

**CONTRACT DOCUMENTS  
AND  
TECHNICAL SPECIFICATIONS  
FOR:**

**WEST LOOP 281  
(US 80 TO SHOFNER)  
UTILITY RELOCATION**



**CITY OF LONGVIEW**

**Prepared by:**

Wood Engineering Company  
Firm Reg. No. F-8594  
1616 Judson Road Suite 6L  
Longview, Texas, 75601  
(WEC Job no. 16-08016)

# TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>PAGE OR FORM NO</u>
TITLE SHEET	
TABLE OF CONTENTS .....	TC-1
ADVERTISEMENT FOR BIDS .....	ADV-1
NOTICE TO BIDDERS .....	B-1
INFORMATION FOR BIDDERS .....	B-2 to B-3
FORM 1295 .....	IP-1 to IP-3
LIQUIDATED DAMAGES .....	LD-1
CERTIFICATE OF FINAL COMPLETION .....	FC-1
WAGE RATES .....	TX-1 to TX-3
PROPOSAL .....	P-1 to P-8
VENDOR COMPLIANCE TO STATE LAW .....	VC-1
STANDARD FORM OF AGREEMENT .....	SF-1 to SF-2
PERFORMANCE BOND .....	PB-1 to PB-2
PAYMENT BOND .....	PB-3 to PB-4
MAINTENANCE BOND .....	MB-1 to MB-2
GENERAL CONDITIONS .....	G-1 to G-18
SPECIAL CONDITIONS .....	SP-1 to SP-9
TECHNICAL SPECIFICATIONS .....	Divisions 01-05
ATTACHMENT:	
NO. 1: CITY OF LONGVIEW APPROVED MATERIALS LIST 2014	Pages 1 to 9

## ADVERTISEMENT FOR BIDS

Sealed proposals addressed to Rolin McPhee, P.E., Director of Public Works, City of Longview, Texas, Public Works Service Center, 933 Mobile Drive, Longview, Texas 75604, will be received until **2:00 p.m. Tuesday September 20, 2016** for furnishing all labor, materials, equipment, supplies, and supervision necessary for construction of **West Loop 281 (US 80 to Shofner) Utility Relocation** in accordance with the specifications on file at Wood Engineering Company, Inc. At the time stated, bids will be opened and publicly announced in the Public Works Training Room of the Public Works Service Center, 933 Mobile Drive, Longview, Texas 75604.

Plans and specifications may be examined without charge or obtained for a purchase price of **\$85.00** per set at the office of Wood Engineering Company, Inc., 1616 Judson Road Suite 6-L, Longview, Texas, 75601

**EEO/M/F/V/H/D**

*Rolin McPhee, P.E.*  
**DIRECTOR OF PUBLIC WORKS**  
**CITY OF LONGVIEW, TEXAS**

## Notice to Bidders

OF THE INTENTION OF THE CITY OF LONGVIEW, TEXAS TO LET BIDS FOR THE CONSTRUCTION OF [West Loop 281 \(US 80 to Shofner\) Utility Relocation](#)

---

**SEALED PROPOSALS** addressed to Rolin McPhee, P.E., Director of Public Works, City of Longview, Texas, Public Works Service Center, 933 Mobile Drive, Longview, Texas 75604, will be received until **2:00 p.m. Tuesday September 20, 2016**, for furnishing all labor, materials, equipment, supplies, and supervision necessary for the construction of **West Loop 281 (US 80 to Shofner) Utility Relocation**, in accordance with the plans and specifications on file at **Wood Engineering Company, Inc.**. At the time stated, bids will be opened and publicly read at the City of Longview, Texas, Public Works Service Center, 933 Mobile Drive, Longview, Texas 75604.

**PLANS AND SPECIFICATIONS** may be examined without charge or obtained for a purchase price of **\$85.00** per set at the office of the **Wood Engineering Company, Inc., 1616 Judson Road, Suite 6-L, Longview, Texas, 75601**. Refunds will be made for undamaged sets returned by actual project bidders at the bid opening, after which time no refunds will be made.

**ALL BID PROPOSALS** submitted should be marked clearly on the outside of the sealed envelope with the project name and bid opening time and date.

**A CERTIFIED OR CASHIER'S CHECK**, or an acceptable bid bond in an amount not less than five percent (**5%**) of the base bid shall accompany each bid as a guaranty that, if awarded the contract, the bidder will promptly enter into contract with the City of Longview, Texas and furnish bonds on the forms provided.

**THE SUCCESSFUL BIDDER OR BIDDERS** will be required to furnish a Performance Bond, Payment Bond, and Maintenance Bond, in the amount of the contract, written by a responsible surety company authorized to do business in the State of Texas, and satisfactory to the Owner as required by Article 5160 V.A.T.C.S.

**BIDDERS ARE EXPECTED TO INSPECT** the site of the work and to inform themselves of all local conditions. Time of completion shall be **75** calendar days, including Saturdays, Sundays, and legal holidays.

**NO BID** may be withdrawn after the scheduled closing time for receipt of bids for at least 90 calendar days.

**IN CASE** of ambiguity or lack of clearness stating the price in the bids, the Owner reserves the right to consider the most advantageous construction thereof or to reject the bid. The Owner reserves the right to reject any or all bids and waive any or all informalities and to award the contract to the bidder or bidders who, in the opinion of the Owner, offers the proposal to the best interest of same.

**EEO/M/F/V/H/D**

*Rolin McPhee, P. E.*  
**DIRECTOR OF PUBLIC WORKS**  
**CITY OF LONGVIEW, TEXAS**

## INFORMATION FOR BIDDERS

1. Receipt and Opening of Proposals. The City of Longview (Owner) invites Proposals to be submitted on the forms provided. Proposals will be received by the Owner at the Public Works Service Center, 933 Mobile Drive, Longview, TX, 75604, until the time and date specified in the Notice to Bidders, and then at the stated time and place, bids will be publicly opened and read aloud. Only the total amount of the bid will be read aloud, however, the Proposals will be opened for public inspection immediately following the opening.

The Owner reserves the right to waive any informality and to reject any or all bids. Any Proposal received after the specified time will be returned to the Bidder unopened. No Proposal may be withdrawn within 90 days from the opening date. Conditional bids will not be considered.

2. Preparation of Proposals. Each Proposal must be submitted in a sealed envelope bearing on the outside the name of the bidder, his address, and the name of the project for which the Proposal is submitted. If forwarded by mail, the sealed envelope containing the Proposal must be enclosed in another envelope addressed as specified.
3. Withdrawal or Modification of Bid. Prior to the bid opening, no Proposal may be withdrawn after 48 hours before the time of the bid opening. Any modification of any bid may be made under the same conditions as set forth for submitting a Proposal.
4. Qualifications of Bidders. The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Proposal if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that the bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.
5. Bid Security. Each Proposal must be accompanied by cash, certified check of the Bidder, or a bid bond duly executed by the Bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of 5% of the base bid. Such cash, checks or bid bonds will be returned to all except the three lowest Bidders within three days after the opening of bids, and the remaining cash, checks, or bid bonds will be returned promptly after the Owner and the accepted Bidder have executed the contract, or if no award has been made within 90 days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his Proposal.
6. Liquidated Damages for Failure to Enter into Contract. The successful Bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within 15 days after he has received notice of the acceptance of his Proposal, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his Proposal.
7. Time of Completion and Liquidated Damages. Bidder must agree to commence work within 10 days after the date to be specified in a written "Notice to Proceed" by the Owner and to fully complete the project within the time stated in the Proposal. The bidder must agree to pay, as liquidated damages, the sum of **\$450.00** for each consecutive calendar day thereafter as hereinafter provided for in the General Conditions.

8. Conditions of Work. Each Bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful Bidder of his obligation to furnish all material and labor necessary to carry out the provision of his Contract. Insofar as possible, the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor.
9. Addenda and Interpretation. No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any Bidder orally. Every request for such interpretation should be in writing addressed to Wood Engineering Company, Inc. 1616 Judson Road, Suite 6-L, Longview, TX, 75601, and to be given consideration must be received at least five days prior to the date fixed for the opening of Proposals. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by regular mail to all prospective bidders not later than two days prior to the date fixed for the opening of Proposals. Failure of any Bidder to receive any such addendum or interpretation shall not relieve such Bidder from any obligation under his bid as submitted. Each Bidder shall check with Wood Engineering Company, Inc. at an appropriate time to determine that he or she has received all Addenda; failure to do so shall be the complete responsibility of the Bidder. All addenda so issued shall become part of the contract documents.
10. Security for Faithful Performance. Simultaneously with his delivery of the executed Contract, the Contractor shall furnish bonds as security for faithful performance of this Contract and for the payment of all persons performing labor on the project under Contract and furnishing materials in connection with Contract, as specified in the General Conditions included herein. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the Owner. In the case that the total bid is **\$25,000** or less, the Contractor may elect not to furnish a Performance and Payment Bond; provided that it is understood and agreed that no progress or monthly payment will be made and that final payment will be made following completion and acceptance by the City of the entire project.
11. Power of Attorney. Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.
12. Laws and Regulations. The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout and they will be deemed to be included in the Contract the same as though herein written out in full.
13. Obligation of Bidder. At the time of the opening of Proposals each Bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents, including all addenda. The failure or omission of any Bidder to examine any form, instrument or document shall in no way relieve any Bidder from any obligation in respect of his bid.
14. Certification of Completion. A Certificate of Completion, which is included in these contract documents, will be required in the final completion and acceptance of the project as provided in the General Conditions of Agreement Item 5.06.

**Certificate of Interested Parties (Form 1295)  
Notice and Process**

In 2015, the Texas Legislature adopted House Bill 1295, which added Section 2252.908 of the Government Code. The law states that a governmental entity may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the governmental entity. The disclosure of interested parties will be submitted online via Form 1295 and must be submitted to the governmental entity prior to any signed contract and/or vote by the governing authority.

**The Filing Process:**

1. Prior to award by City Council, your firm will be required to log in to the Texas Ethics Commission, [https://www.ethics.state.tx.us/whatsnew/elf\\_info\\_form1295.htm](https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm) and fill out the Electronic Filing Application.
2. Once submitted, the system will generate an electronic Form 1295 displaying a "Certificate Number." Your firm must print, sign and notarize Form 1295.
3. **Within seven (7) business days** from notification of pending award by the City of Longview Purchasing Department, the completed Form 1295 **must** be submitted to City of Longview.
4. Your firm will need to repeat this process and obtain a separate Form 1295 each time you enter into a new contract, renew a contract or make modification and/or amendments to a City of Longview contract.

Instructions and information are available at <https://www.ethics.state.tx.us/tec/1295-Info.htm> or you may call the Texas Ethics Commission at (512) 463-5800.

**BY SUBMITTING A BID YOUR FIRM AGREES TO ADHERE TO HB 1295 REFERENCED ABOVE**

**Please Note: No action required until notification of potential award by the City of Longview Purchasing Department.**

## Exhibit A: Instructions for House Bill 1295

This form must be filled out before a recommendation to council for award of a contract can be made.

Since City of Longview is a governmental entity, we are required by law to have you fill out Form 1295 online at the web address listed below. I have attached a copy of what the form will look like when you access it online. Enter your business name, the agency/entity will be City of Longview, and Contract ID will be the bid # and description of the Bid, which is West Loop 281 (US 80 to Shofner). I have included a definition of interested parties: Utility Relocation

Interested Party means a person who has controlling interest in a business entity with whom a governmental entity or state agency contracts or who actively participates in facilitating the contract or negotiating the terms of the contract, including a broker, intermediary, adviser, or attorney for the business entity.

Intermediary for purposes of this rule, means, a person who actively participates in the facilitation of the contract or negotiating the contract, including a broker, adviser, attorney or representative of or agent for the business entity who:

1. receives compensation from the business entity for the person's participation;
2. Communicates directly with the governmental entity or state agency on behalf of the business entity regarding the contract; and
3. Is not an employee of the business entity.

Once you have filled out the form online, the system will generate a form showing a certificate number. Please print this form, sign it and have it notarized. Once it is notarized, please send it to me. I am required by law to keep this certificate on file. Please call me at 903-237-1324 if you have any questions.

Once we have this form, the City can make a recommendation to City Council to award this contract.

### Certificate of Interested Parties (Form 1295)

In 2015, the Texas Legislature adopted House Bill 1295, which added Section 2252.908 of the Government Code. The law states that a government entity may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the government entity. The disclosure of interested parties will be submitted online via Form 1295 and must be submitted to the governmental entity prior to any signed contract and/or vote by the governing authority.

### The Filing Process:

1. **Since your firm was awarded a contract with City of Longview your firm is required to log in to the Texas Ethics Commission, [https://www.ethics.state.tx.us/whatsnew/elf\\_info\\_form1295.htm](https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm) and fill out the Electronic Filing Application.**
2. Once submitted, the system will generate an electronic Form 1295 displaying a "Certificate Number." Your firm must print, sign and notarize Form 1295.
3. **As soon as possible** the completed Form 1295 **must** be submitted to City of Longview.
4. Your firm will need to repeat this process and obtain a separate Form 1295 each time you enter into a new contract, renew a contract or make modification and/or amendments to a City of Longview contract.

Instructions and information are available at <https://www.ethics.state.tx.us/tec/1295-Info.htm> or you may call the Texas Ethics Commission at (512) 463-5800.

# CERTIFICATE OF INTERESTED PARTIES

# FORM 1295

## OFFICE USE ONLY

Complete Nos. 1 - 4 and 6 if there are interested parties.  
 Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

**1 Name of business entity filing form, and the city, state and country of the business entity's place of business.**

**2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.**

**3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the goods or services to be provided under the contract.**

4 Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)	
		Controlling	Intermediary
Example form			
To be completed by the successful Bidder after the Bid Opening and prior to contract execution			

**5 Check only if there is NO Interested Party.**

**6 AFFIDAVIT** I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

\_\_\_\_\_  
 Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said \_\_\_\_\_, this the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_, to certify which, witness my hand and seal of office.

\_\_\_\_\_  
 Signature of officer administering oath      Printed name of officer administering oath      Title of officer administering oath

**ADD ADDITIONAL PAGES AS NECESSARY**

# Liquidated Damages Calculation

PROJECT Pine Tree Road - Loop 281 Utility Relocates for TxDOT Road Improvements  
 C.I.P. PROJECT NO. PROJECT MANAGER Kevin Chumbley  
 CONTRACT NO. PROJECT SPONSOR  
 PREPARED BY Wood Engineering Company, Inc. DATE

## ON-SITE PROJECT INSPECTION (CITY FORCES)

Engineer/Architect	8	hr/wk @	\$43.65 /hr =	\$349.20 /wk (÷7) =	\$49.89 /day
Supervising Inspector	40	hr/wk @	\$22.24 /hr =	\$889.60 /wk (÷7) =	\$127.09 /day
Inspector	0	hr/wk @	\$0.00 /hr =	\$0.00 /wk (÷7) =	\$0.00 /day
				Sub-Total =	\$176.97 /day
Overhead: .00 % of Sub-Total				=	\$176.97 /day

## Overtime (over 40 Hours):

Supervising Inspector	0	hr/wk @	\$0.00 /hr =	\$0.00 /wk (÷7) =	\$0.00 /day
Inspector	0	hr/wk @	\$0.00 /hr =	\$0.00 /wk (÷7) =	\$0.00 /day
				Sub-Total =	\$0.00 /day
Overhead: .00 % of Sub-Total				=	\$0.00 /day

## Consulting Services:

Engineer/Architect (Private Sector)	8	hr/wk @	\$125.00 /hr =	\$1,000.00 /wk (÷7) =	\$142.86 /day
Technician (Private Sector)	8	hr/wk @	\$90.00 /hr =	\$720.00 /wk (÷7) =	\$102.86 /day

## Project Management

Project Manager (City)	2	hr/wk @	\$43.65 /hr =	\$87.30 /wk (÷7) =	\$12.47 /day
Technician (City)	2	hr/wk @	\$24.33 /hr =	\$48.66 /wk (÷7) =	\$6.95 /day
				Sub-Total =	\$19.42 /day
Overhead: .00 % of Sub-Total				=	\$19.42 /day

## INTEREST ON MONEY PAID TO THE CONTRACTOR, BUT NOT USABLE

Assuming 80% paid @ completion date:				
Construction Cost				\$110,000.00
Total Paid (80%)				\$88,000.00
Daily Interest @ 0.0110 % of Total Paid: (or 4 annual interest rate):			=	\$9.68 /day
Loss of Revenue for Revenue Producing Projects			=	\$0.00 /day
Loss of Capital Recovery Fees			=	\$0.00 /day
Actual Expenses Incurred			=	\$0.00 /day
Equipment Rental			=	\$0.00 /day
Space Rental			=	\$0.00 /day
			Total per Calendar Day	\$451.79
			<b>USE</b>	<b>\$450.00</b>

**CITY OF LONGVIEW  
PUBLIC WORKS DEPARTMENT**

**Certificate of Final Completion**

**City of Longview – West Loop 281 (US 80 to Shofner) Utility Relocation**

---

---

CONTRACT DATED: \_\_\_\_\_

STATE OF TEXAS  
COUNTY OF GREGG

Before me, the undersigned authority, a Notary Public in and for Gregg County, Texas, on this day personally appeared \_\_\_\_\_ who, being by me duly sworn on his oath, says that he is/represents \_\_\_\_\_, the contractor who has performed a contract with the City of Longview for the construction of the work described above, and is duly authorized to make this affidavit; that he has personally examined the work described above as required by the specifications of the City of Longview attached to the contract; that said work and all items thereof have been completed and all known defects made good; that thereof have been completed and all known defects made good; that all surplus material, refuse, dirt and rubbish have been cleaned up, removed and disposed of; that all parts of the work are in a neat, tidy, finished condition and ready in all respects for acceptance by the City; that all the required work has been performed in accordance with the specifications, that rates of pay for all labor employed on said work have not been below the minimum set out in Labor Classification and Minimum Wage Scale in said Specifications and that within the knowledge of affiant all just bills for labor and material and for the rental or use of any equipment or apparatus used in, on, or in connection with the work have been paid in full by the Contractor.

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Notary Public, Gregg County, Texas

This is to certify that I have thoroughly inspected the work performed by the above named contractor on the above described contract and find all things in accordance with the plans and specifications governing this work.

\_\_\_\_\_  
Inspector

\_\_\_\_\_  
Project Consulting Engineer



Asphalt Distributor.....	\$ 13.88
Asphalt Paving Machine.....	\$ 12.35
Broom or Sweeper.....	\$ 10.08
Crane, Lattice Boom 80 tons or less.....	\$ 13.85
Crawler Tractor.....	\$ 13.62
Excavator 50,000 pounds or less.....	\$ 13.67
Excavator Operator over 50,000 pounds.....	\$ 13.52
Foundation Drill, Truck Mounted.....	\$ 22.05
Front End Loader , over 3 cy.....	\$ 12.33
Front End Loader, 3 cy or less.....	\$ 13.40
Loader/Backhoe.....	\$ 12.97
Mechanic.....	\$ 17.47
Servicer.....	\$ 14.11
Steel Worker (Reinforcing).....	\$ 17.53
TRUCK DRIVER	
Lowboy-Float.....	\$ 13.41
Off-Road Hauler.....	\$ 10.08
Single Axle.....	\$ 10.75
Single or Tandem Axle Dump.....	\$ 11.95
Tandem Axle Tractor w/SemiTrailer.....	\$ 12.50

-----

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

-----

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of

the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

-----

#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can

be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

**BID PROPOSAL**

**CITY OF LONGVIEW  
PUBLIC WORKS SERVICE CENTER  
933 MOBILE DRIVE  
LONGVIEW, TX 75604**

**West Loop 281 (US 80 to Shofner) Utility Relocation**

**BID DATE: 2:00 p.m., Tuesday September 20, 2016**

Proposal of \_\_\_\_\_, (hereinafter called "Bidder"), a corporation, organized and existing under the laws of the State of \_\_\_\_\_ a partnership, or an individual doing business as \_\_\_\_\_ (strike out inapplicable terms).

TO THE CITY OF LONGVIEW, TEXAS (OWNER):

The undersigned bidder, in response to the Notice to Bidders for the construction of the above project and in conformance with the Information for Bidders; having examined the plans, specifications, related documents and the site of the proposed work; being familiar with all of the conditions relating to the construction of the proposed project, including the availability of materials and labor; hereby proposes to furnish all labor, materials, supplies, equipment, and superintendence necessary for the construction of the project in accordance with the plans, specifications, and contract documents at the unit prices proposed herein.

The undersigned Bidder proposes, acknowledges, and agrees to construct the entire project as shown on the plans, fully in accordance with the requirements of the plans, specifications, and contract documents for the prices included in this Proposal and fully understands and agrees that the various items of material, labor, and construction not specifically enumerated and provided for herein are considered subsidiary to the several items for which this direct payment is specifically provided. Furthermore, the undersigned agrees that one such subsidiary item is the protection, maintenance, repair, or replacement of all underground lines and services, whether shown on the plans or not, all to the full satisfaction of the Engineer and in a timely manner.

**BID PROPOSAL: PINE TREE ROAD – LOOP 281 UTILITY RELOCATES FOR TXDOT ROAD IMPROVEMENTS**

The undersigned Bidder hereby agrees to begin work under the contract on or before the date to be specified in the written Notice to Proceed and to fully complete the project within 75 consecutive calendar days. The undersigned Bidder further agrees to pay, as liquidated damages, the sum of **\$450** for each consecutive calendar day thereafter as provided in Item 7 of the Information for Bidders.

The undersigned Bidder has contacted, within 72 hours prior to this bid opening, the office of the Engineer, **Wood Engineering** and has determined that all Addenda are as follows:

Addendum No. 1, dated \_\_\_\_\_; \_\_\_\_\_  
Addendum No. 2, dated \_\_\_\_\_; \_\_\_\_\_

The undersigned Bidder acknowledges and agrees that this Proposal shall be good and may not be withdrawn for a period of 90 calendar days from the date of this bid opening.

The undersigned Bidder is obligated to and shall show accurate unit prices as well as total amounts, and agrees that in the case of ambiguity between unit prices and total amounts or in the case of any other ambiguity the Owner may interpret an ambiguity in a manner most advantageous to the Owner or reject the bid.

The undersigned Bidder further acknowledges and agrees that a bid that has been opened may not be changed for the purpose of correcting an error in the final bid price.

The undersigned Bidder agrees to execute the Contract Agreement and furnish the required Performance Bond, Payment Bond, and Maintenance Bond within 10 calendar days from the date of acceptance of the Proposal.

The undersigned Bidder has attached and made a part of this Proposal a bid security in conformance with Item 5 of the Information for Bidders.

Submitted by:

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

\_\_\_\_\_  
(Firm)

\_\_\_\_\_  
(Name - Typed or Printed)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(City,County,State,Zip Code)

\_\_\_\_\_  
(Attest - Date)

\_\_\_\_\_  
(Area Code-Telephone Number)

\_\_\_\_\_  
(Corporation Seal)

\_\_\_\_\_  
(Fax Number)

**BID PROPOSAL FOR  
FOR**

**West Loop 281 (US 80 to Shofner) Utility Relocation  
CITY OF LONGVIEW, GREGG COUNTY, TEXAS**

PREPARED BY:

**WOOD ENGINEERING**

1616 JUDSON ROAD, STE 6-L

LONGVIEW, TEXAS 75601

TEL: 903-234-1118

WEC Job. No. 16-08016

**Pine Tree Road - Loop 281 Improvements**

ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE	
1	1	EA	F&I sanitary manhole over existing 8" sanitary sewer per plans and specifications at a unit price of :			
				dollars		
				cents	\$	\$
2	3	EA	Plug and abandon ex. 8" sanitary sewer per plans and specifications at a unit price of :			
				dollars		
				cents	\$	\$
3	1	EA	F&I 6x8 tapping sleeve and gate valve per plans and specifications at a unit price of :			
				dollars		
				cents	\$	\$
4	60	LF	Remove and replace concrete curb and gutter per plans and specifications at a unit price of :			
				dollars		
				cents	\$	\$
5	33	LF	Open cut and repair asphalt drive per plans and specifications at a unit price of :			
				dollars		
				cents	\$	\$
6	2	LF	Abandon existing sanitary manhole per plans and specifications at a unit price of :			
				dollars		
				cents	\$	\$

**Pine Tree Road - Loop 281 Improvements (cont.)**

ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
7	120	LF	F&I 8" C-900 sanitary sewer pressure pipe per plans and specifications at a unit price of :		
			dollars		
8	1	EA	Remove plug, F&I 6" anchor coupling, and tie into existing 6" water main per plans and specifications at a unit price of :		
			dollars	\$	\$
9	115	LF	F&I 6" water main (DR-18) per plans and specifications at a unit price of :		
			dollars	\$	\$
10	3	EA	F&I sanitary manhole per plans and specifications at a unit price of :		
			dollars	\$	\$
11	1	EA	F&I 6" 45 deg. Bend, MJ per plans and specifications at a unit price of :		
			dollars	\$	\$
12	1	EA	F&I 6" short side sewer service per plans and specifications at a unit price of :		
			dollars	\$	\$

**Pine Tree Road - Loop 281 Improvements (cont.)**

ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
13	916	LF	F&I 8" sanitary sewer (SDR-26) per plans and specifications at a unit price of :		
				dollars	
14	875	LF	F&I wire reinforced silt fence per plans and specifications at a unit price of :		
				dollars	
15	64	LF	Open cut and repair asphalt street per plans and specifications at a unit price of :		
				dollars	
16	1	EA	F&I san. Sew, manhole with traffic rated ring and cover over ex. 6" san. Sew. per plans and specifications at a unit price of :		
				dollars	
17	77	LF	Open cut and repair ex. Concrete drive per plans and specifications at a unit price of :		
				dollars	
18	1	EA	Tie 8" san. Sew. Into existing san. Sew. Manhole per plans and specifications at a unit price of :		
				dollars	

**Sub-total - Pine Tree Road - Loop 281 Improvements**

**\$**

**MISCELLANEOUS**

ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
1	1	LS	Miscellaneous allowance	\$10,000.00	\$10,000.00
2	1	LS	F&I Trench safety per plans and specifications at a lump sum price of :		
			dollars		
			cents	\$	\$
3	1	LS	F&I Traffic safety per plans and specifications at a lump sum price of :		
			dollars		
			cents	\$	\$
4	1	LS	F&I Project Signs per plans and specifications at a lump sum price of :		
			dollars		
			cents	\$	\$
5	1	LS	F&I Pipe foundation material per plans and specifications at a lump sum price of :		
			dollars		
			cents	\$	\$
6	1	LS	Water main testing and sterilization per plans and specifications at a lump sum price of :		
			dollars		
			cents	\$	\$
7	1	LS	Sanitary sewer main testing per plans and specifications at a lump sum price of :		
			dollars		
			cents	\$	\$

**MISCELLANEOUS (cont.)**

ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
8	1	LS	Bonding and mobilization at 5% Bid Proposal per plans and specifications at a lump sum price of : <div style="text-align: right; margin-right: 50px;">dollars</div> <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> <div style="text-align: right; margin-right: 50px;">cents</div>	\$	\$
<b>SUB-TOTAL - MISCELLANEOUS</b>				\$	

**GRAND TOTAL**

\$ \_\_\_\_\_

**VENDOR COMPLIANCE TO STATE LAW**

The 1985 Session of the Texas Legislature passed House Bill 620 relative to the award of contracts to non-resident bidders. This law provides that, in order to be awarded a contract as low bidder, non-resident bidders (out-of-state contractors whose corporate offices or principal place of business are outside of the state of Texas) bid projects for construction, improvements, supplies or services in Texas at an amount lower than the lowest Texas resident bidder by the same amount that a Texas resident bidder would be required to under bid a non-resident bidder in order to obtain a comparable contract in the state in which the non-resident's principal place of business is located. The appropriate blanks in Section A must be filled out by all out-of-state or non-resident bidders in order for your bid to meet specifications. The failure of out-of-state or non-resident contractors to do so will automatically disqualify that bidder. Resident bidders must check the blank in Section B.

A. Non-resident vendors in \_\_\_\_\_ (insert state), our principal place of business, are required to be \_\_\_\_\_ percent lower than resident bidders by state law. A copy of the statute is attached.

Non-resident vendors in \_\_\_\_\_ (insert state), our principal place of business, are not required to underbid resident bidders.

B. \_\_\_\_\_ Our principal place of business or corporate offices are in the State of Texas.

BIDDER:

\_\_\_\_\_  
(company)

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

\_\_\_\_\_  
(address)

\_\_\_\_\_  
(print name)

\_\_\_\_\_  
(city, state, zip)

\_\_\_\_\_  
(title)

**THIS FORM MUST BE INCLUDED WITH YOUR SEALED BID**

**STANDARD FORM OF AGREEMENT**

Approved as to Legal Form by  
City of Longview Legal Counsel

STATE OF TEXAS}

COUNTY OF GREGG}

*THIS AGREEMENT, made and entered into this the \_\_\_\_\_, by and between the City of Longview of the County of Gregg and State of Texas, acting through its City Manager, thereunto duly authorized so to do, Party of the First Part, hereinafter termed OWNER, and \_\_\_\_\_, of the City of Longview, County of Gregg, and State of Texas, Party of the Second Part, hereinafter termed CONTRACTOR.*

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the Party of the First Part (OWNER), and under the conditions expressed in the bond bearing even date herewith, the said Party of the Second Part (CONTRACTOR), hereby agrees with the said Party of the First Part (OWNER) to commence and complete the construction of certain improvements described as follows:

**West Loop 281 (US 80 to Shofner) Utility Relocation**

---

and all extra work in connection therewith, under the terms as stated in this Standard Form of Agreement; all of the documents attached to this Standard Form of Agreement; all Plans, Specifications and drawings for the **West Loop 281 (US 80 to Shofner) Utility Relocation** as prepared by the OWNER’s engineer (herein entitled “ENGINEER”); and all printed or written explanatory materials of said Plans, Specifications and drawings. The CONTRACTOR hereby agrees with the OWNER that the CONTRACTOR shall commence and complete all such construction and work at the CONTRACTOR’s own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said construction and work. The documents that are attached to and for all purposes made part of this Standard Form of Agreement include Addenda, Advertisement for Bids, Notice to Bidders, Information for Bidders, Liquidated Damages, Certificate of Final Completion, Wage Rates, Proposal, Vendor Compliance to State Law, Performance Bond, Payment Bond, Maintenance Bond, General Conditions, Special Conditions, Bid Bond, Statement of Materials, Project Insurance, Technical Specifications, and attachments including: City of Longview Approved Materials List. This agreement shall also include all Plans, Specifications and drawings for the **West Loop 281 (US 80 to Shofner) Utility Relocation**, as prepared by the ENGINEER, and all printed or written explanatory materials of said Plans, Specifications and drawings. This Standard Form of Agreement and the documents listed herein shall collectively evidence and constitute the entire contract between the parties hereto regarding the subject matter hereof.

The CONTRACTOR hereby agrees to commence work within ten (10) days after the date written notice to do so shall have been given to him, and to complete the same within **75** calendar days after

the date of the written notice to commence work, subject to such extensions of time as are provided by the General and Special Conditions of Agreement.

CONTRACTOR's failure to timely commence work or diligently pursue completion of the work within the time limitations set out herein shall constitute a material breach of this contract. TIME IS OF THE ESSENCE IN THE PERFORMANCE OF THIS CONTRACT.

The OWNER agrees to pay the CONTRACTOR in current funds the price or prices shown in the Proposal, which forms a part of this contract, such payments to be subject to the terms and conditions of this contract, including without limitation the General and Special Conditions of Agreement;

Without regard to and notwithstanding any rules on conflicts of law, this contract shall be subject to and interpreted in conformance with the laws of the State of Texas, unless expressly required otherwise by federal law or regulations. Venue for any action arising hereunder shall lie exclusively in Gregg County, Texas, for actions in state court and in the Eastern District of Texas, Tyler Division, for actions in federal court.

IN WITNESS WHEREOF, the parties to these presents have executed this Agreement in the year and day first above written.

\_\_\_\_\_  
*Party of the First Part (OWNER)*

\_\_\_\_\_  
*Party of the Second Part (CONTRACTOR)*

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

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

ATTEST:

ATTEST:

\_\_\_\_\_

\_\_\_\_\_

(Seal)

(Seal)

**PERFORMANCE BOND**

STATE OF TEXAS

COUNTY OF GREGG

KNOW ALL MEN BY THESE PRESENTS: That \_\_\_\_\_ of the City of \_\_\_\_\_, County of \_\_\_\_\_, and State of Texas, as principal \_\_\_\_\_ authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto the City of Longview, Texas (Owner), in the penal sum of: \_\_\_\_\_ for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, by these presents:

WHEREAS, the Principal has entered into a certain written contract with the Owner, dated the day of \_\_\_\_\_, 20\_\_\_, to complete

**West Loop 281 (US 80 to Shofner) Utility Relocation**

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 the said Principal shall faithfully perform said Contract and shall in all respects duly and faithfully observe and perform all and singular the covenants, conditions and agreements in and by said contract agreed and covenanted by the Principal to be observed and performed, and according to the true intent and meaning of said Contract and the Plans and Specifications hereto annexed, 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 chapter 2253 of the Texas Government Code, as amended, and all liabilities on this bond shall be determined in accordance with the provisions of said 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, alteration or addition to the terms of the contract, or to the work performed there under, or the plans, specifications, or drawings accompanying the same, shall in anywise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract, or to the work to be performed there under.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Surety

By \_\_\_\_\_

By \_\_\_\_\_

Title \_\_\_\_\_

Title \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The name and address of the Resident Agent of Surety is:

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

**PAYMENT BOND**

STATE OF TEXAS  
COUNTY OF GREGG

KNOW ALL MEN BY THESE PRESENTS: That \_\_\_\_\_ of the City of \_\_\_\_\_, County of \_\_\_\_\_, and State of Texas, as principal, and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto the City of Longview, Texas (Owner), in the penal sum of: \_\_\_\_\_ for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, by these presents:

WHEREAS, the Principal has entered into a certain written contract with the Owner, dated the day of \_\_\_\_\_, 20\_\_\_\_, to construct

**West Loop 281 (US 80 to Shofner) Utility Relocation**

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 the said Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the work provided for in said contract, 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 chapter 2253 of the Texas Government Code, as amended, and all liabilities on this bond shall be determined in accordance with the provisions of said 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, alteration or addition to the terms of the contract, or to the work performed there under, or the plans, specifications, or drawings accompanying the same, shall in anywise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract, or to the work to be performed there under.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Principal

By \_\_\_\_\_

Title \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Surety

By \_\_\_\_\_

Title \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The name and address of the Resident Agent of Surety is:

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

**ONE-YEAR MAINTENANCE BOND**

STATE OF TEXAS  
COUNTY OF GREGG      KNOW ALL MEN BY THESE PRESENTS:

That we, \_\_\_\_\_ as Principal, hereinafter called "Contractor", and the other subscriber hereto as Surety, do hereby acknowledge ourselves to be held and firmly bound to the City of Longview, a municipal corporation, in the sum of: \_\_\_\_\_ for the payment of which sum well and truly to be made to the City of Longview, and its successors, the said Contractor and Surety do bind themselves, their successors and assigns jointly and severally. The conditions of this obligation are such that:

WHEREAS, the said Contractor has entered into a contract in writing with the City of Longview, Texas, dated of even date herewith, for completion of

**West Loop 281 (US 80 to Shofner) Utility Relocation**

---

---

---

---

---

all of such work to be done as set out in full in said contract and the plans and specifications therein referred to.

NOW, THEREFORE, if the said Contractor shall repair, replace and restore any and all defects in or damages to said construction, occasioned by, and resulting within one (1) year from and after the day of the acceptance of said work by said City of Longview from defects in materials furnished by, or workmanship of the Contractor, in performing the work covered by said contract, then this obligation shall become null and void, and shall be of no further force and effect; otherwise, the same is to remain in full force and effect.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument on the respective dates written below their signatures.

ATTEST/SEAL: (if a corporation)

WITNESS: (if not a corporation)

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

\_\_\_\_\_  
Name \_\_\_\_\_

Title \_\_\_\_\_

\_\_\_\_\_  
Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

\_\_\_\_\_  
(Full Name of Surety)

ATTEST/WITNESS:

\_\_\_\_\_  
Name \_\_\_\_\_

Title \_\_\_\_\_

\_\_\_\_\_  
Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

**TABLE OF CONTENTS  
FOR  
GENERAL CONDITIONS OF AGREEMENT**

	<u>Page</u>
<b>1. Definition of Terms</b>	
1.01 Owner, Contractor and Engineer .....	G-3
1.02 Contract Documents.....	G-3
1.03 Sub-Contractor .....	G-3
1.04 Written Notice.....	G-3
1.05 Work .....	G-3
1.06 Extra Work.....	G-3
1.07 Working Day.....	G-4
1.08 Calendar Day .....	G-4
1.09 Substantially Completed .....	G-4
<b>2. Responsibilities of the Engineer and the Contractor</b>	
2.01 Owner-Engineer Relationship.....	G-4
2.02 Professional Inspection by Engineer.....	G-4
2.03 Payments for Work .....	G-4
2.04 Dispute Determinations .....	G-4
2.05 Lines and Grades.....	G-5
2.06 Contractor’s Duty and Superintendence .....	G-5
2.07 Contractor’s Understanding .....	G-6
2.08 Character of Workmen.....	G-6
2.09 Contractor’s Buildings .....	G-6
2.10 Sanitation .....	G-6
2.11 Shop Drawings.....	G-6
2.12 Preliminary Approval.....	G-7
2.13 Defects and Their Remedies .....	G-7
2.14 Changes and Alterations .....	G-7
<b>3.General Obligations and Responsibilities</b>	
3.01 Keeping Plans and Specifications Accessible.....	G-8
3.02 Ownership of Drawings .....	G-8
3.03 Adequacy of Design.....	G-8
3.04 Right of Entry .....	G-8
3.05 Collateral Contracts .....	G-8
3.06 Discrepancies and Omissions .....	G-8
3.07 Equipment, Materials, and Construction Plans.....	G-8
3.08 Damages.....	G-8
3.09 Protection Against Accidents to Employees and the Public.....	G-9
3.10 Performance, Payment, and Maintenance Bonds .....	G-9
3.11 Losses from Natural Causes.....	G-9
3.12 Protection of Adjoining Property.....	G-9
3.13 Protection Against Claims of Sub-Contractors, Etc. ....	G-10
3.14 Protection Against Royalties or Patented Invented .....	G-10
3.15 Laws and Ordinances.....	G-10
3.16 Assignment and Subletting .....	G-10
3.17 Indemnification .....	G-11

3.18	Insurance .....	G-11
3.18.1	Certificate of Insurance.....	G-11

**4. Prosecution and Progress**

4.01	Time and Order of Completion.....	G-12
4.02	Extension of Time.....	G-12
4.03	Hindrances and Delays .....	G-12

**5. Measurement and Payment**

5.01	Quantities and Measurements .....	G-12
5.02	Estimated Quantities .....	G-13
5.03	Price of Work.....	G-13
5.04	Partial Payment .....	G-13
5.05	Use of Completed Portions .....	G-14
5.06	Final Completion and Acceptance .....	G-14
5.07	Final Payment .....	G-14
5.08	Payments Withheld.....	G-14
5.09	Delayed Payments.....	G-15

**6. Extra Work and Claims**

6.01	Change Orders .....	G-15
6.02	Minor Changes.....	G-15
6.03	Extra Work.....	G-15
6.04	Time of Filing Claims.....	G-16

**7. Contractor's Timely Performance**

7.01	Contractor's Obligation to Timely Perform .....	G-17
7.02	Owner's Immediate Remedy .....	G-17
7.03	Owner's Additional Remedies .....	G-17
7.03.1	.....	G-17
7.03.2	.....	G-17
7.04.0	.....	G-18

## GENERAL CONDITIONS OF AGREEMENT

### 1. DEFINITIONS OF TERMS

**1.01 OWNER, CONTRACTOR AND ENGINEER.** The OWNER, the CONTRACTOR, and the ENGINEER are those persons or organizations identified as such in the Agreement and are referred to throughout the contract Documents as if singular in number and masculine in gender. The term ENGINEER means the ENGINEER or his duly authorized representative. The ENGINEER shall be understood to be the ENGINEER of the OWNER, and nothing contained in the Contract Documents shall create any contractual or agency relationship between the ENGINEER and the CONTRACTOR.

**1.02 CONTRACT DOCUMENTS.** The Contract Documents shall consist of the Notice to Contractors (Advertisement), Special Conditions (Instructions to Bidders), Proposal, Signed Agreement, Performance and Payment Bonds (when required), Special Bonds (when required), General Conditions of the Agreement, Plans, Technical Specifications, and all modifications thereof incorporated in any of the documents before the execution of the agreement.

The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. In case of conflict between any of the Contract Documents, priority of interpretation shall be in the following order: Signed Agreement, Performance and Payment Bonds, Special Bonds (if any), Proposal, Special Conditions of Agreement, Notice to Contractors, Technical Specifications, Plans, and General Conditions of Agreement.

**1.03 SUB-CONTRACTOR.** The term Sub-Contractor, as employed herein, includes only those having a direct contract with the CONTRACTOR and it includes one who furnished material worked to a special design according to the plans or specifications of this work, but does not include one who merely furnished material not so worked.

**1.04 WRITTEN NOTICE.** Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, delivered by electronic fax, or if delivered at or sent by registered mail to the last business address known to him who gives the notice.

**1.05 WORK.** The CONTRACTOR shall provide and pay for all materials, supplies, machinery, equipment, tools, superintendence, labor, services, insurance, and all water, light, power, fuel, transportation and other facilities necessary for the execution and completion of the work covered by the contract documents. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of a good quality. The CONTRACTOR shall, if required, furnish satisfactory evidence as to the kind and quality of materials. Materials or work described in words which so applied have a well known technical or trade meaning shall be held to refer to such recognized standards.

**1.06 EXTRA WORK.** The term "Extra Work" as used in this contract shall be understood to mean and include all work that may be required by the ENGINEER or OWNER to be done by the CONTRACTOR to accomplish any change, alteration or addition to the work shown upon the plans, or reasonably implied by the specifications, and not covered by the CONTRACTOR'S proposal, except as provided under "Changes and Alterations", herein.

**1.07 WORKING DAY.** A “Working Day” is defined as any day not including Saturdays, Sundays or any legal holidays, in which weather or other conditions, not under the control of the CONTRACTOR, will permit construction of the principal units of the work for a period of not less than seven (7) hours between 7:00 a.m. and 6:00 p.m.

**1.08 CALENDAR DAY.** “Calendar Day” is any day of the week or month, no days being excepted.

**1.09 SUBSTANTIALLY COMPLETED.** By the term “substantially completed” is meant that the structure has been made suitable for use or occupancy or the facility is in condition to serve its intended purpose, but still may require minor miscellaneous work and adjustment.

## **2. RESPONSIBILITIES OF THE ENGINEER AND THE CONTRACTOR.**

**2.01 OWNER-ENGINEER RELATIONSHIP.** The ENGINEER will be the OWNER’S representative during construction. The duties, responsibilities and limitations of authority of the ENGINEER as the OWNER’S representative during construction are as set forth in the Contract Documents and shall not be extended or limited without written consent of the OWNER and ENGINEER. The ENGINEER will advise and consult with the OWNER, and all of OWNER’S instructions to the CONTRACTOR shall be issued through the ENGINEER.

**2.02 PROFESSIONAL INSPECTION BY ENGINEER.** The ENGINEER shall make periodic visits to the site to familiarize himself generally with the progress of the executed work and to determine if such work generally meets the essential performance and design features and the technical and functional engineering requirements of the Contract documents; provided and except, however, that the ENGINEER shall not be responsible for making any detailed, exhaustive, comprehensive or continuous on-site inspection of the quality or quantity of the work or be in any way responsible, directly or indirectly, for the construction means, methods, techniques, sequences, quality, procedures, programs, safety precautions or lack of same incident thereto or in connection therewith. Notwithstanding any other provision of this agreement or any other contract document, the ENGINEER shall not be in any way responsible or liable for any acts, errors, omissions, or negligence of the CONTRACTOR, any subcontractor or any of the CONTRACTOR’S or subcontractor’s agents, servants or employees or any other person, firm or corporation performing or attempting to perform any of the work.

**2.03 PAYMENTS FOR WORK.** The ENGINEER shall review CONTRACTOR’S applications for payment and supporting data, determine the amount owed to the CONTRACTOR and recommend to OWNER, in writing, payment to CONTRACTOR in such amounts. Such recommendation of payment of CONTRACTOR’S application for payment constitutes a representation to the OWNER of ENGINEER’S professional judgement that the work has progressed to the point indicated to the best of his knowledge, information and belief, but such recommendation of payment of an application for payment to CONTRACTOR shall not be deemed as a representation by ENGINEER that ENGINEER has made any examination to determine how or for what purpose CONTRACTOR has used the moneys paid on account of the Contract price. Further, ENGINEER’S determination of the amount owed to the CONTRACTOR and recommendation of payment shall both be advisory only and shall not be binding upon OWNER.

**2.04 DISPUTE DETERMINATIONS.** The ENGINEER initially shall determine all claims, disputes and other matters in question between the CONTRACTOR and the OWNER

relating to the execution or progress of the work or the interpretation of the Contract Documents and the ENGINEER'S decision shall be rendered in writing within a reasonable time.

**2.05 LINES AND GRADES.** Unless otherwise specified, all lines and grades shall be furnished by the ENGINEER or his representative. Whenever necessary, construction work shall be suspended to permit performance of this work, but such suspension will be as brief as practicable and the CONTRACTOR shall be allowed no extra compensation therefor. The CONTRACTOR shall give the ENGINEER ample notice of the time and place where lines and grades will be needed. All stakes, marks, etc., shall be carefully preserved by the CONTRACTOR, and in case of careless destruction or removal by him or his employees, such stakes, marks, etc., shall be replaced at the CONTRACTOR'S expense.

**2.06 CONTRACTOR'S DUTY AND SUPERINTENDENCE.** The CONTRACTOR shall give adequate attention to the faithful prosecution and completion of this contract and shall keep on the work, during its progress, a competent superintendent and any necessary assistants. The superintendent shall represent the CONTRACTOR in his absence and all directions given to him shall be as binding as if given to the CONTRACTOR.

The CONTRACTOR is and at all times shall remain an independent contractor, solely responsible for the manner and method of completing his work under this contract, with full power and authority to select the means, method and manner of performing such work, so long as such methods do not adversely affect the completed improvements, the OWNER and ENGINEER being interested only in the result obtained and conformity of such completed improvements to the plans, specifications and contract.

Likewise, the CONTRACTOR shall be solely responsible for the safety of himself, his employees and other persons, as well as for the protection of the safety of the improvements being erected and the property of himself or any other person, as a result of his operations hereunder. Engineering construction drawings and specifications as well as any additional information concerning the work to be performed passing from or through the ENGINEER shall not be interpreted as requiring or allowing CONTRACTOR to deviate from the plans and specifications, the intent of such drawings, specifications and any other such instructions being to define with particularity the agreement of the parties as to the work the CONTRACTOR is to perform. CONTRACTOR shall be fully and completely liable, at his own expense, for design, construction, installation and use, or non-use, of all items and methods incident to performance of the contract, and for all loss, damage or injury incident thereto, either to person or property, including, without limitation, the adequacy of all temporary supports, shoring, bracing, scaffolding, machinery or equipment, safety precautions or devices, and similar items or devices used by him during construction.

Any review of work in process, or any visit or observation during construction, or any clarification of plans and specifications, by the ENGINEER, or any agent, employee, or representative of either of them, whether through personal observation on the project site or by means of approval of shop drawings for temporary construction or construction processes, or by other means or method, is agreed by the CONTRACTOR to be for the purpose of observing the extent and nature of work completed or being performed, as measured against the drawings and specifications constituting the contract, or for the purpose of enabling CONTRACTOR to more fully understand the plans and specifications so that the completed construction work will conform thereto, and shall in no way relieve the CONTRACTOR from full and complete responsibility for the proper performance of his work on the project, including but without

limitation the propriety of means and methods of the CONTRACTOR in performing said contract, and the adequacy of any designs, plans or other facilities for accomplishing such performance. Deviation by the CONTRACTOR from plans and specifications that may have been in evidence during any such visitation or observation by the ENGINEER, or any of his representatives, whether called to the CONTRACTOR'S attention or not shall in no way relieve CONTRACTOR from his responsibility to complete all work in accordance with said plans and specifications.

**2.07 CONTRACTOR'S UNDERSTANDING.** It is understood and agreed that the CONTRACTOR has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this contract. No verbal agreement or conversation with any officer, agent or employee of the OWNER or ENGINEER either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

**2.08 CHARACTER OF WORKMEN.** The CONTRACTOR agrees to employ only orderly and competent men, skillful in the performance of the type of work required under this contract, to do the work; and agrees that whenever the ENGINEER shall inform him in writing that any man or men on the work are, in his opinion, incompetent, unfaithful or disorderly, such man or men shall be discharged from the work and shall not again be employed on the work without the ENGINEER'S written consent.

**2.9 CONTRACTOR'S BUILDINGS.** The building of structures for housing men, or the erection of tents or other forms of protection, will be permitted only at such places as the ENGINEER shall direct, and the sanitary conditions of the grounds in or about such structures shall at all times be maintained in a manner satisfactory to the ENGINEER.

**2.10 SANITATION.** Necessary conveniences for the use of laborers on the work, properly secluded from public observation, shall be constructed and maintained by the CONTRACTOR in such manner and at such points as shall be approved by the ENGINEER, and their use shall be strictly enforced.

**2.11 SHOP DRAWINGS.** The CONTRACTOR shall submit to the ENGINEER, with such promptness as to cause no delay in his own work or in that of any other Contractor, four checked copies, unless otherwise specified, of all shop and/or setting drawings and schedules required for the work of the various trades, and the ENGINEER shall pass upon them with reasonable promptness, making desired corrections. The CONTRACTOR shall make any corrections required by the ENGINEER, file with him two corrected copies and furnish such other copies as may be needed. The ENGINEER'S approval of such drawings or specification, unless he has in writing called the ENGINEER'S attention to such deviations at the time of submission, nor shall it relieve him from responsibility for errors of any sort in shop drawings or schedules. It shall be the CONTRACTOR'S responsibility to fully and completely review all shop drawings to ascertain their effect on his ability to perform the required contract work in accordance with the plans and specifications and within the contract time.

Such review by the ENGINEER shall be for the sole purpose of determining the sufficiency of said drawings or schedules to result in finished improvements in conformity with the plans and specifications, and shall not relieve the CONTRACTOR of his duty as an independent

contractor as previously set forth, it being expressly understood and agreed that the ENGINEER does not assume any duty to pass upon the propriety or adequacy of such drawings or schedules, or any means or methods reflected thereby, in relation to the safety of either person or property during CONTRACTOR'S performance hereunder.

**2.12 PRELIMINARY APPROVAL.** The ENGINEER shall not have the power to waive the obligations of this contract for the furnishing by the CONTRACTOR of good material, and of his performing good work as herein described, and in full accordance with the plans and specifications. No failure or omission of the ENGINEER to discover, object to or condemn any defective work or material shall release the CONTRACTOR from the obligations to fully and properly perform the contract, including without limitations, the obligation to at once tear out, remove and properly replace the same at any time prior to final acceptance upon the discovery of said defective work or material; provided, however, that the ENGINEER shall, upon request of the CONTRACTOR, inspect and accept or reject any material furnished, and in event the material has been once accepted by the ENGINEER, such acceptance shall be binding on the OWNER, unless it can be clearly shown that such material furnished does not meet the specifications for this work.

Any questioned work may be ordered taken up or removed for re-examination, by the ENGINEER, prior to final acceptance, and if found not in accordance with the specifications for said work, all expense of removing, re-examination and replacement shall be borne by the CONTRACTOR, otherwise the expense thus incurred shall be allowed as EXTRA WORK, and shall be paid for by the OWNER; provided that, where inspection or approval is specifically required by the specifications prior to performance of certain work, should the CONTRACTOR proceed with such work without requesting prior inspection or approval he shall bear all expense of taking up, removing, and replacing this work if so directed by the ENGINEER.

**2.13 DEFECTS AND THEIR REMEDIES.** It is further agreed that if the work or any part thereof, or any material brought on the site of the work for use in the work or selected for the same, shall be deemed by the ENGINEER as unsuitable or not in conformity with the specifications, the CONTRACTOR shall, after receipt of written notice thereof from the ENGINEER, forthwith remove such material and rebuild or otherwise remedy such work so that it shall be in full accordance with this contract.

**2.14 CHANGES AND ALTERATIONS.** The CONTRACTOR further agrees that the OWNER may make such changes and alterations as the OWNER may see fit, in the line, grade, form, dimensions, plans or materials for the work herein contemplated, or any part thereof, either before or after the beginning of the construction, without affecting the validity of this contract and the accompanying Performance, Payment, and Maintenance Bonds.

If such changes or alterations diminish the quality of the work to be done, they shall not constitute the basis for a claim for damages, or anticipated profits on the work that may be dispensed with, except as provided for unit price items under Section 5 "Measurement and Payment." If the amount of work is increased, and the work can fairly be classified under the specifications, such increase shall be paid for according to the quantity actually done and at the unit price, if any, established for such work under this contract, except as provided for unit price items under Section 5 "Measurement and Payment;" otherwise, such additional work shall be paid for as provided under Extra Work. In case the OWNER shall make such changes or alterations as shall make useless any work already done or material already furnished or used in said work, then the OWNER shall recompense the CONTRACTOR for any material or labor so

used, and for any actual loss occasioned by such change, due to actual expenses incurred in preparation for the work as originally planned.

### **3. GENERAL OBLIGATIONS AND RESPONSIBILITIES**

**3.01 KEEPING PLANS AND SPECIFICATIONS ACCESSIBLE.** The ENGINEER shall furnish the CONTRACTOR with an adequate and reasonable number of copies of all plans and specifications without expense to him, and the CONTRACTOR shall keep one copy of the same constantly accessible on the work, with the latest revisions noted thereon.

**3.02 OWNERSHIP OF DRAWINGS.** All drawings, specifications and copies thereof furnished by the ENGINEER shall not be reused on other work, and, with the exception of the signed contract sets, are to be returned to him on request, at the completion of the work. All models are the property of the OWNER.

**3.03 ADEQUACY OF DESIGN.** It is understood that the OWNER believes it has employed competent engineers and designers. It is, therefore, agreed that the OWNER shall be responsible for the adequacy of the design, sufficiency of the Contract Documents, the safety of the structure and the practicability of the operations of the completed project; provided the CONTRACTOR has complied with the requirements of the said Contract Documents, all approved modifications thereof, and additions and alterations thereto approved in writing by the OWNER. The burden of proof of such compliance shall be upon the CONTRACTOR to show that he has complied with the said requirements of the Contract Documents, approved modifications thereof and all approved additions and alterations thereto.

**3.04 RIGHT OF ENTRY.** The OWNER reserves the right to enter the property or location on which the works herein contracted for are to be constructed or installed, by such agent or agents as he may elect, for the purpose of inspecting the work, or for the purpose of constructing or installing such collateral work as said OWNER may desire.

**3.05 COLLATERAL CONTRACTS.** The OWNER agrees to provide by separate contract or otherwise, all labor and material essential to the completion of the work specifically excluded from this contract, in such manner as not to delay the progress of the work, or damage said CONTRACTOR, except where such delays are specifically mentioned elsewhere in the Contract Documents.

**3.06 DISCREPANCIES AND OMISSIONS.** It is further agreed that it is the intent of this contract that all work must be done and all material must be furnished in accordance with the generally accepted practice, and in the event of any discrepancies between the separate contract documents, the priority of interpretation defined under "Contract Documents" shall govern. In the event that there is still any doubt as to the meaning and intent of any portion of the contract, specifications or drawings, the ENGINEER shall define which is intended to apply to the work.

**3.07 EQUIPMENT, MATERIALS AND CONSTRUCTION PLANT.** The CONTRACTOR shall be responsible for the care, preservation, conservation, and protection of all materials, supplies, machinery, equipment, tools, apparatus, accessories, facilities, all means of construction, and any and all parts of the work, whether the CONTRACTOR has been paid, partially paid, or not paid for such work, until the entire work is completed and accepted.

**3.08 DAMAGES.** In the event the OWNER is damaged in the course of the work by the act,

negligence, omission, mistake or default of the CONTRACTOR, or should the CONTRACTOR unreasonably delay the progress of the work being done by others on the job so as to cause loss for which the OWNER becomes liable, then the CONTRACTOR shall reimburse the OWNER for such loss.

**3.09 PROTECTION AGAINST ACCIDENT TO EMPLOYEES AND THE PUBLIC.**

The CONTRACTOR shall at all times exercise reasonable precautions for the safety of employees and others on or near the work and shall comply with all applicable provisions of Federal, State, and Municipal safety laws and building and construction codes. All machinery and equipment and other physical hazards shall be guarded in accordance with the "Manual of Accident Prevention in Construction" of the Associated General Contractors of America except where incompatible with Federal, State, or Municipal laws or regulations. The CONTRACTOR shall provide such machinery guards, safe walkways, ladders, bridges, gangplanks, and other safety devices. The safety precautions actually taken and their adequacy shall be the sole responsibility of the CONTRACTOR, acting at his discretion as an independent contractor.

**3.10 PERFORMANCE, PAYMENT & MAINTENANCE BONDS.** Unless otherwise specified, it is further agreed by the parties to this Contract that the CONTRACTOR will execute separate performance, payment, and maintenance bonds, each in the sum of one hundred (100) percent of the total contract price, in standard forms for this purpose, guaranteeing faithful performance of the work and the fulfillment of any guarantees required, and further guaranteeing payment to all persons supplying labor and materials or furnishing him any equipment in the execution of the contract, and it is agreed that this Contract shall not be in effect until such performance, payment, and maintenance bonds are furnished and approved by the OWNER.

Unless otherwise approved in writing by the OWNER, the surety company underwriting the bonds shall be acceptable according to the latest list of companies holding certificates of authority from the Secretary of the Treasury of the United States.

Unless otherwise specified, the cost of the premium for the performance and payment bonds shall be included in the CONTRACTOR'S proposal

**3.11 LOSSES FROM NATURAL CAUSES.** Unless otherwise specified, all loss or damage to the CONTRACTOR arising out of the nature of the work to be done, or from the action of the elements, or from any unforeseen circumstance in the prosecution of the same, or from unusual obstructions or difficulties which may be encountered in the prosecution of the work, shall be sustained and borne by the CONTRACTOR at his own cost and expense.

**3.12 PROTECTION OF ADJOINING PROPERTY.** The said CONTRACTOR shall take proper means to protect the adjacent or adjoining property or properties in any way encountered, which might be injured or seriously affected by any process of construction to be undertaken under this Agreement, from any damage or injury by reason of said process of construction; and he shall be liable for any and all claims for such damage on account of his failure to fully protect all adjoining property. The CONTRACTOR agrees to indemnify, save and hold harmless the OWNER and ENGINEER against any claim or claims for damages due to any injury to any adjacent or adjoining property, arising or growing out of the performance of the contract; but any such indemnity shall not apply to any claim of any kind arising out of the existence or character of the work.

**3.13 PROTECTION AGAINST CLAIMS OF SUB-CONTRACTORS, LABORERS, MATERIALMEN AND FURNISHERS OF MACHINERY, EQUIPMENT AND SUPPLIES.** The CONTRACTOR agrees that he will indemnify and save the OWNER and ENGINEER harmless from all claims growing out of the lawful demands of sub-contractors, laborers, workmen, mechanics, material men and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. When so desired by the OWNER, the CONTRACTOR shall furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged or waived. If the CONTRACTOR fails so to do, then the OWNER may at the option of the CONTRACTOR either pay directly any unpaid bills of which the OWNER has written notice, or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to liquidate any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged, whereupon payments to the CONTRACTOR shall be resumed in full, in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligation upon the OWNER by either the CONTRACTOR or his Surety.

**3.14 PROTECTION AGAINST ROYALTIES OR PATENTED INVENTION.** The CONTRACTOR shall pay all royalties and license fees, and shall provide for the use of any design, device, material or process covered by letters patent or copyright by suitable legal agreement with the patentee or owner. The CONTRACTOR shall defend all suits or claims for infringement of any patent or copyright rights and shall indemnify and save the OWNER and ENGINEER harmless from any loss on account thereof, except that the OWNER shall defend all such suits and claims and shall be responsible for all such loss when a particular design, device, material or process or the product of a particular manufacturer or manufacturers is specified or required by the OWNER; provided, however, if choice of alternate design, device, material or process is allowed to the CONTRACTOR, then CONTRACTOR shall indemnify and save OWNER harmless from any loss on account thereof. If the material or process specified or required by the OWNER is an infringement, the CONTRACTOR shall be responsible for such loss unless he promptly gives such information to the OWNER.

**3.15 LAWS AND ORDINANCES.** The CONTRACTOR shall at all times observe and comply with all Federal, State and local laws, ordinances and regulations, which in any manner affect the contract or the work, and shall indemnify and save harmless the OWNER and ENGINEER against any claim arising from the violation of any such laws, ordinances, and regulations whether by the CONTRACTOR or his employees, except where such violations are called for by the provisions of the contract Documents. If the CONTRACTOR observes that the plans and specifications are at variance therewith, he shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in the contract for changes in the work. If the CONTRACTOR performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the ENGINEER, he shall bear all costs arising therefrom. In case the OWNER is a body politic and corporate, the law from which it derives its powers, insofar as the same regulates the objects for which, or the manner in which, or the conditions under which the OWNER may enter into contract, shall be controlling, and shall be considered as part of this contract, to the same effect as though embodied herein.

**3.16 ASSIGNMENT AND SUBLETTING.** The CONTRACTOR further agrees that he will retain personal control and will give his personal attention to the fulfillment of this contract and that he will not assign by Power of Attorney, or otherwise, or sublet said contract without the written consent of the ENGINEER, and that no part or feature of the work will be sublet to

anyone objectionable to the ENGINEER or the OWNER. The CONTRACTOR further agrees that the subletting of any portion or feature of the work, or materials required in the performance of this contract, shall not relieve the CONTRACTOR from his full obligations to the OWNER, as provided by this Agreement.

**3.17 INDEMNIFICATION.** The CONTRACTOR shall defend, indemnify and hold harmless the OWNER and the ENGINEER and their respective officers, agents and employees, from and against all damages, claims, losses, demands, suits, judgments and costs, including reasonable attorneys' fees and expenses, arising out of or resulting from the performance of the work, provided that any such damages, claim, loss, demand, suit, judgment, cost or expense:

- (1) is attributable to bodily injury, sickness, disease or death or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom; and,
- (2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any one of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

The obligation of the CONTRACTOR under this Paragraph shall not extend to the liability of the ENGINEER, his agents or employees arising out of the preparation or approval of maps, drawings, reports, surveys, Change Orders, designs or specifications, or the giving of or the failure to give directions or instructions by the ENGINEER, his agents or employees, provided such giving or failure to give is the primary cause of the injury or damage.

**3.18 INSURANCE.** The CONTRACTOR at his own expense shall purchase, maintain and keep in force such insurance as will protect him from claims set for the below which may arise out of or result from the CONTRACTOR'S operations under the Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- (1) workmen's compensation claims, disability benefits and other similar employee benefit acts;
- (2) claims for damages because of bodily injury, personal injury, occupational sickness or disease, or death of his employees, and claims insured by usual bodily injury liability coverages;
- (3) claims for damages because of bodily injury, personal injury, sickness or disease, or death of any person other than his employees, and claims insured by usual bodily injury liability coverages; and
- (4) claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

**3.18.1 CERTIFICATE OF INSURANCE.** Before commencing any of the work, CONTRACTOR shall file with the OWNER valid Certificates of Insurance acceptable to the OWNER and the ENGINEER. Such Certificates shall contain a provision that coverages afforded under the policies will not be canceled until at least ten days prior written notice has been given to the OWNER.

The CONTRACTOR shall also file with the OWNER valid Certificates of Insurance covering all sub-contractors.

#### **4. PROSECUTION AND PROGRESS**

**4.01 TIME AND ORDER OF COMPLETION.** It shall be the responsibility of the CONTRACTOR to commence work within ten(10) days after the date of written notice to proceed, and to diligently prosecute the project to completion within the time set out herein. This responsibility to proceed diligently shall not be interpreted as OWNER'S right to dictate CONTRACTOR'S order of precedence in performance of the work; provided, however, that the order and the time of prosecution shall be such that the work shall be substantially completed as a whole and in part, in accordance with this contract, the plans and specifications, and within the time of completion designated in the Proposal; provided, also, that when the OWNER is having other work done, either by contract or by his own force, the ENGINEER may direct the time and manner of constructing the work done under this contract, so that conflict will be avoided and the construction of the various works being done for the OWNER shall be harmonized.

The CONTRACTOR shall submit, at such times as may reasonably be requested by the ENGINEER, schedules which shall show the order in which the CONTRACTOR proposes to carry on the work, with dates at which the CONTRACTOR will start the several parts of the work, and estimated dates of completion of the several parts.

**4.02 EXTENSION OF TIME.** Should the CONTRACTOR be delayed in the completion of the work by any act or neglect of the OWNER or ENGINEER, or of any employee of either, or by other contractors employed by the OWNER, or by changes ordered in the work, or by strikes, lockouts, fires, and unusual delays by common carriers, or unavoidable cause or causes beyond the CONTRACTOR'S control, or by any cause which the ENGINEER shall decide justifies the delay, then an extension of time shall be allowed for completing the work, sufficient to compensate for the delay, the amount of the extension to be determined by the ENGINEER, provided, however, that the CONTRACTOR shall give the ENGINEER prompt notice in writing of the cause of such delay.

**4.03 HINDRANCES AND DELAYS.** No claims shall be made by the CONTRACTOR for damages resulting from hindrances or delays from any cause (except where the work is stopped by order of the OWNER) during the progress of any portion of the work embraced in this contract. In case said work shall be stopped by the act of the OWNER, then such expense as in the judgment of the ENGINEER is caused by such stoppage of said work shall be paid by the OWNER to the CONTRACTOR; provided, however, that OWNER shall not be responsible for damages attributable to work stoppages by OWNER in the instance of CONTRACTOR'S failure to timely perform as set out in Paragraph 7 of these General Conditions.

#### **5. MEASUREMENT AND PAYMENT**

**5.01 QUANTITIES AND MEASUREMENTS.** No extra or customary measurements of any kind will be allowed, but the actual measured and/or computed length, area, solid contents, number and weight only shall be considered, unless otherwise specifically provided.

**5.02 ESTIMATED QUANTITIES.** This agreement, including the specifications, plans and estimate, is intended to show clearly all work to be done and material to be furnished hereunder. where the estimated quantities are shown for the various classes of work to be done and material to be furnished under this contract, they are approximate and are to be used only as a basis for estimating the probable cost of the work and for comparing the proposals offered for the work. It is understood and agreed that the actual amount of work to be done and material to be furnished under this contract may differ somewhat from these estimates, and that where the basis for payment under this contract is the unit price method, payment shall be for the actual amount of such work done and the material furnished.

Where payment is based on the unit price method, the CONTRACTOR agrees that he will make no claim for damages, anticipated profits or otherwise on account of any differences which may be found between the quantities of work actually done, the material actually furnished under this contract and the estimated quantities contemplated and contained in the proposal; provided, however, that in case the actual quantity of any major item should become as much as 20% more than, or 20% less than the estimated or contemplated quantity for such items, than either party to this Agreement, upon demand, shall be entitled to a revised consideration upon the portion of the work above or below 20% of the estimated quantity.

A "Major Item" shall be construed to be any individual bid item incurred in the proposal that has a total cost equal to or greater than five(5) percent of the total contract cost, computed on the basis of the proposal quantities and the contract unit prices.

Any revised consideration is to be determined by agreement between the parties, otherwise by the terms of this Agreement, as provided under "Extra Work".

**5.03 PRICE OF WORK.** In consideration of the furnishing of all the necessary labor, equipment and material, and the completion of all work by the CONTRACTOR, and on the completion of all work and of the delivery of all material embraced in this Contract in full conformity with the specifications and stipulations herein contained, the OWNER agrees to pay the CONTRACTOR the prices set forth in the Proposal hereto attached, which has been made a part of this contract. The CONTRACTOR hereby agrees to receive such prices in full for furnishing all material and all labor required for the aforesaid work, also for all expense incurred by him, and for well and truly performing the same and the whole thereof in the manner and according to this Agreement.

**5.04 PARTIAL PAYMENTS.** On or before the 10th day of each month, the CONTRACTOR shall prepare and submit to the ENGINEER a statement showing as completely as practicable the total value of the work done by the CONTRACTOR up to and including the last day of the preceding month; said statement shall also include the value of all sound materials delivered on the site of the work that are to be fabricated into the work. The ENGINEER shall review said statement and recommend to the OWNER approval, modification or rejection of same.

Within 30 consecutive calendar days after approval of the aforesaid statement by the OWNER, the OWNER shall pay the CONTRACTOR the total amount of the approved statement, less 10 percent of the amount thereof, which 10 percent shall be retained until final payment, and further less all previous payments and all further sums that may be retained by the OWNER under the terms of this Agreement. It is understood, however, that in case the whole work be near to completion and some unexpected and unusual delay occurs due to no fault or

neglect on the part of the CONTRACTOR, the OWNER may, upon written recommendation of the ENGINEER, pay a reasonable and equitable portion of the retained percentage to the CONTRACTOR; or the CONTRACTOR at the OWNER'S option, may be relieved of the obligation to fully complete the work and, thereupon, the CONTRACTOR shall receive payment of the balance due him under the contract subject only to the conditions stated under "Final Payment".

**5.05 USE OF COMPLETED PORTIONS.** The OWNER shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the time for completing the entire work or such portions may not have expired but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the work, the CONTRACTOR shall be entitled to such extra compensation, or extension of time, or both, as the ENGINEER may determine.

The CONTRACTOR shall notify the ENGINEER when, in the CONTRACTOR'S opinion, the contract is "substantially completed" and when so notifying the ENGINEER, the CONTRACTOR shall furnish to the ENGINEER in writing a detailed list of unfinished work. The ENGINEER will review the CONTRACTOR'S list of unfinished work and will add thereto such items as the CONTRACTOR has failed to include. The "substantial completion" of the structure or facility shall not excuse the CONTRACTOR from performing all of the work undertaken, whether of a minor or major nature, and thereby completing the structure or facility in accordance with the Contract Documents.

**5.06 FINAL COMPLETION AND ACCEPTANCE.** Within ten(10) days after the CONTRACTOR has given the ENGINEER written notice that the work has been completed, or substantially completed, the ENGINEER and the OWNER shall inspect the work and within said time, if the work is found to be completed or substantially completed in accordance with the Contract Documents, the ENGINEER shall issue to the OWNER and the CONTRACTOR his Certificate of Completion, and thereupon shall place the project on the next available City Council agenda for final acceptance and approval of final payment.

**5.07 FINAL PAYMENT.** Upon the issuance of the Certificate of Completion, the ENGINEER shall proceed to make final measurements and prepare final statement of the value of all work performed and materials furnished under the terms of the Agreement and shall certify same to the OWNER, who shall pay to the CONTRACTOR, within 30 consecutive calendar days after formal acceptance of the completed project by the City Council, the balance due the CONTRACTOR under the terms of this Agreement, provided he has fully performed his contractual obligations under the terms of this contract; and said payment shall be come due in any event upon said performance by the CONTRACTOR. Neither the Certificate of Acceptance nor the final payment, nor any provision in the contract Documents, shall relieve the CONTRACTOR of the obligation for fulfillment of any warranty which may be required.

**5.08 PAYMENTS WITHHELD.** The OWNER may, on account of subsequently discovered evidence, withhold or nullify the whole or part of any certificate to such extent as may be necessary to protect himself from loss on account of:

- (a) defective work not remedied
- (b) claims filed or reasonable evidence indicating probable filing of claims
- (c) failure of the CONTRACTOR to make payments properly to subcontractors or for material

- or labor
- (d) damage to another contractor
- (e) reasonable doubt that the work can be completed for the unpaid balance of the contract amount
- (f) reasonable indication that the work will not be completed within the contract time

When the above grounds are removed or the CONTRACTOR provides a Surety Bond satisfactory to the OWNER, which will protect the OWNER in the amount withheld, payment shall be made for amounts withheld because of them.

**5.09 DELAYED PAYMENTS.** Should the OWNER fail to make payment to the CONTRACTOR of the sum named in any partial or final statement, when payment is due, then the OWNER shall pay to the CONTRACTOR, in addition to the sum shown as due by such statement, interest thereon at the rate of six(6) percent per annum, unless otherwise specified, from date due as provided under "Partial Payments" and "Final Payments", until fully paid, which shall fully liquidate any injury to the CONTRACTOR growing out of such delay in payment.

## **6. EXTRA WORK AND CLAIMS**

**6.01 CHANGE ORDERS.** Without invalidating this Agreement, the OWNER may, at any time or from time to time, order additions, deletions or revisions to the work; such changes will be authorized by Change Order to be prepared by the ENGINEER for execution by the OWNER and the CONTRACTOR. The Change Order shall set forth the basis for any change in contract price, as hereinafter set forth for Extra Work, and any change in contract time which may result from the change.

In the event the CONTRACTOR shall refuse to execute a Change Order which has been prepared by the ENGINEER and executed by the OWNER, the ENGINEER may in writing instruct the CONTRACTOR to proceed with the work as set for the in the Change Order and the CONTRACTOR may make claim against the OWNER for Extra Work involved therein, as hereinafter provided.

**6.02 MINOR CHANGES.** The ENGINEER may authorize minor changes in the work not inconsistent with the overall intent of the Contract Documents and not involving an increase in Contract Price. If the CONTRACTOR believes that any minor change or alteration authorized by the ENGINEER involves Extra Work and entitles him to an increase in the Contract Price, the CONTRACTOR shall make written request to the ENGINEER for a written Field Order.

In such case, the CONTRACTOR by copy of his communication to the ENGINEER or otherwise in writing shall advise the OWNER of his request to the ENGINEER for a written Field Order and that the work involved may result in an increase in the Contract Price.

Any request by the CONTRACTOR for a change in Contract Price shall be made prior to beginning the work covered by the proposed change.

**6.03 EXTRA WORK.** It is agreed that the basis of compensation to the CONTRACTOR for work either added or deleted by a Change Order or for which a claim for Extra Work is made shall be determined by one or more of the following methods:

Method (A): by agreed unit prices; or

Method (B): by agreed lump sum; or

Method (C): if neither Method (A) nor Method (B) be agreed upon before the Extra Work is commenced, then the CONTRACTOR shall be paid the “actual field cost” of the work, plus fifteen (15) percent.

In the event said Extra Work be performed and paid for under Method (C), then the provisions of this paragraph shall apply and the “actual field cost” is hereby defined to include the cost to the CONTRACTOR of all workmen, such as foreman, timekeepers, mechanics and laborers, and materials, supplies, teams, trucks, rentals on machinery and equipment, for the time actually employed or used on such Extra Work, plus actual transportation charges necessarily incurred, together with all power, fuel, lubricants, water and similar operating expenses, also all necessary incidental expenses incurred directly on account of such Extra Work, including Social Security, Old Age Benefits, and other payroll taxes, and, a rateable proportion of premiums on Performance, Payment, and Maintenance Bonds, Public Liability and Property Damage and Workmen’s Compensation, and all other insurance as may be required by any law or ordinance, or directed by the OWNER, or by them agreed to. The ENGINEER may direct the form in which accounts of the “actual field cost” shall be kept and the records of these accounts shall be made available to the ENGINEER. The ENGINEER or OWNER may also specify in writing, before the work commences, the method of doing the work and the type and kind of machinery and equipment to be used; otherwise these matters shall be determined by the CONTRACTOR. Unless otherwise agreed upon, the prices for the use of machinery and equipment shall be determined by using 100 percent, unless otherwise specified, of the latest schedule of Equipment Ownership Expense adopted by the Associated General Contractors of America. Where practicable the terms and prices for the use of machinery and equipment shall be incorporated in the Written Extra Work Order. The fifteen (15%) percent of the “actual field cost” to be paid the CONTRACTOR shall cover and compensate him for his profit, overhead, general superintendence and field office expense, and all other elements of cost and expense not embraced within the “actual field cost” as herein defined, save that where the CONTRACTOR’S Camp or Field Office must be maintained primarily on account of such Extra work; then the cost to maintain and operate the same shall be included in the “actual field cost”.

No claim for Extra work of any kind will be allowed unless ordered in writing by the ENGINEER. In case any orders or instructions, either oral or written, appear to the CONTRACTOR to involve Extra Work for which he should receive compensation or an adjustment in the construction time, he shall make written request to the ENGINEER for written order authorizing such Extra Work. Should a difference of opinion arise as to what does or does not constitute Extra Work, or as to the payment therefor, and the ENGINEER insists upon its performance, the CONTRACTOR shall proceed with the work after making written request for written order and shall keep an accurate account of the “actual field cost” thereof, as provided under Method (C).

**6.04 TIME OF FILING CLAIMS.** It is further agreed by both parties hereto that all questions of dispute or adjustment presented by the CONTRACTOR shall be in writing and filed with the ENGINEER within thirty (30) days after the ENGINEER has given any directions, order or instruction to which the CONTRACTOR desires to take exception. The ENGINEER shall reply within thirty (30) days to such written exceptions by the CONTRACTOR and render his final decision in writing. It is further agreed that final acceptance of the work by the

OWNER and the acceptance by the CONTRACTOR of the final payment shall be a bar to any claims by either party, except where noted otherwise in the Contract Documents. Contractor's failure to timely comply with the time limitations set out herein shall waive any entitlement to dispute or adjustment.

## **7. CONTRACTOR'S TIMELY PERFORMANCE**

**7.01 CONTRACTOR'S OBLIGATION TO TIMELY PERFORM.** In case the CONTRACTOR should abandon or otherwise fail or refuse to commence, continue, or resume work within ten (10) days after written notification from the OWNER, or the ENGINEER, or if the CONTRACTOR fails to comply with the orders of the ENGINEER, when such orders are consistent with the Contract Documents, then, and in that case, where performance and payment bonds exist, the Sureties on these bonds shall be notified in writing and directed to complete the work, and a copy of said notice shall be delivered to the CONTRACTOR.

**7.02 OWNER'S IMMEDIATE REMEDY.** After receiving said notice of failure to perform the CONTRACTOR shall not remove from the work any machinery, equipment, tools, materials, or supplies then on the job, but the same, together with any materials and equipment under contract for the work, may be held for use on the work by the OWNER or the Surety on the performance bond, or another contractor in completion of the work; and the CONTRACTOR shall not receive any rental or credit therefor (except when used in connection with extra work, where credit shall be allowed as provided for under Section 6, Extra Work and Claims), it being understood that the use of such equipment and materials will ultimately reduce the cost to complete the work and be reflected in the final settlement.

**7.03 OWNER'S ADDITIONAL REMEDIES.** Where there is no performance bond provided or in case the Surety should fail to commence compliance with the notice of failure to perform hereinbefore provided for, within ten (10) days after service of such notice, then the OWNER may provide for completion of the work in either of the following elective manners:

**7.03.1** The OWNER may thereupon employ such force of men and use such machinery, equipment, tools, materials and supplies as said OWNER may deem necessary to complete the work and charge the expense of such labor, machinery, equipment, tools, materials and supplies to said CONTRACTOR, and expense so charged shall be deducted and paid by the OWNER out of such moneys as may be due, or that may thereafter at any time become due to the CONTRACTOR under and by virtue of this Agreement. In case such expense is less than the sum which would have been payable under this contract, if the same had been completed by the CONTRACTOR, then said CONTRACTOR shall receive the difference. In case such expense is greater than the sum which would have been payable under this contract, if the same had been completed by said CONTRACTOR, then the CONTRACTOR and/or his Surety shall pay the amount of such excess to the OWNER; or

**7.03.2** In the instance of CONTRACTOR'S failure to perform in the commencement of the contract, and if bids remain outstanding and enforceable from the original bid process, OWNER may award the contract to the next qualified low bidder who will accept the contract. If all bids have expired or no qualified bidder will accept the work, then the OWNER under sealed bids, after five (5) days notice published one or more times in a newspaper having general circulation in the county of the location of the work, may let the contract for the completion of the work under substantially the same terms and conditions which are provided in this contract. In case any increase in cost to the OWNER under the new contract as compared to what would have

been the cost under this contract, such increase shall be charged to the CONTRACTOR and the Surety shall be and remain bound therefor. However, should the cost to complete any such new contract prove to be less than what would have been the cost to compete under this contract, the CONTRACTOR and/or his Surety shall be credited therewith.

When the work has been substantially completed, the CONTRACTOR and his Surety shall be so notified and Certificates of Completion and Acceptance, as provided in Paragraph 5.06 hereinabove, shall be issued. A complete itemized statement of the contract accounts, certified to by the ENGINEER as being correct, shall then be prepared and delivered to the CONTRACTOR and his Surety, whereupon the CONTRACTOR and/or his Surety, or the OWNER as the case may be, shall pay the balance due as reflected by said statement, within fifteen (15) days after the date of such Certificate of Completion.

In the event the statement of accounts shows that the cost to complete the work is less than that which would have been the cost to the OWNER had the work been completed by the CONTRACTOR under the terms of this contract; or when the CONTRACTOR and/or his Surety shall pay the balance shown to be due by them to the OWNER, then all machinery, equipment, tools, materials, or supplies left on the site of the work shall be turned over to the CONTRACTOR and/or his Surety. Should the cost to complete the work exceed the contract price, and the CONTRACTOR and/or his Surety fail to pay the amount due the OWNER within the time designated hereinabove, and there remains any machinery, equipment, tools, materials, or supplies on the site of the work, notice thereof, together with an itemized list of such equipment and materials, shall be mailed to the CONTRACTOR and his Surety at the respective addresses designated in this contract, provided, however, that actual written notice given in any manner will satisfy this condition. After mailing, or other giving of such notice, such property shall be held at ordinary care to protect such property. After fifteen (15) days from the date of said notice the OWNER may sell such machinery, equipment, tools, materials, or supplies and apply the net sum derived from such sale to the credit of the CONTRACTOR and his Surety. Such sale may be made at either public or private sale, with or without notice, as the OWNER may elect. The OWNER shall release any machinery, equipment, tools, materials, or supplies, which remain on the work, and belong to persons other than the CONTRACTOR or his Surety, to their proper owners. The books on all operations provided herein shall be open to the CONTRACTOR and his Surety.

**7.04** The remedies set herein for CONTRACTOR'S failure to timely perform shall not be exclusive; OWNER shall be entitled to exercise any and all other remedies under this contract or available to OWNER at law or in equity, in the event of CONTRACTOR'S failure to timely perform.

## SPECIAL CONDITIONS OF AGREEMENT

- SP-1. LINES AND GRADES. The construction plans include a horizontal control line (baseline) and vertical control points (bench marks). These have been established in the field and will be re-established or shown to the Contractor prior to commencing construction. After construction has started, the Contractor shall be responsible for protecting and preserving these controls. From these controls, the Contractor shall stake all alignments for the work and will be responsible for all horizontal and vertical construction staking.
- SP-2. SUPERINTENDENCE. The Contractor or his appointed Superintendent(s) shall provide proper superintendence for this entire project. Correspondence, questions concerning the project, interpretations and instructions shall be to or through the Contractor or the Superintendent. The Engineer will not in any manner supervise the Contractor's workmen or subcontractors. The Contractor or his Superintendent shall be on the job site whenever work is in progress.
- SP-3. PROJECT MAINTENANCE. The project area shall be maintained by the Contractor in a neat, passable condition. Vehicular access shall be maintained to every house and adjacent property. The Contractor shall provide a crew to maintain streets and driveways during holidays and weekends for the period of this contract.
- SP-4. EXTENSION OF TIME. The Contractor may make written request for an extension of time because of acts of God, acts of war, strikes, or unavailability of materials because of failure of the manufacturer or transporter. The Contractor shall support, by written evidence, any claim for a time extension because of any delay in receipt of material. An extension of time will not be granted for normal material delivery times, or failure of the Contractor to act properly toward the timely completion of the project.

Upon written request, additional contract time will be granted only for the number of days that exceed the National Climatic Data Center's historical average number of days of rainfall of 0.1". Rain days shall be defined as a day with 0.1" or more of measured rainfall, as measured at the Gregg County Airport.

- SP-5. INSURANCE. The Contractor shall not commence work under this contract until he has obtained at his expense all insurance required under this section of the Special Provisions and by the Contract Documents and such insurance has been approved by the Owner, nor shall the Contractor allow any subcontractor to commence work on any subcontract until all similar insurance required of the subcontractor has been so obtained and approved. Such insurance shall remain in full force and effect on all phases of the work, whether or not the work is occupied or utilized by the Owner, until all work under the Contract is completed and has been accepted by the Owner.

Nothing contained in the insurance requirements shall be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from his operations under the Contract.

Any insurance bearing an adequacy of performance will be maintained after completion of the project for the full guarantee period.

The Contractor shall obtain and maintain for the full period of the Contract the following types of insurance in the form, minimum limits and amounts herein specified or as may be otherwise required in the Contract Documents. The Contractor shall automatically renew any policy which expires during the performance of his Contract and notify the Owner and Engineer of such a renewal prior to expiration date.

A. Workmen's Compensation including Occupational Disease, and Employer's Liability Insurance.

Definitions:

*Certificate of coverage ("certificate")* - a copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

*Duration of the project* - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

*Persons providing services on the project ("subcontractor" in 406.096)* - includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

The contractor shall provide coverage, on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.

The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

1. a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
2. no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

The contractor shall contractually require each person with whom it contracts to provide services on a project, to:

1. provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;
2. provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;
3. provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
4. obtain from each other person with whom it contracts, and provide to the contractor:
  - (a) a certificate of coverage, prior to the other person beginning work on the project, and
  - (b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

5. retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
6. notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
7. contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificate of coverage to be provided to the person for whom they are providing services.

By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

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

B. Public Liability Insurance. (Note "Indemnity" clause hereinafter). Before commencement of the work, the Contractor shall submit written evidence that he and all his subcontractors have obtained for the period of the Contract full Comprehensive General Liability Insurance coverage. This coverage shall protect the Contractor; the Owner; the Engineer, its architects and engineers; and each of their officers, agents and employees from claims for damages for bodily or personal injury, sickness or disease, including death, and from claims for damages to property, which may arise directly or indirectly out of, or in connection with the performance of work under this Contract by the Contractor, by any of his subcontractors, or by anyone directly or indirectly employed of either of them, or under the control of either of them, and the minimum amount of such insurance shall be as follows unless higher minimum amounts are otherwise required in the Contract Documents:

Public Liability Insurance in an amount not less than One Million Dollars (\$1,000,000) for damages arising out of bodily or personal injury, sickness or disease, or death of one person and subject to the same limit for each person in an amount not less than One Million Dollars (\$1,000,000) in any one occurrence; and property damage in an amount not less than One Million Dollars (\$1,000,000) for all single combined damages arising out of injury to or destruction of property of others in any one occurrence with an aggregate limit in the same amount.

The Property Damage portion of this coverage shall include explosion, collapse and underground exposure coverage. In addition, where Completed Operation Insurance coverage is applicable, such coverage will be maintained after completion and acceptance of the project for the full guarantee period.

C. Automobile Liability Insurance: Before commencement of the work, the Contractor shall submit written evidence that he and all his subcontractors have obtained Automobile Liability Insurance coverage on all self-propelled vehicles designed for travel on public roads used in connection with the Contract, whether owned, non-owned, or hired. The liability limits shall not be less than Two Hundred Fifty Thousand Dollars (\$250,000) for injury or death of one person and in an amount not less than Five Hundred Thousand Dollars (\$500,000) in any one occurrence; and Property Damage limits of not less than One Hundred Thousand Dollars (\$100,000) in any one occurrence.

D. Contractual Liability Coverage: Each and every policy for Liability Insurance carried by each Contractor and Subcontractor will include a "Contractual Liability Coverage" endorsement sufficiently broad to insure the provision titled "Indemnity" hereinafter set forth.

E. Indemnity: The Contractor shall defend, indemnify and hold harmless the Owner; the Engineer, its Engineers; and each of their officers, agents, servants, and employees; from any and all suits, actions, claims, losses or damage of any character and from all expenses incidental to the defense of such suits, actions or claims, based upon or arising out of or alleged to be based upon or arising out of (1) any injury, disease, sickness or death of any person or persons, (2) any damages to any property including in part loss of use thereof, caused by any act or omission of the Contractor, of any subcontractor of the Contractor, or by their officers, agents, servants, employees, or anyone else under the Contractor's direction and control, and arising out of, occurring in connection with, resulting from, or caused by the performance or failure of performance of any work or services called for by the Contract or from conditions created by the performance or non-performance of said work or services, but not including the sole negligence of any party herein indemnified.

F. Builders' Risk "All-Risk" Insurance: In addition to such Fire and Extended Insurance coverage which the Contractor or his subcontractors elect to carry for their own protection, the Contractor, before commencement of the work, shall effect and maintain for the life of his Contract Builders' Risk "All Risk" completed Value Insurance coverage upon the full insurable value of all portions of the project which is the subject of this Contract and subject to a loss for which Builders' Risk "All-Risk" Insurance coverage gives protection, and shall include completed work and work in progress. This coverage shall be with an insurance company or companies acceptable to the Owner.

Such insurance shall include as Additional Named Insured: The Owner; the Engineer, its architects and engineers; and any of their officers, agents, and employees; and any other persons with an insurable interest designated by the Owner as an Additional Named Insured.

Duplicate originals of the policy of insurance required herein shall be furnished to the Engineer as provided under "Evidence of Insurance Coverage" hereinafter.

G. Evidence of Liability & Builders' Risk Insurance Coverage: Before commencement of any work, the Contractor shall submit written evidence that he and all his subcontractors have obtained the minimum insurance required by the Contract Documents. Such written evidence shall be in the form of a Certificate of Insurance executed by the Contractor's insurance carrier showing such policies in force for the specified period or by furnishing a copy of the actual policy or policies. Each policy or certificate will bear an endorsement or statement waiving right of cancellation or reduction in coverage without ten (10) days notice in writing to be delivered by registered mail to the Owner.

The Contractor shall furnish duplicate originals of Builders' Risk "All-Risk" Completed Value Insurance coverage to the Engineer, one copy of which shall be for the Owner and one copy for the Engineer.

- SP-6. WATER FOR CONSTRUCTION. The Owner will furnish a fire hydrant meter for construction water on this project. The Contractor will be responsible for paying an \$800 meter deposit before the meter will be set. In addition, the Contractor will be responsible for hiring a licensed plumber to install the backflow prevention device on the fire hydrant meter. The Contractor shall provide for all labor and equipment necessary. Such water shall be taken from the system at times, locations, and under conditions approved by the Engineer. Contractor shall notify Owner at least one week in advance of when construction water will be needed.
- SP-7. ELECTRICITY. The Contractor shall make his own arrangement for electricity.
- SP-8. EXPLOSIVES. The use of explosives will not be permitted.
- SP-9. SANITARY REQUIREMENTS. The operations of the Contractor shall be in full conformance with all of the rules and regulations of boards and bodies having jurisdiction with respect to sanitation. The Contractor shall supply safe and sufficient drinking water to all of his employees, shall obey and enforce all sanitary regulations and orders, and shall take precaution against the spread of infectious diseases. Acceptable, portable, chemical-type toilets shall be provided and maintained by the Contractor.
- SP-10. DISPOSAL OF SURPLUS MATERIALS. All surplus materials not included or incorporated in the project shall be removed from the site to the satisfaction of the Engineer.
- SP-11. SIGNS, BARRICADES, AND LIGHTING. The Contractor shall provide and erect construction signing, barricades and lighting to protect the public in connection with the work, all in accordance with the latest published provisions of the Texas Manual of Uniform Traffic Control Devices and as approved by the Engineer. The construction drawings indicate only the general signing required and do not detail the requirements for protection in connection with trenching and other construction operations.

Existing street signs, traffic signs and all other signs within the project area shall be protected, maintained and replaced if damaged or stolen; all by the Contractor as approved by the Engineer.

- SP-12. MATERIALS AND WORKMANSHIP. All materials incorporated into this project shall be new and of first quality except as specifically provided for in the technical specifications. The workmanship shall be of the highest level as approved by the Engineer.
- SP-13. EXISTING FACILITIES. Whether shown on the plans or not, the Contractor shall be completely responsible for the protection or replacement of all facilities within the project area and in connection with the work.
- SP-14. GUARANTEE. As a part of this project, the Contractor shall guarantee all materials and workmanship and shall repair or remove and replace any defective condition as determined by the Engineer. Such guarantee shall be effective for a period of one year from the date of written acceptance by the Owner or date of final payment whichever is first. The maintenance bond shall be in full effect throughout the warranty period.
- SP-15. STATE SALES TAX. The Contractor's attention is directed to paragraph No. 3 of Ruling No. 9 by obtaining the necessary permit or permits from the State Comptroller allowing the purchase of materials for incorporation in this project without having to pay the Limited Sales, Excise and Use Tax at the time of purchase. Such bidders must submit segregated prices for the total cost of materials and total cost of services, and the successful bidder must require his sub-contractors to obtain such permits and to sign written sub-contracts in which the prices are segregated for the total cost of materials and the total cost of services. Total materials cost should not include materials which are used or consumed in performing the work, but do not become a part of the completed installation.

After the bid opening and prior to execution of contract, the low bidder will be required to provide a separation of materials costs and labor costs for the amounts of the base bid and any alternatives. The following form shall be used to provide this information. This form shall be submitted in six(6) copies with the executed contract and such statement will become a part of the contract:

STATEMENT OF MATERIALS AND SERVICES

City of Longview

Project Name: City of Longview

West Loop 281 (US 80 to Shofner) Utility Relocation

Total Materials Cost: \$ \_\_\_\_\_

Total Service Cost: \$ \_\_\_\_\_

TOTAL CONTRACT PRICE: \$ \_\_\_\_\_

Note: The total materials cost plus the total services cost must equal the amount shown of the total contract price.

- SP-16. CLEANUP. The entire project site shall be left in as good or better condition as the condition at the time construction is started, all as approved by the Engineer. All cleanup shall be completed within the time specified for the project construction and liquidated damages will be applied to cleanup time in the event such is performed after the contract time has expired.

- SP-17. CERTIFICATE OF INCORPORATION. In the event the contractor is a corporation, the contractor shall furnish a certificate issued by the Secretary of the State of Texas dated not more than thirty days prior to commencement of construction evidencing that the contractor is a corporation duly incorporated under the laws of the State of Texas and currently in good standing, or in the case of a corporation not incorporated under the laws of the State of Texas, the certificate shall evidence that such corporation currently holds a permit to do business in the State of Texas and it is in good standing. Such corporate contractor shall at all times pay all franchise taxes and other taxes and assessments levied against it by the State of Texas and at all times maintain its corporate status and good standing according to the laws of the State of Texas.
- SP-18. ALTERNATE MATERIALS AND METHODS. Consistent with the intent and character of this project, the Contractor may request from the Engineer the substitution of materials or methods of construction which he believes will give equal results. The request shall be in writing and shall contain detailed information. The Engineer will consider such requests and shall give his answer in writing. The Engineer's judgement will be final and no reason for denial will be required except as may be offered by the Engineer. The Engineer may require additional information on which to make a judgement; in which case it shall be the entire responsibility of the Contractor to provide such information.
- SP-19. EXPECTED EARNINGS SCHEDULE. At the pre-construction conference for this project, the successful bidder shall submit to the City Engineer an "Expected Earnings Schedule". This table or chart shall show the amount of payment the contractor expects to receive from the City on this project each month until the project is completed. The table can be handwritten or typed. Though the contractor shall make his best effort in estimating these payments accurately, the schedule shall be used for estimating purposes only and shall not bind the City nor the Contractor to the listed payments. Payments, as usual, will be made upon actual work performed less the appropriate retainage.
- SP-20. PERFORMANCE, PAYMENT, AND MAINTENANCE BONDS. Surplus lines carriers under Article 1.14-2 of the Insurance Code are not eligible to act as sureties on performance, payment, and maintenance bonds.
- SP-21. RETAINAGE. Retainage is that part of the contract payment withheld by the City to secure performance of the contract.
- Retainage shall be withheld at the following rates:
- A. For any contract where the total contract price estimate at the time of execution of the contract is less than \$400,000 retainage shall be 10%.
  - B. For any contract where the total contract price estimate at the time of execution of the contract is greater than or equal to \$400,000 retainage shall be 5%.
- SP-22. MATERIAL ON HAND. Unless otherwise specified in a writing signed by the Owner prior to the bid opening for this project, the Owner will pay the Contractor for materials on hand for this project, subject to the provisions of this Contract. Such payment will be made only for materials stored on-site in a manner acceptable to the Owner. At a minimum, materials must be stored in a manner that prevents damage, theft, and vandalism. Additionally, payment will

be made only for materials for which the Contractor has supplied invoices to the Engineer that substantiate the amount paid for said materials.

- SP-23. INSPECTION. Contractor will be allowed to work prior to 8:00 a.m. and after 4:30 p.m. on weekdays, and may also elect to work on Saturdays. The City will provide an inspector at these times as necessary. The Contractor, however, will be required to reimburse the City of Longview for the actual hours worked by the inspector outside of the regular 8:00 a.m. to 4:30 p.m. Monday through Friday hours. Such reimbursement will be made at a rate of \$25 per hour.
- SP-24. AS-BUILT DRAWINGS. The Contractor will provide the City, prior to final payment, one set of construction drawings red-lined to show any changes in actual construction.
- SP-25. FIREARMS PROHIBITED. Contractor agrees that Contractor, Contractor's officers, employees, agents, and representatives, shall not carry any firearms, including without limitation concealed handguns, while in the performance of this Contract and on City premises (including City rights-of-way, utility easements, or drainage easements) or when meeting with City officers or employees regarding this Contract. Contractor agrees that failure by Contractor to comply with this requirement shall constitute a substantial breach of this Contract, entitling City to all remedies under the law or this Contract for such breach, including without limitation the City's right to terminate this Contract for substantial nonperformance.
- SP-26. PREVAILING WAGE RATES. Contractor agrees to abide by the requirements of Texas Government Code Chapter 2258, entitled "Prevailing Wage Rates," as applicable. Contractor understands that a contractor or subcontractor subject to the requirements of that Chapter must pay the prevailing wage rates as set forth in this Contract. Any contractor or subcontractor who violates this requirement may be subject to penalties as provided in Chapter 2258, including but not limited to a penalty of \$60 for each worker employed for each calendar day or part of the day that the work is paid less than the wage rates stipulated in this Contract."
- SP-27. ALLOWANCE FOR MISCELLANEOUS EXTRA WORK: A discretionary allowance has been established in the Bid Proposal for extra work for which a method of payment, such as individual bid items, has not been established. This allowance is not intended to be used to procure payment for items specifically named as subsidiary to other bid items within the contract documents such as the subsurface conditions described in the General Provisions or Special Conditions.

Prior to initiating any item of extra work under the allowance bid item the Owner, Engineer, and Contractor shall agree as to the scope of extra work to be performed and the amount of payment to be made for the particular item of extra work under consideration. Expenditure of the allowance funds is at the sole discretion of the Owner. The allowance may be used in full or in part, as the Owner deems necessary. If no extra work is identified, and approved by the Owner, the allowance funds will not be expended.

**TECHNICAL SPECIFICATIONS FOR:**

**WEST LOOP 281  
(US 80 TO SHOFNER)  
UTILITY RELOCATION**

**Prepared for:**

City of Longview  
Department of Public Works

**Prepared by:**

Wood Engineering Company  
Firm Reg. No. F-8594 & 101362-00  
1616 Judson Road Suite 6L

## TABLE OF CONTENTS

### **DIVISION 01 GENERAL REQUIREMENTS**

SECTION 01: .....	REFERENCE STANDARDS
SECTION 02: .....	SUBMITTALS
SECTION 03: .....	QUALITY CONTROL
SECTION 04: .....	TESTING SERVICES
SECTION 05: .....	CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS
SECTION 06: .....	BARRICADES & WARNING DEVICES
SECTION 07: .....	MATERIAL AND EQUIPMENT
SECTION 08: .....	CONTRACT CLOSEOUT

### **DIVISION 02 CONCRETE, ASPHALT, PAVING**

SECTION 01: .....	PAVEMENT REPLACEMENT
-------------------	----------------------

### **DIVISION 03 SITE CONSTRUCTION**

SECTION 01: .....	CLEARING AND GRUBBING
SECTION 02: .....	FENCES AND GATES
SECTION 03: .....	SITE CLEARING
SECTION 04: .....	SOIL MATERIALS
SECTION 05: .....	FERTILIZER
SECTION 06: .....	FURNISHING AND PLACING 4" TOPSOIL
SECTION 07: .....	GRADING AND SEEDING
SECTION 08: .....	FILTER FABRIC FENCE
SECTION 09: .....	SODDING FOR EROSION CONTROL AND FINAL STABILIZATION

### **DIVISION 04 UTILITIES**

SECTION 01: .....	POTABLE WATER
SECTION 02: .....	SANITARY SEWER
SECTION 03: .....	STORM WATER POLLUTION PREVENTION PLAN

### **DIVISION 05 EARTHWORK**

SECTION 01: .....	EXCAVATION, TRENCHING AND BACKFILLING FOR PIPE
-------------------	--

# DIVISION 01 GENERAL REQUIREMENTS

## SECTION 01: REFERENCE STANDARDS

### 1. QUALITY ASSURANCE

- 1.1 For Products or workmanship specified by association, trade or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- 1.2 Conform to reference standard by date of issue current on date of Contract Documents.
- 1.3 Obtain copies of standards when required by the Contract Documents.
- 1.4 Maintain copy at project site during submittals, planning and progress of the specific work, until Substantial Completion.
- 1.5 Should specified reference standards conflict with Contract Documents, request clarification from the Engineer before proceeding.
- 1.6 Neither the contractual relationship, duties and responsibilities of the parties in Contract nor those of the Engineer shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

END OF SECTION

## SECTION 02: SUBMITTALS

### 1. SUBMITTAL PROCEDURES

- 1.1 Submit the number of copies, which the Contractor requires, plus three (3) copies, which will be retained by the Engineer.
- 1.2 Transmit each submittal with AIA Form G810 or Engineer accepted form.
- 1.3 Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- 1.4 Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate.
- 1.5 Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- 1.6 Schedule submittals to expedite the Project, and deliver to Engineer at business address. Coordinate submission of related items.
- 1.7 For each submittal for review, allow fifteen (15) working days, excluding delivery time to and from the Contractor.
- 1.8 Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- 1.9 Provide space for Contractor and Engineer review stamps.
- 1.10 When revised for resubmission, identify all changes made since previous submission.
- 1.11 Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- 1.12 Submittals not requested will not be recognized or processed.

### 2. CONSTRUCTION PROGRESS SCHEDULES

- 2.1 Submit initial schedule in duplicate within fifteen (15) days after date of Owner-Contractor Agreement.
- 2.2 Revise and resubmit as required. -
- 2.3 Submit revised schedules with each Application for Payment, identifying changes since previous version.

2.4 Submit a computer generated horizontal bar chart with separate line for each major portion of Work or operation, identifying first work day of each week.

2.5 Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.

2.6 Indicate estimated percentage of completion for each item of Work at each submission.

### 3. PRODUCT DATA

#### 3.1 Product Data for Review:

Submitted to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

#### 3.2 Product Data for Information:

Submitted for the Engineer's knowledge as contract administrator or for the Owner.

#### 3.3 Product Data for Project Closeout:

Submitted for the Owner's benefit during and after project completion.

Submit the number of copies which the Contractor requires, plus three (3) copies which will be retained by the Engineer. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers standard data to provide information specific to this Project.

After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents.

### 4. SHOP DRAWINGS

#### 4.1 Shop Drawings for Review:

Submitted to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

#### 4.2 Shop Drawings for Information:

Submitted for the Engineer's knowledge as contract administrator or for the Owner.

#### 4.3 Shop Drawings for Project Closeout:

Submitted for the Owner's benefit during and after project completion.

### 5. SAMPLES

#### 5.1 Samples for Review:

Submitted to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

#### 5.2 Samples for Information:

Submitted for the Engineer's knowledge as contract administrator or for the Owner.

#### 5.3 Samples for Selection:

Submitted to Engineer for aesthetic, color, or finish selection.

Submit samples of finishes from the full range of manufacturer's standard colors, in custom colors selected, textures, and patterns for Engineer selection.

Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

Include identification on each sample, with full Project information.

Submit the number of samples specified in individual specification sections; one of which will be retained by Engineer.

Reviewed samples which may be used in the Work are indicated in individual specification sections. Samples will not be used for testing purposes unless specifically stated in the specification section.

### 6. DESIGN DATA

Submit for the Engineer's knowledge as contract administrator or for the Owner.

Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

### 7. TEST REPORTS

Submit for the Engineer's knowledge as contract administrator or for the Owner.

Submit test reports for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents. -

### 8. CERTIFICATES

When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to Engineer, in quantities specified for

Product Data.

Indicate material or Product conforms to or exceeds specified requirements.

Submit supporting reference data, affidavits, and certifications as appropriate.

Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

9. MANUFACTURER'S INSTRUCTIONS

When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer for delivery to owner in quantities specified for

Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

10. MANUFACTURER'S FIELD REPORTS

Submit reports for the Engineer's benefit as contract administrator or for the Owner.

Submit report in duplicate within 30 days of observation to Engineer for information.

Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

11. REQUIRED SUBMITTALS AND SHOP DRAWINGS:

Submittals and/or Shop Drawings shall be submitted on the following items, as appropriate, for approval. The omission of any work item requiring a submittal to be furnished to the Engineer prior to use in this project does not relieve the Contractor from responsibility for making all required submittals.

- Manhole Frames and Covers
- Lime
- Concrete Mix Design for Each Class of Concrete
- Reinforcing Steel
- Paint
- Reinforced Concrete Pipe & Box Culverts
- Required Signs

- Prime Coat
- Non-Shrink Grout
- Erosion Control Matting
- Geofabrics
- Seed, Fertilizer and Mulching Materials
- Seed Mix and Miscellaneous Planting Materials
- Sieve Analysis of All Embedment and Foundation Material
- Filter Fabric Fence
- Fencing Materials
- Other Materials Required in the Technical Specifications

END OF SECTION

## SECTION 03: QUALITY CONTROL

### 1. QUALITY ASSURANCE - CONTROL OF INSTALLATION

- 1.1 Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- 1.2 Comply with manufacturers' instructions, including each step in sequence.
- 1.3 Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- 1.4 Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- 1.5 Perform Work by persons qualified to produce required and specified quality
- 1.6 Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- 1.7 Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

### 2. TOLERANCES

- 2.1 Monitor fabrication and installation tolerance control of Products to produce acceptable Work. Do not permit tolerances to accumulate.
- 2.2 Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- 2.3 Adjust Products to appropriate dimensions; position before securing Products in place.

### 3. REFERENCES AND STANDARDS

- 3.1 For Products or workmanship specified by association, trades, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- 3.2 Conform to reference standard by date of issue current on date of Contract Documents, except where a specific date is established by code.
- 3.3 Obtain copies of standards where required by product specification sections.
- 3.4 Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor

those of the Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

#### 4. INSPECTION AND TESTING LABORATORY SERVICES

- 4.1 Owner may appoint, employ and pay for specified services of an independent firm to perform testing.
- 4.2 The independent firm will perform tests and other services specified in individual specification sections and as required by the Engineer.
- 4.3 Testing and source quality control may occur on or off the project site.
- 4.4 Perform off-site testing as required by the Engineer or the Owner.
- 4.5 Reports will be submitted by the independent firm to the Engineer and Contractor, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- 4.6 Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
- 4.7 Notify Engineer and independent firm 24 hours prior to expected time for operations requiring services.
- 4.8 Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- 4.9 Testing does not relieve Contractor to perform Work to contract requirements.
- 4.10 Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Engineer. Payment for re-testing will be charged to the Contractor by deducting testing charges from the Contract Sum/Price.

#### 5. MANUFACTURERS' FIELD SERVICES

- 5.1 When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- 5.2 Submit qualifications of observer to Engineer thirty (30) days in advance of required observations. Observer subject to approval of Engineer.
- 5.3 Report observations and site decisions or instructions given to applicators or installers that are

supplemental or contrary to manufacturers' written instructions

6. EXAMINATION

6.1 Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work.

Beginning new Work means acceptance of existing conditions.

6.2 Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.

6.3 Examine and verify specific conditions described in individual specifications sections.

6.4 Verify that utility services are available, of the correct characteristics and in the correct locations.

7. PREPARATION

7.1 Clean substrate surfaces prior to applying next material or substance.

7.2 Seal cracks or openings of substrate prior to applying next material or substance.

7.3 Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION

## SECTION 04: TESTING SERVICES

### 1. REFERENCES

- 1.1 ASTM C802 - Practice for Conducting an Interlaboratory Test Program to Determine the Precision of Test Methods for Construction.
- 1.2 ASTM C1077 - Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
- 1.3 ASTM D290 - Recommended Practice for Bituminous Mixing Plant Inspection.
- 1.4 ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- 1.5 ASTM D4561 - Practice for Quality Control Systems for an Inspection and Testing Agency for Bituminous Paving Materials.
- 1.6 ASTM E329 - Practice for Use in the Evaluation of Inspection and Testing Agencies as Used in Construction.
- 1.7 ASTM E543 - Practice for Determining the Qualification of Nondestructive Testing Agencies.
- 1.8 ASTM E548 - Practice for Preparation of Criteria for Use in the Evaluation of Testing Laboratories and Inspection Bodies.
- 1.9 ASTM E699 - Practice for Criteria for Evaluation of Agencies Involved in Testing, Quality Assurance, and Evaluating Building Components in Accordance with Test Methods Promulgated by ASTM Committee E6.

### 2. SELECTION AND PAYMENT

- 2.1 Owner will employ and pay for services of an independent testing agency or laboratory to perform specified testing.
- 2.2 Employment of testing agency or laboratory in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

### 3. QUALITY ASSURANCE

- 3.1 Laboratory: Authorized to operate in State in which Project is located.
- 3.2 Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
- 3.3 Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

#### 4. AGENCY RESPONSIBILITIES

4.1 Test samples of mixes submitted by Contractor.

4.2 Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.

4.3 Perform specified sampling and testing of Products in accordance with specified standards.

4.4 Ascertain compliance of materials and mixes with requirements of Contract Documents.

4.5 Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or Products.

4.6 Perform additional tests required by Engineer.

4.7 Attend preconstruction meetings and progress meetings.

#### 5. AGENCY REPORTS

After each test, promptly submit two copies of report to Engineer and to Contractor which shall include:

- Date Issued
- Project Title and Number
- Name of Inspector
- Date and Time of Sampling or Inspection
- Identification of Product and Specifications Section
- Location in the Project
- Type of Inspection or Test
- Date of Test
- Results of Tests
- Conformance with Contract Documents
- When requested by Engineer, provide interpretation of test results.

#### 6. LIMITS ON TESTING AUTHORITY

6.1 Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract

Documents.

6.2 Agency or laboratory may not approve or accept any portion of the Work.

6.3 Agency or laboratory may not assume any duties of Contractor.

6.4 Agency or laboratory has no authority to stop the Work.

7. CONTRACTOR RESPONSIBILITIES

7.1 Deliver to agency or laboratory at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.

7.2 Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.

7.3 Provide incidental labor and facilities:

- To provide access to Work to be tested.
- To obtain and handle samples at the site or at source of Products to be tested.
- To facilitate tests.
- To provide storage and curing of test samples.

7.4 Notify Engineer and laboratory 24 hours prior to expected time for operations requiring testing services.

END OF SECTION

## SECTION 05: CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

### 1. GENERAL

1.1 Contractor shall maintain for all employees and subcontractors parking, restrooms, telephone service, and water.

1.2 City facilities will not be available for Contractors use.

### 2. TEMPORARY SANITARY FACILITIES

Provide and maintain required facilities and enclosures at time of project mobilization.

### 3. TEMPORARY WATER FACILITIES

3.1 Water supply for use during construction shall be approved by the Engineer and secured by the Contractor from the City of Longview.

3.2 The Contractor shall pay the City of Longview for all water obtained from the City at current prices.

### 4. BARRIERS

4.1 Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent proper-ties from damage from construction operations.

4.2 Provide barricades and covered walkways required by governing authorities for public rights-of-way.

4.3 Provide protection for plants designated to remain. Replace damaged plants.

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

### 5. WATER CONTROL

5.1 Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

5.2 Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

### 6. PROTECTION OF INSTALLED WORK

6.1 Protect installed Work and provide special protection where specified in individual specification sections.

6.2 Provide temporary and removable protection for installed Products. Control activity in

immediate work area to prevent damage. Prohibit traffic from landscaped areas.

7. SECURITY

7.1 Provide security and facilities to protect Work from unauthorized entry, vandalism or theft.

7.2 Coordinate with Owner's security program.

8. ACCESS ROADS

8.1 Construct and maintain temporary roads accessing public thoroughfares to serve construction area.

8.2 Extend and relocate as Work progress requires. Provide detours necessary for unimpeded traffic flow.

8.3 Provide and maintain access to fire hydrants, free of obstructions.

8.4 Provide means of removing mud from vehicle wheels before entering streets.

8.5 Designated existing on-site roads may be used for construction traffic.

9. PARKING

When site space is not adequate, provide additional off-site parking.

10. PROGRESS CLEANING AND WASTE REMOVAL

10.1 Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

10.2 Collect and remove waste materials, debris and rubbish periodically and dispose off-site.

10.1 The Contractor shall not allow the site of the work to become littered with trash and waste material, but shall maintain the site of the work in a neat and orderly condition throughout the construction period.

10.2 On or before the completion of the work, the Contractor shall carefully clean all drain lines and shall remove all temporary structures built by him and rubbish of all kinds from any of the grounds which he has occupied and leave them in a condition to the satisfaction of the Engineer.

10.3 Upon completion of the project (or major portions thereof the contractor shall restore the site to its original condition or better.

10.4 Driveways and streets shall be compacted and resurfaced as originally found.

10.5 All private property disrupted during construction including lawns, fences, patios, retaining walls, sidewalks, wooden decks, etc., shall be mended or repaired to their original condition.

10.6 At the conclusion of the work, all tools, temporary structures and materials belonging to the Contractor shall be promptly removed and all dirt, rubbish and other foreign substances shall be disposed of.

10.7 The Contractor shall thoroughly clean all equipment and material installed by him and shall deliver over such materials and equipment in an undamaged, clean condition.

#### 11. PROJECT IDENTIFICATION

11.1 Provide two (2) four feet wide by four feet high project sign of exterior grade plywood and wood frame construction, painted, with exhibit lettering by professional sign painter to Engineer's design and colors.

11.2 List title of Project, names of Owner, Engineer, and Contractor.

11.3 Erect on site at location established by Engineer.

11.4 No other signs are allowed without Owner permission except those required by law.

11.5 Refer to sign detail in these specifications.

#### 12. REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

12.1 Remove temporary utilities, equipment, facilities, and materials prior to Substantial Completion inspection.

12.2 Remove underground installations to a minimum depth of two (2) feet. Grade site as indicated.

12.3 Clean and repair damage caused by installation or use of temporary work.

12.4 Restore permanent facilities used during construction to specified condition.

END OF SECTION

## SECTION 06: BARRICADES & WARNING DEVICES

### 1. DESCRIPTION:

This item shall consist of providing, installing moving, replacing, maintaining, cleaning, and removing upon completion of work all barricades, except permanent barricades, signs, barriers, cones, lights, signals, and other such devices for handling traffic, as indicated on the plans, or as directed by the Engineer.

### 2. MATERIALS:

2.1 All barricades shall be in accordance with the requirements of Part IV - Traffic controls for Street and Highway Construction and Maintenance Operations of the latest Manual of Uniform Traffic Control for Streets and Highways U.S. Department of Transportation, Federal Highway Administration. Detailed drawings of the standard signs illustrated in that manual are available from the Federal Highway Administration, Washington, D.C. 20591

2.2 Markings for Type III barricade rails shall be alternate red and white (sloping downward at an angle of 45 degrees in the direction traffic is to pass). WHERE THE BARRICADE IS NOT COVERED WITH MARKINGS, IT SHALL BE PAINTED WHITE.

2.3 Where a Type III barricade extends entirely across a roadway, the stripes shall slope downward in the direction toward which traffic must turn in detouring. Where both right and left turns are provided for, the chevron striping shall slope downward in both directions from the center of the barricade.

2.4 The entire area of white and red stripes shall be reflectorized so as to be visible under normal atmospheric conditions from a minimum distance of 1,000 feet when illuminated by the low beams of standard automobile headlights. The predominant color for other barricade components shall be white.

### 3. CONSTRUCTION METHODS:

3.1 All barricades, signs and other types of devices listed above shall be installed in accordance with the "Texas Manual on Uniform Traffic Control Devices." (TMUTCD)

3.2 When required, a Traffic Control Plan responsive to the Texas MUTCD shall be established by the contractor. If this plan is approved by the Engineer, it shall be used.

3.3 In areas where traffic realignment is required all conflicting existing lane lines shall be obliterated and realignment made by the use of temporary removable lane delineation striping

until construction is completed and the temporary striping removed and permanent striping applied in accordance with the Item, " Traffic Paint Striping" or the Item, " Traffic Buttons and Pavement Markers."

3.4 Wherever temporary pavement markings is required either for realigning existing traffic lane striping or for new temporary locations, a suitable degradable or removable lane marking material shall be used as required for F.H.W.A. Addendum Notice N6160.21, dated May 10, 1976, which amended the Manual on Uniform Traffic Control Devices for Streets and Highways as it related to temporary traffic lane marking systems.

4. RESPONSIBILITY FOR DAMAGE AND CLAIMS:

The Contractor shall hold harmless the OWNER and ENGINEER and all its representatives from all suits, actions, or claims, of any character brought on account of any injuries or damages sustained by any person or property in consequence of any neglect in safeguarding the work of through the use of unacceptable materials in the construction of the improvement, or on any account of any act of omission by the contractor. He shall not be released from said responsibility until the project has been completed and accepted, and so much of the money due the said Contractor under and by virtue of his contract may be retained by the Owner, or his Surety may be held until such claims have been settled and suitable evidence to the effect furnished to the ENGINEER.

ALL BARRICADES, WHETHER TEMPORARY OR PERMANENT, SHALL BE CHECKED DAILY TO SEE IF THEY ARE IN THEIR PROPER LOCATIONS.

5. MEASUREMENT:

This item shall not be measured for payment.

6. PAYMENT:

Payment shall be made for this item as a lump sum. All costs for furnishing, applying and removing temporary pavement markings, barricades and warning devices shall be included in the total of the bid for the project.

END OF SECTION

## SECTION 07: MATERIAL AND EQUIPMENT

### 1. TRANSPORTATION AND HANDLING

1.1 Transport and handle Products in accordance with manufacturer's instructions.

1.2 Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.

1.3 Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

### 2. STORAGE AND PROTECTION

2.1 Store and protect Products in accordance with manufacturers' instructions.

2.2 Store with seals and labels intact and legible.

2.3 Store sensitive Products in weather tight, climate controlled, enclosures in an environment favorable to Product.

2.4 For exterior storage of fabricated Products, place on sloped supports above ground.

2.5 Provide off-site storage and protection when site does not permit on-site storage or protection.

2.6 Cover Products subject to deterioration with impervious sheet covering.

2.7 Provide ventilation to prevent condensation and degradation of Products.

2.8 Store loose granular materials on solid flat surfaces in a well-drained area.

2.9 Prevent mixing with foreign matter.

2.10 Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.

2.11 Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

### 3. PRODUCT OPTIONS

3.1 Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

3.2 Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

3.3 Products Specified by Naming One or More Manufacturers with a Provision for Substitutions:

Submit a request for substitution for any manufacturer not named in accordance with the following article.

#### 4. SUBSTITUTIONS

4.1 Engineer will consider requests for Substitutions only within thirty (30) days after date established in Notice to Proceed.

4.2 Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.

4.3 Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

4.4 A request constitutes a representation that the Contractor:

4.4.1 Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.

4.4.2 Will provide the same warranty for the Substitution as for the specified Product.

4.4.3 Will coordinate installation and make changes to other Work, which may be required for the Work to be complete with no additional cost to Owner. Waives claims for additional costs or time extension, which may subsequently become apparent.

4.4.4 Will reimburse Owner and Engineer for review or redesign services associated with re-approval by authorities.

4.4.5 Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals without separate written request or when acceptance will require revision to the Contract Documents.

4.5 Substitution Submittal Procedure:

4.5.1 Submit three (3) copies of request for Substitution for consideration.

4.5.2 Limit each request to one proposed Substitution.

4.5.3 Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on the Contractor.

4.5.4 The Engineer will notify Contractor in writing of decision to accept or reject request.

END OF SECTION

## SECTION 08: **CONTRACT CLOSEOUT**

### 1. CLOSEOUT PROCEDURES

1.1 Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.

1.2 Provide submittals to Engineer that are required by governing or other authorities.

1.3 Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

### 2. FINAL CLEANING

2.1 Execute final cleaning prior to final project assessment.

2.2 Clean debris from drainage systems.

2.3 Clean site; sweep paved areas, rake clean landscaped surfaces.

2.4 Remove waste and surplus materials, rubbish, and construction facilities from the site.

2.5 Remove all temporary facilities and structures.

### 3. PROJECT RECORD DOCUMENTS

3.1 Maintain on site one set of the following record documents; record actual revisions to the Work:

- Drawings
- Specifications
- Addenda
- Change Orders and other modifications to the Contract
- Reviewed Shop Drawings, Product Data, and Samples
- Manufacturer's instruction for assembly, installation, and adjusting

3.2 Ensure entries are complete and accurate, enabling future reference by Owner.

3.3 Store record documents separate from documents used for construction.

3.4 Record information concurrent with construction progress

3.5 Record Drawings and Shop Drawings: Legibly mark each item to record actual construction

including:

- Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
- Field changes of dimension and detail.
- Details not on original Contract drawings.

3.6 Submit documents to Engineer prior to final Application for Payment.

#### 4. WARRANTIES

4.1 Provide duplicate notarized copies.

4.2 Execute and assemble transferable warranty documents from Subcontractors, suppliers and manufacturers.

4.3 Provide Table of Contents and assemble in three D side ring binder with durable plastic cover.

4.4 Submit prior to final Application for Payment.

4.5 For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten (10) days after acceptance, listing date of acceptance as start of warranty period.

#### 5. MAINTENANCE SERVICE

5.1 Furnish service and maintenance of components indicated in specification sections for one (1) year from date of Substantial Completion during the warranty period.

5.2 The Contractor shall be responsible for all road and entrance reconstruction, and repairs and maintenance of same, for a period of one (1) year from the date of acceptance.

5.3 The Contractor shall be responsible for all grass growth for a period of two (2) years from the date of acceptance.

5.4 In the event the repairs and maintenance are not made immediately to the satisfaction of the Engineer and it becomes necessary for the Owner to make such repairs, the Contractor shall reimburse the Owner for the cost of such repairs.

5.5 Maintenance service shall not be assigned or transferred to any agent or Subcontractor without prior written consent of the Owner.

END OF SECTION

## DIVISION 02 CONCRETE, ASPHALT, PAVING

### SECTION 01: PAVEMENT REPLACEMENT

#### 1. DESCRIPTION

The repair and replacement of an open-cut trench pavement section within the confines of an existing roadway pavement section including, but not limited to, asphalt (hot-mix, surface treatment, etc.), brick, concrete, gravel, oil-sand, and unimproved streets and roadways.

#### 2. REFERENCES:

- TxDOT Item 247 - Flexible Base Material
- TxDOT Item 300 - Asphalts, Oils, and Emulsions
- TxDOT Item 310 - Prime Coat (cutback asphaltic material only)
- TxDOT Item 340 - Hot Mix Asphaltic Concrete Pavement
- TxDOT Item 360 - Concrete Pavement
- TxDOT Item 421 - Portland Cement Concrete
- TxDOT Item 433 - Joint Sealant and Fillers
- TxDOT Item 536 - Membrane Curing
- ACI 301 - Specifications for Structural Concrete
- ASTM A615 - Deformed and Plain Billet Steel Bars
- ASTM A616 - Rail Steel Deformed and Plain Bars
- ASTM C260 - Air-Entraining Admixtures for Concrete
- ASTM C494 - Chemical Admixtures for Concrete

#### 3. SUBMITTALS:

3.1 Contractor shall certify the asphalt/concrete mixing plant will conform to the requirements of the TxDOT Standard Specifications for Construction of Highways, Streets, and Bridges, 1993 Edition (Blue Book).

3.2 Contractor shall submit design mixtures for asphalt/concrete, including additive modifiers, for review and approval at least 30 days before any pavement is placed.

4. DELIVERY, STORAGE AND HANDLING:

4.1 Asphaltic Concrete Material shall be hauled in tight trucks previously cleaned of all dirt and foreign material.

4.2 All material shall be delivered and immediately placed or stockpiled. Care shall be taken when stockpiling to prevent contamination of materials.

5. ENVIRONMENTAL REQUIREMENTS:

5.1 Asphaltic Concrete shall not be placed when the ambient temperature is below 600 F and is falling.

5.2 Asphaltic Concrete may be mixed and placed when the ambient temperature is above 500 F and is rising.

5.3 Portland Cement Concrete shall not be placed when the ambient temperature is above 401 and falling.

5.4 Portland Cement Concrete may be placed when the ambient temperature is above 35° and rising.

5.5 Paving materials shall not be placed on wet or frozen subgrade.

6. FLEXIBLE BASE:

TxDOT Item 247, Type A, Grade 2.

7. PRIME COAT:

7.1 Asphaltic Materials: TxDOT Item 300, "Asphalts, Oils and Emulsions."

7.2 Provide grade MC-30, or as approved by the Engineer, in accordance with TxDOT Item 310, "Prime Coat."

8. TACK COAT:

8.1 Asphaltic Materials: TxDOT Item 300, "Asphalts, Oils and Emulsions."

8.2 Provide grade RC-250, or as approved by the Engineer.

9. HOT MIX ASPHALTIC CONCRETE SURFACE COURSE:

TxDOT Item 340, Type D.

## 10. REINFORCEMENT:

10.1 Reinforcing steel shall meet the requirements of ASTM A616, Grade 60 new billet steel bars.

10.2 Dowels for expansion joints shall meet the requirements of ASTM A615, Grade 60.

## 11. PORTLAND CEMENT CONCRETE:

11.1 Use either Type I or Type III, ASTM C-150 concrete.

11.2 Concrete mix shall have a minimum cement content of six (6) sacks per cubic yard (3,000 psi compressive strength).

11.3 Mixing water shall be potable and not detrimental to the concrete.

11.4 The concrete shall contain 3 to 5 percent entrained air and shall meet the requirements of ASTM C260.

11.5 Do not use chemical admixtures such as water reducing, retarding and accelerating agents unless approved by the Engineer. If admixtures are approved, they shall meet the requirements of ASTM C494.

## 12. EXTENT OF REPAIR:

Roadway/street shall be restored to its original condition or better as depicted on the Drawings. The Contractor shall repair all pavement cuts, unless otherwise noted on the Drawings.

### 3.2 FIELD QUALITY CONTROL:

The trench backfill supporting the pavement replacement shall be installed in accordance with this document.

If, in the judgment of the Engineer, the quality of materials used or the completed installation (including compacted density, surface thickness or surface texture) is questionable, the Engineer may conduct the appropriate tests to verify the quality of the installation.

- If the installation does not meet the criteria listed in this section, the material shall be removed and replaced at the expense of the Contractor such that the installation meets the criteria in this section.
- If the installation does not meet the criteria listed in this section, the tests will be at the expense of the Contractor.

## 13. BARRICADES

13.1 The Contractor shall maintain lights and barricades around the work areas until the pavement is ready for traffic.

13.2 Control work so as to minimize disruption of normal traffic flow and prevention of access to normal traffic routes.

14. GRAVEL, OIL-SAND AND OTHER NON-PERMANENT ROADWAYS:

14.1 Ensure trench is backfilled in accordance with these specifications

14.2 Place and compact a finished ten (10) inch layer of flexible base material over the ditch as shown on the Drawings for the finished surface of the roadway.

14.3 The thickness of each layer before compaction shall not exceed six (6) inches.

15. ASPHALTIC CONCRETE ROADWAYS;

15.1 Ensure trench is backfilled in accordance with these specifications

15.2 Flexible Base Course:

Place and compact flexible base course under pavement sections over the ditch within roadways as shown on the Drawings. The thickness of each layer before compaction shall not exceed six (6) inches.

15.3 Prime Coat:

Prime coat shall be applied at a rate of 0.20 to 0.40 gallons per square yard over compacted flexible base and shall be cured for 24 hours minimum.

15.4 Tack Coat:

Tack Coat shall be applied to saw-cut edges, adjacent concrete or other appurtenances within the confines of the paved area. Apply at a rate of 0.05 to 0.15 gallons per square yard

15.5 Laying:

Shall meet the requirements of TxDOT Item 334, or as approved by the Engineer.

15.6 Compacting:

Contractor shall use any equipment deemed necessary.

All equipment shall be approved by the Engineer.

15.7 Density:

As specified within TxDOT Item 334.

#### 15.8 Surface Tests:

15.8.1 The finished surface of the replacement asphalt shall be at the same elevation and grade as the original pavement before cutting, or as shown on the Drawings.

15.8.2 The completed surface, when tested with a straightedge spanning between the undisturbed saw-cut pavement sections at the adjacent trench walls, shall show no deviation in excess of 1/16 inch per foot from the sawed edge.

#### 15.9 Construction Joints

15.9.1 Place courses as nearly continuously as possible.

- If work is interrupted, cut back the previously-laid material to produce a slightly beveled edge for the full thickness of the course.
- Remove old material which has been cut away and lay the new mix against the fresh cut.
- When the asphalt is laid against existing or old asphalt, the existing or old asphalt shall be cut to provide a straight smooth joint.
- Apply tack coat to old asphalt edge as previously described in this specification, prior to laying new material.

### 16. PORTLAND CEMENT CONCRETE PAVEMENT:

#### 16.1 Preparation:

16.1.1 Moisten underlying pavement layer to minimize absorption of water from fresh concrete.

16.1.2 Coat surfaces of manholes, drop inlets, etc. with oil to prevent bond with concrete.

#### 16.2 Forming:

16.2.1 If available, use adjacent saw-cut edges of existing concrete pavement as forms to match grade.

16.2.2 Use forming as necessary to contain the placed concrete when saw-cut edges are not available on both sides of the trench (ie. ditch is parallel to and at the edge of the roadway).

16.2.3 Ensure completed edge of concrete matches the line and grade of adjacent roadway, if

no grade changes are depicted on the Drawings.

16.2.4 Thickness of placed concrete shall match existing pavement.

16.3 Reinforcement:

If reinforcement is required, the size and location will be shown on the plans.

16.4 Concrete Pavement:

16.4.1 Place concrete in accordance with TxDOT Item 360--Concrete Pavement, unless otherwise noted.

16.4.2 Place concrete over the ditch within roadways as shown on the Drawings.

16.4.3 Ensure reinforcement, inserts, embedded parts, formed joints, etc. are not disturbed during concrete placement.

16.4.4 Match pattern of expansion/control joints in existing concrete pavement.

16.4.5 Finished surface of concrete shall match the existing pavement.

16.5 Surface Tests:

16.5.1 The finished surface of the replacement concrete shall be at the same elevation and grade as the original pavement before cutting, or as shown on the Drawings.

16.5.2 The completed surface, when tested with a straightedge spanning between the undisturbed saw-cut pavement sections as the adjacent trench walls, shall show no deviation in excess of 1/16 inch per foot from the sawed edge.

END OF SECTION

## DIVISION 03 SITE CONSTRUCTION

### SECTION 01: **CLEARING AND GRUBBING**

1. GENERAL:

1.1 Clearing and grubbing will consist of the removal and disposal of trees, stumps, brush, roots, vegetation, logs, rubbish and other objectionable matter within the road right-of-way, utility easements, and other locations shown on the plans.

2. CONSTRUCTION METHODS:

2.1 The Contractor shall remove any trees, stumps, roots, brush, vegetation, logs, rubbish or other objectionable matter within the road right-of-way, utilities easement, and other locations shown on the plans.

2.2 All cleared and grubbed material shall become the property of the Contractor and shall be removed from the site of work.

2.3 No burying of any cleared and grubbed material will be allowed.

2.4 The Contractor may burn on-site if he secures a permit from the proper authorities. The Owner will not be held liable for any fines incurred.

2.5 If a burning method is implemented on the site, extreme care shall be used during burning operations with regard to location of fires and direction and velocity of wind to prevent damage or discomfort to adjacent property.

2.6 Special care shall be taken by the Contractor not to damage trees designated for preservation or trees outside the limits of clearing and grubbing. Any trees damaged by the Contractor shall be "doctored" accordingly, to the satisfaction of the Owner and/or the Engineer.

2.7 Extreme caution shall be taken when clearing and grubbing in the areas of any existing pipe lines and/or existing utilities. The Contractor shall be held responsible for any damages incurred due to negligence. The pipeline owner shall be contracted at least 48 hours prior to beginning work under this item.

2.8 The Contractor shall not impair the natural drainage of the land during the clearing and grubbing operation.

2.9 Approval of the Engineer must be secured before construction of pits for burning. Pits must be cleared of any material before backfilling. Backfilling shall be placed in lifts not to exceed 6" and be compacted to 95% Standard Proctor Density.

2.10 All stumps and roots within the street right-of-way shall be removed to a depth of 2' below finished sub-grade elevation.

3. MEASUREMENT:

3.1 "Clearing and grubbing" will be measured by the acre.

3.2 Measurement for payment will be made only on areas indicated on the plans as "Clearing and Grubbing", except that required work on additional areas (e.g. additional right-of-way, additional borrow and material sources, additional cut and embankment areas, etc.) not originally proposed by the plans but found necessary during construction and being classified as "Clearing and Grubbing".

3.3 Previously cleared areas will not be subject to payment for clearing and grubbing.

4. PAYMENT:

All work performed and measured as provided under "Measurement" will be paid for at the unit price bid for "Clearing and Grubbing", which price shall be full compensation for furnishing all labor, equipment, tools, supplies, arranging for and providing disposal sites if disposed of by hauling off the project, and any other incidentals necessary to complete the work.

END OF SECTION

## SECTION 02: **FENCES AND GATES**

### 1. DESCRIPTION

This section includes fence framework, fabric, wire and accessories, excavation for post bases and concrete foundation for posts.

### 2. REFERENCES

- ASTM A121 - Zinc-Coated (Galvanized) Steel Barbed Wire.
- ASTM A123 - Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.
- ASTM A153 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- ASTM A428 - Weight of Coating on Aluminum-Coated Iron or Steel Articles.
- ASTM C94 - Ready-mixed Concrete.
- ASTM F1083 - Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
- ASTM F1234 - Protective Coatings on Steel Framework for Fences.

### 3. SUMMARY OF WORK

3.1 Fences shall be provided and installed were called for on the plans. Removal of the existing fence shall be considered subsidiary to installation of the proposed fence.

3.2 Existing fences shall be replaced in kind with new post and fabric, wire, and supports to match existing, unless otherwise directed by the Engineer.

3.3 Contractor shall secure new fencing to fencing that remains such that there are no gaps or holes in the fence.

### 4. SUBMITTALS FOR REVIEW

4.1 Product Data: Provide data on wire, posts, accessories, fittings and hardware.

4.2 Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components.

### 5. QUALITY ASSURANCE

Perform Work in accordance with manufacturer's instructions.

## 6. MATERIALS

- Terminal Posts: 4" diameter painted pipe posts.
- Line Posts: 3" diameter painted pipe posts.
- T-Posts: 6'-6" Metal T-Post with a minimum weight of 1.33 lb./ft.
- Barbed Wire: ASTM A121 galvanized steel; 12 gauge thick wire, 4 strands, 4 points at 5 inch on center, American made.

## 7. COMPONENTS

### 7.1 Barbed Wire and Field Fence

7.1.1 Steel "T" posts shall be 6 1/2 feet long, No. 1 American made with plate. Posts shall be painted and spaced no greater than 10 feet. Install posts to minimum of one foot below grade, plumb, and in line with fence row.

7.1.2 Corner posts shall be 4-inch diameter steel pipe and bracing shall be 3-inch diameter steel pipe set in concrete with 4-inch bracing post in concrete at a maximum of 7 feet in each direction. Brace posts shall be connected with a minimum of three 1 1/2 diameter tie rods welded to the brace posts and the corner posts. Corner and brace posts shall be set to a minimum of three feet below grade. Install corner and brace posts plumb and in line with fence row.

## 8. FINISHES

8.1 Components and Fabric: Galvanized to ASTM A123; 2.0 oz/sf coating.

8.2 Hardware: Galvanized to ASTM A153, 2.0 oz/sf coating.

8.3 Accessories: Same finish as framing.

## 9. INSTALLATION

### 9.1 Post Setting

9.1.1 Install framework, wire, accessories and gates in accordance with ASTM F567 and manufacturer's instructions.

9.1.2 Set all vertical posts plumb, in concrete footings with top of footing 2 inches above finish

grade. Slope top of concrete for water runoff.

9.1.3 Corner, Gate and Terminal Post Footing Depth Below Finish Grade: ASTM F567 3 feet.

9.1.4 Brace each gate and corner post to adjacent line post with horizontal center brace rail and diagonal truss rods. Install brace rail one bay from end and gate posts.

## 9.2 Attachment to Barbed Wire

9.2.1 Barbed-wire shall be attached to gate corner pull and terminal post by a band clip. The wire shall be stretched taut before fastening.

9.2.2 Tie wires, bolts, tension wire, and other fastening shall be properly tightened. Erection shall provide a fence firmly secured in proper position.

## 10. ERECTION TOLERANCES

10.1 Maximum Variation From Plumb: Y4 inch.

10.2 Maximum Offset From True Position: 1 inch.

10.3 Components shall not infringe adjacent property lines.

END OF SECTION

## SECTION 03: **SITE CLEARING**

### 1. DEFINITION

This section includes:

- Removal of surface debris, removal of trees, shrubs, and other plant life.
- Preparing Right-of-Way shall be performed meeting the requirements of TxDOT Item 100 unless otherwise specified within this section
- Sawcutting of existing pavement and curbs and gutters will be required at the limits of construction.

### 1. SECTION INCLUDES

The work to be performed under this Section shall consist of furnishing all permits, preparation and implementation of a site specific storm water pollution prevention plan, notice of intent, notice of termination, labor, equipment, materials, and pay all permit fees as necessary to meet the requirements of the Texas Pollution Discharge Elimination System (TPDES) associated with construction activities under TPDES Construction General Permit TXR150000 for storm water pollution prevention as required by current Federal, State, and Local rules and regulations as shown and specified.

### 2. REFERENCES

Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges, 1993 Edition (Blue Book).

### 3. REGULATORY REQUIREMENTS

3.1 Conform to applicable code for environmental requirements, disposal of debris, burning debris on site, and use of herbicides.

3.2 Coordinate clearing Work with utility companies.

3.3 Meet all requirements of TxDOT Items

3.4 Existing concrete pavement, curb, asphalt pavement, brick, or curb and gutter to be removed, whether in streets or drives, shall be sawed along neat lines where portions are to be left in place. Cost of sawing shall be considered subsidiary to various bid items, unless otherwise shown.

#### 4. GENERAL

4.1 The Contractor shall make every effort to protect all lawns, trees, plants, and shrubs encountered during construction outside of the construction easement.

4.1.1 Where owner - planted shrubbery and sod must be removed for construction, it shall be stored by the Contractor and replaced in good condition.

4.1.2 In all cases where questions arise, the Contractor shall request clarification from the Engineer.

4.1.3 Any trees or shrubs which are in close proximity to the work or which are removed and replaced by the Contractor and die within a two (2) year period, beginning at the date of final payment, shall be removed and replaced at the Contractor's expense.

4.2 All sign posts and similar private or public obstructions which interfere with the construction of this project will be removed and replaced by the Contractor at his own expense.

4.2.1 Power poles and guys, which interfere with construction, shall be braced and, if necessary, relocated by the utility company.

4.2.2 The Contractor shall be responsible for coordinating this work with the utility company but shall not be responsible for the cost of the work.

4.3 The Contractor shall protect all property lines, monuments and stakes encountered in his work. All monuments and stakes for later use that are disturbed or destroyed by the Contractor shall be replaced at his expense.

4.4 In case it is necessary to change or move the property of any owner of a public utility, such property shall not be moved or interfered with until ordered to do so by the Engineer.

4.4.1 The right is reserved to the owner of public utilities to enter upon the limits of the project for the purpose of making such changes or repairs to their property that may be made necessary by performance of this Contract.

4.4.2 Any time the Contractor intends to expose, cross, or otherwise work in the area of existing utilities, the Contractor shall notify the utility Owner five (5) days in advance.

4.5 The locations of existing utilities indicated on the plans have been determined from field surveys and available public records.

4.5.1 Probes for determination of location and elevation have been made only at locations

specifically described on the plans.

4.5.2 Exact locations and elevation of all utilities are not guaranteed and shall be determined in the field by the Contractor prior to construction.

4.5.3 It shall be the duty of the Contractor to ascertain whether any additional utilities other than those shown on the plans may exist and to locate the same prior to construction.

4.5.4 The Contractor shall also become familiar with any proposed adjustments to be made by the utility owners and extend full cooperation.

4.5.5 Any cost resulting from the Contractor's damages to existing utilities shall be the sole responsibility of the Contractor.

4.6 The Contractor shall be responsible for the protection of all existing utilities or service lines crossed or exposed by his construction operations.

4.6.1 Where existing utilities or service lines are cut, broken or damaged, the Contractor shall replace or repair the utilities or service lines with the same type of original material and construction, or better, at his own cost and expense. The Contractor shall notify all owners of existing utilities a minimum of forty-eight (48) hours prior to the start of construction.

4.7 It is expected that utility relocations by SWEPCO, SWBT and other utility and pipeline companies will be ongoing during the initial stages of this contract. The City has no direct control over these operations and will be held harmless in the event that delays to the Contractor due to the utility relocations, if any, are incurred.

4.8 Abandoned water lines or other pipe lines that have been cut during construction shall be plugged before backfill operations are complete. Cost of plugging existing lines shall be considered subsidiary to various bid items. The Contractor may encounter unanticipated cultural or archeological deposits during construction.

4.8.1 If archeological sites or historic structures are discovered after construction operations are begun, the Contractor shall immediately cease operations in that particular area and notify the Owner.

4.8.2 The Contractor shall take reasonable steps to protect and preserve the discoveries until they have been inspected by the Owner's Representative.

4.8.3 The Owner will promptly coordinate with the Texas Historical Commission and any other appropriate agencies to obtain any necessary approvals or permits to enable the work to

continue.

4.8.4 The Contractor shall not resume work in the area of the discovery -until authorized to do so by the Owner.

## 5. PREPARATION

5.1 Verify that existing plant life designated to remain is tagged or identified.

5.2 Identify an area for placing removed materials.

## 6. SAWCUT EXISTING PAVEMENT

6.1 Equipment:

6.1.1 There shall be few limitations on joint sawing equipment provided the equipment is approved by the project engineer and is in proper working order.

6.1.2 Both wet sawing, with diamond impregnated blades, and dry sawing, with silicon carbide or Carborundum blades may be used.

6.1.3 In general, silicon carbide or Carborundum blades are suitable for producing a clean cut edge through the existing hot mix asphaltic concrete.

6.2 Construction Methods:

6.2.1 Contractor shall sawcut existing hot mix asphaltic concrete or reinforced concrete pavement as required on the Plans.

6.2.2 Minimum depth of cut shall be three (3) inches.

6.2.3 Pavement removal adjacent to the sawcut shall leave a clean and sharply defined pavement edge, thereby creating a smooth and straight paving joint at the existing pavement and the proposed pavement interface.

## 7. PROTECTION

7.1 Locate, identify, and protect utilities that remain, from damage.

7.2 Protect trees, plant growth, and features designated to remain, as final landscaping.

7.3 Protect benchmarks, survey control points, and existing structures from damage or displacement.

## 8. CLEARING

8.1 Clear areas required for access to site and execution of Work.

8.2 Remove trees and shrubs within marked areas. Remove stumps, main root ball, root system to a depth of 36 inches below existing grade prior to fill placement.

8.3 Clear undergrowth and deadwood.

9. REMOVAL

9.1 Remove debris, rock, and extracted plant life from site.

9.2 Partially remove paving, and curbs as indicated. Neatly saw cut edges at right angle to surface.

10. TOPSOIL EXCAVATION

10.1 Excavate topsoil from areas to be further excavated, re-landscaped, or re-graded, without mixing with foreign materials.

10.2 Do not excavate wet topsoil.

10.3 Stockpile in area designated on site to depth not exceeding 8 feet and protect from erosion.

10.4 Remove excess topsoil not intended for reuse, from site.

11. DISPOSAL

11.1 Legally dispose of all material at a licensed site or with written and notarized permission from the property owner for a private disposal site.

11.2 All trees, stumps, brush or other debris removed from the job site as a preliminary to the construction of the work or its appurtenances shall be removed from the property and properly disposed of.

11.3 All excavated earth in excess of that required for backfilling shall be removed from the job site and disposed of in a satisfactory manner.

11.4 The Contractor shall review proposed waste sites for material to be wasted from this project.

11.4.1 Contractor shall determine if any waste sites are located in a "Base Floodplain" or "Floodway" as defined by the Federal Emergency Management Agency (FEMA).

11.4.2 If waste material from this project is placed in a "Base Floodplain" or "Floodway" as defined by FEMA, the Contractor shall be responsible for obtaining a permit from the City of Longview.

11.4.3 The Contractor shall obtain a Development Permit from the City of Longview Engineering Department for any waste sites located within the city limits, and the City will waive any

fees for obtaining the required permit from the City of Longview.

11.4.4 The Contractor shall furnish the Engineer a copy of the signed agreement with the property owner for each disposal site, which the Contractor intends to use for "waste materials.

11.4.5 Conditions and restrictions, if any, will be clearly stated.

11.4.6 Compliance will be required and a release from the property owner - must be obtained upon completion of the project.

11.5 All costs associated with waste material removal and disposal shall be paid for by the Contractor.

11.6 Burning of debris shall not be permitted. -

11.7 The contractor shall be responsible for acquiring written approval and permits.

END OF SECTION

## SECTION 04: **SOIL MATERIALS**

### 1. REFERENCES

- ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures.
- ASTM D2487 - Classification of Soils for Engineering Purposes.
- ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- ASTM D3017 - Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- Association of Official Agriculture Chemists

### 2. SUBMITTALS FOR REVIEW

#### 2.1 Samples:

- Submit, in air—tight containers, 10 lb. sample of each type of fill to testing laboratory.
- All off-site materials must be approved by the Engineer prior to installation.

### 3. SUBMITTALS FOR INFORMATION

Materials Source: Submit name of imported materials source.

### 4. QUALITY ASSURANCE

Perform Work in accordance with plans and specification requirements, TxDOT standards, and City of Longview standards.

### 5. SOIL MATERIALS

#### 5.1 Soil Type Si — Subgrade material:

5.1.1 Material remaining in place after excavation.

5.1.2 Suitable for slab/foundation subgrade, undisturbed nor over excavated.

5.1.3 Where subgrade soils are soft, loose, or otherwise unsatisfactory, the soil shall be removed and replaced with select fill or soil cement as determined by the Engineer.

## 5.2 Soil Type S2 — Common Fill:

5.2.1 Excavated and re-used material or from borrow approved by the Engineer.

5.2.2 Graded free of lumps larger than 3 inches, rocks larger than 2 inches, excessive silts and debris.

5.2.3 Do not use soil containing brush, roots, or similar organic matter.

5.2.4 Conforming to ASTM D2487 Class II or Class III soils with a liquid limit less than 40, and a plasticity index less than 20, but greater than 4.

## 5.3 Soil Type S3 - Select Fill:

5.3.1 Imported borrow material from borrow area approved by the Engineer.

5.3.2 Material shall be tested for compliance by the Contractor and test results submitted to the Engineer for approval.

5.3.3 Clayey sand soils free from organic matter with no lumps larger than 1 inch, no rocks larger than 2 inch, nor excessive silts.

5.3.4 Do not use soils containing brush, roots, sod or other organic materials.

5.3.5 Select fill shall conform to ASTM D2487 Class II or Class III and shall have a liquid limit less than 30 with a plasticity index less than 15 but greater than 4.

## 5.4 Soil Type S4 - Top Soil:

5.4.1 Soil suitable for growth of surface cover. Material stripped and stockpiled from site or borrowed from off site.

5.4.2 Free from roots, brush, rocks, and other extraneous matter exceeding 1 inch in any direction. Free from weeds

5.4.3 Minimum 60% sand, Maximum 30% silts, Maximum 10% clay, no less than 6% and no more than 20% organic matter.

5.4.4 Submit test data showing compliance with these specifications. Include percent weight of constituent material, material particle size, and pH.

- Topsoil shall be reasonably free from subsoil and stumps, roots, brush, stones (2 inches or more in diameter), clay lumps or similar objects.

- There shall be not less than twenty percent (20%) nor more than eighty percent (80%) of the material passing the 200- mesh sieve as determined by the wash test in accordance with ASTM C 117.
- C. The topsoil or soil mixture, unless otherwise specified or approved, shall have a pH range of approximately 5.5 pH to 7.6 pH, when tested in accordance with the methods of testing of the Association of Official Agriculture Chemists in effect on the date of the invitation of bids.
- The organic content shall be not less than three percent (3%) nor more than twenty percent (20%) as determined by the wet-combustion method (chromic acid reduction).

## 6. SOURCE QUALITY CONTROL

6.1 Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D698.

6.2 Testing and Analysis of Topsoil Material: Perform in accordance with ASTM D698.

6.3 If tests indicate materials do not meet specified requirements, change material and retest.

6.4 Provide materials of each type from same source throughout the Work. A change in source requires sampling, testing, and approval by the Engineer.

## 7. SOIL REMOVAL

7.1 Excavate soils from areas designated.

7.2 Remove lumped soil, boulders, and rock.

7.3 Stockpile excavated material in area designated on site and remove excess material not being used, from site.

## 8. STOCKPILING

8.1 Stockpile materials on site at locations designated by Engineer.

8.2 Stockpile in sufficient quantities to meet Project schedule and requirements

8.3 Separate differing materials with dividers or stockpile apart to prevent mixing.

8.4 Prevent intermixing of soil types or contamination.

8.5 Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

## 9. STOCKPILE CLEANUP

9.1 Remove stockpile, leave area in a clean and neat condition

9.2 If a borrow area is indicated, leave area in a clean and neat condition.

9.3 Grade site surface to prevent free standing surface water.

END OF SECTION

## SECTION 05: FERTILIZER

### 1. DESCRIPTION:

1.1 Fertilizing shall consist of providing and distributing fertilizer over such areas as are designed for block sodding, hydro-mulch seeding, or seeding for erosion control and final stabilization and in accordance with these specifications.

### 2. MATERIALS:

2.1 All fertilizer used shall be delivered in bags or containers clearly labeled showing analysis. A pelleted or granulated fertilizer shall be used with analysis of 10-10-5 (nitrogen-phosphoric acid-potash), unless otherwise approved by the Engineer. The figures in the analysis represent the nitrogen, phosphoric acid, and potash nutrients respectively as determined by the methods of the Association of Official Agricultural Chemists. The sources of nitrogen in the fertilizer shall be roughly balanced between ammonical (quick release) and nitrate (slow release). Fertilizer shall be readily water soluble.

2.2 With permission of the Engineer, fertilizer of a different analysis may be substituted. It shall be pelleted or granulated fertilizer with a lower concentration. The total amounts of nutrients furnish and applied per acre shall equal or exceed that specified for each nutrient.

### 3. CONSTRUCTION METHODS:

3.1 When fertilizer is included in the specifications, pelleted or granulated fertilizer shall be applied uniformly over the area specified to be fertilized and in a manner directed for the particular item of work. Fertilizer shall be dry and in good physical condition. Fertilizer that is powdered or caked will be rejected. Distribution of the fertilizer for the particular item of work shall meet the approval of the Engineer.

3.2 Unless otherwise indicated on the plans, fertilizer shall be applied uniformly at the average rate of 480 pounds per acre for sodding and 400 pounds per acre for seeding and hydro-mulching.

### 4. MEASUREMENT:

Acceptable material for fertilizer will be measured by approved scale weight or guaranteed weight of sacks shown by the manufacturer.

### 5. PAYMENT:

No separate payment for this item. This item is subsidiary to the bid item of which it is required.

END OF SECTION

## SECTION 06: FURNISHING AND PLACING 4" TOPSOIL

### 1. DESCRIPTION:

This item shall govern for furnishing and placing topsoil to the lines, grades and depth shown on the plans.

### 2. MATERIALS:

2.1 Existing topsoil shall be used. If the Engineer determines that additional material is needed, topsoil shall conform to the following requirements:

**Table 17-1**

<b>Specification</b>	<b>Applicable Test</b>
PH not greater than 7.6	(1) PH (Litmus)
Sand Content shall not exceed 50% of oven-dry weight	(2) Sedimentation
Total Organic Matter 8-12%	(3) Gravimetric-peroxide
Readily Oxidizable Organic Matter Greater than 2.5%	(4) Walkley-Black or Wet Digestion

\*Use only Tests 1, 2, and 3 or Tests 1, 2, and 4. All tests shall be oven weight.

2.2 The Contractor is required to inform the Engineer of the location of the pit or pits from which the material is to be taken. The Engineer shall have the right to have an independent testing laboratory test the material to determine if it meets these specifications.

2.3 The Contractor shall scarify the existing topsoil within the street right-of-ways to a depth of 4" and stockpile the material at locations to be determined by the Engineer. The stockpiles shall be kept moist until final distribution on the right of ways and easements. The Contractor shall place the topsoil to the lines and grades and to the depth shown on the drawings.

### 3. MEASUREMENTS:

Topsoil shall be measured by the square yard in place, furnished, delivered and placed in accordance with these specifications.

4. PAYMENT:

No separate payment. Topsoil shall be considered subsidiary to "Grading and Seeding"

END OF SECTION

## SECTION 07: GRADING AND SEEDING

### 1. DESCRIPTION:

Grading and seeding shall consist of preparing the ground, sowing the seeds, and application of a fertilizer along and across such areas as is designated on the plans and in accordance with these specifications.

### 2. GRASS:

2.1 All seed must meet the requirements of the U.S. Department of Agriculture as set forth in the Rules and Regulations of the Federal Seed Act and the Texas Seed Law, including the labeling requirements for showing pure live seed, (PLS=purity x germination), name and type of seed.

2.2 Seed furnished shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine (9) months of the time of use on the project. Each variety of seed shall be furnished and delivered in separate bags or containers.

2.3 A sample of each variety of seed shall be furnished and delivered when directed by the Engineer. Seed which has become wet, moldy, or otherwise damaged in transit or storage will not be accepted. The amount of seed planted per acre, the type, and planting date shall be as follows:

<b>TYPE</b>	<b>RATE OF APPLICATION</b>	<b>PLANTING DATE</b>
Unhulled Bermuda Grass	20 lbs/ac	Jan. 1 to Apr. 1
Hulled Bermuda Grass	12 lbs/ac	Apr. 1 to Oct. 1
Mix Bermuda & Rye/Millet		Oct. 1 to Jan. 1
*Unhulled Bermuda Grass	12 lbs/ac	
*Rye/Millet Grass	50 lbs/ac	

### 3. FERTILIZER:

3.1 Commercial fertilizer as outlined in the Item Fertilizer shall be applied to the entire seeded area at the prescribed rates.

3.2 The fertilizer shall be delivered to the site in bags or otherwise convenient containers, each fully labeled, conforming to the applicable State Fertilizer Laws, and bearing the name and warranty of the producer.

### 4. CONSTRUCTION METHODS:

#### 4.1 FERTILIZING AND SEEDING:

4.1.1 After areas to receive fertilizing and seeding have been completed to the lines and grades and section shown on the plans, apply fertilizer at the prescribed rates as outlined in the Item

Fertilizer. Thoroughly mix upper three (3) inches of top soil with fertilizer until a uniform mixture of fertilizer and top soil is obtained. Sprinkle areas to be seeded with water using fine spray to avoid washing or erosion of soil. Broadcast seed with sowing equipment at the rate specified above, using care to obtain uniform distribution. After broadcasting, lightly rake seeds into soil to a depth not to exceed ½ inch. Complete seeding by rolling with roller developing 15 to 25 pounds per square inch of tread.

4.1.2 If rain is imminent, then seeding and fertilization shall be postponed until weather conditions exist such that the potential for runoff of fertilizer from the site is minimized.

5. CONTRACTOR MAINTENANCE & GUARANTEE PERIOD:

5.1 It shall be the responsibility of the contractor to maintain all seeded areas until satisfactory growth has occurred as determined by the Engineer for a period of 60 days after the completion of all punch list items.

5.2 Maintenance shall consist of watering and weeding, and reseeding as necessary to establish a uniform stand of the specified grasses. A minimum of 95% of the area seeded shall be covered with the specified grass with no bare spots or dead spots greater than 10 square feet.

5.3 The contractor is responsible for one mowing per month between the months of April and October. The contractor shall be responsible for 1 mowing every six weeks between the months of November and March. In addition the contractor shall water all grassed areas as often as necessary to establish satisfactory growth and to maintain growth throughout the duration of the project.

5.4 The contractor shall make as many repeat seeding as necessary to achieve a minimum of 95% of the area planted covered the specified grass and no bare or dead spots greater than 10 square feet. Such replanting is to be performed within 14 calendar days of the notification by the Engineer.

6. MEASUREMENT AND PAYMENT:

No separate pay item.

END OF SECTION

## SECTION 08: FILTER FABRIC FENCE

### 1. GENERAL:

1.1 This item describes the installation of erosion and sedimentation control filter fabric fences utilized during construction and prior to the final development of the site. Manufacturer's catalogue sheets and other pertinent information on geotextile fabric.

### 2. MATERIALS:

2.1 Provide woven or nonwoven geotextile filter fabric made of either polypropylene, polyethylene, ethylene, or polyamide material. Geotextile fabric shall have a grab strength of 100 psi in any principal direction (ASTM D-4632), Mullen burst strength exceeding 200 psi (ASTM D-3786), and the equivalent opening size specified on PLANS.

2.2 Filter fabric material shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 degrees F to 120° F. Representative Manufacturers: Marifi Inc. or equal.

### 3. CONSTRUCTION METHODS:

3.1 Provide erosion and sedimentation control systems at the locations shown on PLANS. Such system shall be of the type indicated and shall be constructed in accordance with the requirements shown on PLANS and set out in this item.

3.2 No clearing and grubbing or rough cutting, other than as specifically directed by the Owner to allow soil testing and surveying, shall be permitted until erosion and sedimentation control systems are in place.

3.3 Maintain existing erosion and sedimentation control systems located within the project site installed by others prior to start of construction under this contract until acceptance of the project or until directed by the Owner to remove and discard the existing system.

3.4 Inspect and repair or replace components of all erosion and sedimentation control systems as specified for each type of system. Unless otherwise directed, maintain the erosion and sedimentation control systems until project is accepted by the Owner. Remove erosion and sedimentation control systems promptly when directed by the Owner. Discard removed materials offsite.

3.5 Remove and dispose sediment deposits at the project spoil site. If a project spoil site is not designated on PLANS, dispose of sediment offsite at location not in or adjacent to stream or floodplain. Offsite disposal will be the responsibility of the Contractor. Sediment to be placed

at the project site should be spread, compacted, and stabilized in accordance with the Owner's directions. Sediment shall not be allowed to flush into stream or drainage way. If sediment has been contaminated, it needs to be disposed of in accordance with existing federal, state and local regulations.

- 3.6 Unless otherwise indicated, compact embankments, excavations, and trenches by mechanically blading, tamping, and rolling soil in a maximum of 8-inch layers. Compaction density shall be at a minimum of 90 percent Standard Proctor ASTM D-698-78 density. Make at least one test per 500 cubic yards of embankment.
- 3.7 Equipment and vehicles shall be prohibited by the Contractor from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Damages caused by construction traffic to erosion and sedimentation control systems shall be required immediately. Contractor shall employ protective measures to avoid damage to existing trees to be retained on the project site.
- 3.8 Provide filter fabric fence systems at locations specified on PLANS in accordance with enclosed drawing. Filter fabric fence systems shall be installed in such a manner that surface runoff will percolate through the system in sheet flow fashion and allow sediment to be retained and accumulated.
- 3.9 Attach the filter fabric to 1 inch by 2 inch wooden stakes spaced a maximum of 3 feet apart and embedded a minimum of 1 foot. The wooden stakes shall be installed at a slight angle toward the source of anticipated runoff.
- 3.10 Trench in the toe of the filter fabric fence with a spade or mechanical trencher so that the downward face of the trench is flat and perpendicular to the direction of flow or for V-trench configuration as shown on the attached drawing. Lay filter fabric along the edges of the trench. Backfill and compact trench.
- 3.11 The filter fabric should be provided in continuous rolls and cut to the length of the silt fence to minimize the use of joints. When joints are necessary, the fabric should be spliced together only at a support post with minimum 6 inch overlap, and sealed securely.
- 3.12 Inspect sediment filter barrier systems after each rainfall, daily during periods of prolonged rainfall, and at a minimum once a week. Repair or replace damaged section immediately to restore the requirements of this item. Remove sediment deposits when silt reaches one-third of the height of the fence in depth.

4. MEASUREMENT AND PAYMENT:

- 4.1 Unless indicated in the PROPOSAL FORMS as a pay item, no separate payment will be made for work performed under this item. Include cost of work performed under this item in contract prices bid for items of which this work is a component.
- 4.2 When indicated in PROPOSAL FORMS as pay item measure and pay for the filter fabric fence by the linear foot of completed and accepted filter fabric fence between the limits of the beginning and ending of wooden stakes. Filter fabric fence, measured as stated, will be paid for at the unit price bid for "Filter Fabric Fence".
- 4.3 Payment for filter fabric fence will include and be full compensation for all labor, equipment, materials, supervision, and all incidental expenses for construction of these items, complete in place, including, but not limited to, protection of trees, maintenance requirements, repair and replacement of damaged sections, removal of sediment deposits, and removal of erosion and sedimentation control systems at the end of construction.

END OF SECTION

## SECTION 09: SODDING FOR EROSION CONTROL AND FINAL STABILIZATION

### 1. DESCRIPTION.

1.1 Sodding for erosion control and for final stabilization shall consist of providing and planting Bermuda grass, San Augustine grass, or other acceptable sod along or across such areas as are designated on the drawings, Project Engineer, or Project Inspector, and with the specification requirements herein outlined.

### 2. MATERIALS.

2.1 The sod shall consist of live, growing Bermuda grass, San Augustine grass, or other acceptable sod, (95% pure), secured from sources where the soil is fertile and has been fumigated.

2.2 The sod shall have a healthy virile root system of dense, thickly matted roots throughout. The sod shall be cut from a field so that there is a minimum of ½" of soil on the roots of the sod, and so that no roots show on the bottom of the soil.

2.3 The sod shall be dense, with the grass having been mowed to 1" height before being lifted from field, Sod shall be in a vigorous condition, dark green in color, free of disease and harmful insects.

2.4 The contractor shall not use sod from areas where the grass has thinned out, nor where the grass roots have been dried out by exposure to the air and sun to such an extent as to damage its ability to grow when transplanted.

2.5 The sod shall be free from obnoxious weeds or other grasses and shall not contain any matter deleterious to its growth or which might affect its subsistence or hardiness when transplanted. Unless the area has been closely pastured, it shall be closely mowed and raked to remove all weeds and long-standing stems.

2.6 Care shall be taken at all times to retain the native soil on the grass roots of the sod during the process of excavation, hauling and planting. Sod material shall be kept moist from the time it is excavated, until planted.

2.7 When so directed by the Engineer, the sod existing at the source shall be watered to the extent required, prior to excavating. Do not stack sod for more than 36 hours between the time of cutting and the time of installation. The Engineer reserves the right to reject any sod deemed unacceptable for installation.

2.8 All planting shall be done between the average date of the last freeze in the spring and six weeks

prior to the average date of the first freeze in the fall, according to the U.S. Weather Bureau.

2.9 Fertilizer shall conform to the requirements of the Item "Fertilizer" and shall be applied at the rate of 480 pounds per acre.

### 3. CONSTRUCTION METHODS.

3.1 Immediately after finished grade has been approved, begin sodding operations to reduce excessive weed growth. If sod bed is dry, immediately prior to sod installation, dampen the approved finished grade with a fine mist of water.

3.2 Grass shall be turf sod, cut into 16"x32" modular blocks or approved equal. All areas to be sodded shall be raked to true lines, free from all the unsightly variations, bumps, ridges, or depressions. All sticks, stones, roots, or other objectionable material, which might interfere with the formation of a finely pulverized seed bed, shall be removed from the soil.

3.3 Lay sod so that adjacent strips butt tightly, with no spaces between strips. Lay sod on mounds and slopes with strips parallel to contours. Stagger joints. Sodded areas shall be flush with adjoining seeded areas.

3.4 All sod shall be placed green side up. Tamp and roll the sod thoroughly to make contact with the sod bed, or as directed by the Engineer. Peg sod on slopes 3:1 or steeper with pegs driven through the sod into the soil until pegs are flush with the turf. Space pegs 18" on center. Pegs shall be 1" square 6" long, or 6" lengths of lath.

3.5 Commercial fertilizer as specified in Item "Fertilizer" shall be applied to the entire sodded area at the prescribed rates, immediately following placing the sod. Immediately after fertilizing, water the entire area to a saturated depth of 2". If rain is imminent, then the application of fertilizer shall be postponed until weather condition exists such that the potential for the runoff of the fertilizer from the site is minimized.

3.6 Immediately after installation of the sod, remove sod clumps and any plant material from the roadways and pavements. Edges along curbs and drives shall be carefully trimmed and maintained until accepted.

3.7 Only as approved by the Engineer, in areas where sod is dead, satisfactory growth may be accomplished with the application of seeding or hydro mulch seeding, in lieu of replacing the dead sod. Cost for labor, materials, tools and equipment for the application of seeding or hydro mulch seeding over dead sod shall be incidental to this pay item.

### 4. CONTRACTOR'S MAINTENANCE & GUARANTEE PERIOD.

4.1 It shall be the responsibility of the contractor to maintain all sodded areas until satisfactory

growth as determined by the Engineer and for a period of 60 days after the successful completion of all punch list items. Maintenance shall consist of watering, weeding, repairing of all erosion and resodding as necessary to establish a uniform growth of the specified grass.

4.2 A minimum of 95% of the area planted shall be covered with the specified grass with no bare or dead spots greater than 10 square feet. The contractor shall be responsible for 1 mowing per month between the months of April to October.

4.3 The contractor shall also be responsible for one mowing every 6 weeks between the months of November and March. In addition, the contractor shall water all sodded areas as often as necessary to establish satisfactory growth and to maintain growth throughout the duration of the project.

4.4 The contractor shall make as many repeat plantings as necessary to achieve a minimum of 95% of the area planted covered with the specified grass with no bare spots greater than 10 square feet. Such replanting is to be performed within 14 calendar days of the notification by the Engineer.

5. MEASUREMENT

Work and acceptable material for block sodding shall be measured by the linear foot and shall cover the entire width of the disturbed area.

6. PAYMENT.

Work performed and material furnished under Measurement shall be paid for at the unit price bid for "Block Sodding" which price shall be full compensation for furnishing materials, preparation of ground for planting, planting of sod, pegging of sod, raking, fertilizing, watering, sprinkling, maintenance, and for labor, tools, equipment and incidentals necessary to complete the work. Additional payment shall not be made for those areas that are replanted.

END OF SECTION

## DIVISION 04 UTILITIES

### SECTION 01: POTABLE WATER

1. SCOPE: This section covers furnishing of labor, materials and equipment for potable water distribution.

2. APPLICABLE PUBLICATIONS:

The following Specifications and Standards of the latest issue, listed in this paragraph (including the amendments, addenda, and errata designated), form a part of this Specification to the extent requires by the references thereto.

American Water Works Association Standards:

- C 500 Gate Valve for Ordinary Water Works Service
- C 651 Disinfecting Water Mains
- C 104 Cement Mortar lining for Cast Iron Pipe/Fittings
- C 151 Ductile Iron Pipe
- C 153 Ductile Iron Pressure Fittings
- C 106 Cast Iron Pipe
- C 111 Cast Iron Pressure Fittings
- C 600 Installation of Cast Iron Water Mains
- C 900 Polyvinyl Chloride (PVC) Pressure Pipe for Water Supply and Dist.
- C 965 Polyvinyl Chloride (PVC) Pipe, 14" to 36"

American Association of State Highway Officials:

- T 99 Moisture Density Relationship of Soils using a 5.5 lb. Rammer and a 12-inch Drop.

3. MATERIALS:

Piping for 4" through 12" water mains shall be PVC C900. As shown on the plans and proposals, appurtenant valves and fittings shall be installed where required.

### 3.1 PVC Plastic Pipe:

All 4-inch through 12-inch water mains shall be Class 150, DR-18 PVC pipe conforming to the requirements of AWWA C 900 and ANSI/NSF 61, unless otherwise noted.

### 3.2 Ductile Iron Pipe

3.2.1 Ductile iron pipe shall have 60,000 psi tensile strength, 42,000 psi yield strength, 10% minimum elongation and meet the requirements of the latest revision of ANSI A21.51 (AWWA C151).

3.2.2 Pipe shall be thickness class 52. Pipe shall be cement mortar lined and seal coated in accordance with ANSI A21.4 (AWWA 104). The exterior of the pipe shall have a bituminous coating approximately one mil minimum thickness.

### 3.3 Ductile Iron Fittings:

3.3.1 Ductile iron fittings shall be cast in accordance with ANSI A21.53 (AWWA C153). The working pressure rating shall be 350 psi. Joints shall be mechanical joint. Mechanical joint fittings shall conform to ANSI A32.22 (AWWA C111) and shall be furnished with cast iron or ductile iron glands, bolts and nuts, and plain rubber gaskets.

3.3.2 All fittings except sleeves and plugs shall have a cement mortar lining in accordance with ANSI A32.4 (AWWA C104). Joints shall conform to ANSI A32.22 (AWWA C111) and shall be mechanical joint unless otherwise specified. The minimum thickness class shall be Class 50 unless otherwise specified. All fittings shall be mechanical joint and ductile iron.

### 3.4 Joints:

3.4.1 Joints for PVC pipe shall have elastomeric gaskets and shall comply with ASTM D3139 and ASTM F477 and AWWA C111 and be furnished by pipe manufacture.

3.4.2 Restrainers, when applicable for PVC pipe, will be used with mechanical joint fittings or integral bell and spigot joint pipe. All restrainers must have serration machined on the inside, which lock onto the pipe when the clamping bolts are tightened.

3.4.3 The serration must be in contact with the pipe for the entire 360 (degrees). When used with a mechanical joint fitting, the gland and gasket must be used to insure a water tight seal.

3.4.4 Restraining devices shall have a pressure rating equal to or greater than the PVC pipe and shall be capable of withstanding a minimum test pressure of two times (2x) the pressure rating of the device. Restrainers will be installed per manufactures' recommendation. Restrainers shall be Uni-Flange series 1300, 1350, or approved equal.

### 3.5 Valve Boxes:

3.5.1 Each valve below grade shall be provided with adjustable cast iron valve box with minimum opening of 5". Boxes shall be provided with covers marked with the word "WATER".

### 3.6 Gate Valves:

3.6.1 Gate valves 4" to 24" in diameter shall be non-directional, resilient seated (A.W.W.A. C-509) 200 p.s.i.g. bronze mounting, mechanical joint with rubber joint rings and 2" square operating nut (open counterclockwise). Gate valves shall be as manufactured by Mueller, Clow, or approved equal.

### 3.7 Fire hydrants:

3.7.1 Fire hydrants shall have 6" water main connection, two 2-1/2" hose connections, and 1-4.5" pumper connection. The fire hydrant shall be designed for 150 p.s.i.g. working pressure and 300 p.s.i.g. hydrostatic test pressure. Working parts shall be bronze. Hose threads shall be National Standard Threads.

3.7.2 Fire hydrants shall be painted with one coat of red primer and two finishing coats of approved paint of the color approved by the owner. Fire hydrants shall be dry barrel type traffic model, conforming to A.W.W.A. C-502 with internal valve opening of at least 5" in diameter.

3.7.3 The depth of bury of a fire hydrant is defined as the distance from the bottom of the inlet pipe to the ground line. The inlet connection shall be of a type which is applicable to the type of piping being used. Fire hydrants shall be Mueller A-423 or Clow Medallion, unless otherwise approved by the Engineer.

### 3.8 Air Release Valves:

3.8.1 Air release valves shall be APCO Valve No. 200 or equal. It shall be connected to the water line with a 2" Galveston steel, Mueller No. H15007 or equal, and Mueller No. H15275, or

equal, curb stop. The air release shall be installed as detailed on drawings.

3.9 Concrete:

3.9.1 All concrete shall conform to section "Concrete" of these specifications.

3.10 Tracer Wire

3.10.1 Potable water pipe shall be placed with 14 gage THHN solid copper insulated wire along the complete length and tied on 20 foot intervals minimum. Tracer wire shall surface accessible at all water valves per valve box detail.

4. CONSTRUCTION METHODS:

4.1 Piping shall follow general arrangements indicated and shall be cut and placed accurately to measurements indicated or established from the work. Piping shall be worked into place without forcing or springing clear of opening and other work.

4.2 Changes in horizontal alignment shall be made by use of fittings. Prior to placing in final position, interior of pipe and fittings shall be carefully cleaned and shall be maintained in clean condition.

4.3 Care shall be taken to provide firm and uniform support at proper elevation for lines. No pipe shall be buried, covered or concealed until it had been inspected, tested and approved. Materials and equipment shall be new, free from defects.

4.4 If departures from contract drawings are deemed necessary by Contractor, details of such departures and reasons therefore shall be submitted as soon as practicable to Engineer for approval. No such departures shall be made without prior written approval of Engineer.

4.5 Trench Excavation:

Trenches, and particularly trench width, shall conform to section titled "Excavation, Trenching and Backfilling for Pipe".

4.6 Clearance:

No clearance of less than 18" shall exist between the water pipe lines and foreign pipe lines or other metallic surfaces unless specified written permission is granted to the Contractor by the Engineer. (Other clearance requirements are detailed on the drawings.) The foregoing does not apply to sanitary sewers. If water line shall be laid closer than 10' from a sanitary sewer, then the sewer shall be encased in concrete for 6' on each side of the water line.

5. INSTALLATION:

- 5.1 Proper implements, tools and facilities satisfactory to Engineer shall be provided and used by Contractor for safe and convenient prosecution of work. Pipe and appurtenance shall be carefully lowered into trench piece by piece by means of derrick rope or other suitable tools and equipment, in such a manner as to prevent damage to materials.
- 5.2 Under no circumstances shall materials be dropped or dumped into trench, should a damaged piece of pipe furnished by Contractor be placed in water main, Contractor shall replace defective pipe at no cost to Owner. Do not lay pipe in water, or when trench or weather is unsuitable for work, except with permission of the Engineer.
- 5.3 Keep water out of trench until jointing is complete. When work is not in progress, close ends of pipe and fittings securely so that no trench water, earth or other substance will enter pipes or fittings.
- 5.4 Each piece of pipe shall be examined for defects, cut to correct length and interiors surface thoroughly cleaned prior to placing in trench. Each length of pipe shall rest on pipe bedding throughout its entire length. Pipe shall be laid with bell ends pointing in direction of laying, unless otherwise directed by Engineer. All pipe within street right-of-way shall have 4' minimum 5" cover from natural ground.
- 5.5 Cutting of pipe for inserting valves, fittings or closure pieces shall be done in neat and workmanlike manner without damage to pipe and so as to leave smooth end at right angles to axis of pipe.
- 5.6 Do not exceed pipe manufacture's recommendations for deflections from straight line or grade as required by vertical curves, horizontal curves or offsets. If alignment requires deflections in excess of these limitations, furnish bends or sufficient number of shorter lengths of pipe to provide angular deflections within the limits set, or approved equal.
- 5.7 Setting Fittings and Valves:
- 5.7.1 Valves and fittings shall be set and jointed to pipe in manner heretofore specified for cleaning, laying and jointing of pipe. Each valve must be completely closed when placed in pipe line.
- 5.7.2 Should Contractor place defective fitting shall line or one proves defective during period of guarantee. Contractor will be required to make repairs or replacements, and restore finished grade to its condition prior to making repairs. Each valve shall be set plumb and braced at location and grade directed by Engineer.
- 5.7.3 Valve boxes shall be placed over the stem of each valve set below grade. Valve boxes shall

transmit no shock or stress to valve and shall be centered and plumb over wrench nut of valve with box cover flush with surface of finished grade. Pipe section of each valve box must be cut to proper length, box assembled and braced in vertical position.

#### 5.8 Thrust Blocks:

5.8.1 Thrust blocks shall be placed at fittings, bends, valves and flushing valves as shown in the construction drawing details. Thrust blocks shall bear against a vertical trench wall.

5.8.2 If the Character of the soil is such that the flushing valve cannot be securely wedged in this manner, provide bridle rods and rod collars of not less than 3/4" stock protected by a coat of acid resistant paint.

#### 5.9 Depth of Cover:

The minimum depth of cover for water mains shall be as follows

- 12" and smaller mains shall have a minimum cover of 4' from the top of curb, or 5' from the mean elevation of the bottom of the nearby ditch, nearby right-of-way elevation for open ditch sections, and natural ground on easements.
- 16" and larger mains shall have a minimum cover of 5' from the top of curb, or 6' from the mean elevation of the bottom of the nearby ditch, nearby right-of-way elevation for open ditch sections, and natural ground in easements.

### 6. PIPE BEDDING AND INITIAL BACKFILL:

6.1 Regardless of the type of pipe being laid, 6" of sand bedding shall be provided in the bottom of the trench (the trench having previously been cut 6" below grade) prior to laying the pipe and making up the joints.

6.2 Subsequent to completion of joints being made up and inspected, sand backfill shall be placed around the pipe extending the full width of the trench and to a minimum compacted depth of 6" over the top of the pipe to provide a compacted encasement surrounding the pipe.

6.3 Care shall be taken to see that no dirt, clods or trench sides are allowed to fall and/or to reset against the pipe prior to the completion of the sand encasement.

6.4 Sand for bedding and backfill shall be a select sandy soil or other granular material being free from clay lumps, organic materials or other deleterious substances and having a plasticity index of not greater than 7 and with not more than 40% passing a No. 200 sieve.

6.5 After the pipe is bedded as specified, initial backfill material shall be deposited in 6" maximum thickness layers compacted with suitable tampers to the density of the adjacent soil until there is a cover of not less than 1' over the lines. Initial backfill material shall be non-organic on-site soils free from stones larger than 1" and hard clods larger than 4".

6.6 The Contactor, upon approval by the Engineer and at his own expense, may place the bedding materials in the initial backfill zone and compact by hand tamping.

7. BACKFILL:

The trenches shall not be backfilled until all required pressure tests are performed and satisfactory results are obtained. The remainder of the trench shall be backfilled as described in the section "Excavation, Trenching and Backfilling for Pipe", unless otherwise allowed by the Engineer.

8. HYDROSTATIC TEST:

8.1 After the pipe has been laid and partially backfilled except at joints, and after sterilization period, all pipe, valves, fittings, joints and connections shall be carefully examined under pressure of 150 psi and shall not show leakage in excess of the amounts shown on the following table.

MAXIMUM ALLOWABLE LEAKAGE  
Gallons Per Hour Per 1000 Feet of Main

<b>Type of Pipe and Joint</b>		
<b>Pipe Size (inches)</b>	<b>D.I. Push On</b>	<b>PVC</b>
2	0.34	-
4	0.68	0.3
6	1.01	0.45
8	1.35	0.6
12	2.02	0.91
16	2.69	-
20	3.36	-
24	4.03	-
30	5.04	-

8.2 Cracked or defective pipe, fittings, valves, joints or connections showing visible leaks shall be removed and replaced by Contractor with sound material and sterilization and hydrostatic test

shall be repeated until satisfactory to Engineer. Contractor shall furnish, install and operate at his expense, necessary connections and pump for conduction tests.

8.3 The following general regulations shall be observed on each hydrostatic test:

8.3.1 All lines shall be filled for 24 hours prior to testing.

8.3.2 Pipe lines shall be tested before backfilling at joints, except where otherwise required by necessity.

8.3.3 Duration of test shall not be less than 2 hours when joints are exposed and not less than 8 hours when joints are covered. Alternatively, the hydrostatic test may be conducted at a minimum of 180 psi for a duration of 4 hours.

8.3.4 All visible leaks at exposed joints and all leaks evident on the surface where joints are covered shall be repaired and leakage minimized, regardless of total leakage as shown by test.

8.3.5 Pipe, fittings, and other material found to be defective under test shall be removed and replaced at Contractor's expense.

8.3.6 The CONTRACTOR shall provide, two bacteriological sample tests, one (1) for each day, minimum of two (2) consecutive days. Bacteriological tests shall be conducted per 1,200 linear feet of pipe placed. Contractor shall coordinate testing with the OWNER. Any failed test shall be repeated until satisfactory results are obtained. Contractor shall be responsible for payment of retests.

8.3.7 Contractor shall provide new meter boxes if the existing is in poor condition or damaged. Meter boxes shall be traffic rated where applicable.

## 9. BACERIOLOGICAL TESTING:

Bacteriological Tests shall be in accordance with AWWA Standard C651-14

9.1 Standard conditions for new mains. It should be recognized that the primary means of ensuring the sanitary integrity of a main are the sanitary handling of materials, the practices during construction, and continual inspection of work. After disinfection and final flushing such that typical system chlorine residuals are present, if the system operates with a residual, samples shall be collected as follows:

9.2 For new mains, the purchaser has two options for the bacteriological testing for total coliform

analysis.

9.3 Option A: Before approving a main for release, take an initial set of samples and then resample again after a minimum of 16 hours using the sampling site procedures outlined. Both sets of samples must pass for the main to be approved for release.

9.4 Option B: Before approving a main for release, let it sit for a minimum of 16 hours without any water use. Then collect, using the sampling site procedures outlined and without flushing the main, two sets of samples a minimum of 15 min apart while the sampling taps are left running. Both sets of samples must pass for the main to be approved for release.

9.5 A set of samples includes all samples collected along the length of the pipeline, as described in Sec. 5.1.1.2.

9.6 For new mains, sets of samples shall be collected every 1,200 ft (370 m) of the new water main, plus one set from the end of the line and at least one from each branch greater than one pipe length.

9.7 If trench water has entered the new main during construction or if, in the opinion of the purchaser, excessive quantities of dirt or debris have entered the new main, bacteriological samples shall be taken at intervals of approximately 200 ft (61 m), and the sampling location shall be identified (see Sec. 5.1.3 for sampling location details). Samples shall be taken of water that has stood in the new main for at least 16 hr after final flushing has been completed.

9.8 A standard heterotrophic plate count (HPC) test may be required at the option of the purchaser because new mains do not typically contain coliform bacteria but often contain HPC bacteria. If sample results show HPC greater than 500 CFU/mL, flushing should resume and another set of HPC and coliform samples collected until no coliform are present and the HPC is less than 500 CFU/mL.

9.9 Standard conditions for repaired mains. It should be recognized that the primary means of ensuring the sanitary integrity of a main are the sanitary handling of materials, the practices during repair work, and continual inspection of work. After disinfection and final flushing, samples shall be collected as follows:

9.9.1 For repaired mains that were depressurized and/or wholly or partially dewatered, one set of samples may be required, and depending upon the sanitary conditions, the line may be reactivated prior to the completion of bacteriological testing. Samples shall be collected downstream of the repair site and at intervals of approximately 200 ft (61 m) within the length of pipe that was shut down. If direction of flow is not known, samples shall be

collected on either side of the repair site. Refer to Sec. 4.11.

9.9.2 For repaired mains that were maintained under pressurized conditions at all times, disinfection and/or testing may not be required. Refer to Sec. 4.11.3.

9.9.3 However, under either main repair scenario, it is advisable where possible to provide a scour flush to clear before the release of the repaired section.

9.10 Sampling procedure. Samples for bacteriological analysis shall be collected in sterile bottles treated with sodium thiosulfate, in accordance with Section

9.11 Samples of Standard Methods for the Examination of Water and Wastewater. Hoses and fire hydrants are not recommended for the collection of samples that will be used to make decisions on the bacteriological quality of drinking water. However, if no sampling port is available, cleaned fire hydrants that have been cleared of standing water and/or other sanitized sampling apparatus (i.e., sanitized tubing, hose, gooseneck, spigot) may be used with the understanding that they do not represent optimum access to the water main for bacteriological sampling. A suggested combination blow-off and sampling tap used for mains up to and including 8-in. (200-mm) diameter is shown in Figure 2. There should be no water in the trench up to the connection for sampling. The sampling pipe must be dedicated and clean and disinfected and flushed prior to sampling. A corporation cock may be installed in the main with a copper-tube gooseneck assembly. After samples have been collected, the gooseneck assembly may be removed and retained for future use and the corporation cock should be capped or taped for future reuse. If corporation cocks are placed at the 12 o'clock position, they may be struck more easily during future excavations.

9.12 Sample results. Samples shall be tested for bacteriological quality in accordance with Standard Methods for the Examination of Water and Wastewater and shall show the absence of coliform bacteria.

9.13 In addition, it is recommended that samples be tested for acceptable aesthetic quality (e.g., chlorine residual, pH, alkalinity, specific conductance, turbidity). Levels should be as expected or typical for the water system. For new mains, a standard heterotrophic plate count test may be required at the option of the purchaser because new mains do not typically contain coliform bacteria but often contain HPC bacteria. If sample results show HPC greater than 500 CFU/mL, flushing should resume and another set of HPC and coliform samples collected until no coliform are present and the HPC is less than 500 CFU/mL.

9.14 Record of compliance. The record of compliance shall be the bacteriological test results certifying that the water sampled is free of coliform bacteria contamination.

9.15 Re-disinfection. If the initial disinfection fails to produce satisfactory bacteriological results, or if other results indicate unacceptable water quality, the main may be re-flushed and shall be resampled. If check samples fail to produce acceptable results, the main shall be re-chlorinated by the continuous-feed or slug method until satisfactory results are obtained—that being acceptable samples taken as described in Sec. 5.1.1.1.

Note: In the case of new mains, high velocities in the adjacent existing system, resulting from flushing the new main, may disturb sediment that has accumulated in the existing mains. When check samples are taken, it is advisable to sample water entering the new main to determine if excessive turbidity is present that could be interfering with results.

10. SERVICES:

1 ½" diameter Endotrace Traceable Tubing as manufactured by Endot Industries, Inc. (800-44ENDOT or [www.endot.com](http://www.endot.com)) is an acceptable alternate to copper tubing .

11. MEASUREMENT AND PAYMENT:

All items in this section shall be measured and paid in units as outlined in the bid proposal items and shall include the following: trenching, shoring, bedding, compaction, testing and sterilization, grading, and seeding all disturbed areas.

END OF SECTION

## SECTION 02: **SANITARY SEWERS**

### 1. GENERAL:

This section describes the complete work necessary to install sanitary sewers and appurtenances, including sanitary sewer manholes.

### 2. PRODUCTS:

Except as otherwise specified, furnish materials according to requirements of the City of Longview approved products.

#### 2.1 Manholes:

2.1.1 Manholes will be concrete or brick unless otherwise authorized by the Engineer, Precast concrete rings for manholes shall conform to the requirements of ASTM C478.

2.1.2 Any manhole poured on site must have the same reinforcement as a precast manhole. A copy of the reinforcement information must be filed with the Engineer.

#### 2.2 Sanitary Sewer Pipe:

2.2.1 Polyvinyl Chloride Pipe: For line sizes from 4" to 15" diameter, provide pipe and fittings which conform to ASTM Specification D3034, SDR 26 for line sizes from 18" to 27" diameter, pipe and fittings shall conform to ASTM F679, SDR 26.

2.2.2 Pipe: The pipe shall be made from PVC compound having physical properties and chemical resistance of cell classification 12454-B (formerly Type I, Grade I), and fittings shall be made from PVC compound having physical properties and chemical resistance of cell classification 12454-B, 12454-C or 13343-C, as defined in ASTM Specifications D1784, Rigid Polyvinyl Chloride Compounds.

2.2.3 Sewer lines crossing water lines shall be AWWA C900 Class 150 or equivalent, and extend 10-feet on either side of the water line.

2.2.4 Any substitution as an equal to P.V.C. SDR-26 pipe (mortar lined ductile iron is acceptable) must have approval from the Engineer and the Director of Public Works for the City of Longview. PROTECTO 401 is an acceptable alternate.

3. JOINTS AND FITTINGS FOR POLYVINYL CHLORIDE PIPE:

3.1 Pipe shall have integral wall bell and spigot joints. Joints of pipe and fittings shall conform to ASTM Specifications D3212, Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.

3.2 All fittings shall have elastomeric seals and shall conform to the requirements of ASTM D3034 for dimension ratio 26.

4. RUBBER GASKETS:

The elastomeric seal rubber gaskets shall be high grade, properly galvanized of either a basic natural or synthetic compound and shall comply with the requirements of ASTM Specifications F477, Elastomeric Seals (Gaskets) for Joining Plastic Pipes. Pipe gaskets shall be of the compression type and no chevron-type gaskets shall be permitted.

5. LUBRICANT:

Lubricant shall be water soluble, non-toxic, and have no deteriorating effects on gasket or pipe materials and shall not support the growth of bacteria.

6. QUALITY ASSURANCE CERTIFICATION:

The manufacture shall furnish a certificate of conformance to these specifications upon request, unless otherwise agreed to in writing with the purchaser at the time that order is placed, that the manufacture shall furnish other certification in the form of either affidavit of conformance, test results, copies of test reports or that the purchaser may witness the inspection and tests may by the manufacture.

7. IDENTIFICATION MARKING:

7.1 Pipe: Pipe in conformance with this standard shall be legibly marked at intervals of 5' (1.5 meters) or less, as follows:

- Manufacture's Name
- Nominal Size
- PVC Cell Classification (12454-B)
- PSM (Pipe Size Series)
- Sewer (Pipe Type)

- DR 26 (Standard Dimension Ratio)
- D3034 (ASTM pipe designation)
- D3213 (ASTM joint designation)
- Coded production numbers for extruder, plant, and production lot in this sequence year, month, day, and shift.

7.2 Fittings: All fittings shall be marked as follows:

- Manufacture's Identification
- Nominal Size
- PVC (Material)
- PSM (Pipe Size Series)
- ASTM D3034

## 8. EXECUTION:

### 8.1 Pipe Installation:

8.1.1 General: Install pipe in accordance with applicable provisions of the governing specifications.

8.1.2 Piping and materials of sewer lines shall be types specified herein, unless otherwise indicated in drawings.

8.1.3 Do not lay pipe in water filled trenches, when trench is unsafe, or when weather conditions are unsuitable for work, except by permission of Engineer.

8.1.4 Keep interior of pipe clean of foreign matter during and after laying.

8.1.5 Full length of each section of pipe shall rest solidly upon pipe bed with recesses excavated to accommodate bells.

8.1.6 Handle pipe and accessories in such a manner as to insure delivery to trench in sound undamaged condition.

### 8.2 Pipe Bedding and Initial Backfill:

8.2.1 Provide 6" of clean sand bedding in the bottom of the trench, the trench having been cut

6" below grade. Provide bedding prior to laying the pipe making up the joints.

8.2.2 After making up and inspecting the joints, place bedding material around and under the pipe haunches, extending the full width of the trench to a minimum compacted depth equal to the midpoint of the pipe. Bedding shall be compacted to 95% Standard Proctor Density per A.S.T.M. D-698.

8.2.3 After the pipe is bedded 6" over the top of initial backfill material shall be deposited in 6" minimum thickness layers and compacted with suitable tampers to specified backfill densities until there is a cover of not less than 1" over the lines.

8.2.4 Initial backfill material shall be non-organic on-site soils free from stones larger than 1" and hard clods larger than 4".

### 8.3 Backfill:

8.3.1 Backfill as specified in the section "Excavation, Trenching, and Backfilling for Pipe", unless otherwise directed.

8.3.2 Backfill pipe with material as approved by Engineer. Materials should be selected material and should not contain large lumps or clods of dirt.

8.3.3 Backfill pipe using caution no to push large amounts of cohesive material onto top of pipe.

### 8.4 Stacks:

8.4.1 When 6" diameter stacks or risers are to be constructed, pipe and fittings shall be solid wall thickness class SDR-26 and shall be solid built in accordance with the details of the construction drawings. Bedding will be the same as that used for the pipe main. Payment for stack will include the 6" pipe riser and 6" pipe wye and plugs. Plugs in the wye shall be "friction fit" for easy removal.

### 8.5 Service Leads:

8.5.1 When 6" diameter services leads are to be constructed, pipe and fittings shall be solid wall thickness class SDR-26 and shall be built in accordance with the details of the construction drawings. Bedding will be the same as that used for the pipe main. Payment for service leads will be for leads complete and in place. Plugs in the wye shall be "friction fit" for easy removal.

### 8.6 Manhole Connections:

8.6.1 Manhole water stops consisting of rubber gaskets and steel band shall be used at all points of entrance and exit of manholes. The stop shall be placed on the pipe near the center of the manhole wall. Care shall be taken when grouting the annular space between pipe and manhole wall to prevent grout or concrete from entering the bell end of the coupling.

## 9. MANHOLES:

### 9.1 Description

9.1.1 The work to be performed under this item shall consist of the construction of manholes complete in place, including the furnishing, adjusting to grade, and installation of manhole casting and cover.

### 9.2 Construction Methods

9.2.1 Manholes will be constructed at locations shown on the plans, and of the type and depth indicated there on. Each manhole shall be constructed in strict accordance with detailed drawings. Manholes shall be precast concrete.

9.2.2 In the construction of a manhole on pipe sewer, the concrete foundation for the manhole shall be placed as soon as practical after the sewer piping is complete through the manhole location.

9.2.3 This base shall be of the shape and size required for the particular type of manhole and shall have a minimum thickness of 12" with reinforcing Unless otherwise directed, bases for manholes on monolithic concrete sewers shall be placed at the same time sewer is being constructed, and shall be constructed of the same class of concrete used in the sewer construction.

9.2.4 After manhole work has been completed to the proper elevation, the cast iron manhole cover frame shall be set in full mortar bed and adjusted to the elevation established by the Engineer.

9.2.5 The inverts of the sewer lines or several sewer lines entering the manhole at or near the flow line elevation of the manhole shall be shaped and routed across the floor of the manhole using mortar to obtain the proper contour.

9.3 Brick Manholes are not allowed in this project.

9.4 Cast Iron Manhole Frame and Cover:

9.4.1 Cast iron for manhole frame and covers shall conform to the shape and dimensions shown on the drawings and shall be clean and perfect, free from sand or blow holes or other defects. Hole in cover must be free from plugs and shall be clean.

9.4.2 Bearing surfaces of manhole frames and cover are to be machined so that even bearing may be had in any position in which manhole cover is seated in the frame. Cast iron shall conform to ASTM specification A-48 for Class 20 Gray Cast Iron.

9.4.3 30" clear manhole covers will be used on sewers of 48" diameter or less 32" manhole cover will be used for sewers in excess of 48" diameter.

9.5 Provide manhole drops wherever pipe enters a manhole 2' or more above the invert of the manhole, or as shown on drawings.

9.6 All manholes shall be built to natural ground then adjusted to the required elevation when the pavement is completed and the lots shaped. The price for adjustment shall be included in the unit price submitted and there will be no extra compensation to the Contractor.

9.7 Manholes built in easements shall be built above natural ground per detail and graded to drain away from the manholes.

9.8 Every sanitary manhole shall have a protective costing applied to the entire interior. Manhole interior shall be clean and active leaks must be stopped prior to applying protective coating. Protective coating shall be Koppers Super Black protective coating, applied to a minimum thickness of 25 mils. Substitutions must first be approved by the Engineer. ***This item is not required unless specified by the project engineer.***

#### 10. LEAKAGE TEST:

10.1 After backfilling and removing debris from each section of sewer line, the Contractor at his expense shall conduct a line acceptance test under observation of an inspector. Test the sanitary sewer lines in strict accordance with the following leakage test using low-pressure air. If the test results indicate an unacceptable installation, locate the source of leakage, correct the defect, and re-test until installation is proven satisfactory.

10.2 Minimum Requirements for Equipment:

- Control Panel.
- Low-pressure air supply connected to control panel.
- Pneumatic plugs: Of acceptable size for diameter of pipe to be tested; capable of

withstanding internal test pressure without leaking or requiring external bracing.

- Air hose from control panel to:
- Air supply
- Pneumatic plugs
- Sealed line for pressuring
- Sealed line for monitoring internal pressure

### 10.3 Testing Pneumatic Plugs:

10.3.1 Test plugs before using in actual test installation. Place one length of pipe on ground and seal at both ends with pneumatic plugs to be checked.

10.3.2 Pressurize plugs to 25 psig; then pressurize sealed pipe to 5 psig. The plugs are acceptable if they remain in place against the test pressure without external aids.

### 10.4 Compensating for Ground Water Pressure:

10.4.1 Where ground water exists, install a capped pipe nipple at the same time the sewer line is placed. Use a 1/2" capped pipe nipple approximately 10" long. Make the installation through the manhole wall on top of the sewer line where the line enters the manhole.

10.4.2 Immediately before performed the line acceptance test, remove the pipe cap, clear the pipe nipple with air pressure, and connect a clear plastic tube to the pipe nipple. Support the tube vertically and allow water to rise in the tube.

10.4.3 After the water stops rising, measure the height in feet of water over the invert of the pipe. Divide this height in be 2.3 feet/psi to determine the ground water pressure to be used in the line testing.

### 10.5 Line Testing:

10.5.1 After pneumatic plugs have been checked, place plugs in line at manholes and inflate plugs to 25 psig. Introduce low-pressure air into sealed line until the internal air pressure reaches 4 psig greater than the ground water pressure.

10.5.2 Allow at least 2 minutes for air pressure to stabilize. If at least 3.5 psig over ground water pressure is maintained, disconnect the air hose from the control panel to the air supply and measure the time of the pressure drop between 3.5 and 2.5 psig above ground water

pressure.

10.5.3 The installation is acceptable if the air loss rate does not exceed 0.0015 cfm per square foot of internal pipe surface with an average test pressure of 3.0 psig greater than ground water pressure.

10.5.4 For sections of pipe less than 36-inch average inside diameter, the maximum time allowable for the pressure to drop from 3.5 pounds per square inch gauge to 2.5 psi gauge shall be computed from the following equation:

$T = 0.0850 (D) (K) / (Q)$  where T = time for pressure to drop 1.0 psi gauge in seconds.

$K = 0.000419 (D) (L)$ , but not less than 1.0

D = average inside diameter in inches.

L = length of line in feet of same pipe size being tested

Q = rate of loss; assume 0.0015 cubic feet per minute per square foot internal surface.

Since a K valve of less than 1.0 shall not be used, there are minimum testing times for each pipe diameter, as outlined below:

<i>Pipe Diameter</i>	<i>Minimum Time</i>	<i>Length for Minimum Time</i>	<i>Time for Longer Length</i>
(Inches)	(Seconds)	(Feet)	(Seconds)
6	340	398	0.855 (L)
8	454	289	1.520 (L)
10	567	239	2.347 (L)
12	680	199	3.149 (L)
15	850	159	5.342 (L)
18	1020	133	7.693 (L)
21	1190	114	10.471 (L)
24	1360	100	13.676 (L)
27	1530	88	17.309 (L)
30	1700	80	21.369 (L)
33	1870	72	25.856 (L)

#### 10.6 Deflection Test:

10.6.1 Deflection tests shall be performed on all flexible and semi-rigid pipe. The test shall be conducted after the final backfill has been in place at least 30 days. No pipe shall exceed a deflection of 5%.

10.6.2 If the deflection test is to be run using a rigid ball or mandrel, it shall have a diameter equal to 95% of the inside diameter of the pipe.

10.6.3 The test shall be performed without mechanical pulling devices. The test must be made under the observation of the Engineer or his authorized representative. The Contractor shall supply ball or mandrel and any equipment necessary to perform the test.

## 11. SEPARATION DISTANCES:

The following rules apply to separation distances between potable water and wastewater treatment plans, and water lines and sanitary sewers, per TITLE 30 TAC Section 217.53.

### 11.1 Water Line/ New Sewer Line Separation:

11.1.1 When new sanitary sewers are installed, they shall be installed no closer to water lines than nine feet (9') in all directions. Sewers that parallel water lines must be installed in separate trenches. Where the 9' separation distance cannot be achieved, the following guidelines will apply.

- Where a sanitary sewer parallels a water line, the sewer shall be constructed of cast iron, ductile iron, or PVC meeting ASTM specifications with a pressure rating for both the pipe and joints of 150 psi.
- The vertical separation shall be a minimum of two feet (2') between outside diameters and the horizontal separation shall be a minimum four feet (4') between outside diameters. The sewer shall be located below the water line.
- Where a sanitary sewer crosses a water line and the sewer is constructed of cast iron, ductile iron, or PVC with a minimum pressure rating of 150psi, an absolute minimum distance of six inches (6") between outside diameters shall be maintained.
- In addition, the sewer shall be located below the water line where possible, and one length of the sewer pipe must be centered on the water line.
- Where a sewer crosses under a water line and the sewer is constructed of ABS truss pipe, similar semi-rigid plastic composite pipe, clay pipe, or concrete pipe with gasketed joints, a minimum two feet (2') separation distance shall be maintained.
- The initial backfill shall be cement stabilized sand (two or more bags of cement per cubic yard of sand) for all sections of sewer within nine feet (9') of the water line. This

initial backfill shall be from one quarter diameter below the centerline of the pipe to one pipe diameter (but not less than 12") above the top of the pipe.

- Where a sewer crosses over a water line, all portions of the sewer within nine feet (9') of the water line shall be constructed of cast iron, ductile iron, or PVC pipe with a pressure rating of at least 150 psi using appropriate adapters. In lieu of this procedure, the new conveyance may be encased in a joint of 150 psi pressure class pipe at least 18 feet (18') long and two nominal sizes larger than the new conveyance.
- The space around the carrier pipe shall be supported at five feet (5') intervals with spacers, or be filled to the spring-line with washed sand. The encasement pipe should be centered on the crossing and both ends sealed with cement grout or manufactured seal.

#### 11.2 Water Line/Manhole Separation:

Unless sanitary sewer manholes and the connection sewer can be made water tight and tested for no leakage, they must be installed so as to provide a minimum of nine feet (9') of horizontal clearance from an existing or proposed water line. Where the 9' separation distance cannot be achieved, a carrier pipe as described in subsection A. (4) of this section may be used where appropriate.

### 12. MEASUREMENT AND PAYMENT:

Work performed under this section will be paid at unit prices for the following bid items.

#### 12.1 Sanitary Sewers:

Includes service stubs and PVC C-900 pipe a crossing of water mains. Measure from center of manhole to center of manhole. Payment will be at unit prices for size and depth of pipe and will include cost of labor, material, excavation, trench shoring, bedding, backfill, and compaction, grading and seeding all disturbed areas, and testing to complete construction.

#### 12.2 Manholes, Drops, Stacks, and Service Leads:

Payment includes complete cost of excavation, backfill, materials, and construction.

END OF SECTION

## SECTION 03: **STORM WATER POLLUTION PREVENTION PLAN**

### 1. SUBMITTALS FOR INFORMATION

The following items shall be submitted for record purposes only. These documents will not be reviewed for compliance with permit requirements.

- Storm water pollution prevention plan,
- Notice of Intent (N.O.I.),
- Photocopies of permit application fee payment(s), and
- Notice of Termination (N.O.T.).

### 2. GENERAL PERMIT, APPLICATION, AND FEES

2.1 The Contractor shall bear sole responsibility for the storm water pollution prevention provisions of this Contract as well as bear sole responsibility for development, implementation, and maintenance of the storm water pollution prevention plan, the best management practices, and the facilities utilized to meet the TPDES General Permit requirements. The storm water pollution prevention plan and Notice of Intent shall be completed prior to beginning any work or stockpiling of materials.

2.2 Prior to filing the Notice of Intent, the Contractor shall develop and submit a project specific storm water pollution prevention plan based on best management practices that includes all aspects as required by current Texas Commission on Environmental Quality (TCEQ) and US Environmental Protection Agency (USEPA) rules.

2.3 After submittal of a Project specific storm water pollution prevention plan as required by TXR1 50000, the Contractor shall file the Notice of Intent (N.O.I.). A copy of the Notice of Termination (N.O.T.) shall be submitted to the Engineer for record purposes.

2.4 The Contractor shall pay all fees, including initial application and renewal fees, associated the TPDES permit application. A photocopy of the payment shall be submitted to the Engineer.

2.5 The Contractor shall pay all costs associated with the development of the storm water pollution prevention plan as well as the implementation, maintenance, monitoring, and inspection of the storm water pollution prevention plan facilities during the construction period.

2.6 Upon closeout of the Project, the Contractor shall submit at Notice of Termination (N.O.T.) to the TCEQ using the proper form and provide a copy to the Engineer for record purposes.

### 3. SWPPP REQUIREMENTS

The Storm Water Pollution Prevention Plan shall comply with the requirements of TPDES Construction General Permit TXR1 50000 (see Attachment 3). For additional information contact the Texas Commission on Environmental Quality at P. O. Box 13087, Austin, TX 78711-3087

END OF SECTION

## DIVISION 05 EARTHWORK

### SECTION 01: EXCAVATION, TRENCHING AND BACKFILLING FOR PIPE

1. SCOPE:

This section covers excavation, trenching, and backfilling for pipe and underground pipe system structures.

2. GENERAL REQUIREMENTS:

2.1 Make all excavations to line and grades indicated on the drawings. Perform clearing and grubbing within work area. Remove and dispose of trees, stumps, brush, roots, logs, vegetation, rubbish, and structures that obstruct the work.

2.2 Perform all excavation work in a safe and proper manner. Take precautions to avoid hazards of every kind. Provide adequate working space and clearances for installation of work and form removal. Do not undercut excavation faces for extended footing.

2.3 Clear subgrade surfaces of loose material before placing bedding materials or pouring concrete.

2.4 Allow no less than 6 inch (6") clearance in horizontal dimensions of excavations for outside plastering of manholes and similar structures constructed of masonry units.

2.5 Remove from the site at no cost to the Owner all excavated materials not suitable for backfill. Disposal of this material shall be the responsibility of the Contractor.

3. CLASSIFICATION OF EXCAVATED MATERIALS:

All excavated materials will be unclassified.

4. BLASTING:

The use of explosives will not be permitted.

5. UNAUTHORIZED EXCAVATION:

Replace all material excavated below bottoms of concrete footings, slabs on grade, and foundations with concrete placed at the same time and monolithic with the concrete, at no cost to the Owner.

6. REMOVAL OF WATER:

6.1 Provide and maintain adequate dewatering equipment to remove and dispose of all surface and ground water entering excavations, trenches or other parts of the work. Keep excavations dry

continually during preparation of subgrade and until structure is completed. Water shall be removed sufficiently ahead of pipe laying operation to insure dry, firm bed on which to place pipe, and dewatering operations shall be continued until after joints have been inspected by Engineer and concrete is set.

6.2 Divert all surface water away from excavated areas and prevent water from entering excavations.

6.3 Where excavations for trenches or concrete structures extend below the static ground water elevations, lower and maintain the ground water surface to a depth no less than 12" below the bottom of the excavation.

6.4 Maintain in usable condition all pipe or conduit used for drainage purposes and leave clean and free from sediment at completion of work.

6.5 Dewatering by well pointing, when directed by the Engineer, shall be paid for at the unit price bid for well pointing. No other pay shall be made for dewatering or removal of water from excavations and cost should be included in those items of which it is a component.

## 7. SHEETING AND SHORING:

7.1 Except where banks are cut back to a stable slope, trench excavations which exceed 5 feet in depth shall be shored by use of a trench shield. Sheeting, shoring, and bracing will be used only if the trench shield is not practicable. The Contractor shall submit a structural engineer's certification of the structural limits of any trench shields to be used on the project.

7.2 The system strength must exceed short term lateral earth pressures which will be experienced on the project. Maintain the shape and position of sheeting, bracing and shoring for duration necessary. Shoring, bracing, and sheeting shall be removed as excavations are backfilled in a manner such as to prevent injurious caving. Where, in the opinion of the Engineer, damage is likely to result from withdrawing sheeting, the sheeting shall be left in place. Untreated sheeting shall not be left under pavement and structures.

7.3 Trench safety systems shall meet OSHA Standards, Chapter XVII Occupational Safety and Health Administration, Section 1926.650 Subpart P., Excavations, Trenching, and Shoring.

7.4 Payment will be made for cutting back banks use of the trench shield, or timber furnished and installed under this item at the unit price bid per unit shown on bid proposal. When item is necessary, required, and item does not appear on bid proposal, the cost of supplying and installing such timbers is to be included in the price of sewers, appurtenances and their related structures. Where special sections are ordered which include the placement of timber

foundations, the cost of the timber foundations shall be included in the price of the special section.

8. PREPARATION OF SUBGRADE:

8.1 Trench bottoms and subgrade surfaces for concrete structures shall be firm, dense, thoroughly compacted and consolidated, and shall be free from mud and muck and sufficiently stable to remain firm and intact under feet of the workmen.

8.2 Where rock or other incompressible material is encountered, remove material to a depth of six inches (6") below subgrade and backfill with suitable material.

8.3 All trench bottoms or subgrade surfaces for concrete structures which are otherwise solid, but which become mucky on top due to construction operations shall be reinforced with granular material. No more than 1/2" depth of mud or muck shall remain on trench bottoms when pipe is installed. The finished elevations of subgrades for concrete structures shall not be above the subgrade elevations shown on the drawing.

8.4 Use only suitable materials to bring fills to the lines and grades indicated and for replacing unsatisfactory materials.

8.5 Where pipe is laid in fill, construct the embankment to an elevation no less than 1 foot (1') above top of pipe prior to excavation for pipe.

9. EXCAVATION:

9.1 Open only as much trench in advance of pipe laying as is necessary to expedite the work. Do not keep open more than 100 feet of trench on any line under construction. Excavation shall be open from the surfaces unless tunneling operations are indicated on the drawings. Install underground piping and structures before paving is placed.

9.2 Alignment, Grade, Minimum Cover: Fix and determine the alignment and grade or elevation of each pipe line by using offset stakes. Vertical and horizontal alignment of pipes and the maximum joint deflection used shall be in conformity with the requirements of the section covering the installation of the pipe being laid.

9.3 Where pipe grades or elevations (culverts) are not definitely fixed by drawing, excavate trenches to a depth sufficient to provide a 24" minimum backfill cover over top of pipe where surface grades are definitely established and 30" in other locations. Greater depth of backfill cover may be necessary on vertical curves or to provide necessary clearance beneath pipes, conduits, drains, drainage structures or other obstructions encountered at normal pipe grades. For water mains, provide 4' minimum cover. Depth of backfill cover shall be measured vertically from top

of pipe to finish ground.

9.4 Trench Excavation, Widths, and Pipe Clearances: Ditching machines will be permitted, at Contractor's option, subject to the approval of the engineer, whenever their use is applicable and practical for work shown on the drawing. A certain amount of hand excavation may be required due to special field conditions and to avoid conflict with vegetation.

9.5 Trench width below top of pipe bell or other joints for smaller than 30" pipes shall be not be less than the outside diameter of pipe plus 12", and not more than outside diameter of pipe plus 18". Trench width for 30" and larger pipe shall not be less than outside diameter plus 16", and not more than outside diameter of pipe plus 24". Trench widths for special jointing shall comply with requirements of pipe materials manufacturer. Trench widths for monolithic sewers shall be equal to outside diameter of sewer plus thickness of any sheathing timber extending below top of concrete.

9.6 Trench widths above tops of pipe bells or monolithic sewers may be increased by an amount to permit sheathing and bracing timbers and to permit installation of well points and pumps in the trench where surface pumping is uneconomical. Provide space between cross braces to permit handling of forms, pipe, and other material.

9.7 Do not deposit excavated material on lawn, sidewalk, garden, or shrubbery. During handling of this material, do not obstruct drainage.

9.8 Unauthorized Trench Widths: Where trench width exceeds maximum permitted, provide pipe of adequate strength, arch concrete encasement, or special pipe embedment designed and selected to satisfy loading conditions at no cost to Owner.

9.9 Excavation below Pipe Subgrade: Except as hereinafter specified for wet or otherwise unstable material, over depths shall be backfilled with materials specified for bedding in the lower portion of trenches.

9.10 Wet Sand Construction of Sewer Lines: Where quicksand, much or similar unstable soil is encountered below subgrade, the Engineer may approve the use of special bedding and flooring.

- Payment for special bedding and flooring used in wet sand construction will be paid for at the bid unit price for same. Special Section No. 5, as shown on drawing details, will apply with the following exceptions:
- PVC pipe will be required for sanitary sewer lines 24" and smaller.
- Trench must be over-excavated to allow a minimum of 12" of special bedding material

under the pipe for foundation. Special bedding material may be washed shell or crushed limestone gravel (having less than 25% passing the No. 4 sieve).

- This pay item will include excavation, special bedding material used below the pipe flow line to stabilize the trench bottom, and backfilling. Pay for well pointing will be as described earlier in this section, and is a separate pay item.

If, in the opinion of the Engineer, an adequate foundation for the pipe sewer cannot be obtained from the procedures described above, the Engineer may order full timber flooring, including spreaders, stringers, sills, and floor boards for pipes 36" and smaller or S-2 bedding for sewers 42" and larger.

Payment for rock foundation material shall be paid at the unit price bid per linear foot.

9.11 Bell Holes: Provide adequate clearances for tools and jointing operations. Do not allow any part of bell or coupling to contact trench bottom or trench wall when pipe is jointed.

9.12 Surplus Excavated Material: Surplus excavated material, which is material left after pipe has been backfilled to natural ground elevation, shall be hauled away and disposed of, at no extra cost to Owner. All surplus excavated material left within the right-of-way above pre-existing natural ground elevations will be hauled and back-charged to the Contractor.

#### 10. PIPE EMBEDMENT:

Pipe bedding and initial backfill shall be performed as described in the individual sections for each type of pipe.

#### 11. TRENCH BACKFILL:

11.1 Do not backfill until all requirements under "Pipe Embedment" are completed.

11.2 Mechanical Compaction: Trench backfill will be accomplished using mechanical means. The Contractor will use a RayGo 220 vibratory compactor, or approved equal, for all trenches and around all manholes. Soil will be placed in 8" lifts and compaction shall conform to requirements for location of pipe.

11.3 Pipe under Pavements: Cement stabilized sand backfill, thoroughly rodded, shall be used for trench backfill under pavements, driveways, walks, curbs, gutters, and other surface structures, and where pipe is within 1' of an existing or proposed concrete curb, edge of asphalt or concrete paving. No direct payment will be made for backfill under the above conditions and cost should be included in price bid for pipe.

11.4 Pipe Under Grassy or Native Soil Area:

- Pipe within road right-of-way and more than 5' from existing or proposed paving shall be backfilled with soils selected from excavation operation and free of stones larger than 6". Place soil in 8" maximum lifts compacted to 95% Standard Proctor Density per AASHTO T-99.
- Pipes outside road rights-of-way shall be backfilled with material selected from excavation operations and shall be placed in 12" layers, compacted to density equal to adjacent undisturbed soils.

11.5 Determination of Backfill Density: Compaction test specimens may be taken at Owner's option.

A separate batch of soil will be used for each compaction test specimen. No material will be re-used. Initial tests will be performed at intervals of no less than 1 per 1,000 linear feet. Except where otherwise specified, the soil density will be measured in the field in accordance with ASTM D698. If compaction is found to be inadequate, tests may be taken at 100' intervals until satisfactory compaction is found to exist.

Trenches improperly backfilled shall be re-opened to the depth required for proper compaction, then re-filled and compacted as specified, or condition shall be otherwise corrected as permitted by Engineer.

The cost of re-compacting and re-testing of failed sections will be paid for by the Contractor.

11.6 Base Material Backfill: 12" of base material shall be provided under pavement replacement.

Base material shall meet the requirements of Texas Highway Department 1972 Specifications, Item 242, Paragraph 242.2 for material, Paragraph 242.3 for Type B, Paragraph 242.4 for Grade 1. Place and compact material as specified for granular material backfill.

11.7 Special Care: Do not damage pipe coatings and wrappings during backfill operations.

11.8 The surface shall be restored to its original condition as near as practicable and as hereinafter specified. Pavement and sidewalks disturbed by trenching operations shall be replaced with materials equal to the adjacent pavement or sidewalk for a minimum distance of 12" on each side of the trench, as shown on the plans.

12. STRUCTURE BACKFILL:

Place backfill in layers around structures and compact equal to adjacent undisturbed materials; to prevent future settlement. Do not use water settlement where water settlement may cause

damage to work. Backfill material shall not contain wood, grass, roots, broken concrete, stones, trash, or debris. Backfill intended to be mechanically tamped shall not be deposited or compacted in water. Where cement-sand is specified for backfill, comply with placement procedures given in that section.

13. DRAINAGE MAINTENANCE:

Backfilling operations for trenches crossing highways, streets, and driveways adjacent to drainage ditches and water courses shall start upstream and proceed downstream to prevent impounding of water. Water shall not be allowed to accumulate in incomplete trenches. Remove all material deposited in ditch or water course crossed by trench excavation immediately after completion of backfill. Restore section, grades, and contours of ditches or water courses to original conditions. Take precautions necessary to protect property and the work from damage caused by obstruction to surface drainage.

14. STRIPPING:

Strip the top 4-inches (4") of all areas to receive compacted embankments or which will be under structures. Stockpile this material in sufficient quantity to accomplish the required finished grading.

15. FINISH GRADE:

Uniformly grade smooth all areas indicated to be graded on the drawings. The finish surface shall be not more than 0.15 feet above or below the established grade of cross-section. Finish all ditches and gutters to drain properly. Re-grade existing ground surfaces not indicated on the drawings to be graded, where these surfaces have been disturbed during construction operations.

16. COMPACTED EMBANKMENTS:

Embankment under structures shall be compacted in 6" layers at optimum moisture content to 95% Standard Proctor Density as determined by ASTM D-698.

17. JACKING OR BORING CASING:

Provide jacked or bored casing where shown on the drawings. Casing material shall be new ductile iron. Casing thickness and strength shall be as shown on plans. Join sections of casing by welding. Install casing and carrier pipe prior to other installations to allow for line and grade corrections. Jacking and boring shall conform to the requirements of Texas Highway Department 1972 Standard Specification, Item 476, Paragraph 476.3 entitled "Construction".

18. LINES AND GRADES:

Lines and grades shall be established per the "Special Conditions".

19. SAFETY:

The Contractor shall provide whatever warnings, signs, lanterns, lights, "rope-offs", barricades, and other safety features that may be necessary to insure the reasonable safety of all traffic (regardless of kind).

19.1 MEASUREMENT AND PAYMENT:

No separate payment: All of the work specified on this item will not be paid directly, but shall be considered subsidiary work pertaining to the installation of items involved.

END OF SECTION



## APPROVED WATER PRODUCTS LIST

DATE: 3-14-2014 @ 5:00 PM

### I. BALL VALVES, CORPORATIONS, RESETTERS, UNIONS (FLARE)

AWWA C-800, latest revision, No-lead brass shall contain not more than one fifth of one percent (0.20% or less) total lead content by weight.

(Ball valves have 360° rotation with locking wing nut.)

Acceptable brands are:

- A. Ford
- B. Mueller
- C. A.Y. McDonald Mfg Co.

### I-I. BALL VALVES, CORPORATIONS, RESETTERS, UNIONS (COMPRESSION)

AWWA C-800, latest revision, No-lead brass shall contain not more than one fifth of one percent (0.20% or less) total lead content by weight.

(Ball valves have 360° rotation with locking wing nut.)

Acceptable brands are:

- A. Ford (Q-NUT)
- B. Mueller (CTS-110)
- C. A.Y. McDonald Mfg Co. (T-NUT)

### I-II. STEEL INSERTS FOR COMPRESSION BRASS FITTINGS

Acceptable brands

- A. Ford
- B. Mueller
- C. A.Y. McDonald Mfg. Co

### II. BRASS BUSHINGS, NIPPLES, PLUGS, TEES

AWWA C-800, latest revision, No-lead brass shall contain not more than one fifth of one percent (0.20% or less) total lead content by weight.

Acceptable brands are:

- A. Merit Brass
- B. Grinnell
- C. Preferred Pipe
- D. Lee
- E. Matco-Norca

III. BRASS GATE VALVES

AWWA C-800, latest revision, No-lead brass shall contain not more than one fifth of one percent (0.20% or less) total lead content by weight.

Acceptable brands are:

- A. Grinnell
- B. Crane
- C. Milwaukee
- D. Hammond
- E. Nibco
- F. Matco-Norca

IV. COPPER FITTINGS

Acceptable brands are:

- A. Mueller Brass
- B. Grinnell
- C. Nibco

V. COPPER TUBING

Type "K" soft copper – for water services  $\frac{3}{4}$ " to 1"

Type "L" hard copper – for 1  $\frac{1}{2}$ " and 2" copper

Acceptable brands are:

- A. Mueller
- B. Wolverine
- C. Cambridge Lee – Halstead, Reading
- D. Cerro

VI. POLY TUBING SDR-9 200 PSI CTS 1" AND  $\frac{3}{4}$ "

Acceptable brands are:

- A. Endotrace

VI. GALVANIZED FITTINGS

Acceptable brands are:

- A. Grinnell
- B. Southern Nipple
- C. Union

VII. DUCTILE IRON PIPE

Pressure Class

Domestic only

Acceptable brands are:

- A. U.S. Pipe
- B. Griffin
- C. American Cast Iron Pipe Co.

VIII. DUCTILE IRON RETAINER GLANDS

Acceptable brands are:

- A. Tyler Pipe
- B. U. S. Pipe
- C. Sigma

VIII-I MECHANICAL JOINT RESTRAINT FOR PVC AND DI PIPE

Acceptable brands are:

- A. Star
- B. Smith Blair Cam-lock
- C. Ford Uni-Flange
- D. Ebaa Iron Megalug

IX. CAST IRON FITTINGS Class 350 Short body D.I.

Acceptable brands are:

- A. Tyler Pipe
- B. Sigma
- C. American Cast Iron Pipe Co.
- D. Serampore
- E. Star pipe
- F. Accucast
- G. Nacip

X. CAST IRON VALVES

AWWA C-509 R/S “550 Coated Epoxy”

Domestic only

Acceptable brands are:

- A. Mueller
- B. American flow control / American Darling
- C. M & H
- D. Clow R/S

XI. CAST IRON TAPPING VALVES

AWWA C-509 R/S

Domestic only

Acceptable brands are:

- A. American flow control / American Darling
- B. Mueller
- C. M & H
- D. Clow R/S

XII. CAST IRON TAPPING SLEEVE

Acceptable brands are:

- A. Mueller
- B. Clow
- C. M & H
- D. Waterous

XIII. TAPPING SLEEVE

Epoxy coated stainless steel nuts and bolts or all stainless steel.

Acceptable brands are:

- A. Smith Blair
- B. JCM
- C. Ford
- D. Romac

XIV. FITTINGS FOR SCHEDULE 40 PVC

Acceptable brands are:

- A. Spears
- B. Lasco
- C. Nibco

XV. FITTINGS FOR DR 26 “ Sewer Fittings”

Acceptable brands are:

- A. Multi-fitting
- B. Plastic Trends
- C. Vassallo
- D. GPK
- E. Tigre

XVI. VALVE BOXES AND LIDS

Plastic

Acceptable brands are:

- A. Ameter

XVII. PLUGS

Plastic

Acceptable brands are:

- A. Vassallo

XVIII. REPAIR CLAMPS

Stainless steel bolts

Acceptable brands are:

- A. Smith Blair

XIX. REDI CLAMPS, BELL JOINT LEAK CLAMPS, BOLTED CAST COUPLINGSTRANSITION COUPLINGS, CUT IN REPAIR COUPLINGS

Acceptable brands are:

- A. Smith Blair

XX. SERVICE SADDLES

- A. 2" TO 4" – 315 single strap

Acceptable brands are:

- A. Smith Blair
- B. Romac
- C.

- B. 6" TO 12" – 317 double strap with npt tap

Acceptable brands are:

- A. Smith Blair
- B. Romac

XXI. COMPRESSION COUPLINGS 525

Acceptable brands are:

- A. Smith Blair
- B. JCM
- C. Romac

XXII. CLAY SEWER PIPE AND FITTINGS

- for repairs only -

Acceptable brands are:

- A. Mission Clay Products

XXIII. SEWER DONUT

Acceptable brands are:

- A. Fernco
- B. DFW
- C. Flow
- D. Indiana Seal

XXIV. BANDED ADAPTOR FOR SEWER PIPE

Acceptable brands are:

- A. Fernco
- B. Flow
- C. DFW
- D. Indiana Seal

XXIV-I. SHEAR GUARD FOR BANDED ADAPTOR FOR SEWER PIPE

Acceptable brands are:

- A. Indiana Seal, GPK

XXV. CAST IRON SOIL PIPE AND FITTINGS

Acceptable brands are:

- A. Tyler Pipe

XXVI. 24" 300 POUND CAST IRON – MANHOLE RINGS/LIDS, MANHOLE EXTENSIONS.

Acceptable brands are:

- A. Bass/Hayes
- B. Serampore

XXVI-I. 30" 175 AND 210 POUND CAST IRON – MANHOLE RINGS/LIDS AND EXTENSION

Acceptable brands are:

- A. Star
- B. Sigma
- C. East Jordan Iron Works / B&H; V1420/1430
- D. Accucast
- E. Nacip
- F. Serampore

XXVI-II. 339 CLEANOUT AND LIDS

Acceptable brands are:

- A. Bass/Hayes
- B. Serampore
- C. Accucast

XXVII. MANHOLE INSERTS

Acceptable brands are:

- A. L. F. Product
- B. Enviroquip corp.

XXVIII. MANHOLE CONES & RISERS – CONCRETE

Acceptable brands are:

- A. Hanson
- B. Tyler Product
- C. Del Zotto Products

XXIX. 24" STORM SEWER RING AND LID  
226 RING AND 226-L LID

Acceptable brands are:

- A. Bass/Hayes
- B. East Jordan Iron Works
- C. Serampore
- D. Accucast

XXIX.-I 30" VRM-30 REVERSIBLE CAST IRON – STORM INLET RINGS/LIDS

Acceptable brands are:

- A. Accucast
- B. Serampore
- C. Bass & Hayes, East Jordan Iron Works

XXX. METER BOXES AND COVERS

Acceptable brands are:

- A. For cleanout /sewer tap: NDS part number D1200-CI and DFW #1200TT-CI.
- B. For water tap: NDS: part number D15AMR2-OLLOC with a mouse hole on each end. DFW: part number 16AMRBLOC with a mouse hole on each end.
- C. For driveways: 1" and 5/8" x 3/4" water meters use a Hubbell Lenoir City Inc. A221118501050 Water with one 2" touch read hole and 2ea. 2-1/2" x 4" mouse hole centered each end or equal. For 1-1/2" & 2" water meters use a Hubbell Lenoir City Inc. A281730507050-Water 12" or a A281730507050-Water 18" with one 2" touch read hole and 2ea. 2-1/2" x 4" mouse hole centered each end or equal. For driveways with cleanouts /sewer taps: Use a Hubbell Lenoir City Inc. A24132412A01J or equal.

XXXI. VALVE STAND AND LID

Acceptable brands are:

- A. Bass/Hayes
- B. Sigma
- C. Serampore
- D. Star Pipe Products
- E. Accucast
- F. Nacip

XXXII. TRANSITION GASKETS

Acceptable brands are:

- A. Tyler Pipe
- B. Kennedy
- C. Gates Rubber Co.

XXXIII. PORTLAND CEMENT – 94 lb sack

Acceptable brands are:

- A. TXI
- B. Texas LeHigh
- C. Ideal

XXXIV. MASONRY CEMENT

Acceptable brands are:

- A. TXI
- B. Texas LeHigh
- C. Ideal

XXXV. READY TO USE CONCRETE MIX

Acceptable brands are:

- A. Sakrete
- B. Quickrete
- C. Easy-Mix

XXXVI. HYDRANTS

Open counter-clockwise; AWWA C-502, 4-1/2” pumper nozzle, painted yellow.

Acceptable brands are:

- A. Mueller – A – 423
- B. American Darling B84Btc
- C. Clow- Medallion

XXXVII. PLASTIC WATER PIPE DR 18 C-900 OR CERTA-LOK C-900

Acceptable brands are:

- A. Certainteed
- B. Napco
- C. JM / PWEagle
- D. Diamond Pipe Co.
- E. Pipelife Jet Stream, Inc.

PLASTIC WATER PIPE UPONOR AWWA C909 (Ultra Blue)

SDR 26 minimum

Acceptable brands are:

- A. JM / PWEagle

XXXVIII. PLASTIC HEAVY WALL SEWER PIPE SDR 26  
No SDR 35

Acceptable brands are:

- A. Certaineed
- B. Napco
- C. JM / PWEagle
- D. Pipelife Jet Stream, Inc.
- E. Diamond Pipe Co.
- F. Hawk Pipe Co.
- G. STC

XXXIX. VAULTS WITH TORRISION ASSITED LIDS

Acceptable brands are:

- A. Hubbell Power Systems, Inc.  
(4' x 4' x 78" A2A4872507050)  
(4' x 4' x 96" A2A4896513050)  
(4' x 4' x 108" A2A4810500050)

XL. CASING PIPE SPACERS

Acceptable brands are:

- A. Advance Products & Systems, Inc. (SS)
- B. BWM (SS)
- C. CCI pipe line system (SS)