and profit.
- B. Total compensation for required Unit Price work shall be included in Unit Price bid in Bid Form. Claims for payment as Unit Price work, but not specifically covered in the list of Unit Prices contained in Bid Form, will not be accepted.
- C. Interim payments for stored materials will be made only for materials to be incorporated under items covered in Unit Prices, unless disallowed in Supplementary Conditions.
- D. Progress payments will be based on Public Works' observations and evaluations of quantities incorporated in the Work multiplied by Unit Price.
- E. Final payment for work governed by Unit Prices will be made on the basis of actual measurements and quantities verified by Public Works multiplied by the Unit Price for work which is incorporated in or made necessary by the Work.

1.06 NONCONFORMANCE ASSESSMENT

- A. Remove and replace work, or portions of the Work, not conforming to the Contract documents.
- B. When not practical to remove and replace work, Public Works will direct one of the following remedies:
 - 1. Nonconforming work will remain as is, but Unit Price will be adjusted lower at discretion of Public Works.
 - 2. Nonconforming work will be modified as authorized by Public Works, and the Unit Price will be adjusted lower at the discretion of Public Works, when modified work is deemed less suitable than specified.
- C. Specification sections may modify the above remedies or may identify a specific formula or percentage price reduction.
- D. Authority of Public Works to assess nonconforming work and identify payment adjustment is final.

1.07 NONPAYMENT FOR REJECTED PRODUCTS

- A. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in an unacceptable manner.
 - 2. Products determined as nonconforming before or after placement.
 - 3. Products not completely unloaded from transporting vehicles.
 - 4. Products placed beyond lines and levels of required work.
 - 5. Products remaining on hand after completion of the Work, unless specified otherwise.
 - 6. Loading, hauling, and disposing of rejected Products.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION – Not Used.

END OF SECTION

SECTION 01292

SCHEDULE OF VALUES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preparation and submittal of Schedule of Values for Stipulated Price Contracts or for Major Unit Price Work on Unit Price Contracts.

1.02 PREPARATION

- A. For Stipulated Price Contracts, subdivide the Schedule of Values into logical portions of the Work, such as major work items or work in contiguous construction areas. Use Section 01325-Construction Schedule as a guide to subdivision of work items. Directly correlate Items in the Schedule of Values with tasks in the Construction Schedule. Organize each portion using the Project Manual Table of Contents as an outline for listing value of the Work by Sections. A pro rata share of mobilization, Bonds, and insurance may be listed as separate items for each portion of the Work.

- B. For Unit Price Contracts, items should include a proportional share of Contractor's overhead and profit so that total of all items will equal Contract Price.

- C. For lump sum equipment items, where submittal of operation and maintenance data and testing are required, include separate items for equipment operation and maintenance data where:

- 1. Submittal of maintenance data is valued at five percent of the lump sum amount for each equipment item and
- 2. Submittal for testing and adjusting is valued at five percent of the lump sum amount for each equipment item.

Round off figures for each item listed to the nearest \$100. Set the value of one item, when necessary, to make total of all values equal the Contract Price for Stipulated Price Contracts or the lump sum amount for Unit Price Work.

1.03 SUBMITTAL

- A. Submit the Schedule of Values, in accordance with requirements of Section 01330-Submittal Procedures, at least 10 days prior to processing of the first Certificate for Payment.

- B. Submit the Schedule of Values in an approved electronic spreadsheet file and an 8 ½-inch by 11-inch print on white bond paper.
- C. Revise Schedule of Values for items affected by Contract Modifications. After Public Works has reviewed changes, resubmit at least 10 days prior to the next scheduled Certificate for Payment date.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION – Not Used.

END OF SECTION

SECTION 01312

COORDINATION AND MEETINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General coordination including pre-construction meeting, site mobilization conference, and progress meetings.

1.02 COORDINATION OF DOCUMENTS

- A. Coordination is required throughout documents. Refer to Contract documents and coordinate as necessary.

1.03 CONTRACT COORDINATION

- A. Coordinate scheduling, submittals, and work of various Specification sections to assure efficient and orderly sequence of Installation of interdependent construction elements.
- B. Coordinate completion and clean up of the Work prior to the Date of Substantial Completion and for portions of the Work designated for City's partial occupancy.
- C. Coordinate access to the site for correction of nonconforming work to minimize disruption of the City's activities where the City is in partial occupancy.

1.04 PRE-CONSTRUCTION MEETING

- A. Public Works will schedule pre-construction meeting.
- B. Attendance Required: City representatives, Design Consultants, Special Consultants as required by Public Works, Contractor, and Major Subcontractors and Suppliers.
- C. Agenda:
 - 1. Distribution of Contract Documents.
 - 2. Designation of personnel representing the Parties and Design Consultant.
 - 3. Review of insurance.

4. Discussion of formats for Schedule of Values and Construction Schedule.
5. Procedures and processing of Shop Drawings, substitutions, pay estimates or Applications for Payment, Requests for Information, Requests for Proposal, Modifications, and the Contract closeout, other submittals.
6. Scheduling of the Work and coordination with other contractors.
7. Review of Subcontractors and Suppliers
8. Appropriate agenda items listed for the site mobilization conference, Paragraph 1.05.C, when pre-construction meeting and site mobilization conference are combined.
9. Procedures for testing.
10. Procedures for maintaining record documents.

1.05 SITE MOBILIZATION CONFERENCE

- A. When required by Contract documents, Public Works will schedule a conference at the Project site prior to Contractor mobilization.
- B. Attendance Required: City representatives, Design Consultant, Special consultants, Superintendent, and major subcontractors.
- C. Agenda:
 1. Use of premises by the City and Contractor.
 2. Safety and first aid procedures.
 3. Construction controls provided by the City.
 4. Temporary utilities.
 5. Survey and layout.
 6. Security and housekeeping procedures.
 7. Field office requirements.

1.06 PROGRESS MEETINGS

- A. Hold meetings at Project field office or other location designated by Public Works. Hold meetings at monthly intervals, or more frequently when directed by Public Works.
- B. Attendance Required: Superintendent, major Subcontractors and Suppliers, City representatives, Design Consultant and its subconsultants as appropriate for agenda topics for each meeting.
- C. Design Consultant will make arrangements for meetings, and for recording minutes.
- D. Design Consultant will prepare the agenda and preside at meetings.
- E. Provide required information and be prepared to discuss each agenda item.
- F. Agenda:
 - 1. Review minutes of previous meeting.
 - 2. Review of construction schedule, pay estimates, cash flow curve, payroll and compliance submittals.
 - 3. Field observations, problems, and necessary decisions.
 - 4. Identification of problems that impede planned progress.
 - 5. Review of submittal schedule and status of submittals.
 - 6. Review of RFI and RFP status.
 - 7. Modification status.
 - 8. Review of off-site fabrication and delivery schedules.
 - 9. Maintenance of Construction Schedule.
 - 10. Corrective measures to regain Construction Schedule.
 - 11. Planned progress during the succeeding work period.
 - 12. Coordination of projected progress.
 - 13. Maintenance of quality and work standards.

14. Effect of proposed Modifications on Construction Schedule and Coordination.
15. Other item relating to the Work.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION – Not Used.

END OF SECTION

SECTION 01321

CONSTRUCTION PHOTOGRAPHS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Photographic requirements for construction photographs and submittals.

1.02 DEFINITIONS

- A. Pre-construction Photographs: Photographs taken, in sufficient numbers and detail, prior to Date of Commencement of the Work, to show original construction site conditions.
- B. Progress Photographs: Photographs, taken throughout the duration of construction of regular intervals and from fixed vantage points, pre-approved by the City, that document progress of the Work.
- C. Finished Photographs: Photographs, taken by a professional photographer near Date of Substantial Completion and before City Council's acceptance of the Work, that are suitable for framing and for use in brochures or on the Internet.

1.03 SUBMITTALS

- A. Refer to Section 01330, Submittal Procedures, for submittal requirements.
- B. Format and Media: Film or digital photography may be used. Submit color photographs, unless otherwise specified.
 - 1. Prints: Submit each Progress or Pre-construction Photograph print in the three-hole plastic pocket or sleeve, bound in a three-ring notebook. Produce prints on photographic-quality paper approved by Public Works. Minimum size for Pre-Construction Photograph prints shall be 3-inches by 5-inches. Progress Photograph prints shall be 8-inches by 10-inches.
 - 2. Film: Use 35 mm or larger color film. Submit negatives used to make submitted photographs, in 3-hole 8-1/2 inch by 11-inch plastic sheets with sleeves for negatives.

3. Digital Photography: Use 2.1 megapixel density or greater for photographs. Scanned photographs must equal or exceed 400 dots per inch when scanned from 8-inch by 10-inch prints. Submit digital photographic files on computer disks. Format disks for MS-DOS (Microsoft Disk Operating System) filing system and in JPEG (Joint Photographic Experts Group) format.
- C. Submittal Quantities and Frequencies.
1. Pre-construction Photographs:
 - a. For Stipulated Price Contracts, submit two sets of Pre-construction Photographs, if required, prior to first Application for Payment.
 - b. For Unit Price Contracts, submit two sets of Pre-construction Photographs prior to start of construction operations.
 2. Progress Photographs:
 - a. For Stipulated Price Contracts, submit three sets of Progress Photographs with each Application for Payment at the times established for submittal of Applications for Payment. Monthly Applications for Payment shall be deemed incomplete if not accompanied by the required Progress Photographs. Contractor's failure or election to not submit a monthly Application for Payment shall not affect the requirement for monthly Progress Photographs.
 - b. Progress Photographs are not required for Unit Price Contracts unless otherwise specified.
 3. Finished Photographs: For Stipulated Price Contracts submit two sets of Finished Photographs, if required, after Date of Substantial Completion and prior to final payment. Each set shall contain one 11-inch by 14-inch matte finish color photographic print from each of the two vantage points pre-approved by the City. Vantage points for Finished Photographs will be approved separately from vantage points approved for Progress Photographs. Finished Photographs are not required for Unit Price Contracts unless otherwise specified.
- D. Labeling: Place a label on the back of each photographic print, applied so as to not show through on the front. Labels shall contain the following information:
1. Name of Project, address of Project and GFS Number.
 2. Name and address of Contractor.

3. Date photograph was taken.
 4. Location photo taken from and short description of photo subject.
 5. Name and address of professional photographer who took the photograph, if applicable.
- E. Hand-deliver or transmit prints in standard photographic mailers marked "Photographs – Do Not Bend".
- F. Photographic prints, negatives, photographic files and disks become the property of the City. Do not publish photographs without written consent by the City.

1.04 QUALITY ASSURANCE

- A. Contractor shall be responsible for the quality of and timely execution and submittal of photographs.
- B. For Finished Photographs, Contractor shall use a professional photographer, with five years minimum professional experience in the Schertz area. Contractor shall submit name, address and credentials of professional photographers for Public Works' review and approval.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION

3.01 PRE-CONSTRUCTION PHOTOGRAPHS

- A. Prior to commencement of construction operations, photograph the site to include initial construction corridor, detour routes, and staging or storage areas.
1. For Stipulated Price Contracts, unless specified as a requirement in other Sections, these photographs are optional for Contractor, but are highly recommended for areas bounded by other property owners.

2. Pre-construction photographs are required for Unit Price Contracts. For line projects with scheduled construction segments, take Pre-construction Photographs prior to commencement of work on each segment.
- B. Prepare Pre-construction Photographs as follows:
1. Show the following information on a non-reflective chalkboard placed within the picture frame:
 - a. Job number.
 - b. Project number.
 - c. Date and time photographs were taken (Automatic date/time in negative is acceptable).
 - d. Baseline station, direction of view (i.e. N, S, NW, etc.) and house number or street address and street name.
 2. Pre-construction Photographs shall indicate condition of the following:
 - a. Esplanades and boulevards.
 - b. Yards (near side and far side of street).
 - c. House walks and sidewalks.
 - d. Curbs.
 - e. Areas between walks and curbs.
 - f. Particular features (e.g. yard lights, shrubs, fences, trees).
 3. Show date photographs were taken on negatives.
- C. Show the location of vantage points and direction of shots on a key plan of the site.

3.02 PROGRESS PHOTOGRAPHS

- A. Progress Photographs document monthly advancement of the Work. Select vantage points for each shot so as to best show status of construction and progress since last photograph submittal. Select camera stations that will require little or no movement or adjustment over the duration of construction.
- B. Take monthly Progress Photographs at regular intervals to coincide with cutoff dates associated with each Application for Payment.

3.03 FINISHED PHOTOGRAPHS

- A. Finished Photographs shall be “staged” and taken by professional photographer to depict the most flattering images of a finished facility. Two vantage points, from which Finished Photographs will be taken, shall be agreed to in advance by the City. Photographer shall consider lighting, time of day, height of eye, landscaping and placement of vehicles, people and other props in each picture. Filters and post-photography processing may be utilized to achieve a finished product acceptable to the City.

3.04 LOCATION

- A. Vantage points, times and conditions for camera stations and photography for Progress and Finished Photographs shall be mutually agreed upon by the City, Contractor and Photographer. Progress Photograph vantage points may be changed by mutual agreement as the Work progresses, at no additional cost to the City.

END OF SECTION

SECTION 01325
CONSTRUCTION SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Provide Construction Schedules for the Work included in this Contract in accordance with requirements in this Section. Create Construction Schedule using Critical Path Method (CPM) computer software capable of mathematical analysis of Precedence Diagramming Method (PDM) plan. Provide printed activity listings and bar charts in format described in this Section.
- B. Combine activity listings and bar charts with narrative report to form Construction Schedule submittal for Public Works.

1.02 SCHEDULING STAFF

- A. Employ or retain services of individual experienced in CPM scheduling for duration of the Contract. Individual shall cooperate with Public Works and update schedule monthly as required to indicate current status of the Work.

1.03 SUBMITTALS

- A. Conform to requirements of Section 01330-Submittal Procedures.
- B. During preconstruction meetings, as described in Section 01312-Coordination and Meetings, provide sample bar charts and activity listings produced from scheduling software proposed. Scheduling software is subject to review by Public Works and must meet requirements provided in this Section. Public Works will provide review of samples within seven days of submittal.
- C. Within 21 days of receipt of approval of Contractor's format, or 30 days of Notice to Proceed, whichever is later, submit proposed Construction Schedule for review. Base Construction Schedule submittal on the following:
 - 1. Level of detail and number of activities required in schedule are dependent on project type.
 - a. For wastewater projects, categorize work type
 - b. For projects with multiple types of tasks within scope, indicate types of work separately within schedule.
 - c. For projects with work at different physical locations or service areas, or different facilities within a site, indicate

each location or facility separately within schedule. Show work on each floor of multi-story building as separate tasks.

- d. For projects with multiple crafts or significant Subcontractor components, indicate elements separately within schedule.
2. Unless permitted by Public Works, each scheduled task shall be same as Schedule of Values line item, and vice versa.
 3. For projects with Major Unit Price Work, indicate Shop Drawing submittal and review, purchase, delivery, and Installation dates on Project schedule. Include activities for testing, adjustment, and delivering O&M manuals.
 4. No task except the acquisition of Major Unit Price Work shall represent more than one percent of Original Contract Price for facility projects and three percent of Original Contract Price for other projects. Duration of tasks may not exceed 40 calendar days.
 5. For projects where operating facilities are involved, identify each period of work that will impact any process or operation in the schedule and that must be agreed to by Public Works and facility operator prior to starting work in the area.
- C. Construction Schedule submittals shall include:
1. Printed bar charts that meet criteria outlines in this Section and are produced by Contractor's approved scheduling software;
 2. Activity listings that meet criteria outlined in this Section and are produced by Contractor's approved scheduling software; and
 3. A predecessor/successor listing sorted by Activity ID that meets criteria outlines in this Section and is produced by Contractor's scheduling software.
 4. A logic network diagram is required with the first Construction Schedule submittal for facilities projects.
 5. Prepare and submit graphic or tabular display of estimated monthly billings (i.e. cash flow curve for the Work) with the first schedule submittal. This information is not required in monthly updates, unless significant changes in work require re-submittal of schedule for review. Display shall allocate units indicated in bid schedule or Schedule of Values to Construction Schedule activities. Weighted allocation are acceptable, where appropriate. Dollar value associated with each allocated unit will be spread across the duration

of that activity on a monthly basis. Total for each month and cumulative total will be indicated. These monthly forecasts are only for Public Work's planning purposes. Monthly payments for actual work completed will be made in accordance with General Conditions.

6. Narrative Report that provides the information outlines in this Section.
- E. No payment will be made until Public Works approves Construction Schedule and billing forecast.
- F. If Contractor desires to make changes in its method of operating and scheduling, after Public Works has reviewed original schedule, notify Public Works in writing, stating reasons for changes. When Public Works considers these changes to be significant, Contractor may be required to revise and resubmit for review all or affected portion of Contractor's Construction Schedule to show effect of the Work.
- G. Upon written request from Public Works, revise and submit for review all or any part of Construction Schedule submittal to reflect changed conditions in the Work or deviations made from original schedule.
- H. Updated Construction Schedule with actual start and actual finish dates, percent complete, and remaining duration of each activity shall be submitted monthly. Data date used in updating monthly Construction Schedule shall be the same date as used in monthly Payment Application. Monthly update of Construction Schedule is required for monthly Payment Application to be processed for payment.

1.04 SCHEDULING COMPUTER SOFTWARE REQUIREMENTS

- A. Contractor's scheduling software shall be capable of creating bar charts and activity listings, which can be sorted by various fields (i.e. Activity ID, Early Start, Total Float, Area Code, Specification Section Number, and Subcontractor). Use software capable of producing logic network diagrams.
- B. Use scheduling software capable of producing activity listings and bar charts with the following information for each activity in the schedule:
 1. Activity ID
 2. Activity Description
 3. Estimated (Original) Duration
 4. Remaining Duration
 5. Actual Duration

6. Early Start Date
 7. Late Start Date
 8. Early Finish Date
 9. Late Finish Date
 10. Free Float
 11. Total Float
 12. Activity Codes (such as Area Code, Work Type, Specification Section, Subcontractor)
- C. Use scheduling software capable of printing calendars using mathematical analysis of schedule, indicating standard workdays of week and scheduled holidays.
- D. Use scheduling software capable of printing activity listing that indicates predecessors and successors, lag factors and lag relationships used in creating logic of the schedule.
- E. Use scheduling software to provide monthly time in Bar Chart format and scale with 12-month scale not to exceed one page width. Bar charts may be printed or plotted on 8-1/2 inch by 11 inch, 8-1/2 inch by 14 inch or 11 by 17 inch sheet sizes. Over-size plots are not acceptable.

1.05 NARRATIVE SCHEDULE REPORT

- A. Narrative schedule report shall list activities started this month, activities completed this month, activities continues this month, activities scheduled to start or complete next month, problems encountered this month, and actions taken to solve these problems.
- B. Narrative schedule report shall describe changes made to Construction Schedule logic (i.e. changes in predecessors and lags), activities added to schedule, activities deleted from schedule , any other changes made to the schedule other than addition of actual start dates and actual finish dates and changes of data date and remaining durations for re-calculation of mathematical analysis.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION

END OF SECTION

SECTION 01326

CONSTRUCTION SCHEDULE (BAR CHART)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Provide an initial Construction Schedule as required by this section for the Work. Do not start construction until Public Works reviews the schedule.

1.02 FORM AND CONTENT OF INITIAL CONSTRUCTION SCHEDULE

A. Bar Chart:

1. Show major construction activities such as pipe laying, by traffic control phases or other approved key areas; tunnel construction, pavement removal, pavement replacement, pressure testing, chlorination, clean up and punch list as separate activities on the schedule.
2. Show week duration for each activity.
3. Show separate activities for each Shop Drawing and Product Data submittal critical to timely completion. Show submittal dates and dates Public Works needs to provide approved submittals.
4. Provide separate horizontal bar for each activity. List start and finish date for each activity at left side of diagram.
5. Horizontal Time Scale: Identify first work day of each week.
6. Scale and Spacing: Notes must be legible. Allow space for notations and future revisions.
7. Order of Listings: Order bar charts listings by phases or other approved groups of activities that are contiguous. List activities in chronological order within each phase or group.

B. Narrative Description:

1. Submit narrative descriptions of anticipated work sequences as indicated by the sequence of activities presented in the schedule.

2. Discuss any activity that affects the public (such as phases of traffic control), interaction with specific forces of the City (such as valve operation, chlorination and testing) or other associated contractors.

1.03 PROGRESS REVISIONS

- A. Submit progress revisions or necessary information to complete and process Payment Applications. When required, re-submittals for rejected revisions must be submitted and reviewed prior to the following month's processing of a Payment Application. The following month's Payment Application will not be processed until the re-submittal is reviewed and required progress revisions are received.
- B. Provide a narrative report to describe:
 1. Major changes in scope.
 2. Revised projections in progress, completion, or changes in activity duration.
 3. Other identifiable changes.
 4. Problem areas, anticipated delays, and the impact on schedule.
 5. Corrective action recommended and its effect.
 6. Effect of changes on schedules or other contractors.
 7. Product delivery lead times.
- C. Include additional data with Bar Chart described in Paragraph 1.03A of this Section:
 1. Show original dates for each activity in the approved initial progress schedule by narrow bar next to a wider bar for the current schedule.
 2. Show date each activity actually started or finished when an event has occurred. Clearly identify actual dates in two right-most columns in left portion of an 11 by 17 inch chart.
 3. Indicate the percentage progress to the date of submittal for each activity.

1.04 SUBMITTALS

- A. Submit the initial progress schedule within 15 days after award of contract. Public Works will review the schedule and return a reviewed copy within 21 days after receipt.
- B. Cut-off dates for progress revisions may be as early as the 20th of the month to avoid delaying processing of Payment Applications. Use the cut-off date for the first approved revision for further revisions.
- C. When required, re-submit within seven days after return of review copy.
- D. Include connecting lines between bars in the schedule to indicate the sequence that activities will be accomplished. Connecting lines when the activity's start or finish is modified will identify impact of preceding or succeeding activities. Submit a minimum of six copies of the bar chart on 11 by 17 inch opaque reproductions. Public Works will retain five copies and return the remaining copy.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION– Not Used.

END OF SECTION

SECTION 01330
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittal procedures for:

1. Schedule of Values
2. Construction Schedules and Cash Flow Curve (billing forecast).
3. Shop Drawings, Product Data and Samples.
4. Operations and Maintenance (O&M) Data
5. Manufacturer's Certificates
6. Construction Photographs.
7. Project Record Documents and monthly certificate.
8. Video Tapes.
9. Design Mixes.

1.02 SUBMITTAL PROCEDURES

A. Scheduling and Handling:

1. Submit Shop Drawings, data and Samples for related components as required by Specifications and Public Works.
2. Schedule submittals well in advance of need for construction Products. Allow time for delivery of Products after submittal approval.
3. Develop submittal schedule that allows sufficient time for initial review, correction, resubmission and final review of all submittals. Allow a minimum of 30 days for initial review. Public Works will review and return submittals to Contractor as expeditiously as possible but time required for review will vary depending on complexity and quantity of data submitted.

4. Public Work's review of submittals covers only general conformity to Drawings, Specifications and dimensions that affect layout. Contractor is responsible for quantity determination. No quantities will be verified by Public Works. Contractor is responsible for errors, omissions or deviations from Contract requirements; review of submittals does not relieve Contractor from the obligation to furnish required items in accordance with Drawings and Specifications.
5. Submit five copies of documents unless otherwise specified.
6. Revise and resubmit submittals as required. Identify all changes made since previous submittal.
7. Assume risk for fabricated Products delivered prior to approval. Do not incorporate Products into the Work, or include payment for Products in periodic progress payments, until approved by Public Works.

B. Transmittal Form and Numbering:

1. Transmit each submittal to Public Works with Transmittal letter which includes:
 - a. Date and submittal number.
 - b. Project title and number.
 - c. Names of Contractor, Subcontractor, Supplier and Manufacturer.
 - d. Identification of Product being supplied.
 - e. Location of where Product is to be Installed.
 - f. Applicable Specification section number.
2. Identify deviations from Contract documents clouding submittal drawings. Itemize and detail on separate 8 ½ by 11 inch sheets entitled "DEVIATIONS FOR _____." When no deviations exist, submit a sheet stating no deviations exist.
3. Have design deviations signed and sealed by an appropriate design professional, registered in the State of Texas.
4. Sequentially number transmittal letters beginning with number one. Use original number for re-submittals with an alphabetic suffix (i.e., 2A for the first re-submittal 2, or 15C for third re-submittal of submittal 15, etc.) Show only one type of work or Product on each submittal. Mixed submittals will not be accepted.

C. Contractor's Stamp:

1. Apply Contractor's Stamp certifying that the items have been reviewed in detail by Contractor and that they comply with Contract requirements, except as noted by requested variances.
 2. As a minimum, Contractor's Stamp shall include:
 - a. Contractor's name
 - b. Job number
 - c. Submittal number
 - d. Certification statement Contractor has reviewed submittal and it is in compliance with the Contract.
 - e. Signature line for Contractor.
- D. Submittals will be returned with of the following Responses:
1. "ACKNOWLEDGE RECIEPT" when no response and re-submittal is required.
 2. "NO EXCEPTION" when sufficient information has been supplied to determine that item described is accepted and that no re-submittal is required.
 3. "EXCEPTIONS AS NOTED" when sufficient information has been supplied to determine that item will be acceptable subject to changes, or exceptions, which will be clearly stated. When exceptions require additional changes, the changes must be submitted for approval. Re-submittal is not required when exceptions required no further changes.
 4. "REJECTED-RE-SUBMIT" when submittal does not contain sufficient information, or when information provided does not meet Contract requirements. Additional data or details requested by Public Works must be submitted to obtain approval.

1.03 MANUFACTURER'S CERTIFICATES

- A. When required by Specification sections, submit manufacturer's certificate of compliance for review by Public Works.
- B. Place Contractor's Stamp on front of certification.
- C. Submit supporting reference data, affidavits, and certifications as appropriate.
- D. Product certificates may be recent or from previous test results, but must be acceptable to Public Works.

1.04 DESIGN MIXES

- A. When required by Specification sections, submit design mixes for review.
- B. Place Contractor's Stamp, as specified in this Section, on the front of each design mix.
- C. Mark each mix to identify proportions, gradations, and additives for each class and type of mix submitted. Include applicable test results from samples for each mix. Perform tests and certifications within 12 months of the date of the submittal.
- D. Maintain copies of approved mixes at mixing plant.

1.05 CHANGES TO CONTRACT

- A. Changes to Contract may be initiated by completing a Request for Information form. Public Works will provide a response to Contractor by completing the form and returning it to Contractor.
 - 1. If Contractor agrees that the response will result in no increase in cost or time, a Minor Change in the Work will be issued by Public Works.
 - 2. If Contractor and Public Works agree that an increase in time or cost is warranted, Public Works will forward the Request for Proposal for negotiation of a Change Order.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION– Not Used.

END OF SECTION

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Methods, schedules, and processes to be followed for Shop Drawings, Product Data and Sample submittals.

1.02 REQUIREMENT

- A. Submit Shop Drawings, Product Data and Samples as required by General Conditions and Specification sections, using procedures specified in Section 01330-Submittal Procedures and the requirements of this Section.
- B. Shop Drawings, Product Data and Samples are not considered Contract documents.

1.03 SHOP DRAWINGS/SUBMITTAL SCHEDULE

- A. Submit a separate Shop Drawing submittal schedule at same time the Construction Schedule is submitted. List Products for which Shop Drawings and other submittals are required in the order that they appear in Specifications. Include Product Data and Sample submittals in the schedule. Payment Applications or Certificates for Payment will not be processed until Public Works has approved the Shop Drawing submittal schedule.

1.04 SHOP DRAWINGS

- A. Submit a minimum of five sets of Shop Drawings and Product Data in a form and quality suitable for microfilming. Review and sign Shop Drawings indicating compliance with the Contract.
- B. Place Contractor's Stamp on each drawing as described in Section 01330-Submittal Procedures.
- C. Show the following accurately and distinctly:
 - 1. Field and erection dimensions;
 - 2. Arrangement and section views;

3. Relation to adjacent materials or structure, including complete information for making connections between the Work and work under other contracts;
 4. Types of Products and finishes;
 5. Parts list and descriptions;
 6. Assembly drawings of equipment components and accessories showing respective positions and relationships to the complete equipment package;
 7. Identify details by referencing drawing sheet and detail numbers, schedule or room numbers as shown on the Contract drawings, where necessary for clarity.
- D. Scale drawings to provide a true representation of the specific equipment or item furnished.
- E. Coordinate and submit components, necessary for Public Works to adequately review submittal, as a complete package. Reproduction of the Drawings for use in Shop Drawings is not allowed.
- F. For major changes to original documents, submit Computer-Aided Design (CAD) drawings on a media acceptable to Public Works.

1.05 PRODUCT DATA

- A. Submit Product Data for review as required in Specifications.
- B. Place Contractor's stamp, on each data item submitted, as described in Section 01330-Submittal Procedures.
- C. Mark each copy to identify applicable Products, models, and options to be used in the Work. Where required by Specifications, supplement manufacturer's standard data to provide information unique to the Work.
- D. Give manufacturers, trade name, model or catalog designation and applicable reference standard for Products specified only by reference standards.
- E. Pre-approved and Pre-qualified Products.
 1. For "pre-approved", "pre-qualified" and "approved" Products named in the City standard product list, provide an appropriate list

designation, as described in Section 01630-Product Substitution Procedures, within 30 days after Notice to Proceed.

2. For Products proposed as alternates to “approved” products, provide information required to demonstrate that the proposed Products meet the level of quality and performance criteria of the “approved” product.

1.06 SAMPLES

- A. Submit Samples for review as required by Specifications. Have Samples reviewed and signed by a Registered Professional.
- B. Place Contractor’s stamp on each Sample or firmly attach a sheet of paper with Contractor’s stamp, as described in Section 01330-Submittal Procedures.
- C. Submit the number of Samples specified in Specifications; Public Works will retain one.
- D. Reviewed Samples that may be used in the Work are identified in Specifications.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION – Not Used.

END OF SECTION

SECTION 01410

TPDES REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Documentation to be prepared and signed by Contractor before conducting construction operations, in accordance with the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit Number TXR 150000 (the Construction General Permit).
- B. Implementation, maintenance inspection, and termination of storm water pollution prevention control measures including, but not limited to, erosion and sediment controls, storm water management plans, waste collection and disposal, off-site vehicle tracking, and other appropriate practices shown on the Drawings or specified elsewhere in the Contract.
- C. Review of the Storm Water Pollution Prevention Plan (SWP3) implementation in a meeting with Public Works prior to start of construction.

1.02 DEFINITIONS

- A. Commencement of Construction Activities: The exposure of soil resulting from activities such as clearing, grading, and excavating.
- B. Large Construction Activity: Project that:
 - 1. disturbs five acres or more, or
 - 2. disturbs less than five acres but is part of a larger common plan of development that will disturb five acres or more of land.
- C. Small Construction Activity: Project that:
 - 1. disturbs one or more acres but less than five acres, or
 - 2. disturbs less than one acre but is part of a larger common plan of development that will ultimately disturb one or more acres but less than five acres.
- D. TPDES Operator:
 - 1. The Contractor shall be the operator as defined by TPDES

General Permit. The operator will prepare, submit SWP3 plans and permits and have day-to-day operational control of the construction activities which are necessary to ensure compliance with the SWP3 for the site or other Construction General Permit conditions.

E. Municipal Separate Storm Water Sewer System (MS4) Operator:

1. The City of Schertz Public Works is the MS4 Operator who maintains the streets, channels, gutters, ditches or anything else that is publicly owned, designed or used to collect or transport storm water.

PART 2 PRODUCTS -Not Used

PART 3 EXECUTION

3.01 SITE SPECIFIC STORM WATER POLLUTION PREVENTION PLAN (SWP3)

- A. Prepare a SWP3 following TCEQ Part III of the Construction General Permit Number 150000.
- B. Update or revise the SWP3 as needed during the construction following Part III, Section E of the Construction General Permit.
- C. Submit the SWP3 and any updates or revisions to Public Works for review and address comments prior to commencing, or continuing, construction activities.

3.02 NOTICE OF INTENT For Large Construction Activity

- A. Prepare and submit TCEQ Form 20022 Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR 150000). See TCEQ website for Storm Water Permits for Construction:
http://www.tceq.state.tx.us/nav/permits/wq_construction.html
- B. Submission of the Notice of Intent form to TCEQ is required a minimum of seven days before Commencement of Construction Activities.
- C. The Contractor shall provide Public Works with copies of submitted notifications and associated records of payment.

3.03 CONSTRUCTION SITE NOTICE FOR SMALL CONSTRUCTION ACTIVITY

- A. Prepare and post the Construction Site Notice, to TPDES General Permit TXR 150000, "Construction Site Notice". See TCEQ website for Storm

Water Permits for Construction:
http://www.tceq.state.tx.us/nav/permits/wq_construction.html

- B. At least 2 days before beginning construction, provide a copy of the site notice to the operator of any Municipal Separate Storm Water Sewer System (MS4) into which storm water will be discharged.
- C. Adhere to the requirements of General Permit TXR 150000 and no notice of intent (NOI), notice of termination (NOT), or fee is required under this option—as long as the requirements of this general permit are followed

3.04 CERTIFICATION REQUIREMENTS

- A. Fill out TPDES Operator's Information form, **ATTACHMENT 3** of this Section 01410, including Contractor's name, address, and telephone number, and the names of persons or firms responsible for maintenance and inspection of erosion and sediment control measures. Use multiple copies as required to document full information.
- B. Contractor and Subcontractors shall sign and date the Contractor's / Subcontractor's Certification for TPDES Permitting, **ATTACHMENT 4** of this Section 01410. Include this certification with other Project certification forms.
- C. Submit properly completed certification forms to Public Works for review before beginning construction operations.
- D. Conduct inspections in accordance with TCEQ requirements. Ensure persons or firms responsible for maintenance and inspection of erosion and sediment control measures read, fill out, sign, and date the Erosion Control Contractor's Certification for Inspection and Maintenance. Use the Construction Inspection Form, **ATTACHMENT 5** of this Section 01410; and the City of Schertz Storm Water Pollution Prevention Plan Construction Site Inspection Report, **ATTACHMENT 6** of this Section 01410 to record maintenance inspections and repairs.

3.05 RETENTION OF RECORDS

- A. Keep a copy of this document and the SWP3 in a readily accessible location at the construction site from Commencement of Construction Activity until submission of the Notice of Termination (NOT) for Storm Water Discharges Associated with Construction Activity under TPDES Construction General Permit (TXR 150000). Contractors with day-to-day operational control over SWP3 implementation shall have a copy of the SWP3 available at a central location, on-site, for the use of all operators and those identified as having responsibilities under the SWP3. Upon

submission of the NOT, submit all required forms and a copy of the SWP3 with all revisions to Public Works.

3.06 REQUIRED NOTICES

- A. Post the following notices from effective date of the SWP3 until date of final site stabilization as defined in the Construction General Permit:
1. Post the TPDES permit number for Large Construction Activity or a signed TCEQ Construction Site Notice for Small Construction Activity.
 2. Post notices near the main entrance of the construction site in a prominent place for public viewing. Post name and telephone number of Contractor's local contact person, brief project description and location of the SWP3.
 - a. If posting near a main entrance is not feasible due to safety concerns, coordinate posting of notice with Public Works to conform to requirements of the Construction General Permit.
 - b. If Project is a linear construction project (e.g.: road, utilities, etc.), post notice in a publicly accessible location near active construction. Move notice as necessary.
 3. Post a notice to equipment and vehicles operators, instructing them to stop, check, and clean tires of debris and mud before driving onto traffic lanes. Post at each stabilized construction exit area.
 4. Post a notice of waste disposal procedures in a readily visible location on site.

3.07 ON-SITE WASTE MATERIAL STORAGE

- A. On-site waste material storage shall be self-contained and shall satisfy appropriate local, state, and federal rules and regulations.
- B. Prepare list of waste material to be stored on-site. Update list as necessary to include up-to-date information. Keep a copy of updated list with the SWP3.
- C. Prepare description of controls to reduce pollutants generated from on-site storage. Include storage practices necessary to minimize exposure of materials to storm water, and spill prevention and response measures consistent with best management practices. Keep a copy of the description with the SWP3

3.08 NOTICE OF TERMINATION

- A. Submit a Notice of Termination (NOT), to TCEQ within 30 days after:
1. Final stabilization has been achieved on all portions of the site that are the responsibility of the Contractor; or
 2. Another operator has assumed control over all areas of the site that have not been stabilized; and
 3. All silt fences and other temporary erosion controls have either been removed, are scheduled to be removed as defined in the SWP3, or transferred to a new operator if the new operator has sought permit coverage.

END OF SECTION

ATTACHMENT 1
Notice of Intent

(Most up-to-date version to be obtained from TCEQ website
http://www.tceq.state.tx.us/nav/permits/wq_construction.html
also available for electronic submittal)

ATTACHMENT 2

Construction Site Notice

(Most up-to-date version can be obtained from TCEQ website
http://www.tceq.state.tx.us/nav/permits/wq_construction.html
also available for electronic submittal)

ATTACHMENT 3

TPDES OPERATOR'S INFORMATION

Owner's Name and Address:

City of Schertz

Mr. _____
(City Official)

(Department)

1400 Schertz Parkway
Schertz, Texas 78154
(210) 619-1000

Contractors' Names and Addresses:

Contractor General:

Telephone:

Site Superintendent:

Telephone:

Erosion Control and Maintenance Inspection: _____

Telephone:

Subcontractors' Names and Address:

Telephone

Telephone

Note: Insert name, address, and telephone number of person or firms

ATTACHMENT 4

CONTRACTOR'S / SUBCONTRACTOR'S

CERTIFICATION FOR TPDES PERMITTING

I certify under penalty of law that I understand the terms and conditions of TPDES General Permit No. TXR150000 and the Storm Water Pollution Prevention Plan for the construction site identified as part of this certification.

Signature: _____

Name: (printed or typed) _____

Title: _____

Company: _____

Address: _____

Date: _____

Signature: _____

Name: (printed or typed) _____

Title: _____

Company: _____

Address: _____

Date: _____

Signature: _____

Name: (printed or typed) _____

Title: _____

Company: _____

Address: _____

Date: _____

ATTACHMENT 5

Storm Water Construction Site Inspection Report

| General Information | | | |
|---|--|----------------|--|
| Project Name | | | |
| NPDES Tracking No. | | Location | |
| Date of Inspection | | Start/End Time | |
| Inspector's Name(s) | | | |
| Inspector's Title(s) | | | |
| Inspector's Contact Information | | | |
| Describe present phase of construction | | | |
| Type of Inspection <input type="checkbox"/> Regular <input type="checkbox"/> Pre-storm event <input type="checkbox"/> During storm event <input type="checkbox"/> Post-storm event | | | |
| Weather Information | | | |
| Has it rained since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| If yes, provide: Storm Start Date & Time: Storm Duration (hrs): Approximate Rainfall (in): | | | |
| Weather at time of this inspection? | | | |
| Do you suspect that discharges may have occurred since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| Are there any discharges at the time of inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |

Site-specific BMPs

Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of this numbered site map with you during your inspections. This list will help ensure that you are inspecting all required BMPs at your site. Customize this section as needed.

| | BMP Description | BMP Installed and Operating Properly? | Corrective Action Needed | Date for corrective action/responsible person |
|----|-----------------|--|--------------------------|---|
| 1 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 2 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 3 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 4 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 5 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 6 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 7 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 8 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 9 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 10 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |

CITY OF SCHERTZ
STANDARD SPECIFICATION

TPDES REQUIREMENTS

| | BMP Description | BMP Installed and Operating Properly? | Corrective Action Needed | Date for corrective action/responsible person |
|----|-----------------|--|--------------------------|---|
| 11 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 12 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 13 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 14 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 15 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 16 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 17 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 18 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 19 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 20 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |

Below are some general site issues that should be assessed during inspections. Please customize this list as needed for conditions at your site.

Overall Site Issues

| | BMP/activity | Implemented? | Maintained? | Corrective Action | Date for corrective action/responsible person |
|---|---|--|--|-------------------|---|
| 1 | Are all slopes and disturbed areas not actively being worked properly stabilized? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 2 | Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 3 | Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 4 | Are discharge points and receiving waters free of sediment deposits? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 5 | Are storm drain inlets properly protected? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 6 | Is there evidence of sediment being tracked into the street? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 7 | Is trash/litter from work areas collected and placed in covered dumpsters? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |

CITY OF SCHERTZ
STANDARD SPECIFICATION

TPDES REQUIREMENTS

| | BMP/activity | Implemented? | Maintained? | Corrective Action | Date for corrective action/responsible person |
|----|--|--|--|-------------------|---|
| 8 | Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 9 | Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 10 | Are materials that are potential stormwater contaminants stored inside or under cover? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 11 | Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 12 | (Other) | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 13 | (Other) | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |

Certification statement:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Print name: _____

Signature: _____

Date: _____

ATTACHMENT 6



City of Schertz

Storm Water Pollution Prevention Plan
Construction Site Inspection Report

TPDES/EPA Permit Number _____
DATE _____

No exceptions noted.

The following must be corrected prior to continuing work:

- Public Notice improperly posted
- Initial Construction Site Inspection Report information requires updating
- Copy of NOI not on site
- Storm water pollution prevention plan not on site
- Erosion and sediment controls improperly installed
- Erosion and sediment control devices improperly maintained
- Fueling or washout areas not properly protected
- Portocan or other sanitary facilities not properly protected
- Self-inspection and maintenance records incomplete
- Sediment from site outside area of construction
- Other (see description below)

Please Contact the Public Works at
10 Commercial Place, Bldg #2, Schertz, Texas 78154
210-619-1800 fax 210-619-1849

Once the above items have been corrected, call to arrange for re-inspection. No further inspections for any construction related activity shall be made until the above items have been corrected.

Inspector's Signature

Contractor's Signature

Inspector's Name

Contractor's Name

ATTACHMENT 7
Notice of Termination

(Most up-to-date version can be obtained from TCEQ website
http://www.tceq.state.tx.us/nav/permits/wq_construction.html
also available for electronic submittal)

SECTION 01422

REFERENCE STANDARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Section includes general quality assurance as related to Reference Standards and a list of references.

1.02 QUALITY ASSURANCE

- A. For Products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on the date as stated in the General Conditions.
- C. Request clarification from Public Works before proceeding should specified reference standards conflict with Contract documents.

1.03 SCHEDULE OF REFERENCES

| | |
|--------|---|
| AASHTO | American Association of State Highway And Transportation Officials 444 North Capitol Street, N.W. Washington, DC 20001 |
| ACI | American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333-9094 |
| AGC | Associated General Contractors of America 333 John Carlyle Street Alexandria, VA 22314 |
| AI | Asphalt Institute Research Park Drive P.O. Box 14052 Lexington, KY 40512 |
| AITC | American Institute of Timber Construction 7012 S. Revere Parkway, Suite 140 Englewood, CO 80112 |

CITY OF SCHERTZ
STANDARD SPECIFICATION

REFERENCE STANDARDS

| | |
|------|---|
| AISC | American Institute of Steel Construction One East Wacker Drive Chicago, IL 60601 |
| AISI | American Iron and Steel Institute 1101 17t Street NW, Suite 1300 Washington, DC 20036 |
| ASME | American Society of Mechanical Engineers Three Park Avenue New York, NY 10016 |
| ANSI | American National Standards Institute 1819 L Street NW Sixth Floor Washington, DC 20036 |
| APA | American Plywood Association Box 11700 Tacoma, WA 98411 |
| API | American Petroleum Institute 1220 L Street NW Washington, DC 20005 |
| AREA | American Railway Engineering and Maintenance-of-Way- Association 8201 Corporate Drive, Suite 1125 Landover, Maryland 20785 |
| ASTM | American Society for Testing and Materials 100 Barr Harbor Drive West Conshohocken, PA 19428 |
| AWPA | American Wood-Preservers' Association P.O. Box 5690 Granbury, Texas 76049 |

| | |
|-------|---|
| AWS | American Welding Society 550 NW 42 nd Avenue Miami, FL 33126 |
| AWWA | American Water Works Association 6666 West Quincy Avenue Denver, CO 80235 |
| COS | City of Schertz 1400 Schertz Pkwy Schertz, Texas 78154 |
| CLFMI | Chain Link Fence Manufacturers Institute 9891 Broken Land Parkway, Suite 300 Columbia, MD 21046 |
| CRSI | Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, UL. 60173-4758 |
| EJMA | Expansion Joint Manufacturers Association 25 North Broadway Tarrytown, NY 10591 |
| FS | Federal Standardized Documents General Services Administration Specifications Unit (WFSIS) 7 th and D Streets, S.W. Washington, DC 20406 |
| ICEA | Insulated Cable Engineer Association P.O. Box 440 S. Yarmouth, MA. 02664 |
| IEEE | Institute of Electrical and Electronics Engineers 445 Hoes Lane P.O. Box 440 Piscataway, NJ 08855-459 |
| ISA | International Society of Arboriculture P.O. Box 3129 Champaign, IL. 61826-3129 |

| | |
|------|--|
| MIL | Military Specifications General Services Administration Specifications Unit (WFSIS) 7 th and D Streets, S.W. Washington, DC 20406 |
| NACE | National Association of Corrosion Engineers 1440 South Creek Drive Schertz, Texas 77084-4906 |
| NEMA | National Electrical Manufacturer's Association 1300 North 17 th Street, Suite 1847 Rosslyn, VA. 22209 |
| NFPA | National Fire Protection Association 1 Batterymarch Park P.O. Box 9101 Quincy, MA. 02269-9101 |
| OSHA | Occupational Safety Health Administration U.S. Department of Labor Office of Public Affairs – Room N3647 Washington, DC. 20210 |
| PCA | Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077-1083 |
| PCI | Prestressed Concrete Institute 209 W. Jackson Blvd. Chicago, IL. 60606 |
| SDI | Steel Deck Institute P.O. Box 25 Fox River Grove, IL. 60021 |
| SSPC | Society for Protective Coatings (Steel Structures Painting Council) 40 24 th Street, Sixth Floor Pittsburgh, PA. 15222 |

| | |
|----------|--|
| TAC | Texas Administrative Code http://info.sos.state.tx.us/pls/pub/readtac\$ext.viewtac P.O. Box 13087 Library MC-196 Austin, Texas 78711-3087 |
| TxDOT | Texas Department of Transportation 125 East 11 th Street Austin, Texas 78701-2483 |
| UL | Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062 |
| UNI-BELL | UNI-BELL Pipe Association 2655 Villa Creek Drive, Suite 155 Dallas, Texas 75234 |

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION – Not Used.

END OF SECTION

SECTION 01450

CONTRACTOR'S QUALITY CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Quality assurance and control of Installation and manufacturer's field services and reports.

1.02 QUALITY ASSURANCE AND CONTROL OF INSTALLATION

- A. Monitor quality control over Suppliers, manufacturers, Products, Services, Site Conditions and Workmanship, to produce work of specified quality at no additional cost to the City.
- B. Comply fully with manufacturer's Installation Instructions, including each step in sequence.
- C. Request clarification from Public Works before proceeding should manufacturer's instructions conflict with the Contract.
- D. Comply with specified standards as minimum requirements for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform the Work by persons qualified to produce a specified level of workmanship.

1.03 REFERENCES

- A. Obtain copies of standards and maintain at job site when required by individual Specification sections.

1.04 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual Specification sections, or as required by Public Works, provide Product suppliers' or manufacturers' technical representative to observe site conditions, conditions of surfaces and Installation, quality of workmanship, start-up of equipment, operator training, testing, adjusting and balancing of equipment a applicable and to initiate required operation. Conform to minimum time requirements for start-up operations and operator training when provided in Specification sections.

- B. At Public Work's request, submit qualifications of manufacturers' representative to Public Works 15 days in advance of required representatives' services. Representative is subject to approval by Public Works.

- C. Manufacturers' representative shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to a manufacturer's written instructions. Submit report within 14 days of observation to Public Works for review.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION – Not Used.

END OF SECTION

SECTION 01452
INSPECTION SERVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Inspection services and references

1.02 INSPECTION

- A. Public Works will appoint an Inspector to represent the City and perform inspections, tests, and other services specified in individual Specification Sections.
- B. Public Works may also appoint, employ, and pay an independent firm to provide additional inspection or construction management services as indicated in Section 01454 -Testing Laboratory Services.
- C. The independent firm will submit reports to Public Works, indicating observations and results of tests and indicating compliance or noncompliance with Contract requirements.
- D. Contractor shall assist and cooperate with the Inspector; furnish samples of materials, design mix, equipment, tools, and storage.
- E. Contractor shall notify Public Works 24 hours prior to expected time for operations requiring services.
- F. Contractor shall sign and acknowledge reports for Inspector.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION – Not Used.

END OF SECTION

SECTION 01454

TESTING LABORATORY SERVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Testing laboratory services and Contractor responsibilities related to those services.

1.02 REFERENCES

- A. ASTM C 1077-Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
- B. ASTM D 3666-Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials.
- C. ASTM D 3740-Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- D. ASTM E 329-Standard Specification for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
- E. ISO/TEC Guide 25-General Requirements for the Competence of Calibration and Testing Laboratories.

1.03 SELECTION AND PAYMENT

- A. The City will select, employ, and pay for services of an independent testing laboratory to perform inspection and testing identified in Part 3 of individual Specification sections.
- B. Contractor shall employ and pay for services of an independent testing laboratory or laboratories to perform inspection and testing identified in Part 2 of individual Specification sections.
- C. Employment of a testing laboratory by the City shall not relieve Contractor of its obligation to perform work in accordance with requirements of Contract documents.

- D. The City will deduct a minimum two-hour charge for testing laboratory time from periodic progress payment when operations requiring testing or inspection are canceled without prior notification.
- E. The City will deduct cost of retesting from periodic progress payment whenever failed work is removed, replaced or retested.

1.04 QUALIFICATION OF LABORATORY

- A. Meet laboratory requirements of ASTM E 329 and applicable requirements of ASTM C 1077, ASTM D 3666, and ASTM D 3740.
- B. Meet ISO/TEC Guide 17025 conditions for accreditation by the American Association for Laboratory Accreditation (A2LA) in specific fields of testing required in individual Specification sections.
- C. If laboratory subcontracts are part of the testing services, such work will be placed with a laboratory complying with the requirements of this Section.

1.05 LABORATORY REPORTS

- A. Testing laboratory shall provide and distribute copies of laboratory reports to the distribution list Public Works provides at the pre-construction conference.
- B. Keep one copy of each laboratory report distributed or faxed at the site field office for duration of the Work.
- C. Laboratory will fax material supplier, Contractor and Public Works reports that indicate failing test results by no later than close of business on the working day following test completion and review.

1.06 LIMITS ON TESTING LABORATORY AUTHORITY

- A. Laboratory may not release, revoke, alter, or enlarge requirements of the Contract.
- B. Laboratory may not approve or accept any portion of the Work.
- C. Laboratory may not assume Contractor duties.
- D. Laboratory has no authority to stop the Work.

1.07 CONTRACTOR RESPONSIBILITIES

- A. Provide safe access to the Work and to manufacturer's facilities for Public Works and for testing laboratory personnel.
- B. Provide testing laboratory with a copy of the Construction Schedule and a copy of each update to Construction Schedule.
- C. Notify Public Works and testing laboratory during normal working hours of the day previous to expected time for operations requiring inspection and testing services. When Contractor fails to make timely prior notification, do not proceed with the operations requiring inspection and testing services.
- D. Notify design Consultant 24 hours in advance when Specification required presence of Design Consultant for sampling or testing.
- E. Request and monitor testing as required to provide timely results and to avoid delays to the Work. Provide samples to laboratory in sufficient time to allow required test to be performed in accordance with specified test methods before intended use of the Product.
- F. Cooperate with laboratory personnel in collecting samples on site. Provide incidental labor and facilities for safe access to the Work to be tested, to obtain and handle sampled at site or at source of Products to be tested, and to facilitate tests and inspections including storage and curing of test samples.
- G. Make arrangement with laboratory through Public Works. Payment for additional testing will be made in accordance with Document 00700-General Conditions:
 - 1. Re-testing required for failed tests.
 - 2. Re-testing for nonconforming work.
 - 3. Additional sampling and tests requested beyond specified requirements.
 - 4. Insufficient notification of cancellation of tests for work scheduled but not performed.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION

3.01 CONDUCTING TESTING

- A. Conform to laboratory sampling and testing methods specified in individual Specification sections to the latest issues of ASTM standards, methods, or other recognized test standards as approved by Public Works.
- B. Requirements of this Section shall also apply to those tests for approval of materials, for mix designs, and for quality control of materials as performed by employed testing laboratories.

END OF SECTION

SECTION 01502

MOBILIZATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Mobilization of construction equipment and facilities onto the site.

1.02 MEASUREMENT AND PAYMENT

- A. Unit Price Contracts. If Contract is Unit Price Contract, measurement for mobilization is on a lump sum basis.
- B. Stipulated Price (Lump Sum) Contract. If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.
- C. Mobilization payments will be included in monthly payment estimates upon written application by Contractor subject to the following provisions:

1. Authorization for payment of 50 percent of that portion of Contract Price designated for mobilization will be made upon receipt and approval by Public Works of the following items, as applicable:

- a. Safety Program (General Conditions, Article 5).
- b. Schedule of Values (Section 01292), if any.
- c. Initial Construction Photographs (Section 01321), if needed.
- d. Preliminary Construction Schedule and Billing Forecast (Section 01325).
- e. Construction Schedule (Section 01325 or Section 01326, as applicable).
- f. Submittal Schedule (Section 01330).
- g. Site specific Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) along with storm water application fee (Section 01410), if required.
- h. Contractor's Quality Control Plan (Section 01450), if required.
- i. Establishment of a Field Office for Public Works meeting requirements of Section 01520 -Temporary Field Office, when an office is required by the Contract.
- j. Traffic Control Plan (Section 01555), if required.
- k. Plan for Control of Ground and Surface Water (Section 01578), if required.
- l. Project Signs Submittal (Section 01580).

- m. Trench Safety Program (Section 02260), if required.
 - n. Dewatering plan, when required.
2. Authorization for payment of 90% of the balance of that portion of Contract Price designated for mobilization will be made upon completion of the Work amounting to five percent of Original Contract Price. The final 5% will be paid after approval of the required close-out documents in accordance with Section 01770. The amount of Contract Price designated for mobilization may not be applied in computing whether or not five percent of the Original Contract Price has been obtained.
3. Mobilization payments will be subject to retainage amounts stipulated in Document 00700-General Conditions.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION – Not Used.

END OF SECTION

SECTION 01504

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary facilities and necessary controls for the project, including utilities, telephone, sanitary facilities, storage sheds and building, safety requirements, first aid equipment, fire protection, security measures, protection of the Work and property, access roads and parking, environmental controls, pest and rodent control and disposal of trash, debris and excavated material.
- B. Facilities and controls specified in this section are considered minimum for the Project. Provide additional facilities and controls for proper execution of the Work and to meet Contractor's responsibilities for protection of person and property.

1.02 CONTRACTOR'S RESPONSIBILITY

- A. Comply with applicable requirements specified in other sections of Specifications.
 - 1. Maintain and operate temporary facilities and systems to assure continuous service.
 - 2. Modify and extend systems as the Work progress requires.
 - 3. Completely remove temporary materials and equipment when no longer required.
 - 4. Restore existing facilities used for temporary services to specified or original condition.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION

3.01 TEMPORARY UTILITIES

- A. Obtaining Temporary Service:
 - 1. Make arrangements with utility service companies for temporary services.

2. Abide by rules and regulations of the utility service companies or authorities having jurisdiction.
3. Be responsible for utility service costs until Date of Substantial Completion. Included are fuel, power, light, heat, and other utility services necessary for execution, completion, testing, and initial operation of the Work.

B. Water:

1. Provide water required for and in connection with work to be performed and for specified tests of piping, equipment, devices, or for other use as required for proper completion of the Work.
2. Water to be drawn from public fire hydrants. Obtain meter from City of Schertz, Public Works Department. Pay required deposit based on rates established by latest ordinance.
3. Provide and maintain an adequate supply of potable water for domestic consumption by Contractor personnel, Public Works, and representatives of the City.

C. Electricity and Lighting:

1. Provide electrical power service required for the Work including required testing, lighting, operation of equipment, and other Contractor use.
2. Electric power service includes temporary power or generators required to maintain plant operations during scheduled shutdowns.
3. Minimum lighting level shall be 10 foot candles for open areas; 20 foot candles for stairs and shops. Provide a minimum of one 300 watt lamp for each 200 square feet of work area.

D. Temporary Heat and Ventilation:

1. Provide temporary heat necessary for protection or completion of the Work.
2. Provide temporary heat and ventilation to assure safe working conditions; maintain enclosed areas at a minimum of 50 degrees F.

E. Telephone:

1. Provide emergency telephone service at Project site for use by Contractor personnel and others performing work or furnishing services at the site.

F. Sanitary Facilities:

1. Provide and maintain sanitary facilities for person on the site; comply with regulations of State and local department of health.
2. Enforce use of sanitary facilities by construction personnel at site. Enclose sanitary facilities. Pit-type toilets are not permitted. No discharge will be allowed from these facilities. Collect and store sewage and waste so as to not cause a nuisance or health problem. Haul sewage and waste off-site and properly dispose in accordance with applicable regulations.
3. Locate toilets near the Work site and secluded for view insofar as possible. Keep toilets clean and supplied throughout the course of the Work.

3.02 STORAGE SHEDS AND BUILDINGS

- A. Provide adequately ventilated, watertight storage facilities with floor above ground level for Products susceptible to weather changes.
- B. Storage of Products not susceptible to weather damage may be on blocks off the ground.
- C. Store Products in a neat and orderly manner. Place Products to permit easy access for identification, inspection and inventory.
- D. Fill and grade site for temporary structures to provide drainage away from temporary and existing buildings.

3.03 SAFETY REQUIREMENTS

- A. Submit a safety program at the pre-construction meeting and follow the program in accordance with General Conditions. Include documented response to trench safety requirements of Section 02260-Trench Safety System.
- B. Conduct operations in strict accordance with applicable Federal, State and local safety codes and statutes and with good construction practice. Establish and maintain procedures for safety of all work, personnel and equipment involved in the Work.

- C. Observe and comply with Texas Occupational Safety Act (Art. 5182A, V.C.S.) and with all safety and health standards promulgated by Secretary of Labor under Section 107 of Contract Work Hours and Standards Act, published in 29 CFR Part 1926 and adopted by Secretary of Labor as occupational safety and
- D. Observance of and compliance with safety regulations is Contractor's responsibility without reliance or superintendence of or direction by Public Works. Immediately advise Public Works of investigation or inspection by Federal Safety and Health inspectors of Contractor's or subcontractor's work or place of work on site under the Contract, and after investigation or inspection, advise Public Works of results. Submit on copy of accident reports to Public Works within 10 days of occurrence.
- E. Protect areas occupied by workmen using the best available devices for detection of lethal and combustible gases. Test devices frequently to assure functional capability. Constantly observe infiltration of liquids into the Work area for visual or odor evidence of contamination, and immediately take appropriate steps to seal off entry of contaminated liquids to the Work area.
- F. Implement safety measures, including but not limited to safety personnel, first-aid equipment, ventilating equipment and other safety equipment specified or detailed on Drawings.
- G. Maintain required coordination with Emergency Services during entire period covered by the Contract.
- H. Include Project safety analysis in safety plan. Itemize major tasks and potential safety hazards. Plan to eliminate hazards or protect workers and public from each hazard.

3.04 FIRST AID EQUIPMENT

- A. Provide a first aid kit throughout the construction period. List telephone numbers for physicians, hospitals, and ambulance services in each first aid kit.
- B. Have at least one person thoroughly trained in first aid and CPR procedures present on the site when work is in progress. Contractor to conform to protocols and requirements for training and protection against "blood borne pathogens".

3.05 FIRE PROTECTION

- A. Conform to specified fire protection and prevention requirements established by Federal, State, or local governmental agencies and as provided in Safety Program.

3.06 SECURITY MEASURES

- A. Protect the Work, materials, equipment, and property from loss, theft, damage, or vandalism. Protect City property used in performance of the Contract.
- B. If existing fencing or barriers are breached or removed for purposes of construction, provide and maintain temporary security fencing equal to existing.

3.07 PROTECTION OF UTILITIES AND PIPELINES

- A. Prevent damage to existing public utilities during construction. Approximate locations of known utilities are shown on Drawings, but all lines may not be shown. Excavate with caution and repair lines damaged by construction operations.
- B. Texas One Call System, which must be called 48 hours in advance. The toll free telephone number is 1-800-DIG-TESS.
- C. Before excavating, locate underground utilities by appropriate means including the use of metal detection equipment, and probes, or by excavation or surveys. Repair damage caused by investigative work and by failure to locate or to preserve underground utilities.
- D. Give utility owners a minimum five days notice before commencing excavation to allow time to locate utilities and make adjustments or relocations when they conflict with the Work. Include cost for temporary relocation of water, wastewater, and storm drainage lines, necessary to accommodate construction, in unit prices for utility construction unless otherwise noted. By passing of sanitary waste to storm drainage facilities is not allowed.
- E. Prior to excavation near pipelines, request a representative of the pipeline company to meet with Contractor and Public Works at the site to discuss procedures to be used. Request pipeline company's representative to locate the pipelines in a least three locations: at each side and at centerline of proposed excavation of proposed utility. Also request representative and Public Works to be present to observe Contractor operations when excavation is conducted within 15 feet of pipeline.

3.08 PROTECTION OF THE WORK AND PROPERTY

A. Preventive Action

1. Take necessary precautions and actions to prevent damage, injury, or loss to the Work or public and private property, including:
 - a. Storage or apparatus, supplies, and Products in an orderly, safe manner to limit interference with progress of the Work or work of other contractors, utility service companies, or the City's operations.
 - b. Suitable storage for Products subject to damage by exposure to weather, theft, breakage, etc.
 - c. Limitation of loading pressures imposed upon portions of the Work.
 - d. Frequent clean up of refuse, scrap materials, and debris from construction operations, necessary to maintain the site in a safe and orderly condition.
 - e. Provision of barricades and guard rails to protect pedestrian and traffic around openings, scaffolding, temporary stairs and ramps, excavation, elevated walkways, and other hazardous areas.
2. Protect public and private property adjacent to the site. Obtain written consent before entering or occupying privately-owned land except on easements provided for construction. Restore property damaged by construction operations to condition equal to or better than that existing before the damage.

B. Barricades and Warning Systems

1. Where work is performed on or adjacent to roadways, rights-of-ways, or public land, provide barricades, fences, lights, warning signs, danger signals, and other precautionary measures necessary for protection of persons or property and for protection of the Work.
 - a. Erect sufficient barricades to keep vehicles and pedestrians from entering the Work. Paint barricades to be visible at night. From sunset to sunrise, provide at least one light at each barricade.
 - b. Maintain barricades, signs, lights, and provide watchmen until Public Works approved removal. Whenever work creates encroachment onto public roadways, station flagmen to manage traffic flow in accordance with approved traffic control plan.

- c. Conform to requirements of section 01555-Traffic Control and regulation.

3.09 PROTECTION OF EXISTING STRUCTURES

2. Underground Facilities

- a. Known Underground Facilities are shown on the Drawings but all Facilities may not be shown. Explore sufficiently ahead of trenching and excavation work to locate Underground Facilities in order to prevent damage to them and to prevent interruption of utility services. Restore damage to Underground Facilities to original condition at no additional cost to the City.
- b. If necessary to avoid unanticipated Underground Facilities, Public Works may make changes in location of the Work.
- c. If permanent relocation of an Underground Facility is required and not provided for in the Contract documents, Public Works will direct Contractor in writing to perform the Work under Modification provisions in General Conditions.

- 3. Surface Structures include buildings, tanks, walls, bridges, roads, dams, channels, open drainage, piping, poles, wires, posts, signs, markers, curbs, walks, guard cables, fencing, and other facilities that are visible above the ground level.

4. Protection of Underground Facilities and Surface Structures:

- a. Support in place and protect Underground Facilities and Surface Structures located within or adjacent to the limits of the Work from damage. Install supports as required by the owner of the structure. Satisfy Public Works that the owner of the facility or structure has approved methods and procedures before installing structure supports.
- b. Avoid moving or changing public utility or private corporation property without prior written consent of a responsible official or the facility or structure. Allow representatives of utilities to enter the construction site for maintenance and repair purposes or to make necessary changes.
- c. Notify utility and pipeline owners and operators of the nature of construction operations and dates when operations will be performed. When construction operations are required in immediate vicinity of existing structures, pipelines, or utilities, give a minimum of five working days advance notice. Probe and flag location of Underground Facilities prior to

commencement of excavation. Keep flags in place until construction operations uncover the facility.

- d. Assume risk for damages and expenses to Underground Facilities and Surface Structures within or adjacent to the Work.

- C. Employ a structural engineer to ensure protection measures are adequate for the safety and integrity of structures and facilities.

3.10 PROTECTION OF INSTALLED PRODUCTS:

1. Provide protection of Installed Products to prevent damage from subsequent operations. Remove protection facilities when no longer needed, prior to completion of the Work.
2. Control traffic to prevent damage to Products and surfaces.
3. Provide coverings to protect Products from damage. Cover projections, wall corners, jambs, sills, and exposed sides of openings in areas used for traffic and passage of materials in subsequent work.

3.11 ROADS AND PARKING

- A. Prevent interference with traffic and operations of the City on existing roads.
- B. Designate temporary parking areas to accommodate construction and City personnel. When site space is not adequate, provide additional off-site parking. Locate as approved by Public Works.
- C. Minimize use by construction traffic on existing streets and driveways.
- D. Do not allow heavy vehicles or construction equipment in existing parking areas.

3.12 ENVIRONMENTAL CONTROLS

- A. Use methods, equipment, and temporary construction necessary for control of environmental conditions at the site and adjacent areas.
- B. Comply with statutes, regulations, and ordinances relating to prevention of environmental pollution and preservation of natural resources including National Environmental Policy Act of 1969, PL 91-190, Executive Order 11514.

- C. Minimize impact to the surrounding environment. Do not use construction procedures that cause unnecessary excavation and filling of terrain, indiscriminate destruction of vegetation, air or stream pollution, or harassment or destruction of wildlife.
- D. Limit disturbed areas to boundaries established by the Contract. Do not pollute on-site streams, sewers, wells, or other water sources.
- E. Do not burn rubbish, debris, or waste materials.

3.13 POLLUTION CONTROL

- A. Provide methods, means, and facilities necessary to prevent contamination of soil, water or the atmosphere by discharge of Pollutants from construction operations.
- B. Provide equipment and personnel to perform emergency measures to contain spillage, and to remove contaminated soils or liquids. Excavate and dispose of contaminated earth off-site in accordance with laws and regulations, and replace with suitable compacted fill and topsoil.
- C. Provide systems necessary for control of Pollutants.
 - 1. Prevent toxic concentrations of chemicals.
 - 2. Prevent harmful dispersal of Pollutants into the environment.
- D. Use equipment that conforms to current Federal, State and local laws and regulations.

3.14 PEST AND RODENT CONTROL

- A. Provide rodent and pest control as necessary to prevent infestation of construction or storage areas.
- B. Employ methods and use materials that will not adversely affect conditions at site or on adjoining properties.

3.15 NOISE CONTROL

- A. Provide vehicles, equipment, and use construction activities that minimize noise to the greatest degree practicable. Conform to City Ordinance No. 09-H-03, § III, 1-20-2009, and latest OSHA standards. Do not permit noise levels to interfere with the Work or create a nuisance to surrounding areas.

- B. Conduct construction operations during daylight hours except as approved by Public Works.
- C. Select construction equipment that operates with minimum noise and vibration. When directed by Public Works, correct objectionable noise or vibration produced by operation of equipment at no additional cost to the City. Sound Power Level (PWL) of equipment shall not exceed 85 dbA (re: 10-12 watts) measured five feet from the equipment, or at a lower level. Equipment noise requirements are contained in equipment specifications.

3.16 DUST CONTROL

- A. Use water or other methods approved by Public Works to control amount of dust generated by vehicle and equipment operations.

3.17 WATER RUNOFF AND EROSION CONTROL

- A. Comply with requirements of section 01410 -TPDES Requirements.
- B. Conduct fill, grading and ditching operations and provide adequate methods necessary to control surface water, runoff, subsurface water, and water from excavations and structures in order to prevent damage to the Work, the site, or adjoining properties.
 - 1. Plan and execute construction and earthwork by methods that control surface drainage from cuts and fills, and from borrow and waste disposal areas.
 - 2. Minimize area of bare soil exposed at one time.
 - 3. Provide temporary control measures, such as berms, dikes, and drains.
 - 4. Provide, operate, and maintain equipment and facilities of adequate size to control surface water.
 - 5. Construct fill and waste areas by selective placement of materials to eliminate erosion of surface silts or clays that may erode.
 - 6. Direct water away from excavation, pits, tunnels, and other construction areas to prevent erosion, sedimentation or damage.
 - 7. Maintain existing drainage patterns adjacent to the site by constructing temporary earth berms, sedimentation basins, retaining areas, and temporary ground cover.

8. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to the site or adjoining areas, in conformance with environmental requirements.
9. Inspect earthwork periodically to detect any evidence of erosion. Take corrective measures as required to control erosion.

END OF SECTION

SECTION 01506
DIVERSION PUMPING

PART 1 GENERAL

1.01 DEFINITIONS

- A. Diversion-pumping: Installation and operation of bulkheads, plugs, hoses, piping, and pumps required to maintain sewer flow and prevent backups and overflows.

1.02 SYSTEM DESCRIPTION

- A. Provides continuous sewer service to users of sewer systems while maintenance or construction operations are in progress, by diverting flow around construction locations. Maintain sewer flow to prevent backup or overflow onto streets, yards, and unpaved areas or into buildings, adjacent ditches, storm sewers, and waterways. Do not divert sewage outside of sanitary sewer system.
- B. When pumps are operating, have an experienced operator on site to monitor operation, adjust pumps, make minor repairs to system, and report problems.

1.03 SUBMITTALS

- A. Conform to requirements of Section 01330 - Submittals Procedures.
- B. For systems that bypass sanitary sewer line segments of 42-inch diameter to larger, submit a Diversion Pumping Plan prior to installation. Show location, number and size of pumps, number, location, size and type of hoses or rigid piping, and location of downstream, discharge; and special features where pipes or hoses cross roadways, temporary trenches, support bridges.

1.04 SCHEDULING

- A. When the City operates or maintains diversion pumping in construction areas, coordinate construction activities with Public Works.
- B. Cease operation of diversion pumping when approved by Public Works.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Design piping, joints and accessories to withstand at least twice maximum system pressure or 50psi, whichever is greater.
- B. Use self-priming type or submersible electric pumps, with a working pressure gauge on the discharge.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

- A. During diversion pumping, do not allow sewage to leak, dump, or spill into or onto areas outside of existing sanitary sewer systems.
- B. In the event of an accidental spill or overflow, immediately stop discharge and take action to clean up and disinfect spill. Promptly notify Public Works so required reporting can be made to the Texas Commission on Environmental Quality (TCEQ) and the Environmental Protection Agency (EPA).

3.02 CLEANING

- A. When diversion-pumping operations are complete, drain sewage within piping into sanitary sewers prior to disassembly.

END OF SECTION

SECTION 01520
TEMPORARY FIELD OFFICE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary field office building and associated parking area.

1.02 FACILITY DESCRIPTION

A. Temporary field office to be utilized by authorized representatives of the City to coordinate and monitor daily construction activities performed by Contractor.

B. Field office shall be a non-smoking facility.

PART 2 PRODUCTS

2.01 FIELD OFFICE

A. General:

1. Locate office in vicinity of the Work at a location approved by Public Works or where indicated on Drawings.
2. Furnish, Install and maintain field office for exclusive use of authorized representatives of the City. Provide sufficient room for Project meetings and Inspector's office.
3. Provide office within 10 days of Date of Commencement of the Work.
4. Construct two all-weather, hard surfaced parking spaces for exclusive use of authorized representatives of the City. Provide all-weather surfaced walk between parking spaces and field office.

B. Minimum Construction:

1. Structurally sound foundation and superstructure.
2. Weather tight with insulated roof, walls and 7-foot ceiling (minimum).
3. Stairs or walkway with handrail and covered entrance platform (minimum 4 feet by 4 feet) with mud scraper at door.
4. Resilient floor covering.

5. Screened windows with area equal to approximately 10 percent of floor area sufficient for light, view of the site, and ventilation. Provide each window with operable sash and burglar bars.
6. Secure exterior doors with dead-bolt cylinder locks and burglar bars.

C. Minimum Services:

1. Exterior entrance light.
2. Interior lighting of 75 foot-candles minimum at desktop height.
3. Automatic heating to maintain 65 degrees F in winter.
4. Automatic cooling to maintain 75 degrees F in summer.
5. Electric power service.
6. Three telephone service lines one for voice, one for data, and one for fax, for exclusive use of authorized representatives of the City.
7. Sanitary facilities in field office with one water closet, one lavatory, and one medicine cabinet for exclusive use of authorized representatives of the City.

D. Minimum Furnishings:

1. One 5-drawer desk
2. Two swivel desk chairs with casters.
3. One plan table.
4. One drawing plan rack.
5. One 4-drawer legal file cabinet complete with fifty legal-size hanging folders and two full-sized carriers.
6. One marker board with cleaner and markers.
7. Two waste baskets.
8. One 30-inch by 36-inch tack board.
9. One all-purpose fire extinguisher.
10. Six protective helmets (hard hats) with ratchet adjustment for

exclusive use of authorized representatives of the City.

11. Conference table and chairs to accommodate 10 persons.
 12. Plain paper fax machine.
 13. Telephone instrument separate from fax machine.
- E. Provide adequate space for one set of Contract documents for ready reference.

PART 3 EXECUTION

3.01 MAINTENANCE

- A. Maintain all-weather surface driveway and parking areas, buildings, walkways, stairs and required furnishings and equipment for duration of the Contract.
- B. Provide janitorial services for duration of the Contract consisting of twice weekly sweeping and mopping floors, trash removal, weekly restroom cleaning, and weekly dusting of furniture and equipment.
- C. Provide soap, paper towels, toilet paper, cleansers and other necessary consumables.
- D. Immediately repair damage, leaks or defective service.

3.02 PROJECT CLOSEOUT

- A. Remove temporary field office and signs and restore site as specified in Section 01770 - Closeout Procedures.

END OF SECTION

SECTION 01555

TRAFFIC CONTROL AND REGULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for signs, signals, control devices, traffic barriers, flares, lights and traffic signals; construction parking control, designated haul routes, and bridging of trenches and excavations.
- B. Qualifications and requirements for use of flagmen.

1.02 MEASUREMENT AND PAYMENT

- A. Unit Price Contracts.
 - 1. Traffic control and regulation. Payment for traffic control and regulation is on a lump sum basis. Include preparation and submittal of traffic control plan if different than shown on Drawings, and provision of traffic control devices, equipment, and personnel necessary to protect the Work and public. Payment will be based on Contractor's Schedule of Values for traffic control and regulation.
 - 2. Flagmen. Payment for flagmen is on a lump sum basis. Partial payments will be based on Contractor's Schedule of Values for flagmen.
 - 3. New Portable Concrete Low Profile Traffic Barrier Provided. Payment is on a unit price basis for each linear foot of low profile traffic barrier provided, installed with hardware assemblies and connected together in accordance with the approved traffic control plan.
 - 4. Portable Concrete Low Profile Traffic Barrier. Payment is on a unit price basis for each linear foot of low profile traffic barrier picked up from designated stockpile, moved onto the project, set at location and connected together.
 - 5. Portable Concrete Low Profile Traffic Barrier Installed. Payment is on a unit price basis for each linear foot of low profile traffic barrier delivered to the project location, installed with hardware assemblies and connected together in accordance with the approved traffic control plan.

6. Portable Concrete Low Profile Traffic Barrier Moved and Reset. Payment is on a unit price basis for each linear foot of low profile traffic barrier disassembled, moved on the project, reset at the new locations and connected together. Include cost to repair roadway in the unit price.
 7. Portable Concrete Low Profile Traffic Barrier Removed. Payment is on a unit price basis for each linear foot of low profile traffic barrier removed from the project, including hardware assemblies, and stockpiling at location listed in Section 01110-Summary of Work. Include cost to repair roadway in the unit price.
 8. Refer to Section 01270-Measurement and Payment for unit price procedures.
- B. Stipulated Price Contracts. Include payment for work under this section in the total Stipulated Price.

1.03 REFERENCES

- A. Texas Manual on Uniform Traffic Control Devices (TMUTCD).
- B. Article 4413 (29bb), commonly referred to as Private Investigators and Private Security Agencies Act, and Article 2.12, Texas code of Criminal Procedure.
- C. Code of Ordinances, City of Schertz, Texas.
 1. Chapter 78, Article V., Section 78-121 Right-of-Way Construction

1.04 SUBMITTALS

- A. Conform to requirements of Section 01330-Submittal Procedures.
- B. Traffic control plans:
 1. If using traffic control plan contained in the Contract without modification, submit a letter confirming use of the plan.
 2. If using a different traffic control plan, submit the plan for approval. The plan must conform to TMUTCD requirements and be sealed by a Registered Texas Professional Engineer.
- C. Submit copies of traffic control plan at least 48 hours prior to implementing traffic control devices.

1.05 FLAGMEN

- A. Use Uniformed Peace Officers and Certified Flagmen to control movement of vehicular and pedestrian traffic when construction operations encroach on public traffic lanes.
- B. Uniformed Peace Officer: Individual employed full-time as a peace officer who received separate compensation as a privately employed flagman. Private employment may be an employee-employer relationship or on an individual basis. Flagman may not be in the employ of another peace officer nor be a reserve peace officer.
 - 1. Uniformed Peace Officers may be:
 - a. sheriffs and their deputies;
 - b. constables and deputy constables;
 - c. marshals or police officers of an incorporated city, town or village; or
 - d. as otherwise provided by Article 2.12, Code of Criminal Procedure.
 - 2. The Uniformed Peace Officer must be a full-time peace officer, must work a minimum average of 32 paid hours per week, and must be paid a rate not less than the prevailing minimum hourly wage rate set by the Federal Wage and Hour Act. The individual must be entitled to vacation, holidays, and insurance and retirement benefits.
- C. Certified Flagman: Individual who receives compensation as a flagman and meets the following qualifications:
 - 1. Formally trained and certified in traffic control procedures by the City's requirements.
 - 2. Speaks English, Ability to speak Spanish is desirable but not required.
 - 3. Paid for flagman duty at an hourly rate not less than the wage rate set for Rough Carpenter under the City's Wage Scale for Engineering Construction.
- D. Certified Flagmen must wear a distinctive uniform, bright-colored vest, and be equipped with appropriate flagging and communication devices while at the Work site. They must also have in their possession while on duty, a proof of training identification card issued by the appropriate training institute.

PART 2 PRODUCTS

2.01 SIGNS, SIGNALS, AND DEVICES

- A. Comply with TMUTCD requirements.
- B. Traffic cones and drums, flares and lights: Conform to local jurisdictions' requirements.

2.02 PORTABLE LOW PROFILE CONCRETE BARRIERS

- A. The low profile concrete barrier is a patented design. Information concerning this barrier may be obtained from Texas Transportation Institute, Texas A&M University System, College Station, Texas 77843-3135, (409) 845-1712.

PART 3 EXECUTION

3.01 PUBLIC ROADS

- A. Submit traffic control plan to Public Works for approval at least 5 days prior to need for blocking vehicular lanes or sidewalks. Do not block lanes or sidewalks without approval.
- B. Follow laws and regulations of governing jurisdictions when using public roads. Pay for and obtain permits from jurisdiction before impeding traffic or closing lanes. Coordinate activities with Public Works.
- C. Give Public Works 5 days notice before implementing approved traffic control phases. Inform local businesses of impending traffic control activities.
- D. Notify Emergency Services in writing a minimum of five business days prior to beginning work.
- E. Maintain 10-foot-wide all-weather lanes adjacent to the Work for emergency vehicle use. Keep all-weather lanes free of construction equipment and debris.
- F. Do not obstruct flow of traffic from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. on designated major arterials or as directed by Public Works.
- G. Maintain local driveway access to residential and commercial properties adjacent to work areas at all times. Use all-weather materials approved by Public Works to maintain temporary driveway access to commercial and residential driveways.

- H. Keep streets entering and leaving job site free of excavated material, debris, and foreign material resulting from construction operations in compliance with applicable ordinances.
- I. Remove existing signage and striping that conflict with construction activities or that may cause driver confusion.
- J. Provide safe access for pedestrians along major cross streets.
- K. Alternate closures of cross streets so that two adjacent cross streets are not closed simultaneously.
- L. Do not close more than two consecutive esplanade openings at a time without prior approval from Public Works.

3.02 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and the City's operations.
- B. Monitor parking of construction personnel's vehicles in existing facilities. Maintain vehicular access to and through parking areas.
- C. Prevent parking on or adjacent to access roads or in non-designated areas.

3.03 FLARES AND LIGHTS

- A. Provide flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

3.04 HAUL ROUTES

- A. Utilize haul routes designated by authorities or shown on Drawings for construction traffic.
- B. Confine construction traffic to designated haul routes.
- C. Provide traffic control at critical areas of haul routes to regulate traffic and minimize interference with public traffic.

3.05 TRAFFIC SIGNS AND SIGNALS

- A. Construct necessary traffic control devices for temporary signals required to complete the Work including loop detectors, traffic signal conduits,

traffic signal wiring and crosswalk signals. Notify the Public Works a minimum of 60 days in advance of need for control boxes and switchgear. The City will perform necessary service, programming or adjustments, to signal boxes and switchgear if required during construction.

- B. Install and operate traffic control signals to direct and maintain orderly traffic flow in areas under Contractor's control affected by Contractor's operations. Post notices, signs and traffic controls before moving into next phase of traffic control.
- C. Relocate traffic signs and signals as the Work progresses to maintain effective traffic control.
- D. Unless otherwise approved by Public Works, provide driveway signs with name of business that can be accessed from each crossover. Use two signs for each crossover.
- E. Replace existing traffic control devices in Project area.
- F. Public Works may direct Contractor to make minor adjustments to traffic control signage to eliminate driver confusion and maintain orderly traffic flow during construction at no additional cost to the City.

3.06 BRIDGING TRENCHES AND EXCAVATIONS

- A. When necessary, construct bridges over trenches and excavation to permit an unobstructed flow of traffic across construction areas and major drives. Use steel plates of sufficient thickness to support H-20 loading and install to operate with minimum noise.
- B. Shore trench or excavation to support bridge and traffic
- C. Secure bridging against displacement with adjustable cleats, angles, bolts or other devices when:
 - 1. bridging is placed under existing bus routes,
 - 2. more than five percent of daily traffic is comprised of commercial or truck traffic,
 - 3. more than two separate plates are used for bridging, and
 - 4. when bridge is to be used for more than five consecutive days.
- D. Extend steel plates used for bridging a minimum of 1 foot beyond edges of trench or excavation. Use temporary paving materials such as premix to feather edges of plates to minimize wheel impact on secured bridging.

3.07 REMOVAL

- A. Remove equipment and devices when no longer required.
- B. Repair damage caused by installation.
- C. Remove post settings to a depth of 2 feet.

3.08 TRAFFIC CONTROL, REGULATION AND DIRECTION

- A. Use Flagmen to control, regulate and direct an even flow and movement of vehicular and pedestrian traffic, for periods of time as may be required to provide for public safety and convenience, where:
 - 1. multi-lane vehicular traffic must be diverted into single lane vehicular traffic,
 - 2. vehicular traffic must change lanes abruptly,
 - 3. construction equipment must enter or cross vehicular traffic lanes and walks,
 - 4. construction equipment may intermittently encroach on vehicular traffic lanes and unprotected walks and crosswalks,
 - 5. traffic regulation is needed due to rerouting of vehicular traffic around the Work site, and
 - 6. where construction activities might affect public safety and convenience.
- B. Use of Flagmen to assist in the regulation of traffic flow and movement does not relieve Contractor of responsibility to take other means necessary to protect the Work and public.

3.09 INSTALLATION STANDARDS

- A. Place temporary pavement markings for single lane closures, in accordance with TMUTCD.
- B. Reinstall temporary and permanent pavement markings as approved by Public Works. When weather conditions do not allow application according to manufacturer's requirements, alternate markings may be considered. Submit proposed alternate to Public Works for approval prior to installation. No additional payment will be made for use of alternate markings.

3.10 MAINTENANCE OF EQUIPMENT AND MATERIAL

- A. Submit name, address and telephone number of individual designated to be responsible for maintenance of traffic handling at construction site to Public Works. Individual must be accessible at all times to immediately correct deficiencies in equipment and materials used to handle traffic including missing, damaged, or obscured signs, drums, barricades, or pavement markings.
- B. Inspect signs, barricades, drums, lamps and temporary pavement markings daily to verify that they are visible, in good working order, and conform with traffic handling plans as approved by Public Works. Immediately repair, clean, relocate, realign, or replace equipment or materials that are not in compliance.
- C. Keep equipment and materials, signs and pavement markings, clean and free of dust, dirt, grime, oil, mud, or debris.
- D. Obtain approval of Public Works to reuse damaged or vandalized signs, drums, and barricades.

END OF SECTION

SECTION 01562

TREE AND PLANT PROTECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Tree and plant protection and maintenance.
- B. Planting new trees and relocating and replanting existing trees.
- C. Maintenance of planted or replanted trees.

1.02 SUBMITTALS

- A. Conform to requirements of Section 01330 - Submittal Procedures.
- B. Submit name and experience of qualified Arborist, proposed for use on the Work, to Public Works.

1.03 PROJECT CONDITIONS

- A. Preserve and protect existing trees and plants that are to remain; from damage to foliage, branches, trunk, or roots; that could result from construction operations.
- B. Do not remove any Tree unless Parks and Recreation Department grants written permission for removal.
- C. Prevent following types of damage:
 - 1. Compaction of root zone by foot, vehicular traffic, or material storage.
 - 2. Trunk damage from equipment operations, material storage, or from nailing or bolting.
 - 3. Trunk and branch damage caused by ropes or guy wires.
 - 4. Root poisoning from spilled solvents, gasoline, paint, and other noxious materials.
 - 5. Branch damage due to improper pruning or trimming.
 - 6. Damage from lack of water due to:

- a. Cutting or altering natural water migration patterns near root zones.
 - b. Failure to provide adequate watering.
7. Damage from alteration of soil pH factor caused by depositing lime, concrete, plaster, or other base materials near roots.
8. Cutting of roots larger than 1-1/2 inches in diameter.

1.04 DAMAGE ASSESSMENT

- A. When an ornamental tree on private property or an otherwise protected or heritage tree, as defined by the Code, other than those permitted for removal, are destroyed or badly damaged as result of construction operations, remove and replace according to the City's requirements for tree mitigation as outlined in Article 21.9.9.D. Mitigation will be at Contractors expense.
- B. If any oak tree is wounded by intentional damage or pruning or as a result of natural causes, the damaged area shall be immediately treated with tree wound dressing.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Obtain approval from Parks Department for tree wound dressing, fungicide, or insecticide.
- B. Burlap: Suitable for use as tree wrapping.
- C. Fertilizer: Liquid containing 20 percent nitrogen, 10 percent phosphorus, and 5 percent potash.
- D. Obtain Public Works approval of replacement trees.

PART 3 EXECUTION

3.01 PROTECTION

- A. Trees within Project area, except for trees shown on Drawings or directed by Public Works to be removed and relocated, are to remain in place. Protect from damage and maintain trees that are to remain.
- B. Perform the following for trees or shrubs that are to remain:

1. Trim trees and shrubs under supervision of a professional tree surgeon or horticulturist.
 - a. Prune trees according to International Society of Arbor culture specifications.
 - b. Prune trees and shrubs requiring pruning for construction operations for balance and to maintain proper form and branching habit.
 - c. Cut limbs at branch collar and remove stubs. Do not gouge outer layer of tree structure or trunk.
 - d. Prior to construction, prune all trees to remain of new or recent growth to maintain basic branching form of trees. Base extent of pruning upon proximity of pavement to trunk and size of tree blockouts and requirements of construction adjacent to tree.
 - e. Limit pruning of young branches to the maximum extent possible. Maintain older branches that provide basic form of tree. Prune in the presence of Public Works.
 - f. Paint exposed, living tissue of cuts over 3/4" in diameter with tree paint.

2. Use extreme care to prevent excessive damage to root systems.
 - a. Cut tree roots in construction area smoothly with a trencher before excavating. Do not allow ripping of roots with backhoes or other equipment.
 - b. Temporarily cover exposed roots with wet burlap to prevent roots from drying out.
 - c. Cover exposed roots with soil as soon as possible.

3. Prevent damage or compaction of root zone (area below drip line) by construction activities.
 - a. Do not allow equipment to scar trunks or limbs
 - b. Do not store construction materials, vehicles, or excavated material under drip line of trees.
 - c. Do not pour liquid materials under drip line.

4. Water and fertilize remaining trees and shrubs to maintain their health during construction period.
 - a. Water landscaping during construction operations at least once every seven days in cold months and once every four

- b. Saturate soils to at least 6 to 8 inches beneath surface.
5. Water areas currently being served by private sprinkler systems while systems are temporarily taken out of service to maintain health of existing landscapes.
6. With Public Works' permission, shrubs to remain may be temporarily transplanted and returned to original positions under supervision of professional horticulturist.

3.02 PROTECTION

A. Protection of Trees or Shrubs in Open Area:

1. Install steel drive-in fence posts in protective circle, approximately 8 feet on center, not closer than 4 feet to trunk of trees or stems of shrubs.
2. Insert steel drive-in fence posts a minimum of 3 feet into ground, leaving a minimum of 5 feet above ground.
3. Mount fluorescent orange construction fence on fence posts.
4. For trees or shrubs in paved areas, use movable posts consisting of two 1/2-inch minimum diameter concrete-filled steel pipe mounted in rubber automobile tires filled with concrete.

B. Provide timber wrap protection for trees in close proximity to equipment when work is required within construction fencing.

1. Wrap trunk with a layer of burlap.
2. Install vertical 5 to 6 foot long 2 by 4's or 2 by 5's, spaced 3 to 5 inches apart, around circumference of tree trunk.
3. Tie burlap in place with 12 to 9 gauge steel wire.

3.03 RELOCATING AND PLANTING NEW TREES

- #### A. Employ a qualified Arborist, acceptable to Public Works, to plant and to move and relocate trees. Arborist must be normally engaged in the field and have a minimum of five years experience.

3.04 MAINTENANCE OF NEWLY PLANTED TREES AND REPLANTED TREES

- #### A. Provide proof of capability to water trees during dry periods.

- B. Maintain newly planted trees, in healthy condition until end of one-year warranty.
 - 1. Straighten leaning trees.
 - 2. Replace dead trees or trees that, in the opinion of Public Works, have become unhealthy, unsightly or have lost their natural shape as result of additional growth, improper pruning, maintenance or weather conditions, within four weeks of notice from Public Works.
 - 3. When a tree must be replaced, a new warranty period shall commence on date of tree replacement, and Public Works' approval. Minimum warranty period shall be one year.
 - 4. Dispose of rejected trees.

END OF SECTION

SECTION 01570

STORM WATER POLLUTION CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Implementation of Storm Water Pollution Prevention Plans (SWP3) described in Section 01410 - TPDES Requirement.
- B. Installation and maintenance of storm-water pollution prevention structures: diversion dikes, interceptor dikes, diversion swales, interceptor swales, down spout extenders, pipe slope drains, paved flumes and level spreaders. Structures are used during construction and prior to final development of the site.
- C. Filter Fabric Fences: Temporary filter fabric fences for erosion and sediment control in non-channelized flow areas.

1.02 MEASUREMENT AND PAYMENT

A. UNIT PRICES

- 1. This item shall be paid as "Lump Sum" for Storm Water Pollution Prevention Plan. This price shall be full compensation for furnishing all labor, materials, supplies, equipment and incidentals necessary to include payment of all permit fees. The "Lump Sum" price shall also be full compensation for removal and replacement and proper disposal of control measures not incorporated as permanent control measures. The lump sum will be pro-rated based on the number of calendar days in the project contract. Failure to complete the work within time allowed in the project contract due to approving designs, testing, material shortages, closed construction season, curing periods, and testing periods will not qualify for additional compensation.
 - 2. Refer to Section 01270 - Measurement and Payment for unit price procedures.
- B. Stipulated Price (Lump Sum) Contract. If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCE STANDARDS

A. ASTM

1. A 36 - Standard Specification for Carbon Structural Steel.
2. D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
3. D3786 - Standard Test Method for Hydraulic Bursting Strength for Knitted Goods and Nonwoven Fabrics.
4. D 4355 - Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus).
5. D 4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
6. D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
7. D 4833 - Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.
8. D 6382 - Standard Practice for Dynamic Mechanical Analysis and Thermogravimetry of Roofing and Waterproofing Membrane Material.

1.04 SYSTEM DESCRIPTIONS

- A. Filter Fabric Fence Type 1 and Type 2: Install to allow surface or channel runoff percolation through fabric in sheet-flow manner and to retain and accumulate sediment. Maintain Filter Fabric Fences to remain in proper position and configuration at all times.
- B. Interceptor Dikes and Swales: Construct to direct surface or channel runoff around the project area or runoff from project area into sediment traps.
- C. Drop Inlet Baskets: Install to allow runoff percolation through the basket and to retain and accumulate sediment. Clean accumulation of sediment to prevent clogging and backups.
- D. Sediment traps: Construct to pool surface runoff from construction area

to allow sediment to settle onto the bottom of trap.

1.05 SUBMITTALS

- A. Conform to requirements of Section 01330 - Submittal Procedures.
- B. Submit manufacturer's literature for product specifications and installation instructions.
- C. Submit manufacturers catalog sheets and other product data on geotextile or filter fabrics, outlet pipe, perforated riser and connectors.
- D. Submit proposed methods, equipment, materials, and sequence of operations for storm-water pollution prevention structures.
- E. Submit shop drawings for Drop Inlet Baskets.

PART 2 PRODUCTS

2.01 CONCRETE

- A. Concrete: Class B in accordance with Section 03315 - Concrete for Utility Construction or as shown on the Drawings.

2.02 AGREGATE MATERIALS

- A. Use poorly graded cobbles with diameter greater than 3 inches and less than 5 inches.
- B. Provide gravel lining in accordance with Section 2320 - Utility Backfill Materials or as shown on the drawings.
- C. Provide clean cobbles and gravel consisting of crushed concrete or stone. Use clean, hard crushed concrete or stone free from adherent coatings, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic matter.
- D. Sediment Pump Pit Aggregate: Use nominal 2-inch diameter river gravel.

2.03 PIPE

- A. Polyethylene culvert pipe or PVC sewer pipe in accordance with Section 02505- High Density Polyethylene (HDPE) Solid and Profile Wall Pipe and Section 02506 Polyvinyl Chloride Pipe or as shown on the Drawings.
- B. Inlet Pipes: Galvanized steel pipe in accordance with Section 02642 Corrugated Metal Pipe or as shown on the Drawings.

- C. Standpipe for Sediment Pump Pits: Galvanized round culvert pipe or round PVC pipe, minimum of 12-inch and a maximum of 24-inch diameter, perforate at 6 to 12 inch centers around circumference.

2.01 GEOTEXTILE FILTER FABRIC

- A. Woven or nonwoven geotextile filter fabric made of either polypropylene, polyethylene, ethylene, or polyamide material, in continuous rolls of longest practical length.
- B. Filter Fabric for Temporary Sediment Control Fence to meet the following minimum standards. Grab Tensile: 100 psi in any principal direction (ASTM D-4632), Mullen burst strength >200 psi (ASTM D-3786), and apparent opening size between 20 and 50. Ultraviolet Resistance at 80% minimum at 500 hours

2.02 FENCING

- A. Wire Fencing: Galvanized welded wire mesh, at least 12.5 gauge, max opening size of 2-inch x 4-inch, minimum 24 inch roll or sheet width of longest practical length.
- B. Fence Stakes: Nominal 2 by 2 inch moisture-resistant treated wood or steel posts (min. of 1.25 lbs. per linear foot and Brinell Hardness greater than 140) with safety caps on top; length as required for minimum 18 inch bury and full height of filter fabric.

2.03 SANDBAGS

- A. Provide woven material made of polypropylene, polyethylene, or polyamide material.
 - 1. Minimum unit weight of four ounces per square yard.
 - 2. Minimum grab strength of 100 psi in any principal direction (ASTM D4632)
 - 3. Mullen burst strength exceeding 300 psi (ASTM D3786).
 - 4. Ultraviolet stability exceeding 70 percent.
 - 5. Size: Length:18 to 24 inches. Width: 12 to 18 inches. Thickness: 6 to 8 inches. Weight: 50 to 125 pounds.

2.04 DROP INLET BASKET

- A. Provide steel frame members in accordance with ASTM A36.
- B. Construct top frame of basket with two short sides of 2 inch by 2 inch and single long side of 1 inch by 1 inch, 1/8 inch angle iron. Construct basket hangers of 2 inch by 1/4 inch iron bars. Construct bottom frame of 1 inch by 1/4 inch iron bar or 1/4 inch plate with center 3 inches removed. Use minimum 1/4 inch diameter iron rods or equivalent for sides of inlet basket. Weld minimum of 14 rods in place between top frame/basket hanger and bottom frame. Exact dimensions for top frame and insert basket will be determined based on dimensions of type of inlet being protected.

PART 3 EXECUTION

3.01 PREPARATION, INSTALLATION AND MAINTAINANCE

- A. Provide erosion and sediment control structures at locations shown on the Drawings.
- B. Do not clear, grub or rough cut until erosion and sediment control systems are in place unless approved by Public Works to allow installation of erosion and sediment control systems, soil testing and surveying.
- C. Maintain existing erosion and sediment control systems located within project site until acceptance of Project or until directed by Public Works to remove and discard existing system.
- D. Regularly inspect and repair or replace damaged components of erosion and sediment control structures. Unless otherwise directed, maintain erosion and sediment control structure until project area stabilization is accepted. Redress and replace granular fill at outlets as needed to replenish depleted granular fill. Remove erosion and sediment control structures promptly when directed by Public Works. Dispose of materials in accordance with Section 01576 - Waste Material Disposal.
- E. Remove and dispose sediment deposits at the designated spoil site for the Project. If a project spoil site is not designated on Drawings, dispose of sediment off site at approved location in accordance with Section 01576 - Waste Material Disposal.
- F. Unless otherwise shown on the Drawings, compact embankments, excavations, and trenches in accordance with Section 02315 Roadway Excavation or Section 2317 Excavation and Backfill for Utilities.
- G. Prohibit equipment and vehicles from maneuvering on areas outside of

dedicated right of way and easements for construction. Immediately repair damage caused by construction traffic to erosion and sediment control structures.

- H. Protect existing trees and plants in accordance with Section 1562 - Tree and Plant Protection.

3.02 SEDIMENT TRAPS

- A. Install sediment traps so that surface runoff shall percolate through system in sheet flow fashion and allow retention and accumulation of sediment.
- B. Inspect sediment traps after each rainfall, daily during periods of prolonged rainfall, and at a minimum once each week. Repair or replace damaged sections immediately.
- C. Use fill material for embankment in accordance with Section 02320 - Utility Backfill Materials.
- D. Excavation length and height shall be as specified on Drawings. Use side slopes of 2:1 or flatter.
- E. Stone outlet sediment traps:
 - 1. Maintain minimum of 6 inches between top of core material and top of stone outlet, minimum of 4 inches between bottom of core material and existing ground and minimum of 1 foot between top of stone outlet and top of embankment.
 - 2. Embed cobbles minimum of 4 inches into existing ground for stone outlet. Core shall be minimum of 1 foot in height and in width and wrapped in triple layer of geotextile filter fabric.
- F. Sediment Basin with Pipe Outlet Construction Methods: Install outlet pipe and riser as shown on the Drawings.
- G. Remove sediment deposits when design basin volume is reduced by one-third or sediment level is one foot below principal spillway crest, whichever is less.

3.03 SEDIMENT CONTROL FENCE CONSTRUCTION METHODS

- A. Trench in the toe of the fence lines so the downward face of the trenches is flat and perpendicular to direction of flow.

- B. Attach filter fabric to wooden fence stakes spaced a maximum of 6 feet apart or steel fence stakes spaced a maximum of 8 feet apart and embedded a minimum of 18 inches. Install stakes at a slight angle toward source of anticipated runoff.
 - 1. Securely fasten filter fabric material to wire fence with tie wires at spacing of 15" minimum. Attach welded wire fence and fabric to fence stakes at minimum 4 evenly spaced staples or t-clips.
 - 2. Connect successive reinforcement sheets/rolls a minimum of 6 times with hog rings.
- C. Remove sediment deposits when silt reaches depth one-third height of barrier or 6 inches, whichever is less.
- D. Trench in toe of filter fabric fence with so that downward face of trench is flat and perpendicular to direction of flow, 4" minimum against trench wall and 2" minimum against trench floor.
- E. Backfill and compact trench upon completion of Construction.
- F. Filter fabric fence shall have a minimum height of 18 inches and a maximum height of 36 inches above natural ground.
- F Cut length of fence to minimize use of joints. When joints are necessary, splice fabric together only at support post with minimum 6 inch overlap and seal securely.

3.04 DIKE AND SWALE

- A. Unless otherwise indicated, maintain minimum dike height of 18 inches, measured from cleared ground at up slope toe to top of dike. Maintain side slopes of 2:1 or flatter.
- B. Dike and Swale Stabilization: When shown on the Drawings, place gravel lining 3 inches thick and compacted into the soil or 6 inches thick if truck crossing is expected. Extend gravel lining across bottom and up both sides of swale minimum height of 8 inches vertically, above bottom. Gravel lining on dike side shall extend up the up slope side of dike a minimum height of 8 inches, measured vertically from interface of existing or graded ground and up slope toe of dike, as shown on Drawings.
- C. Divert flow from dikes and swales to sediment basins, stabilized outlets, or sediment trapping devices of types and at locations shown on Drawings. Grade dikes and swales as shown on Drawings, or, if not

specified, provide positive drainage with maximum grade of 1 percent to outlet or basin.

- D. Clear in accordance with Section 2233 - Clearing and Grubbing
Compact embankments in accordance with Section 2315 - Roadway
Excavation.
- E. Carry out excavation for swale construction so that erosion and water
pollution is minimal. Minimum depth shall be 1 foot and bottom width shall
be 4 feet, with level swale bottom. Excavation slopes shall be 2:1 or flatter.
Clear, grub and strip excavation area of vegetation and root material.

3.05 DOWN SPOUT EXTENDER

- A. Down spout extender shall have slope of approximately 1 percent. Use
pipe diameter of 4 inches or as shown on the Drawings. Place pipe in
accordance with Section 2317 - Bedding and Backfill for Utilities.

3.06 PIPE SLOPE DRAIN

- A. Compact soil around and under drain entrance section to top of
embankment in lifts appropriately sized for method of compaction utilized.
- B. Inlet pipe shall have slope of 1 percent or greater. Use pipe diameter
as shown on the Drawings.
- C. Top of embankment over inlet pipe and embankments directing water to
pipe shall be at least 1 foot higher at all points than top of inlet pipe.
- D. Pipe shall be secured with hold-down grommets spaced 10 feet on
centers.
- E. Place riprap apron with a depth equal to pipe diameter with 2:1 side slopes.

3.07 PAVED FLUME

- A. Compact soil around and under the entrance section to top of the
embankment in lifts appropriately sized for method of compaction
utilized.
- B. Construct subgrade to required elevations. Remove and replace soft
sections and unsuitable material. Compact subgrade thoroughly and shape
to a smooth, uniform surface.
- C. Construct permanent paved flumes in accordance with Drawings.

- D. Remove sediment from riprap apron when sediment has accumulated to depth of one foot.

3.08 LEVEL SPREADER

- A. Construct level spreader on undisturbed soil and not on fill. Ensure that spreader lip is level for uniform spreading of storm runoff.
- B. Maintain at required depth, grade, and cross section as specified on Drawings. Remove sediment deposits as well as projections or other irregularities which will impede normal flow.

3.09 INLET PROTECTION BARRIER

- A. Place sandbags and filter fabric fences at locations shown on the SWP3.

3.10 DROP INLET BASKET CONSTRUCTION METHODS

- A. Fit inlet insert basket into inlet without gaps around insert at locations shown on the SWP3.
- B. Support for inlet insert basket shall consist of fabricated metal.
- C. Push down and form filter fabric to shape of basket. Use sheet of fabric large enough to be supported by basket frame when holding sediment and extend at least 6 inches past frame. Place inlet grates over basket/frame to serve as fabric anchor.
- D. Remove sediment deposit after each storm event and whenever accumulation exceeds 1-inch depth during weekly inspections.

3.11 STREET AND SIDEWALK CLEANING

- A. Keep areas clean of construction debris and mud carried by construction vehicles and equipment. If necessary, install stabilized construction exits at construction, staging, storage, and disposal areas, following Section 01575-Stabilized Construction Exit.
- B. In lieu of or in addition to stabilized construction exits, shovel or sweep pavements as required to keep areas clean. Do not waterhose or sweep debris and mud off street into adjacent areas, except, hose sidewalks during off-peak hours, after sweeping.

3.12 WASTE COLLECTION AREAS

- A. Prevent water runoff from passing through waste collection areas, and prevent water runoff from waste collection areas migrating outside collection areas.

3.13 EQUIPMENT MAINTENANCE AND REPAIR

- A. Confine maintenance and repair of construction machinery and equipment to areas specifically designated for that purpose, so fuels, lubricants, solvents, and other potential pollutants are not washed directly into receiving streams or storm water conveyance systems. Provide these areas with adequate waste disposal receptacles for liquid and solid waste. Clean and inspect maintenance areas daily.
- B. Where designated equipment maintenance areas are not feasible, take precautions during each individual repair or maintenance operation to prevent potential pollutants from washing into streams or conveyance systems. Provide temporary waste disposal receptacles.

3.14 VEHICLE/ EQUIPMENT WASHING AREAS

- A. Install wash area (stabilized with coarse aggregate) adjacent to stabilized construction exit(s), as required to prevent mud and dirt run-off. Release wash water into drainage swales or inlets protected by erosion and sediment controls. Build wash areas following Section 01575- Stabilized Construction Exit. Install gravel or rock base beneath wash areas.
- B. Wash vehicles only at designated wash areas. Do not wash vehicles such as concrete delivery trucks or dump trucks and other construction equipment at locations where runoff flows directly into watercourses or storm water conveyance systems.
- C. Locate wash areas to spread out and evaporate or infiltrate wash water directly into ground, or collect runoff in temporary holding or seepage basins.

3.15 WATER RUNOFF AND EROSION CONTROL

- A. Control surface water, runoff, subsurface water, and water from excavations and structures to prevent damage to the Work, the site, or adjoining properties.
- B. Control fill, grading and ditching to direct water away from excavations, pits, tunnels, and other construction areas, and to direct drainage to proper runoff courses to prevent erosion, sedimentation or damage.
- C. Provide, operate, and maintain equipment and facilities of adequate size

to control surface water.

- D. Dispose of drainage water to prevent flooding, erosion, or other damage to the site or adjoining areas. Follow environmental requirements.
- E. Retain existing drainage patterns external to the site by constructing temporary earth berms, sedimentation basins, retaining areas, and temporary ground cover as required to control conditions.
- F. Plan and execute construction and earth work to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.
 - 1. Hold area of bare soil exposed at one time to a minimum.
 - 2. Provide temporary controls such as berms, dikes, and drains.
- G. Construct fill and waste areas by selective placement to eliminate surface silts or clays which will erode.
- H. Inspect earthwork periodically to detect start of erosion. Immediately apply corrective measures as required to control erosion.
- I. Dispose of sediments offsite, not in or adjacent to streams or floodplains, nor allow sediments to flush into streams or drainage ways. Assume responsibility for offsite disposal location.
- J. Unless otherwise indicated, compact embankments, excavations, and trenches by mechanically blading, tamping, and rolling soil in maximum of 8-inch layers. Provide compaction density at minimum 90 percent Standard Proctor ASTM D-698-78 density. Make at least one test per 500 cubic yards of embankment.
- K. Do not maneuver vehicles on areas outside of dedicated rights-of-way and easements for construction. Immediately repair damage to erosion and sedimentation control systems caused by construction traffic.
- L. Do not damage existing trees intended to remain.

3.16 REMOVAL OF CONTROLS

- A. Remove erosion and sediment controls when the site is finally stabilized or as directed by Public Works.
- B. Dispose of sediments and waste products following Section 01505-Temporary Facilities.

END OF SECTION

SECTION 01575

STABILIZED CONSTRUCTION EXIT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Installation of erosion and sediment control for stabilized construction exits used during construction and prior to final development of site.

1.02 MEASUREMENT AND PAYMENT

- A. Unit Price Contracts. If Contract is Unit Price Contract, payment for work in this Section will be covered under the Lump Sum Item for Storm Water Pollution Plan.
- B. Stipulated Price (Lump Sum) Contracts. If the Contract is a Stipulated Price Contract, include payment for work under this Section in the total Stipulated Price.

1.03 SUBMITTALS

- A. Conform to requirements of Section 01330-Submittal Procedures
- B. Submit manufacturer's catalog sheets and other Product Data on Geotextile fabric.
- C. Submit sieve analysis of aggregates conforming to requirements of this Specification.

1.04 REFERENCES

- A. ASTM D 4632-Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
- B. Storm Water Quality Management Guidance Manual prepared by the City of Schertz and Guadalupe County.

PART 2 PRODUCTS

2.01 2.01 GEOTEXTILE FABRIC

- A. Provide woven or non-woven geotextile fabric made of polypropylene, polyethylene, ethylene, or polyamide material.

- B. Geotextile fabric: Minimum grab strength of 200 psi in any principal direction (ASTM D-4632) and equivalent opening size between 80 and 120.
- C. Geotextile and threads: Resistant to chemical attack, mildew, and rot and is for satisfactory use in wet soil and aggregate environment.
- D. Representative Manufacturers: Mirafi, Inc. or equal.

2.02 COARSE AGGREGATES

- A. Coarse aggregate: Crushed stone, gravel, crushed blast furnace slag, or combination of these materials. Aggregate shall be composed of clean, hard, durable materials free from adherent coatings of, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic and injurious matter.
- B. Coarse aggregates shall be open graded with a size of 4" to 8"

PART 3 EXECUTION

3.01 PREPARATION AND INSTALLATION

- A. Provide stabilized construction roads and exits at construction, staging, parking, storage, and disposal areas to keep street clean of mud carried by construction vehicles and equipment. Construct erosion and sediment controls in accordance with Drawings and Specification requirements.
- B. Do not clear grub or rough cut until erosion and sediment control systems are in place, unless approved by Public Works to allow soil testing and surveying.
- C. Maintain existing construction site erosion and sediment control systems until acceptance of the Work or until removal of existing systems is approved by Public Works.
- D. Regularly inspect, repair or replace components of stabilized construction exits. Unless otherwise directed, maintain stabilized construction roads and exits until the City accepts the Work. Remove stabilized construction roads and exits promptly when directed by Public Works. Discard removed materials off-site.
- E. Remove and dispose of sediment deposits at designated spoil site for Project. If a spoil site is not designated on Drawings, dispose of sediment off-site at a location not in or adjacent to stream or flood plain. Assume responsibility for off-site disposal.

- F. Spread compacted and stabilized sediment evenly throughout site. Do not allow sediment to flush into streams or drainage ways. Dispose of contaminated sediment in accordance with existing federal, state, and local rules and regulations.
- G. Prohibit equipment and vehicles from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Immediately repair damage to erosion and sediment control systems caused by construction traffic.
- H. Conduct construction operations in conformance with erosion control requirements of Specification 01570 – Storm Water Pollution Control.

3.02 CONSTRUCTION METHODS

- A. Provide stabilized access roads, subdivision roads, parking areas, and other on-site vehicle transportation routes where shown on Drawings.
- B. Provide stabilized construction exits and truck washing areas, when approved by Public Works, of sizes and at locations shown on Drawings or as specified in this Section.
- C. Clean tires to remove sediment on vehicles leaving construction areas prior to entering public right-of-ways. Construct truck washing areas needed to remove sediment. Wash trucks on stabilized areas that drain into drainage systems protected by erosion and sediment control measures.
- D. Details for stabilized construction exits are shown on Drawings. Construct other stabilized areas to same requirements. Maintain minimum roadway widths of 14 feet for one-way traffic and 20 feet for two-way traffic and of sufficient width to allow ingress and egress. Place geotextile fabric as a permeable separator to prevent mixing of coarse aggregate with underlying soil. Limit exposure of geotextile fabric to elements between laydown and cover to a maximum 14 days to minimize potential damage.
- E. Grade roads and parking areas to provide sufficient drainage away from stabilized areas. Use sandbags, gravel, boards, or similar materials to prevent sediment from entering public right-of-ways, receiving streams or storm water conveyance systems.
- F. Inspect and maintain stabilized areas daily. Provide periodic top dressing with additional coarse aggregates to maintain required depth. Repair and clean out damaged control systems used to trap sediment. Immediately remove spilled, dropped, washed, or tracked sediment from public right-

of-ways.

- G. Maintain lengths of stabilized areas as shown on Drawings or a minimum of 50 feet. Maintain a minimum thickness of 8 inches. Maintain minimum widths at all points of ingress or egress.
- H. Stabilize other areas with the same thickness, and width of coarse aggregate required for stabilized construction exits, except where shown otherwise on Drawings.
- I. Stabilized areas may be widened or lengthened to accommodate truck washing areas when authorized by Public Works.
- J. Clean street daily before end of workday. When excess sediments have tracked onto streets, Public Works may direct Contractor to clean street as often as necessary. Remove and legally dispose of sediments.
- K. Use other erosion and sediment control measures to prevent sediment runoff during rain periods and non-working hours and when storm discharges are expected.

END OF SECTION

SECTION 01576

WASTE MATERIAL DISPOSAL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Disposal of waste material and salvageable material.

1.02 1.02 SUBMITTALS

- A. Conform to requirements of Section 01330 - Submittal Procedures.
- B. Obtain a copy of approved "Floodplain Development Permit" prior to disposal of excess material in areas designated as being in "100-year Flood Hazard Area" within the City. Contact the City of Schertz Flood Plain Manager, 10 Commercial Place at (210) 619-1800 for flood plain information.
- C. Obtain and submit disposal permits for proposed disposal sites, if required by local ordinances.
- D. Submit copy of written permission from property owner, with description of property, prior to disposal of excess material adjacent to project. Submit written and signed release from property owner upon completion of disposal work.
- E. Describe waste materials expected to be stored on-site and a description of controls to reduce Pollutants from these materials, including storage practices to minimize exposure of materials to storm water; and spill prevention and response measures in Project's Storm Water Pollution Prevention Plan (SWPPP). Refer to Section 01410-TPDES Requirements.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 SALVAGEABLE MATERIAL

- A. Excavated Material: When indicated on Drawings, load, haul, and deposit excavated material at location or locations shown on Drawings outside limits of Project.
- B. Base, Surface, and Bedding Material: Load shell, gravel, bituminous, or

other base and surfacing material designated for salvage into City trucks.

- C. Pipe Culvert: Load culverts designated for salvage into City trucks.
- D. Other Salvageable Materials: Conform to requirements of individual Specification Sections.
- E. Coordinate loading of salvageable material on City trucks with Public Works.

3.02 EXCESS MATERIAL

- A. Remove and legally dispose of vegetation, rubble, broken concrete, debris, asphaltic concrete pavement, excess soil, and other materials not designated for salvage from job site.
- B. Excess soil may be deposited on private property adjacent to Project when written permission is obtained from property owner. See Paragraph 1.02 D above.
- C. Verify flood plain status of any proposed disposal site. Do not dispose of excavated materials in area designated as within 100-year Flood Hazard Area unless "Floodplain Development Permit" has been obtained. Remove excess material placed in "100-year Flood Hazard Area" within the City, without "Floodplain Development Permit", at no additional cost to the City.
- D. Remove waste materials from site daily, in order to maintain site in neat and orderly condition.

END OF SECTION

SECTION 01578

CONTROL OF GROUND AND SURFACE WATER

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Dewatering, depressurizing, draining, and maintaining trenches, shaft excavations, structural excavations and foundation beds in stable condition, and controlling ground water conditions for tunnel excavations.
- B. Protecting work against surface runoff and rising floodwaters.
- C. Trapping suspended sediment in the discharge from the surface and ground water control systems.

1.02 MEASUREMENT AND PAYMENT

A. UNIT PRICES

- 1. Measurement for control of ground water, if included in Bid Form, will be on either a lump sum basis or a linear foot basis for continuous installations of wellpoints, eductor wells, or deep wells.
- 2. If not included in Bid Proposal, include the cost to control ground water in unit price for work requiring such controls.
- 3. No separate payment will be made for control of surface water. Include cost to control surface water in unit price for work requiring controls.
- 4. Follow Section 01270 - Payment Procedures for unit price procedures.

- B. Stipulated Price (Lump Sum) Contract. If the Contract is a Stipulated Price Contract, include payment for work under this section in the total Stipulated Price.

1.03 REFERENCES

- A. ASTM D 698 - Standard Test Methods for Laboratory Compaction of Soils Using Standard Effort (12,400 ft-lbf/ft³ (600kN-m/m³))
- B. Federal Regulations, 29 CFR Part 1926, Standards-Excavation, Occupational Safety and Health Administration (OSHA).

1.04 DEFINITIONS

- A. Ground water control system: system used to dewater and depressurize water-bearing soil layers.
 - 1. Dewatering: lowering the water table and intercepting seepage that would otherwise emerge from slopes or bottoms of excavations, or into tunnels and shafts; and disposing of removed water. Intent of dewatering is to increase stability of tunnel excavations and excavated slopes, prevent dislocation of material from slopes or bottoms of excavations, reduce lateral loads on sheeting and bracing, improve excavating and hauling characteristics of excavated material, prevent failure or heaving of bottom of excavations, and to provide suitable conditions for placement of backfill materials and construction of structures and other installations.
 - 2. Depressurization: includes reduction in piezometric pressure within strata not controlled by dewatering alone, necessary to prevent failure or heaving of excavation bottom or instability of tunnel excavations.
- B. Excavation drainage: includes keeping excavations free of surface and seepage water.
- C. Surface drainage: includes use of temporary drainage ditches and dikes and installation of temporary culverts and sump pumps with discharge lines necessary to protect Work from any source of surface water.
- D. Monitoring facilities for ground water control system: includes piezometers, monitoring wells and flow meters for observing and recording flow rates.

1.05 PERFORMANCE REQUIREMENTS

- A. Conduct subsurface investigations to identify groundwater conditions and to provide parameters for design, installation, and operation of groundwater control systems. Submit proposed method and spacing of readings for review prior to obtaining water level readings.
- B. Design ground water control system, compatible with requirements of Federal Regulations 29 CFR Part 1926 and Section 02260 - Trench Safety Systems, to produce following results:
 - 1. Effectively reduce hydrostatic pressure affecting:
 - a. Excavations
 - b. Tunnel excavation, face stability or seepage into tunnels

2. Develop substantially dry and stable subgrade for subsequent construction operations
 3. Preclude damage to adjacent properties, buildings, structures, utilities, installed facilities and other work
 4. Prevent loss of fines, seepage, boils, quick condition, or softening of foundation strata
 5. Maintain stability of sides and bottom of excavations
- C. Provide ground water control systems that include single-stage or multiple-stage well point systems, eductor and ejector-type systems, deep wells, or combinations of these equipment types.
- D. Provide drainage of seepage water and surface water, as well as water from other sources entering excavation. Excavation drainage may include placement of drainage materials, crushed stone and filter fabric, together with sump pumping.
- E. Provide ditches, berms, pumps and other methods necessary to divert and drain surface water from excavation and other work areas.
- F. Locate ground water control and drainage systems so as not to interfere with utilities, construction operations, adjacent properties, or adjacent water wells.
- G. Assume sole responsibility for ground water control systems and for any loss or damage resulting from partial or complete failure of protective measures and settlement or resultant damage caused by ground water control operations. Modify ground water control systems or operations if they cause or threaten to cause damage to new construction, existing site improvements, adjacent property, adjacent water wells, or potentially contaminated areas. Repair damage caused by ground water control systems or resulting from failure of system to protect property as required.
- H. Install an adequate number of piezometers installed at proper locations and depths, necessary to provide meaningful observations of conditions affecting excavation, adjacent structures and water wells.
- I. Install environmental monitoring wells at proper locations and depths necessary to provide adequate observations of hydrostatic conditions and possible contaminant transport from contamination sources into work area or ground water control system.

1.06 SUBMITTALS

- A. Conform to requirements of Section 01330 - Submittals Procedures.
- B. Submit Ground Water and Surface Water Control Plan for review by Public Works prior to start of excavation work. Include the following:
 - 1. Results of subsurface investigations and description of extent and characteristics of water bearing layers subject to ground water control
 - 2. Names of equipment Suppliers and installation Subcontractors
 - 3. Description of proposed ground water control systems indicating arrangement, location, depth and capacities of system components, installation details and criteria and operation and maintenance procedures
 - 4. Description of proposed monitoring facilities indicating depths and locations of piezometers and monitoring wells, monitoring installation details and criteria, type of equipment and instrumentation with pertinent data and characteristics
 - 5. Description of proposed filters including types, sizes, capacities and manufacturer's application recommendations
 - 6. Design calculations demonstrating adequacy of proposed systems for intended applications. Define potential area of influence of ground water control operation near contaminated areas.
 - 7. Operating requirements, including piezometric control elevations for dewatering and depressurization
 - 8. Excavation drainage methods including typical drainage layers, sump pump application and other means
 - 9. Surface water control and drainage installations
 - 10. Proposed methods and locations for disposing of removed water
- C. Submit following records upon completion of initial installation:
 - 1. Installation and development reports for well points, eductors, and deep wells
 - 2. Installation reports and baseline readings for piezometers

and monitoring wells.

3. Baseline analytical test data of water from monitoring wells
 4. Initial flow rates
- D. Submit the following records weekly during control of ground and surface water operations:
1. Records of flow rates and piezometric elevations obtained during monitoring of dewatering and depressurization. Refer to Paragraph 3.02, Requirements for Eductor, Well Points, or Deep Wells.
 2. Maintenance records for ground water control installations, piezometers and monitoring wells

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Comply with requirements of agencies having jurisdiction.
- B. Comply with Texas Commission on Environmental Quality regulations and Texas Water Well Drillers Association for development, drilling, and abandonment of wells used in dewatering system.
- C. Obtain necessary permits from agencies with jurisdiction over use of groundwater and matters affecting well installation, water discharge, and use of existing storm drains and natural water sources. Since review and permitting process may be lengthy, take early action to obtain required approvals.
- D. Monitor ground water discharge for contamination while performing pumping in vicinity of potentially contaminated sites.

PART 2 PRODUCTS

2.01 EQUIPMENT AND MATERIALS

- A. Select equipment and materials necessary to achieve desired results for dewatering. Selected equipment and materials are subject to review by Public Works through submittals required in Paragraph 1.06, Submittals.
- B. Use experienced contractors, regularly engaged in ground water control system design, installation, and operation, to furnish and install and operate eductors, well points, or deep wells, when needed

- C. Maintain equipment in good repair and operating condition.
- D. Keep sufficient standby equipment and materials available to ensure continuous operation, where required.
- E. Portable Sediment Tank System: Standard 55-gallon steel or plastic drums, free of hazardous material contamination.
 - 1. Shop or field fabricate tanks in series with main inlet pipe, inter-tank pipes and discharge pipes, using quantities sufficient to collect sediments from discharge water.

PART 3 EXECUTION

3.01 GROUND WATER CONTROL

- A. Perform necessary subsurface investigation to identify water bearing layers, piezometric pressures and soil parameters for design and installation of ground water control systems. Perform pump tests, if necessary to determine draw down characteristics. Present results in the Ground Water and Surface Water Control Plan. submittal
- B. Provide labor, material, equipment, techniques and methods to lower, control and handle ground water in manner compatible with construction methods and site conditions. Monitor effectiveness of installed system and its effect on adjacent property.
- C. Install, operate, and maintain ground water control systems in accordance with the Ground Water and Surface Water Control Plan. Notify Public Works in writing of changes made to accommodate field conditions and changes to Work. Provide revised drawings and calculations with notification.
- D. Provide continuous system operation, including nights, weekends, and holidays. Arrange appropriate backup if electrical power is primary energy source for dewatering system.
- E. Monitor operations to verify systems lower ground water piezometric levels at rate required to maintain dry excavation resulting in stable subgrade for subsequent construction operations.
- F. Depressurize zones where hydrostatic pressures in confined water bearing layers exist below excavations to eliminate risk of uplift or other instability of excavation or installed works. Define allowable piezometric elevations in the Ground Water and Surface Water Control Plan.
- G. Removal of ground water control installations.

1. Remove pumping system components and piping when ground water control is no longer required.
 2. Remove piezometers, including piezometers installed during design phase investigations and left for Contractor's use, upon completion of testing, as required in accordance with Part 3 of applicable specification.
 3. Remove monitoring wells when directed by Public Works.
 4. Grout abandoned well and piezometer holes. Fill piping that is not removed with cement-bentonite grout or cement-sand grout.
- H. During backfilling, maintain water level a minimum of 5 feet below prevailing level of backfill. Do not allow the water level to cause uplift pressures in excess of 80 percent of downward pressure produced by weight of structure or backfill in place. Do not allow water levels to rise into cement-stabilized sand until at least 48 hour after placement.
- I. Provide uniform pipe diameter for each pipe drain run constructed for dewatering. Remove pipe drains when no longer required. If pipe removal is impractical, grout connections at 50-foot intervals and fill pipe with cement-bentonite grout or cement-sand grout after removal from service.
- J. The extent of ground water control for structures with permanent perforated underground drainage systems may be reduced, for units designed to withstand hydrostatic uplift pressure. Provide a means to drain affected portions of underground systems, including standby equipment. Maintain drainage systems during construction operations.
- K. Remove systems upon completion of construction or when dewatering and control of surface or ground water is no longer required.
- L. Compact backfill to not less than 95 percent of maximum dry density in accordance with ASTM D 698.
- M. Foundation Slab: Maintain saturation line at least 3 feet below lowest elevations where concrete is to be placed. Drain foundations in areas where concrete is to be placed before placing reinforcing steel. Keep free from water for 3 days after concrete is placed.

3.02 REQUIREMENTS FOR EDUCTOR, WELL POINTS, OR DEEP WELLS

- A. For aboveground piping in ground water control system, include a 12-inch minimum length of clear, transparent piping between each eductor well or well point and discharge header to allow visual monitoring of discharge from each installation.

- B. Install sufficient piezometers or monitoring wells to show that trench or shaft excavations in water bearing materials are pre-drained prior to excavation. Provide separate piezometers for monitoring of dewatering and for monitoring of depressurization. Install piezometers and monitoring wells for tunneling as appropriate for selected method of work.
- C. Install piezometers or monitoring wells at least one week in advance of the start of associated excavation.
- D. Dewatering may be omitted for portions of under drains or other excavations, where auger borings and piezometers or monitoring wells show that soil is pre-drained by existing systems and that ground water control plan criteria are satisfied.
- E. Replace installations that produce noticeable amounts of sediments after development.
- F. Provide additional ground water control installations, or change method of control if, ground water control plan does not provide satisfactory results based on performance criteria defined by plan and by specifications. Submit revised plan according to Paragraph 1.06B.

3.03 SEDIMENT TRAPS

- A. Install sediment tank as shown on approved plan.
- B. Inspect daily and clean out tank when one-third of sediment tank is filled with sediment.

3.04 SEDIMENT SUMP PIT

- A. Install sediment sump pits as shown on approved plan.
- B. Construct standpipe by perforating 12 inch to 24 inch diameter corrugated metal or PVC pipe.
- C. Extend standpipe 12 inches to 18 inches above lip of pit.
- D. Convey discharge of water pumped from standpipe to sediment trapping device.
- E. Fill sites of sump pits, compact to density of surrounding soil and stabilize surface when construction is complete.

3.05 EXCAVATION DRAINAGE

- A. Use excavation drainage methods if well-drained conditions can be achieved. Excavation drainage may consist of layers of crushed stone and filter fabric, and sump pumping, in combination with sufficient ground water control wells to maintain stable excavation and backfill conditions.

3.06 MAINTENANCE AND OBSERVATION

- A. Conduct daily maintenance and observation of piezometers or monitoring wells while ground water control installations or excavation drainage is operating at the site, or water is seeping into tunnels, and maintain systems in good operating condition.
- B. Replace damaged and destroyed piezometers or monitoring wells with new piezometers or wells as necessary to meet observation schedules.
- C. Cut off piezometers or monitoring wells in excavation areas where piping is exposed, only as necessary to perform observation as excavation proceeds. Continue to maintain and make specified observations
- D. Remove and grout piezometers inside or outside of excavation area when ground water control operations are complete. Remove and grout monitoring wells when directed by Public Works.

3.07 MONITORING AND RECORDING

- A. Monitor and record average flow rate of operation for each deep well, or for each wellpoint or educator header used in dewatering system. Also, monitor and record water level and ground water recovery. Record observations daily until steady conditions are achieved and twice weekly thereafter.
- B. Observe and record elevation of water level daily as long as ground water control system is in operation, and weekly thereafter until Work is completed or piezometers or wells are removed, except when Public Works determines more frequent monitoring and recording are required. Comply with Public Work's direction for increased monitoring and recording and take measures necessary to ensure effective dewatering for intended purpose.

3.08 SURFACE WATER CONTROL

- A. Intercept surface water and divert it away from excavations through use of dikes, ditches, curb walls, pipes, sumps or other approved means. Requirement includes temporary works required to protect adjoining properties from surface drainage caused by construction operations.

- B. Divert surface water and seepage water into sumps and pump it into drainage channels or storm drains, when approved by agencies having jurisdiction. Provide settling basins when required by agencies.

END OF SECTION

SECTION 01580

PROJECT IDENTIFICATION SIGNS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project identification sign description.
- B. Project sign installation.
- C. Maintenance and removal of Project sign.

1.02 SYSTEM DESCRIPTION

- A. Sign Construction: Construct signs of new materials in accordance with Standard Detail provided at the Pre-construction Conference.
- B. Appearance: Maintain signs to present a clean and neat look throughout Contract duration.
- C. Sign Manufacturer: Experienced professional sign company.
- D. Sign Placement: At locations shown in Drawings unless otherwise specified by Public Works at pre-construction meeting.
 - 1. Provide one sign at each end of a linear Project involving bridges, paving, overlay, sewer line, storm drainage, or water main construction located in rights-of-ways.
 - 2. Provide one sign for site or building construction Contracts.
 - 3. Provide one sign at each site for Contracts with multiple sites.
 - 4. Sign Relocation: As work progresses, relocate signs if directed by Public Works in writing. Include cost for one relocation of post-mounted signs in Contract Price. Subsequent relocations, if directed by Public Works in writing, will be subject to Change Order.
- E. Skid-mounted signs: Use for projects with noncontiguous locations where work progresses from one location to another. Design skid structure to withstand a 60 mile-per-hour wind load to the face or back of sign using stakes, straps, or ballast. Contractor shall be responsible for security of signs at each site.

1.03 SUBMITTALS

- A. Submit Shop Drawings under provisions of Section 01330-Submittal Procedures.
- B. Show content, layout, lettering style, lettering size, and colors. Make sign and lettering to scale, clearly indicating condensed lettering, if used.

PART 2 PRODUCTS

2.01 SIGN MATERIALS

- A. Structure and Framing: Use new sign materials.
 - 1. Sign Posts: 4 inch by 4 inch pressure treated wood posts, 9 feet long for skid mounting and 12 feet long minimum for in-ground mounting.
 - 2. Skid Bracing: 2 inch by 4 inch wood framing material.
 - 3. Skid Members: 2 inch by 6 inch wood framing material.
 - 4. Fasteners:
 - a. Galvanized steel
 - b. Attach sign to posts with ½ inch by 5 ½ inch button head carriage bolts and secure with nuts and flat head washers.
 - c. Cover button heads with white reflective film or paint to match sign background.
 - d. Use metal brackets and braces and ¾ inch wood screws to attach sign header.
- B. Sign and Sign Header: ¾ inch thick marine plywood. Use 4 foot by 8 foot sheet for the sign and a single piece for the header to minimize joints. Do not piece wood sheets to fabricate sign face.
- C. Paint and Primers: White industrial grade, fast-drying, oil-based paint with gloss finish for structural and framing members, sign, and sign header material surfaces. Paint all sign surfaces prior to adding adhesive applications.
- D. Colors:
 - 1. Sign Background: Reflective white 3M Scotchlite Engineer Grade, Pressure Sensitive Sheeting (White), or approved equal.

2. Sign Film: 3M Scotchcal Pressure Sensitive Films, or approved equal for legends, symbols, lettering and artwork. Match colors to 3M Scotchcal Pressure Sensitive Films. See Attachment 1.

2.02 SIGN LAYOUT

A. Lettering:

1. Style, Size and Spacing: Helvetica Regular Lettering.
2. Condensed Style: Text may be condensed if needed to maintain sign composition.

B. Composition:

1. See Attachment 1 for sign template.
2. Lines with Standard Text
Obtain necessary information from plans and Public Works.
 - a. List the Project Name, and Cost, and Funding
 - b. List the names of the OWNER's, Mayor, Manager, Council Members, ENGINEER and CONTRACTOR
3. Schertz LOGO
 - a. In colors as provided by Public Works

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install Project identification signs within seven days after Date of Commencement of the Work.
- B. Erect signs at locations shown in Drawings unless otherwise designated by Public Works at pre-construction meeting. Position sign so it is fully visible and readable to general public.
- C. Erect sign level and plumb.
- D. If mounted on posts, sink posts 3 to 4 feet below grade and stabilize posts to minimize lateral motion. Leave a minimum of 8 feet of post above existing grade for mounting of sign.

- E. Erect sign so that top edge of sign is at a nominal 8 feet above existing grade.

3.01 MAINTENANCE AND REMOVAL

- A. Keep signs and supports clean. Repair deterioration and damage.
- B. Remove signs, framing, supports, and foundations to a depth of at least 2 feet upon completion of Project. Restore area to a condition equal to or better than before construction.

END OF SECTION

APPENDIX A TO SECTION 01580



SECTION 01581

EXCAVATION IN PUBLIC WAY PERMIT SIGNS (When Required)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project sign installation.
- B. Maintenance and removal of Project sign.

1.02 SYSTEM DESCRIPTION

- A. Sign Construction: Construct signs of new materials.
- B. Appearance: Maintain signs to present a clean and neat look throughout the Contract duration.
- C. Sign Placement: Place signs at each street entrance to street cut excavation.

1.03 SUBMITTALS

- A. Submit Shop Drawings under provisions of Section 01330-Submittal Procedures.
- B. Show content, layout, lettering styles, lettering size and colors. Make sign and lettering to scale, clearly indicating condensed lettering, if used.

PART 2 PRODUCTS

2.01 SIGN LAYOUT

- A. Conform to Texas Manual on Uniform Traffic Control Devices. Minimum size: 36 inches by 36 inches.
- B. Lettering: Uppercase Helvetica Regular lettering.
- C. Composition: include a sign copy of street cut permit, title "City of Schertz", contracting department's name, address, and emergency telephone number and Contractor's name. Public Works will provide department name, address, and emergency telephone number for preparation of sign.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install Project signs before commencement of pavement excavation in Public Way.
- B. Position sign so it is fully visible and readable to general public.
- C. Erect sign level and plumb.
- D. Erect sign so that top edge of sign is at a nominal 8 feet above existing grade.

3.02 MAINTENANCE AND REMOVAL

- A. Keep signs and supports clean. Repair deterioration and damage.
- B. Remove signs, framing, supports and foundations to depth of at least 2 feet upon completion of the Work. Restore area to condition equal to or better than before construction.

END OF SECTION

SECTION 01610

BASIC PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for transportation, delivery, handling, and storage of Products.

1.02 PRODUCTS

- A. Products: Defined in General Conditions. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components designated for reuse.
- B. Do not reuse materials and equipment, designated for removal, except as specified by the Contract.
- C. Provide Products from the fewest number of manufacturers as practical, in order to simplify spare parts inventory and to allow for maximum interchangeability of components. For multiple components of the same size, type or application, use the same make and model of component throughout the Work.

1.03 TRANSPORTATION

- A. Make arrangements for transportation, delivery, and handling of Products required for timely completion of the Work.
- B. Transport and handle Products in accordance with manufacturer's instructions.
- C. Consign and address shipping documents to proper party giving name of the Project and its complete street address. Shipments shall be delivered to Contractor.

1.04 DELIVERY

- A. Arrange deliveries of Products to accommodate short-term site completion schedules and in ample time to facilitate inspection prior to Installation. Avoid deliveries that cause lengthy storage or overburden of limited storage space.

- B. Coordinate deliveries to avoid conflict with the Work and conditions at the site and to accommodate the following:
 - 1. Work of other contractors or the City.
 - 2. Limitations of storage space.
 - 3. Availability of equipment and personnel for handling Products.
 - 4. The City's use of premises.
- C. Have Products delivered to the site in manufacturer's original, unopened, labeled containers.
- D. Immediately upon delivery, inspect shipment to assure:
 - 1. Product complies with requirements of the Contract.
 - 2. Quantities are correct.
 - 3. Containers and packages are intact; labels are legible.
 - 4. Products are properly protected and undamaged.

1.05 PRODUCT HANDLING

- A. Coordinate off-loading of Products delivered to the site. If necessary during construction, move and relocate stored Products at no additional cost to the City.
- B. Provide equipment and personnel necessary to handle Products, including those provided by the City, by methods to prevent damage to Products or packaging.
- C. Provide additional protection during handling as necessary to prevent breaking, scraping, marring, or otherwise damaging Products or surrounding areas.
- D. Handle Products by methods to prevent over-bending or overstressing.
- E. Lift heavy components only at designated lifting points.
- F. Handle Products in accordance with manufacturer's recommendations.
- G. Do not drop, roll or skid Products off delivery vehicles. Hand-carry or use suitable materials handling equipment.

1.06 STORAGE OF PRODUCTS

- A. Store and protect Products in accordance with manufacturer's recommendations and requirements of these Specifications.
- B. Make necessary provisions for safe storage of Products. Place Products so as to prevent damage to any part of the Work or existing facilities and to maintain free access at all times to all parts of the Work and to utility service company installations in the vicinity of the Work. Keep Products neatly and compactly stored in locations that will cause minimum inconvenience to other contractors, public travel, adjoining owners, tenants, and occupants. Arrange storage in a manner so as to provide easy access for inspection.
- C. Restrict storage to areas available on the site for storage of Products as shown on Drawings or approved by Public Works.
- D. Provide off-site storage and protection when on-site storage is not adequate. Provide addresses of, and access to, off-site storage locations for inspection by Public Works.
- E. 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.
- F. Protect stored Products against loss or damage.
- G. Store in manufacturers' unopened containers.
- H. Neatly, safely, and compactly stack Products delivered and stored along the line of the Work to avoid inconvenience and damage to property owners and general public, and maintain at least 3 feet clearance around fire hydrants. Keep public, private driveways and street crossing open.
- I. Repair or replace damaged lawns, sidewalks, streets, or other improvements at satisfaction of Public Works. Total length the Products may be distributed along route of construction at one time is 1000 linear feet, unless otherwise approved in writing by Public Works.

PART 2 PRODUCTS

PART 3 EXECUTION

END OF SECTION

SECTION 01630

PRODUCT SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Options for making Product or process selections.
- B. Procedures for proposed equivalent Products or processes, including pre-approved, pre-qualified, and approved Products or processes.

1.02 DEFINITIONS

- A. Product: As defined in General Conditions. Product does not include machinery and equipment used for production, fabrication, conveying, and erection of the Work. Products may also include existing materials or components designated for reuse.
- B. Process: Any proprietary system or method for installing system components resulting in an integral, functioning part of the Work. For this Section, the word Products includes Processes.

1.03 SELECTION OPTIONS

- A. Pre-approved Products: Construction products of certain manufacturers or Suppliers designated in Specification as “pre-approved.” The City maintains a list of pre-approved products. Pre-approved Products for this Project are designated as pre-approved in Specifications. Products of other manufacturers or suppliers are not acceptable for this Project and will not be considered under the submittal process for approving alternate products.
- B. Pre-qualified Products: Construction products of certain manufacturers or Suppliers designated in Specifications as “pre-qualified.” Pre-qualified Products for this Project are designated as pre-qualified in Specifications. Products of other manufacturers or suppliers are not acceptable for this Project and will not be considered under the submittal process for approving alternate products.
- C. Approved Products: Construction products of certain manufacturers or Suppliers designated in Specifications followed by words “or approved equal.” Approval of alternate products not listed in Specifications may be obtained through provisions for product options and substitutions in General Conditions, and by following submittal procedures specified in Section

01330-Submittal Procedures. The procedures for approval of alternate products are not applicable to pre-approved or pre-qualified products.

- D. Product Compatibility: To the maximum extent possible, provide Products that are of the same type or function from a single manufacturer, make, or source. Where more than one choice is available, select Product that is compatible with other Products already selected, specified, or in use by the City.

1.04 CONTRACTOR'S RESPONSIBILITY

- A. Responsibility related to Product options and substitutions is defined in General Conditions.
- B. Furnish information Public Works deems necessary to judge equivalency of alternate Product.
- C. Pay for laboratory testing, as well as any other review or examination cost, needed to establish equivalency between products in order to obtain information upon which Public Works can base a decision.
- D. If Public Works determines alternate product is not equal to that named in Specifications, furnish one of the specified Products.

1.05 CITY REVIEW

- A. Use alternate Products only when approved in writing by Public Works. Public Works determination regarding acceptance of proposed alternate Product is final.
- B. Alternate Products shall be accepted if Products are judged by Public Works to be equivalent to specified Product or to offer substantial benefit to the City.
- C. The City retains the right to accept any Product deemed advantageous to the City, and similarly, to reject any product deemed not beneficial to the City.

1.06 SUBSTITUTION PROCEDURE

- A. Collect and assemble technical information applicable to the proposed Product to aid in determining equivalency as related to the approved Product specified.
- B. Submit a written request for a construction Product to be considered as an alternate Product.

- C. Submit Product information after the effective date of the Contract and within the time period allowed for substitution submittals given in General Conditions. After the submittal period has expired, requests for alternate Products shall be considered only when specified Product becomes unavailable because of conditions beyond Contractor's control.

- D. Submit (5) five copies of each request for alternate Product approval. Include the following information:
 - 1. Complete data substantiating compliance of proposed substitution with the Contract.

 - 2. For Products:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature with Product description, performance and test data, and reference standards.
 - c. Samples, as applicable
 - d. Name and address of similar projects on which Product was used and date of installation. Include names of Owner, design consultant, and installing contractor.

 - 3. For construction methods:
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.

 - 4. Itemized comparison of proposed substitution with Product or method specified.

 - 5. Data relating to changes in Construction Schedule.

 - 6. Relation to separate contracts, if any.

 - 7. Accurate cost data on proposed substitution in comparison with Product or method specified.

 - 8. Other information requested by Public Works.

- E. Approved alternate Products will be subject to the same review process as the specified Product would have been for Shop Drawings, Product Data, and Samples.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01725
FIELD SURVEYING

PART 1 GENERAL

1.01 QUALITY CONTROL

- A. Conform to State of Texas laws for surveys requiring licensed surveyors. Employ a surveyor acceptable to Public Works if required by the Contract.

1.02 SUBMITTALS

- A. Conform to requirements of Section 01330-Submittal Procedures.
- B. Submit name, address, and telephone numbers of Surveyor to Public Works before starting survey work.
- C. Submit documentation verifying accuracy of survey work on request.
- D. Submit certificate signed by Surveyor, that elevations and locations of the Work are in conformance with the Contract.

1.03 PROJECT RECORD DOCUMENTS.

- A. Maintain a complete and accurate log of control and survey work as it progresses.
- B. Prepare a certified survey setting forth dimensions, locations, angles, and elevations of construction and site work upon completion of foundation walls and major site improvements.
- C. Submit record documents under provisions of Section 01785-Project Record Documents.

1.04 EXAMINATION

- A. Verify locations of survey control points prior to starting the Work.
- B. Notify Public Works immediately if any discrepancies are discovered.

1.05 SURVEY REFERENCE POINTS

- A. The City will establish survey control datum as provided in General Conditions and as indicated on Drawings. Inform Public Works in advance of time horizontal and vertical control points will be established so

verification deemed necessary by Public Works may be done with minimum inconvenience to the City or Contractor.

- B. Locate and protect survey control points prior to starting site work; preserve permanent reference points during construction.
- C. Notify Public Works a minimum of 48 hours before relocation of reference points is needed due to changes in grades or other reasons.
- D. Promptly report loss or destruction of reference points to Public Works.
- E. Reimburse the City of cost of reestablishment of permanent reference points disturbed by construction operations.

1.06 SURVEY REQUIREMENTS

- A. Utilize recognized engineering survey practices.
- B. Establish a minimum of two permanent benchmarks on site, referenced to established control points. Record horizontal and vertical location data on Project record documents.
- C. Establish elevations, lines and levels to provide quantities required for measurement and payment and for appropriate controls for the Work. Locate and lay out the following with appropriate instruments:
 - 1. Site improvements including grading, fill and topsoil placement, utilities, and footings and slabs.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, and ground floor elevations.
- D. Periodically verify layouts.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

SECTION 01731
CUTTING AND PATCHING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cutting, patching and fitting of the Work or work under construction. Coordinating Installation or connection of the Work to existing facilities, or uncovering work for access, inspection or testing and related submittals.

1.02 CUTTING AND PATCHING

- A. Perform activities to avoid interference with facility operations and work of others in accordance with General Conditions of Contract.
- B. Execute cutting and patching, including excavation, backfill and fitting to:
 - 1. Remove and replace defective work or work not conforming to Drawings and Specifications;
 - 2. Take samples of installed work as required for testing;
 - 3. Remove construction required to provide for specified alterations or additions to existing work.
 - 4. Uncover work to allow inspection or re-inspection by Public Works or regulatory agencies having jurisdiction.
 - 5. Connect uninstalled work to completed work in proper sequence;
 - 6. Remove or relocate existing utilities and pipes that obstruct work;
 - 7. Make connections or alterations to existing or new facilities;
 - 8. Provide openings, channels, chases and flues and cut, patch, and finish, if required; or
 - 9. Provide protection for other portions of the Work.
- C. Restore existing work to a condition equal to or better than that which existed prior to cutting and patching, and to standards required by Specifications.

- D. Support, anchor, attach, match, trim and seal materials to work of others. Unless otherwise specified. Furnish and Install sleeves, inserts, and hangers required for excavation of the Work.
- E. Provide shoring, bracing and support necessary to maintain structural integrity and to protect adjacent work from damage during cutting and patching. Request written approval from Public Works, before cutting structural members such as beams, anchors, lintels, or other supports. Follow approved submittals, as applicable.
- F. Match new materials to existing materials by bonding, lapping, mechanically tying, anchoring or other effective means in order to prevent cracks and to minimize evidence of patching. Conceal effects of demolition and patching by blending new construction to existing surfaces. Avoid obvious breaks, joints, or changes of surface appearance unless shown on Drawings or authorized by Public Works.

1.03 SUBMITTALS

- A. Conform to requirements of Section 01330-Submittal Procedures.
- B. Submit a written request to Public Works for consent to proceed, before conducting cutting operations that might affect structural integrity, design function, City operations, or work of another contractor.
- C. Include the following in submittal:
 - 1. Identification of Project
 - 2. Description of affected work
 - 3. Necessity for cutting
 - 4. Effect on other work and on structural integrity
 - 5. Describe the proposed work including:
 - a. Scope of cutting and patching
 - b. Contractor, Subcontractor or Supplier who will execute the work
 - c. Proposed Products
 - d. Extent of refinishing
 - e. Schedule of operations
 - 6. Alternatives to cutting and patching

- D. When work conditions or schedule dictate the need for change of materials or methods, submit a written recommendation to Public Works that includes:
 - 1. Conditions necessitating the change;
 - 2. Recommendations for alternative materials or methods; and
 - 3. Submittals required for proposed substitutions.
- E. Notify Public Works in writing when work will be uncovered for observation. Do not begin cutting or patching operations until authorized by Public Works.

1.04 CONNECTIONS TO EXISTING FACILITIES

- A. Perform construction operations necessary to complete connections and tie-ins to existing facilities. Keep existing facilities in continuous operation unless otherwise permitted in the Specifications or approved in writing by Public Works.
- B. Coordinate interruption of service requiring connection to existing facilities with Public Works. Do not bypass wastewater or sludge to waterways. Provide temporary pumping facilities to handle wastewater if necessary. Use temporary bulkheads to minimize disruption. Provide temporary power and piping to facilitate construction where necessary.
- C. Submit a detailed schedule of proposed connections, including shut-downs and tie-ins. Include proposed time and date as well as anticipated duration of work. Coordinate the connection schedule with the construction schedule.
 - 1. Submit specific times and dates to Public Works at least 48 hours in advance of proposed work.
- D. Procedures and Operations:
 - 1. Operate existing pumps, valves, and gates in required sequence under supervision of Public Works. Do not operate valves, gates or other items of equipment without Public Works knowledge.
 - 2. If possible, test equipment under operating conditions before making final tie-ins to connect equipment to existing facilities.
 - 3. Coordinate work and schedules. Notify Public Works at least 48 hours before shutdowns or bypasses are required.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

SECTION 01732

PROCEDURE FOR WATER VALVE ASSISTANCE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Operation of valves. City employees will operate existing valves. Contractor's employees may operate new valves included in the Project prior to acceptance by the City.

1.02 PROCEDURE

- A. Perform activities listed in Exhibit A attached to this Section.

1.03 SUBMITTALS

- A. Submit request for work order planning meetings in accordance with Exhibit A. Include information listed in Step 1 of Exhibit A, attached to this Section.

1.04 CANCELLATION

1. Contractor, Public Works, or Public Utilities Division may cancel a scheduled valve assistance appointment at no extra cost or payment to Contractor. Contractor shall notify City's appointed Project Inspector ("Inspector") 24 hours in advance of cancellation. Inspector shall notify Public Works immediately upon receipt of cancellation notice. Cancellation may be caused by bad weather, preparation of work taking longer than anticipated, or unforeseen delays in one or more of the three parties.

PART 2 PRODUCTS

PART 3 EXECUTION

END OF SECTION

EXHIBIT A

PROCEDURE FOR VALVE ASSISTANCE

The following procedure will be used by Public Works personnel when completing a service request from individual Contractors, through Inspector, for operation of existing water valves.

ROUTINE VALVE ASSISTANCE REQUEST (NON-EMERGENCY JOBS):

Step 1. a. When notified by Contractor, Inspector will schedule a work order planning meeting by calling Public Works (PW) and providing information shown below. The work order planning meeting shall be conducted a minimum of three days after the request; excluding weekends, holidays, inclement weather days, and the day of the call.

| | |
|--|--|
| Location of Work (Street Intersection) | Project # |
| Project Description | Contractor (Company Name) |
| Job Superintendent's Name | Superintendent's Office #/Mobile #/Pager # |
| Contractor's Emergency Information | Name and Phone #/Mobile #/Pager # |
| Inspector/Senior Inspector | Name, Phone #/Mobile #/Pager # |
| Date & Time assistance is requested | |

- b. PW will create a work order for each wet connection, cut and plug, etc. that will be designated as a "Code 40" (Private Contractor).
- c. PW will give Inspector the work order number. This work order number must be used as a reference in all communications regarding this request for Valve Assistance.
- d. Valve personnel must have the work order number on their route sheet. When valve personnel arrive at the job site for the Work Order Planning Meeting between Inspector, Contractor, and PW valve personnel, they will verify the street intersection and work order number with the Inspector before beginning Work Order Planning Meeting.
- e. During Work Order Planning Meeting, the work to be performed will be outlined and the actual date work will be performed will be mutually determined by Inspector, Contractor and PW valve personnel, based upon relevant factors such as preparatory work needed, customer requirements, etc.
- f. Valve personnel will perform work specifically outlined in the work order requested. Also, PW valve personnel will only operate existing water valves. Inspector must contact PW and request a new work order for additional work.
- g. Valve personnel will contact the dispatcher and advise when the job is complete. Valve personnel will list all appropriate information on the Crew Activity Report.

Step 2. Should valve personnel not be able to keep an appointment to provide valve assistance, PW will provide notification to appropriate Inspector by phone at least 24 hours prior, with that fact and rescheduling information, if available.

- Step 3.** Inspector will notify PW if valve personnel have not arrived at the site within 30 minutes of scheduled appointment. If Contractor is not ready when valve operator arrives to provide valve assistance, the City shall charge Contractor \$50.00 per hour, starting 15 minutes after the scheduled appointment time, minimum one hour charge.
- Step 4.** Contractor will not be due delay claims or downtime if Utility Maintenance Branch has notified Inspector that they will not be able to provide valve assistance as scheduled.
- Step 5.** Test installed new valves in the presence of Inspector before substantial completion inspection is scheduled. Place new valves in open position on or before the Date of Substantial Completion.
- Step 6.** Public Works will notify, in writing, Utility Maintenance Branch two months before the warranty expires to report any problems they have with new water lines. Public Works will notify Contractor about these problems.

EMERGENCY REQUEST FOR VALVE ASSISTANCE PROCEDURE:

- Step 1.** When notified by Contractor, Inspector will request emergency Valve Assistance due to a broken line/service, etc. by calling PW and providing the following information:
- | | |
|--|--|
| Location of Work (Street Intersection) | Project # |
| Project Description | Superintendent's Office #/Mobile #/Pager # |
| Contractor (Company Name) | Name and Phone #/Mobile #/Pager # |
| Job Superintendent's Name | Name, Phone #/Mobile #/Pager # |
| Contractor's Emergency Information | |
| Inspector/Senior Inspector | |
| Date & Time assistance is requested | |
- Step 2.** PW will create an emergency work order number and describe the work to be performed.
- Step 3.** PW will give Inspector the emergency work order number. Reference work order number in all communications regarding request for Valve Assistance.
- Step 4.** PW will contact designated valve personnel and assign emergency work order. Dispatcher will follow standard PW procedures if this situation occurs after normal working hours.
- Step 5.** Valve personnel must have the emergency work order number on the route sheet. When valve personnel arrive at the job site for emergency work, they will verify the street intersection and emergency work order number with Inspector prior to beginning work requested for operating existing water valves. Valve personnel will coordinate verification of street intersection and work order number with Inspector prior to performing work.

SECTION 01740
SITE RESTORATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Restoration of site affected by the Work in public or private property, including pavement, esplanades, sidewalks, driveways, fences, lawns and landscaping.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for restoration of Project site disturbed by utility construction operations is on a linear foot basis. Measurement will be as provided for corresponding utility in each Specification section. No separate payment made for branch pipe, valves and, other associated work for utilities. Measurement for restoration with multiple utilities within the same right-of-way will be on a linear foot basis for only one utility.
2. No separate payment made for facility or roadway projects. Include cost in the surface improvements associated with the facility or roadway construction.
3. Payment includes required site restoration within the right-of-way or easement regardless of size or type of pipe, method of construction, paved or unpaved areas or thickness and width of pavement.
4. No separate payment made for site restoration for service connections under this Section. Include cost in appropriate utility section.
5. Refer to Section 01270 - Measurement and Payment for Unit Price procedures.

- B. Stipulated Price (Lump Sum) Contracts. If Contract is Stipulated Price Contract, include payment for work under this section in total Stipulated Price.

1.03 DEFINITIONS

- A. Phase: Locations identified on the plans and listed in Section 1110 - Summary of Work under Work Sequence.
- B. Site Restoration: Replacement or reconstruction of Site Improvements located in rights-of-way, easements, public property, and private property affected or altered by the Work.
- C. Site Improvement: Includes pavement, curbs and gutters, esplanades, sidewalks, driveways, fences, lawns, irrigation systems, landscaping, and other improvements in existence at the Project site before commencement of construction operations.

1.04 SUBMITTALS

- A. Conform to requirements of Section 01330 - Submittal Procedures.
- B. Schedule of testing, service connections, abandonment, backfill, and site restoration.
- C. Sample of notices to residents outlining their responsibility for maintenance of site improvements adjacent to the Project that are not disturbed by construction operations

1.05 SCHEDULING

- A. Schedule testing, service connections, abandonment, backfill and site restoration immediately following completion of pipe laying work or paving within each block or line segment.
- B. Phased Construction:
 - 1. Commencement of subsequent Phase will follow scheduling of site restoration of prior Phase. Limit work to a maximum of two Phases of the project.
- C. Construction of Projects with no Phases listed in Section 01110- Summary of Work:
 - 1. Complete site restoration prior to disturbing over 50% of total project linear feet or 2,000 linear feet, whichever is greater, of right-of-way or easement.
 - 2. Limit work to a maximum of 50% of total project linear feet or 2,000 linear feet, whichever is greater, of right-of-way and easement. Commence work in additional right-of-way or easement after completion of site restoration.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Pavement, Sidewalks and Driveways: Materials specified in Section 02951-Pavement Repair and Resurfacing.
- B. Seeding and Sodding: Sod specified in Section 02922-Sodding and Seed specified in Section 02921-Hydromulch Seeding.
- C. Trees, Shrubs and Plantings: Conform to requirements of Section 01562-Tree and Plant Protection.

PART 3 EXECUTION

3.01 PREPARATORY WORK

- A. Provide cleanup and restoration crews to work closely behind pipe laying and roadway construction crews, and where necessary, during testing, service restoration, abandonment, backfill and surface restoration.
- B. Water Lines: Unless otherwise approved by Public Works, comply with the following:
 - 1. Once Public Works approves work within a Phase, immediately begin preparatory work for disinfection effort.
 - 2. No later than three days after completing disinfection preparatory work, submit to City appropriate request for disinfection.
 - 3. If City fails to perform initial disinfection of lines in accordance with Section 2514 – Disinfection of Water Lines, within seven days from submission of appropriate request, and if approved by Public Works, pipe laying operations may continue beyond approved limits until the City responds.
 - 4. Immediately after transfer of services, begin abandonment of old water lines and site restoration.
- C. Wastewater Lines:
 - 1. Once Public Works approves work within a Line Segment, immediately begin preparatory work for testing effort.
 - 2. No later than three days after completing preparatory work for testing, initiate testing work.

3. Immediately after transfer of service connections, begin abandonment of old wastewater lines, and site restoration.

D. Street Construction and Paving Projects

1. Once Public Works approves work within a Line Segment or block, immediately begin preparatory work for testing effort.
2. No later than three days after completing preparatory work for testing, initiate testing work.
3. Immediately after testing begin site restoration.

E. Street Construction and Paving Projects

1. Once Public Works approves work within a block, immediately begin preparatory work for sidewalk construction, sodding and hydromulching and tree planting.
2. No later than seven days after completing preparatory work, initiate construction.

3.02 CLEANING

- A. Remove debris and trash to maintain a clean and orderly site in accordance with requirements of General Conditions and Section 01576 - Waste Material Disposal.

3.03 LANDSCAPING AND FENCES

A. Seeding and Sodding.

1. Remove construction debris and level area with bank sand so that new grass surface matches level of existing grass and maintains pre-construction drainage patterns. Level and fill minor ruts or depressions caused by construction operations with bank sand, where grass is still viable.
2. Restore previously existing turfed areas with sod and fertilize in accordance with Section 02922 - Sodding. Sod to match existing turf.
3. Restore unpaved areas not requiring sodding with hydromulch seeding conforming to Section 02921 - Hydromulch Seeding.

B. Trees, Shrubbery and Plants.

1. Remove and replant trees, shrubs, and plants in accordance with requirements of Section 01562-Tree and Plant Protection.
- C. Fence Replacement.
1. Replace removed or damaged fencing to equal or better condition than existed prior to construction, including concrete footings and mow strips. Provide new wood posts, top and bottom railing and panels. Metal fencing material, not damaged by the Work, may be reused.
 2. Remove and dispose of damaged or substandard material.

3.04 MAINTENANCE

- A. Maintain shrubs, plantings, sodded areas and seeded areas.
- B. Replace shrubs, plantings and seeded or sodded areas that fail to become established.
- C. Refer to Section 01562-Tree and Plant Protection, Section 02921-Hydromulch Seeding and Section 02922-Sodding for Maintenance Requirements.

END OF SECTION

SECTION 01755
STARTING SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Starting systems
- B. Demonstration and instructions
- C. Testing, adjusting and balancing.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION

3.01 PREPARATION

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Public Works seven days prior to startup of each item.
- C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other damage-causing conditions.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision in accordance with manufacturer's instructions.
- G. When specified in individual Specification sections, required manufacturer to provide an authorized representative to be present at the site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. Submit written report indicating that equipment or system has been properly installed and is functioning correctly.

3.02 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Public Works two weeks prior to Date of Substantial Completion.
- B. Utilize O&M Manuals as the basis for instruction. Review contents of manual with Public Works in detail to explain aspects of operation and maintenance.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shootings, servicing, maintenance, and shutdown of each item of equipment at agreed upon times, at the equipment location.
- D. Prepare and insert additional data in O&M Manuals when the need for additional data becomes apparent during instruction.
- E. At a minimum, Contractor will demonstrate the following:
 - 1. Products and procedures to be used in maintaining various surfaces, e.g., counter tops, toilet partitions, tile floors, and carpeting;
 - 2. Procedures to set and maintain landscape irrigation system;
 - 3. Procedures to set and maintain security and fire alarm systems; and
 - 4. Procedures to set and maintain HVAC systems.

3.03 TESTING, ADJUSTING AND BALANCING

- A. Contractor shall appoint, employ and pay for the service of an independent firm to perform testing, adjusting and balancing.
- B. Submit reports by the independent firm to Public Works describing observations and results of tests and signifying compliance or non-compliance with specified requirements and requirements of the Contract.

END OF SECTION

SECTION 01770
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures to establish Date of Substantial Completion.
- B. Closeout procedures for final submittals, O&M data, warranties, spare parts and maintenance materials.
- C. Texas Department of Licensing and Regulation (TDLR) inspection for Texas Accessibility Standards (TAS) compliance.

1.02 SUBSTANTIAL COMPLETION

- A. Comply with General Conditions regarding Date of Substantial Completion when Contractor considers the Work, or portion thereof designated by Public Works, to be substantially complete.
- B. Insure the following items have been completed when included in the Work, prior to presenting a list of items to be inspected by Public Works for issuance of a Certificate of Substantial Completion:
 - 1. Cutting, plugging, and abandoning of water, wastewater, and storm sewer lines, as required by Contract documents for each item;
 - 2. Construction of, and repairs to, pavement, driveways, sidewalks, and curbs and gutters;
 - 3. Sodding and hydromulch seeding, unless waived by Public Works in writing;
 - 4. General clean up including pavement markings, transfer of services, successful testing and landscape;
 - 5. Additional requirements contained in Section 01110-Summary of Work.
- C. Assist Public Works with inspection of Contractor's list of items and complete or correct the items, including items added by Public Works, within specified time period.

- D. Should Public Works inspection show failure of Contractor to comply with requirements to obtain Date of Substantial Completion, including those items in Paragraph 1.02 B. of this section, Contractor shall complete or correct the items, before requesting another inspection by Public Works.

1.03 CLOSEOUT PROCEDURES

- A. Comply with General Conditions regarding final completion and final payment when the Work is complete and ready for Public Works final inspection.
- B. Provide Project Record Documents in accordance with Section 01785-Project Record Documents.
- C. Complete or correct items on punch list, with no new items added. Address new items during warranty period.
- D. The City will occupy portions of the Work as specified in other sections.

1.04 FINAL CLEANING

- A. Execute final cleaning prior to final inspection
- B. For facilities, clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean equipment and fixtures to sanitary condition.
- D. Clean or replace filters of operating equipment.
- E. Clean debris from roofs, gutters, down spouts, and drainage systems.
- F. Clean site, sweep paved areas, and rake clean landscaped surfaces.
- G. Remove waste and surplus materials, rubbish, and temporary construction facilities from site following final test of utilities and completion of the Work.

1.05 ADJUSTING

- A. Adjust operating equipment to ensure smooth and unhindered operation. Value of this testing and adjusting is five percent of Lump Sum Price in the Schedule of Values for items being tested.

1.06 OPERATION AND MAINTENANCE DATA

- A. Submit O&M data as noted in Section 01330-Submittal Procedures.
- B. Five percent of lump sum amount of each piece of equipment as indicated in Schedule of Unit Price Work or Schedule of Values will be paid after the required O&M data submittals are received and approved by Public Works.

1.07 WARRANTIES

- A. Provide one original of each warranty from Subcontractors, Suppliers, and manufacturers.
- B. Provide Table of Contents and assemble warranties in a 3-ring/D binder with durable plastic cover.
- C. Submit warranties prior to final progress payment.
- D. Warranties shall commence in accordance with the requirements in Document 00700-General Conditions.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual Specification sections.
- B. Deliver to a location within the City limits as directed by Public Works. Applicable items must be delivered prior to issuance of a final Certificate for Payment.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

SECTION 01782

OPERATIONS AND MAINTENANCE DATA

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittal requirements for equipment and facility Operations and Maintenance (O&M) Manuals.

1.02 MEASUREMENT AND PAYMENT

- A. Measurement for equipment O&M Manuals is on a lump sum basis equal to five percent of the individual equipment value contained in Schedule of Unit Prices or Schedule of Values. The lump sum amount may be included in the first Progress Payment following approval of the O&M Manuals by Public Works.

1.03 SUBMITTALS

- A. Conform to requirements of Section 01330-Submittals Procedures. Submit a list of O&M Manuals and parts manuals for equipment to be incorporated into the Work.
- B. Submit documents with 8 ½ x 11 inch text pages, bound in 3 ring/ D binders with durable plastic covers.
- C. Print "OPERATION AND MAINTENANCE INSTRUCTIONS", Project, name, and subject matter of binder on covers when multiple binders are required.
- D. Subdivide contents with permanent page dividers, logically organized according to the Table of Contents, with tab titling clearly printed under reinforced laminated plastic tabs.
- E. O&M Manual contents: Prepare a Table of Contents for each volume, with each Product or system description identified.
 - 1. Part 1 – Directory: Listing of names, addresses, and telephone numbers of Design Consultant, Contractor, Subcontractor, and major equipment suppliers.
 - 2. Part 2 – O&M instructions arranged by system. For each category, identify names, addresses, and telephone numbers of Subcontractors and Suppliers and include the following:

- a. Significant design criteria.
 - b. List of equipment
 - c. Parts list for each component
 - d. Operating instructions
 - e. Maintenance instructions for equipment and systems
 - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
3. Part 3 – Project documents and certificates including:
- a. Shop Drawings and relevant data.
 - b. Air and water balance reports
 - c. Certificates
 - d. Photocopies of warranties
- F. Submit two copies of O&M Manuals and parts manuals, for review, within one month prior to placing the equipment or facility in service.
- G. Submit one copy of complete volumes in final form 10 days prior to final inspection. One copy with Public Works comments will be returned after final inspection. Revise content of documents based on Public Works comments prior to final submittal.
- H. Revise and resubmit three final volumes within 10 days after final inspection.

1.04 EQUIPMENT O&M DATA

- A. Furnish O&M Manuals, prepared by manufacturers for all equipment. Manuals must contain, as a minimum, the following:
1. Equipment functions, normal operating characteristics, and limiting conditions.
 2. Assembly, Installation, alignment, adjustment, and checking instructions.
 3. Operating instructions for start up, normal operation, regulation and control, normal shutdown, and emergency shutdown.
 4. Detailed drawings showing the location of each maintainable part and lubrication point with detailed instructions on disassembly and reassembly of the equipment.

5. Troubleshooting guide.
 6. Spare parts list, predicted life of parts subject to wear, lists of spare parts recommended to be on hand for both initial start-up and for normal operating inventory, and local or nearest source of spare parts availability.
 7. Outline, cross-section, and assembly drawings with engineering data and wiring diagrams.
 8. Test data and performance curves.
- B. Furnish parts manuals for all equipment, prepared by the equipment manufacturer, which contain, as a minimum, the following:
1. Detailed drawings giving the location of each maintainable part.
 2. Spare parts list, predicted life of parts subject to wear, lists of spare parts recommended to be on hand for both initial start-up and for normal operating inventory, and local or nearest source of spare parts availability.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

SECTION 01785

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Maintenance and submittal of record documents and Samples.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Maintain one record copy of documents at the site in accordance with a Article 3.4 of General Conditions.
- B. Store record documents and Samples in field office, if a field office is required by the Contract, or in a secure location. Provide files, racks, and secure storage for record documents and Samples.
- C. Label each document "PROJECT RECORD" in neat, large, printed letters.
- D. Maintain record documents in a clean, dry, and legible condition. Do not use record documents for construction purposes. Do not use permit drawings to record Modifications to the Work.
- E. Keep record documents and Samples available for inspection by Public Works.
- F. Bring record documents to progress review meetings for viewing by Public Works and, if applicable, Design Consultant.

1.03 RECORDING

- A. Record information legibly with red ink pen on a set of drawings stamped "Approved For Construction", concurrently with construction progress. Maintain an instrument on site at all times for measuring elevations accurately. Do not conceal work until required information is recorded.
- B. Contract Drawings and Shop Drawings: Mark each item to record completed Modifications, or when minor deviations exist, the actual construction including:
 - 1. Measured depths of elements of foundation in relation to finish first floor datum.

2. Measured horizontal locations and elevations of Underground Facilities and appurtenances, referenced to permanent surface improvements.
 3. Elevations of Underground Facilities referenced to City benchmark utilized for the Work.
 4. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 5. Dimensions and details of field changes.
 6. Changes made by Modifications.
 7. Details not on original Drawings.
 8. References to related Shop Drawings and Modifications.
- C. Measure fitting to fitting of water mains at the time of construction. Record lengths, top of pipe elevations, and centerline horizontal location relative to baseline and or fixed features such as curb, manhole, etc. on Drawings
- D. For larger diameter water mains, mark specifications and addenda to record:
1. Manufacturer, trade name, catalog number and Supplier of each Product actually installed.
 2. Changes made by Modification or field order.
 3. Other matters not originally specified.
- E. Annotate Shop Drawings to record changes made after review.

1.04 SUBMITTALS

- A. At closeout of the Contract, deliver Project record documents to Public Works.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION