



**BOWMAN SPRINGS ROAD  
(IH 20 – ENCHANTED BAY BOULEVARD)**

**CITY OF ARLINGTON  
PROJECT NO. PWST18001**

**Prepared by  
City of Arlington  
Department of Public Works and Transportation  
and  
Department of Water Utilities**



*Sabino E. Martin* 10/21/21



*Lori Du*  
10/21/2021



**Legend**  
 Project Location

"This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries."



**Bowman Springs  
(I-20 to Enchanted Bay)  
Project No. PWST18001  
Location Map**



Prepared By:  
PWT Engineering Operations  
10/2/2020

## TABLE OF CONTENTS

<u>SECTION NUMBER</u>	<u>SUBJECT OF SECTION</u>
	Instructions to Bidders
1	Advertisement for Bids
2	Prevailing Wage Rates
3	Contractor Residency Statement
3A	MWBE Utilization Plan
3B	Letter of Intent to Subcontract
3C	Good Faith Effort Checklist
4	Affidavit Against Prohibited Acts
4A	Affidavit Against Firearm Entities
4B	Affidavit Against Boycotting Energy Companies
5	Verification Relating to Boycotting Israel
6	Proposal
7	Contract
8	Performance Bond
9	Payment Bond
10	Maintenance Bond
11	Special Provisions - General Administration Specifications
12	Special Provisions - General Construction Specifications
13	Special Provisions – Paving Specifications
14	Special Provisions – Water & Sanitary Sewer Specifications
15	Special Provisions – Drainage Specifications
16	Trench Safety and OSHA
17	Special Provisions - Landscaping Specifications
18	Special Provisions - Pavement Marking Specifications

- 19 Special Provisions - Streetlights Specifications
- 20 Special Provisions – Sign Specifications
- 21 ~~Special Provisions – Signals Specifications – N/A~~
- 22 ~~Special Provisions – Mill & Overlay/Reclamation Specifications – N/A~~
- 23 Special Specifications – Technical Specifications (Freese & Nichols, Inc.)
- 24 Supplemental Contract Conditions And Instructions (TWDB-0550)
  - DB-0154 – Monthly Davis Bacon Wage Rate Certificate of Compliance
  - ED-103 – Contractor’s Act of Assurance
  - ED-104 – Contractor’s Act of Assurance Resolution
  - SRF-404 – Debarment/Suspension Certification
  - TWDB-0216 – TWDB Affirmative Steps Solicitation Report
  - TWDB-0217 – TWDB Prime Consultant/Contractor Certification
  - TWDB-0373 – TWDB Participation Summary
  - TWDB-0459 – Vendor Compliance with Reciprocity on Non-Resident Bidders
  - WRD-255 – Bidder’s Certification
- 25 Guidance for Disadvantaged Business Enterprise (DBE) Program (TWDB-0210)
- 26 American Iron and Steel (AIS) Guidance for Clean Water & Drinking Water State Revolving Fund Projects
- 27 Floodplain Permit

## INSTRUCTIONS TO BIDDERS

1. **PROPOSAL FORM:** The Bidder may use the original proposal forms included in these bid documents or the Bidder may substitute a computer-generated proposal for the original proposal included in these bid documents. The Substitute Proposal shall also be signed by the Bidder. Any discrepancy in items between the Substitute Proposal and the original proposal form, the original proposal form shall govern. If the Substitute Proposal changes the intent of a bid item or contains an error in the quantities, unit prices, or extension of prices, the City may reject the bid submitted.

2. **DELIVERY OF PROPOSAL:** Proposal shall be delivered directly to the Office of the Director of Public Works and Transportation, 2<sup>nd</sup> Floor, City Hall, 101 West Abram Street, Arlington TX, 76010. It shall be the Bidder's responsibility to ensure delivery of his/her proposal at the proper place by the time stated in the Notice to Bidders. The mere fact that a proposal was dispatched will not be considered. Any bids received after closing time will be returned unopened.

- **Each Proposal shall be in a sealed envelope plainly marked with the words "BID DOCUMENTS" or "BID PROPOSAL" with the name or description of the project as shown on the front cover of the Contract Documents.**
- **All bid items in the proposal including alternate and addendum items must be filled with a numeric value, including zero value. Bid items with blanks or dashes will be considered as non-responsive items and the bid will not be eligible for award consideration.**
- **The following MUST be included in the bid proposal otherwise the bid will be considered non-responsive and the bid will not be eligible for award consideration:**
  - *Certified or cashier's check or an approved bidder's bond*
  - *Signed Section 3 Contractor Residency Statement*
  - *Signed Acknowledgement/Acceptance of addendum(s) {last page of the addendum}, if applicable*
  - *Vendor Compliance with Reciprocity on Non-Resident (TWDB-0459) {form located in Section No. 24}*
  - *MWBE Utilization Plan - Section 3A (MWBE certifications for each firm must be included)*
- **All potential bidders MUST submit the following to Sabino Martin at Sabino.Martin@arlingtontx.gov no later than 3:00 p.m. CDT, on Thursday, March 10, 2022.**
  - *Letter of Intent to Subcontract – Section 3B (needed for each subcontractor)*
  - *Good Faith Effort Checklist (GFE) – Section 3C and supporting documentation.*

***Failure to submit the required MWBE documentation, based on the above listed time and date will result in the bid being considered non-responsive.***

3. **MINORITY/WOMAN BUSINESS ENTERPRISE CONTRACT SPECIFIC GOAL**

The City's Minority/Woman Business Enterprise (MWBE) utilization goal, for this project is **34%**.

Subcontracting opportunity identified for this solicitation includes: **Concrete Pavement, Earthwork, Subgrade, Miscellaneous Asphalt, Small Retaining, Natural Stream Stabilization, Storm Sewer, Streetlights, Landscaping, and Fencing.**

The contractor's MWBE commitment percentage is based on the total value of the contract including any change orders and modifications throughout the contract agreement.

The criteria used to set a MWBE Contract Specific Goal shall include business availability, the nature of the contract, the City's past experiences with MWBE participation in similar contracts, price competitiveness, subcontracting opportunities, progress towards meeting the annual goal and other relevant factors.

Bidders/proposers must submit good-faith efforts documentation, along with Good Faith Effort (GFE) checklist, **no later than 3:00 p.m. CDT, on Thursday, March 10, 2022.** Good Faith Effort (GFE) documentation will be sent to the Office of Business Diversity for review to determine if bid/proposal will be accepted, declined, or allow the bidder/proposer to withdraw.

4. PROCUREMENT OF GOODS AND SERVICES FROM MINORITY/WOMEN BUSINESS ENTERPRISE OR HISTORICALLY UNDERUTILIZED BUSINESSES:

It is the City's policy to remove all barriers for MWBEs to compete and create a level playing field for MWBEs to participate in City contracts and related subcontracts.

The Contractor specifically shall comply with all applicable provisions of the City's MWBE Policy and Procedures and any amendments. MWBE and non-MWBE subcontractors also agree to comply with all applicable provisions of the City's MWBE Policy and Procedures and any amendments. The City's MWBE Policy and Procedures and any amendments thereto are incorporated by reference herein as though written word for word. The Contractor shall insert the substance of this provision in all subcontracts and purchase orders.

The Contractor shall appoint a high-level official with decision-making capabilities for the Contractor to administer and coordinate the Contractor's efforts to carry out the requirements and provisions of the City's MWBE Policy and Procedures and its Contractual commitments.

The City of Arlington reaffirms that it will not, nor will its contractors, discriminate based on race, age, color, religion, sex, sexual orientation, gender identity, national origin, ancestry, gender, disability, or place of birth in the award and performance of contracts.

Every locally funded contract will be evaluated by the City to determine the appropriate method for enhancing MWBE participation, including progress towards the achievement of the annual aspirational MWBE goal and other program objectives.

Procedures for implementation, including good faith efforts requirements, information submitted with bid proposals, reporting procedures, etc.; shall be consistent with the procedures utilized in the City's MWBE Policy & Procedures Manual.

The City will recognize MWBE companies that have received one or more certifications from the following organizations:

- North Central Texas Regional Certification Agency (NCTRCA),
- State of Texas Historically Underutilized Business (HUB),
- Texas Department of Transportation (TxDOT),
- DFW Minority Supplier Development Council (MSDC), and
- Woman's Business Council Southwest.

5. PREQUALIFICATION OF BIDDERS: All Bidders on this project must be prequalified to perform Concrete Paving work by the City of Arlington prior to the opening of bids. The successful contractor must perform this primary work type on this project. Bids received not in compliance with the prequalification requirements will not be opened.

Contractors performing the following work types must also be prequalified:

Concrete Structures  
 Storm Sewer  
 Subgrade Preparation  
 Sanitary Sewer Manhole  
 Sanitary Sewer Manhole Rehabilitation  
 Water/Sewer

The lowest responsible bidder will be required to submit a list of subcontractors and the type of work they will be performing to verify status of prequalification. If the required prequalification is not met, the lowest responsible bidder will be required to provide a substitute prequalified subcontractor or the bid will be rejected. Application for prequalification of subcontractors will not be accepted after the bid is opened. However, should there be a change in project scope during construction the City reserves the right to require additional prequalification of contractor(s) performing the work.

For information related to prequalification status, please contact the Department of Public Works and Transportation. To obtain prequalification status, application forms must be completed and returned to the Department of Public Works and Transportation. Processing time varies and may take up to three weeks to process. The mere fact that an application was submitted does not guarantee or constitute approval of prequalification status.

6. BID SECURITY: Each bid must be accompanied by a certified or cashier's check or an approved bidder's bond made payable to the City in an amount of five (5%) percent of the largest possible total of the bid as a guarantee that, if awarded the contract, the Bidder will enter into a Contract and execute all necessary bonds.

7. PERFORMANCE, PAYMENT AND MAINTENANCE BONDS: Performance, payment and maintenance bonds in the amount of not less than one hundred percent (100%) of the contract price conditioned upon the faithful performance of the contract, and upon payment of all persons supplying labor or furnishing materials, will be required upon the forms which are a part of the Contract Documents. Bonds shall be executed by a surety company acceptable to and approved by the City, authorized to do business in the State of Texas and acceptable for underwriting of risks as indicated by the latest revision, Treasury Department Circular 570, listing acceptable sureties on Federal Bonds. The period of the Maintenance Bond shall be two years from the date of acceptance of all work done under the Contract, to cover the guarantee as set forth in the Special Provisions.

8. **BIDDERS KNOWLEDGE OF CONDITIONS:** Prior to submission of a proposal, bidders shall have made a thorough inspection of the site of work and a thorough examination of the plans and specifications and shall become informed as to the nature of the work, labor conditions, and all other matters that may affect the cost and time of completion of the work.

9. **INTERPRETATION OF DOCUMENT:** If any person contemplating submitting a bid is in doubt as to the meaning of any part of the plans, specifications, or other proposed contract documents, the person may contact the engineer (email preferred) for an interpretation. All inquiries must be received no later than seven (7) calendar days prior to opening of bids. The person making the inquiry or request for additional information will be responsible for its prompt delivery. The City cannot guarantee a response if the inquiry or request is not submitted in time. Any interpretation of these documents will be made by addendum duly issued. The City will not be responsible for any other explanations or interpretations.

10. **SOIL INVESTIGATION:** Investigation of soil and foundation conditions of the size and areas near the site were performed by Freese & Nichols, Inc. A copy of the soils report is available for review via request to the project engineer or it can be downloaded from the City's supplier/vendor portal, IonWave. The City of Arlington does not represent that the available records show completely the existing conditions and does not guarantee any interpretations of these records. The Contractor assumes all responsibility for interpretations of these records and for making conclusions as to the nature of materials to be excavated, the difficulties of making and maintaining the required excavations and of doing other work affected by the geology of the site of the work. This geotechnical report is in no way intended for use in designing trench safety systems.

11. **ALTERNATE BIDS:** No bids for alternate work items shall be submitted except as shown on the Proposal. The City reserves the right to choose either the base bid or alternate bid whichever is most advantageous to the City. There will be no adjustments to unit prices bid due to the City's choice of alternate bids.

12. **ADDENDUM:** The City reserves the right to issue addendum(s) to the Plans, Proposal, Specifications, and Special Provisions. Addendum(s) will be issued via the City's supplier/vendor portal, IonWave, located on the City's web page. Bidders who are currently registered with IonWave will be notified via the portal notification process and the addendum(s) may be downloaded by logging into the portal. **It shall be the Bidder's responsibility to ensure that he/she is aware of any and all addendum(s) issued by the City.**

13. **AWARD OF CONTRACT:** As allowed by law, the Contract shall be awarded to the bidder whose bid represents the lowest responsible bid as determined by the City.

It is the intent of the City of Arlington that this project be completed as quickly and economically as is feasible. A tabulation of the bids received will be prepared for consideration by the City Council. It is anticipated that the BEGIN WORK DATE will be approximately two months after the date of bid opening.

14. **BID TABULATION:** A tabulation of all bids will be available after the MWBE review has been completed and will be posted on the City's web page, [https://www.arlingtontx.gov/city\\_hall/departments/finance/purchasing/bidding\\_procurement](https://www.arlingtontx.gov/city_hall/departments/finance/purchasing/bidding_procurement), under "Current Bid Opportunities", "Public Works and Transportation/Engineering".

15. **AFFIDAVIT AGAINST PROHIBITED ACTS:** It shall be the lowest responsible bidder's responsibility to complete this affidavit (Section 4 of the Contract Documents) prior to execution of the contract by the City of Arlington. Failure to complete this form may prohibit the Contractor's ability to secure the contract.

16. TITLE VI: The City of Arlington, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-Assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all vendors that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. Vendor will abide and ensure compliance with all terms of Appendix A of the USDOT Standard Title VI Assurances as listed below.

Appendix A of the USDOT Standard Title VI Assurances

During the performance of this contract, the Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

(1) Compliance with Regulations: The Contractor shall comply with the Regulations relative to nondiscrimination in Federally-Assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

(2) Nondiscrimination: The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

(4) Information and Reports: The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the City of Arlington or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information the Contractor shall so certify to the City of Arlington, or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance: In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, the City of Arlington shall impose such contract sanctions as it or the Texas Department of Transportation may determine to be appropriate, including, but not limited to:

- (a) withholding of payments to the Contractor under the contract until the Contractor complies, and/or
- (b) cancellation, termination or suspension of the contract, in whole or in part.

(6) Incorporation of Provisions: The Contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

The Contractor shall take such action with respect to any subcontract or procurement as the City of Arlington or the Texas Department of Transportation may direct as a means of enforcing such provisions including sanctions for non-compliance. Provided, however, that, in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the City of Arlington to enter into such litigation to protect the interests of the City of Arlington, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

17. FORM 1295: Effective January 1, 2016, the Texas Legislature, House Bill 1295 requires all business entity to file an electronic disclosure of interested parties (Form 1295) to the Texas Ethic Commission (TEC) for any contracts requiring City Council approval. The lowest responsible bidder will be required to file online with TEC at <https://www.ethics.state.tx.us/filinginfo/1295/>. The responsible bidder will be required to swear or affirm that the information entered is true and correct. An original signed copy of the filing must be submitted to the City prior to approval of the contract by City Council. **Failure to submit Form 1295 prior to date of City Council's approval will result in the contracts not being processed.**

Definition of "Interested Party" is located under Laws & Regulations, Chapter 46, Commission Rules; Disclosure of Interested Parties. FAQ's for Form 1295 can be found on [https://www.ethics.state.tx.us/resources/FAQs/FAQ\\_Form1295.php](https://www.ethics.state.tx.us/resources/FAQs/FAQ_Form1295.php).

18. VERIFICATION RELATING TO BOYCOTTING ISRAEL: New State legislation, Chapter 2270 of the Texas Government Code prevents the City of Arlington from entering a contract that boycotts Israel. The successful contractor must verify they do not and will not boycott Israel during term of this contract. It shall be the lowest responsible bidder's responsibility to complete this verification (Section 5 of the Contract Documents) prior to execution of the contract by the City of Arlington. Failure to complete this form will prohibit the contractor's ability to secure the contract.

19. TEXAS WATER DEVELOPMENT BOARD REQUIREMENTS: This project is receiving financial assistance through a grant/loan obtained from the Texas Water Development Board (TWDB. Refer to the following sections for TWDB requirement details.

Section No. 24 – Supplemental Contract Conditions And Instructions (TWDB-0550)

- Debarment / Suspension Certification (SRF-404) - Prior to awarding the contract, the City of Arlington will verify that the Prime and Subcontractors are not listed as an "excluded party" for federal assistance. **All Prime and Subs will be required to register at the Federal System for Award Management (SAM.gov) to qualify for assistance.**

Section No. 25 – Guidance for Disadvantaged Business Enterprise (DBE) Program (TWDB-0210)

Section No. 26 – American Iron and Steel (AIS) Guidance for Clean Water & Drinking Water State Revolving Fund Projects.

Section No. 27 – A floodplain permit for construction within the 100-year floodplain.

Note: Pipeline crossings of all potential waters of the United States under the jurisdiction of the United States Army Corps of Engineers, will be performed in compliance with Nationwide Permit 12 – Utility Line Activities.

20. TEXAS WATER DEVELOPMENT BOARD INSTRUCTIONS TO BIDDERS: See pages appended to this section.

NOTE: Pipeline Crossing of all potential waters of the United States under the jurisdiction of the United States Army Corps of Engineers, will be performed in compliance with the Nationwide Permit 12-Utility Line Activities.

## SECTION NO. 1

### ADVERTISEMENT FOR BIDS

This project primarily consists of reconstructing the county type roadway to a three-lane roadway, including storm drain improvements, water & sanitary sewer renewals, street lights, pavement markings, street signs, sidewalks, hike & bike trail, fiber optic conduit, and a roundabout (at Bowman Springs/ Greenspring/ future Pleasant Ridge intersection) with landscaping and irrigation. The Engineer's estimate for this project is \$8.5M.

Sealed bids will be received by the City of Arlington, Texas, at the Office of the Director of Public Works and Transportation, 2<sup>nd</sup> Floor, City Hall, 101 W. Abram Street, Arlington TX, 76010, **until 3:00 p.m. on TUESDAY, MARCH 8, 2022**, for the construction of **BOWMAN SPRINGS ROAD (IH 20 to ENCHANTED BAY BOULEVARD), PROJECT NO. PWST18001** as listed in the contract documents, at which time and place they will be publicly opened and read aloud in the Public Works Conference Room . Any bid received after closing time will be returned unopened.

All bidders and subcontractors on this project must be pre-qualified in the appropriate work category as outlined in the Instructions to Bidders of the contract documents.

Contract documents, including plans, specifications, and addendums may be reviewed and/or downloaded from the City's vendor/supplier portal, IonWave, accessible via the City's web page, [https://arlingtontx.gov/city\\_hall/departments/finance](https://arlingtontx.gov/city_hall/departments/finance). Look for "Vendor/Supplier" under "Services".

A cashier's check or an acceptable Bidder's Bond payable to the City of Arlington, Texas, in an amount of not less than five percent (5%) of the largest possible total for the bid submitted, must accompany the bid.

A Performance Bond and a Payment Bond, each for one hundred percent (100%) of the contract price, will be required. The successful bidder shall also furnish to the City a Maintenance Bond covering defects of material and workmanship for two calendar years following the City's approval and acceptance of the construction.

Not less than the prevailing wage rates adopted by the City of Arlington, Texas, and as set forth in the contract documents, must be paid on this project.

The City reserves the right to request bidders to provide Minority/Women Business Enterprises (MWBE) information. This is for information only and no preference shall be given, nor will this information affect the results of the contract award.

In case of ambiguity or lack of clearness in stating prices in the Proposal, the City reserves the right to accept the most advantageous construction thereof to the City or to reject the proposal.

The City reserves the right to reject any or all bids and waive any or all informalities. No bid may be withdrawn until the expiration of ninety (90) days from the date bids are opened.

All inquiries must be submitted to the City in accordance with the Instructions to Bidders of the contract documents.

**This contract is contingent upon release of funds from the Texas Water Development Board (TWDB). Refer to TWDB INSTRUCTIONS TO BIDDERS for details.**

**A PRE-BID Teleconference/Meeting** will be held for this project on Tuesday, February 22, 2022 at 10:00 a.m. in the Public Works and Transportation Conference Room, 2<sup>nd</sup> Floor, City Hall, 101 W. Abram Street, Arlington, TX 76010. Prospective bidders are encouraged to participate either in person or by teleconference. If participating by teleconference, please contact Sabino Martin, Civil Engineer at 817-459-6582 or at [Sabino.Martin@arlingtontx.gov](mailto:Sabino.Martin@arlingtontx.gov) no later than Friday, February 18, 2022 at 5:00 p.m. to register for the call.

***Arlington Star-Telegram* publication dates:** Sunday, February 13, 2022 & Sunday, February 20, 2022



Principal place of business: \_\_\_\_\_  
City County State Zip

Contact Person: \_\_\_\_\_  
Name Phone Email Address

**SECTION 3: If the contractor is a corporation, fill in this section only:**

Registered name of corporation: Tiseo Paving Company

Doing business as: N/A

Date charter expires: N/A

State of corporation: Michigan

Date of corporation filing: 1998 (If non-Texas corporation, date of Certificate of Authority Issuance).

Registered Agent: Louis Tiseo  
First Middle Last

Address: 419 US Hwy 80E Mesquite Dallas Texas 75150  
Street City County State ZIP

Location of Corporation principal office:

419 US Hwy 80E Mesquite Dallas Texas 75150  
Street City County State ZIP

Person executing contract on behalf of corporation: (Please print)

Name: Louis Tiseo  
First Middle Last

Title: President

Address: 419 US Hwy 80E Mesquite Dallas Texas 75150  
Street City County State ZIP

Telephone Number: 972-289-0723

Contact Person: Grant Brown 972-289-0723 gbrown@tiseopaving.com  
Name Phone Email Address

END OF SECTION



Structures.....\$ 13.84

LABORER

Asphalt Raker.....\$ 12.69  
Flagger.....\$ 10.06  
Laborer, Common.....\$ 10.72  
Laborer, Utility.....\$ 12.32  
Pipelayer.....\$ 13.24  
Work Zone Barricade  
Servicer.....\$ 11.68

POWER EQUIPMENT OPERATOR:

Asphalt Distributor.....\$ 15.32  
Asphalt Paving Machine.....\$ 13.99  
Broom or Sweeper.....\$ 11.74  
Concrete Pavement  
Finishing Machine.....\$ 16.05  
Concrete Saw.....\$ 14.48  
Crane Operator, Lattice  
Boom 80 Tons or Less.....\$ 17.27  
Crane Operator, Lattice  
Boom over 80 Tons.....\$ 20.52  
Crane, Hydraulic 80 Tons  
or Less.....\$ 18.12  
Crawler Tractor.....\$ 14.07  
Excavator, 50,000 pounds  
or less.....\$ 17.19  
Excavator, over 50,000  
pounds.....\$ 16.99  
Foundation Drill , Truck  
Mounted.....\$ 21.07  
Foundation Drill, Crawler  
Mounted.....\$ 17.99  
Front End Loader 3 CY or  
Less.....\$ 13.69  
Front End Loader, over 3 CY.\$ 14.72  
Loader/Backhoe.....\$ 15.18  
Mechanic.....\$ 17.68  
Milling Machine.....\$ 14.32  
Motor Grader, Fine Grade....\$ 17.19  
Motor Grader, Rough.....\$ 16.02  
Pavement Marking Machine....\$ 13.63  
Reclaimer/Pulverizer.....\$ 11.01  
Roller, Asphalt.....\$ 13.08  
Roller, Other.....\$ 11.51  
Scraper.....\$ 12.96  
Small Slipform Machine.....\$ 15.96  
Spreader Box.....\$ 14.73

Servicer.....\$ 14.58

Steel Worker (Reinforcing).....\$ 16.18

TRUCK DRIVER

Lowboy-Float.....\$ 16.24  
Off Road Hauler.....\$ 12.25  
Single Axle.....\$ 12.31



PLUMBER/PIPEFITTER.....\$ 34.13 9.70

SUTX1990-041 06/01/1990

	Rates	Fringes
CARPENTER.....	\$ 10.40	\$3.64
Concrete Finisher.....	\$ 9.81	
ELECTRICIAN.....	\$ 13.26	
Form Setter.....	\$ 7.86	
Laborers:		
Common.....	\$ 7.25	
Utility.....	\$ 8.09	
PAINTER.....	\$ 10.89	
Pipelayer.....	\$ 8.43	
Power equipment operators:		
Backhoe.....	\$ 11.89	3.30
Bulldozer.....	\$ 10.76	
Crane.....	\$ 13.16	3.30
Front End Loader.....	\$ 10.54	
Mechanic.....	\$ 10.93	
Scraper.....	\$ 10.00	
Reinforcing Steel Setter.....	\$ 10.64	
TRUCK DRIVER.....	\$ 7.34	

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

THE STATE OF TEXAS §

**AFFIDAVIT**

COUNTY OF Dallas §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Louis Tiseo,  who is known to me or  who was proved to me on the oath of \_\_\_\_\_ (name of person identifying the acknowledging person) or  who was proved to me through \_\_\_\_\_ (description of identity card or other document issued by the federal or state government containing the picture and signature of the acknowledging person) to be the person whose name is subscribed to this affidavit; and being by me first duly sworn, upon oath stated as follows:

"My name is Louis Tiseo. I am of sound mind and capable of making this affidavit.

"I am President for Tiseo Paving Company, which company entered into a contract on the 12<sup>th</sup> day of April, 2022, to construct **BOWMAN SPRINGS ROAD (IH 20 – ENCHANTED BAY BOULEVARD)**, City of Arlington Project No. **PWST18001**, in the City of Arlington, Texas, and I am duly authorized on behalf of said company to hereby swear and affirm that all wages for labor on the above-referenced project are in strict compliance with the established prevailing wage rates as described in the contract documents for the referenced project, and all wages have been and will be paid and satisfied as the prevailing rates may change from time to time. Upon request by the City of Arlington, I shall allow a complete examination of the financial records relative to this project, including, but not limited to, cancelled checks, invoices and statements at any time, and allow the City of Arlington to interview any and/or all employees of the above said company or any and/or all employees of said Company's subcontractor or subcontractors. Also, I hereby agree on behalf of the above company, to be accountable for any and all penalties and/or fine provisions in accordance with the contract documents and relevant law."



\_\_\_\_\_  
AFFIANT

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 14 day of April, 2022.



Notary Public In and For The State of Texas

Melanie R Taylor  
Notary's Printed Name



END OF SECTION

SECTION NO. 3

CONTRACTOR RESIDENCY STATEMENT

The Texas Government Code section 2252.002 governs the awarding of contracts to non-resident bidders. This law provides that, in order to be awarded a contract as low bidder, a non-resident bidder (out-of-state contractor whose corporate office or principal place of business is outside the State of Texas) bid projects 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 underbid 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 the following statement must be filled out by all out-of-state or non-resident bidders in order for those bids to meet specifications. The failure of out-of-state or non-resident contractors to do so will automatically disqualify that bidder. This does not apply to contracts involving Federal Funds.



Initial here if you are Texas Residential Bidder.



Initial here if you are a Non-resident contractor in \_\_\_\_\_ (give state), our principal place of business, is required to be \_\_\_\_\_ percent lower than resident bidders by State Law.

BIDDER

Tised Paving CO.  
Company

By LOUIS TISED  
(Please Print)

419 US HWY 80 E  
Address

Signature

Mesquite Tx 75150  
City State Zip

President  
Title (Please Print)

\*The State Purchasing and General Services Commission defines Principal Place of Business as follows: Principal Place of Business in Texas means, for any type of business entity recognized in the State of Texas, that the business entity:

- has at least one permanent office located in the State of Texas, from which business activities other than submitting bids to governmental agencies are conducted and from which the bid is submitted, and
- has at least one employee who works in the Texas office

\*The Texas Comptroller annually publishes a list showing how each state regulates the award if governmental contracts whose principal place of business is not located in that state.  
<http://comptroller.texas.gov/>

END OF SECTION  
Revised 9/2016

**SECTION 3A**

**OFFICE OF BUSINESS DIVERSITY  
MWBE Utilization Plan**

Project Name: BOWMAN SPRINGS ROAD  
 Project No: PWST18001 Date: 3/10/2022

LEGEND

MWBE = Minority/Woman Business Enterprise

\* Ethnicity = Native American (AI), Asian Pacific/Indian (AS), African American (BL), Hispanic (HI), Caucasian Female (WO), or Non-Minority (N/A)

Prime Contractor	MWBE (Yes/No)
TISEO PAVING COMPANY	NO

LIST ALL SUBCONTRACTING OPPORTUNITIES (use additional sheets if necessary):

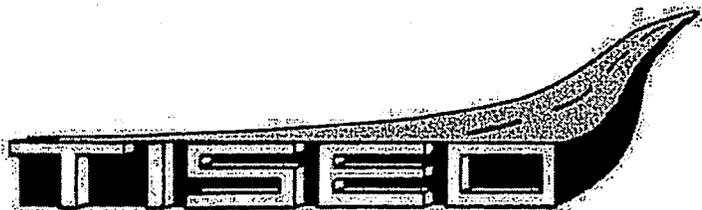
Name of Company and Description of Work Type	Potential MWBE Firm Ethnicity* (Yes/No)	Anticipated Dollar (\$) of Work
<i>* See Attached *</i>		

Please complete this form and include with proposal, as an attachment.

Upon formal award of said project, the proposer will submit a Prime, Subs & MWBE Report identifying the Local and/or MWBE subcontractor(s) that will perform the listed work. By signing below, the recommended proposer shall agree to meet their Local and/or MWBE goal based on the information provided on this document.

Name of Company's Main Contact Person GRANT BROWN

Signature of Main Contact Person *[Handwritten Signature]*



# PAVING COMPANY

P.O. Box 270040 Dallas, Texas 75227-0040

Telephone (972) 289-0723 Fax (972) 216-5637

Section 3A:

Tiseo Subcontract List:

NAME OF COMPANY & DESCRIPTION OF WORK	POTENTIAL MWBE (YES/NO)	DOLLAR (\$) OF WORK
--	----------------------------	---------------------

Fourstar Excavation: Storm	No	\$ 1,384,293.00
IBCTX/ IOWA Bridge: Concrete Structures	No	\$1,616,610.00
AXIS CONTRACTING: DIRT/ FLATWORK	Yes <i>WD (NCTPCA)</i>	\$1,961,094.00
Mels Electric: Electrical	No	\$313,658.00
Stenson Landscape: Landscape	No	\$ 248,807.50
Metroplex: Pavement Marking/ Signage	No	\$60,114.55
Venus Construction: Water/Sewer	No	\$2,579,157.00
Industry Junction: Storm, Sanitary, Water Pipe Materials	Yes <i>Hub HI (DFW MWBE)</i>	\$589,000.00

**MINORITY/WOMEN BUSINESS ENTERPRISE**

Minority and/or Woman-owned Business Enterprises are encouraged to participate in all City procurement solicitation. In order to be identified as a certified Minority/Woman Business Enterprise with the City of Arlington, Texas; this form, along with a copy of the selected certification, must be included with the bid/proposal.

PLEASE CHECK THE APPROPRIATE ETHNICITY AND/OR GENDER:

American Indian     Asian     Black     Hispanic     Woman Owned

Certification Status: Is the firm certified as a Minority, Woman, or Disadvantaged Business Enterprise by a government or business development agency?     Yes     No (If yes, please select specific agency)

North Central Texas Regional Certification Agency (NCTRCA)

State of Texas Historically Underutilized Business (HUB)

Dallas/Fort Worth Minority Supplier Development Council (DFW MSDC) or NMSDC affiliate

Women's Business Council – Southwest (WBC-SW) or WBENC affiliate

Texas Department of Transportation, Disadvantaged Business Enterprise (TxDOT, DBE)

Small Business Administration, 8(A) Program

Other (please specify)

---

The City of Arlington encourages minority participation and utilizing MWBE subconsultants where there are opportunities on this project.

**For City Use Only:**

I have reviewed this Utilization Plan and found that the Tiseo Pawing ~~HAS~~ or HAS NOT complied as per the City's M/WBE Special Provisions.

Verified Goal attainment:

MBE 4.42%    WBE 14.72%

*Tiseo is meeting a 19.14% MWBE goal out of the 34% contract specific. Tiseo provided required GFE.*

Reviewer

*Sanchez*

Date:

*3/15/2022*

SECTION 3B

OFFICE OF BUSINESS DIVERSITY  
Letter of Intent

Project Number: PWST18001

Project Title: BOWMAN SPRINGS ROAD

TESEG PAVING COMPANY ("Prime Contractor") agrees to enter into a contractual agreement with AXIS CONTRACTING, INC. ("Subcontractor/Supplier"), who will provide the following goods/services on the above-referenced contract.

(Use broad categories (ex. "electrical work", "HVAC equipment purchase", etc.) to describe the goods/services to be provided).

EXCAVATION AND FLATWORK

for an estimated amount of \$ 1,961,094.00 or \_\_\_\_\_ % of the total estimated contract value.

Prime Contractor agrees to utilize said Subcontractor/Supplier in the capacity indicated herein and Subcontractor/Supplier agrees to work on the above-referenced contract in the capacity herein, contingent upon award of the contract to Prime Contractor.

[Signature]  
Signature - Prime Contractor

Grant Brown  
Print Name

Vice President                      3-9-22  
Title    Date

[Signature]  
Signature - Subcontractor/Supplier

Lance Smith  
Print Name

Contract Administrator                      3-10-22  
Title    Date

SECTION 3B

OFFICE OF BUSINESS DIVERSITY  
Letter of Intent

Project Number: PWST 18001

Project Title: BOWMAN SPRINGS ROAD

TISEO PAVING COMPANY ("Prime Contractor") agrees to enter into a contractual agreement with INDUSTRY SUNCTION ("Subcontractor/Supplier"), who will provide the following goods/services on the above-referenced contract.

(Use broad categories (ex. "electrical work", "HVAC equipment purchase", etc.) to describe the goods/services to be provided).

STORM, SANITARY AND WATER PIPE & MATERIALS

for an estimated amount of \$ 589,000.00 or \_\_\_\_\_ % of the total estimated contract value.

Prime Contractor agrees to utilize said Subcontractor/Supplier in the capacity indicated herein and Subcontractor/Supplier agrees to work on the above-referenced contract in the capacity herein, contingent upon award of the contract to Prime Contractor.

[Signature]  
Signature - Prime Contractor

Grant Brown  
Print Name

Vice President      3-9-22  
Title                                      Date

[Signature]  
Signature - Subcontractor/Supplier

Roaclio Cabello  
Print Name

President      3-10-22  
Title                                      Date

## SECTION 3C

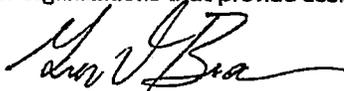
### OFFICE OF BUSINESS DIVERSITY Good Faith Effort Checklist

In making a determination that the contractor has made a good-faith effort to meet the City's MWBE goals, the Office of Business Diversity shall consider specific documentation concerning the steps taken to obtain MWBE participation, with a consideration of the following factors:

If a contractor fails to submit the Good Faith Efforts checklist, with document, by the deadline for submission will be considered non-responsive.

- Contractor attended the City's pre-bid or pre-proposal meeting.
- Contractor advertised in general circulation, trade association, and/or MWBE-focused media regarding subcontracting and/or supplier opportunities.
- Contractor solicited through reasonable and available means (e.g., written notices, advertisements) M/WBEs certified in the anticipated scopes of subcontracting of the contract, within sufficient time to allow them to respond. Attach detailed Contacts Log, including date, method of contact, person contacted and contact information, and the result of the contact.
- Contractor selected those portions of the contract consistent with the available M/WBEs, including breaking down the work into economically feasible units to facilitate M/WBE participation even when the proposer would prefer to perform those scopes with its own forces. Provide description of work selected.
- Contractor provided timely and adequate information about plans, specifications, scope of work and contract requirements to interested MWBEs. Followed up initial solicitations to answer questions and encourage M/WBEs to submit proposals or bids. Attach evidence of information provided, including the date, e.g., letters, emails, telephone logs, etc.
- Contractor negotiated in good-faith with interested MWBEs that have submitted proposals or bids and thoroughly investigated their capabilities, using good business judgement, and taking into consideration the MWBE subcontractor's price quote and not rejecting reasonable quotes from interested MWBE. Evidence of such negotiations includes the names, addresses, email addresses and telephone numbers of M/WBEs with whom the vendor negotiated; a description of the information provided to M/WBEs regarding the work selected for subcontracting; and explanations as to why agreements could not be reached with M/WBEs to perform the work.
- Contractor made effort to assist interested MWBEs to obtain bonding, lines of credit, or insurance as required by the City or the vendor for performance of the contract (if applicable).
- Contractor effectively utilized the services of M/WBE assistance groups; local, state, and federal M/WBE business assistance offices and other organizations that provide assistance in the recruitment and placement of MWBEs.

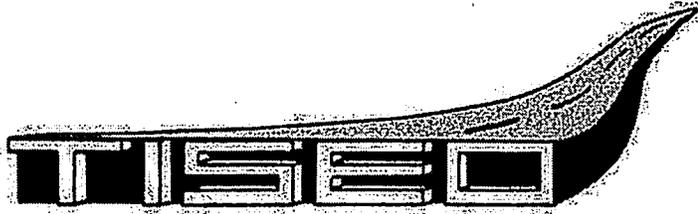
Signature Prime Contractor:



Print Name: Grant Brown

Title Vice President

Date: 3-9-22



# PAVING COMPANY

P.O. Box 270040 Dallas, Texas 75227-0040

Telephone (972) 289-0723 Fax (972) 216-5637

## LIST OF SCOPE OF WORK BROKE OUT FOR SUBCONTRACTORS:

**Concrete Structures**

**Erosion Controls**

**Utilities**

**Electrical**

**Signage and Paving Markings**

**Landscape and Irrigation**

**Flatwork**

**Metal Beam Guard Fence**

**Asphalt (HMAC)**

**Box Culverts**

North Dallas Gazette

(Division of Minority Opportunity News)

P.O. Box 763866

Dallas, Texas 75376-3866

RECEIVED

JAN 18 2022

Invoice

DATE	INVOICE #
1/13/2022	13092

<b>BILL TO</b>
Tisco Paving Company c/o Ms. Melanie Taylor P.O. Box 270040 Dallas, TX 75227-0040

<b>TEAR SHEET TO</b>
Tisco Paving Company c/o Ms. Melanie Taylor P.O. Box 270040 Dallas, TX 75227-0040

<b>P.O. NO.</b>	<b>TERMS</b>
Job Line	Net 10

DESCRIPTION	QTY	RATE	AMOUNT
News Advertisement for P'O_ Job Line Description of Services __ Advertising__ Print run date 1.13.22 Web run date January 2022 Web (300 x 250) " Complimentary		135.00	135.00
		350.00	350.00
		-350.00	-350.00
		<b>Total</b>	\$135.00
		<b>Payments/Credits</b>	\$0.00
		<b>Balance Due</b>	\$135.00

**www.cityofirving.org**

*The City of Irving does not discriminate on the basis of race, sex, religion, age or disability in employment or the provision of services.*

**NAN Chapter President**

The National Action Network is looking for a President for its upcoming Dallas chapter. This is a volunteer position that requires an activist heart and an interest in civil rights.

The President:

- Presides at meetings and acts as Chairman/Chairwoman of the Executive Committee.
- Appoints all committees not directly elected by the Chapter.
- Between meetings of the Executive Committee and subject to the approval thereof exercises executive authority on behalf of the Chapter.
- The President shall be an ex-officio member of all committees.
- Shall work with other members of the Executive Committee to develop a program agenda for a defined fiscal year.

Acknowledges he/she is the primary force within the Chapter in establishing a working relationship and communication with the National and Regional Office(s), ensures that these offices receive all reports, including quarterly reports, and reports of elections. Gets familiar with pertinent governing documents including the NAN by-laws and Chapter rules.

Interested parties should contact Robert D. Bush, President of the Las Vegas Chapter at (702) 626-0158.

**LOOKING FOR A CAREER CHANGE? Then We Need You!**

If you're looking for full or part-time work with flexible hours, income ranging from \$800.00 to \$2,000.00 plus weekly. No Experience Needed we will license and train!

For more information call (214) 238-6855 Ask for Shun

Email: info@cbolutionplus.com

**TISEO PAVING COMPANY**

4191 E. Hwy. 80, Mesquite, TX 75150  
Tel: (972) 289-0723 Fax: (972) 216-5637  
www.tiseopaving.com

Performing Concrete Street Paving in the Metroplex Area

We Accept Subcontracting Bids For All Public Works/Projects in the Dallas Area.

We Are Accepting Applications for Concrete Mixer Drivers and Heavy Equipment Mechanics

**Equal Opportunity Employer**

around 8,000 professionals and 500 recruiting companies. The data science and software development focused career fairs delivered right at your desk top. No need to travel anywhere just sign up and wait for FAX to organize your interactions.

**On-Going Customer Rep Job fairs**

Pro Staff in Arlington will be hosting an on-site Customer Service Representative Job Fair for all center located downtown Dallas every three days and Thursday from 10 am to 7pm at 700 Highland Blvd. Suite 110. The positions pay between \$12-\$13.50 per hour plus up to \$1.50 an hour in performance pay. The work days will vary, must be available 7 am to 10 pm with overtime as needed. Must have at least one year of customer service experience.

U.S. Citizen or permanent resident

**Ongoing Census Bureau**

The Census Bureau conducts continuous surveys to help the nation with important statistics on people, places, and our economy. All field workers know communities best, and instrumental in conducting surveys with residents a variety of topics. Visit us.gov to apply.

**Ongoing City of Dallas**

The City of Dallas HR is currently accepting applications for the Budget and Contract Administrator position. A bachelor's degree in a business/public administration, human resources or healthcare administration field plus 7 yrs exp. for more info and to apply, visit: <http://bit.ly/2NcRVP>.

North Dallas Gazette

(Division of Minority Opportunity News)

P.O. Box 763866

Dallas, Texas 75376-3866

RECEIVED

JAN 24 2022

Invoice

DATE	INVOICE #
1/20/2022	13100

<b>BILL TO</b>
Tiseo Paving Company c/o Ms. Melanie Taylor P.O. Box 270040 Dallas, TX 75227-0040

<b>TEAR SHEET TO</b>
Tiseo Paving Company c/o Ms. Melanie Taylor P.O. Box 270040 Dallas, TX 75227-0040

<b>P.O. NO.</b>	<b>TERMS</b>
Job Line	Net 10

DESCRIPTION	QTY	RATE	AMOUNT
News Advertisement for PO_ Job Line Description of Services __ Advertising_ Print run date 1.20.22 Web run date January 2022 Web (300 x 250) " Complimentary		135.00	135.00
		350.00	350.00
		-350.00	-350.00
<b>Total</b>			\$135.00
<b>Payments/Credits</b>			\$0.00
<b>Balance Due</b>			\$135.00

ment resident

### Ongoing

#### Census Bureau

The Census Bureau conducts continuous surveys to supply the nation with important statistics on people, places, and our economy. Local field workers know their communities best and are instrumental in conducting surveys with residents on a variety of topics. Visit census.gov to apply.

### On-Going

#### Customer Rep

Job fairs are instrumental in conducting surveys with residents on a variety of topics. Visit census.gov to apply. Pro Staff in Arlington will be hosting an in-office Customer Service Representative Job Fair for a call center located downtown Dallas every Tuesday and Thursday from 10 a.m. to 5 p.m. at 700 Highland Blvd. Suite 110. The positions pay between \$13.50 per hour, plus \$1.50 per hour, plus up to \$1.50 an hour in performance pay. The work days will vary, must be available 7 a.m. to 11 p.m. with overtime as needed. For more info and to apply, visit <http://bit.ly/2NcCfVP>

### On-Going

#### City of Dallas

The City of Dallas HR Dept is currently accepting apps for the Budget and Contract Administrator position. Bachelor's degree in a business/public administration, human resources or healthcare administration field, plus 7 yrs exp. For more info and to apply, visit <http://bit.ly/2NcCfVP>

### WE ARE NEED YOU!

If you're looking for full or part-time work with flexible hours, income ranging from \$800.00 to \$2,000.00 plus weekly. No Experience Needed, we will train and train!

For more information call (214) 236-6855  
Ask for Shun  
Email: [info@cbolutionsplus.com](mailto:info@cbolutionsplus.com)

## TISEO PAVING COMPANY

419 E. Hwy. 80, Mesquite, TX 75150  
Tel: (972) 289-0723 Fax: (972) 216-5637  
[www.tiseopaving.com](http://www.tiseopaving.com)

Performing Concrete Street Paving  
in the Metroplex Area  
We Accept Subcontracting Bids  
For All Public Works Projects  
in the Dallas Area

We Are Accepting Applications for Concrete Mixer Drivers and Heavy Equipment Mechanics  
Equal Opportunity Employer

### www.anyofriving.org

The City of Irving does not discriminate on the basis of race, sex, religion, age, or disability in employment or the provision of services.

### NAN Chapter President

The National Action Network is looking for a President for its upcoming Dallas chapter. This is a volunteer position that requires an activist heart and an interest in civil rights.

- a. The President:
  - i. Presides at meetings and acts as Chairman/Chairwoman of the Executive Committee.
  - ii. Appoints all committees not directly elected by the Chapter.
  - iii. Between meetings of the Executive Committee and subject to the approval thereof, exercises executive authority on behalf of the Chapter.
  - iv. The President shall be an ex-officio member of all committees.
  - v. Shall work with other members of the Executive Committee to develop a program agenda for a defined fiscal year.
- b. Acknowledges he/she is the primary force within the Chapter in establishing a working relationship and communication with the National and Regional Office(s), ensures that these offices receive all reports, including quarterly reports, and reports of elections.
- c. Is familiar with pertinent governing documents including The NAN by-laws and Chapter rules.
- d. Interested parties should contact Robert D. Bush, President of the Las Vegas Chapter, at (702) 926-0158.

**From:** [Jessica Cardenas](#)  
**To:** [Grant Brown](#)  
**Cc:** [Ryan Thompson](#)  
**Bcc:** [Abigail Rodriguez](#); [Alex Hammes](#); [Alfredo](#); [als est](#); [AMET](#); [Andy Nord](#); [Arian Mirtaneri](#); [Artie Melton](#); [B Kohler](#); [Beatrice Camarillo](#); [Bob Trawick](#); [Bobby Bounds](#); [Bobby Dixon](#); [Booder McWhorter](#); [Brad Berland](#); [Brad Catlett](#) ([brad@acadlabx.com](mailto:brad@acadlabx.com)); [Brian Collin](#); [Bruce Telford](#); [Bruce Walton](#); [Bryan A. Robertson](#) ([brobertson@ratliffco.com](mailto:brobertson@ratliffco.com)); [C Greanead](#); [Caleb Chalmers](#); [Cary Bassham](#); [Cary Francis](#); [Chada](#); [Charlie Daniels](#); [Chase](#); [CHERISH](#) ([cherish@tsomaterials.com](mailto:cherish@tsomaterials.com)); [Chris Crosby](#); [CHRIS FALES](#); [Chris Kumnick](#); [Christopher](#); [CHRISTOPHER MARTIN MARIETTA](#); [Cole Benton](#); [Craig Janecka](#); [D Patterson](#); [dallas lights](#); [David Gonzales](#); [Derek](#); [dlw](#); [dnichols@rumseville.com](mailto:dnichols@rumseville.com); [Donnie Ives](#); [DOUG HAEUSSLER](#); [Driskoll Tubbs](#); [EARTHBUILDERS INC.](#); [Ed Massey](#); [Eduardo M Hernandez](#); [P.E](#); [Esk](#); [estimating](#); [estimating stenson](#); [Ethan Sanders](#); [Four Star](#); [Frank Claravino](#); [Gary Beene](#); [Gary Hinson](#); [Gary Ishmael](#); [Gaspar Remirez](#); [Giles Ludwig](#); [Glenn](#); [Greg](#); [Greg Hommel](#); [Hermilo Montesdeoca](#); [hunter](#); [hunter cook](#); [Iron Concrete](#); [Ismael Coronado](#); [J Hernandez](#); [Jacob Brown](#); [James](#); [Jason](#); [Jason Crandall](#); [Javier Hernandez](#); [Jasby](#); [Jeff](#); [Jeff Hall](#); [Jeff Palce](#) ([palce@vmcmail.com](mailto:palce@vmcmail.com)); [Jennifer](#); [Jeremy Martin](#); [Jerry Simpson](#); [JIM SMITH](#); [Joe Angelone](#); [Joe Lipscomb](#); [John Bosco](#); [John Casey](#); [John Moreland](#); [Johnny Heine](#); [Joshua Allred](#); [Joshua Ivy](#); [jr](#); [Julia Mendez](#); [Julian Vargas](#); [Justin Smith](#); [K&S UTIL](#); [KAYE](#) ([kaye@tsomaterials.com](mailto:kaye@tsomaterials.com)); [Kendo](#); [kristin](#); [Kurt Milliman](#); [kurtpremier](#); [Kyle Riggs](#); [L Nelson](#); [La Banda](#); [Larry](#); [Larry Hart](#); [Iharan](#); [Lisa McBurrows](#); [LJohnson](#); [Logan Tassi](#); [Lorenzo Torres](#); [Louie Tiseo](#); [Luigi](#); [Lyndon](#) ([craig.lyndon@gmail.com](mailto:craig.lyndon@gmail.com)); [Mark Bradley](#); [Mark Herndon](#); [Mark Lewis](#); [Mark Medlin](#); [Mark.Alsobrook@Hanson.com](mailto:Mark.Alsobrook@Hanson.com); [Matt](#); [Matt Miller](#); [mattstenson73@gmail.com](mailto:mattstenson73@gmail.com); [melissa unvi](#); [Mels Electric](#); [Mike](#); [Mike Albert](#); [Mike Holleman](#); [Mike Marcom](#); [Mlee](#); [Morrie Gamlin](#); [Nikole Brock](#); [PAT THORPE](#); [Phillip Snoddy](#); [Preston](#); [Randy Harding](#); [RAUL CANALES](#); [Ray Smith](#); [RCTX](#); [Ricardo Hurtado](#); [Richard Lough](#); [Rob](#); [robby bentz](#); [Robert](#); [Robert Caudill](#); [Rodney](#); [Ron Johnson](#); [Ron Simons](#); [Ronnie Stone](#); [RPMx](#); [Rudy](#); [sam mcada](#); [Scott](#); [Sean Foley](#); [Shane Pate](#); [Shelton](#); [sravank](#); [stenson](#); [Steve Huggol](#); [stewel@buversbarricades.com](mailto:stewel@buversbarricades.com); [tim](#); [Tiny Lewis](#); [Tomas Coronado](#); [wade.blake@rpmxconstruction.com](mailto:wade.blake@rpmxconstruction.com); [William](#); [William Richmond](#); [Woody Leath](#); [Young Hul](#); [Zach](#)  
**Subject:** TISEO PAVING CO JOBS BIDDING  
**Date:** Friday, March 4, 2022 12:10:00 PM  
**Attachments:** [TISEO PAVING CO JOBS BIDDING.pdf](#)

---

Good afternoon,

Attached above is the updated Tiseo paving jobs bidding list.

**Please note:** The bid date has changed for the following:

- Dallas County- Wildlife Parkway to **MARCH 24, 2022 @ 2:00**

Thank you!

Jessica Cardenas  
Tiseo Paving Company  
Office (972) 289-0723  
Fax (972)216-5637



All email are sent BCC onto one email advertising upcoming jobs Tiseo is bidding:

These are all the email addresses Tiseo Paving sends for upcoming jobs bidders list.

Abigail Rodriguez <Abigail@InletStructureSpecialties.com>; Alex Hammes <ahammes@jbctx.com>; Alfredo <alfredo@hardscapespecialtiesinc.com>; als est <amj@americanlandscapesystems.com>; AMET <amet@trexcavation.com>; Andy Nord <nord@daggercontracting.com>; Arian Mirtaneri <Arian@irsvcs.com>; Artie Melton <amelton@anchortexas.com>; B Kohler <bkohler@williamhcompany.com>; Beatrice Camarillo <bcamarillo1@hotmail.com>; Bob Trawick <bob.trawick@ramtool.com>; Bobby Bounds <bobby@bmfbcconcrete.com>; Bobby Dixon <bdixon@meadegroup.net>; Booder McWhorter <bmcwhorter@ratliffco.com>; Brad Berland <bberland@ctands.com>; Brad Catlett (brad@acadiatx.com); Brian Collin <brian@earthbasics.net>; Bruce Telford <btelford@barnsco.com>; Bruce Walton <bwalton@teamconsultants.net>; Bryan A. Robertson (brobertson@ratliffco.com); C Greanead <cgreanead@us-concrete.com>; Caleb Chalmers <cchalmers@woeconstruction.com>; Cary Bassham <cbassham@argos-us.com>; Cary Francis <cfrancis@1constructiongroup.com>; Chada <chadawalters@yahoo.com>; Charlie Daniels <cdaniels@reynoldsasphalt.com>; Chase <chace@pcontractorsllc.com>; CHERISH (cherish@tsgmaterials.com); Chris Crosby <crosby@vmcmail.com>; CHRIS FALES <cfales@us-concrete.com>; Chris Kumnick <ckumnick@aertellusaqua.com>; Christopher <Christopher.Crosby@us-concrete.com>; CHRISTOPHER MARTIN MARIETTA <christopher.moretti@martinmarietta.com>; Cole Benton <cole@buyersbarricades.com>; Craig Janecka <cjanecka@us-concrete.com>; D Patterson <dpatterson@readycable.net>; dallas lights <jaygaller@sbcglobal.net>; David Gonzales <david@melselectric.com>; Derek <derek@panioloconstruct.com>; dlw <dlw@americanlandscapesystems.com>; dnichols@rumseyllc.com; Donnie Ives <Dives@landteceng.com>; DOUG HAEUSSLER <dwhbandabros@yahoo.com>; Driskoll Tubbs <dtubbs@jbcco.com>; EARTHBUILDERS INC. <TODD@EARTHBASICS.NET>; Ed Massey <edward.massey@att.net>; Eduardo M Hernandez, P.E <eduardo.hernandez@flow-lineconstruction.com>; Esk <esk@trexcavation.com>; estimating <estimating@mossutilities.com>; estimating stenson <estimating@stensonland.com>; Ethan Sanders <ethans@thmtx.com>; Four Star <fourstarexcavating@gmail.com>; Frank Ciaravino <frankciaravino65@gmail.com>; Gary Beene <jwbeene@gmail.com>; Gary Hinson <GHinson@tbarfence.com>; Gary Ishmael <gary.ishmael@dlbinc.net>; Gaspar Ramirez <gaspar@paveprousa.com>; Giles Ludwig <giles.ludwig@fabcous.com>; Glenn <gthibbard@aol.com>; Greg <greg@metroplexpavementmarkings.com>; Greg Hommel <greg.hommel@aggregate-us.com>; Hermilo Montesdeoca <hermiem@montesexcavation.com>; hunter <hunter@aafctx.com>; hunter cook <hunter.cook@ashgrove.com>; Iron Concrete <ironconstruction@sbcglobal.net>; Ismael Coronado <texasstartrans@aol.com>; J Hernandez <jhernandez@labandallc.com>; Jacob Brown <jacob@sitebarricades.com>; James <james@srhtrees.com>; Jason <jason.daniels@interstatepipeline.com>; Jason Crandall <dfwsiteservices@gmail.com>; javier Hernandez <j.hernandez@bridges-and-roads.com>; Jeasby <Jeasby@nctxdirtworks.com>; Jeff <jeff@mpxco.com>; Jeff Hall <jeff@avantitx.com>; Jeff Paice (paicej@vmcmail.com); Jennifer <estimating@concretepaversystems.com>; Jeremy Martin <jeremy.martin@martinmarietta.com>; Jerry Simpson <jsimpson@dustrol.com>; JIM SMITH <JIMSMITH@PAVERSYSTEMS.NET>; Joe Angelone <jta@americanlandscapesystems.com>; Joe Lipscomb <jlipscomb@wrightconst.com>; John Bosco <john@mpxco.com>; John Casey <john\_casey@jecinstall.com>; John Moreland

<jmoreland@alphatesting.com>; Johnny Heine <johnny@melselectric.com>; Joshua Allred <jallred@texasenviro.com>; Joshua Ivy <ortegalandclearing@gmail.com>; jr <jr@asphaltdallastx.com>; Julia Mendez <jmendez@tiseopaving.com>; Julian Vargas <julian.vargas@martinmarietta.com>; Justin Smith <justin@stensonland.com>; K&S UTIL <GLEND@KSUTILITY.COM>; KAYE (kaye@tsgmaterials.com); Kendo <office@kendocontract.com>; kristin <kristin@calcontex.com>; Kurt Milliman <kurt.milliman@lehighhanson.com>; kurtpremier <khinds@premierpavingltd.com>; Kyle Riggs <KyleRiggs@uslm.com>; L Nelson <lnelson@ingramconcrete.com>; La Banda <labandallc@gmail.com>; Larry <Larry@ashlartx.com>; Larry Hart <larry.hart@fabcous.com>; lharari <lharari@axiscontracting.com>; Lisa McBurrows <lisa@ratliffhardscape.com>; LJohnson <ljohnson.cntsales@gmail.com>; Logan Tassi <logantassi@icloud.com>; Lorenzo Torres <lorenzo.torres@amxcompanies.com>; Louie Tiseo <ltiseo@TiseoPaving.com>; Luigi <luigisconcrete17@yahoo.com>; lyndon (craig.lyndon@gmail.com); Mark Bradley <'Mbradley@argos-us.com'>; Mark Herndon <herndonmarka@gmail.com>; Mark Lewis <mlewis@crossroadslp.com>; Mark Medlin <MMedlin@venusconstruction.com>; Mark.Alsobrook@Hanson.com; Matt <matt@swerosioncontrol.com>; Matt Miller <trinitymillerllc@gmail.com>; mattstenson73@gmail.com; melissa unvi. <melissa@universalfencecompany.com>; Mels Electric <melselectric@melselectric.com>; Mike <mike@greeniverse.com>; Mike Albert <mike@mikealbertinc.com>; Mike Holleman <mholleman@barsonutilities.com>; Mike Marcom <mmarcom@marcomsmowingservice.com>; Mlee <mlee@urbaniconstruct.com>; Morrie Gamini <roadwaysolutions@aol.com>; Nikole Brock <nikoleb@txswppps.com>; PAT THORPE <PTHORPE@LARRETTINC.COM>; Phillip Snoddy <phillip.snoddy@amxcompanies.com>; Preston <preston@unitedsandandgravel.com>; Randy Harding <rharding@bccclp.com>; RAUL CANALES <rcanales@oryxcommercial.com>; Ray Smith <arlpaver@flash.net>; RCTX <estimating@2rcstx.com>; Ricardo Hurtado <tuneros1@sbcglobal.net>; Richard Lough <estimating@usaerosioninc.com>; Rob <rsmith182@gmail.com>; robbi bentz <rbentz@Lindamood.net>; Robert <robert.herman@burnco.com>; Robert Caudill <rcaudill@TiseoPaving.com>; Rodney <rodney@barricadesplustx.com>; Ron Johnson <rjohnsonpaving@aol.com>; Ron Simons <ron.simons@aggregate-us.com>; Ronnie Stone <ronnie@texasinlets.com>; RPMx <planroom@rpmxconstruction.com>; Rudy <rudy.liraelectric@yahoo.com>; sam mcada <smcada@venusconstruction.com>; Scott <scott.hickfang@burnco.com>; Sean Foley <sean.foley@martinmarietta.com>; Shane Pate <spate@TiseoPaving.com>; Shelton <shelton@irsvcs.com>; sravank <sravank@axiscontracting.com>; stenson <slestimating@gmail.com>; Steve Hugdol <steve@bluestarutilities.com>; stevel@buyersbarricades.com; tim <tim@melselectric.com>; Tiny Lewis <tlewis@slsstexas.com>; Tomas Coronado <tocorona@gmail.com>; wade blake (wblake@rpmxconstruction.com); William <WilliamT@vilhauerenterprises.com>; William Richmond <americanstriping@msn.com>; Woody Leath <wleath@aol.com>; Young Hui <young@genesisearthsolutions.com>; Zach <zach@ntexcon.com>

# TISEO PAVING

## JOBS BIDDING

**MARCH 4, 2022**

<b>TUESDAY</b>	<b>MARCH</b>	<b>08</b>	<b>3:00</b>	<b>CITY OF ARLINGTON</b>	<b>BOWMAN SPRINGS ROAD</b>
<b>WEDNESDAY</b>	<b>MARCH</b>	<b>09</b>	<b>1:00</b>	<b>CITY OF PLANO</b>	<b>17<sup>th</sup> STREET PROJECT NO.7222</b>
<b>FRIDAY</b>	<b>MARCH</b>	<b>11</b>	<b>11:00</b>	<b>COLLIN COUNTY</b>	<b>BRIDGEWATER, LENNAR HOMES</b>
<b>THURSDAY</b>	<b>MARCH</b>	<b>24</b>	<b>2:00</b>	<b>DALLAS COUNTY</b>	<b>WILDLIFE PARKWAY</b>
<b>FRIDAY</b>	<b>MARCH</b>	<b>25</b>	<b>10:00</b>	<b>CITY OF SOUTHLAKE</b>	<b>CREEKSIDE DRIVE</b>

**SECTION NO. 4**

**AFFIDAVIT AGAINST PROHIBITED ACTS**

I hereby affirm that I am aware of the provisions of the Texas Penal Code Sec. 36.02, 36.08, 36.09, and 36.10 (a copy of which follows), dealing with Bribery and Gifts to Public Servants. I further affirm that I will adhere to such rules and instruct and require all agents, employees, and sub-contractors to do the same. I am further aware that any violation of these rules subjects this agreement to revocation, my removal from bid lists, prohibiting future contract/subcontract work, revocation of permits, and prosecution.

  
\_\_\_\_\_  
Signature **LOUIS TISEDI PRESIDENT**

4/14/22  
Date

  
\_\_\_\_\_  
ATTEST (if corporation)

4/14/22  
Date

# TEXAS PENAL CODE

## TITLE 8: OFFENSES AGAINST PUBLIC ADMINISTRATION

### CHAPTER 36. Bribery and Corrupt Influence

#### 36.02 Bribery

- (a) A person commits an offense if he intentionally or knowingly offers, confers, or agrees to confer on another, or solicits, accepts, or agrees to accept from another:
- (1) any benefit as consideration for the recipient's decision, opinion, recommendation, vote, or other exercise of discretion as a public servant, party official, or voter;
  - (2) any benefit as consideration for the recipient's decision, vote, recommendation, or other exercise of official discretion in a judicial or administrative proceeding;
  - (3) any benefit as consideration for a violation of a duty imposed by law on a public servant or party official; or
  - (4) any benefit that is a political contribution as defined by Title 15, Election Code, or that is an expenditure made and reported in accordance with Chapter 305, Government Code, if the benefit was offered, conferred, solicited, accepted, or agreed to pursuant to an express agreement to take or withhold a specific exercise of official discretion if such exercise of official discretion would not have been taken or withheld but for the benefit; notwithstanding any rule of evidence or jury instruction allowing factual inferences in the absence of certain evidence, direct evidence of the express agreement shall be required in any prosecution under this subdivision.
- (b) It is no defense to prosecution under this section that a person whom the actor sought to influence was not qualified to act in the desired way whether because he had not yet assumed office or he lacked jurisdiction or for any other reason.
- (c) It is no defense to prosecution under this section that the benefit is not offered or conferred or that the benefit is not solicited or accepted until after:
- (1) the decision, opinion, recommendation, vote, or other exercise of discretion has occurred; or
  - (2) the public servant ceases to be a public servant.
- (d) It is an exception to the application of Subdivisions (1), (2), and (3) of Subsection (a) that the benefit is a political contribution as defined by Title 15, Election Code, or an expenditure made and reported in accordance with Chapter 305, Government Code.
- (e) An offense under this section is a felony of the second degree.

#### 36.08 Gift to Public Servant by Person Subject to His Jurisdiction

- (a) A public servant in an agency performing regulatory functions or conducting inspections or investigations commits an offense if he solicits, accepts, or agrees to accept any benefit

from a person the public servant knows to be subject to regulation, inspection, or investigation by the public servant or his agency.

- (b) A public servant in an agency having custody of prisoners commits an offense if he solicits, accepts, or agrees to accept any benefit from a person the public servant knows to be in his custody or the custody of his agency.
- (c) A public servant in an agency carrying on civil or criminal litigation on behalf of government commits an offense if he solicits, accepts, or agrees to accept any benefit from a person against whom the public servant knows litigation is pending or contemplated by the public servant or his agency.
- (d) A public servant who exercises discretion in connection with contracts, purchases, payments, claims, or other pecuniary transactions of government commits an offense if he solicits, accepts, or agrees to accept any benefit from a person the public servant knows is interested in or likely to become interested in any contract, purchase, payment, claim, or transaction involving the exercise of his discretion.
- (e) A public servant who has judicial or administrative authority, who is employed by or in a tribunal having judicial or administrative authority, or who participates in the enforcement of the tribunal's decision, commits an offense if he solicits, accepts, or agrees to accept any benefit from a person the public servant knows is interested in or likely to become interested in any matter before the public servant or tribunal.
- (f) A member of the legislature, the governor, the lieutenant governor, or a person employed by a member of the legislature, the governor, the lieutenant governor, or an agency of the legislature commits an offense if he solicits, accepts, or agrees to accept any benefit from any person.
- (g) A public servant who is a hearing examiner employed by an agency performing regulatory functions and who conducts hearings in contested cases commits an offense if the public servant solicits, accepts, or agrees to accept any benefit from any person who is appearing before the agency in a contested case, who is doing business with the agency, or who the public servant knows is interested in any matter before the public servant. The exception provided by Sec. 36.10(b) does not apply to a benefit under this subsection.
- (h) An offense under this section is a Class A misdemeanor.
- (i) A public servant who receives an unsolicited benefit that the public servant is prohibited from accepting under this section may donate the benefit to a governmental entity that has the authority to accept the gift or may donate the benefit to a recognized tax-exempt charitable organization formed for educational, religious, or scientific purposes.

### **36.09 Offering Gift to Public Servant**

- (a) A person commits an offense if he offers, confers or agrees to confer any benefit on a public servant that he knows the public servant is prohibited by law from accepting.
- (b) An offense under this section is a Class A misdemeanor.

**36.10 Non-Applicable**

- (a) Sections 36.08 (Gift to Public Servant) and 36.09 (Offering Gift to Public Servant) do not apply to:
- (1) a fee prescribed by law to be received by a public servant or any other benefit to which the public servant is lawfully entitled or for which he gives legitimate consideration in a capacity other than as a public servant;
  - (2) a gift or other benefit conferred on account of kinship or a personal, professional, or business relationship independent of the official status of the recipient; or
  - (3) a benefit to a public servant required to file a statement under Chapter 572, Government Code, or a report under Title 15, Election Code, that is derived from a function in honor or appreciation of the recipient if:
    - (A) the benefit and the source of any benefit in excess of \$50 is reported in the statement; and
    - (B) the benefit is used solely to defray the expenses that accrue in the performance of duties or activities in connection with the office which are nonreimbursable by the state or political subdivision;
  - (4) a political contribution as defined by Title 15, Election Code;
  - (5) a gift, award, or memento to a member of the legislative or executive branch that is required to be reported under Chapter 305, Government Code;
  - (6) an item with a value of less than \$50, excluding cash or a negotiable instrument as described by Section 3.104, Business & Commerce Code; or
  - (7) an item issued by a governmental entity that allows the use of property or facilities owned, leased, or operated by the governmental entity.
- (b) Section 36.08 (Gift to Public Servant) does not apply to food, lodging, transportation, or entertainment accepted as a guest and, if the donee is required by law to report those items, reported by the donee in accordance with that law.
- (c) Section 36.09 (Offering Gift to Public Servant) does not apply to food, lodging, transportation, or entertainment accepted as a guest and, if the donor is required by law to report those items, reported by the donor in accordance with that law.
- (d) Section 36.08 (Gift to Public Servant) does not apply to a gratuity accepted and reported in accordance with Section 11.0262, Parks and Wildlife Code. Section 36.09 (Offering Gift to Public Servant) does not apply to a gratuity that is offered in accordance with Section 11.0262, Parks and Wildlife Code.

END OF SECTION

**SECTION NO. 4A**

**VERIFICATION RELATING TO DISCRIMINATING AGAINST FIREARM OR  
AMMUNITION INDUSTRIES**

The State of Texas has passed legislation, which is codified in Chapter 2274 of the Texas Government Code, that prevents any municipal government from entering into a contract for goods and services unless the contractor makes certain verifications. The Contractor, by signing below, verifies that Contractor does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association, and that it will not discriminate against a firearm entity or firearm trade association during the term of this Contract. This verification, when executed, will be attached to the contract and become a part of the contract for all purposes. This verification relates to the contract for **BOWMAN SPRINGS ROAD (IH 20 to ENCHANTED BAY BOULEVARD)**, City of Arlington project No. **PWST18001**.

BY:   
Name: Louis Tiseo  
Title: President

Witness:  
  
Signature  
Melanie Taylor  
Name  
Admin  
Title

END OF SECTION

**SECTION NO. 4B**

**VERIFICATION RELATING TO BOYCOTTING ENERGY COMPANIES**

The State of Texas has passed legislation, which is codified in Chapter 2274 of the Texas Government Code, that prevents any municipal government from entering into a contract for goods and services unless the contractor makes certain verifications. The Contractor, by signing below, verifies that Contractor does not boycott energy companies and will not boycott energy companies during the term of the Contract. This verification, when executed, will be attached to the contract and become a part of the contract for all purposes. This verification relates to the contract for **BOWMAN SPRINGS ROAD (IH 20 to ENCHANTED BAY BOULEVARD)**, City of Arlington project No. **PWST18001**.

BY:   
Name: Louis Tiseo  
Title: President

Witness:  
  
Signature  
Melanie Taylor  
Name  
ADMIN  
Title

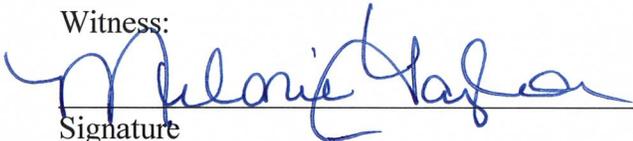
END OF SECTION

**SECTION NO. 5**

**VERIFICATION RELATING TO BOYCOTTING ISRAEL**

The State of Texas has passed legislation which is codified in Chapter 2270 of the Texas Government Code that prevents any municipal government from entering into a contract for goods and services unless the contractor makes certain verifications. The Contractor by signing below verifies that Contractor does not boycott Israel and will not boycott Israel during the term of the Contract. This verification when executed will be attached to the contract and become a part of the contract for all purposes. This verification relates to the contract for **BOWMAN SPRINGS ROAD (IH 20 to ENCHANTED BAY BOULEVARD)**, City of Arlington project No. **PWST18001**.

BY:   
Name: Louis Tiseo  
Title: President

Witness:  
  
Signature  
Melanie Taylor  
Name  
ADMIN  
Title

END OF SECTION

**SECTION NO. 6**

**PROPOSAL**

Proposal of: Tiseo Paving Company  
Address: 419 US Hwy 80E  
City/State/ZIP: Mesquite, Texas 75150  
Federal ID# 38-2209998-5  
Bid Opening Date: March 8, 2022

TO THE CITY OF ARLINGOTN, TEXAS:

The undersigned hereby proposes to furnish the equipment, fuel, labor, materials, power, tools, superintendence, transportation, and to perform the work required for the construction of Bowman Springs Road (IH-20 to Enchanted Bay Boulevard) , City of Arlington Project No. PWST18001, in the City of Arlington, Texas, for the following prices, which prices it is clearly and definitely understood shall include all construction materials and equipment as set out in the basis of payment in the contractual documents and maintaining same as required by the detailed specifications.

**PROPOSAL SCHEDULE**

**MOBILIZATION & SWPPP (ITEMS 101 - 102)**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICE IN FIGURES	
					UNIT PRICE	TOTAL
101	Mobilization & Bonds in accordance with Section 11-10, for the unit price of	Two Hundred Twenty Thousand Dollars and No Cents	1	Lump Sum	\$ 220,000.00	\$ 220,000.00
102	Design, Implement, & Maintain Storm Water Pollution Prevention Plan , complete and in place for the unit price of	Seventy Five Thousand Dollars and No Cents	1	Lump Sum	\$ 75,000.00	\$ 75,000.00

**SUBTOTAL MOBILIZATION & SWPPP (ITEMS 101 - 102) \$ 295,000.00**

**PAVING IMPROVEMENTS (ITEMS 201 - 263)**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
201	Right-of-Way/Easement Preparation, work fully performed for the unit price of	One Million Two Hundred Forty Two Thousand Six Hundred Fifty Dollars and No Cents	1	Lump Sum	\$ 1,242,650.00	\$ 1,242,650.00
202	Unclassified Roadway Excavation, work fully performed complete for the unit price of	Forty Two Dollars and No Cents	11,200	Cubic Yard	\$ 42.00	\$ 470,400.00
203	Furnish & Install Compacted Roadway Fill, complete and in place for the unit price of	Forty One Dollars and No Cents	9,200	Cubic Yard	\$ 41.00	\$ 377,200.00
204	Preparation & Manipulation 10-inch Lime Treated Subgrade, work fully performed for the unit price of	Five Dollars and Forty Five Cents	15,000	Square Yard	\$ 5.45	\$ 81,750.00
205	Furnish Hydrated Lime for Treated Subgrade (45 lbs/SY), work fully performed for the unit price of	Two Hundred Seven Dollars and No Cents	338	Ton	\$ 207.00	\$ 69,966.00
206	Preparation & Manipulation 14-inch Lime Treated Subgrade, work fully performed for the unit price of	Six Dollars and Fifty Cents	760	Square Yard	\$ 6.50	\$ 4,940.00
207	Furnish Hydrated Lime for Treated Subgrade (63 lbs/SY), work fully performed for the unit price of	Two Hundred Seven Dollars and No Cents	24	Ton	\$ 207.00	\$ 4,968.00
208	Preparation & Manipulation 8-inch Cement Treated Subgrade, work fully performed for the unit price of	Five Dollars and Forty Five Cents	15,000	Square Yard	\$ 5.45	\$ 81,750.00
209	Furnish Type I Portland Cement (30 lbs/SY), work fully performed for the unit price of	Three Hundred Ninety One Dollars and No Cents	225	Ton	\$ 391.00	\$ 87,975.00
210	Preparation & Manipulation 12-inch Cement Treated Subgrade, work fully performed for the unit price of	Six Dollars and Fifty Cents	750	Square Yard	\$ 6.50	\$ 4,875.00
211	Furnish Type I Portland Cement (45 lbs/SY), work fully performed for the unit price of	Three Hundred Ninety One Dollars and No Cents	17	Ton	\$ 391.00	\$ 6,647.00
212	Furnish & Install 9-inch Reinforced Concrete Pavement with Monolithic Curb, including reinforcing steel, blockouts & joints, complete and in place for the unit price of	Ninety Six Dollars and Seventy Cents	12,500	Square Yard	\$ 96.70	\$1,208,750.00
213	Additional Cost for 9-inch High Early Strength Reinforced Concrete Paving (3600 psi/24 hours) as directed by City (above the cost of concrete bid item), for the unit price of	Forty Dollars and No Cents	3,500	Square Yard	\$ 40.00	\$ 140,000.00
214	Furnish & Install 12-inch Reinforced Concrete Pavement with Monolithic Curb (Stamped and Colored), including reinforcing steel, blockouts, joints, stamping & coloring, complete and in place for the unit price of	Two Hundred Seventy Five Dollars and No Cents	495	Square Yard	\$ 275.00	\$ 136,125.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
215	Furnish & Install 4-inch Reinforced Concrete Pavement (Stamped and Colored) (Stamped and Colored), including reinforcing steel, blockouts, joints, stamping & coloring, complete and in place for the unit price of	One Hundred Thirty Dollars and No Cents	723	Square Yard	\$ 130.00	\$ 93,990.00
216	Furnish & Install 11-inch Flexible Base (Type A, Grade 1), complete and in place for the sum of	Thirty Dollars and No Cents	778	Square Yard	\$ 30.00	\$ 23,340.00
217	Furnish & Install 7-inch Reinforced Concrete Pavement with Monolithic Curb, including reinforcing steel, blockouts & joints, complete and in place for the unit price of	One Hundred Five Dollars and No Cents	150	Square Yard	\$ 105.00	\$ 15,750.00
218	Furnish & Install 5-inch Reinforced Concrete Residential Drive Approach on compacted native soil, complete and in place for the unit price of	Eighty Eight Dollars and No Cents	600	Square Yard	\$ 88.00	\$ 52,800.00
219	Furnish & Install 6-inch Reinforced Concrete Commercial Drive Approach on compacted native soil, complete and in place for the unit price of	One Hundred Eight Dollars and No Cents	175	Square Yard	\$ 108.00	\$ 18,900.00
220	Furnish & Install Reinforced Concrete Pavement Header, complete and in place for the unit price of	Thirty Dollars and No Cents	178	Linear Foot	\$ 30.00	\$ 5,340.00
221	Furnish, Install, & Remove 4-inch Type "D" HMAC Temporary Traffic Control over compacted native soil for & access to private properties, complete and in place for the unit price of	Sixty Dollars and No Cents	6,000	Square Yard	\$ 60.00	\$ 360,000.00
222	Furnish & Install Cement Treated Base (CTB) as directed by City, complete and in place for the unit price of	Three Hundred Dollars and No Cents	50	Ton	\$ 300.00	\$ 15,000.00
223	Furnish & Install Crushed Stone for bad weather access, complete and in place for the unit price of	Forty Five Dollars and No Cents	2,000	Ton	\$ 45.00	\$ 90,000.00
224	Furnish & Install 6-inch Reinforced Concrete Curb & Gutter, complete and in place for the unit price of	Fifty Dollars and No Cents	400	Linear Foot	\$ 50.00	\$ 20,000.00
225	Furnish & Install Reinforced Concrete Ribbon, complete and in place for the unit price of	Fifty Dollars and No Cents	250	Linear Foot	\$ 50.00	\$ 12,500.00
226	Furnish & Install 4-inch thick Reinforced Concrete Sidewalks over compacted native soil, complete and in place for the unit price of	Sixty Nine Dollars and No Cents	2,300	Square Yard	\$ 69.00	\$ 158,700.00
227	Furnish & Install 5-inch thick Reinforced Concrete Sidewalks over compacted native soil, complete and in place for the unit price of	Eighty Two Dollars and No Cents	2,450	Square Yard	\$ 82.00	\$ 200,900.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
228	Furnish & Install Retaining Wall (City of Arlington Standard) adjacent to Sidewalk, including joints, & reinforced steel, complete and in place for the unit price of	Two Thousand One Hundred Forty Five Dollars and No Cents	25	Cubic Yard	\$ 2,145.00	\$ 53,625.00
229	Additional Cost for Retaining Wall (City of Arlington Standard) Form Liner (above the cost of retaining wall bid item), for the unit price of	One Hundred Thirty Two Dollars and No Cents	230	Linear Foot	\$ 132.00	\$ 30,360.00
230	Furnish & Install Retaining Wall (TxDOT Type RW-1(H)C) , including joints, reinforced steel, filter material, filter fabric, concrete course aggregate, and weep holes, complete and in place for the unit price of	One Thousand One Hundred Dollars and No Cents	470	Cubic Yard	\$ 1,100.00	\$ 517,000.00
231	Additional Cost for Retaining Wall (TxDOT Standard) Form Liner (above the cost of retaining wall bid item), for the unit price of	One Hundred Twenty One Dollars and No Cents	320	Linear Foot	\$ 121.00	\$ 38,720.00
232	Furnish & Install Pedestrian Rail (TxDOT Type PR11), complete and in place for the unit price of	One Hundred Sixty Five Dollars and No Cents	414	Linear Foot	\$ 165.00	\$ 68,310.00
233	Furnish & Install Combination Rail (TxDOT Type C221), complete and in place for the unit price of	Two Hundred Sixty Four Dollars and No Cents	244	Linear Foot	\$ 264.00	\$ 64,416.00
234	Furnish & Install 5-inch ADA Compliant Barrier Free Ramp (TxDOT PED-18), complete and in place for the unit price of	Three Thousand Eighty Dollars and No Cents	12	Each	\$ 3,080.00	\$ 36,960.00
235	Furnish & Install 9-inch ADA Compliant Barrier Free Ramp (TxDOT PED-18), complete and in place for the unit price of	Four Thousand Six Hundred Twenty Dollars and No Cents	12	Each	\$ 4,620.00	\$ 55,440.00
236	Furnish & Install Curb Drain (R3262 Neenah Foundry or equivalent), including all appurtenances, complete and in place for the unit price of	Seventeen Thousand Six Hundred Dollars and No Cents	4	Each	\$ 17,600.00	\$ 70,400.00
237	Move, Protect, & Reset Existing Mail Box, horizontally & vertically as necessary to meet U.S. Postal Service criteria, including placement of temporary mailboxes throughout construction, work fully performed for the unit price of	Five Hundred Dollars and No Cents	1	Each	\$ 500.00	\$ 500.00
238	Furnish & Install Grass Sodding to match existing yard, complete and in place for the unit price of (REVISED PER ADDENDUM NO. 3)	Twelve Dollars and Fifty Cents	10,300	Square Yard	\$ 12.50	\$ 128,750.00
239	Furnish & Install Hydromulch to disturbed areas, complete and in place for the unit price of (REVISED PER ADDENDUM NO. 3)	Ten Dollars and No Cents	15,250	Square Yard	\$ 10.00	\$ 122,500.00
240	Tree Removal (all sizes), including grinding stump to below ground level, work fully performed for the unit price of	One Hundred Nineteen Thousand Nine Hundred Dollars and No Cents	1	Lump Sum	\$ 119,900.00	\$ 119,900.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
241	Existing Tree Protection, including fence fabric, posts, maintenance, and watering, complete and in place for the unit price of	Five Hundred Dollars and No Cents	68	Each	\$ 500.00	\$ 34,000.00
242	Furnish & Install Permanent Pavement Markings as shown in construction plans, complete and in place for the unit price of	Forty One Thousand Dollars and No Cents	1	Lump Sum	\$ 41,000.00	\$ 41,000.00
243	Furnish & Install Traffic Signs as shown on plans, including signs, supports, foundations & associated mounting hardware, complete and in place for the unit price of	Twenty Nine Thousand Dollars and No Cents	1	Lump Sum	\$ 29,000.00	\$ 29,000.00
244	Furnish & Install 6-foot Chain Link Fence, complete and in place for the unit price of	Sixty One Dollars and No Cents	175	Linear Foot	\$ 61.00	\$ 10,675.00
245	Furnish & Install 6-foot x 6-foot Chain Link Fence Gate, complete and in place for the unit price of	One Thousand Six Hundred Fifty Dollars and No Cents	1	Each	\$ 1,650.00	\$ 1,650.00
246	Furnish & Install 5-Strand Wire Fence (Metal Post), complete and in place for the unit price of	Seventeen Dollars and No Cents	322	Linear Foot	\$ 17.00	\$ 5,474.00
247	Furnish & Install 16-foot Wide Metal Gate, complete and in place for the unit price of	One Thousand Nine Hundred Dollars and No Cents	1	Each	\$ 1,900.00	\$ 1,900.00
248	Furnish & Install Steel Tube Fence, complete and in place for the unit price of	Three Hundred Thirty Dollars and No Cents	70	Linear Foot	\$ 330.00	\$ 23,100.00
249	Furnish & Install Single Post Hinged Bollard Assembly, complete and in place for the unit price of	Ten Thousand Four Hundred Fifty Dollars and No Cents	2	Each	\$ 10,450.00	\$ 20,900.00
250	Furnish & Install Metal Beam Guard Fence (MBGF), complete and in place for the unit price of	Forty Dollars and No Cents	252	Linear Foot	\$ 40.00	\$ 10,080.00
251	Furnish & Install Single Guardrail Terminal (Steel Post), complete and in place for the unit price of	Four Thousand Dollars and No Cents	2	Each	\$ 4,000.00	\$ 8,000.00
252	Furnish & Install 4-inch Concrete Riprap for MBGF, complete and in place for the unit price of	One Hundred Sixty Five Dollars and No Cents	85	Square Yard	\$ 165.00	\$ 14,025.00
253	Furnish & Install 7-inch Type "B" & 2-inch Type "D" HMAC Permanent Asphalt Collector Street Transition	Sixty Four Dollars and No Cents	1,750	Square Yard	\$ 64.00	\$ 112,000.00
254	Furnish & Install 4-inch Type "B" & 2-inch Type "D" HMAC Permanent Asphalt Residential Street Transition	Fifty Eight Dollars and No Cents	125	Square Yard	\$ 58.00	\$ 7,250.00
255	Furnish & Install 10-inch Cement Treated Base (CTB) for Permanent Asphalt Collector and Street Transition	One Hundred Eighty Five Dollars and No Cents	490	Square Yard	\$ 185.00	\$ 90,650.00
256	Furnish & Install 4-Foot Polypropylene Orange Safety Fencing with Steel Posts, complete and in place for the unit price of	Six Dollars and No Cents	1,460	Linear Foot	\$ 6.00	\$ 8,760.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
257	Furnish & Install Berntsen Top Security Road Monuments, provide survey, & publish certified G.P.S. Data Sheet, complete and in place for the unit price of	Three Thousand Dollars and No Cents	2	Each	\$ 3,000.00	\$ 6,000.00
258	Adjust Existing Sanitary Sewer Manhole to Proposed Grade, complete and in place for the unit price of	Two Thousand Five Hundred Dollars and No Cents	1	Each	\$ 2,500.00	\$ 2,500.00
259	Construction Contingency for Public Works' Items, work fully performed for the unit price of	Three Hundred Fifty Thousand Dollars and No Cents	1	Lump Sum	\$ 350,000.00	\$ 350,000.00
260	Furnish, Install, Remove, & Dispose 12-inch TxDOT Grade 1 Type "A" Flexible Base over compacted native soil for & access to private properties, complete and in place for the unit price of (ADDED PER ADDENDUM NO. 3)	Fifty Dollars and No Cents	3,000	Square Yard	\$ 50.00	\$ 150,000.00
261	Unclassified Roadway Excavation for temporary driveway access including preparing for temporary pavement and restoration after temporary access removal, work fully performed complete for the unit price of (ADDED PER ADDENDUM NO. 3)	Forty One Dollars and Thirty Five Cents	1,250	Cubic Yard	\$ 41.35	\$ 51,687.50
262	Furnish & Install Cattle Guard per detail including adjusting existing fence and gate, complete and in place for the unit price of (ADDED PER ADDENDUM NO. 3)	Forty Two Thousand Nine Hundred Dollars and No Cents	1	Lump Sum	\$ 42,900.00	\$ 42,900.00
263	Furnish, Install, & Remove 24-inch Class V Reinforced Concrete Pipe Culvert, including embedment & backfill, complete and in place for the unit price of (ADDED PER ADDENDUM NO. 3)	Two Hundred Forty Nine Dollars and No Cents	180	Linear Foot	\$ 249.00	\$ 44,820.00

**SUBTOTAL PAVING IMPROVEMENTS (ITEMS 201 - 263) \$ 7,358,468.50**

**DRAINAGE IMPROVEMENTS (ITEMS 301 - 344)**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
301	Furnish & Install 18-inch Class III Reinforced Concrete Pipe, including embedment & backfill, complete and in place for the unit price of	One Hundred Seventy Two Dollars and No Cents	1,290	Linear Foot	\$ 172.00	\$ 221,880.00
302	Furnish & Install 18-inch Class IV Reinforced Concrete Pipe, including embedment & backfill, complete and in place for the unit price of	One Hundred Seventy Five Dollars and No Cents	84	Linear Foot	\$ 175.00	\$ 14,700.00
303	Furnish & Install 21-inch Class III Reinforced Concrete Pipe, including embedment & backfill, complete and in place for the unit price of	One Hundred Eighty Three Dollars and No Cents	81	Linear Foot	\$ 183.00	\$ 14,823.00
304	Furnish & Install 24-inch Class III Reinforced Concrete Pipe, including embedment & backfill, complete and in place for the unit price of	Two Hundred Seven Dollars and No Cents	685	Linear Foot	\$ 207.00	\$ 141,795.00
305	Furnish & Install 30-inch Class III Reinforced Concrete Pipe, including embedment & backfill, complete and in place for the unit price of	Two Hundred Thirty Six Dollars and No Cents	226	Linear Foot	\$ 236.00	\$ 53,336.00
306	Furnish & Install 36-inch Class III Reinforced Concrete Pipe, including embedment & backfill, complete and in place for the unit price of	Two Hundred Eighty Four Dollars and No Cents	349	Linear Foot	\$ 284.00	\$ 99,116.00
307	Furnish & Install 42-inch Class III Reinforced Concrete Pipe, including embedment & backfill, complete and in place for the unit price of	Three Hundred Eighty Four Dollars and No Cents	291	Linear Foot	\$ 384.00	\$ 111,744.00
308	Furnish & Install 48-inch Class III Reinforced Concrete Pipe, including embedment & backfill, complete and in place for the unit price of	Four Hundred Thirty Two Dollars and No Cents	689	Linear Foot	\$ 432.00	\$ 297,648.00
309	Furnish & Install 5-foot x 4-foot Reinforced Concrete Box Culvert, complete and in place for the unit price of	Eight Hundred Seventy Six Dollars and No Cents	107	Linear Foot	\$ 876.00	\$ 93,732.00
310	Furnish & Install 12-foot x 12-foot Reinforced Concrete Box Culvert, complete and in place for the unit price of	One Thousand Five Hundred Twenty Dollars and No Cents	475	Linear Foot	\$ 1,520.00	\$ 722,000.00
311	Furnish & Install Trench Safety System for Stormwater Lines for all depths in accordance with Trench Safety Plan & the latest OSHA Standards, complete and in place for the unit price of	Four Dollars and No Cents	4,227	Linear Foot	\$ 4.00	\$ 16,908.00
312	Furnish & Install Crushed Stone Cushion, complete and in place for the unit price of	Fifty Five Dollars and No Cents	200	Ton	\$ 55.00	\$ 11,000.00
313	Construct 10-foot TxDOT TY II Inlet, work fully performed for the unit price of	Ten Thousand Two Hundred Thirty Dollars and No Cents	2	Each	\$ 10,230.00	\$ 20,460.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
314	Construct 10-foot Recessed Inlet, work fully performed for the unit price of	Six Thousand Nine Hundred Thirty Dollars and No Cents	14	Each	\$ 6,930.00	\$ 97,020.00
315	Construct 15-foot Recessed Inlet, work fully performed for the unit price of	Nine Thousand Seven Hundred Ninety Dollars and No Cents	9	Each	\$ 9,790.00	\$ 88,110.00
316	Construct 20-foot Recessed Inlet, work fully performed for the unit price of	Twelve Thousand Seven Hundred Sixty Dollars and No Cents	4	Each	\$ 12,760.00	\$ 51,040.00
317	Construct 15-foot TxDOT Channel Headwall Inlet (Including 5-inch Concrete Riprap), work fully performed for the unit price of	Fourteen Thousand Six Hundred Thirty Dollars and No Cents	1	Each	\$ 14,630.00	\$ 14,630.00
318	Construct 4-foot x 4-foot Drop Inlet, work fully performed for the unit price of	Six Thousand Six Hundred Dollars and No Cents	1	Each	\$ 6,600.00	\$ 6,600.00
319	Construct 3-foot x 5-foot Drop Inlet, work fully performed for the unit price of	Six Thousand Nine Hundred Thirty Dollars and No Cents	1	Each	\$ 6,930.00	\$ 6,930.00
320	Construct 4-foot x 4-foot Storm Drain Junction Box, work fully performed for the unit price of	Seven Thousand Two Hundred Sixty Dollars and No Cents	9	Each	\$ 7,260.00	\$ 65,340.00
321	Construct 5-foot x 5-foot Storm Drain Junction Box, work fully performed for the unit price of	Ten Thousand One Hundred Twenty Dollars and No Cents	2	Each	\$ 10,120.00	\$ 20,240.00
322	Construct 6-foot x 6-foot Storm Drain Junction Box, work fully performed for the unit price of	Eleven Thousand Two Hundred Twenty Dollars and No Cents	3	Each	\$ 11,220.00	\$ 33,660.00
323	Furnish & Install Concrete Headwall (TxDOT CH-PW-S) (2-18"RCP), complete and in place for the unit price of	Five Thousand Six Hundred Ten Dollars and No Cents	1	Each	\$ 5,610.00	\$ 5,610.00
324	Furnish & Install Concrete Wingwall (TxDOT PW-1) (5'x4' RCB), complete and in place for the unit price of	Thirty Six Thousand One Hundred Seventy Dollars and No Cents	1	Each	\$ 36,170.00	\$ 36,170.00
325	Furnish & Install Concrete Wingwall (TxDOT PW-1) (MOD) (3-12'x12' RCB), complete and in place for the unit price of	One Hundred Ninety Four Thousand Dollars and No Cents	1	Each	\$ 194,000.00	\$ 194,000.00
326	Furnish & Install Concrete Headwall (3-12'x12' RCB), complete and in place for the unit price of	Sixteen Thousand Five Hundred Dollars and No Cents	1	Each	\$ 16,500.00	\$ 16,500.00
327	Furnish & Install Combination Rail (TxDOT Type C221) including power coated black finish, complete and in place for the unit price of	Two Hundred Seventy Five Dollars and No Cents	183	Linear Foot	\$ 275.00	\$ 50,325.00
328	Furnish & Install Steel Tube Fence including power coated black finish, complete and in place for the unit price of	Three Hundred Eighty Five Dollars and No Cents	23	Linear Foot	\$ 385.00	\$ 8,855.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
329	Furnish & Install Safety End Treatments (Type 2-Parallel) (18") (6:1), complete and in place for the unit price of	Two Thousand Nine Hundred Seventy Dollars and No Cents	5	Each	\$ 2,970.00	\$ 14,850.00
330	Furnish & Install Safety End Treatments (Type 2-Parallel) (30") (6:1), complete and in place for the unit price of	Four Thousand Eight Hundred Forty Dollars and No Cents	1	Each	\$ 4,840.00	\$ 4,840.00
331	Cut & Plug Existing 36-inch RCP, work fully performed for the unit price of	Three Thousand Five Hundred Twenty Dollars and No Cents	1	Each	\$ 3,520.00	\$ 3,520.00
332	Connect to Existing 18-inch RCP, including reinforced concrete collar, work fully performed for the unit price of	Four Thousand Seventy Dollars and No Cents	1	Each	\$ 4,070.00	\$ 4,070.00
333	Connect to Existing 21-inch RCP, including reinforced concrete collar, work fully performed for the unit price of	Four Thousand One Hundred Eighty Dollars and No Cents	1	Each	\$ 4,180.00	\$ 4,180.00
334	Unclassified Channel Excavation, including removal & disposal of excess material & debris, work fully performed for the unit price of	Ninety Three Dollars and No Cents	3,510	Cubic Yard	\$ 93.00	\$ 326,430.00
335	Furnish & Install 6-inch Buried Soil Riprap, including rock, topsoil, and hydromulch seeding, complete and in place for the unit price of	One Hundred Sixty Five Dollars and No Cents	160	Cubic Yard	\$ 165.00	\$ 26,400.00
336	Furnish & Install 12-inch Buried Soil Riprap, including rock, topsoil, and hydromulch seeding, complete and in place for the unit price of	Two Hundred Dollars and No Cents	80	Cubic Yard	\$ 200.00	\$ 16,000.00
337	Furnish & Install Rock Drop Structure, including header rocks, footer rocks, 12-inch rock riprap, geotextile, stone filling, bedding material, complete and in place for the unit price of	Fifty Five Thousand Dollars and No Cents	1	Each	\$ 55,000.00	\$ 55,000.00
338	Furnish & Install 12-inch Rock Riprap, including rock, geotextile, and bedding material, complete and in place for the unit price of	Two Hundred Dollars and No Cents	550	Cubic Yard	\$ 200.00	\$ 110,000.00
339	Furnish & Install 6" Subdrain (Schedule 40 Solid), including excavation, filter fabric, filter material and compaction, complete and in place for the unit price of	One Hundred Twenty Six Dollars and No Cents	27	Linear Foot	\$ 126.00	\$ 3,402.00
340	Furnish, Install, & Maintain Temporary Trench Repair, Immediately After Storm Drain Installation, including 6-inch flexbase (TxDOT Type "A"- Grade 1) & 4-inch Type "D" HMAC, complete and in place for the unit price of	Thirty Three Dollars and No Cents	3,150	Linear Foot	\$ 33.00	\$ 103,950.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
341	Furnish & Install Hydromulch to disturbed areas, complete and in place for the unit price of	Nine Dollars and No Cents	4,000	Square Yard	\$ 9.00	\$ 36,000.00
342	Furnish & Install Erosion Control Blanket (Curlex II or Equivalent), complete and in place for the unit price of	Three Dollars and No Cents	4,000	Square Yard	\$ 3.00	\$ 12,000.00
343	Furnish G.P.S. Data on New Stormwater Attributes installed with this project, work fully performed for the unit price of	Forty One Thousand Eight Hundred Dollars and No Cents	1	Lump Sum	\$ 41,800.00	\$ 41,800.00
344	Post-Construction CCTV Inspections of Storm Drain System Installation in accordance with Section 15-07, work fully performed for the unit price of (REVISED PER ADDENDUM NO. 3)	Four Dollars and No Cents	4,277	Linear Foot	\$ 4.00	\$ 17,108.00

**SUBTOTAL DRAINAGE IMPROVEMENTS (ITEMS 301 - 344) \$ 3,293,722.00**

**WATER IMPROVEMENTS - PUBLIC WORKS FUNDED (ITEMS 401 - 415)**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
401	Furnish & Install 12-inch PVC Water Line C-900-16 (DR-18) 235 psi by Open Cut, including ductile iron fittings with polyethylene encasement, megalugs, concrete blocking, trench, embedment, & backfill, complete and in place for the unit price of	One Hundred Ninety Three Dollars and No Cents	1,271	Linear Foot	\$ 193.00	\$ 245,303.00
402	Furnish & Install 6-inch PVC Water Line C-900-16 (DR-18) 235 psi by Open Cut, including ductile iron fittings with polyethylene encasement, megalugs, concrete blocking, trench, embedment, & backfill, complete and in place for the unit price of	One Hundred Thirty Two Dollars and No Cents	77	Linear Foot	\$ 132.00	\$ 10,164.00
403	Furnish & Install Trench Safety Systems for Water Line by open cut for all depths in accordance with the Trench Safety Plan & the latest OSHA Standards, complete and in place for the unit price of	Two Dollars and No Cents	1,348	Linear Foot	\$ 2.00	\$ 2,696.00
404	Furnish & Install Lead Free Fire Hydrant Assembly per Detail, complete and in place for the unit price of	Nine Thousand Twenty Dollars and No Cents	2	Each	\$ 9,020.00	\$ 18,040.00
405	Remove & Dispose Existing Fire Hydrant, work fully performed for the unit price of	Three Hundred Eighty Five Dollars and No Cents	2	Each	\$ 385.00	\$ 770.00
406	Furnish & Install 12-inch Resilient Wedge Gate Valve & all associated appurtenances, including valve box & extension, complete and in place for the unit price of	Seven Thousand Eight Hundred Ten Dollars and No Cents	4	Each	\$ 7,810.00	\$ 31,240.00
407	Furnish & Install 6-inch Resilient Wedge Gate Valve & all associated appurtenances, including valve box & extension, complete and in place for the unit price of	Two Thousand Ninety Dollars and No Cents	2	Each	\$ 2,090.00	\$ 4,180.00
408	Remove & Dispose Existing 12-inch Gate Valve, work fully performed for the unit price of	Two Hundred Twenty Dollars and No Cents	5	Each	\$ 220.00	\$ 1,100.00
409	Remove & Dispose Existing 6-inch Gate Valve, work fully performed for the unit price of	Two Hundred Twenty Dollars and No Cents	1	Each	\$ 220.00	\$ 220.00
410	Replace Existing Meter Box with City Furnished 1-inch Meter Box, including detaching & reattaching AMI antenna to meter box (coordinate with Water Meter Services representative), & adjusting vertically & horizontally to final grade per city specifications, work fully performed for the unit price of	One Thousand Two Hundred Ten Dollars and No Cents	1	Each	\$ 1,210.00	\$ 1,210.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
411	Relocate & Adjust Existing AMI Water Meter to Final Grade & Location, including all fittings & piping for connection before & after Meter, detaching & reattaching AMI antenna to meter box (coordinate with Water Meter Services representative), work fully performed for the unit price of	Two Thousand Ninety Dollars and No Cents	1	Each	\$ 2,090.00	\$ 2,090.00
412	Furnish & Install 1-inch Long Water Service from Main to Meter per Detail, complete and in place for the unit price of	Three Thousand Eight Hundred Fifty Dollars and No Cents	2	Each	\$ 3,850.00	\$ 7,700.00
413	Cut & Plug Existing 6-inch Water Line, work fully performed for the unit price of	One Thousand Forty Five Dollars and No Cents	1	Each	\$ 1,045.00	\$ 1,045.00
414	Cut & Plug Existing 12-inch Water Line, work fully performed for the unit price of	One Thousand Six Hundred Fifty Dollars and No Cents	6	Each	\$ 1,650.00	\$ 9,900.00
415	Furnish, Install & Maintain Temporary Trench Repair, immediately after water main/service line installation, including 6-inch flexbase (TxDOT Type "A"- Grade 1) & 4-inch Type "D" HMAC, complete and in place for the unit price of	Forty Four Dollars and No Cents	150	Linear Foot	\$ 44.00	\$ 6,600.00

**SUBTOTAL WATER IMPROVEMENTS - PUBLIC WORKS  
FUNDED (ITEMS 401 - 415)**

**\$ 342,258.00**

**WATER IMPROVEMENTS - WATER UTILITIES FUNDED (ITEMS 501 - 522)**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
501	Furnish & Install 12-inch PVC Water Line C-900-16 (DR-18) 235 psi by Open Cut, including ductile iron fittings with polyethylene encasement, megalugs, concrete blocking, trench, embedment, & backfill, complete and in place for the unit price of	One Hundred Ninety Three Dollars and No Cents	1,129	Linear Foot	\$ 193.00	\$ 217,897.00
502	Furnish & Install 8-inch PVC Water Line C-900-16 (DR-18) 235 psi by Open Cut, including ductile iron fittings with polyethylene encasement, megalugs, concrete blocking, trench, embedment, & backfill, complete and in place for the unit price of	One Hundred Fifty Four Dollars and No Cents	162	Linear Foot	\$ 154.00	\$ 24,948.00
503	Furnish & Install 6-inch PVC Water Line C-900-16 (DR-18) 235 psi by Open Cut, including ductile iron fittings with polyethylene encasement, megalugs, concrete blocking, trench, embedment, & backfill, complete and in place for the unit price of	One Hundred Thirty Two Dollars and No Cents	31	Linear Foot	\$ 132.00	\$ 4,092.00
504	Furnish & Install 6-inch PVC Water Line by Open Cut Including 12-inch Steel Casing Pipe (0.375-inch minimum wall thickness), stainless steel casing spacers (minimum three per joint), bore pit, & pressure grout, complete and in place for the sum of dollars and cents per Linear Foot.	Three Hundred Eight Dollars and No Cents	20	Linear Foot	\$ 308.00	\$ 6,160.00
505	Furnish & Install 12-inch PVC Water Line by Open Cut Including 20-inch Steel Casing Pipe (0.375-inch minimum wall thickness), stainless steel casing spacers (minimum three per joint), bore pit, & pressure grout, complete and in place for the sum of dollars and cents per Linear Foot.	Four Hundred Sixty Two Dollars and No Cents	199	Linear Foot	\$ 462.00	\$ 91,938.00
506	Furnish & Install Trench Safety Systems for Water Line by open cut for all depths in accordance with the Trench Safety Plan & the latest OSHA Standards, complete and in place for the unit price of	Two Dollars and No Cents	1,657	Linear Foot	\$ 2.00	\$ 3,314.00
507	Furnish & Install Lead Free Fire Hydrant Assembly per Detail, complete and in place for the unit price of	Nine Thousand Twenty Dollars and No Cents	1	Each	\$ 9,020.00	\$ 9,020.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
508	Furnish & Install 12-inch Resilient Wedge Gate Valve & all associated appurtenances, including valve box & extension, complete and in place for the unit price of	Seven Thousand Eight Hundred Ten Dollars and No Cents	5	Each	\$ 7,810.00	\$ 39,050.00
509	Furnish & Install 8-inch Resilient Wedge Gate Valve & all associated appurtenances, including valve box & extension, complete and in place for the unit price of	Two Thousand Five Hundred Thirty Dollars and No Cents	1	Each	\$ 2,530.00	\$ 2,530.00
510	Remove & Dispose Existing 12-inch Gate Valve, work fully performed for the unit price of	Two Hundred Twenty Dollars and No Cents	2	Each	\$ 220.00	\$ 440.00
511	Furnish & Install 6-inch Blow-off Valve Assembly per Detail, complete and in place for the unit price of	Nine Thousand Nine Hundred Dollars and No Cents	1	Each	\$ 9,900.00	\$ 9,900.00
512	Remove & Dispose Existing Water Vault, work fully performed for the unit price of	Sixteen Thousand Five Hundred Dollars and No Cents	1	Each	\$ 16,500.00	\$ 16,500.00
513	Replace Existing Meter Box with City Furnished 1-inch Meter Box, including detaching & reattaching AMI antenna to meter box (coordinate with Water Meter Services representative), & adjusting vertically & horizontally to final grade per city specifications, work fully performed for the unit price of	One Thousand Two Hundred Ten Dollars and No Cents	2	Each	\$ 1,210.00	\$ 2,420.00
514	Furnish & Install 1-inch Long Water Service from Main to Meter per Detail, complete and in place for the unit price of	Three Thousand Eight Hundred Fifty Dollars and No Cents	2	Each	\$ 3,850.00	\$ 7,700.00
515	Connect to Existing 16-inch Water Line, Gate Valve, Tee or Cross, including adaptors & offset bends, work fully performed for the unit price of	Twelve Thousand One Hundred Dollars and No Cents	1	Each	\$ 12,100.00	\$ 12,100.00
516	Connect to Existing 12-inch Water Line, Gate Valve, Tee or Cross, including adaptors & offset bends, work fully performed for the unit price of	Nine Thousand Three Hundred Fifty Dollars and No Cents	2	Each	\$ 9,350.00	\$ 18,700.00
517	Connect to Existing 8-inch Water Line, Gate Valve, Tee or Cross, including adaptors & offset bends, work fully performed for the unit price of	Eight Thousand Five Hundred Eighty Dollars and No Cents	1	Each	\$ 8,580.00	\$ 8,580.00
518	Connect to Existing 6-inch Water Line, Gate Valve, Tee or Cross, including adaptors & offset bends, work fully performed for the unit price of	Eight Thousand One Hundred Forty Dollars and No Cents	1	Each	\$ 8,140.00	\$ 8,140.00
519	Cut & Plug Existing 6-inch Water Line, work fully performed for the unit price of	One Thousand Forty Five Dollars and No Cents	1	Each	\$ 1,045.00	\$ 1,045.00
520	Cut & Plug Existing 16-inch Water Line, work fully performed for the unit price of	Two Thousand Four Hundred Twenty Dollars and No Cents	5	Each	\$ 2,420.00	\$ 12,100.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
521	Furnish, Install & Maintain Temporary Trench Repair, immediately after water main/service line installation, including 6-inch flexbase (TxDOT Type "A"- Grade 1) & 4-inch Type "D" HMAC, complete and in place for the unit price of	Forty Four Dollars and No Cents	550	Linear Foot	\$ 44.00	\$ 24,200.00
522	Construction Contingency for Water Items, work fully performed for the unit price of	Thirty Thousand Dollars and No Cents	1	Lump Sum	\$ 30,000.00	\$ 30,000.00

**SUBTOTAL WATER IMPROVEMENTS - WATER UTILITIES  
FUNDED (ITEMS 501 - 522)**

**\$ 550,774.00**

**SANITARY SEWER IMPROVEMENTS - TWDB FUNDED (ITEMS 601 - 631)**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
601	Furnish & Install 12-inch Sanitary Sewer Line, PVC (SDR- 26, 115 psi, Green Color) by Open Cut, all depths, including trench, embedment, & backfill, complete and in place for the unit price of	Two Hundred Twenty Two Dollars and No Cents	355	Linear Foot	\$ 222.00	\$ 78,810.00
602	Furnish & Install 10-inch Sanitary Sewer Line, PVC (SDR- 26, 115 psi, Green Color) by Open Cut, all depths, including trench, embedment, & backfill, complete and in place for the unit price of	Two Hundred Four Dollars and No Cents	152	Linear Foot	\$ 204.00	\$ 31,008.00
603	Furnish & Install 8-inch Sanitary Sewer Line, PVC (SDR- 26, 115 psi, Green Color) by Open Cut, all depths, including trench, embedment, & backfill, complete and in place for the unit price of	One Hundred Seventy Eight Dollars and No Cents	63	Linear Foot	\$ 178.00	\$ 11,214.00
604	Furnish & Install 8-inch Sanitary Sewer Line, PVC (SDR- 26, 160 psi, Green Color) by Open Cut, all depths, including trench, embedment, & backfill, complete and in place for the unit price of	One Hundred Seventy Four Dollars and No Cents	363	Linear Foot	\$ 174.00	\$ 63,162.00
605	Furnish & Install Trench Safety Systems for Sanitary Sewer Line for all depths, in accordance with the Trench Safety Plan & the latest OSHA Standards, complete and in place for the unit price of	Two Dollars and No Cents	933	Linear Foot	\$ 2.00	\$ 1,866.00
606	Furnish & Install 12-inch PVC Sanitary Sewer Line by Other Than Open Cut, including pipe material, 20-inch steel casing pipe (.375-inch minimum wall thickness), stainless steel casing spacers (minimum three per joint), bore pit, & pressure grout, complete and in place for the unit price of	Six Hundred Seventy One Dollars and No Cents	222	Linear Foot	\$ 671.00	\$ 148,962.00
607	Furnish & Install 4-inch SDR-26 PVC Sanitary Sewer Service (Green Color) from main to property Line or easement line, including connection to existing sewer service, complete and in place for the unit price of (REVISED PER ADDENDUM NO. 4)	Three Thousand Eight Hundred Fifty Dollars and No Cents	7	Each	\$ 3,850.00	\$ 26,950.00
608	Furnish & Install Standard 4-foot Diameter Sewer Manhole (0-6 foot Depth), complete and in place for the unit price of	Thirteen Thousand Seven Hundred Fifty Dollars and No Cents	1	Each	\$ 13,750.00	\$ 13,750.00
609	Extra Depth for 4-foot Diameter Manhole, work fully performed for the unit price of	Seven Hundred Seventy Dollars and No Cents	2	Vertical Foot	\$ 770.00	\$ 1,540.00
610	Furnish & Install Standard 4-foot Diameter Outside Sewer Drop Manhole (0-6 foot depth), complete and in place for the unit price of	Seventeen Thousand Six Hundred Dollars and No Cents	1	Each	\$ 17,600.00	\$ 17,600.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
611	Extra Depth for 4-foot Diameter Drop Manhole, work fully performed for the unit price of	Seven Hundred Seventy Dollars and No Cents	4	Vertical Foot	\$ 770.00	\$ 3,080.00
612	Remove & Replace Existing Manhole with a 5-foot Diameter Sewer Manhole (0-6 foot depth), work fully performed for the unit price of	Eighteen Thousand Seven Hundred Dollars and No Cents	2	Each	\$ 18,700.00	\$ 37,400.00
613	Extra Depth for 5-foot Diameter Manhole, work fully performed for the unit price of	Nine Hundred Ninety Dollars and No Cents	27	Vertical Foot	\$ 990.00	\$ 26,730.00
614	Furnish & Install Standard 5-foot Diameter Outside Sewer Drop Manhole (0-6 foot depth), complete and in place for the unit price of	Twenty Four Thousand Two Hundred Dollars and No Cents	3	Each	\$ 24,200.00	\$ 72,600.00
615	Extra Depth for 5-foot Diameter Drop Manhole, work fully performed for the unit price of	Nine Hundred Ninety Dollars and No Cents	33	Vertical Foot	\$ 990.00	\$ 32,670.00
616	Remove & Dispose Existing Manhole, work fully performed for the unit price of	Six Hundred Sixty Dollars and No Cents	4	Each	\$ 660.00	\$ 2,640.00
617	Connect to Existing Sanitary Sewer Line, work fully performed for the unit price of	One Thousand One Hundred Dollars and No Cents	3	Each	\$ 1,100.00	\$ 3,300.00
618	Connect to Existing Manhole by Coring & Rework Invert, including Sewer Manhole Rehabilitation Liner, work fully performed for the unit price of	Four Thousand One Hundred Eighty Dollars and No Cents	1	Each	\$ 4,180.00	\$ 4,180.00
619	Cut & Plug Existing Sanitary Sewer Line, work fully performed for the unit price of	Five Hundred Fifty Dollars and No Cents	10	Each	\$ 550.00	\$ 5,500.00
620	Furnish & Install Reinforced Concrete Encasement, complete and in place for the unit price of	One Hundred Forty Three Dollars and No Cents	20	Linear Foot	\$ 143.00	\$ 2,860.00
621	8-inch Waterline Lowering, work fully performed for the sum of dollars and cents per Linear Foot.	Five Hundred Forty Five Dollars and No Cents	20	Linear Foot	\$ 545.00	\$ 10,900.00
622	Furnish, Install & Maintain Temporary Trench Repair, immediately after sanitary sewer main/service line installation, including 6-inch flexbase (TxDOT Type "A" Grade 1) & 4-inch Type "D" HMAC, complete and in place for the unit price of	Forty Four Dollars and No Cents	350	Linear Foot	\$ 44.00	\$ 15,400.00
623	Remove & Replace 5-inch Reinforced Concrete Residential Drive Approach on compacted native soil, work fully performed for the unit price of	One Hundred Thirty Eight Dollars and No Cents	25	Square Yard	\$ 138.00	\$ 3,450.00
624	Furnish & Install 2-inch Type "D" HMAC Surface Course for Pavement, complete and in place for the unit price of	Nineteen Dollars and No Cents	950	Square Yard	\$ 19.00	\$ 18,050.00
625	Perform 2-inch Deep Surface Milling, work fully performed for the unit price of	Nine Dollars and No Cents	950	Square Yard	\$ 9.00	\$ 8,550.00
626	Remove & Replace Reinforced Concrete Curb & Gutter, including 8-inch CTB, work fully performed for the unit price of	Four Hundred Fifty Dollars and No Cents	46	Linear Foot	\$ 450.00	\$ 20,700.00

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
627	Move, Protect & Reset Existing Mail Box, horizontally & vertically as necessary to meet U.S. Postal Service criteria, including placement of temporary mailboxes throughout construction, work fully performed for the unit price of	Four Thousand Dollars and No Cents	2	Each	\$ 4,000.00	\$ 8,000.00
628	Pre-Construction Television Inspection to Evaluate Existing Sanitary Sewer Line Conditions & Identify Existing Services & Connections, work fully performed for the unit price of	Seven Dollars and No Cents	1,120	Linear Foot	\$ 7.00	\$ 7,840.00
629	Post-Construction CCTV Inspections of Sanitary Sewer Main in accordance with Section 14-23, work fully performed for the unit price of	Six Dollars and No Cents	1,261	Linear Foot	\$ 6.00	\$ 7,566.00
630	Bypass Pumping, work fully performed for the unit price of	One Hundred Eighty Two Thousand Three Hundred Twelve Dollars and Sixty One Cents	1	Lump Sum	\$ 182,312.61	\$ 182,312.61
631	Construction Contingency for Sanitary Sewer Items, work fully performed for the unit price of	Fifty Five Thousand Dollars and No Cents	1	Lump Sum	\$ 55,000.00	\$ 55,000.00

**SUBTOTAL SANITARY SEWER IMPROVEMENTS - TWDB FUNDED (ITEMS 601 - 631)**

**\$ 923,590.61**

---

**SEWER IMPROVEMENTS - PUBLIC WORKS FUNDED (ITEMS 701 - 708)**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
701	Furnish & Install 6-inch Sanitary Sewer Line, PVC (SDR- 26, 160 psi, Green Color) by Open Cut, all depths, including trench, embedment, & backfill, complete and in place for the unit price of	One Hundred Sixty Nine Dollars and No Cents	81	Linear Foot	\$ 169.00	\$ 13,689.00
702	Furnish & Install Trench Safety Systems for Sanitary Sewer Line for all depths, in accordance with the Trench Safety Plan & the latest OSHA Standards, complete and in place for the unit price of	Two Dollars and No Cents	81	Linear Foot	\$ 2.00	\$ 162.00
703	Furnish & Install 4-inch SDR-26 PVC Sanitary Sewer Service (Green Color) from main to property Line or easement line, including connection to existing sewer service, complete and in place for the unit price of	Three Thousand Eight Hundred Fifty Dollars and No Cents	1	Each	\$ 3,850.00	\$ 3,850.00
704	Furnish & Install Standard 4-foot Diameter Sewer Manhole (0-6 foot Depth), complete and in place for the unit price of	Thirteen Thousand Seven Hundred Fifty Dollars and No Cents	2	Each	\$ 13,750.00	\$ 27,500.00
705	Remove Existing 6-inch VCP Sewer Line, work fully performed for the unit price of	Thirty Nine Dollars and No Cents	105	Each	\$ 39.00	\$ 4,095.00
706	Furnish, Install & Maintain Temporary Trench Repair, immediately after sanitary sewer main/service line installation, including 6-inch flexbase (TxDOT Type "A" Grade 1) & 4-inch Type "D" HMAC, complete and in place for the unit price of	Forty Four Dollars and No Cents	102	Linear Foot	\$ 44.00	\$ 4,488.00
707	Pre-Construction Television Inspection to Evaluate Existing Sanitary Sewer Line Conditions & Identify Existing Services & Connections, work fully performed for the unit price of	Seven Dollars and No Cents	220	Linear Foot	\$ 7.00	\$ 1,540.00
708	Post-Construction CCTV Inspections of Sanitary Sewer Main in accordance with Section 14-23, work fully performed for the unit price of	Six Dollars and No Cents	105	Linear Foot	\$ 6.00	\$ 630.00

**SUBTOTAL SEWER IMPROVEMENTS - PUBLIC WORKS**

**\$**

**55,954.00**

**STREETLIGHTS, FIBER, & COMMUNICATION IMPROVEMENTS (ITEMS 801 - 808)**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
801	Furnish & Install 2-inch Dove Grey Schedule 40 PVC Street Light Conduit by Trenching, including pull wires, & backfilling, complete and in place for the unit price of	Sixteen Dollars and No Cents	3,131	Linear Foot	\$ 16.00	\$ 50,096.00
802	Furnish & Install 4-inch HDPE Black Communication Conduit by Trenching, including pull wires, trenching & backfilling, complete and in place for the unit price of	Twenty Dollars and No Cents	2,648	Linear Foot	\$ 20.00	\$ 52,960.00
803	Furnish & Install #2-2-4 AWG Aluminum Triplex Insulated Electrical Conductor, complete and in place for the unit price of	Five Dollars and No Cents	3,163	Linear Foot	\$ 5.00	\$ 15,815.00
804	Furnish & Install Powder Coated Bronze Single Davit Streetlight Assembly per detail, including transformer base and LED luminaires, complete and in place for the unit price of	Eight Thousand Dollars and No Cents	23	Each	\$ 8,000.00	\$ 184,000.00
805	Construct 24-inch Diameter Streetlight Foundation per detail & specifications, complete and in place for the unit price of	One Thousand Seven Hundred Fifty Dollars and No Cents	23	Each	\$ 1,750.00	\$ 40,250.00
806	Provide Electrical Connection to Streetlight Circuits, including connection to the transformer and/or relay, work fully performed for the unit price of	Seven Thousand Six Hundred Seventy Five Dollars and No Cents	1	Each	\$ 7,675.00	\$ 7,675.00
807	Furnish & Install Type 'A' Pullbox with 10-inch Apron for Streetlights, complete and in place for the unit price of	One Thousand One Hundred Fifty Five Dollars and No Cents	2	Each	\$ 1,155.00	\$ 2,310.00
808	Furnish & Install Type 'C' Pullbox with 10-inch Apron for Communications, complete and in place for the unit price of	One Thousand Three Hundred Dollars and No Cents	5	Each	\$ 1,300.00	\$ 6,500.00

**SUBTOTAL STREETLIGHTS, FIBER, & COMMUNICATION IMPROVEMENTS (ITEMS 801 - 808)**

**\$ 359,606.00**

**TREES AND LANSCAPING IMPROVEMENTS (ITEMS 901 - 910)**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
901	Furnish & Install Mulch, complete and in place for the unit price of	Eighty Eight Dollars and No Cents	43	Cubic Yard	\$ 88.00	\$ 3,784.00
902	Furnish & Install Plant Soil Mix, complete and in place for the unit price of	Ninety Four Dollars and No Cents	253	Cubic Yard	\$ 94.00	\$ 23,782.00
903	Furnish & Install Plant Material (Class #45) (Tree), complete and in place for the unit price of	One Thousand One Hundred Dollars and No Cents	6	Each	\$ 1,100.00	\$ 6,600.00
904	Furnish & Install Plant Material (Class #5) (Shrub), complete and in place for the unit price of	Eighty Three Dollars and No Cents	46	Each	\$ 83.00	\$ 3,818.00
905	Furnish & Install Plant Material (Class #3) (Shrub), complete and in place for the unit price of	Fifty Dollars and No Cents	207	Each	\$ 50.00	\$ 10,350.00
906	Furnish & Install River Rock, including filter fabric and compaction, complete and in place for the unit price of	Four Hundred Ninety Five Dollars and No Cents	63	Cubic Yard	\$ 495.00	\$ 31,185.00
907	Furnish & Install 6" Subdrain (Schedule 40 Perforated), including excavation, filter fabric, filter material and compaction, complete and in place for the unit price of	Fifty Five Dollars and No Cents	435	Linear Foot	\$ 55.00	\$ 23,925.00
908	Furnish & Install 8-inch Reinforced Concrete Landscape Curb, complete and in place for the unit price of	Forty Four Dollars and No Cents	210	Linear Foot	\$ 44.00	\$ 9,240.00
909	Furnish & Install Landscape Irrigation System, complete and in place for the unit price of	Twenty Four Thousand Seven Hundred Fifty Dollars and No Cents	1	Lump Sum	\$ 24,750.00	\$ 24,750.00
910	Impact Fee and Activation Fee Reimbursement (including meter fee) for Irrigation Meter , for the unit price of	One Thousand One Hundred Ninety One Dollars and Eighty Nine Cents	1	Lump Sum	\$ 1,191.89	\$ 1,191.89

**SUBTOTAL TREES AND LANSCAPING IMPROVEMENTS (ITEMS 901 - 910)**

**\$ 138,625.89**

**ALTERNATE A (ITEMS 200A )**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
200A	The additional cost for using Green Cement above the cost of cement in accordance with Section 12-38 for raw cement and for items where concrete is placed or cast-in-place, for the unit price of	One Dollar and No Cents	1	Lump Sum	\$ 1.00	\$ 1.00

**SUBTOTAL ALTERNATE A (ITEMS 200A )**

**\$ 1.00**

---

**TOTAL SUMMARY**

<b>MOBILIZATION &amp; SWPPP (ITEMS 101 - 102)</b>	<b>\$</b>	<b><u>295,000.00</u></b>
<b>PAVING IMPROVEMENTS (ITEMS 201 - 263)</b>	<b>\$</b>	<b><u>7,358,468.50</u></b>
<b>DRAINAGE IMPROVEMENTS (ITEMS 301 - 344)</b>	<b>\$</b>	<b><u>3,293,722.00</u></b>
<b>WATER IMPROVEMENTS - PUBLIC WORKS FUNDED (ITEMS 401 - 415)</b>	<b>\$</b>	<b><u>342,258.00</u></b>
<b>WATER IMPROVEMENTS - WATER UTILITIES FUNDED (ITEMS 501 - 522)</b>	<b>\$</b>	<b><u>550,774.00</u></b>
<b>SANITARY SEWER IMPROVEMENTS - TWDB FUNDED (ITEMS 601 - 631)</b>	<b>\$</b>	<b><u>923,590.61</u></b>
<b>SEWER IMPROVEMENTS - PUBLIC WORKS FUNDED (ITEMS 701 - 708)</b>	<b>\$</b>	<b><u>55,954.00</u></b>
<b>STREETLIGHTS, FIBER, &amp; COMMUNICATION IMPROVEMENTS (ITEMS 801 - 808)</b>	<b>\$</b>	<b><u>359,606.00</u></b>
<b>TREES AND LANDSCAPING IMPROVEMENTS (ITEMS 901 - 910)</b>	<b>\$</b>	<b><u>138,625.89</u></b>
<b>ALTERNATE A (ITEMS 200A )</b>	<b>\$</b>	<b><u>1.00</u></b>
<b>TOTAL BASE BID</b>	<b>\$</b>	<b><u><u>13,317,999.00</u></u></b>
<b>TOTAL BASE BID + ALTERNATE A</b>	<b>\$</b>	<b><u><u>13,318,000.00</u></u></b>

In case of ambiguity or lack of clearness in stating prices in the Proposal, the City reserves the right to accept the most advantageous construction thereof to the City or to reject the Proposal.

The undersigned bidder agrees to begin work within ten (10) days from the beginning date of the project as provided in the written Notice to Proceed and to complete the work within 450 calendar days; provided, that the City's construction funds are available.

Enclosed with this Proposal is a Bidder's Bond or Cashier's Check for five percent bidders bond (\$ 5% ) dollars, which it is agreed shall be collected and retained by the City as liquidated damages if the City accepts this bid within ninety (90) days after the opening of bids, and the undersigned bidder then fails to execute the contract and bonds with the City within ten (10) days after official notice of such acceptance; otherwise, said Bidder's Bond or Check shall be returned to the undersigned on demand. This sum of money is not to be considered as a penalty, but shall be deemed, taken and treated as reasonable liquidated damages. The sum of money is fixed and agreed on between the bidder and City because of the impracticability and extreme difficulty of fixing and ascertaining the actual damage to the owner.

The undersigned acknowledges receipt of the following addendum

- Addendum No. 1 X A.O.T.
- Addendum No. 2 X A.O.T.
- Addendum No. 3 X A.O.T.
- Addendum No. 4 X A.O.T.

**BIDDER**

Tiseo Paving Company

Company

By [Signature]

Louis Tiseo

(Please Print)

President

Title

419 US Hwy 80E

Address

Mesquite Texas 75150

City

State

Zip

(Seal if corporation)

**ADDENDUM NO. 1**  
**to the Plans and Specifications for**  
**BOWMAN SPRINGS ROAD**  
**(IH 20 – ENCHANTED BAY BOULEVARD)**

**CITY OF ARLINGTON**  
**PROJECT NO. PWST18001**

**February 15, 2022**

The following instructions shall constitute Addendum No. 1 to the Plans and Specifications for the above titled project. **The Bidder shall acknowledge receipt of the addendum in the appropriate spaces provided on the last page of this addendum and include the acknowledgement/acceptance with the sealed bid. Addendum not acknowledged will be considered non-responsive and the bid will not be considered for award.** They shall supersede any and all instructions and shall become as much a part of the Plans and Specifications as though written therein. The successful bidder shall also acknowledge acceptance of the addendum on the final contract:

**I. CLARIFICATION & ADDITIONAL INFORMATION:**

1. The Contractor shall coordinate with the Texas Department of Transportation Southeast Connector Project. The City anticipates the project will be under construction simultaneously at a given point, so it will be required that line items such stormwater management controls (SWPPP), traffic control, and pavement construction between the two projects must be coordinated to ensure minimal inconveniences to all the residents in this area. The contractor shall attend any progress, coordination, or construction meetings between the TxDOT and the City of Arlington as directed by the City Engineers.
2. Pre-cast Box Culverts will not be allowed. In addition, the box culverts shall be installed and scheduled per the following:
  - Culvert C1: Full closure of Bowman Springs Road at intersection of Greenspring Drive and Future Pleasant Ridge Road will be allowed for the construction of Culvert C1. Intersection Closure Limits details are shown at the end of the Addendum No. 1. Installation of Culvert C1, all drainage improvements, all water and sanitary sewer improvements, paving, and flat work within the vicinity of the Greenspring Drive/Pleasant Ridge Road intersection shall be substantially complete to allow full traffic flow within 200 consecutive calendar days from the start of the road closure. Contractor must provide the City a schedule for this work showing the start and end dates. Failure to substantially complete to allow full traffic flow in accordance with the approved schedule will result in the Contractor being charged liquidated damages in the amount of two thousand dollars (\$2,000) per day after the approved end date.

3. Northbound one-way traffic will be allowed for the exclusive installation of stormwater improvements, water/sanitary sewer utilities, and paving operations south of Enchanted Bay Boulevard to IH-20. The contractor shall maintain continuous work of the stormwater improvements, water/sanitary sewer utilities, and paving operations once one-way traffic control is in place. Failure to maintain continuous work will require the contractor to provide two-way traffic according to City specifications at no additional expense to the City.
  
4. The intent of one-way traffic is to allow enough construction so Bowman Springs Road can reopen to two-way traffic as soon as possible. Bowman Springs Road shall open to two-way traffic once all pavement and pertinent construction along Bowman Springs Road and adjacent street is complete, and Bowman Springs Road can safely allow vehicle traffic.

## **II. CHANGE TO SPECIAL PROVISIONS:**

### **1. SECTION 2 PREVAILING WAGE RATES, revise section to read:**

General Decision Number: TX20220025 01/07/2022

Superseded General Decision Number: TX20210025

State: Texas

Construction Type: Highway

Counties: Archer, Callahan, Clay, Collin, Dallas, Delta, Denton, Ellis, Grayson, Hunt, Johnson, Jones, Kaufman, Parker, Rockwall, Tarrant and Wise Counties in Texas.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on

contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number      Publication Date  
0                              01/07/2022

\* SUTX2011-007 08/03/2011

	Rates	Fringes
CONCRETE FINISHER (Paving and Structures).....	\$ 14.12	
ELECTRICIAN.....	\$ 19.80	
FORM BUILDER/FORM SETTER		
Paving & Curb.....	\$ 13.16	
Structures.....	\$ 13.84	
LABORER		
Asphalt Raker.....	\$ 12.69	
Flagger.....	\$ 10.06	
Laborer, Common.....	\$ 10.72	
Laborer, Utility.....	\$ 12.32	
Pipelayer.....	\$ 13.24	
Work Zone Barricade Servicer.....	\$ 11.68	
POWER EQUIPMENT OPERATOR:		
Asphalt Distributor.....	\$ 15.32	
Asphalt Paving Machine.....	\$ 13.99	
Broom or Sweeper.....	\$ 11.74	
Concrete Pavement Finishing Machine.....	\$ 16.05	
Concrete Saw.....	\$ 14.48	
Crane Operator, Lattice Boom 80 Tons or Less.....	\$ 17.27	
Crane Operator, Lattice Boom over 80 Tons.....	\$ 20.52	
Crane, Hydraulic 80 Tons or Less.....	\$ 18.12	
Crawler Tractor.....	\$ 14.07	
Excavator, 50,000 pounds or less.....	\$ 17.19	
Excavator, over 50,000 pounds.....	\$ 16.99	
Foundation Drill , Truck Mounted.....	\$ 21.07	
Foundation Drill, Crawler Mounted.....	\$ 17.99	
Front End Loader 3 CY or Less.....	\$ 13.69	
Front End Loader, over 3 CY.....	\$ 14.72	
Loader/Backhoe.....	\$ 15.18	
Mechanic.....	\$ 17.68	
Milling Machine.....	\$ 14.32	

Motor Grader, Fine Grade.....	\$ 17.19
Motor Grader, Rough.....	\$ 16.02
Pavement Marking Machine.....	\$ 13.63
Reclaimer/Pulverizer.....	\$ 11.01
Roller, Asphalt.....	\$ 13.08
Roller, Other.....	\$ 11.51
Scraper.....	\$ 12.96
Small Slipform Machine.....	\$ 15.96
Spreader Box.....	\$ 14.73
Servicer.....	\$ 14.58
Steel Worker (Reinforcing).....	\$ 16.18
TRUCK DRIVER	
Lowboy-Float.....	\$ 16.24
Off Road Hauler.....	\$ 12.25
Single Axle.....	\$ 12.31
Single or Tandem Axle Dump	
Truck.....	\$ 12.62
Tandem Axle Tractor with	
Semi Trailer.....	\$ 12.86
Transit-Mix.....	\$ 14.14
WELDER.....	\$ 14.84

-----  
 ---

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

---

"General Decision Number: TX20220026 01/07/2022

Superseded General Decision Number: TX20210026

State: Texas

Construction Type: Heavy

Counties: Johnson, Parker and Tarrant Counties in Texas.

Heavy Construction Projects (Including Water and Sewer Lines)



Scraper.....\$ 10.00  
Reinforcing Steel Setter.....\$ 10.64  
TRUCK DRIVER.....\$ 7.34

-----  
---  
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

2. SECTION 11-02 SCOPE OF WORK, add paragraphs D and E to read as follows:

a. Add paragraph D to read as follows:

D. The Contractor shall coordinate with the Texas Department of Transportation Southeast Connector Project. The City anticipates the project will be under construction simultaneously at a given point, so it will be required that line items such stormwater management controls (SWPPP), traffic control, and pavement construction between the two projects to ensure minimal inconveniences to all the residents in this area. The contractor shall attendance any progress, coordination, or construction meeting between the TxDOT and the City of Arlington as directed by the City Engineers.

b. Add paragraph E to read as follows:

E. Northbound one-way traffic will be allowed for the exclusive installation of stormwater improvements, water/sanitary sewer utilities, and paving operations south of Enchanted Bay Boulevard to IH-20. The contractor shall maintain continuous work of the stormwater improvements, water/sanitary sewer utilities, and paving operations once one-way traffic control is in place. Failure to maintain continuous work will require the contractor to provide two-way traffic according to City specifications at no additional expense to the City.

c. Add paragraph F to read as follows:

Bowman Springs Road shall open to two-way traffic once all pavement and pertinent construction along Bowman Springs Road and adjacent street is complete, and Bowman Springs Road can safely allow vehicle traffic.

d. Add paragraph G to read as follows:

Full closure of Bowman Springs Road at intersection of Greenspring Drive and Future Pleasant Ridge Road will be allowed for the construction of Culvert C1. Intersection Closure Limits details are shown at the end of the Addendum No. 1. Installation of Culvert C1, all drainage improvements, all water and sanitary sewer improvements, paving, and flat work within the vicinity of the Greenspring Drive/Pleasant Ridge Road intersection shall be substantially complete to allow full

traffic flow within 200 consecutive calendar days from the start of the road closure. Contractor must provide the City a schedule for this work showing the start and end dates. Failure to substantially complete to allow full traffic flow in accordance with the approved schedule will result in the Contractor being charged liquidated damages in the amount of two thousand dollars (\$2,000) per day after the approved end date.

3. SECTION 11-15 TIME FOR COMPLETION AND LIQUIDATED DAMAGE, revised to read:

A. Since time is of the essence, the City has seen fit to establish the time required to complete this project. The time, as set out in SECTION 6 of this contract, will be the maximum number of calendar days allowed to substantially complete this project. Substantially complete is defined as having completed all bid items included in the contract to allow the facilities to function as designed. Failure of the Contractor to complete the work within this time will result in damages being sustained by the City. Such damages are, and will continue to be, impracticable and extremely difficult to determine. The Contractor will pay the City one thousand dollars (**\$1,000**) for each calendar day of delay (including Sundays and holidays) in finishing the work in excess of time specified for completion, plus any authorized time extensions. Execution of the contract under these specifications shall constitute agreement by the City and Contractor that one thousand dollars (**\$1,000**) is the minimum value of the costs and actual damage caused by failure of the Contractor to complete the work within the allotted time, that such sum is liquidated damages and shall not be construed as a penalty, and that such sum may be deducted from payments due the Contractor if such delay occurs.

B. Full closure of Bowman Springs Road at intersection of Greenspring Drive and Future Pleasant Ridge Road will be allowed for the construction of Culvert C1. Intersection Closure Limits details are show at the end of the Addendum No. 1. Installation of Culvert C1, all drainage improvements, all water and sanitary sewer improvements, paving, and flat work within the vicinity of the Greenspring Drive/Pleasant Ridge Road intersection shall be substantially complete to allow full traffic flow within 200 consecutive calendar days from the start of the road closure. Contractor must provide the City a schedule for this work showing the start and end dates. Failure to substantially complete to allow full traffic flow in accordance with the approved schedule will result in the Contractor being charged liquidated damages in the amount of two thousand dollars (**\$2,000 per calendar day**) after the approved end date.

4. SECTION 11-21 QUALITY ASSURANCE/QUANLITY CONTROL (QA/QC), paragraph D is revised to read:

D. All testing shall be coordinated through the Inspector. Results of tests shall be based on findings by the City's contracted testing facility. The Contractor shall provide sufficient notice for any changes or issues that will affect the scheduled testing. If sufficient notice is not provided, the Contractor shall bear the cost of any cancellation charges by the

testing firm. The Contractor shall also be responsible for any charges of stand-by time due to construction delays or material delivery.

5. SECTION 11-23 SATURDAY OR CITY HOLIDAY INSPECTION, revised to read:

1. Below are holidays observed by the City of Arlington. Actual date/day that the holiday is observed changes yearly based on the calendar. No work will be permitted except in the most extreme circumstances and with prior approval from the Construction Services Manager. If approved to work on a holiday, the Saturday inspection rates will apply.

- » Martin Luther King Day
- » President's Day
- » Good Friday
- » New Year's Day
- » Memorial Day
- » Juneteenth
- » Independence Day
- » Labor Day
- » Thanksgiving Day
- » Thanksgiving Friday
- » Christmas Eve
- » Christmas Day

In addition to the above, no work will be permitted on the weekend adjoining a holiday that falls on Friday or Monday.

6. Add SECTION 11-31 AS-BUILT PLANS to read:

The contractor shall submit as-built plans that records all pertinent revisions made during construction as well as any underground utilities or structure locations that are encountered. Pertinent revisions include horizontal adjustments greater than one foot and vertical adjustments greater than 0.1 feet. A portable document format (PDF) copy of the as-built plans shall be submitted prior to final estimate. As-built plans consist of markups that clearly show revisions to the original plans. As-built plans are not required to be sealed by a professional engineer.

7. SECTION 12-34 BACKFILL AND CLEANUP

a. Revise paragraph D to read:

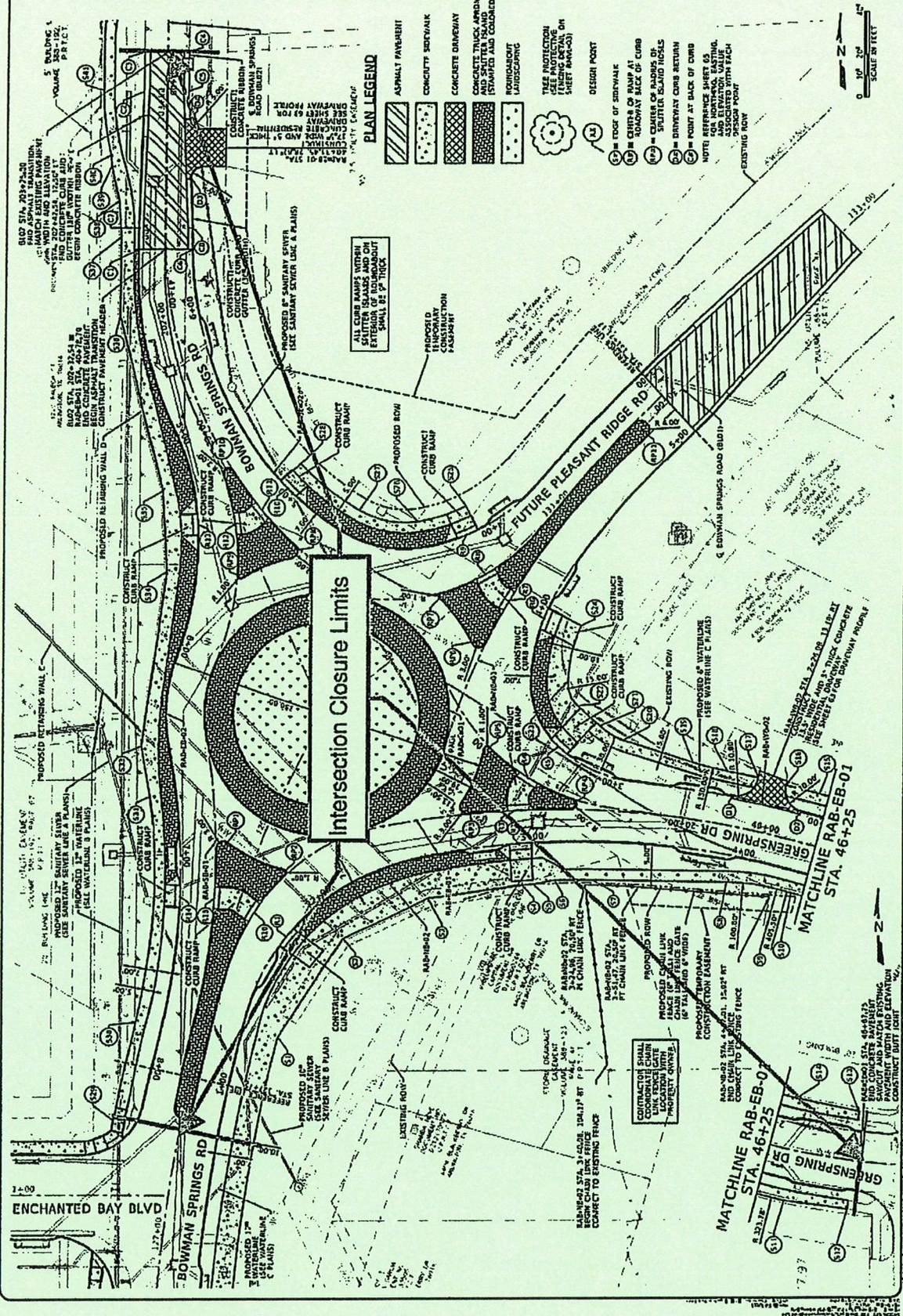
D. All concrete shall be backfilled as soon as possible. If "honeycomb" appears, the Contractor shall grout back side to smooth out the surface within twenty-four (24) hours of form removal.

b. Revise paragraph E to read:

E. Where lines or services are laid in, along, or across street pavement the pavement shall be left in a clean and acceptable condition. At the end of each work day the Contractor shall sweep and/or wash the pavement to leave the roadway completely clean of dirt and debris. Dirt, debris, and/or wash water shall be

collected for appropriate disposal and shall NOT be washed into waterways or storm drains. Other suitable methods of maintaining the pavement in a clean, unobstructed condition may be utilized by the Contractor. No additional payment will be made for cleaning of pavement. Backfill and clean-up shall be considered subsidiary to the work performed under this contract.

8. SECTION 13-10 CONCRETE CURB AND GUTTER, add paragraph F to read:
  - F. Refer to Section 13-16 for additional concrete specifications.
9. SECTION 13-11 CONCRETE VALLEY CUTTERS, add paragraph C to read:
  - C. Refer to Section 13-16 for additional concrete specifications.
10. SECTION 13-13 CONCRETE SIDEWALKS, add paragraph C to read:
  - C. Refer to Section 13-16 for additional concrete specifications.
11. SECTION 13-14 BARRIER FREE RAMPS, add paragraph D to read:
  - D. Refer to Section 13-16 for additional concrete specifications.
12. SECTION 13-15 CONCRETE PANEL REPLACEMENT, add paragraph E to read:
  - E. Refer to Section 13-16 for additional concrete specifications.
13. SECTION 13-16 CONCRETE PAVEMENT, revise to read:  
SECTION 13-16 CONCRETE/CONCRETE PAVEMENT
14. SECTION 13-16 CONCRETE/CONCRETE PAVEMENT
  - a. Revise paragraph A.1 to read:
    - A.1. This item shall consist of portland cement concrete pavement, panel replacement, sidewalk, driveways, retaining walls, etc., with reinforcement as shown on plans, with or without monolithic curbs, constructed as herein specified on the prepared subgrade or other base course in conformity with the lines, grades, thickness and typical cross-sections shown on plans. Concrete shall be considered of satisfactory quality provided:
      - a. it is made of materials accepted for the job,
      - b. in the proportions approved by the City and
      - c. mixed, placed, finished and cured in accordance with the requirements of this specification and meets the requirements herein specified.
  - b. Add paragraph F.1.g. to read:
    - F.1.g. Mobile batch trucks and/or volumetric trucks will not be permitted for use for any concrete.
15. SECTION 15-04 CONCRETE DRAINAGE STRUCTURES, add paragraph J to read:
  - J. Refer to Section 13-16 for additional concrete specifications.
16. SECTION 15-06 REINFORCED CONCRETE CHANNEL/SLOPE, add paragraph C to read:
  - J. Refer to Section 13-16 for additional concrete specifications.



Intersection Closure Limits

- PLAN LEGEND**
- ASPHALT PAVEMENT
  - CONCRETE PAVEMENT
  - CONCRETE DRIVEWAY
  - CONCRETE TRUCK APRON (STAIRS AND COULDS)
  - PAVEMENT MARKINGS
  - TREE PROTECTION (SEE PROTECTIVE FENCING DRAWING ON SHEET RAB-01)
  - DESIGN POINT

- ① = FOOT OF SIDEWALK
  - ② = CENTER OF RAMP AT ROADWAY BACK OF CURB
  - ③ = CENTER OF RADIOS OF SPLITTER ISLAND NOSELS
  - ④ = DRIVEWAY CURB RETURN POINT AT BACK OF CURB
- NOTE: REFERENCE SHEET 63 FOR NORTH-SOUTH EASTING ASSOCIATED WITH EACH DESIGN POINT

**TOTAL SUMMARY**

**MOBILIZATION & SWPPP** \$ \_\_\_\_\_  
**(Items 101 – 102)**

**PAVING IMPROVEMENTS** \$ \_\_\_\_\_  
**(Items 201 - 260)**

**DRAINAGE IMPROVEMENTS** \$ \_\_\_\_\_  
**(Items 301 – 344)**

**WATER IMPROVEMENTS – PUBLIC WORKS** \$ \_\_\_\_\_  
**FUNDED (Items 401 – 415)**

**WATER IMPROVEMENTS – WATER UTILITIES** \$ \_\_\_\_\_  
**FUNDED (Items 501 – 522)**

**SANITARY SEWER IMPROVEMENTS – TWDB** \$ \_\_\_\_\_  
**FUNDED (Items 601 - 631)**

**SEWER IMPROVEMENTS – PUBLIC WORKS** \$ \_\_\_\_\_  
**FUNDED (Items 701 - 708)**

**STREETLIGHTS, FIBER & COMMUNICATION** \$ \_\_\_\_\_  
**IMPROVEMENTS (Items 801-808)**

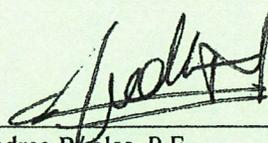
**TREES & LANDSCAPE IMPROVEMENTS** \$ \_\_\_\_\_  
**(Items 901 - 910)**

**TOTAL BASE BID** \$ \_\_\_\_\_

**TOTAL BASE BID + ALTERNATE A** \$ \_\_\_\_\_

ACKNOWLEDGEMENT/ACCEPTANCE:

The undersigned does hereby agree to the additions, stipulations, and terms outlined in **ADDENDUM NO.1** to the Plans and Specifications for the **BOWMAN SPRINGS ROAD (IH 20 – ENCHANTED BAY BOULEVARD)** Project, **City of Arlington Project No. PWST18001.**



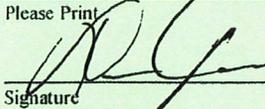
\_\_\_\_\_  
Andrea Ruales, P.E.  
Senior Engineer/ Engineering Operations  
Public Works and Transportation

The bidder shall acknowledge his/her Addendum in the appropriate space below and **include it in the bid proposal otherwise the bid will be considered as non-responsive.**

Contractor:

Tiseo Paving Co.  
Company

By Louis Tiseo  
Please Print

  
Signature

President  
Title - Please Print

**ADDENDUM NO. 2**  
**to the Plans and Specifications for**  
**BOWMAN SPRINGS ROAD**  
**(IH 20 – ENCHANTED BAY BOULEVARD)**

**CITY OF ARLINGTON**  
**PROJECT NO. PWST18001**

**February 25, 2022**

The following instructions shall constitute Addendum No. 2 to the Plans and Specifications for the above titled project. The Bidder shall acknowledge receipt of the addendum in the appropriate spaces provided on the last page of this addendum and include the acknowledgement/acceptance with the sealed bid. Addendum not acknowledged will be considered non-responsive and the bid will not be considered for award. They shall supersede any and all instructions and shall become as much a part of the Plans and Specifications as though written therein. The successful bidder shall also acknowledge acceptance of the addendum on the final contract:

**I. CLARICATION & ADDITIONAL INFORMATION:**

1. The questions below were presented during the pre-bid meeting:
  - a. Question: Is AT&T duct bank in conflict with waterline?  
Answer: No, the ATT duct bank has been relocated.
  - b. Will the City of Arlington allow work between IH-20 and Enchanted Bay Blvd during the closure of Greenspring Rd/Future Pleasant Ridge Rd intersection?  
Answer: Yes
  - c. Question: Will the City allow by-pass pumping on the utility easement shown on Sheet SS-2 in plans?  
Answer: Yes, the City will allow the 15' utility easement to set up bypass pumping.
  - d. Question: What is the difference between Item No. 228 & 229.  
Answer: Item No. 228 is to furnish and install the retaining wall with no form liner. Item No. 229 is the additional cost to install form liner to Item No. 228.
  - e. Question: Can the contractor order pipe before City Council approval.  
Answer: Contractor may order pipe at contractor's risk.
  - f. Question: Will the City pay for material on hand.  
Answer: The city will consider paying materials on hand. Payment for materials on hand is at the City's discretion.
2. Please see the Pre-Bid Agenda attached to the end of the Addendum No. 2.

**PRE-BID MEETING AGENDA**

for

**Bowman Springs Road  
(Interstate 20 to Enchanted Bay)**

**PROJECT NO. PWST18001**

**I. Introduction**

1. City Employees
  1. Project Engineer – Sabino Martin
  2. Project Inspector – Mark Abrego
2. Sign-in Sheet
3. Contractor's Prequalification Requirements:
  1. Prime – Concrete Paving
  2. Subs – Concrete Structures, Storm Sewer, Subgrade Preparation, Sanitary Sewer Manhole, Sanitary Sewer Manhole Rehabilitation, Water/Sewer
    - a. Contractor is to provide list of subcontractors and the type of work they will be performing at time of contract execution. Contractor and Subcontractors must be prequalified prior to bid opening. No post prequalification is allowed.
    - b. City of Arlington (COA) recommends Contractor verify their and their subs' status after this meeting.
4. BID DATE is: March 8, 2022 at 3:00-PM

**II. Project Review**

1. Project Description
  1. The project involves rebuilding Bowman Springs Road from I-20 to Greenspring Rd/Future Pleasant Ridge Rd Intersection.
  2. Other improvement include:
    - a. Installing a roundabout at Greenspring Rd/Future Pleasant Ridge Rd intersection
    - b. Installing a new culvert and storm drain system
    - c. Installing water and sanitary sewer pipe and appurtenances.
    - d. Installing streetlights, and
    - e. Installing sidewalks
      - a. Sidewalk extends north of Greenspring Rd to Falcon Lake Dr
2. Potential Conflicts / Unusual Areas
  1. Greenspring Rd / Future Pleasant Ridge Intersection Closure to build
    - a. Addendum #1
  2. Marti Van Ravenswaay Park

- a. Coordination with COA Parks Department
3. AT&T Duct Bank
  - a. Large portion was relocated
  - b. Portion near Enchanted that remained in place and ATT provide concrete cap for protection.
4. TxDOT Southeast Connector
  - a. Contractor will need to coordinate with TxDOT
  - b. Schedule for TxDOT Southeast Connector has not been released.
3. Major Proposal Bid Items
  1. Unclassified Roadway Excavation: 11,200 CY
  2. Furnish & Install Compacted Roadway Fill: 9,200 CY
  3. Preparation of Subgrade: 15,760 SY
  4. 9-Inch Concrete Paving: 12,500 SY
  5. 4-inch sidewalk: 2,300 SY
  6. 5-inch sidewalk: 2, 450 SY
  7. Approximately 3,800 LF of reinforced concrete pipe of various sizes
  8. Approximately 3,900 LF of PVC water pipe of various sizes
  9. Approximately 4,150 LF of PVS sanitary sewer pipe of various sizes
4. Revisions to Instructions to Bidders
  1. The following must be included with bid proposal otherwise bid will be considered as non-responsive and bid will not be considered for award:
    - a. Approved Bidder's bond, or certified or cashier's check
    - b. Signed Section 3 Contractor Residency Statement
    - c. Signed Acknowledgement/Acceptance of addendum(s) – last page of the addendum
    - d. Vendor Compliance with Reciprocity on Non-Resident
    - e. MWBE Utilization Plan – Section 3A
5. MWBE – Office of Business Diversity
  1. MWBE Utilization Plan and Additional Required Documents
  2. The City's Minority/Woman Business Enterprise (MWBE) utilization goal, for this project is 34%
  3. All potential bidders MUST submit the following to Sabino Martin at Sabino.Martin@arlingtontx.gov no later than 3:00 p.m. CDT, on Thursday, March 10, 2022:
    - a. Letter of Intent to Subcontract
    - b. Good Faith Effort Checklist
  4. Post Award Compliance – Creating an account and inputting subcontractor vendors into B2Gnow system. Each month Prime will go and input payments made to the subcontractors.
6. Special Provisions of Note

1. Section 11-06 (Insurance)
    - a. Umbrella Liability for this project is \$5,000,000 Each Occurrence
    - b. Since CCTV is required on this project, the contractor or subcontractor performing the CCTV must provide Professional Liability.
    - c. Ensure 30 day notice of cancellation is on certificate(s).
    - d. Copy of the full endorsement must be included with the certificate(s).
  2. Section 11-12 (Submittals) – Contractor to provide shop drawings/product data prior to purchase or fabrication.
  3. Sections 11-15 (Time for Completion & Liquidated Damages): Time for completion will be strictly enforced.
  4. Section 11-17 (Computation of Contract Time for Completion & Delays) – Any requests for an extension of time must be submitted in writing within 14 calendar days from when a delay occurs.
  5. Section 11-26 (Owner Notification): Contractor will be responsible for providing door hangers and notifying property owners/occupants of work potentially disrupting businesses or homes. City will provide electronic copy of doorhangers to contractor for production at Pre-Con.
  6. Section 11-28 (Project Signs): New design/City logo for project signs. Jpeg file of the graphics is available on City web page.
  7. Section 13-14 (Barrier Free Ramps): TXDOT PED-18 will be used as shown in plans.
  8. Section 14-04 (Valve Operations Notifications) – Contractor to provide a minimum of five (5) business days of notification prior to any valve operations.
  9. Section 15-07 (CCTV Inspections of Storm Drain System) – Contractor will perform CCTV inspections. The contractor is to remedy defects prior to acceptance. This section does not apply to sanitary sewer CCTV inspection. For CCTV Inspections of Sanitary Sewer refer to Section 14-23.
  10. Section 15-08 (G.P.S. Data on Stormwater Attributes) – Contractor to provide GPS data on all new stormwater items installed with project.
  11. Class "C" concrete now specified for most uses. #4 rebar now specified for most uses. Check construction details.
7. Traffic Control Plan (Sections 12-03 Detours and Barricades) - ALL subsidiary to other pay items
1. Submit 1 copy of TCP together with completed checklist to Traffic Engineering and not inspector or engineer. TCP submittal can be submitted at the Public Works front desk on the 2<sup>nd</sup> floor of City Hall.
  2. Barricades/Traffic Control Devices shall be furnished according to the Texas Manual on Uniform Traffic Control Devices.
  3. No vertical panels allowed unless approved by City.
  4. Per Addendum #1:
    - a. Greenspring Rd/Pleasant Ridge Rd intersection closure is allowed up to 200 Days

- b. Bowman Springs is allowed one-way northbound traffic.
- 8. Utility Status
  - 1. All relocations are complete
  - 2. AT&T has a major fiber optic duct bank
- 9. Supplier portal, IonWave
  - 1. To register as vendor or to download plans and specs, go to City's website, [https://www.arlingtontx.gov/city\\_hall/departments/finance/purchasing/become\\_a\\_vendor\\_supplier](https://www.arlingtontx.gov/city_hall/departments/finance/purchasing/become_a_vendor_supplier).

**Addendum Notifications**

- 2. All addendums will be notified via portal notification process. Download addendum from portal, Ionwave. Contractor's responsibility to ensure he/she is aware of any and all addendums issued.
- 3. Addendum #1 major items. Please see Addendum #1 on portal for all clarifications and changes.
  - a. Greenspring Rd and Future Pleasant Ridge Closure
    - a. 200 consecutive calendar days
    - b. \$2,000 per day liquidated damages
  - b. Northbound one-way traffic will be allowed for the exclusive installation of stormwater improvements, water/sanitary sewer utilities, and paving operations south of Enchanted Bay Blvd to IH-20.

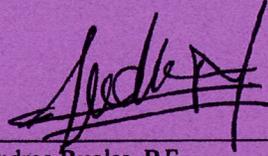
**III. Anticipated Schedule**

- 1. All question need to be submitted no later than March 1, 2022 at 12:00 PM.
- 2. Bid Date – March 8, 2022 at 3:00 PM
- 3. Recommendation to City Council – April 12, 2022
- 4. Pre-Construction Meeting – Tentatively Scheduled Week of April 25, 2022
- 5. Construction Briefing Meeting – Tentatively Scheduled Week of May 5, 2022
- 6. Estimated Start Work Date – Week of May 16, 2022
- 7. Time for Completion – 450
- 8. Liquidated Damage Amount:
  - 1. \$1,000 per calendar day beyond 450 contract days
  - 2. \$2,000 per calendar day beyond 200 days for Greenspring Rd and Future Pleasant Ridge Rd
- 9. Bonus Amount – \$500 per calendar day
- 10.

**IV. Questions**

ACKNOWLEDGEMENT/ACCEPTANCE:

The undersigned does hereby agree to the additions, stipulations, and terms outlined in **ADDENDUM NO. 2** to the Plans and Specifications for the **BOWMAN SPRINGS ROAD (IH 20 - ENCHANTED BAY BOULEVARD)** Project, City of Arlington Project No. PWST18001.



Andrea Ruales, P.E.  
Senior Engineer/ Engineering Operations  
Public Works and Transportation

*Lori Du*

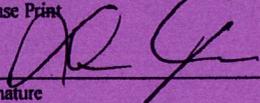
Lori Du, P.E.  
Civil Engineer  
Arlington Water Utilities

The bidder shall acknowledge his/her Addendum in the appropriate space below and include it in the bid proposal otherwise the bid will be considered as non-responsive.

Contractor:

Tiseo Paving Co.  
Company

By Louis Tiseo  
Please Print

  
Signature

President  
Title - Please Print

**ADDENDUM NO. 3**  
**to the Plans and Specifications for**  
**BOWMAN SPRINGS ROAD**  
**(IH 20 – ENCHANTED BAY BOULEVARD)**

**CITY OF ARLINGTON**  
**PROJECT NO. PWST18001**

**March 3, 2022**

The following instructions shall constitute Addendum No. 3 to the Plans and Specifications for the above titled project. **The Bidder shall acknowledge receipt of the addendum in the appropriate spaces provided on the last page of this addendum and include the acknowledgement/acceptance with the sealed bid. Addendum not acknowledged will be considered non-responsive and the bid will not be considered for award.** They shall supersede any and all instructions and shall become as much a part of the Plans and Specifications as though written therein. The successful bidder shall also acknowledge acceptance of the addendum on the final contract:

**I. CLARICATION & ADDITIONAL INFORMATION:**

1. The Contractor shall coordinate with Sage Natural Resources, LLC and property owner for the installation of the temporary driveway access to the gas well site. Temporary driveway access shall be provided prior to full closure the Greenspring Drive and Future Pleasant Ridge Road. Plans for a temporary driveway are presented in Addendum No. 3 and will be part of the conformed plan set. Additional sheets will be added to the end of the conformed plan set.

**II. CHANGE TO PLANS:**

1. Add TEMPORARY DRIVEWAY ACCESS plan sheet, SHEET: TDA, SEQ. 217. The Temporary Driveway Access plan sheet is added to the end of Addendum No. 3. The full-size version is available on the Supplier Portal.
2. Add CATTLE GUARD DETAILS (40' RECOVERY ZONE) plan sheet, SHEET: CGD, SEQ. 218. The Cattle Gard Details plan sheet is added to the end of Addendum No. 3. The full-size version is available on the Supplier Portal.

**III. CHANGE TO SPECIAL PROVISIONS:**

1. SECTION 11-02 SCOPE OF WORK, add paragraph H. to read as follows:

H. The Contractor shall coordinate with Sage Natural Resources, LLC and property owner for the installation of the temporary driveway access to the gas well site. Temporary driveway access shall be provided prior to full closure the Greenspring Drive and Future Pleasant Ridge Road.

**IV. CHANGE TO PROPOSAL – SECTION 6:**

**1. REVISE Base Bid Items**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
238	Furnish & Install Grass Sodding to match existing yard, complete and in place for the unit price of	_____ Dollars and _____ Cents	10,300	Square Yard	\$	\$
239	Furnish & Install Hydromulch to disturbed areas, complete and in place for the unit price of	_____ Dollars and _____ Cents	15,250	Square Yard	\$	\$
344	Post-Construction CCTV Inspections of Storm Drain System Installation in accordance with Section 15-07, work fully performed for the unit price of	_____ Dollars and _____ Cents	4,277	Linear Foot	\$	\$



NOTES:  
 1. IMPROVE PAVEMENT TYPE TO TYPE 'A' GRADE AND TYPE 'C'  
 2. 10' DP PAVEMENT SHALL MATCH EXISTING GRADE



CITY OF ARLINGTON, TEXAS  
 TEMPORARY DRIVEWAY ACCESS  
 DATE: 2/10/2022 SCALE: 1/32" (2" = 34') SHEET: TDA  
 DESIGNED BY: DRAWN BY: SEQ: 217



**TOTAL SUMMARY**

**MOBILIZATION & SWPPP** \$ \_\_\_\_\_  
**(Items 101 – 102)**

**PAVING IMPROVEMENTS** \$ \_\_\_\_\_  
**(Items 201 - 263)**

**DRAINAGE IMPROVEMENTS** \$ \_\_\_\_\_  
**(Items 301 – 344)**

**WATER IMPROVEMENTS – PUBLIC WORKS** \$ \_\_\_\_\_  
**FUNDED (Items 401 – 415)**

**WATER IMPROVEMENTS – WATER UTILITIES** \$ \_\_\_\_\_  
**FUNDED (Items 501 – 522)**

**SANITARY SEWER IMPROVEMENTS – TWDB** \$ \_\_\_\_\_  
**FUNDED (Items 601 - 631)**

**SEWER IMPROVEMENTS – PUBLIC WORKS** \$ \_\_\_\_\_  
**FUNDED (Items 701 - 708)**

**STREETLIGHTS, FIBER & COMMUNICATION** \$ \_\_\_\_\_  
**IMPROVEMENTS (Items 801-808)**

**TREES & LANDSCAPE IMPROVEMENTS** \$ \_\_\_\_\_  
**(Items 901 - 910)**

**TOTAL BASE BID** \$ \_\_\_\_\_

**TOTAL BASE BID + ALTERNATE A** \$ \_\_\_\_\_

ACKNOWLEDGEMENT/ACCEPTANCE:

The undersigned does hereby agree to the additions, stipulations, and terms outlined in **ADDENDUM NO. 3** to the Plans and Specifications for the **BOWMAN SPRINGS ROAD (IH 20 – ENCHANTED BAY BOULEVARD)** Project, City of Arlington Project No. **PWST18001**.

*Andrea Ruales*

---

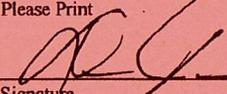
Andrea Ruales, P.E.  
Senior Engineer/ Engineering Operations  
Public Works and Transportation

The bidder shall acknowledge his/her Addendum in the appropriate space below and **include it in the bid proposal otherwise the bid will be considered as non-responsive.**

Contractor:

Tiseo Paving CO.  
Company

By Louis Tiseo  
Please Print

  
Signature

President  
Title - Please Print

**ADDENDUM NO. 4**  
to the Plans and Specifications for

**BOWMAN SPRINGS ROAD**  
(IH 20 – ENCHANTED BAY BOULEVARD)

**CITY OF ARLINGTON**  
**PROJECT NO. PWST18001**

March 7, 2022

The following instructions shall constitute **Addendum No. 4** to the Plans and Specifications for the above titled project. **The Bidder shall acknowledge receipt of the addendum in the appropriate spaces provided on the last page of this addendum and include the acknowledgement/acceptance with the sealed bid. Addendum not acknowledged will be considered non-responsive and the bid will not be considered for award.** They shall supersede any and all instructions and shall become as much a part of the Plans and Specifications as though written therein. The successful bidder shall also acknowledge acceptance of the addendum on the final contract:

**I. CHANGE TO PROPOSAL – SECTION 6:**

**1. REVISE Base Bid Items**

ITEM NO.	DESCRIPTION	UNIT PRICE IN WORDS	QTY	UNIT	PRICES IN FIGURES	
					UNIT PRICE	TOTAL
607	Furnish & Install 4-inch SDR-26 PVC Sanitary Sewer Service (Green Color) from main to property Line or easement line, including connection to existing sewer service, complete and in place for the unit price of	_____ Dollars and _____ Cents	7	Each	\$	\$

ACKNOWLEDGEMENT/ACCEPTANCE:

The undersigned does hereby agree to the additions, stipulations, and terms outlined in **ADDENDUM NO. 4** to the Plans and Specifications for the **BOWMAN SPRINGS ROAD (IH 20 – ENCHANTED BAY BOULEVARD)** Project, City of Arlington Project No. **PWST18001**.

*Lori Du*

\_\_\_\_\_  
Lori Du, P.E.  
Civil Engineer  
Water Utilities Department

The bidder shall acknowledge his/her Addendum in the appropriate space below and **include it in the bid proposal otherwise the bid will be considered as non-responsive.**

Contractor:

*Tised Paving CO.*  
\_\_\_\_\_  
Company

By *Louis Tises*  
\_\_\_\_\_  
Please Print

*[Signature]*  
\_\_\_\_\_  
Signature

*President*  
\_\_\_\_\_  
Title - Please Print

**SECTION NO. 7**

STATE OF TEXAS §

**Contract**

COUNTY OF TARRANT §

PROJECT NO. PWST18001

This Contract, made and entered into this 12<sup>th</sup> day of April, 2022, by and between the City of Arlington of Tarrant County, Texas, a municipal corporation, hereinafter called "Owner," and Tiseo Paving Company, hereinafter called "Contractor."

WITNESSETH:

For and in consideration of the payment, agreements and conditions hereinafter mentioned, and under the conditions expressed in the bonds herein, Contractor hereby agrees to complete the construction of improvements described as follows:

**BOWMAN SPRINGS ROAD  
(IH 20 to ENCHANTED BAY BOULEVARD)**

**City of Arlington Project No. PWST18001**

in the City of Arlington, Texas, and all extra work in connection therewith, under the terms as stated in the latest versions of the:

Standard Specifications for Public Works Construction Standards, as issued by the North Central Texas Council of Governments, and;

City of Arlington Standard Specifications For Water & Sanitary Sewer Construction,

as they may be amended from time to time (hereinafter collectively called "Standard Specifications"), and under the terms of all Special Provisions and Special Specifications of this Contract; and at his, her or their own proper cost and expense to furnish all superintendence, labor, insurance, equipment, tools and other accessories and services necessary to complete the said construction in accordance with all the Contract documents, incorporated herein as if written word for word, and in accordance with the plans, which include all maps, plats, blueprints, and other drawings and printed or written explanatory manner therefore, and the specifications as prepared by **City of Arlington** hereinafter called Engineer, who has been identified by the endorsement of the Contractor's written proposal, these General Provisions of the Standard Specifications, the Special Provisions, and the Special Specifications of this Contract, the payment, performance, and maintenance bonds hereto attached; all of which are made a part hereof and collectively evidence and constitute the entire Contract.

The Contractor hereby agrees to commence work within ten (10) days from the beginning date of the project as provided in the written Notice to Proceed and to complete the work within 450 calendar days from the beginning date of the project.

The Owner agrees to pay the Contractor in current funds for the performance of the Contract in accordance with the proposal submitted therefore, subject to additions and deductions, as provided therein.

This Contract is entered into subject to the Charter and ordinances of Owner, as they may be amended from time to time, and is subject to and is to be construed, governed, and enforced under all applicable State of Texas and federal laws. Situs of this Contract is agreed to be Tarrant County, Texas, for all purposes including performance and execution.

If any of the terms, sections, subsections, sentences, clauses, phrases, provisions, covenants, or conditions of this Contract is held for any reason to be invalid, void or unenforceable, the remainder of the terms, sections, subsections, sentences, clauses, phrases, provisions, covenants, or conditions of this Contract shall remain in full force and effect and shall in no way be affected, impaired, or invalidated.

Owner reserves the right to terminate this agreement immediately upon breach of any term or provision of this Contract by Contractor; or, if any time during the term of this Contract, Contractor shall fail to commence the work in accordance with the provisions of this Contract or fail to diligently provide Services in an efficient, timely, and careful manner and in strict accordance with the provisions of this Contract or fail to use an adequate number or quality of personnel and equipment to complete the work or fail to perform any of its obligations under this Contract, then Owner shall have the right, if Contractor shall not cure any such default after thirty (30) days written notice thereof, to terminate this Contract and complete the work in any manner it deems desirable, including engaging the Services of other parties therefore. Any such act by Owner shall not be deemed a waiver of any other right or remedy of Owner. If after exercising any such remedy the cost to Owner of the performance of the balance of the work is in excess of that part of the Contract sum which has not theretofore been paid to Contractor hereunder, Contractor shall be liable for and shall reimburse Owner for such excess.

No right or remedy granted herein or reserved to the parties is exclusive of any other right or remedy herein by law or equity provided or permitted; but, each shall be cumulative of every other right or remedy given hereunder. No covenant or condition of this Contract may be waived without consent of the parties. Forbearance or indulgence by either party shall not constitute a waiver of any covenant or condition to be performed pursuant to this Contract.

Contractor's status shall be that of an independent Contractor and not an agent, servant, employee or representative of Owner in the performance of this Contract. No

term or provision of, or act of Contractor or Owner under this Contract shall be construed as changing that status.

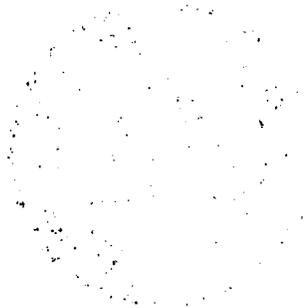
This Contract embodies the complete agreement of the parties hereto, superseding all oral or written previous and contemporary agreements between the parties relating to matters herein; and except as otherwise provided herein, cannot be modified without the written agreement of the parties.

Owner and Contractor each bind themselves, their successors, executors, administrators and assigns to the other party to this Contract. Neither Owner nor Contractor will assign, sublet, subcontract or transfer any interest in this Contract without the written consent of the other party. No assignment, delegation of duties or subcontract under this Contract will be effective without the written consent of Owner.

It is further agreed that one or more instances of forbearance by the City in the exercise of its rights herein shall in no way constitute a waiver thereof.

In performing this Contract, Contractor agrees to use diligent efforts to purchase all goods and services from Arlington Businesses whenever such goods and services are comparable in availability, quality and price.

*{Signature Pages Follows}*



IN WITNESS WHEREOF, the parties of these presents have executed this agreement in the year and date first written above.

CONTRACTOR

Tiseo Paving Company  
Company Name

38-2209998-5  
Tax Identification Number:

By [Signature]  
Signature

Louis Tiseo  
Printed or Typed Name

President  
Printed or Typed Title

CITY OF ARLINGTON, TEXAS

ATTEST:

[Signature]  
Keith E. Brooks, P.E., CFM  
Director of Public Works  
and Transportation

[Signature]  
Alex Busken  
City Secretary

APPROVED AS TO FORM:  
TERIS SOLIS, City Attorney

BY [Signature]



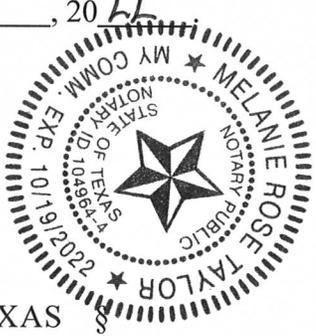
THE STATE OF TEXAS §

Contractor Acknowledgment

COUNTY OF Dallas §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared LOUIS TISED,  who is known to me or  who was proved to me on the oath of \_\_\_\_\_ (name of person identifying the acknowledging person) or  who was proved to me through \_\_\_\_\_ (description of identity card or other document issued by the federal or state government containing the picture and signature of the acknowledging person) to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed same for and as the act and deed of TISED PAVING CO, a corporation of Dallas County, Texas, and as PRESIDENT thereof, and for the purposes and consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 14 day of April, 2022.



Melanie Rose Taylor  
Notary Public In and For The State of Texas  
Melanie Rose Taylor  
Notary's Printed Name

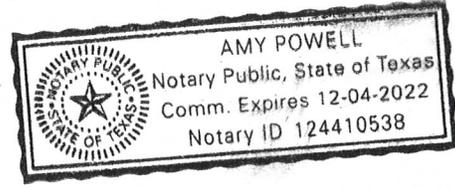
THE STATE OF TEXAS

City Acknowledgement

COUNTY OF TARRANT §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Keith E. Brooks, P.E., CFM, known to me to be a person and officer whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed same for and as the act of the City of Arlington, Texas, a Texas municipal corporation, and as Director of Public Works and Transportation thereof, and for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 27<sup>th</sup> day of April, 2022.



Amy Powell  
Notary Public In and For The State of Texas  
Amy Powell  
Notary's Printed Name

END OF SECTION

SECTION NO. 8

THE STATE OF TEXAS §  
COUNTY OF TARRANT §

Performance Bond

KNOW ALL BY THESE PRESENTS:

THAT Tiseo Paving Co., P. O. Box 270040  
of the City of Dallas, County of Dallas  
State of Texas hereinafter referred to as "PRINCIPAL," and

Hartford Fire Insurance Company, a corporate surety/sureties organized under the laws of the State of Connecticut and authorized to do business in the State of Texas, hereinafter referred to as "SURETY," (whether one or more), are held and firmly bound unto the CITY OF ARLINGTON, TEXAS, a municipal corporation located in Tarrant County, Texas, hereinafter referred to as "CITY," in the amount of Thirteen Million Three Hundred Eighteen Thousand DOLLARS and 00/100 CENTS (\$ 13,318,000.00), lawful money of the United States, to be paid in Arlington, Tarrant County, Texas, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, assigns, administrators and successors, jointly and severally; and firmly by these presents, the condition of this obligation is such that,

WHEREAS, PRINCIPAL entered into a certain written Contract with the City of Arlington dated the 12th day of April, 2022, a copy of which is attached hereto and made a part hereof, to furnish all materials, equipment, labor, supervision, and other accessories necessary for the construction of:

**BOWMAN SPRINGS ROAD  
(IH 20 to ENCHANTED BAY BOULEVARD)**

**City of Arlington Project No. PWST18001**

in the City of Arlington, Texas, as more particularly described and designated in the above referenced contract such contract being incorporated herein and made a part hereof as fully and to the same extent as if written herein word for word:

NOW THEREFORE,

If PRINCIPAL shall well, truly and faithfully perform and fulfill all of the undertakings, covenants, terms, conditions and agreements of the above referenced Contract in accordance with the plans, specifications and Contract documents during the original term thereof, and any extension thereof which may be granted with or without notice to SURETY, and during the life of any guaranty required under the Contract, and shall also well and truly perform and fulfill all the covenants, terms, conditions and agreements of

any and all authorized modifications of such Contract that may hereafter be made, notice of which modifications to SURETY being hereby waived, then this obligation shall be void, otherwise to remain in full force and effect; and in case PRINCIPAL shall fail to do so, it is agreed that CITY may do such work and supply such materials and charge the same against PRINCIPAL and SURETY on this obligation, and PRINCIPAL and SURETY hereon shall be subject to the liquidated damages mentioned in the Contract for each day's failure on its part to comply with the terms and provisions of such Contract. **This bond shall remain in effect for a period of one (1) year following the date of final acceptance of City of Arlington Project No. PWST18001.**

Provided, further, that if any legal action be filed on this Bond, venue shall lie in Tarrant County, Texas.

And, that SURETY, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work performed thereunder, or the plans, specifications, drawings, etc., accompanying same shall in any way 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 thereunder.

The undersigned and designated agent is hereby designated by SURETY as the agent resident in either Tarrant or Dallas County to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

IN WITNESS WHEREOF, this instrument is executed on this the 14th day of April, 2022.

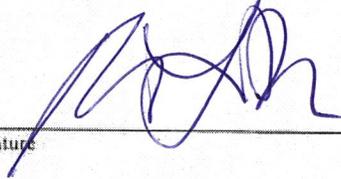
WITNESS

PRINCIPAL

By Melanie Taylor  
Signature  
Melanie Taylor  
Typed/Printed Name  
Admin  
Title  
419 US Hwy 80  
Address  
MESQUITE, TX 75150  
City State Zip

Tiseo Paving Co.  
Company  
By [Signature]  
Signature  
LOUIS TISEO  
Typed/Printed Name  
PRESIDENT  
Title  
P. O. Box 270040  
Address  
Dallas, TX 75227  
City State Zip

WITNESS

By  \_\_\_\_\_  
Signature

Meagan Reynolds  
Typed/Printed Name

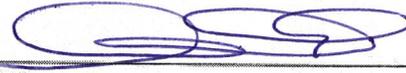
Surety Administrator  
Title

1175 W. Long Lake Road, Suite 200  
Address

Troy, MI 48098  
City State Zip

SURETY

Hartford Fire Insurance Company  
Company

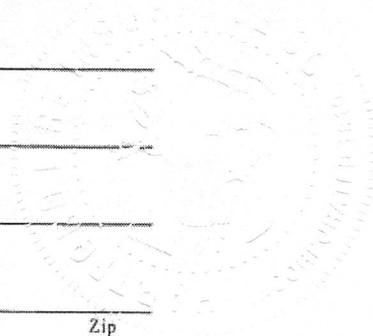
By  \_\_\_\_\_  
Signature

Susan L. Small  
Typed/Printed Name

Attorney-In-Fact  
Title

One Hartford Plaza  
Address

Hartford, CT 06155  
City State Zip



**NOTE: Date of Performance Bond must NOT be prior to date of Contract**

END OF SECTION

SECTION NO. 9

THE STATE OF TEXAS §  
COUNTY OF TARRANT §

Payment Bond

KNOW ALL BY THESE PRESENTS:

THAT Tiseo Paving Co., P. O. Box 270040  
of the City of Dallas, County of Dallas  
State of Texas hereinafter referred to as "PRINCIPAL", and

Hartford Fire Insurance Company, a corporate  
surety/sureties organized under the laws of the State of Connecticut and authorized  
to do business in the State of Texas, hereinafter referred to as "SURETY", (whether one  
or more), are held and firmly bound unto the CITY OF ARLINGTON, TEXAS, a  
municipal corporation located in Tarrant County, Texas, hereinafter referred to as  
"CITY", and unto all persons, firms and corporations who may furnish materials for or  
perform labor upon the buildings, structures or improvements referred to in the attached  
Contract, in the penal sum of <sup>Thirteen Million Three</sup>~~Hundred Eighteen Thousand~~ DOLLARS and 00/100 CENTS (\$13,318,000.00), lawful  
money of the United States, to be paid in Arlington, Tarrant County, Texas, for the  
payment of which sum well and truly to be made, we bind ourselves, our heirs, executors,  
administrators, successors, and assigns, jointly and severally; and firmly by these  
presents, the condition of this obligation is such that,

WHEREAS, PRINCIPAL entered into a certain Contract with the City of Arlington, dated  
the day of April 12th, 2022, a copy of which is attached hereto and made a  
part hereof, to furnish all materials, equipment, labor, supervision, and other accessories  
necessary for the construction of:

**BOWMAN SPRINGS ROAD  
(IH 20 to ENCHANTED BAY BOULEVARD)**

**City of Arlington Project No. PWST18001**

in the City of Arlington, Texas, as more particularly described and designated in the  
above referenced contract such contract being incorporated herein and made a part hereof  
as fully and to the same extent as if written herein word for word;

NOW THEREFORE,

If PRINCIPAL shall well, truly and faithfully perform its duties and make prompt  
payment to all persons, firms, subcontractors, corporations and claimants supplying labor

and materials in the prosecution of the work provided for in the above referenced Contract and any and all duly authorized modifications of such Contract that may hereafter be made, notice to SURETY of such modifications being hereby waived, then this obligation shall be void, otherwise to remain in full force and effect. **This bond shall remain in effect for a period of one (1) year following the date of final acceptance of City of Arlington Project No. PWST18001**

PROVIDED, further, that if any legal action be filed on this Bond, venue shall lie in Tarrant County, Texas.

And, that such SURETY, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work performed thereunder, or the plans, specifications, drawings, etc. accompanying same shall in any way 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 thereunder.

This Bond is given pursuant to the provisions of Chapter 2253 of the Government Code, as amended. The terms "payment bond beneficiary", "public work labor", and "public work material", as used herein, are in accordance with and as defined in the relevant provisions of Chapter 2253 of the Government Code.

The undersigned and designated agent is hereby designated by SURETY herein as the resident agent in either Tarrant or Dallas Counties to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

IN WITNESS WHEREOF, this instrument is executed on this the 14th day of April, 2022.

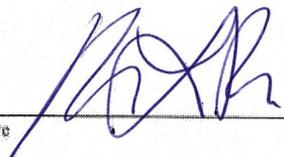
WITNESS

By Melanie Taylor  
Signature  
Melanie Taylor  
Typed/Printed Name  
ADMIN  
Title  
419 US Hwy 80  
Address  
MESQUITE, TX 75150  
City State Zip

PRINCIPAL

Tiseo Paving Co.  
Company  
By [Signature]  
Signature  
LOUIS TISEO  
Typed/Printed Name  
PRESIDENT  
Title  
P. O. Box 270040  
Address  
Dallas, TX 75227  
City State Zip

WITNESS

By   
Signature

Meagan Reynolds  
Typed/Printed Name

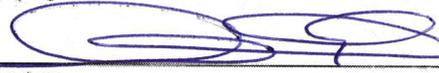
Surety Administrator  
Title

1175 W. Long Lake Road, Suite 200  
Address

Troy, MI 48098  
City State Zip

SURETY

Hartford Fire Insurance Company  
Company

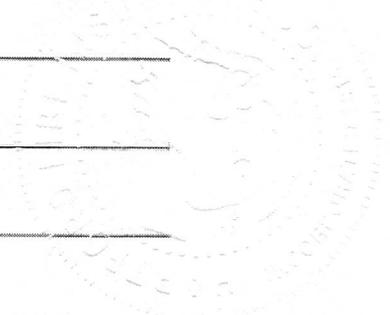
By   
Signature

Susan L. Small  
Typed/Printed Name

Attorney-In-Fact  
Title

One Hartford Plaza  
Address

Hartford, CT 06155  
City State Zip



The Resident Agent of the SURETY in either Tarrant or Dallas County, Texas, for delivery of notice and service of process is:

NAME Donnie Doan

ADDRESS 8144 Walnut Hill Lane, 16th Floor, Dallas, TX 75321

**NOTE: Date of Payment Bond must NOT be prior to date of Contract.**

END OF SECTION

SECTION NO. 10

THE STATE OF TEXAS §

Maintenance Bond

COUNTY OF TARRANT §

KNOW ALL BY THESE PRESENTS:

THAT Tiseo Paving Co., P. O. Box 270040

of the City of Dallas, County of Dallas

State of Texas hereinafter referred to as "PRINCIPAL," and

Hartford Fire Insurance Company, a corporate surety/sureties organized under the laws of the State of Connecticut and authorized to do business in the State of Texas, hereinafter referred to as "SURETY," (whether one or more), are held and firmly bound unto the CITY OF ARLINGTON, TEXAS, a municipal corporation located in Tarrant County, Texas, hereinafter referred to as "CITY," in the amount of Thirteen Million Three Hundred Eighteen Thousand DOLLARS and 00/100 CENTS (\$13,318,00.00), lawful money of the United States, to be paid in Arlington, Tarrant County, Texas, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, assigns, administrators and successors, jointly and severally; and firmly by these presents, the condition of this obligation is such that:

WHEREAS, PRINCIPAL entered into a certain written Contract with City of Arlington, dated the 12th day of April, 20 22, a copy of which is attached hereto and made a part hereof, to furnish all materials, equipment, labor, supervision, and other accessories necessary for the construction of:

BOWMAN SPRINGS ROAD  
(IH 20 to ENCHANTED BAY BOULEVARD)

City of Arlington Project No. PWST18001

in the City of Arlington, Texas, as more particularly described and designated in the above referenced contract such contract being incorporated herein and made a part hereof as fully and to the same extent as if written herein word for word:

NOW THEREFORE,

If PRINCIPAL will maintain and keep in good repair the work herein contracted to be done and performed for a period of two (2) years from the date of acceptance and perform all necessary work and repair any defective condition growing out of or arising in any part of the construction of said improvement, including but not limited to; performing all necessary backfilling that may

arise on account of sunken conditions in ditches, or otherwise, repair any defective condition growing out of or arising from the improper joining of underground infrastructures, or on account of any breaking of infrastructures caused by PRINCIPAL in laying or building the infrastructures, or on account of any defect arising in any of such work laid or constructed by PRINCIPAL, or on account of improper excavation or backfilling. It being understood that the purpose of this section is to cover all defective conditions arising by reason of defective materials, work or labor performed by PRINCIPAL; then this obligation shall be void, otherwise it shall remain in full force and effect; and in case PRINCIPAL shall fail to do so, it is agreed that CITY may do such work and supply such materials and charge the same against PRINCIPAL and SURETY on this obligation, and in addition, PRINCIPAL and SURETY herein shall be subject to the liquidated damages as provided in the Contract referred to herein for each day's failure on its part to comply with the terms and provisions of such Contract.

Provided, further, that if any legal action be filed on this Bond, venue shall lie in Tarrant County, Texas.

And, that SURETY, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work performed thereunder, or the plans, specifications, drawings, etc., accompanying same shall in any way 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 thereunder.

The undersigned and designated agent is hereby designated by SURETY as the resident agent in either Tarrant or Dallas County to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

IN WITNESS WHEREOF, this instrument is executed on this the 14th day of April, 2022.

WITNESS

PRINCIPAL

By Melanie Taylor  
Signature  
Melanie Taylor  
Typed/Printed Name  
ADMIN  
Title  
419 US Hwy 80  
Address  
MESQUITE, Tx 75150  
City State Zip

Tiseo Paving Co.  
Company  
By [Signature]  
Signature  
LOUIS TISEO  
Typed/Printed Name  
PRESIDENT  
Title  
P. O. Box 270040  
Address  
Dallas, TX 75227  
City State Zip

WITNESS

By   
Signature

Meagan Reynolds  
Typed/Printed Name

Surety Administrator  
Title

1175 W. Long Lake Road, Suite 200  
Address

Troy, MI 48098  
City State Zip

SURETY

Hartford Fire Insurance Company  
Company

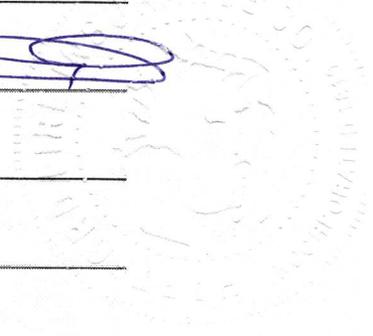
By   
Signature

Susan L. Small  
Typed/Printed Name

Attorney-In-Fact  
Title

One Hartford Plaza  
Address

Hartford, CT 06155  
City State Zip



**NOTE: Date of Maintenance Bonds must NOT be prior to date of Contract**

END OF SECTION

# POWER OF ATTORNEY

Direct Inquiries/Claims to:  
**THE HARTFORD**  
BOND, T-11  
One Hartford Plaza  
Hartford, Connecticut 06155  
Bond.Claims@thehartford.com  
call: 888-266-3488 or fax: 860-757-5835

KNOW ALL PERSONS BY THESE PRESENTS THAT:

Agency Name: VTC INSURANCE GROUP  
Agency Code: 35-351225

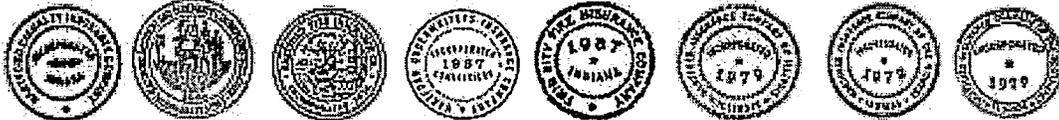
- Hartford Fire Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- Hartford Casualty Insurance Company, a corporation duly organized under the laws of the State of Indiana
- Hartford Accident and Indemnity Company, a corporation duly organized under the laws of the State of Connecticut
- Hartford Underwriters Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- Twin City Fire Insurance Company, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of Illinois, a corporation duly organized under the laws of the State of Illinois
- Hartford Insurance Company of the Midwest, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of the Southeast, a corporation duly organized under the laws of the State of Florida

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, **up to the amount of Unlimited :**

Susan L. Small, Jeffrey A. Chandler, Alan P. Chandler, Ian J. Donald, Wendy L. Hingson, Kathleen M. Ireland, Meagan L. Kress, Robert Trobec, T.L. Young of TROY, Michigan

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by , and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on May 23, 2016 the Companies have caused these presents to be signed by its Assistant Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



*Shelby Wiggins*

Shelby Wiggins, Assistant Secretary

*Joelle L. LaPierre*

Joelle L. LaPierre, Assistant Vice President

STATE OF FLORIDA }  
COUNTY OF SEMINOLE } ss. Lake Mary

On this 20th day of May, 2021, before me personally came Joelle LaPierre, to me known, who being by me duly sworn, did depose and say: that (s)he resides in Seminole County, State of Florida; that (s)he is the Assistant Vice President of the Companies, the corporations described in and which executed the above instrument; that (s)he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that (s)he signed his/her name thereto by like authority.



*Jessica Ciccone*

Jessica Ciccone  
My Commission HH 122280  
Expires June 20, 2025

I, the undersigned, Assistant Vice President of the Companies, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is still in full force effective as of April 14th, 2022.

Signed and sealed in Lake Mary, Florida.



*Keith D. Dozois*

Keith D. Dozois, Assistant Vice President

## IMPORTANT NOTICE

To obtain information or make a complaint:

You may contact your agent.

You may call Hartford Insurance Group at the toll free telephone number for information or to make a complaint at:

**1-800-392-7805**

You may also write to The Hartford:

**The Hartford**  
**Hartford Financial Products**  
**2 Park Avenue, 5<sup>th</sup> Floor**  
**New York, New York 10016**  
**1-212-277-0400**

You may contact the Texas Department of Insurance to obtain information on companies, coverages, rights or complaints at:

**1-800-252-3439**

You may write the Texas Department of Insurance

P.O. Box 149104  
Austin, TX 78714-9104  
Fax Number (512) 475-1771  
Web: <http://www.tdi.state.tx.us>  
E-mail: [ConsumerProtection@tdi.state.tx.us](mailto:ConsumerProtection@tdi.state.tx.us)

**PREMIUM OR CLAIMS DISPUTES:** Should you have a dispute concerning your premium or about a claim you should contact the agent first. If the dispute is not resolved, you may contact the Texas Department of Insurance.

**ATTACH THIS NOTICE TO YOUR POLICY:** This notice is for your information only and does not become a part or condition of the attached document.

## AVISO IMPORTANTE

Para obtener informacion o para someter una queja.

Puede comunicarse con su agente.

Usted puede llamar al numero de telefono gratis de The Hartford Insurance Group para informacion o para someter una queja al

**1-800-392-7805**

Usted tambien puede escribir a The Hartford.

**The Hartford**  
**Hartford Financial Products**  
**2 Park Avenue, 5<sup>th</sup> Floor**  
**New York, New York 10016**  
**1-212-277-0400**

Puede comunicarse con el Departamento de Seguros de Texas para obtener informacion acerca de compañías, coberturas, derechos o quejas al:

**1-800-252-3439**

Puede escribir al Departamento de Seguros de Texas

P.O. Box 149104  
Austin, TX 78714-9104  
Fax Number (512) 475-1771  
Web: <http://www.tdi.state.tx.us>  
E-mail: [ConsumerProtection@tdi.state.tx.us](mailto:ConsumerProtection@tdi.state.tx.us)

**DISPUTAS SOBRE PRIMAS O RECLAMOS:** Si tiene una disputa concierne a su prima o a un reclamo, debe comunicarse con su agente primero. Si no se resuelve la disputa, puede entonces comunicarse con el departamento (TDI).

**UNA ESTE AVISO A SU POLIZA:** Este aviso es solo para proposito de informacion y no se convierte en parte o condicion del documento adjunto.

## SECTION NO. 11

### SPECIAL PROVISIONS – GENERAL ADMINISTRATION SPECIFICATIONS

#### NUMERICAL LISTING

Section No.	
11-01	PURPOSE OF SPECIAL PROVISIONS
11-02	SCOPE OF WORK
11-03	MINORITY / WOMEN BUSINESS ENTERPRISE (MWBE) PROGRAM
11-04	MINORITY / WOMEN BUSINESS ENTERPRISE (MWBE) POST AWARD COMPLIANCE
11-05	PREVAILING WAGE RATES
11-06	BONDS, INSURANCE, & AFFIDAVITS
11-07	INDEMNIFICATION
11-08	RIGHT TO AUDIT
11-09	SALES TAX EXEMPTION
11-10	CONTRACTOR PERSONNEL
11-11	MOBILIZATION AND BONDS
11-12	SUBMITTALS
11-13	CONSTRUCTION MEETING
11-14	PUBLIC MEETING
11-15	TIME FOR COMPLETION & LIQUIDATED DAMAGES
11-16	BONUS
11-17	COMPUTATION OF CONTRACT TIME FOR COMPLETION & DELAYS
11-18	CONSTRUCTION CONTINGENCY ALLOWANCE
11-19	MATERIALS AND WORKMANSHIP: WARRANTIES AND GUARANTEES
11-20	DEFECTIVE MATERIALS, EQUIPMENT, OR IN-PLACE CONSTRUCTION
11-21	QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)
11-22	SAFETY DATA SHEET
11-23	SATURDAY OR CITY HOLIDAY INSPECTIONS
11-24	WORK PERFORMED WITHOUT BENEFIT OF INSPECTIONS
11-25	MONTHLY ESTIMATE
11-26	OWNER NOTIFICATION
11-27	SIGNS FOR BUSINESSES – N/A
11-28	PROJECT SIGNS

- 11-29 QUANTITIES
- 11-30 CONTRACTOR SELF-PERFORMANCE
- 11-31 AS-BUILT PLANS (ADDED PER ADDENDUM NO. 1)

## SECTION NO. 11

### SPECIAL PROVISIONS – GENERAL ADMINISTRATION SPECIFICATIONS

#### **11-01 PURPOSE OF SPECIAL PROVISIONS:**

- A. Paving and Drainage improvements shall be in accordance with the latest version of the STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION STANDARDS as issued by The North Central Texas Council of Governments (NCTCOG); Water and Sanitary Sewer improvements shall be in accordance with the latest version of the CITY OF ARLINGTON STANDARD SPECIFICATIONS FOR WATER & SANITARY SEWER CONSTRUCTION; hereinafter collectively referred to as “Standard Specifications”.
- B. All Special Provisions included in this contract document are for the purpose of adapting the Standard Specifications to the particular project which is subject to this agreement and of adding thereto such further provisions as may be necessary to state the contract in its entirety.
- C. The work shall conform to the requirements of the Special Provisions and the details as shown on the drawings. These contract documents are intended to be complementary. The intent of the contract documents, including the Standard Specifications, Special Provisions, and other instruments, documents, drawings and maps comprising the Plans and Specifications, is to describe the completed work to be performed by the Contractor under the contract as an independent Contractor. Requirements of any of the contract documents are as binding as if called for by all. Any provision of the agreement vesting in the City or the engineer the right of inspection is understood by all the parties to be for the purpose of ensuring that the plans and specifications are complied with and that the completed work is obtained and described, and no such provision shall be interpreted as vesting the City or engineer the right to control the details of work.
- D. In the event of conflict between documents, Special Provisions shall take priority over drawings, and drawings shall govern over Standard Specifications.
- E. References made to TxDOT Items in this contract shall mean items in the latest version of the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges as published by the Texas Department of Transportation. Further technical requirements contained in other publications are referenced in sections where they apply and are hereby incorporated.
- F. References made to “City” shall mean the City of Arlington.

#### **11-02 SCOPE OF WORK:**

- A. The work governed by these specifications is located in the City of Arlington, Texas and consists of **BOWMAN SPRINGS ROAD (IH 20 to ENCHANTED BAY BOULEVARD)**, City of Arlington Project No. **PWST18001**, including all necessary appurtenances.

- B. The Contractor shall provide, at his/her own expense, all construction staking required to perform the work as described in the plans and specifications. For City capital projects, control monuments may be verified by the City. The Contractor shall set excavation and fill stakes on or near the right-of-way, all stakes necessary for water or sewer relocation and storm drain placement, 4-foot off-set back of curb stakes for subgrade stabilization and paving, and intermediate grade stakes (i.e. blue topping, fill, or cut stakes) on the centerline. All staking shall be subjected to inspection by the City. While the City shall have the right to inspect, it shall have no duty to inspect. The Contractor will be responsible for any discrepancies from the plan alignment and/or grade. Calendar days will not be adjusted due to the lack of available crews or due to the negligence of the Contractor or vandalism that causes the replacement of stakes.
- C. Work shall be accomplished between the hours of 7 a.m. to 6 p.m. (Central Standard Time) and 7 a.m. to 8 p.m. (Central Daylight Savings Time), Monday through Friday unless otherwise approved by the City. For Saturday and holiday inspections, see Section 11-22.
- D. The Contractor shall coordinate with the Texas Department of Transportation Southeast Connector Project. The City anticipates the project will be under construction simultaneously at a given point, so it will be required that line items as stormwater management controls (SWPPP), traffic control, and pavement construction between the two projects to ensure minimal inconvenienced to all the residents in this area. The contract shall attend any progress, coordination, or construction meeting between TxDOT and the City of Arlington as directed by the City Engineers. **(ADDED PER ADDENDUM NO. 1)**
- E. Northbound one-way traffic will be allowed for the exclusive installation of stormwater improvements, water/sanitary sewer utilities, and paving operations south of Enchanted Bay Boulevard to IH-20. The contractor shall maintain continuous work of the stormwater improvements, water/sanitary sewer utilities, and paving operations once one-way traffic control is in place. Failure to maintain continuous work will require the contractor to provide two-way traffic according to City specifications at no additional expense to the City. **(ADDED PER ADDENDUM NO. 1)**
- F. Bowman Springs Road shall open to two-way traffic once all pavement and pertinent construction along Bowman Springs Road and adjacent street is complete, and Bowman Springs Road can safely allow vehicle traffic. **(ADDED PER ADDENDUM NO. 1)**
- G.. Full closure Bowman Springs Road at intersection of Greenspring Drive and Future Pleasant Ridge Road will be allowed for the construction of Culvert C1. Intersection Closure Limits details are shown at the end of the Addendum No. 1. Installation of Culvert C1, all drainage improvements, all water and sanitary sewer improvements, paving, and flat work within the vicinity of Greenspring Drive/Pleasant intersection shall be substantially complete to allow full traffic flow within 200 consecutive calendar days from the start of the road closure. Contractor must provide the City a schedule for this work showing the start and end dates. Failure to substantially complete to allow full traffic flow in accordance with the approved schedule will result in the Contractor being charged

liquidated damages in the amount of two thousand dollars (\$2,0000 per day after the approved end date. **(ADDED PER ADDENDUM NO. 1)**)

- H. The Contractor shall coordinate with Sage Natural Resources, LLC and property owner for the installation of the temporary driveway access to the gas well site. Temporary driveway access shall be provided prior to full closure the Greenspring Drive and Future Pleasant Ridge Road. **(ADDED PER ADDENDUM NO. 3)**

**11-03 MINORITY/WOMEN BUSINESS ENTERPRISE (MWBE) CONTRACT**

**SPECIFIC GOAL:** The City's Minority/Woman Business Enterprise (MWBE) utilization goal, for this project is **34%**.

The contractor's MWBE commitment percentage is based on the total value of the contract including any change orders and modifications throughout the contract agreement.

**11-04 MINORITY/WOMEN BUSINESS ENTERPRISE (MWBE) POST AWARD COMPLIANCE:**

- A. The Contractor shall report all subcontractor payment activity with the Contractor's monthly estimate in accordance to Section 11-25. If change orders, amendments or any contract modification are issued by the City, the Contractor has a contractual commitment to meet and/or exceed their MWBE utilization goal. Contractor is obligated to immediately notify the City, in writing, of any agreed increase or decrease in the scope of work that will impact the MWBE participation in the contract.

- B. The Contractor cannot terminate, substitute, or change the terms of the MWBE Utilization Plan prior to or after Contract award without prior written consent from the City. If the Contractor is unable to meet its MWBE commitment with certified MWBE companies, the Contractor shall satisfy its commitment, as it relates to the scope of work changes, modifications, and/or amendments by soliciting new certified MWBE companies. Contractor shall submit a Request for Approval of Change to MWBE Utilization Plan for review and written approval from the City.

If the City observes any MWBE subcontractor other than those listed on the MWBE Utilization Plan are performing work or providing materials and/or equipment for those MWBE Subcontractors listed on the MWBE Utilization Plan, the Contractor will be notified in writing that an apparent violation is taking place and payments may be withheld in addition to any other sanctions included in the MWBE Policy and Procedures Manual. The Contractor will be given an opportunity to meet with the City prior to a finding of noncompliance.

- C. Contractor shall pay its subcontractors no later than the 5th business day after the date the prime contractor receives payment from the City. The prime contractor also agrees to promptly request the release of any retainage withheld from subcontractors within five (5) business days after the subcontractor's work is satisfactorily completed and receives partial acceptance, substantial completion or final completion/final acceptance as defined in the General Provisions of the contract. Furthermore, the prime contractor agrees to pay the

subcontractor its retainage within five (5) business days after the date the prime contractor receives the subcontractor's retainage payment from the City.

A finding of non-payment shall be a material breach of this contract. The City may withhold progress payments until the Contractor demonstrates timely payment due all subcontractors. The City also reserves the right to exercise other breach of contract remedies.

- D. During the performance of this Contract, the Contractor or Subcontractor agrees that it will not discriminate on the basis of on race, age, color, religion, sex, sexual orientation, gender identity, national origin, ancestry, gender, disability, or place of birth in the award. Failure by the Contractor to ensure non-discrimination is a material breach of this Contract, which may result in the termination of this Contract or such other remedy, as the City deems appropriate. The Contractor must insert the substance of this clause in all Subcontracts and purchase orders.
- E. The failure by the Contractor to carry out the requirements of the Program is a material breach of the Contract and may result in the termination of the Contract or such other remedies as the City deems appropriate. Violation of MWBE Policies and Procedures, or Contractual obligations, may result in any one or more of the following sanctions:
1. Administrative Warning: Issued for first-time violations or minor violations.
  2. Withholding of funds payable under the Contract, including, but not limited to, funds payable for work self-performed by the Contractor or applicable retainage.
  3. Temporarily suspending, at no cost to the City, Contractor's performance under the Contract.
  4. Termination of the Contract.
  5. Suspension/debarment of a Contractor for a period of time from participating in any solicitations issued by the City.

**11-05 PREVAILING WAGE RATES:**

- A. The Contractor shall comply with V.T.C.A., Government Code, Chapter 2258, in performing this project. In accordance with V.T.C.A., Government Code, Chapter 2258, the prevailing wage rates as set forth in Section 2 of the contract documents shall be paid on this project. For overtime work and legal holidays, the hourly rate shall be one and one-half (1½) times the basic hourly rate set forth in Section 2. The City will require Contractor to execute an affidavit affirming that all wages are in strict compliance with the established prevailing wages rates as described in the contract documents and all wages have been or will be paid accordingly. The City reserves the right to conduct interviews with the Contractor's employees to ensure compliance with Section 2 of the contract documents in accordance with applicable State and Federal Laws.
- B. Upon written request by the City, the general Contractor shall be responsible for submitting payroll information to the City for all employees performing work on the project, whether employed by the general Contractor or a subcontractor to the general Contractor. Each submittal shall be certified by the general Contractor as to completeness and accuracy.

- C. A Contractor or subcontractor in violation of V.T.C.A., Government Code, Chapter 2258 is liable for a penalty. That Contractor or subcontractor shall pay to the City sixty dollars (\$60.00) for each laborer, workman, or mechanic employed for each calendar day, or portion thereof, such laborer, workman, or mechanic is paid less than the said stipulated rates for work done under the contract.
- D. The Contractor or subcontractor violating a requirement of this Special Provision may be determined ineligible to bid on or receive any additional work during the calendar year following the year in which the violation of this Special Provision occurred.

**11-06 BONDS, INSURANCE AND AFFIDAVITS:**

- A. The following bonds and proof of insurance shall be filed with the City of Arlington as a condition of the contract, together with appropriate powers of attorney.
  - 1. Performance, Payment, And Maintenance Bonds: Performance, payment and maintenance bonds in the amount of not less than one hundred percent (100%) of the contract price conditioned upon the faithful performance of the contract, and upon payment of all persons supplying labor or furnishing materials, will be required upon the forms which are a part of the Contract Documents. Bonds shall be executed by a surety company authorized to do business in the State of Texas and acceptable to and approved by the City. The period of the Maintenance Bond shall be two (2) years from the date of acceptance of all work done under the contract, to cover the guarantee as set forth in the Special Provisions.
  - 2. Performance Bonds And Payment Bonds In Excess Of \$100,000: In addition to all other requirements set forth with regard to performance bonds and payment bonds, any performance bond or payment bond in an amount exceeding One Hundred Thousand Dollars (\$100,000) must be issued by a surety that is qualified as a surety on obligations permitted or required under federal law as indicated by publication of the surety's name in the current U.S. Treasury Department Circular 570. In the alternative, an otherwise acceptable surety company that is authorized and admitted to write surety bonds in Texas must obtain reinsurance on any amounts in excess of One Hundred Thousand Dollars (\$100,000) from a reinsurer authorized and admitted as a reinsurer in Texas who qualifies as a surety or reinsurer on obligations permitted or required under federal law as indicated by publication of the surety's or reinsurer's name in the current U.S. Treasury Department Circular 570.
  - 3. Insurance: Contractor shall, at his/her own expense, purchase, maintain and keep in force during the term of this contract such insurance as set forth below. Contractor shall not commence work under this contract until he/she has obtained all the insurance required under the contract and such insurance has been approved by the City, nor shall the Contractor allow any subcontractor to commence work on his/her subcontract until all similar insurance of the subcontractor has been obtained and approved. All insurance policies provided under this contract shall be written on an "occurrence" basis. The policy limits stated below are at a minimum.

Liability Insurance

Commercial General Liability \$1,000,000 Per Occurrence/  
(No standard coverages are to be excluded by endorsement. XCU  
and contractual liability are not to be excluded) \$2,000,000 Aggregate

Automobile Liability Insurance

Commercial Auto Liability Policy \$ 1,000,000 Combined Single Limit  
(Any Auto, including hired, and non-owned autos)

Umbrella Liability

(Following Form and Drop Down Provisions Included) \$2,000,000 Each Occurrence

Workers' Compensation Insurance

Workers' Compensation Statutory Limit  
Employer's Liability \$1,000,000 Each Occurrence  
\$1,000,000 Disease - Each Employee  
\$1,000,000 Disease - Policy Limit

Professional Liability – required for Contractor or subcontractor performing CCTV services and report

Or Errors & Omissions coverage \$1,000,000 per claim  
\$2,000,000 Aggregate

(Rev. 1/2020)

B. It is agreed by all parties to this contract that the insurance policies required under this contract shall be endorsed to provide:

1. The City, its officials, employees and volunteers shall be named as an additional insured on the Commercial General Liability, Automobile Liability and Umbrella Liability insurance policies. These insurance policies shall contain the appropriate additional insured endorsement to cover premises/operations and products/completed operations, including materials, equipment or supplies provided by the City. (Rev. 9/2019)
2. The General Liability policy shall be endorsed as primary and non-contributory with other insurance carried by the City, and aggregate policy limits shall apply “per project”;
3. Provide for thirty (30) days notice of cancellation to the City, ten (10) days notice of cancellation is acceptable for nonpayment of premium;
4. Be written through companies duly authorized to transact that class of insurance in the State of Texas with an A.M. Best rating of A:VII or better; and,

5. Waive subrogation rights for loss or damage so that insurers have no right to recovery or subrogation against the City of Arlington, it being the intention that the required insurance policies shall protect all parties to the contract and be primary coverage for all losses covered by the policies.
6. Provide one copy of a Certificate of Insurance on an Acord form or other State-approved form evidencing the required coverages to:

Department of Public Works and Transportation, MS01-0220  
Attention: Amy Powell, Engineering Coordinator  
City of Arlington  
P.O. Box 90231  
Arlington, TX 76004-3231

C. Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the City (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the City or the City's property might be responsible or encumbered (less amounts withheld by City) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the contract documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least thirty (30) days prior written notice has been given to the City, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the contract documents, (4) consent of Surety, if any, to final payment and (5) if required by the City, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the contract, to the extent and in such form as may be designated by the City. If a subcontractor refuses to furnish a release or waiver required by the City, the Contractor may furnish a bond satisfactory to the City to indemnify the City of Arlington against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the City all money that the City may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

D. In addition to the requirements contained above, the Contractor shall comply with the following in its provision of workers' compensation insurance.

1. 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.

2. The Contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the Contractor providing services on the project, for the duration of the project.
3. The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.
4. 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.
5. The Contractor shall obtain from each person providing services on a project, and provide to the governmental entity:
  - a. 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
  - b. no later than seven (7) days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
6. The Contractor shall retain all required certificates of coverage for the duration of the project and for two (2) year thereafter.
7. The Contractor shall notify the governmental entity in writing by certified mail or personal delivery, within ten (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.
8. 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.

9. The Contractor shall contractually require each person with whom it contracts to provide services on a project, to:
  - a. 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;
  - b. 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;
  - c. 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;
  - d. obtain from each other person with whom it contracts, and provide to the Contractor:
    1. a certificate of coverage, prior to the other person beginning work on the project; and
    2. 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;
  - e. retain all required certificates of coverage on file for the duration of the project and for one (1) year thereafter;
  - f. notify the governmental entity in writing by certified mail or personal delivery, within ten (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
  - g. contractually require each person with whom it contracts, to perform as required by paragraphs 1 – 7 above, with the certificates of coverage to be provided to the person for whom they are providing services.
10. 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.

11. 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 (10) days after receipt of notice of breach from the governmental entity.
  - A. It is understood and acknowledged by both parties that the minimum amounts for insurance, as provided for herein may be adjusted from time to time due to changing conditions to cover City's needs as determined by its Risk Manager.
  - B. Any of the insurance policies required under this section may be written in combination with any of the others, where legally permitted, but none of the specified limits may be lowered thereby.

**11-07 INDEMNIFICATION:** Contractor does hereby agree to waive all claims, release, indemnify, defend and hold harmless the City of Arlington and all of its officials, officers, agents, employees, in both their public and private capacities, from and against any and all liability, claims, losses, damages, suits, demands or causes of action including all expenses of litigation and/or settlement, court costs and attorney fees which may arise by reason of injury to or death of any person or for loss of, damage to, or loss of use of property occasioned by error, omission, or negligent act of Contractor, his or her officers, agents, employees, subcontractors, invitees or any other persons, arising out of or in connection with the performance of this contract, and Contractor will at his or her own cost and expense defend and protect City of Arlington from any and all such claims and demands. Contractor does hereby agree to waive all claims, release, indemnify, defend and hold harmless City of Arlington and all its officials, officers, agents, and employees, from and against any and all claims, losses, damages, suits, demands or causes of action, and liability of every kind including all expenses of litigation and/or settlement, court costs and attorneys fees for injury or death of any person or for loss of, damage to, or loss of use of any property, arising out of or in connection with the performance of this contract. Such indemnity shall apply whether the claims, losses, damages, suits, demands or causes of action arise in whole or in part from the negligence of the City of Arlington, his or her officers, officials, agents or employees. It is the express intention of all the parties that the indemnity provided for in this paragraph is indemnity by Contractor to indemnify and protect City of Arlington from the consequences of City of Arlington's own negligence, whether that negligence is a sole or concurring cause of the injury, death or damage and whether said negligence is characterized as sole, contractual comparative, concurrent, joint, gross, active, passive, or any other form of negligence.

In any and all claims against any party indemnified hereunder by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, this indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or

benefits payable by or for the Contractor or any subcontractor under workmen's compensation acts or other employee benefit acts.

**11-08 RIGHT TO AUDIT:**

- A. Contractor agrees that City shall, until the expiration of three (3) years after final payment under this contract, have access to and the right to examine any directly pertinent books, documents, papers and records of Contractor involving transactions relating to this contract. Contractor agrees that City shall have access during normal working hours to all necessary Contractor facilities and shall be provided adequate and appropriate work space in order to conduct audits in compliance with the provisions of this section. City shall give Contractor reasonable advance notice of intended audits.
  
- B. Contractor further agrees to include in subcontract(s), if any, a provision that any subcontractor agrees that City shall have access to and the right to examine any directly pertinent books, documents, papers and records of such subcontractor involving transactions to the subcontract, and further, that City shall have access during normal working hours to all subcontractor facilities, and shall be provided adequate and appropriate work space, in order to conduct audits in compliance with the provisions of this paragraph.

**11-09 SALES TAX EXEMPTION:** The Contractor is responsible for understanding Texas law regarding tax exemption for City projects and bidding accordingly. The latest information can be obtained from the State Comptroller's Office and/or other appropriate entities.

**11-10 CONTRACTOR PERSONNEL:**

- A. The Prime Contractor shall provide phone number(s) of superintendent(s) available twenty-four (24) hours a day to handle any emergencies that may occur. (Rev. 3/2019)
  
- B. The Prime Contractor shall provide a superintendent authorized to receive and fulfill instructions from the Inspector at all times on the job site. Superintendent must: (Rev. 3/2019)
  - 1. Serve as the Contractor's primary point of contact.
  - 2. Be a permanent staff employee.
  - 3. Be knowledgeable of the specifications herein and common construction practices.
  - 4. Be responsible for the performance of the crew(s).
  - 5. Be responsible for the day to day operations in accordance to the service requirements throughout the term of the contract.
  - 6. Make decisions and receive, follow, give, and understand written and verbal instructions in English, and inspect the work site with City upon request.

7. Provide copy of the monthly pay estimate/quantity to the Inspector on the spreadsheet provided by the City.
  8. Upload MWBE Reporting to the City's Diversity Management System (B2Gnow).
- C. The City recognizes that events beyond the control of the Contractor (such as death, physical or mental incapacity, long-term illness, or the voluntary termination of employment of the on-site supervisor) will require the Contractor to propose a replacement. In the event that such replacement is necessary, the Contractor agrees that no personnel shall begin work on the project without written approval from the City.
  - D. The Contractor shall employ only competent, efficient workmen and shall not use any unfit person or one that is not skilled in the work assigned to him. The Contractor shall at all times maintain good order among his/her employees.
  - E. Whenever the City informs the Contractor in writing that, in his/her opinion, any employee is unfit, unskilled, disobedient or is disrupting the orderly progress of the work, such employee shall be removed from the project. The City may orally require immediate removal of an employee for cause, to be followed by written confirmation.

**11-11 MOBILIZATION AND BONDS:** A lump sum bid item in the amount designated in the PROPOSAL has been included for compensation for mobilization and bonds. This item is a one-time pay item per project and will not be paid per location unless otherwise stated in the PROPOSAL. Upon presentation of a paid invoice for the required bonds, the Contractor will be paid that amount from the amount stated in the PROPOSAL. However, a monthly pay estimate will not be processed solely for paying these items. Work on other pay items must be initiated prior to processing the first monthly pay estimate. The remaining amount of the lump sum will be paid when ten percent (10%) of the amount for the original construction items is earned.

**11-12 SUBMITTALS:**

- A. Contractor shall submit plans or product data to City for review and approval prior to the purchase or fabrication of any equipment or material for use on this project.
- B. Submittals shall include but not limited to the following:
  - Streetlight Pole Assemblies, including Luminaires
  - Signal Pole Assemblies
  - Pedestrian Pole Assemblies
  - Concrete Design
  - Asphalt Design
  - Pipe Or Box Culvert Material
  - Any Pre-Cast Structures (If Approved)
  - Turf Reinforced Matting (TRM)
  - Water/Sanitary Sewer Products
  - Trench Safety
  - Concrete Formliners

- Specialty Concrete/Brick Pavers
  - Modular Block Walls And Tie-Backs
  - Traffic Control Plans (1 hard copy)
  - SWPPP (2 hard copies)
  - Street Marker Blades
- C. Submittal shall include all appropriate catalog cut sheets, shop drawings, product specifications, and other product documentation as requested by the City. Shop drawings and other necessary data for all non-catalog or custom-made items, shall be sealed or certified accordingly. Unless otherwise noted, submittals should be in electronic format.
- D. In order to facilitate review, the Contractor shall clearly label each item of submittal data with the bid item number which it applies to. Each submittal shall contain sufficient information and details to permit full evaluation of the item and its interrelationship with other items. Submittals that, in the judgment of the City, are insufficient to permit proper evaluation, will not be reviewed.
- E. Items that are "rejected" are judged to be basically unacceptable and the Contractor shall proceed immediately to identify new items or redesign said items and resubmit them for review.
- F. The Contractor shall allow a fourteen (14) business day review period for each package of submittal information. No time extensions will be granted to the Contractor as a result of re-occurring incomplete or unacceptable submittals or resubmittals.
- G. Review and acceptance of the submittal data by the City shall not relieve the Contractor of his/her obligation to furnish and install the work in accordance with the contract documents.

**11-13 CONSTRUCTION MEETING:** A pre-construction meeting will be held prior to the issuance of the Notice to Proceed. The purpose of this meeting is to cover all aspects of the project. Issues will be discussed related to the chain-of-command, areas of special concern, and coordination expectations. Weekly or bi-weekly project construction meetings may be held for this project. The City will schedule the time and location; and determine the frequency of these meetings. A representative of the Contractor, knowledgeable of the project, shall attend these construction meetings.

**11-14 PUBLIC MEETING:** Prior to start of construction, a public meeting will be held for this project. The purpose of the meeting will be to explain the project and answer questions to affected citizens and/or businesses. A representative of the Contractor, knowledgeable of the project, shall attend the public meeting. The representative will be introduced and will be called on as necessary to assist in answering questions.

(Rev 9/2019)

**11-15 TIME FOR COMPLETION AND LIQUIDATED DAMAGES:**

- A. Since time is of the essence, the City has seen fit to establish the time required to complete this project. The time, as set out in SECTION 6 of this contract, will be the maximum

number of **calendar** days allowed to substantially complete this project. Substantially complete is defined as having completed all bid items included in the contract to allow the facilities to function as designed. Failure of the Contractor to complete the work within this time will result in damages being sustained by the City. Such damages are, and will continue to be, impracticable and extremely difficult to determine. The Contractor will pay the City one thousand dollars **(\$1,000)** for each **calendar** day of delay (including Sundays and holidays) in finishing the work in excess of time specified for completion, plus any authorized time extensions. Execution of the contract under these specifications shall constitute agreement by the City and Contractor that one thousand dollars **(\$1,000)** is the minimum value of the costs and actual damage caused by failure of the Contractor to complete the work within the allotted time, that such sum is liquidated damages and shall not be construed as a penalty, and that such sum may be deducted from payments due the Contractor if such delay occurs.

- B. Full closure of Bowman Springs Road at intersection of Greenspring Drive and Future Pleasant Ridge Road will be allowed for the construction of Culvert C1. Intersection Closure Limits details are shown at the end of the Addendum No. 1. Installation of Culvert C1, all drainage improvements, all water and sanitary sewer improvements, paving, and flat work within the vicinity of the Greenspring Drive/Pleasant Ridge Road intersection shall be substantially complete to allow full traffic flow within **200 consecutive calendar days** from the start of the road closure. Contractor must provide the City a schedule for this work showing the start and end dates. Failure to substantially complete to allow full traffic flow in accordance with the approved schedule will result in the Contractor being charged liquidated damages in the amount of two thousand dollars **(\$2,000) per calendar day** after the approved end date. **(ADDED PER ADDENDUM NO. 1)**

**11-16 BONUS:** Should the Contractor substantially complete the contract prior to the time specified in this contract, the Contractor will be awarded a bonus. Substantially complete is defined as having completed all bid items included in the contract to allow the facilities to function as designed, including seeding and landscaping. That bonus shall be in the amount of five hundred dollars **(\$500)** for each **calendar** day remaining upon the completion of the contract. However in no case shall the Contractor's bonus exceed five hundred dollars **(\$500)** times half the **calendar** days set out in the bid documents for the project.

**11-17 COMPUTATION OF CONTRACT TIME FOR COMPLETION & DELAYS:**

- A. Time will be charged for all calendar days regardless of weather conditions, material supplies, or other conditions not under the control of the Contractor, which could impede the progress of the work. Time will also be charged for Sundays and holidays.
- B. Prior to beginning construction operations, the Contractor shall submit to the City a critical path method (CPM) chart progress schedule showing the manner of prosecution of the work that he intends to follow in order to complete the contract within the allotted time. The purpose for this schedule is to assure adequate planning and execution of the work. The progress schedule must present a reasonable approach to completing the work within the allotted time.

- C. Payment of partial monthly estimates will not be processed until the CPM chart progress schedule has been approved by the City.
- D. The Contractor shall be entirely responsible for maintaining the progress of the work in accordance with the approved schedule. Should it become evident, in the opinion of the City, any time during the construction that the progress of the work has not been maintained in accordance with the approved schedule, the Contractor shall, upon written request by the City, promptly submit a revised schedule. This revised schedule shall set out operations, methods, equipment, added labor, and additional work shifts by which time lost shall be made up. At the end of each estimate period, the City will determine whether the Contractor is in compliance with the approved schedule, or the approved revised schedule. In the event the Contractor is determined not to be in compliance, he/she will be notified immediately in writing. If the Contractor does not correct the work progress to comply with the approved revised schedule by the end of the month of notification, payment for work performed during the period of non-compliance will be reduced according to the following:
- 1st Month - Reduction = 30% X work performed (Month Only)
  - 2nd Month - Reduction = 40% X work performed (Month Only)
  - 3rd Month - Reduction = 50% X work performed (Month Only)
  - Subsequent Month - Reduction = 50% work performed (Month Only)
- E. The first month (the month of notification) is that month in which notification is made. Each month's reduction will be assessed only for that work performed during that specific month. The reduction will be cumulative for the entire period of non-compliance; i.e., thirty percent (30%) payment reduction for the work performed during the first month, plus forty percent (40%) payment reduction for work performed during the second month, plus fifty percent (50%) payment reduction for work performed during the third month, and plus fifty percent (50%) payment reduction for work performed in each succeeding month of non-compliance thereafter. When the work progress becomes in compliance with the approved schedule, or the approved revised schedule, all withheld monies will be paid to the Contractor with the next regular estimate.
- F. The Contractor shall anticipate possible delays and shall be prepared to supplement and revise his/her construction methods accordingly. The Contractor assumes the risk of all suspensions of or delays in performance of the contract, regardless of length thereof, arising from all causes whatsoever, whether or not relating to this contract, including wrongful acts or omissions of the City or its Contractors or subcontractors except only to the extent, if any, that compensation or an extension of time may be due as expressly provided for elsewhere in this contract for such suspension or delays, and, subject only to such exception, the Contractor shall bear the burden of all costs, expenses and liabilities which he/she may incur in connection with such suspensions or delays, and all such suspensions, delays, costs, expenses and liabilities of any nature whatsoever, whether or not provided for in this contract, shall conclusively be deemed to have been within the contemplation of the parties.

- G. Notwithstanding any provisions of this contract, whether relating to time of performance or otherwise, City makes no representation or guarantee as to when the construction site or any part thereof will be available for the performance of the contract, or as to whether conditions at the construction site will be such as to permit the contract to be performed thereon without interruption or by any particular sequence or method or as to whether the performance of the contract can be completed by the time required under this contract or by any other time.
- H. Wherever in connection with this contract it is required, expressly or otherwise, that City shall perform any act relating to the contract, including making available or furnishing any real property, materials or other things, no guarantee is made by the City as to the time of such performance and the delay of City in fulfilling such requirement shall not result in liability of any kind on the part of City except only to the extent, if any, that an extension of time or compensation may be due as expressly provided for in this contract.
- I. If the contract requires unforeseen work or work and materials in greater amounts than those set forth in the contract, then additional calendar days may be considered at the discretion of the City. However, the completion time can only be changed by the execution of a signed agreement. An extension of time will only be considered when a claim for such extension is submitted to the City in writing by the Contractor within fourteen (14) calendar days from the time when any alleged cause of delay occurs.

**11-18 CONSTRUCTION CONTINGENCY ALLOWANCE:** A construction contingency allowance, in the amount designated in the PROPOSAL, is provided to allow for expeditious handling of unforeseen conditions that may arise during the course of the Project and may only be used with the concurrence of the City. Before contingency work is performed, the Contractor shall submit a proposed price for the work to the City and shall obtain written approval before proceeding with the additional work. Any balance of funds remaining in the construction contingency allowance at the close of the project belong to and shall remain with the City.

**11-19 MATERIALS AND WORKMANSHIP: WARRANTIES AND GUARANTEES:** Under the terms of the warranties which arise from these contract documents and/or by the terms of any applicable special warranties required by the contract documents, if any of the work in accordance with this contract is found to not be in accordance with the requirements of the contract documents, the Contractor shall correct such work promptly after receipt of written notice from the City or other entity as the contract documents may provide. This obligation shall survive acceptance of the work under the contract and termination of the contract. If Contractor fails within a reasonable time after written notice to correct defective work or to remove and replace rejected work, or if Contractor fails to perform the work in accordance with the contract documents, or if Contractor fails to comply with any provision in the contract document, either the City or its designee may, after seven (7) days written notice to Contractor, correct and remedy any such deficiency at the expense of the Contractor.

**11-20 DEFECTIVE MATERIALS, EQUIPMENT OR, IN-PLACE CONSTRUCTION:**

- A. Materials and equipment not conforming to the requirements of these specifications will be rejected and shall be removed immediately from the site of the work, unless permitted

to remain by the Inspector. Rejected materials, the defects of which have been subsequently corrected, shall be considered as new material.

- B. In-place construction not conforming to the requirements of these specifications will be removed and replaced/reworked at the Contractor's expense as deemed appropriate by the City. Tests made on in-place construction which has been replaced or reworked due to failure to meet project specifications will be authorized by the City and the cost of such tests will be the expense of the Contractor. Testing will be performed by testing company under contract with the City at the rates specified by that contract.

**11-21 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC):**

- A. The City shall have the authority to test materials, equipment and in-place construction to verify compliance with project specifications. Unless otherwise noted within these Special Provisions, the expense of testing shall be paid for by the City.
- B. If there are any failing tests, the Contractor shall be responsible for all cost of additional testing until compliant. The failure of the City to make any tests shall in no way relieve the Contractor of his/her responsibility to provide materials, equipment, and in-place construction which comply with project specifications.
- C. The Contractor shall provide such facilities as the City may require for collecting and forwarding samples and shall not, without specific written permission of the City, use the materials represented by the samples until tests have been made and materials approved for use. The Contractor will furnish adequate samples without charge to the City.
- D. All testing shall be coordinated through the Inspector. Results of tests shall be based on findings by the City's contracted testing facility. The Contractor shall provide sufficient notice for any changes or issues that will affect the scheduled testing. If sufficient notice is not provided, the Contractor shall bear the cost of any cancellation charges by the testing firm. The Contractor shall also be responsible for any charges of stand-by time due to construction delays or material delivery. **(REVISED PER ADDENDUM NO. 1)**

(Rev 1/2022)

**11-22 SAFETY DATA SHEET:** Contractor shall provide a copy of Safety Data Sheets (SDS), product specifications, Manufacturer's warranty, and application instructions to City for approval prior to commencing work, if applicable.

(Rev 9/2019)

**11-23 SATURDAY OR CITY HOLIDAY INSPECTION:**

- A. In an effort to limit face-to-face contact and maintain continuing operations, the City will accept credit card payments over the phone for Saturday/Holiday Inspection fees.

(Rev. 4/2020)

- B. Any Contractor requiring the services of an Inspector on Saturdays will be charged a flat rate of \$40.00 per hour for inspection services. In addition, the Contractor will also be required to pay a non-refundable \$100.00 deposit to the City. Contractors will notify the Department of Public Works and Transportation by 4:30 PM on the preceding Thursday at 817-459-6550 to request Saturday/Holiday Inspection Services. If the request is not

submitted by the deadline, the Contractor will not be able to work on the requested Saturday/Holiday. City Staff from the Planning and Development Department will contact the Contractor Friday by 10:00 AM to process a credit card over the telephone. For each transaction, there is a 2.75% third party credit card processing fee. This is not a city fee. A receipt will be emailed to the Contractor. (Rev. 4/2020)

- C. Following the performance of inspection services, an invoice will be prepared and mailed to the Contractor. The \$100.00 deposit will be deducted from the total invoice amount. All invoices must be paid in order for the Contractor to receive the retained funds at the termination of a project, and/or to receive a final project acceptance.
- D. The Contractor will be charged only for the hours worked. If the Contractor works only 2.5 hours, no invoice will be generated (2.5 hours x \$40 = \$100 deposit already received). If an Inspector watches several projects and the remitted deposits equal or surpass the amount needed to pay for his or her hours, no invoices will be delivered. However, if the \$100.00 deposit is delivered and the Contractor is unable to work for any reason, including weather, the \$100.00 fee will not be refunded.
- E. Construction Services management will determine the appropriate number of Inspectors necessary and which Inspectors will work on each Saturday.
- F. No money will be exchanged in the field.
- G. Overtime during the work week is not subjected to the required process listed above. Night time tie-ins are also exempt from these rules when they are done in an effort to reduce the impact of water outages to customers.
- H. No work will be permitted on Sundays without prior approval from the Construction Services Manager. If approved to work on Sunday, the Saturday inspection rates will apply.
- I. Holiday Schedule (REVISED PER ADDENDUM NO. 1)
  - 1. Below are holidays observed by the City of Arlington. Actual date/day that the holiday is observed changes yearly based on the calendar. No work will be permitted except in the most extreme circumstances and with prior approval from the Construction Services Manager. If approved to work on a holiday, the Saturday inspection rates will apply.
    - » Martin Luther King Day
    - » President's Day
    - » Good Friday
    - » New Year's Day
    - » Memorial Day
    - » Juneteenth
    - » Independence Day
    - » Labor Day

- » Thanksgiving Day
- » Thanksgiving Friday
- » Christmas Eve
- » Christmas Day

(Rev. 1/2022)

2. In addition to the above, no work will be permitted on the weekend adjoining a holiday that falls on Friday or Monday.

(Rev. 1/2022)

**11-24 WORK PERFORMED WITHOUT BENEFIT OF INSPECTION:**

- A. **Contractor shall provide the City 24 hours notice prior to any construction.** Any time work is being performed on bid items, work that supports bid items, or work that requires lane closures, an Inspector must be present. Work performed without the proper inspection will be consider unauthorized, and at the option of the Construction Services Manager may not be measured and paid for and may require removal at the Contractor's expense.
- B. If the Contractor fails to satisfactorily repair, replace or remove the unauthorized work or materials immediately upon receipt of written notice, the City will have authority to cause such remediation to be performed and to deduct the cost thereof from any monies due or to become due to the Contractor.
- C. If there is ever any question as to what requires inspection, please check with the assigned Inspector, Inspector Supervisor, or Construction Services Manager. General clean-up and similar items of work that have no direct pay can be performed without the benefit of inspection.

**11-25 MONTHLY ESTIMATE:**

- A. Monthly pay estimates will be processed at the beginning of each month for work per formed during the prior month. Monthly pay estimates shall be submitted no later than the 1<sup>st</sup> day of each month. Assuming there are no issues encountered during the standard process, payment will be processed within thirty (30) days from the end of the prior month.  
(Rev. 9/2020)
- B. Where multiple locations are included in the contract, City may require measurements to be performed on a daily basis. The Contractor is required to be present whenever (monthly or final) quantities are measured by the Inspector. The Inspector will coordinate with the Contractor to schedule a mutually agreeable date and time (including Saturdays) to perform the measuring. If the Contractor chooses not to be present when quantities are measured by the Inspector, the Contractor agrees to accept the Inspector's measurements. Invoices shall be submitted for the actual work performed.
- C. Submittal of monthly pay estimate shall include:
  - » Spreadsheet of itemized request (form provided by City)
  - » SWPPP Report
  - » Invoices
  - » Tickets
  - » Other supporting documentation (where applicable or as required by the City)

- D. Submittal of monthly pay estimate to the City's Diversity Management System (B2Gnow), including all payments to subcontractors on the Contract no later than 5 business days after City has agreed on quantities in monthly estimate.
- E. Failure to submit by the deadline or without the required documents will result in the pay estimate being processed in the following month.

**11-26 OWNER NOTIFICATION:**

- A. When work performed has the potential of disrupting businesses or homestead, including but not limited to water cutoff or driveway reconstruction, Contractor shall notify the business owners, occupants and residents in writing forty-eight (48) hours prior to commencing work. It is incumbent upon the Contractor to provide and place door hangers by the required time. Cost for producing the door hangers shall be subsidiary to various bid items.
- B. Door hangers shall be printed in color, in English & Spanish, on 65 pound, white card stock paper and be designed as indicated below. Any deviation will require prior approval from the City. The City will provide a full scaled colored pdf version of the doorhangers to the successful contractor for production.

(Rev 1/2019)

## LIMITED STREET PARKING



### *Hello!*

We are making progress on your street's project and need your help to finish it!

### How does this construction affect me?

The City of Arlington is making improvements in your neighborhood. With that improvement comes construction. This construction may at times affect access in and around your street.

### What do I need to do?

To help ensure that this project is completed in a timely fashion with minimal interruptions and to prevent damage to your personal vehicles, please remove any vehicles, trailers, etc. that may interfere with the construction process and avoid parking on the street, Monday through Friday from 7:00 a.m. to 5:00 p.m. on

Date	To Date

Please remember to tell any guest visiting you about this parking limitation.

### What happens if I am unable to move my vehicles?

If vehicles are not moved, the towing of vehicles will be at the owner's expense of at least \$200 (Article XIV, Section 14.04 Streets and Sidewalks).

### Who can I talk to?

For any additional information or questions, please contact the following contractor or City staff member.

Contractor Name	
Contractor Phone Number	
City Inspector	
City Inspector Phone Number 817-459-6550	Date

We appreciate your cooperation and apologize for any inconvenience this may cause. The City of Arlington appreciates your help in moving this project forward!

## LIMITED STREET PARKING



### *Hello!*

We are making progress on your street's project and need your help to finish it!

### How does this construction affect me?

The City of Arlington is making improvements in your neighborhood. With that improvement comes construction. This construction may at times affect access in and around your street.

### What do I need to do?

To help ensure that this project is completed in a timely fashion with minimal interruptions and to prevent damage to your personal vehicles, please remove any vehicles, trailers, etc. that may interfere with the construction process and avoid parking on the street, Monday through Friday from 7:00 a.m. to 5:00 p.m. on

Date	To Date

Please remember to tell any guest visiting you about this parking limitation.

### What happens if I am unable to move my vehicles?

If vehicles are not moved, the towing of vehicles will be at the owner's expense of at least \$200 (Article XIV, Section 14.04 Streets and Sidewalks).

### Who can I talk to?

For any additional information or questions, please contact the following contractor or City staff member.

Contractor Name	
Contractor Phone Number	
City Inspector	
City Inspector Phone Number 817-459-6550	Date

We appreciate your cooperation and apologize for any inconvenience this may cause. The City of Arlington appreciates your help in moving this project forward!



## ESTACIONAMIENTO LIMITADO EN LA CALLE

### ¡Hola!

Estamos progresando en el proyecto de su calle y necesitamos su ayuda para terminar.

### ¿Como me afecta la construcción?

La City of Arlington esta mejorando su barrio. Con el mejoramiento viene construcción. Esta construcción puede afectar el acceso de su calle y las calles alrededor.

### ¿Que necesito hacer?

Para garantizar que este proyecto se termine a tiempo con minimas interrupciones y para prevenir los daño a su vehículo, **por favor de mover sus vehículos, trailas, etc. que puede interferir con el proceso de construcción y evitar estacionar en el calle, Lunes a Viernes de las 7:00 AM a 5:00PM**

Fecha	Hasta Fecha

Por favor recuerda informar a sus visitantes de el estacionamiento limitado.

### ¿Que pasa si no puedo mover mi vehículo?

Si los vehiculos no se han movido, vehiculos estacionados seran remolcados y será la responsabilidad financiera de el dueño de los gastos con minimo de \$200 (Article XIV, Section 14.04 Streets and Sidewalks).

### ¿A quien puedo hablar?

Para información adicional o preguntas, por favor llama al siguiente contratista o personal de la ciudad.

Nombre de contratista	
Telefono de contratista	
Inspector de la ciudad	
Telefono de Inspector 817-459-6550	Fecha

Apreciamos su cooperación y nos disculpamos por la inconveniencia que esto puede causar. ¡La City of Arlington apreciamos su ayuda en el avance del proyecto!



## ESTACIONAMIENTO LIMITADO EN LA CALLE

### ¡Hola!

Estamos progresando en el proyecto de su calle y necesitamos su ayuda para terminar.

### ¿Como me afecta la construcción?

La City of Arlington esta mejorando su barrio. Con el mejoramiento viene construcción. Esta construcción puede afectar el acceso de su calle y las calles alrededor.

### ¿Que necesito hacer?

Para garantizar que este proyecto se termine a tiempo con minimas interrupciones y para prevenir los daño a su vehículo, **por favor de mover sus vehículos, trailas, etc. que puede interferir con el proceso de construcción y evitar estacionar en el calle, Lunes a Viernes de las 7:00 AM a 5:00PM**

Fecha	Hasta Fecha

Por favor recuerda informar a sus visitantes de el estacionamiento limitado.

### ¿Que pasa si no puedo mover mi vehículo?

Si los vehiculos no se han movido, vehiculos estacionados seran remolcados y será la responsabilidad financiera de el dueño de los gastos con minimo de \$200 (Article XIV, Section 14.04 Streets and Sidewalks).

### ¿A quien puedo hablar?

Para información adicional o preguntas, por favor llama al siguiente contratista o personal de la ciudad.

Nombre de contratista	
Telefono de contratista	
Inspector de la ciudad	
Telefono de Inspector 817-459-6550	Fecha

Apreciamos su cooperación y nos disculpamos por la inconveniencia que esto puede causar. ¡La City of Arlington apreciamos su ayuda en el avance del proyecto!

## LIMITED DRIVEWAY ACCESS



## LIMITED DRIVEWAY ACCESS



### *Hello!*

We are making progress on your street's project and need your help to finish it!

### How does this construction affect me?

The City of Arlington is making improvements in your neighborhood. With that improvement comes construction, which may at times affect access in and around street.

### What do I need to do?

To help ensure that this project is completed in a timely fashion with minimal interruptions and to prevent damage to your personal vehicles, please remove any vehicles, trailers, etc. that may interfere with the construction process of your driveway and avoid parking on the street, Monday through Friday from 7:00 a.m. to 5:00 p.m. on

Date	To Date

### Your driveway will be closed during this time.

Please remember to tell any guest visiting you about this parking limitation.

### What happens if I am unable to move my vehicles?

If vehicles are not moved, the towing of vehicles will be at the owner's expense of at least \$200 (Article XIV, Section 14.04 Streets and Sidewalks).

### Who can I talk to?

For any additional information or questions, please contact the following contractor or City staff member:

Contractor Name	
Contractor Phone Number	
City Inspector	
City Inspector Phone Number 817-459-6550	Date

We appreciate your cooperation and apologize for any inconvenience this may cause. The City of Arlington appreciates your help in moving this project forward!

### *Hello!*

We are making progress on your street's project and need your help to finish it!

### How does this construction affect me?

The City of Arlington is making improvements in your neighborhood. With that improvement comes construction, which may at times affect access in and around your street.

### What do I need to do?

To help ensure that this project is completed in a timely fashion with minimal interruptions and to prevent damage to your personal vehicles, please remove any vehicles, trailers, etc. that may interfere with the construction process of your driveway and avoid parking on the street, Monday through Friday from 7:00 a.m. to 5:00 p.m. on

Date	To Date

### Your driveway will be closed during this time.

Please remember to tell any guest visiting you about this parking limitation.

### What happens if I am unable to move my vehicles?

If vehicles are not moved, the towing of vehicles will be at the owner's expense of at least \$200 (Article XIV, Section 14.04 Streets and Sidewalks).

### Who can I talk to?

For any additional information or questions, please contact the following contractor or City staff member:

Contractor Name	
Contractor Phone Number	
City Inspector	
City Inspector Phone Number 817-459-6550	Date

We appreciate your cooperation and apologize for any inconvenience this may cause. The City of Arlington appreciates your help in moving this project forward!



## ACCESO LIMITADO EN LA ENTRADA DE VEHÍCULO

## ACCESO LIMITADO EN LA ENTRADA DE VEHÍCULO

### ¡Hola!

Estamos progresando en el proyecto de su calle y necesitamos su ayuda para terminar.

### ¡Hola!

Estamos progresando en el proyecto de su calle y necesitamos su ayuda para terminar.

### ¿Como me afecta la construcción?

La City of Arlington esta mejorando su barrio. Con el mejoramiento viene construcción. Esta construcción puede afectar el acceso de su calle y las calles alrededor.

### ¿Como me afecta la construcción?

La City of Arlington esta mejorando su barrio. Con el mejoramiento viene construcción. Esta construcción puede afectar el acceso de su calle y las calles alrededor.

### ¿Que necesito hacer?

Para garantizar que este proyecto se termine a tiempo con mínimas interrupciones y para prevenir daño a su vehículo, por favor de mover sus vehículos, trailas, etc. que puede interferir con la construcción de su entrada de vehículo y evitar estacionar en el calle, Lunes a Viernes de las 7:00 AM a 5:00PM

### ¿Que necesito hacer?

Para garantizar que este proyecto se termine a tiempo con mínimas interrupciones y para prevenir daño a su vehículo, por favor de mover sus vehículos, trailas, etc. que puede interferir con la construcción de su entrada de vehículo y evitar estacionar en el calle, Lunes a Viernes de las 7:00 AM a 5:00PM

Fecha	Hasta Fecha
-------	-------------

Fecha	Hasta Fecha
-------	-------------

No tendra acceso a su entrada de vehículos durante este tiempo.

No tendra acceso a su entrada de vehículos durante este tiempo.

Por favor recuerda informar a sus visitantes de el estacionamiento limitado.

Por favor recuerda informar a sus visitantes de el estacionamiento limitado.

### ¿Que pasa si no puedo mover mi vehículo?

Si los vehículos no se han movido, vehículos estacionados seran remolcados y será la responsabilidad financiera de el dueño de los gastos con minimo de \$200 (Article XIV, Section 14.04 Streets and Sidewalks).

### ¿Que pasa si no puedo mover mi vehículo?

Si los vehículos no se han movido, vehículos estacionados seran remolcados y será la responsabilidad financiera de el dueño de los gastos con minimo de \$200 (Article XIV, Section 14.04 Streets and Sidewalks).

### ¿A quien puedo hablar?

Para información adicional o preguntas, por favor llamar al siguiente contratista o personal de la ciudad.

### ¿A quien puedo hablar?

Para información adicional o preguntas, por favor llamar al siguiente contratista o personal de la ciudad.

Nombre de contratista	
Telefono de contratista	
Inspector de la ciudad	
Telefono de Inspector 817-459-6550	Fecha

Nombre de contratista	
Telefono de contratista	
Inspector de la ciudad	
Telefono de Inspector 817-459-6550	Fecha

Apreciamos su cooperación y nos disculpamos por la inconveniencia que esto puede causar. ¡La City of Arlington apreciamos su ayuda en el avance del proyecto!

Apreciamos su cooperación y nos disculpamos por la inconveniencia que esto puede causar. ¡La City of Arlington apreciamos su ayuda en el avance del proyecto!

## UPCOMING WATER SHUTOFF



## UPCOMING WATER SHUTOFF



The City of Arlington is working to improve water services to your neighborhood and will be performing necessary utility work that requires turning off your water.

The City of Arlington is working to improve water services to your neighborhood and will be performing necessary utility work that requires turning off your water.

### When will my water be turned off?

From	To
On	
Comments	

### When will my water be turned off?

From	To
On	
Comments	

### How can I get updates?

Go to [www.arlingtontx.gov/wateroutages](http://www.arlingtontx.gov/wateroutages) or sign up for email notifications by registering your account at [www.arlingtontx.gov/wateronline](http://www.arlingtontx.gov/wateronline).

### How can I get updates?

Go to [www.arlingtontx.gov/wateroutages](http://www.arlingtontx.gov/wateroutages) or sign up for email notifications by registering your account at [www.arlingtontx.gov/wateronline](http://www.arlingtontx.gov/wateronline).

### Who can I talk to?

For any additional information or questions, please contact the following contractor or City staff member.

Contractor Name	
Contractor Phone Number	
City Inspector	Time
City Inspector Phone Number 817-459-6550	Date

### Who can I talk to?

For any additional information or questions, please contact the following contractor or City staff member.

Contractor Name	
Contractor Phone Number	
City Inspector	Time
City Inspector Phone Number 817-459-6550	Date

We appreciate your cooperation and apologize for any inconvenience this may cause. This work is necessary for the enhancement of your neighborhood and the City of Arlington.

We appreciate your cooperation and apologize for any inconvenience this may cause. This work is necessary for the enhancement of your neighborhood and the City of Arlington.



## APAGADO PROGRAMADO DE AGUA

## APAGADO PROGRAMADO DE AGUA

La City of Arlington esta mejorando el servicio de agua en su barrio y estaremos haciendo las necesarias instalaciones que requiere apagar el servicio de agua.

La City of Arlington esta mejorando el servicio de agua en su barrio y estaremos haciendo las necesarias instalaciones que requiere apagar el servicio de agua.

### ¿Cuándo se apagará mi servicio de agua?

Desde	Hasta
En	
Comentarios	

### ¿Cuándo se apagará mi servicio de agua?

Desde	Hasta
En	
Comentarios	

### ¿Como recibo actualizaciones?

Se puede recibir actualizaciones en [www.arlingtontx.gov/wateroutages](http://www.arlingtontx.gov/wateroutages) o se puede registrarse en [www.arlingtontx.gov/wateronline](http://www.arlingtontx.gov/wateronline) para recibir notificaciones por correo electronico.

### ¿Como recibo actualizaciones?

Se puede recibir actualizaciones en [www.arlingtontx.gov/wateroutages](http://www.arlingtontx.gov/wateroutages) o se puede registrarse en [www.arlingtontx.gov/wateronline](http://www.arlingtontx.gov/wateronline) para recibir notificaciones por correo electronico.

### ¿A quien puedo hablar?

Para información adicional o preguntas, por favor llamar al siguiente contratista o personal de la ciudad.

Nombre de contratista	
Telefono de contratista	
Inspector de la ciudad	
Telefono de Inspector 817-459-6550	Fecha

### ¿A quien puedo hablar?

Para información adicional o preguntas, por favor llamar al siguiente contratista o personal de la ciudad.

Nombre de contratista	
Telefono de contratista	
Inspector de la ciudad	
Telefono de Inspector 817-459-6550	Fecha

Apreciamos su cooperación y nos disculpamos por la inconveniencia que esto puede causar. ¡La City of Arlington apreciamos su ayuda en el avance del proyecto!

Apreciamos su cooperación y nos disculpamos por la inconveniencia que esto puede causar. ¡La City of Arlington apreciamos su ayuda en el avance del proyecto!

**11-27 SIGNS FOR BUSINESSES: N/A**

**11-28 PROJECT SIGNS:**

- A. Contractor shall provide and install a minimum of three (3) project signs. Fewer signs may be allowed upon approval by the City.
- B. Generally, project signs shall be located at the beginning and end of the project and on major intersecting streets. Locations of signs and specific information on signs shall be approved by the City prior to fabrication of signs.
- C. Signs shall be in accordance with the appropriate sign detail for the project. Construction shall be on ¾-inch weatherproof (marine), 4-foot x 8-foot plywood and the painting/graphics shall be accomplished with good quality paint which will not weather or fade during the life of the contract. A jpeg file of the graphics is available on the City's web page, <http://www.arlingtontx.gov/details>. Color shall be similar in nature. Any deviation will require prior approval from the City. (Rev 4/2019)
- D. Signs shall be placed in prominent locations and maintained in good condition until the completion of the project. Damaged or defaced signs will be repaired or replaced within two (2) calendar days at the Contractor's expense. The cost of the plywood sign(s) shall be considered subsidiary to the unit prices bid on this project.

**11-29 QUANTITIES:**

- A. Quantities provided in the plans are superseded by quantities included in this contract. Quantities shown on plan sheets are for guidance only. (Rev. 8/2021)

**11-30 CONTRACTOR SELF-PERFORMANCE:**

- A. The contractor shall use its own personnel and equipment to perform the primary work type identified in this contract. Primary work includes: Concrete Paving. Qualified subcontractors may be used to perform any other work types in this contract. (Rev. 8/2021)

**11-31 AS-BUILT PLANS: (ADDED PER ADDENDUM NO.1)**

- A. The contractor shall submit as-built plans that records all pertinent revisions made during construction as well as any underground utilities or structure locations that are encountered. Pertinent revisions include horizontal adjustments greater than one foot and vertical adjustments greater than 0.1 feet. A portable document format (PDF) copy of the as-built plans shall be submitted prior to final estimate. As-built plans consist of markups that clearly show revisions to the original plans. As-built plans are not required to be sealed by a professional engineer.

END OF SECTION

## SECTION NO. 12

### SPECIAL PROVISIONS – GENERAL CONSTRUCTION SPECIFICATIONS

#### NUMERICAL LISTING

Section No.	
12-01	STORMWATER MANAGEMENT CONTROLS
12-02	FILTER FABRICS
12-03	DETOURS AND BARRICADES
<del>12-04</del>	<del>TEMPORARY TRAFFIC SIGNALS – N/A</del>
12-05	PROTECTION OF THE PUBLIC
12-06	PROTECTION OF FLOODPLAIN
12-07	PROTECTION OF ADJACENT PROPERTY
12-08	PROTECTION OF ADJACENT LANDSCAPING IMPROVEMENTS
12-09	PROTECTION & CLEANING OF EXISTING STORM OR SANITARY SEWERS
12-10	MAINTENANCE OF ADEQUATE DRAINAGE
12-11	TEMPORARY ACCESS TO PRIVATE PROPERTIES
12-12	CRUSHED STONE BAD WEATHER PROTECTION
12-13	USE OF PRIVATE PROPERTY
12-14	USE OF CITY PARKS
<del>12-15</del>	<del>CONSECUTIVE STREET CONSTRUCTION – N/A</del>
12-16	TOWING OF VEHICLES
12-17	CONSTRUCTION WATER
12-18	DAILY CLEANUP & REMOVAL ITEMS
12-19	DUST CONTROL
12-20	MOWING DURING CONSTRUCTION
12-21	EXISTING UTILITIES
12-22	SITE PREPARATION
12-23	TREE REMOVAL
12-24	TREE TRIMMING
12-25	SITE GRADING
12-26	BORROW
12-27	FILLING
12-28	SELECT FILL

- 12-29 SPRINKLER RELOCATIONS
- 12-30 CRUSHED STONE CUSHION
- 12-31 BACKFILL & BACKFILL MATERIAL
- 12-32 MECHANICALLY COMPACTED BACKFILL
- 12-33 TRENCHLESS TECHNOLOGY
- 12-34 BACKFILL AND CLEANUP
- 12-35 FLOWABLE BACKFILL
- 12-36 TEMPORARY STREET REPAIR
- 12-37 VERTICAL ADJUSTMENT OF WATER VALVES, MANHOLES, ACCESS CHAMBERS AND CLEANOUTS
- 12-38 GREEN CEMENT
- 12-39 REINFORCING STEEL
- 12-40 RESTORATION OF EXISTING PAVED SURFACES
- ~~12-41 GALVANIZED GABIONS WITH PVC COATING - N/A~~
- 12-42 CONDUIT
- 12-43 SLOPE EROSION CONTROL
- 12-44 TOPSOIL
- 12-45 HYDRO-MULCH SEEDING
- 12-46 SODDING/TURFGRASS PLANTING
- 12-47 FINAL CLEANUP
- 12-48 FINAL INSPECTION

## SECTION NO. 12

### SPECIAL PROVISIONS – GENERAL CONSTRUCTION SPECIFICATIONS

#### **12-01 STORMWATER MANAGEMENT CONTROLS:**

- A. This project is subject to the Texas Commission on Environmental Quality's (TCEQ) Construction General Permit under the Texas Pollutant Discharges Elimination System (TPDES) Program as well as the City's Ordinances. The City is a Municipal Separate Storm Sewer System (MS4) Operator.
- B. The Contractor is considered the Primary Operator and is responsible for the Erosion Control Plan, Stormwater Pollution Prevention Permit (SWPPP), and or Notice of Intent/Notice of Termination (NOI/NOT) as well as ongoing compliance throughout construction. The Contractor shall provide adequate erosion, sedimentation and pollution controls, and shall be solely responsible for day to day operations, inspections, and maintenance of stormwater controls. It shall be the Contractor's responsibility to ensure no sediment leaves the site. An Erosion Control Plan has been included in the construction plans for the Contractor's use. The provided Erosion Control Plan serves as minimum measures to control erosion, sediment, and pollution during construction.
- C. The City is considered the Secondary Operator and has control over specifications, plans and the Erosion Control Plan and/or SWPPP. The Contractor shall comply with all requests by the City for maintenance of stormwater controls or general site maintenance to prevent erosion, sedimentation, or pollution.
- D. The information contained in the Erosion Control Plan, SWPPP, NOI and/or Site Notices shall be in accordance with the TPDES Construction General Permit and City's Ordinances. All plans, permits, and notices shall be submitted to the City for review at least fifteen (15) calendar days prior to commencement of construction activities. Final plans, permits and notices shall be submitted to the City and TCEQ (if applicable). Notices must be posted on site prior to commencement of construction activities.
- E. All plans and permits shall be prepared and certified by a Licensed Professional Engineer or other professional, approved by the City, certified in a discipline that includes erosion and sediment control principles appropriate for the site in accordance with City Ordinances.
- F. For projects that disturb less than twelve thousand (12,000) square feet that are not part of a Larger Common Plan of Development, no submittals are required. Installation, inspection and maintenance of stormwater controls shall be in accordance with standards set forth in the TPDES Construction General Permit.
- G. For projects that disturb between twelve thousand (12,000) square feet and 1-acre that are not part of a Larger Common Plan of Development, the Contractor shall prepare an Erosion Control Plan (if it is not provided in the construction plans). Inspection and maintenance of stormwater controls shall be in accordance with standards set forth in the TPDES Construction General Permit.

- H. For projects that disturb between 1-acre and 5-acres, the Contractor shall provide a site specific SWPPP and two (2) separate Site Notices (one to be signed by the Contractor and one to be signed by the City). The SWPPP shall be prepared and certified by a licensed professional civil engineer or by a certified professional who is familiar with the TCEQ TPDES Construction General Permit requirements. The SWPPP shall be subject to approval by the City and/or TCEQ and shall contain information as required by the TPDES General Permit Regulations and the City's checklist included in the City's Design Criteria Manual.
- I. For projects larger than 5-acres, the Contractor shall provide a site specific SWPPP and two (2) separate Site Notices (one to be signed by the Contractor and one to be signed by the City). The SWPPP shall be prepared and certified by a licensed professional civil engineer or by a certified professional who is familiar with the TCEQ TPDES Construction General Permit requirements. The SWPPP shall be subject to approval by the City and/or TCEQ and shall contain information as required by the TPDES General Permit Regulations and the City's checklist included in the City's Design Criteria Manual. The Contractor shall submit a NOI to TCEQ and obtain a site specific TPDES authorization number prior to the commencement of construction activities. The Contractor shall submit a NOT within thirty (30) days of project completion to TCEQ. Copy of the NOI and NOT must be submitted to the City.
- J. The following shall be maintained on the project site by the Contractor at all times:
1. Post near main entrance to project site or at project site office:
    - a. Site Notices (signed by the Contractor and the City) depending on project size.
    - b. Local contact person with phone number.
    - c. Brief description of project.
    - d. Location of SWPPP (if applicable)
  2. SWPPP including any revisions (if applicable).
- K. **The stormwater controls must be in place on the project prior to any construction activity. Any stockpiles of unusable items and/or excavated materials shall be removed from the project site within seven (7) days.** In case of failure on the part of the Contractor to control soil erosion, pollution and/or siltation, the City reserves the right to employ outside assistance or to use City forces to provide the necessary corrective measures. Such incurred direct costs plus project engineering costs will be billed to the Contractor. Contractor shall not begin work to the detriment of work already begun. Contractor shall conduct operations so as to impose a minimum interference to traffic. Monthly pay estimates to the Contractor may be withheld until Contractor is in compliance.

- L. A lump sum bid item in the amount designated in the PROPOSAL has been to pay the Contractor for SWPPP preparation as well as providing, installing, and maintaining the physical stormwater control measures throughout construction and removal of all items and structures constructed for stormwater pollution protection once vegetation is established. Twenty five percent (25%) of this amount will be paid on the first monthly pay estimate with the remainder amount prorated equally to the remainder months of the contract time.
- M. Contractor shall provide an electronic file in pdf format of the final SWPPP, including all revisions, inspections and NOT (if applicable) with the final payment estimate.

**12-02 FILTER FABRICS:**

- A. The filter fabric shall be of a synthetic material that will allow stormwater to freely flow through while trapping sediment and debris. The geotextile shall be non-biodegradable and resistant to degradation by ultraviolet exposure and resistant to contaminants commonly encountered in storm water.
- B. When applicable, the applications and uses of the filter fabric include but are not limited to the selection listed below. The filter fabrics have the following Minimum Average Roll Values (MARV) for physical properties:

			Applications/Uses				
			Silt Fence	Sub-Drain, French Drain	Dewatering	Separation, Pipe Embedment, Concrete Channels, Concrete Slope Protection, Weepholes	Construction Access
Tensile Strength	ASTM D-4632	LBS	100x100	120	200	250	300
CBR Puncture	ASTM D-6241	LBS	250	300	600	700	850
Apparent Opening Size (max)	ASTM D-4751	US Sieve (max)	30	70	70	80	80
Apparent Opening Size (min)	ASTM D-4751	US Sieve (min)	80	80	80	100	100
Water Flow Rate	ASTM D-4491	GAL/MIN/	8	120	85	75	75

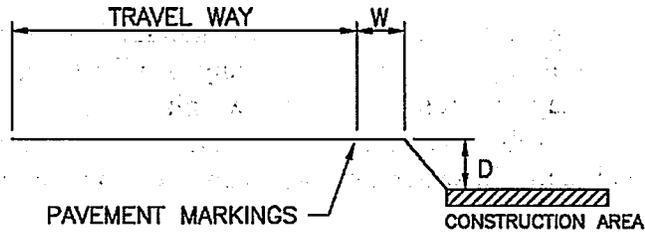
UV Resistance	ASTM D-4355	% (500 HRS)	80	70	70	70	70
Woven / Nonwoven			Woven	Nonwoven	Nonwoven	Nonwoven	Nonwoven

**12-03 DETOURS AND BARRICADES:**

- A. After coordinating and discussing plans with the Project Manager and Inspector the Contractor shall submit one (1) copy of a Traffic Control Plan, together with the Temporary Traffic Control Permit two (2) weeks prior to closing any street or causing any obstruction to traffic on any street to the Department of Public Works and Transportation. The Contractor shall not proceed with the implementation of the Traffic Control Plan until notified by the City that the plan has been accepted. The Traffic Control Plan shall be drawn at a scale not less than 1"=200' unless approved by the Traffic Engineer; and such that it is legible; and shall include proposed street closings, detours, barricade placements, and sign placement, including advance warning signs, temporary signals, portable message boards and pavement markings, if necessary. (Rev. 9/2021)
- B. The Contractor shall furnish and erect suitable barricades, signs, signals and appropriate pavement markings to protect motorists and pedestrians, as set forth in the latest edition of the TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. However, vertical panels will not be allowed unless approved by the Traffic Engineer. The barricades, signs, signals and pavement markings shall be constructed, placed, and adequately maintained as set forth in the Traffic Control Plan or as directed by the City.
- C. Unless otherwise approved by the City two-way traffic shall be maintained on all roadways under construction at all times. If it becomes necessary to detour traffic off the existing paved roadway for more than seven (7) days, a hard surface driving lane, such as asphalt, shall be properly constructed and maintained by the Contractor throughout the duration of the detour. All temporary tie-ins shall be constructed to a minimum of 4-inches Type "B" asphalt over a compacted subgrade (standard compaction). Subsequent maintenance of all detours and tie-ins shall be considered subsidiary to the unit prices bid for temporary asphalt. Cutting, removing, and replacing the asphalt for utility installations, excavation, and/or liming operations shall be considered subsidiary to the initial placement of asphalt and will not be paid for each re-installation. Asphalt shall be replaced within seven (7) days of removal for these activities. A bid item is included for furnishing, installing, maintaining and final removal of the asphalt.
- D. Where pavement drop-offs occur, traffic control plans shall be in accordance as illustrated on the following "Traffic Control Device Detail," which is enclosed as part of these specifications. These guidelines are applicable to construction work where continuous pavement edges or drop-offs exist parallel and adjacent to a lane used for traffic.
- E. When performing maintenance on major arterials or as directed by the Traffic Engineer, Contractor shall use portable message boards to inform the public of the construction date,

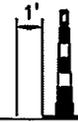
length of project, and to expect delays. The signs shall be operational twenty-four (24) hours a day. Portable message boards shall be erected at minimum three (3) calendar days prior to beginning work or as directed by the City, and all verbiage shall be approved by the City Traffic Engineer.

- F. No direct compensation (unless bid item included) will be made to the Contractor for furnishing, installing, and maintaining any Traffic Control Devices, including but not limited to message boards, barricades, warning signs, signals, pavement markings, and detours and their subsequent maintenance and removal. This is to be considered subsidiary to the several items for which unit prices are requested in the PROPOSAL.
- G. Should it be necessary for the City to provide and/or maintain signs, barricades, signals, and markings due to Contractors lack of response to correct deficiencies, Contractor shall be billed for the work performed by the City.



"W" GREATER THAN OR EQUAL TO 30' NO DEVICE NEEDED

"W" LESS THAN 30' BUT GREATER THAN OR EQUAL TO 12' WITHOUT CURB OR 2' WITH CURB



"W" LESS 12' WITHOUT CURB OR 2' WITH CURB AND:

(A) "D"=2" TO 6"

4' MIN. (6' DESIRED)

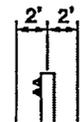
(B)

"D" GREATER THAN 6" TO 24"



(C)

"D" GREATER THAN 24"



MBGF, CONCRETE MEDIAN BARRIER OR "W" SECTION ON DRUMS FOR SLOPES STEEPER THAN 2:1 (IF SLOPE IS 2:1 OR FLATTER DETAIL B MAY BE USED)

## TRAFFIC CONTROL DEVICE DETAIL

ALL TRAFFIC CONTROL SHALL COMPLY WITH THE LATEST EDITION OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES

REV: 03/31/16

 CITY OF ARLINGTON, TEXAS		
Traffic Control Device		
DATE:	DESIGNED BY:	SERIES:
DRAWN BY:	CHECKED BY:	CHECKED BY:

**12-04 TEMPORARY TRAFFIC SIGNALS: N/A**

**12-05 PROTECTION OF THE PUBLIC:**

- A. The Contractor shall at all times conduct the work in such manner as to ensure the least possible obstruction to public traffic and protect the safety of the public. Any provisions necessary for the work being performed to provide public safety and convenience shall be the direct responsibility of the Contractor and shall be performed at his/her expense.
- B. Materials placed on the site, materials excavated and construction materials or equipment shall be located so as to cause as little obstruction to the public as possible.
- C. The City reserves the right to remedy any neglect on the part of the Contractor in regard to public convenience and safety which may come to our attention. The cost of such work done or material furnished by the City shall be billed to the Contractor.

**12-06 PROTECTION OF FLOODPLAIN:**

- A. No dumping will be allowed in floodplains or below the 100-year flood elevation of drainage ways. Areas in the floodplain or near drainage ways shall be protected and be undisturbed unless otherwise noted in the construction plans. No items shall be placed in the floodplain or drainage ways unless approved by the City, including but not limited to temporary stockpiling and/or material storage.
- B. Contractor is responsible for ensuring all applicable local, state and federal permits are approved prior to any land disturbance in floodplains or drainage ways. Construction activity shall not divert or obstruct the natural flow of surface water in a manner that damages surrounding properties.

**12-07 PROTECTION OF ADJACENT PROPERTY:**

- A. The Contractor shall be responsible for the protection of all fences, trees, curb and gutter, and other improvements on the property adjoining the construction sites from damage by the Contractor's equipment and personnel. The Contractor shall be responsible for notifying the property owners in advance of any trimming to be done on trees. The Contractor will notify the City of any trees, shrubs, or bushes that are not identified on the plans that must be removed by the construction. Trees not identified on the plans shall not be removed until permission is granted by the City. The Contractor will not be allowed to place excess material, forms, equipment, or any other material outside the street right-of-way without written permission of the property owner and approval of the City.
- B. For documentation purposes, the Contractor will be responsible to video the job site prior to commencing work and to provide the Inspector with a date stamped copy of the video. To avoid any dispute of damages caused, it is strongly recommended the video be of good quality and capture as much detail as possible. Contractor will be responsible for any damages caused by the Contractor or his/her subcontractors. Damages shall be repaired or resolved promptly upon notification by the Inspector. Damages to irrigation by negligence of the Contractor shall be repaired by a licensed irrigator within forty-eight (48) hours of being damaged. Contractor will be responsible for any cost incurred if City forces or City's

contractor repairs the damages due to lack of response from the Contractor. Such cost shall be billed to the Contractor.

**12-08 PROTECTION OF ADJACENT LANDSCAPING IMPROVEMENTS:**

- A. The Contractor shall be responsible for the protection of any existing landscaping improvements in the medians and parkways adjacent to the project including but not limited to trees, shrubs and irrigation from damage by Contractor's equipment or personnel.
- B. If the Contractor damages any of the landscaping improvements, the Contractor shall be responsible for replacing and/or repairing the improvements at his/her expense. Monthly pay estimates may be withheld until the replacement or repair has been fully performed. If the Contractor feels any of the landscaping improvements are in conflict with the project and must be removed or have prior damage, the Contractor shall notify the City prior to removal of any landscaping improvements.

**12-09 PROTECTION & CLEANING OF EXISTING STORM OR SANITARY SEWERS:**

- A. If the Contractor, through carelessness or negligence, obstructs the flow of or deposits any materials into any existing storm or sanitary sewer lines, the Contractor shall provide the necessary equipment and labor (or hire a subcontractor approved by the City) to clean and televise the affected lines. The limits of the lines to be cleaned and televised will be determined by the Inspector.
- B. The identified lines shall be cleaned within forty-eight (48) hours of notification. In emergency situations, timeline for cleaning the lines will be determined by the Inspector. After cleaning, the Contractor shall televise and videotape the lines. Video tapes shall be delivered to the Inspector so they can be reviewed and approved for acceptance of the cleaning work.

**12-10 MAINTENANCE OF ADEQUATE DRAINAGE:** Contractor shall maintain adequate drainage at all times during construction. Changing of natural runoff flow locations or concentrating flows to a point of potential harm to the adjacent property will not be allowed.

**12-11 TEMPORARY ACCESS TO PRIVATE PROPERTIES:**

- A. The Contractor shall maintain all private drives in an accessible condition to allow residents ingress and egress before leaving the job site, except during the placing and curing of drive approaches. All commercial drives and other locations with high traffic volumes, as directed by the City, shall be a minimum of 4-inches Type "B" asphalt over a compacted subgrade (standard compaction). Subsequent maintenance of drives shall be considered subsidiary to the unit prices bid. Cutting, removing, and replacing the asphalt for utility installations, excavation, and/or liming operations shall be considered subsidiary to the initial placement of asphalt and will not be paid for each re-installation. Asphalt shall be replaced within seven (7) days of removal for these activities.
- B. Should a vehicle become damaged or stranded due to an inaccessible condition, any legitimate claims arising from such conditions shall be the sole responsibility of the

Contractor. The City reserves the right to withhold monthly pay estimates until all claims are resolved.

**12-12 CRUSHED STONE BAD WEATHER PROTECTION:**

- A. During periods of bad weather, the Contractor shall put in place, on excavated streets, 1½-inches to 2-inches crushed stone or crushed concrete sufficient to provide temporary access to private property. All material will be removed and stockpiled for future use at other locations as necessary. Any material removed and hauled off the project site without approval from the City will be replaced by an equal quantity at the Contractor's expense. Special care will be taken by the Contractor during placement and removal of the material, not to unnecessarily combine it with native material on the project. If special care is not taken by the Contractor, an equal quantity of material will be replaced at the Contractor's expense.
- B. Weight tickets shall be submitted to the Inspector or his/her representative no later than one (1) week after delivery. Any tickets not submitted within this time frame or signed by the Inspector shall not be paid.
- C. NOTE: The use of crushed stone or crushed concrete as a means to detour traffic or maintain two-way traffic will not be paid under this item.
- D. The tons in the bid quantity are rough estimates. The actual amount used will be determined by the need for temporary and/or emergency access during construction.

**12-13 USE OF PRIVATE PROPERTY:**

- A. The Contractor shall not at any time use private property to park or turn around construction vehicles or store equipment and/or materials without the written permission of the property owner.
- B. The Contractor shall not at any time use water metered by meters set for the property owner's use without written permission of the property owner. Contractor is responsible for any and all damages caused to private property or additional cost incurred by property owner due to use of property for construction purposes.

**12-14 USE OF CITY PARKS:**

- A. The Contractor shall obtain written permission from the Parks and Recreation Department prior to the use of City park property for access or for the storage of machinery, equipment, materials, and/or supplies.
- B. Any damage incurred to City park property, by unauthorized use by the Contractor will be the responsibility of the Contractor to repair in an equal or better condition. Monthly pay estimates to the Contractor may be withheld until the damage is repaired and/or payment for the damages has been made.

**12-15 CONSECUTIVE STREET CONSTRUCTION: N/A**

**12-16 TOWING OF VEHICLES:** The Contractor shall follow applicable City Ordinances should it be determined that vehicles parked upon a City street must be moved in order to perform street maintenance or construction. Contractor shall provide ample notice to the City if any vehicle is to be towed.

**12-17 CONSTRUCTION WATER:**

- A. Contractor is responsible to provide all water necessary for the construction of this project. All construction water will be metered by City owned meters. A fee and a deposit must be paid before the meter is released to the Contractor. Payment and meter pick up locations are the South Service Center, 1100 S.W. Green Oaks, or City Hall Customer Care, 101 W. Abram. The meter readings will be submitted online by the Contractor and billed each month in accordance with the current Customer Care and Business Services Policy.
- B. Any damage that occurs to the meter during this time will be repaired by the City at the expense of the Contractor. The cost of the repairs will be deducted from the deposit and the remaining deposit will be returned to the Contractor. This procedure will be followed wherever construction water is needed.
- C. If the meter is set on a fire hydrant, the meter assembly shall be provided with an approved backflow prevention device, provided by the Contractor in accordance with the standard detail and the Fire Hydrant Meter Agreement requirements located under <http://www.arlingtontx.gov/details>. (Rev 4/2019)

**12-18 DAILY CLEANUP & REMOVAL ITEMS:**

- A. The removal of existing concrete curb and gutters, concrete valley gutters, concrete drive, and existing drainage features, shall be at the locations indicated by the City and shall be paid for under the right-of-way preparation pay item (See Special Provision Section 12-22, Right-of-way/Easement Preparation) unless a separate bid item is included in the PROPOSAL.
- B. All concrete curb and gutter and drive approaches removed will be broken out at existing construction expansion joints if possible. Where existing concrete is removed, the slab will be sawed in a neat straight line the full depth of the slab. The cost for sawing and breaking shall be considered subsidiary to the unit price bid for concrete removal. The Contractor shall make every effort to protect all concrete surfaces that will remain. Any remaining surfaces damaged during removal operations by the Contractor will be replaced at the Contractor's expense.
- C. Disposal of excess materials and debris resulting from construction, including but not limited to concrete, excess soil, forms, and rebar shall be removed and disposed of on a daily basis, unless other disposal schedule is approved by Inspector. Depending on type of material or debris, dump trucks should be the primary source of disposal. Contractor will be responsible for providing the necessary equipment or vehicle for such task.

- D. Dump trucks must be tarped while in transit to disposal sites. Tarps must be secured and not torn or tattered. All applicable State and local laws and ordinances relating to hauling, handling, and disposal of such materials shall be complied with. Use of Roll Off Box shall meet the City's Ordinances.
- E. The responsibility of locating suitable disposal sites for removal items on this project will be solely a function of the Contractor. The City will in no way be responsible for the actions of the Contractor if he disposes of excess material in locations that are not approved.

**12-19 DUST CONTROL:** Contractor will be responsible for minimizing dust on a daily basis and when instructed by the City. Dust control shall include, but is not limited to operations such as watering stockpiles, subgrade, pavement, sawing (including brick pavers), concrete joint sealing, routing, and crack sealing. Equipment necessary for capturing particulate matter during the process of routing, cleaning & sealing cracks & joints shall be considered subsidiary. The necessary application of water for dust shall be considered subsidiary to the other bid items.

(Rev. 10/2020)

**12-20 MOWING DURING CONSTRUCTION:** Contractor shall maintain existing parkways and medians at all times during construction by providing periodic mowing to meet the applicable City Ordinances. Any code violation or citation issued for not maintaining these areas will be the responsibility of the Contractor. Contractor will also be responsible for any cost incurred if City forces or City's contractor performs the mowing due to lack of response from the Contractor. Such cost will be billed to the Contractor.

**12-21 EXISTING UTILITIES:**

- A. In the preparation of plans and specifications, the engineer has endeavored to indicate the location of existing underground utility lines which are known to the engineer. It is not guaranteed that all lines or structures have been shown on the plans. Prior to the start of construction, the Contractor shall communicate with the local representative of all utility companies and advise said representatives of the route of the proposed construction in order to obtain the assistance of the utility companies in the location of and in the avoidance of the conflicts with utility lines.
- B. The Contractor should not assume the City has Surface Utility Engineering (SUE) maps for any of the proposed locations. Contractor will be responsible for calling for ALL locates (1-800-DIGTESS) in a timely matter to ensure utility issues are addressed and resolved within the allotted contract time. Contractor will also be responsible for complying with all State regulation and requirements.
- C. For the City's Streetlights, Storm Water, Signals, Fiber Optics, Water and Sewer line locates, request must be made online through the City's web site or through the "Ask Arlington" App. For emergency locates, as defined as a situation that endangers life, health, or property; or a situation in which the public need for uninterrupted service and immediate re-establishment of service, or if services are interrupted compels immediate action, call (817) 459-5900. If a request is falsely called in as an emergency, Contractor will be liable for payment of the emergency line locate service call.

- D. The Contractor shall contact the proper utility representative for questions or coordination of construction related to existing utilities. It is the Contractor's responsibility to uncover and determine the elevation and location of all potential conflicts well ahead of the excavation.
- E. The Contractor shall make every effort to protect existing utilities and other lines or structures. The Contractor shall not adjust, remove, or operate existing utilities unless specifically requested to do so in these specifications or authorized to do so by the City.
- F. Contractor shall protect all utility pole(s) impacted by the construction. Protection shall include temporary bracing of the utility poles where adjacent excavation could reasonably compromise the stability of the utility pole(s). Contractor shall coordinate the utility pole bracing with the owner of the utility pole(s) and the City. Unless there is a specific pay item for temporary pole bracing of utility pole(s), bracing of utility poles shall be incidental to other pay items included in the contract. Any utility damaged by the Contractor during the construction shall be suitably replaced at the Contractor's expense.
- G. Where excavation endangers adjacent structures and utilities, the Contractor shall, at his/her own expense, carefully support and protect such structures and/or utilities so that there will be no failure or settlement. Where it is necessary to move services, poles, guy wires, pipe lines, or other obstructions, the Contractor shall notify and cooperate with the utility owner.
- H. Should damage to any existing structure or utility occurs, whether from failure or settlement, the Contractor shall restore the structure or utility to its original condition and position without compensation from the City. All costs of temporarily or permanently relocating the conflicting utilities shall be borne by the Contractor without extra compensation from the City.

**12-22 SITE PREPARATION:**

- A. Site preparation shall consist of preparing the right-of-way, designated easements, and additional areas made available for construction of this project by the removal and disposal of all obstructions. Such obstructions shall be considered to include: remains of houses not completely removed by others, foundations, floor slabs, concrete, brick, lumber, plaster, septic tanks, basements, abandoned utility pipes and conduits, equipment and other foundations, fences, retaining walls, outhouses, shacks, sheds, curb and gutters, driveways, paved parking areas, miscellaneous stone, brick, concrete sidewalks, concrete and asphalt pavement, drainage structures, manholes, inlets, abandoned railroad tracks, scrap iron, trees, stumps, bushes, vegetation, roots, shrubs, brush, logs, limbs, rubbish, and other debris, whether above or below ground except live utility facilities. Clearing and grubbing shall be done in a matter that will not damage adjacent property. (Rev 7/2021)
- B. It is the intent of this specification to provide for the removal and disposal of all obstructions and objectionable materials not specifically provided for elsewhere in the plans and specifications. (Rev 7/2021)

- C. Site preparation construction methods shall be in accordance with the NCTCOG Standard Specifications for Public Works Construction – North Central Texas, Section 203.1.2. The contractor shall leave the construction site and disturbed areas in a neat and presentable condition. (Rev 7/2021)
- D. The lump sum bid for this item shall not exceed ten percent (10%) of the total amount bid for the entire project. A prorated portion of the lump sum bid shall be paid monthly until such work is completed. The Contractor should take special precautions to avoid damaging any trees outside the construction limits and any other trees which the City may designate to remain.

**12-23 TREE REMOVAL:**

- A. All trees to be removed shall be tagged and approved by the City prior to removal. (Rev. 7/2021)
- B. All trees and bushes that are cut down shall be hauled off the same day. (Rev. 7/2021)
- C. Contractor will fully comply with any and all federal, State and local laws related to the removal of trees including but not limited to the Migratory Bird Treaty Act. Contractor will be responsible for any fines, penalties, or damages due to any such violations of law and any such fines, penalties, or damages will be subject to the indemnification provision of this contract.
- D. Payment for tree removal is included in the Site Preparation bid item. Measurement and payment shall be made in accordance with the Site Preparation specification. (Rev. 7/2021)

**12-24 TREE TRIMMING:**

- A. All trees shall be trimmed back to avoid damage by construction equipment. All cuts shall be clean and smooth, with the bark intact with no rough edges or tears. Tree trimming shall be done in accordance with the International Society of Arborists or National Association of Arborists Standards. Trees shall also be protected to avoid damage by construction activities. (Rev 1/2019)
- B. Prior to initial acceptance of the project, Contractor shall trim the lower branches of all trees that overhang the sidewalk to a minimum height of 7-feet above the sidewalk. (Rev 1/2019)
- C. Payment for tree trimming and protection is considered subsidiary to the contract unless a separate pay item has been included in the Proposal. (Rev 1/2019)

**12-25 SITE GRADING:**

- A. All vegetation shall be removed from areas where fill is to be placed. Topsoil shall be grubbed, removed, and stockpiled. After the fill has been placed and compacted, the topsoil shall be spread to a thickness of 4-inches in all proposed areas that require it. The topsoil shall be free from grass, roots, sticks, stones, or other foreign materials. After

placement is complete, the surface of the topsoil shall be finished to a reasonably smooth surface so grass may be planted and maintained.

- B. Site grading will be based on the elevations and grades shown on the Grading and Paving Drawings. Filling, construction of embankments, removal, stockpiling, and spreading topsoil and offsite disposal of excess material will be considered incidental and subsidiary to excavation and shall not be a separate pay item.
- C. No extra payment shall be made for rock excavation or crushing rock material for placement in fill areas. This work shall be considered incidental to site grading and shall not be a separate pay item.

**12-26 BORROW:**

- A. It is the Contractor's responsibility to locate a suitable source of select borrow material for completing the fills on the project if there is insufficient material from the street excavation to complete all fills as shown on the construction plans. Prior to using any offsite borrow material, the material must be approved by the City. The following will be required prior to approval:
  - 1. The Contractor must obtain a written, notarized certification from the landowner of each proposed borrow source stating that to the best of the landowner's knowledge and belief there has never been contamination of the borrow source site with hazardous or toxic materials.
  - 2. The Contractor shall provide adequate testing to determine that the borrow source material is not contaminated with hazardous or toxic materials. The geotechnical engineer performing the testing for the Contractor shall notify the City in writing of his/her approval of the material.
  - 3. Based on geotechnical testing performed on existing soil from the project site, a lime/cement application rate has been determined for subgrade stabilization as set forth in these Special Provisions. The quantities included in the PROPOSAL are based on the determined application rate. Before using any offsite borrow material for subgrade purposes, the Contractor shall provide necessary testing to determine the lime/cement application rate for the proposed borrow material. The results of these tests shall be submitted to the City in writing by the geotechnical engineer performing the testing for the Contractor. If the lime/cement application rate required for the offsite borrow material is greater than the rate specified in these Special Provisions, the Contractor shall be responsible for the cost of the additional lime/cement required or locate an alternative borrow source. If the application rate required for the borrow material is less than the rate specified in these Special Provisions, the Contractor will be paid for the actual quantity of lime/cement used on the project.
  - 4. The Contractor shall provide testing (ASTM D 698) to determine the optimum density and moisture content for the borrow material if used as treated subgrade.

5. The borrow material shall be tested for the presence of soluble sulfates. Any soil with a content of soluble sulfate in excess of 2000 ppm will not be approved.
6. No organic material, trash, debris, trees, clippings or other deleterious material will be allowed in offsite borrow material.
7. Payment for Borrow is based on plan quantity. Contractor shall verify excavation/fill quantities and shall notify City in writing of concurrence or disagreement with plan quantities prior to start of construction. Any discrepancies in quantities shall be resolved prior to beginning excavation. No adjustments to plan quantities shall be allowed once excavation/fill activities have begun.

**12-27 FILLING:**

- A. Fills shall be constructed at the locations and to the lines and grades indicated on the drawings. When rock excavation is used, it shall be broken or crushed so that the maximum dimension is 4-inches. No rock will be allowed in the upper 12-inches of the fill.
- B. Equipment for compacting fills shall be sheep foot rollers, rubber-tired rollers, and other approved equipment capable of obtaining required density.
- C. The combined excavation and fill placing operation shall be blended sufficiently to secure the best practicable degree of compaction. Fill shall be compacted to at least ninety-five percent (95%) Density per ASTM D698, +/- two percent (2%) optimum moisture content. The suitability of the materials shall be subject to approval of the City's laboratory. Dump, then spread and mix successive loads of material to give a horizontal layer of not more than 8-inches in depth, loose measurement. After each layer of fill has been spread to the proper depth, it shall be thoroughly manipulated with a disc plow or other suitable and approved equipment until the material is uniformly mixed, pulverized, and brought to a uniform approved moisture content.
- D. No fill material shall be rolled until the layer of material has a uniform moisture content which will permit the proper compaction under that degree of moisture content which is the optimum for obtaining the required compaction.
- E. Dry any material having moisture content too high for proper compaction by aeration until the moisture content is lowered to a point where satisfactory compaction may be obtained. If the moisture of the fill material is too low, add water to the material and thoroughly mix by blading and discing to produce a uniform and satisfactory moisture content.
- F. If, in the opinion of the City's laboratory or Inspector, the rolled surface of any layer or section of the fill is too smooth to bond properly with the succeeding layer or adjacent section, roughen by discing or scarifying to the satisfaction of the City's laboratory before placing succeeding layer or adjacent sections.

**12-28 SELECT FILL:**

- A. Select fill shall be in accordance with the construction plans. Contractor shall provide

laboratory test reports for each soil select fill source used to supply general select fill and select fill materials. Contractor shall provide a test load to the project site for testing purposes. Once material has been tested and has passed all requirements, the Contractor shall then be permitted to deliver material for the project.

- B. Payment shall be in cubic yards in its final position using the average end area method as indicated on the plans. The bid price shall include transporting or hauling the material, furnishing, placing, compacting, proof rolling, disposal of excess or waste material, and reworking or replacement of undercut material. No additional compensation will be made for rock or shrinkage/swell factors.

**12-29 SPRINKLER RELOCATIONS:**

- A. Sprinkler relocations may be required on this project. The City will be responsible for sprinkler relocations. Prior to construction, the Contractor and Inspector shall identify and document the sprinkler systems that will be affected by the construction of the project. The Contractor shall contact the owner of each sprinkler system and arrange to test each system. In the presence of the Inspector, the Contractor shall:

1. determine if the system functions properly
2. identify the layout of the system and
3. document in writing the layout and function of the system. The work described above is required by the Contractor for all projects and should be considered subsidiary to the unit prices bid for other items.

- B. When construction activity approaches a sprinkler system, the Contractor shall provide the Inspector seven (7) days notice to allow for relocation of the sprinkler system. Should the Contractor damage any sprinkler system, it will be the Contractor's responsibility to repair or replace the same at no additional charge to the City.

**12-30 CRUSHED STONE CUSHION:**

- A. When in the opinion of the City the subgrade material encountered at grade is soft spongy, and unsuitable, it shall be removed to a depth necessary below the barrel of the pipe to achieve stable layers and replaced with a crushed stone cushion so as to provide an unyielding stable foundation. The stone used in cushion shall be 1-inch washed crushed stone and shall be free from silt, loam, or vegetable matter and shall be of a gradation of from ¾-inch to 1-inch.
- B. Crushed stone cushion will be paid for at the contract unit price per ton in place and shall be the total compensation for furnishing all labor, materials, tools, and equipment for performing this particular phase of work. Crushed stone cushion shall be paid for the amount of stone placed at a depth greater than 6-inches below the bottom of the pipe.
- C. Subgrades that have been allowed to become unstable by neglect or fault of the Contractor, by improper drainage or lack of drainage, the City shall order the Contractor to remove the

unstable subgrade and replace the same with crushed stone cushion at the expense of the Contractor.

**12-31 BACKFILL & BACKFILL MATERIAL:**

- A. Backfill operations shall begin immediately following removal of the forms on the permanent improvements. All loose concrete, rocks, roots, trash, and other debris shall be removed from the excavation prior to any backfill being placed.
- B. Backfill material shall consist of the native material obtained from excavation unless in the opinion of the City, this material is unsuitable for use. The material shall not contain trash, rocks, concrete, asphalt, gravel, roots, or other debris. Sand shall not be used for backfill material unless the native soil in the construction area is sandy in nature. All backfill material will be considered subsidiary.

**12-32 MECHANICALLY COMPACTED BACKFILL:**

- A. Areas shall be backfilled with native material and compacted by mechanical methods. Compaction must be achieved with equipment specifically designed for compaction only. If hand pneumatic tampers are used, the backfill shall be placed in layers not exceeding 6-inches in loose thickness and thoroughly compacted to at least ninety-five percent (95%) density per ASTM D698, +/- two percent (2%) optimum moisture content.
- B. Backfill shall be placed in uniform layers completely across the area, and compaction shall proceed in an orderly, uniform manner. If compaction is performed by the use of heavy tamping (sheep's foot) rollers, backfill shall be placed in layers not exceeding 9-inches in loose thickness and compacted to at least ninety-five percent (95%) density per ASTM D698, +/- two percent (2%) optimum moisture content. The use of walk behind and remote compacting rollers will not be permitted.
- C. Payment for backfill shall be subsidiary to unit prices bid for pipe.

**12-33 TRENCHLESS TECHNOLOGY: This specification is for general application only and not for pipe bursting or other trenchless rehabilitation methods.**

- A. Prior to construction, all existing public facilities shall be physically located in the field when crossing over or under water lines, sanitary sewer, or storm drains or where the existing facility is running in the same direction and is within 5-feet of the proposed facility.
- B. Construction shall be done in such a manner that will minimize interference with vehicular traffic and shall not weaken or damage the existing street.
  - 1. The location of the boring pits shall be a minimum of 5-feet from the roadway to prevent undermining of the curb, gutter, or shoulder section.
  - 2. The pit shall be dug to a depth sufficient to maintain a minimum boring depth of 48-inches below the traffic surface. Jetting types of boring equipment are not allowed.

3. All overcutting shall be remedied by pressure grouting the entire length of the installation.
  4. The pits or trenches excavated to facilitate this operation shall be backfilled and compacted immediately after work is completed.
- C. The Contractor shall be able to locate the bore head at all times in accordance with the latest technologies and provide the location of the bore to the City upon request.
- D. All directional boring shall have the locator place bore marks and depths while the bore is in progress. Locator shall place a mark at each stem with a paint dot and indicate the depth at every other stem.

**12-34 BACKFILL AND CLEANUP:**

- A. Backfill and cleanup shall be done daily. This work shall progress immediately behind pipe laying and shall be within 50-feet of the pipe laying operation at all times. It shall also include the disposal of all excess material on a daily basis. Ditch lines, storm drains, inlets, bar ditches, and other drainage facilities shall be maintained and cleaned on a daily basis so they will function for their intended purposes.
- B. Where lines or services are laid in, along, or across the street pavement, the ditch line shall be backfilled and an approved all weather surface, such as flexbase or CTB shall be installed upon the completion of that day's work. Approved barricades shall be erected at these locations and shall be maintained by the Contractor until the permanent pavement is replaced. No later than the second day following the installation of a line, the specified asphalt shall be placed in the ditch and the street repair shall be completed. In the event these procedures are not followed, pipe laying shall cease immediately and not resume until the cleanup is completed and the roadway is safe for traffic.
- C. Particular care shall be taken during inclement weather to ensure that driveways are backfilled with an approved all weather surface. No driveway shall be blocked for longer than two (2) hours and only after notifying the affected property owner.
- D. All concrete shall be backfilled as soon as possible. If "honeycomb" appears, the Contractor shall grout back side to smooth out the surface within twenty-four (24) hours of form removal.  
**(REVISED PER ADDENDUM NO. 1)**  
 (Rev. 1/2022)
- E. Where lines or services are laid in, along, or across street pavement the pavement shall be left in a clean and acceptable condition. At the end of each work day the Contractor shall sweep and/or wash the pavement to leave the roadway completely clean of dirt and debris. Dirt, debris, and/or wash water shall be collected for appropriate disposal and shall NOT be washed into waterways or storm drains. Other suitable methods of maintaining the pavement in a clean, unobstructed condition may be utilized by the Contractor. No additional payment will be made for cleaning of pavement. Backfill and clean-up shall be considered subsidiary to the work performed under this contract.  
**(REVISED PER ADDENDUM NO. 1)**  
 (Rev. 1/2022)

**12-35 FLOWABLE BACKFILL:** Use of flowable backfill shall be preapproved by the City prior to application.

A. **FLOWABLE BACKFILL:**

1. Flowable backfill shall consist of a mixture of native sand or a blend of native sand/manufactured sand, cement, fly ash and water which produces a material with unconfined compressive strength of between two hundred fifty (250) and four hundred fifty (450) psi after twenty-eight (28) days.
2. The flowable mixture shall be mixed at a concrete batch plant or a mobile transit mixer and shall have a minimum slump of 5-inches. Unless otherwise allowed by the City, the flowable mixture must be allowed to set at a minimum of forty-eight (48) hours prior to the placement of any overlying material.

B. **MODIFIED FLOWABLE BACKFILL:**

1. Modified flowable backfill in areas of possible future excavation such as utility installations shall consist of a mixture of native sand or a blend of native sand/manufactured sand, cement, fly ash and water which produces a material with unconfined compressive strength of between fifty (50) and one hundred fifty (150) psi after twenty-eight (28) days.
2. Modified flowable backfill in permanent areas such as abandoned pipe closures, abutments and embankments shall contain the same materials with an unconfined compressive strength of greater than one hundred fifty (150) psi after twenty-eight (28) days.
3. The flowable mixture shall be mixed at a concrete batch plant or a mobile transit mixer and shall have a minimum slump of 5-inches.
4. Unless otherwise allowed by the City, the flowable mixture must be allowed to set at a minimum of forty-eight (48) hours prior to the placement of any overlying material.
5. The Contractor shall submit to the City a mix design for the type of flowable backfill to be used ten (10) days prior to the start of the backfill operation. When the mix design has been approved by the City there shall be no changes or deviation from the proportions or sources of supply except as approved by the City.

**12-36 TEMPORARY STREET REPAIR:**

- A. A temporary driving surface will be required on all street cut openings. It shall be composed of permanent type paving material, specifically excluding gravel or flexbase as the surface material, unless approved by the City.
- B. A minimum of 4-inches hot mix asphaltic concrete (Type "D") over a minimum of 6-inches flexbase on compacted native material shall be used for all streets regardless of classification.

(Rev. 9/2019)

- C. All flexbase shall be in accordance with the latest TxDOT Standard Specifications and shall be Type "A" Grade 1 material. An acceptable alternative to Type "A" Grade 1 flexbase is crushed concrete. Crushed Concrete shall be categorized as Type "D" Grade 1 Flexbase. Flexbase shall be thoroughly compacted and placed to a depth specified on the City's detail and shall be subsidiary to the temporary street repair items.
- D. Installation of temporary street repairs will be completed by the Contractor as soon as possible after completing the backfill, but always within five (5) business days after completion of the work involving the cut.
- E. Road plates may not be used for more than five (5) business days. Any temporary driving surface that fails to provide an acceptable driving surface shall be removed and replaced at the Contractor's expense, as directed by the Inspector.

**12-37 VERTICAL ADJUSTMENT OF WATER VALVES, MANHOLES, ACCESS CHAMBERS AND CLEANOUTS:**

- A. Contractor shall identify, verify, and mark locations of all water valves, manholes, access chambers, and cleanouts. It is the Contractor's responsibility to maintain their functionality at all times during construction. Any damage through carelessness or negligence will be the contractor's responsibility to repair or replace the same at no additional charge to the City.
- B. For concrete pavement, all water valves, manholes, access chambers, and cleanouts shall be brought to the final grade before placement of concrete. Valve boxes shall be adjusted to the final grade by adjustment of the screw type valve box.
- C. For asphalt pavement reclamation, all new water valves, manholes, access chambers, and cleanouts shall be adjusted to approximately 1-foot below the bottom of the proposed subgrade prior to the application of cement or lime slurry. Adjustment to the final grade and installation of the concrete pad per details shall be made after placement of the top layer of surface course. The valve boxes shall be adjusted to the final grade by adjustment of the screw type valve box.
- D. For asphalt pavement mill & overlay, ductile iron valve box extension for valve box and grade ring for manholes and access chamber may be used for adjustment to the final grade.
- E. The existing lids for water valves, manholes, access chambers, and cleanouts may be reused if instructed by the City. All grade rings, frames and covers, and cones (if cone replacement is instructed by the City) for adjustments shall be furnished and installed by the contractor and subsidiary to other unit prices bid in the PROPOSAL. (Rev. 2/2021)
- F. This paragraph is only applicable to the City's Asphalt Pavement Maintenance Projects. All the ductile iron valve box extensions, grade rings, frames and covers for adjustments will be furnished by the City. Contractor shall provide a minimum of two (2) weeks notice to the Inspector prior to picking up from the South Service Center Warehouse, 1100 SW

Green Oaks Boulevard, and transporting to the job site. Any damage to the materials once they leave the warehouse will be the contractor's responsibility to replace the same at no additional charge to the City. The valve boxes shall be adjusted to the final grade by adjustment of the screw type valve box.

**12-38 GREEN CEMENT:**

- A. In striving to improve air quality in the North Texas area, an alternate bid item to add the additional cost of "green" cement above the cost of cement supplied from an unspecified source will be considered as part of this project. Utilization of "green" cement will be considered for raw cement and for items where concrete is placed or cast-in-place (examples: pavement, driveways, cement for stabilization, sidewalk, barrier free ramps, curb inlets, curb and gutter, flumes, and channel lining).
- B. "GREEN" cement is defined as cement that is generated from a kiln whose emission rates:
1. Are in compliance with all applicable state and federal environmental standards relating to the emission of NOx, including all applicable TCEQ and EPA rules and regulations; and
  2. Operate kilns that exceed the standards for NOx emissions set out in 30 Tex. Admin. Code § 117.3110(a)(1)-(4) (as provided presently and as may be amended in the future) by the following percentage amounts:
    - a. For each long wet kiln, ten percent (10%) lower than the standard for long wet kilns located in Ellis County, Texas as set out in 30 Tex. Admin. Code § 117.3110(a)(1)(B);
    - b. For each long dry kiln, twenty percent (20%) lower than the standard for long dry kilns, as set out in 30 Tex. Admin. Code § 117.3110(a)(2);
    - c. For each preheater kiln, twenty percent (20%) lower than the standard for preheater kilns, as set out in 30 Tex. Admin. Code § 117.3110(a)(3); and
    - d. For each preheater-precalciner kiln or precalciner kiln, thirty-five percent (35%) lower than the standard for preheater-precalciner or precalciner kilns, as set out in 30 Tex. Admin. Code § 117.3110(a)(4).
- C. Should the City award the contract with this alternate, the Contractor and the material supplier will need to sign a certified compliance statement. Form will be provided by the City. No payment on the alternate item for utilizing "green" cement will be made unless this statement is executed and returned to the City.

**12-39 REINFORCING STEEL:**

- A. All reinforcing steel used on this project shall comply in all respects to TxDOT Item 440, "Reinforcing Steel".
- B. Rebar that requires bending in the field shall be Grade 40 reinforcing steel. Payment for reinforcing steel shall be considered subsidiary to the various bid items.

**12-40 RESTORATION OF EXISTING PAVED SURFACES:**

- A. The Contractor shall be responsible for maintenance of existing paved roadway surfaces within the project limits throughout the duration of the project. The Contractor shall perform daily inspections and restoration work required to provide an acceptable driving surface, as determined by the City.
- B. Restoration of paved surfaces shall be of asphalt, unless otherwise approved by the City. Should the Contractor be notified of unacceptable roadway conditions, the Contractor shall restore the surface within twenty-four (24) hours. Should it become necessary for the City to provide for the restoration of the surface, the cost of such will be billed to the Contractor. All asphalt for restoration of existing paved surfaces shall be considered subsidiary to the various bid items on this contract.

**12-41 GALVANIZED GABIONS WITH PVC COATING: N/A**

**12-42 CONDUIT:**

- A. **MATERIAL:**  
Conduits for installation of City's fiber optics shall be purple High Density Polyethylene (HDPE) Standard Dimension Ratio (SDR) 13.5 plastic conduits. All other conduits shall be schedule 40, polyvinylchloride (PVC), certified to UL Standard 651.
- B. **CONSTRUCTION METHODS:**
  - 1. Prior to the installation of conduits, the City shall be notified so that a representative may be present to inspect the installation of the conduit. Failure to contact the City shall constitute grounds for rejecting conduit which has been installed without the presence of a representative of the City.
  - 2. All conduits shall be placed in accordance with line and grade, details and dimensions as shown on the plans, or as directed by the City. All ends of pipe shall be reamed to remove burrs and fitted with appropriate sized bell end. All splicing of conduit shall be done by using standard couplings manufactured for this purpose. All bare ends of conduit for future connections by others shall be capped with standard conduit caps. The location of ends of all conduit for future electric circuits in structures shall be marked by a "Y" at least 3-inches high, cut into the face of curb, gutter or wall directly above the conduit.
  - 3. All conduits shall be placed a minimum depth of 36-inches below the top of curb. Conduit shall extend 6-inches behind back of curb unless otherwise called for on the plans. Installation under existing pavement may be accomplished by jacking, tunneling, or drilling.
  - 4. Where pullboxes or junction boxes are required in medians which are to be surfaced, they shall be installed by the Contractor at the location and grade as shown on the plans or as directed by the City. Unless otherwise indicated on the plans, Type "C" pull boxes shall be used for signals and fiber; and Type "A" for streetlights.

5. All necessary fittings for proper installation of conduit in the pull-box shall be furnished and installed by the Contractor. Where it is required that pull-boxes be installed, the conduit shall be fitted with standard ninety degree (90°) ell fittings to enter the pull-box from the bottom. A nipple shall be attached to the ell of sufficient length so that the distance from the top of the pull-box to the end of the nipple shall be 8-inches.
6. A mule tape shall be placed in all conduits. Prior to the placement of paving, the tape shall be moved back and forth to ensure that the conduit is free from obstructions. Before final acceptance of the conduit work, this method of checking shall again be incorporated to ensure that the paving operations have not rendered the conduit useless. It shall be the Contractor's responsibility to remove and replace all damaged conduit at his/her own expense.
7. All plastic conduit shall have factory bends.
8. Conduit locations shown on the plans are for bidding purposes only and may be changed with permission of the City to avoid underground obstacles. If necessary, the Contractor shall furnish and install conduit to an electrical service point as determined by the City prior to the beginning of construction.

C. MEASUREMENT AND PAYMENT:

1. Conduit of the size specified on the plans shall be measured by the linear foot along the main line of conduit. Fittings shall not be measured directly but shall be considered subsidiary to this item.
2. Conduit, as measured in this item, shall be paid for at the unit price bid for "conduit" of the size specified, excavation, backfill, labor, tools, equipment, materials, fittings and all incidentals necessary to complete the work.

**12-43 SLOPE EROSION CONTROL:**

A. Erosion control material shall be "Curlex Blanket" heavy jute netting, such as "AMXCO Curlex Blanket," or approved equal (no plastic meshes are allowed), and shall be applied after seeding is complete. Heavy jute mesh shall be open plain weave of unbleached single jute yarn, averaging one hundred and thirty (130) pounds per spindle of 14,400 yards. Jute mesh shall be furnished in approximately ninety (90) pound rolled strips.

B. Other criteria for jute mesh shall be as follows:

Length	- approximately 75-yards.
Width	- 48-inches (+/- 1-inch).
0.78 warp ends per width of cloth.	
Forty-one (41) weft ends per yard.	
Weight of cloth	- 1.22 pounds per linear yard (+/- 5%).

- C. Staples shall be of No. 11 gauge steel wire formed into a "U" shape 6-inches long.
- D. To install erosion control material on channel slopes, bury the up-channel end in a trench 6-inches deep. After the jute is buried, the trench shall be tamped firmly closed. Using a steel tube or 3/4-inch pipe through the paper core of the roll with a rope on each end will enable the operator to lower the roll down the slope. The material should be applied without stretching. The material should lie smoothly, but loosely on the soil surface. In order to keep the area as smooth as possible, workers should avoid, as much as possible, walking directly on the seed bed, either before or after the jute is applied. In cases where one roll ends and another is needed, the up-channel piece should overlap the second roll by at least 18-inches. Where two or more widths are applied side by side, an overlap of at least 4-inches shall be maintained. The material shall be brought to level area before terminating. The end shall be across the fold on 12-inches centers. Outside edges, centers, and overlaps on banks shall be stapled on 2-foot intervals. Each width of cloth will have a row of staples down the center as well as along each edge. On soft or sandy soil or windy areas, apply staples in alternate slanting position and space at closer intervals (12-inches to 18-inches). For extra hard soil or shale areas, use sharp pointed, hardened steel 3-inches fence-type staple. Outside edges shall have loose topsoil spread over them to allow for smooth entry of water. The entire jute covered area should be rolled with a smooth roller weighing fifty (50) to seventy-five (75) pounds per foot of length.
- E. Any clumps, debris, etc., which hold the jute off the ground, shall be tamped into the soil. The netting shall completely cover all areas to be protected from erosion. Overlaps must be ample and well stapled so that no gapping can occur. The material shall be in intimate contact with the surface at all points. If some areas experience severe erosion, two layers shall be in intimate contact with the surface at all points.
- F. The quantity shown in the PROPOSAL is a rough estimate as the actual amount and location of the jute mesh will be determined in the field as directed by the City in areas where excessive slopes exist. Overlapping of material will not be paid for double.
- G. Heavy jute netting will be paid for at the unit price bid per square yard, which price will be full compensation for furnishing and placing all materials, including all labor, tools, equipment, and incidentals necessary to complete the work.

**12-44 TOPSOIL:**

- A. A minimum of 4-inches of topsoil shall be placed on all disturbed areas within and adjacent to permanent improvements within the project limits. Topsoil shall be approved by the City prior to application. The topsoil shall be free from stone, rock, lumps, clods of hard earth, plants or their roots, sticks and other foreign material and shall be brought to the lines and grades as established by the City. Under no circumstances will topsoil be accepted unless it is free from the aforementioned contaminants. (Rev. 9/2019)
- B. Contractor may use approved means of treating the topsoil to ensure its acceptability. This item shall be considered subsidiary to the other items in this project and shall not be a separate pay item.

- C. The existing topsoil from the project limits may be used if Contractor stockpiles and protects it properly. No trash, lime shavings or other foreign material, shall be added to this stockpile. All topsoil including existing topsoil that is stockpiled shall meet the following specification:
- D. The soil texture shall be classified as loam or sandy loam according to the following criteria:

	(% Passing) <u>Loam</u>	(% Passing) <u>Sandy Loam</u>
Sand (0.074 to 4.76 mm diameter)	25-50%	45-85%
Silt (0.002 to 0.074 mm diameter)	30-50%	Less than 50%
Clay (Smaller than 0.002 mm) (Hydrometer analysis)	5-25%	Less than 20%

Soil texture shall be determined by utilizing processes as prescribed in ASTM D 422.

- E. Topsoil material shall be stockpiled at locations approved by the City. After completion of the permanent improvements, topsoil shall be placed on all disturbed areas so as to provide a minimum 4-inches depth of topsoil. Clumps shall be reduced to less than 1-inch diameter.

**12-45 HYDRO-MULCH SEEDING:**

- A. **DESCRIPTION:** This item shall consist of preparing ground, providing, and planting seed, or a mixture of seeds, of the kind specified along and across such areas as are designated by the City.
- B. **MATERIALS:** The type seed used shall be in accordance with COG Specification, Section 202.6, and approved by the City. All seed must carry a Texas Seed Label showing purity and germination, name and type of seed, and that it meets all requirements of the Texas Seed Law. Seed furnished shall be of the previous season's crop and the date of analysis shown on each tag shall be within nine (9) months of the time of delivery to the project. Each variety of seed shall be furnished and delivered in separate bags or containers. The City may require a sample of each variety of seed to be furnished for analysis and testing. Grass seed shall equal or exceed ninety-five percent (95%) purity and ninety percent (90%) germination.
- C. **PLANTING SEASON:** Planting of hulled bermuda grass seed shall be done between the months of April through September. The density of seeds planted shall be eighty (80) pounds per acre. A blend of thirty (30) pounds Rye grass and forty (40) pounds unhulled bermuda may be used between the months of September through April.
- D. **CONSTRUCTION METHODS:** The designated areas shall be raked, leveled and fine graded as necessary to provide a smooth uniform grade, free of ruts, depressions, humps

and objectionable soil clods, prior to seeding. The area shall also be free of weeds, rubbish, and building materials. Any low areas shall also be filled to prevent ponding. All particles in the seed bed shall be reduced to less than 1-inch in diameter or they shall be removed. The areas to be seeded shall be moisture conditioned prior to placement of seed. In areas that appear to be overly compacted or to destroy existing vegetation, the soil shall be loosen or disked, at the direction of the City. The cost of any chemical treatment to the soil in order to establish a uniform stand of grass will be subsidiary to "Hydro-mulch Seeding." Seeding of the type specified shall be performed in accordance with the requirements in COG Specification 202.6 except as hereinafter described:

1. Watering: The seeded areas shall be watered as necessary to establish grass as described in Establishment and Acceptance of Seeding.
2. Hydro-Mulch Seeding: In accordance with COG Specification 202.6.4.4 alternate methods for placement of seed may be used if approved by the City

E. MEASUREMENT: Work and acceptable material for "Hydro-mulch Seeding" will be measured by the unit bid, complete in place.

F. ESTABLISHMENT AND ACCEPTANCE OF SEEDING: Regardless of unseasonable climatic conditions or other adverse conditions affecting planting operations and the growth of the grass, it shall be the sole responsibility of the Contractor to establish a uniform stand of grass as herein specified. When adverse conditions such as drought, cold weather, high winds, excessive precipitation, or other factors prevail to such an extent that satisfactory results are unlikely, the City may, at his/her own discretion, stop any phase of the work until conditions change to favor the establishment of grass.

G. MAINTENANCE: Maintenance shall begin immediately after each portion of grass area is planted. It will be the Contractor's responsibility to maintain the existing grades and leave them in a true and even condition after planting. All planted areas will be protected and maintained by watering, weed control, mowing, and replanting as necessary for at least thirty (30) days after initial planting and for as much longer as necessary to establish a uniform stand with complete coverage of the specified grass.

H. FERTILIZER: (Subsidiary to Seeding Item)

1. Description: This item shall consist of providing and distributing fertilizer over the seeded areas.
2. Materials: Shall be in accordance with COG Specification 202.4.1 and Special Provisions, Landscaping Specifications, Section 17.
3. Construction Methods: The fertilizer shall be pelleted or granular fertilizer and shall be applied uniformly over the entire area specified to be fertilized and in the manner directed for the particular item of work. The fertilizer shall be dry and in good physical condition. Fertilizer that is powdered or caked will be rejected. Distribution of fertilizer for the particular item of work shall meet the approval of the City.

Unless otherwise indicated on the plans, fertilizer shall be applied uniformly at the average rate of four hundred (400) pounds per acre for all types of seeding.

I. **PAYMENT:**

1. The work performed and materials furnished and measured as provided under "Measurement" will be paid for at the unit price bid for "Seeding" which price shall be full compensation for furnishing all materials and for performing all operations necessary to complete the work, including fertilizer. Once a "uniform stand of grass" is provided, the City will provide payment for the seeding. See definition of "uniform stand of grass" below.
2. **Uniform Stand of Grass:** A uniform stand with complete coverage of the specified grass shall be defined as not less than one hundred-fifty (150) growing plants per square foot seeded. Growing plants shall be defined as healthy grass plants of two blades or more at least 2-inches tall.

**12-46 SODDING:** For this project, sodding shall be in conformance with Special Provisions, Section 17, Landscaping Specifications. Payment for sodding shall include the cost of all top soil, fertilizer and water. No separate payment will be made for top soil, fertilizer and sprinkling. Buffalo grass sod shall be used on all medians unless otherwise specified in the plans. (Rev. 9/2019)

**12-47 FINAL CLEANUP:** The intent of this section is to ensure that an adequate cleanup job be performed by the Contractor. Prior to accepting the project by the City, Contractor shall sweep and remove all trash, debris and remnants from all locations or areas affected by construction activities. All necessary cleanup work shall be considered subsidiary to the various bid items on this contract.

**12-48 FINAL INSPECTION:** The City will make final inspection of all work included in the contract as soon as practicable after the work is completed and ready for acceptance. If the work is not acceptable at the time of such inspection, the City will inform the Contractor as to the particular defects to be remedied before final acceptance will be made.

END OF SECTION

**SECTION NO. 13**

**SPECIAL PROVISIONS – PAVING SPECIFICATIONS**

**NUMERICAL LISTING**

Section No.	
13-01	ROADWAY EXCAVATION
13-02	COMPACTED ROADWAY FILL & EMBANKMENT
13-03	CEMENT TREATED BASE (CTB)
13-04	HYDRATED LIME
13-05	LIME AND CEMENT TREATED SUBGRADE
<del>13-06</del>	<del>CEMENT TREATED SUBGRADE – N/A</del>
13-07	EPOXY BONDING AGENT
13-08	MISCELLANEOUS CONCRETE TESTING REQUIREMENTS
13-09	RECONSTRUCT DRIVES
13-10	CONCRETE CURB AND GUTTER
13-11	CONCRETE VALLEY GUTTERS
13-12	CONCRETE DRIVEWAYS
13-13	CONCRETE SIDEWALKS
13-14	BARRIER FREE RAMPS
13-15	CONCRETE PANEL REPLACEMENT
13-16	CONCRETE PAVEMENT
13-17	CONCRETE MEDIANS
13-18	MEMBRANE CURING
13-19	ASPHALTIC PRIME COAT
<del>13-20</del>	<del>TACK COAT – N/A</del>
13-21	NON-TRACKING TACK COAT
13-22	HOT MIX ASPHALTIC CONCRETE
<del>13-23</del>	<del>PAVING FABRIC (PETRO-MAT) – N/A</del>
13-24	STEEL GUARD RAIL
13-25	GPS MONUMENT
13-26	TEMPORARY BATCH PLANT

**SECTION NO. 13**

**SPECIAL PROVISIONS – PAVING SPECIFICATIONS**

**13-01 ROADWAY EXCAVATION:**

- A. All roadway excavation on this project shall be unclassified and shall be performed in full accordance with the C.O.G. SPECIFICATIONS, Division 200, 203.4, "Unclassified Street Excavation."
- B. Payment for excavation is based on plan quantity. Contractor shall verify excavation/fill quantities and shall notify City in writing of concurrence or disagreement with plan quantities prior to start of construction. Any discrepancies in quantities shall be resolved prior to beginning excavation. No adjustments to plan quantities shall be allowed once excavation/fill activities have begun.
- C. The placement and compaction of fill material in roadway fill areas on this project shall be measured by the cubic yard in place and paid separately from roadway excavation as specified in the item "Compacted Roadway Fill & Embankment". It shall be the responsibility of the Contractor to locate a suitable disposal site outside the right-of-way limits to dispose of both excess and unsuitable material from roadway excavation not needed in roadway fill and embankment. No separate payment shall be made for disposal of excess or unsuitable material. Disposal shall be performed in accordance with appropriate laws and ordinances.
- D. If you are planning on taking fill material from projects to the City of Arlington landfill, please be aware that the landfill operator, Republic Services, has requirements to ensure fill material is acceptable. Please contact Republic Services at (817) 354-2300 directly to obtain details of the requirements.

**13-02 COMPACTED ROADWAY FILL & EMBANKMENT:**

- A. All compacted roadway fill and embankments constructed on this project shall be in accordance with the C.O.G. SPECIFICATIONS, Division 200, 203.7, "Embankment", except as amended herein or as shown on the plans.
- B. All fill material shall be compacted in lifts of loose depth not exceeding 8-inches and compacted to at least ninety-five percent (95%) density per ASTM D698, +/- two percent (2%) optimum moisture content. Each lift shall be tested before a subsequent lift is allowed to be placed. It shall be the responsibility of the Contractor to locate a suitable disposal site outside the right-of-way limits and to dispose of any excess material not needed for constructing embankments to the established grade, shape of the typical sections shown on the plans, and detailed sections or slopes. Disposal shall be performed in accordance with appropriate laws and ordinances.
- C. The placement and compaction of fill material in roadway and embankment areas on this project shall be measured and paid for separately from the "Roadway Excavation". However, no separate payment will be made for the disposal of excess materials as mentioned above. Measurement for compacted roadway fill and embankment shall be for

in-place embankment after compaction to the density specified on the plans. Measurement shall be in cubic yards as determined on the basis of the natural ground cross-section and the finished lines and grades as shown in the plans and computed by the method of average end areas from the project cross-section.

- D. The price bid per cubic yard for "Compacted Roadway Fill and Embankment" shall be full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the embankment, including cost of water, sprinkling, wetting, and rolling in accordance with the plans and specifications.

**13-03 CEMENT TREATED BASE (CTB):**

- A. Cement Treated Base shall be in accordance with TxDOT Standard Specification, Item 276. Use strength "L". In any areas where the City determines the subgrade is unstable or unsuitable, the subgrade material shall be removed and be replaced with CTB compacted to ninety-five percent (95%) of TEX-113E at optimum to plus four percent (4%). Unless a separate item is included in the PROPOSAL, CTB shall be subsidiary.
- B. In emergency situations, the City may approve flexible base in lieu of CTB. The flexible base shall be Type "A", Grade 1 Flex Base in accordance with TxDOT Standard Specification Item 247.

**13-04 HYDRATED LIME:** The hydrated lime to be used on this job shall conform to COG Specification Item 301.2 with the exception of 301.2.1.2 Quicklime. No Quicklime will be allowed on this project unless otherwise approved by the City.

**13-05 LIME AND CEMENT TREATED SUBGRADE:**

- A. This item shall consist of treating the subgrade by scarifying, addition of lime slurry, initial mixing and curing, re-scarifying, addition of cement slurry, final mixing and compacting the material to the required density. This item applies to the subgrade, i.e., natural ground, embankment or existing pavement structure and shall be constructed as specified herein and in conformity with the typical sections, lines and grades as shown on the Plans or as established by the City.
- B. **MATERIALS:**
  - 1. **Soil**
    - a. Soil shall consist of approved material free from roots, vegetation or other objectionable matter encountered in the subgrade. Rocks or similar debris larger than 4-inches shall be removed from the subgrade prior to treatment. Acceptable material shall also be used in preparation of the roadbed in accordance with this specification. Prior to beginning subgrade treatment, the area to be treated shall be brought to the required line, grade, cross-section, and proof rolled in accordance with the latest TxDOT Standard Specifications.
    - b. Any identified soft or unstable areas shall be excavated and re-compacted with acceptable material to ninety-five percent (95%) density per TEX 113E. Moisture content shall range from zero percent (0%) to + four percent (4%) optimum. Any unsuitable or deleterious material found shall be removed and

disposed of. The cost of proof rolling shall be considered subsidiary to this item.

2. Lime

- a. The Contractor can use Type "A", Hydrated Lime (a dry powdered material consisting essentially of calcium hydroxide) or Type C, Quicklime-Grades DS and "S" (a dry material consisting essentially of calcium oxide), to produce a lime slurry or Type "B", Commercial Lime Slurry (a liquid mixture of essentially hydrated lime solids and water in slurry form). The lime and lime slurry shall meet the latest version of TxDOT Department of Material and Testing, DMS 6350.
- b. All slurry shall be furnished at or above the minimum "Dry Solids" content as approved by the City and must be of a consistency that can be handled and uniformly applied without difficulty. The slurry shall be free of liquids other than water.
- c. Hydrated lime shall be stored and handled in closed weatherproof/waterproof containers until immediately before distribution on the roadway subgrade. If lime is furnished in trucks, each truck shall have the weight of lime certified on public scales or the Contractor shall place a set of standard platform truck scales or hopper scales at the location provided by the City.

3. Portland Cement

- a. Portland Cement shall be Type I, unless otherwise directed by the City. All apparatus for handling, weighing and spreading the cement shall be approved by the City in writing before use on the project. Cement weighing and distribution equipment shall be as specified below.
- b. Portland cement shall be stored and handled in closed weatherproof/waterproof containers until immediately before distribution on the roadway subgrade. If cement is furnished in trucks, each truck shall have the weight of cement certified on public scales or the Contractor shall place a set of standard platform truck scales or hopper scales at the location approved by the City.

4. Water

Water shall be clean and free of oil, acid, alkali, organic matter, or other deleterious substances.

B. EQUIPMENT:

1. The machinery, tools and equipment necessary for proper execution of the work shall be on the project, approved by the City prior to the beginning of the construction operations and be maintained in good working order.
2. Slurry distribution trucks must be equipped with an agitator to keep the additive (Hydrated Lime or Cement, as appropriate) and water in a homogeneous suspension.

Mixture shall be uniform in consistency from beginning to end of the distribution operation.

3. When the Contractor elects to use a cutting and pulverizing machine that will process the material to the plan depth, the Contractor will not be required to excavate to the secondary grade or windrow the material. This method will be permitted only if a machine is provided which will ensure that the material is cut uniformly to the proper depth and provide a smooth surface over the entire width of the cut. The machine shall have a visible indicator that the machine is cutting to the proper depth at all times.

C. CONSTRUCTION METHODS:

1. General

- a. Contractor shall verify, identify, and maintain marked locations of all water valves, sanitary sewer manholes, and cleanouts at all times during construction. Prior to the application of cement or lime slurry, all manholes, cleanouts, and water valves shall be adjusted to approximately 1-foot below the bottom of the proposed subgrade.
- b. It is the primary requirement of this specification to secure a completed course of treated material containing a uniform blend of lime and cement, free from loose or segregated areas, of uniform density and moisture content for its full depth and with a smooth surface suitable for placing subsequent courses. It shall be the responsibility of the Contractor to regulate the sequence of his/her work, to use the proper amount of lime and cement, maintain the work and rework the courses as necessary to meet the above requirements.
- c. The roadbed shall be constructed and shaped to conform to the typical sections, lines, and grades as shown on the Plans or as established by the City. The subgrade shall be firm and able to support, without significant displacement, the construction equipment and obtain the compaction herein specified.

2. Lime Modification

- a. Prior to beginning any lime modification, the subgrade shall be brought to the required line, grades and cross-section in accordance with the specification requirements.
- b. After the subgrade has been shaped, the roadway will be scarified to full depth and width of modification. Full depth will be a minimum of 8-inches below finished grade or as indicated on the Plans. Full width will be that distance from 1-foot behind the back of curb on each side of the roadway. Scarification shall be accomplished using a motor grader with short teeth, or other appropriate means assuring accurate depth of scarification.

i. Lime Slurry Placement

Lime will be applied by the "slurry" method and be spread only on that area where the mixing and sealing operations can be continuous and completed in one operation. The lime slurry will be applied with an approved distributor truck by making multiple passes, if necessary, to uniformly apply the correct amount of lime as specified in the Plans. The distributor truck will be equipped with an agitator to keep the lime slurry in constant mixture.

ii. Application

For applications greater than forty-two (42) pounds per square yard, the initial application shall be applied in halves (two equal parts) on day one (1) and day two (2). This is subsidiary to the lime stabilization item.

iii. Initial Mixing

Immediately following lime application, thoroughly mix the slurry into the subgrade with a pulvimixer until one hundred percent (100%) of all material will pass a 2-inches sieve. If necessary, make passes at various angles across the site to facilitate breaking up of large clods. The lime modified material shall then be rolled with pneumatic roller to seal the lift and left to cure for a minimum of twenty-four (24) hours. During the curing period, the subgrade shall be kept at least two percent (2%) above its optimum moisture content.

3. Cement Stabilization

a. Prior to beginning any cement stabilization, the previously treated subgrade shall be re-scarified to full depth and width of modification. Full depth will extend to the underlying untreated material but must not extend into the underlying untreated material. Full width will be that distance from 1-foot behind the back of curb on each side of the roadway. Scarification shall be accomplished using a motor grader with short teeth, or other appropriate means assuring accurate depth of scarification.

i. Application of Cement

Cement shall be applied by the "slurry" method. The cement shall be mixed with water to form a slurry of the solids content designated by the City. The amount of cement to be added will be shown on the plans or indicated in the contract documents.

Cement shall be spread only in that area where the mixing, compacting, and finishing operations can be continuous and completed within six (6) hours of addition of water.

Cement slurry shall be applied with an approved distributor truck by making multiple passes, if necessary, to uniformly apply the correct amount of cement as specified in the Plans or contract documents. The distributor truck shall be equipped with an agitator to keep the cement slurry in a consistent mixture. The cement slurry must be dispensed as soon as

practical, but within a maximum of ninety (90) minutes from the addition of cement to the slurry water.

Unless otherwise approved by the City, the cement treatment operation shall not be started until ambient temperature reaches thirty-five (35) degrees with a projected high of forty (40) degrees (minimum). Operations shall cease when temperature falls below forty (40) degrees. The temperature will be taken in the shade and away from artificial heat. Cement shall not be placed when weather conditions in the opinion of the City are unsuitable.

Dry application will not be allowed unless approved by the City. If approved, the cement shall be spread by an approved spreader or by bag distribution. It shall be distributed at a uniform rate and in such a manner as to reduce to a minimum the scattering of cement by wind. Cement shall not be applied when wind conditions, in the opinion of the City, are such that blowing cement becomes objectionable to adjacent property owners or dangerous to traffic.

b. Final Mixing

- i. Immediately following cement slurry application, thoroughly mix the slurry into the subgrade with a pulvimixer. If necessary, make passes at various angles across the site to facilitate breaking up of oversized clods. The previously lime treated material and cement slurry shall be thoroughly mixed until, in the opinion of the City, a homogeneous, friable mixture of material and cement is obtained, free of all clods or lumps. Materials shall be mixed as thoroughly as possible at the time of the cement application and brought to a minimum of two (2) percent above its optimum moisture content. The material shall be kept moist as directed by the City.
- ii. If the cement-modified soil mixture contains clods, they shall be reduced in size by raking, blading, discing, harrowing, scarifying or the use of other approved pulverization methods to achieve the following gradation:

Minimum Passing 1½-inches Sieve	100%
Minimum Passing No. 4 Sieve	60%

4. Final Compaction

- a. Compaction of the subgrade shall begin immediately after final mixing and after final gradation has been met. Final compaction of the subgrade shall be complete within six (6) hours of introduction of water to cement.
- b. The subgrade shall be sprinkled, if necessary, and compacted to provide the density specified below as determined by the use of TEX 113-E. Testing shall occur after the subgrade is brought to the required lines and grades shown on the Typical Sections and Plans or as specified by the City.

Description	Density, Percent	Moisture, Percent
For cement-modified subgrade that will receive subsequent courses	Not less than 95, except when shown otherwise on the Plans.	Optimum to plus 4% unless otherwise shown on the Plans

- c. The testing will be as outlined in Test Method ASTM D 2922 and ASTM D3017 or other approved methods. In-place density tests shall be performed at the minimum of one test per three hundred (300) linear feet of paving for two (2) lanes. If the material fails to meet these density requirements it shall be reworked as necessary to meet said requirements. Reapplication of cement slurry will be required to aid in recovering lost strength from reworking. Throughout this entire operation, the shape of the course shall be smooth and in conformity with the Typical Sections shown on the Plans and to the established lines and grades. Should the material due to any reason or cause lose the required stability, density and finish before the next course is placed or the work is accepted, it shall have cement incorporated at originally specified rate, remixing, and be recompact and refinished at the sole expense of the Contractor.
- d. Finishing of the completed section shall be accomplished by rolling as directed with a pneumatic tire or other suitable roller sufficiently light to prevent hair cracking.

**D. MAINTENANCE OF SUBGRADE CONDITION:**

- 1. The Contractor shall make provisions for maintaining the compacted subgrade in a moist condition for a secondary curing time. The requirement is to maintain the in-situ moisture at least two (2) percentage points above optimum conditions throughout the treated section. This is to be accomplished by frequent light sprinkling of the surface. During this secondary curing time, all construction vehicles shall be prohibited from the subgrade for a minimum of two (2) days.
- 2. The Contractor shall maintain the completed subgrade within the limits of his/her contract in good condition, satisfactory to the City as to grade, crown and cross section until such time as the surface course is constructed. All irregularities or other defects that may occur shall be repaired by the Contractor as his/her expense.
- 3. All over-excavated areas (shy grade) will require additional depth of pavement. No additional cement treated subgrade will be allowed on top of the initially processed grade (no scabbing).
- 4. The moisture content of the prepared subgrade shall be maintained at optimum or above until the next subsequent pavement course is installed. If this moisture decreases below optimum, the incorporation of additional moisture by scarifying and

re-compaction the prepared grade will not be permitted. If at any time the prepared subgrade needs to be disturbed to incorporate moisture or when subgrade has been exposed for more than thirty (30) days, an additional application of cement at one hundred percent (100%) of the original application rate of cement will be required. NO additional payment shall be made if these additional cement applications are required.

E. MEASUREMENT AND PAYMENT:

1. This work shall be measured by the square yard of completed and accepted lime modified / cement stabilized treated subgrade. Measurement of both the lime and cement shall be per ton of dry weight, as determined by certified weight tickets. No allowance shall be made for any materials used or work done outside the limits shown on the Plans and Typical Sections. The work performed and material furnished as prescribed by this item and measured as provide in this item shall be paid for at the unit price bid for lime modified / cement stabilized soil, which price shall be full compensation for scarifying the soil materials; for handling; hauling and spreading the lime slurry; for mixing the lime slurry into the subgrade; for roll sealing and curing the subgrade; for re-scarifying the lime modified subgrade; for handling; hauling and spreading the cement slurry; for mixing the cement slurry into the lime modified subgrade; for establishing final gradation; for spreading and shaping the mixture; compacting the mixture, including all rolling required for this compaction; surface finishing; and for all manipulation, labor, equipment, appliances, tools and incidentals necessary to complete the work and carry out the maintenance provisions in this specification.
2. Lime and cement materials measured as provided in this item shall be paid for at the unit price bid for lime and cement materials, which price shall be compensation for furnishing the material; for all freight involved, for all unloading and storing; and for all labor, equipment, fuels, tools and incidentals necessary to complete the work, all in accordance with the Plans and these Specifications.

**13-06 CEMENT TREATED SUBGRADE: N/A**

**13-07 EPOXY BONDING AGENT:** Epoxy used shall be in accordance with TxDOT DMS-6100 Epoxies and Adhesives specifications.

**13-08 MISCELLANEOUS CONCRETE TESTING REQUIREMENTS:**

- A. The strength of the concrete shall be determined during the construction by taking a minimum of four (4) test cylinders during each fifty (50) cubic yards of continuous placement. These tests shall be conducted by an approved testing laboratory and the initial tests shall be paid for by the City. The cost of additional testing to isolate areas not complying with the specifications shall be paid for by the Contractor.
- B. Strength tests permitted by the specifications for early form removal shall be conducted by an approved testing laboratory and the cost shall be borne by the Contractor.

**13-09 RECONSTRUCT DRIVES:**

- A. Existing drives which will be affected by proposed construction and which will be reconstructed are specifically called out on the plans. After construction operations are completed in the street area, these drives shall be reconstructed to original or better condition than existed before construction and to satisfaction of the City. Existing surface and base materials and storm drain pipe may be reused if approved by the City.
- B. All work shall conform to the applicable standard and special project specifications. Work shall include all materials, labor, and supervision for the reconstructing the drives and be paid per unit price as stated in the PROPOSAL.

**13-10 CONCRETE CURB AND GUTTER:**

- A. Concrete curb and gutter shall be placed at locations along the project where portions of the existing curb and gutter is removed. Unless otherwise approved by the City, all curb and gutter shall be standard 30-inches curb and gutter sections and be replaced at a minimum thickness of 6-inches or match existing curb and gutter thickness, whichever is greater. Contractor shall remove additional 8-inches thick, 1-foot back of curb of existing material under new curb and gutter limits and replace with 8-inches CTB compacted to ninety-five percent (95%) TEX-113E at optimum to plus four percent (4%).
- B. All concrete used for curb and gutter in the City will have a cement content of not less than five and a half (5.5) sacks of cement per cubic yard of concrete, four and a half percent (4.5%) entrained air (+/- 1.5%), and a minimum compressive strength at twenty-eight (28) days of thirty-six hundred (3,600) pounds per square inch. The unit price bid for curb and gutter shall include all reinforcing steel, including No. 4 "L" bars at every 18-inches. Curb & gutter, including additional excavation and CTB will be paid by the linear foot.
- C. Expansion joints shall be placed at all intersections, P.Cs, P.Ts, driveways, inlets, other curb and gutter or every 200-feet. Tooled joints shall be placed at every 5-foot intervals. All expansion joints shall not be less than ½-inch in thickness with longitudinal dowels. Dowels shall be three No. 4 smooth bars, 24-inches in length. One-half of the dowel shall be coated with asphalt and terminated with an expansion cap.
- D. All work shall be in compliance with C.O.G. Section 305.1. All loose material between the forms will be removed and the grade wetted prior to the placing of the concrete. An approved curing compound shall be applied to the surface in accordance with the Curing Specification. All curbs shall be vibrated to eliminate "honeycomb" appearance.
- E. Locations where homeowners have installed drain pipes that run through the curb, curb opening casting will be required to discharge water through the curb. Drain outfall (R3262 Neenah Foundry or equivalent) shall be installed flush with the curb and the location be approved by the City prior to installation. It is the Contractor's responsibility to connect existing pipe to the curb opening casting and ensure connection is secure with no water leaks or dirt infiltration.
- F. Refer to Section 13-16 for additional concrete specifications. **(ADDED PER ADDENDUM NO. 1)**

(Rev 1/2022)

**13-11 CONCRETE VALLEY GUTTERS:**

- A. All concrete valley gutters shall have a minimum thickness of 6-inches on residential streets and 8-inches on collector or larger streets. Contractor shall remove additional 8-inches of existing material under proposed valley gutter limits and replace with 8-inches CTB compacted to ninety-five percent (95%) TEX-113E at optimum to plus four percent (4%). Concrete valley gutters shall be reinforced with No. 4 bars on 12-inches spacing in both directions.
- B. All concrete shall have a minimum cement content of five and a half (5.5) sacks per cubic yard of concrete, four and a half percent (4.5%) entrained air (+/- 1.5%) and a minimum compressive strength at twenty-eight (28) days of thirty-six hundred (3,600) pounds per square inch. All concrete shall be vibrated and an approved curing compound shall be applied to the surface.
- C. Refer to Section 13-16 for additional concrete specifications. **(ADDED PER ADDENDUM NO. 1)** (Rev 1/2022)

**13-12 CONCRETE DRIVEWAYS:**

- A. All concrete driveways shall have a minimum thickness of 5-inches for residential driveways and 6-inches for commercial driveways or shall match existing driveway thickness, whichever is greater.
- B. Driveways shall be composed of concrete having a minimum cement content of five and a half (5.5) sacks per cubic yard of concrete, four and a half percent (4.5%) entrained air (+/- 1.5%) and a minimum compressive strength at twenty-eight (28) days of thirty-six hundred (3,600) pounds per square inch. The unit bid price shall also include No. 4 bars on 18-inches centers both ways. All concrete shall be vibrated and an approved curing compound shall be applied to the surface.
- C. The City will replace only those existing driveways specified. Any new drives installed by the Contractor under criteria other than the above will be at his/her own expense.
- D. Refer to Section 13-16 for additional concrete specifications. (Rev 1/2022)

**13-13 CONCRETE SIDEWALKS:**

- A. **MATERIALS:**
  - 1. Sidewalks shall have a minimum thickness of 4-inches and be constructed of concrete with a minimum cement content of five and a half (5.5) sacks of cement per cubic yard of concrete, four and a half percent (4.5%) entrained air (+/- 1.5%), and a compressive strength of not less than thirty-six hundred (3,600) pounds per square inch at twenty-eight (28) days. Reinforcing steel shall be No. 4 bars on 18-inches centers located 2-inches below the top surface of the sidewalk. All concrete shall be vibrated and as soon as the concrete has obtained its initial set, a white pigmented approved curing compound shall be applied to the surface. (Rev. 12/2020)

B. CONSTRUCTION PROCEDURE:

1. In general, the grade of the sidewalks shall be established with respect to the curb. Forms shall be set for all sidewalks and shall be true to line and grade. Forms shall be set to provide a cross slope of ¼-inch per foot (maximum) across the sidewalk toward the street. All forms shall remain in place at least twenty-four (24) hours.
2. The plane of all joints shall make a right angle with the surface of the pavement. No joints shall have an error in alignment of more than ½-inch at any point. The edges of the slab at all joints, except where the joints are sawed, shall be rounded with an edger having a radius of ¼-inch, except as otherwise shown on the plans. The edging shall also be done symmetrically on each section with the plane of the joint.
3. Longitudinal expansion joints, joints used to separate new from old concrete, and all joints around all fire hydrants shall be made of conventional ¾-inch asphalt expansion joint material extending completely through the concrete unless otherwise specified on the plans.
4. Transverse expansion joints shall be ¾-inch in width and be made of high grade redwood with removable ¾-inch wide by 1-inch deep cap strip or with asphalt expansion material with removable cap strip, sealed with self-leveling gray silicon sealant. Joints shall be placed through the concrete at a spacing not to exceed 40-feet. 24-inches, No. 4 smooth steel dowels shall be placed on 12-inches centers through each expansion joint, one end of each dowel being wrapped or otherwise prevented from bonding to the concrete.
5. Contraction joints shall be made in the sidewalk at regular intervals, such intervals generally being equal to the width of the sidewalk.
6. The Contractor shall grade or fill, as necessary, along the sidewalk to match the existing ground. Care will be used to ensure that adjacent property outside the right-of-way line is protected.
7. When sidewalks are constructed adjacent to retaining walls, the plans shall specify if the sidewalk and retaining wall are to be constructed as separate items or as a sidewalk with wall unit. The sidewalk with wall unit shall be constructed in accordance with the City typical details. When specified to be constructed as separate items, the limits of pay for the sidewalk shall be all of the sidewalks up to the face of the retaining wall. The retaining wall shall be paid under retaining wall on a cubic yard basis.
8. Unless otherwise approved by the City, nothing shall be installed in the sidewalks, including but not limited to meters, meter boxes, valves, fire hydrants, manholes, and sign poles.

C. Refer to Section 13-16 for additional concrete specifications. **(ADDED PER ADDENDUM NO. 1)**

(Rev 1/2022)

**13-14 BARRIER FREE RAMPS:**

- A. Sidewalks shall be constructed barrier free and fully accessible. Curb ramps are required at all intersections between sidewalks and streets. At driveways, the curb shall be laid down and the sidewalk section shall be maintained through the driveway. All concrete shall be vibrated and the ramps be constructed in accordance with the detail shown on the plans.
- B. Ramp slopes shall not exceed 8.33%. All ramps shall be constructed with current ADA standards, including Colonial Red (Federal Color No. 20109) Cast In Place Detectable/Tactile Warning Surface Tile as manufactured by Armor Tile or 4-inches x 8-inches x 2¼-inches ADA compliant detectable warning pavers in Antique (shade No. 32) as manufactured by Whitacre-Greer or in River Red as manufactured by Pavestone, or approved equal.
- C. All incidentals, including but not limited to, the transition, the landings, curb, pavers and sidewalks all the way to the tie-in as necessary to meet ADA compliance, the concrete below the detectable warning device, the bedding sand shall be subsidiary to the unit price bid for each ramp.
- D. Refer to Section 13-16 for additional concrete specifications. **(ADDED PER ADDENDUM NO. 1)** (Rev 1/2022)

**13-15 CONCRETE PANEL REPLACEMENT:**

- A. The contractor shall perform an elevation survey of all segments and establish removal and replacement limits to ensure ponding water will not exist after construction. Contractor shall provide cut sheets clearly showing concrete removal limits to the City for review and approval prior to starting construction. Survey shall include enough information to evaluate drainage of the street and adjacent properties. The City will make the final determination as to the limits of the concrete replacement. Payment to complete this work and survey will be considered subsidiary to the bid item. (Rev. 11/2019)
- B. All concrete paving shall be replaced at a minimum thickness of 8-inches or shall match existing pavement thickness, whichever is greater. Paving shall include 8-inches of Cement Treated Base (CTB) and be reinforced with No. 4 rebar on 18-inches spacing both directions. Contractor shall drill 6-inches into existing pavement to accomplish tie-in with No. 4 rebar, 30-inches in length, every 18-inches with epoxy.
- C. Any curb replacement associated with concrete paving shall be considered integral to the paving. All expansion joints in curbs shall conform to the joint locations in the slab. All expansion joints in the slab (newly replaced paving) shall conform to existing expansion joint unless otherwise approved by the Inspector. All joints shall be routed and sealed. All concrete shall be vibrated.
- D. Concrete trucks shall be discharged to achieve uniform placement across the entire width of the panel.

- E. Refer to Section 13-16 for additional concrete specifications. (ADDED PER ADDENDUM NO. 1)

(Rev 1/2022)

**13-16 CONCRETE/CONCRETE PAVEMENT:**

**A. DESCRIPTION: (REVISED PER ADDENDUM NO. 1)**

1. This item shall consist of portland cement concrete pavement, panel replacement, sidewalk, driveways, retaining walls, etc., with reinforcement as shown on plans, with or without monolithic curbs, constructed as herein specified on the prepared subgrade or other base course in conformity with the lines, grades, thickness and typical cross-sections shown on plans. Concrete shall be considered of satisfactory quality provided:
  - a. it is made of materials accepted for the job,
  - b. in the proportions approved by the City and
  - c. mixed, placed, finished and cured in accordance with the requirements of this specification and meets the requirements herein specified.

**B. MATERIALS:**

1. Cement

- a. The cement shall be Type 1 of a standard brand of portland cement. Type III cement shall be used when high early strength concrete is required by the plans or special provisions. If the use of high early strength cement is not specified, the Contractor desires to use it, he shall obtain written permission of the City and shall assume all additional costs incurred by the use of such cement. Type I and Type III cement shall conform to the requirements of ASTM Designation: C 150. When Type III cement is used, the average strength of briquettes at the age of seven (7) days shall be higher than that attained at three (3) days. Either the tensile or the compressive tests may be used for either type cement. In addition to the requirements of ASTM Designation C 150, the specific surface area of Type I cement shall not exceed two thousand (2,000) square centimeters per gram as measured by the Wagner Turbidimeter in accordance with Test Method Tex-310-D.

2. Admixtures

- a. No admixtures shall be used in the concrete without prior approval, and all approved admixtures shall meet applicable AASHTO, ASTM, and CSA requirements.
- b. Air-entraining agents shall have proven compatibility with all local concrete materials, including cement, and shall be capable of providing in the concrete the required air contents and an air-void system known to produce durable, scale-resistant concrete.
- c. Admixtures other than air-entraining agents shall not be used until trial mixes with job materials have shown them to be compatible at job temperatures. Trial mixes must also show that desired properties will be imparted to the fresh concrete without any subsequent loss of strength or durability in the hardened concrete.

d. Air reducing agents will not be acceptable for use.

3. Coarse Aggregate

a. Coarse aggregate shall consist of durable crushed limestone of reasonably uniform quality throughout, free from injurious amounts of salt, alkali, vegetable matter or other objectionable material, either free or as an adherent coating on the aggregate. It shall not contain more than a quarter percent (0.25%) by weight of clay lumps, nor more than one percent (1%) by weight of shale nor more than five percent (5%) by weight of laminated and/or friable particles when tested in accordance with Test Method Tex-413-A.

b. Coarse aggregate shall have a wear of not more than thirty-eight percent (38%) when tested according to Test Method Tex-410-A, and shall meet the grading requirements of TxDOT Standard Specification 421.2 Table 3 for 1-inch or 1½-inches.

c. Where the coarse aggregate is delivered on the job in two or more sizes or types, each type and/or size shall be batched and weighed separately.

d. A supply of aggregate adequate for two (2) days paving shall be stockpiled at the concrete plant. All aggregates shall be handled and stored in such a manner as to prevent size segregation and contamination by foreign substances. When segregation is apparent, the aggregate shall be remixed. At the time of its use, the aggregate shall be free from frozen material and aggregate containing foreign materials will be rejected. Coarse aggregate that contains more than half a percent (0.5%) free moisture by weight shall be stockpiled for at least twenty-four (24) hours prior to use.

e. Adequate storage facilities shall be provided for all approved materials. The intermixing of nonapproved materials with approved materials either in stockpiles or in bins will not be permitted. Aggregates from different sources shall be stored in different stockpiles unless otherwise approved by the City.

f. Each aggregate stockpile shall be reworked with suitable equipment at such times, as required by the City to remix the material to provide uniformity of the stockpile.

4. Fine Aggregate

a. Fine Aggregate shall consist of sand or a combination of sands, and shall be composed of clear, hard, durable, uncoated grains. Fine aggregate shall be free from injurious amounts of salt, alkali or vegetable matter. Unless otherwise shown on plans, the acid insoluble residue of the fine aggregate shall be not less than twenty-eight percent (28%) by weight when tested in accordance with Test Method Tex-612-J.

- b. It shall not contain more than half a percent (0.5%) of weight of clay lumps. It shall contain no more than twenty percent (20%) manufactured sand. When subjected to the color test for organic impurities, Test Method Tex-408-A, the fine aggregate shall not show a color darker than the standard.
- c. When the fine aggregate is tested in accordance with Test Method Tex-317-D, it shall have tensile strength of mortar equal to or greater than the strength of standard Ottawa sand mortar.
- d. Unless specified otherwise, fine aggregate shall meet the grading requirements of TxDOT Standard Specifications 421.2, Table 4.
- e. Fine aggregate will be subjected to the Sand Equivalent Test (Test Method Tex-203-F). The sand equivalent value shall not be less than eighty (80), or less than the value shown on the plans, whichever is greater. The acid insoluble residue of fine aggregate used in concrete subject to direct traffic shall be not less than sixty percent (60%) by weight when tested in accordance with Test Method Tex 612-J.

5. Mixing Water

- a. Water for use in concrete and for curing shall be free from oil, acids, organic matter or other deleterious substances and shall not contain more than 1,000 parts per million of chlorides as Cl. nor more than 1,000 parts per million of sulfates as SO<sub>4</sub>.
- b. Water from municipal supplies approved by the State Health Department will not require testing. Water from other sources will not be allowed. A sample of approximately one gallon will be submitted to Materials and Tests Division, Camp Hubbard, Austin, for test and approval.
- c. Tests procedure shall be in accordance with AASHTO Designation: T 26.

6. Joint Filler

- a. Boards for expansion joint filler and for contraction joints shall be of the size, shape and type indicated on the details.
- b. Boards shall be obtained from redwood timber. They shall be sound heartwood and shall be free from sapwood, knots, clustered birdseye, checks and splits. Occasional sound or hollow birdseye, when not in clusters, will be permitted provided the board is free from any other defects that will impair its usefulness as a joint filler.

7. Joint Sealing Material

- a. Unless otherwise shown on the plans, joint sealing material shall conform to the requirements herein or as an approved equivalent. The material shall adhere to the sides of the concrete joint or crack and shall form an effective seal against

infiltration of water and incompressibles. Joints shall not be overfilled. The material shall not crack or break when exposed to low temperatures.

- i. **Hot Poured Rubber:** This sealer shall be a rubber asphalt compound which when heated shall melt to the proper consistency for pouring and shall solidify on cooling at atmospheric temperatures.

The material when tested in accordance with Test Method Tex-525-C shall meet the following requirements:

Penetration:

32°F, 200 grams, 60 seconds..... not less than 0.28 cm  
77°F, 150 grams, 5 seconds .....45 to 0.75 cm

Flow:

5 hours, 140°F, 75° incline..... not more than 0.5 cm

Bond and Extension:

15°F, 5 cycles      There shall be no cracking of the joint sealing material or break in the bond between the joint material and the mortar pieces.

8. Asphalt Board

- a. Asphalt board when used in accordance with plans shall be of required size and uniform thickness and when used in transverse joints, shall conform approximately to the shape of the pavement crown as shown on plans. Asphalt board shall consist of two liners of 0.016-inch asphalt impregnated paper filled with a mastic mixture of asphalt and vegetable fiber and/or mineral filler.
- b. Boards shall be smooth, flat and straight throughout, and shall be sufficiently rigid to permit easy installation. Boards that crack or shatter during installing and finishing operations will not be acceptable. Board shall be furnished in lengths equal to one-half (1/2) the pavement width or in lengths equal to the width between longitudinal joints and may be furnished in strips or scored sheet of the required shape. When tested in accordance with Test Method Tex-524-C the asphalt board shall not deflect from the horizontal more than 3/4-inch in 3 1/2-inches.

9. Steel Dowel Bars

- a. Smooth steel bar dowels shall be of the size and type indicated on the details and shall be open-hearth, basic oxygen or electric-furnace steel conforming to the mechanical properties specified for grade 60 in ASTM Designations: A 615. The free end of dowel bars shall be smooth and free of shearing burrs.
- b. One end of each dowel bar shall be encased in an approved cap having an inside diameter of one 1/16-inch greater than the diameter of the dowel bar. The cap shall be of such strength, durability and design as to provide free movement of

the dowel bar and shall be approved by the City prior to use. One end of the cap shall be lubricated in order to permit free movement of the dowel bar for a distance equivalent to one hundred fifty percent (150%) of the width of the expansion joint used. The dowel caps and dowel bars shall be held securely in place by an approved dowel support basket, or an approved equivalent thereof.

10. Steel Reinforcement

Reinforcing steel shall be in accordance with DMS-7320, Item 440, "Qualification Procedure for Reinforcing Steel Producing Mills".

11. Membrane Curing Compound

The membrane curing compound shall be in accordance with "Membrane Curing," Type 2 white pigmented.

C. EQUIPMENT: All equipment and tools necessary for handling materials and performing all parts of the work shall be approved by the City and shall conform to Item 360.4 "Equipment" of the latest TxDOT Specs.

D. PROPORTIONING CONCRETE:

1. Concrete Control

a. The City shall furnish at its expense continuous plant control of the concrete by having full time a commercial laboratory at concrete plants to make the following test and inspection:

i. Check incoming aggregates, fine and coarse, for gradations, specific gravity, unit weight, abrasion wear, etc.

ii. Determine moisture contents of the aggregates to adjust bin weights to comply with designs.

iii. Make all concrete designs in accordance with Specifications.

iv. Check scales as needed for accuracy.

v. Help maintain proper slumps, as specified.

vi. Send inspection reports for each day's operations.

b. The laboratory shall cast field specimens and perform related tests for every one hundred (100) cubic yards of concrete manufactured for main lane paving and, every fifty (50) cubic yards of concrete manufactured for hand placement or any portion thereof.

(Rev. 8/2019)

2. Concrete Mix Design

a. The concrete shall be composed of Normal Portland Cement or High-Early-Strength Portland Cement, coarse aggregate, fine aggregate and water. The coarse aggregate cannot be less than sixty percent (60%) of the total combination of aggregates by volume. High-Early-Strength Portland Cement

may be used only when specifically approved by the City in writing and the concrete made therewith shall be subject to all applicable provisions of these specifications.

- b. Within a period of not less than ten (10) days prior to the start of concreting operations, the Contractor shall submit to the City a design of the concrete mix he proposes to use together with samples of all materials to be incorporated into the mix and a full description of the source of supply of each material component. The design of the concrete mix shall conform to the provisions and limitation requirements of these specifications. When the design mix has been approved by the City, there shall be no change or deviation from the proportions thereof or sources of supply except as hereinafter provided. No concrete may be placed on the job site until the mix design has been approved by the City.
- c. It is the intent of this specification to develop and use an economical mix design with the proportion of fine aggregate in the concrete mix near the upper limit of the range that permits proper placing, finishing, and texturing and which will fulfill all requirements of this specification when using acceptable materials as furnished by the Contractor. Where hand finishing is permitted, the addition of one-half sack of cement (6 sacks total) per cubic yard shall be required.
- d. The concrete mix design shall have an entrained air content of four and a half percent (4.5%), +/- one and a half percent (1.5%).
- e. After the mix proportions and water-cement ratio required to produce concrete of the specified strength have been determined, placing of the concrete may be started. The strength of the concrete in the completed pavement will be determined by compressive strength test specimens.
- f. All concrete shall be designed for a minimum compressive strength at twenty-eight (28) days of thirty-six hundred pounds per square inch (3,600 psi) or a minimum flexural strength of five hundred seventy-five pounds per square inch (575 psi) at the age of seven (7) days when Type I Portland Cement is used. If Type III cement is used, a flexural strength at seven (7) days of six hundred pounds per square inch (600 psi) will be required. Flexural strength will be determined as a simple beam with center point loading (A.S.T.M. Designation C 293). While concreting operations are in progress, beam or cylinder specimens shall be made by the City's independent laboratory according to the STANDARD SPECIFICATIONS FOR PUBLIC WORKS AND TRANSPORTATION CONSTRUCTION AS ISSUED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG). All concrete having a minimum compressive strength at twenty-eight (28) days of thirty-six hundred (3,600) psi shall have a minimum cement content of five and a half (5.5) sacks per cubic yard.

3. Workability:

- a. Concrete shall be uniformly plastic, cohesive and workable. Workable concrete is defined as concrete which can be placed without honeycomb and without voids in the surface of the pavement after the specified finishing machine has been over a given area twice. Workability shall be obtained without producing a condition such that free water appears on the surface of the slab when being finished as specified. Where water appears on the surface of the concrete after finishing and this condition cannot be corrected by reasonable adjustment in the batch design, the bleeding will be immediately corrected by one of the following measures or a combination of two or more of the following listed measures:
  - i. Redesign of the batch.
  - ii. Increase of cement content.
  - iii. Use of an approved admixture.
- b. The mix will be designed with intention of producing concrete which will have a slump of 1½-inches when tested in accordance with the STANDARD SPECIFICATIONS FOR PUBLIC WORKS AND TRANSPORTATION CONSTRUCTION AS ISSUED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG). The maximum slumps shall be as follows.
  - i. Machine placement – 4-inches maximum
  - ii. Hand placement – 5-inches maximum

E. FORMS:

1. Placing and Removing Forms

- a. The subgrade under the forms shall be firm and cut true to grade so that each form section when placed will be firmly in contact for its whole length and base width, and exactly at the established grade. Any subgrade under the forms below established grade shall be corrected, using suitable materials, place, sprinkled and rolled as directed. Forms shall be staked with at least three pins for each 10-foot section. A pin shall be placed at each side of every joint. Form sections shall be tightly joined and keyed to prevent relative displacement. Forms shall be cleaned and oiled each time they are used. Forms shall be set for sufficient distance in advance of the point where concrete is being placed to permit a finished and approved subgrade length of not less than 300-feet ahead of the mixer. Conformity of the grade and alignment of forms shall be checked immediately prior to placing concrete, and all necessary corrections made by the Contractor. Where any form has been disturbed or any subgrade becomes unstable, the form shall be reset and rechecked.
- b. In exceptional cases, the City may require suitable stakes driven to the grade of the bottom of the forms to afford additional support. Sufficient stability of forms to support the equipment operated thereon and to withstand its vibration without springing or settlement shall be required. If forms settle and/or deflect

over 1/8-inch under finishing operations, paving operations shall be stopped and the forms shall be reset to line and grade.

- c. Forms shall remain in place for not less than twelve (12) hours after the concrete has been placed. They shall be carefully removed in such a manner that no damage will be done to the edge of the pavement. Any damage resulting from this operation shall be immediately repaired. After the forms have been removed, the ends of all joints shall be cleaned, and any honeycombed areas shall be patched immediately with an approved mortar. In cases of severe honeycomb, the pavement will be removed.
- d. Immediately after patching, the form trench, if used, shall be filled immediately with earth from the shoulders in such a manner as to shed water from rainfall or curing away from the edge of the pavement. On completion of the required curing, the subgrade or shoulders adjacent to the pavement shall be placed in condition to maintain drainage.
- e. Any grade revisions shall be established by the City. No additional payment over the contract unit price will be made for any pavement of a thickness exceeding that required on the plans.

F. CONCRETE MIXING AND PLACING:

1. Mixing Methods

- a. The concrete shall be mixed in a mixer conforming to the requirements of the latest TxDOT Standard Specifications.
- b. Central Mix: The aggregates, cement and water shall be measured separately, introduced into the mixer, and mixed for a period of not less than fifty (50) seconds nor more than ninety (90) seconds, measured from the time the last aggregate enters the drum to the time discharge of the concrete begins. The required water shall be introduced into the mixing drum during the first fifteen (15) seconds of mixing. The entire contents of the drum shall be discharged before any materials of the succeeding batch are introduced.
- c. The City may increase the minimum mixing time to that necessary to produce thoroughly mixed concrete based on inspection or appropriate uniformity tests. The mixing time may be varied at any time as necessary to produce acceptable concrete.
- d. The concrete shall be discharged into the specified hauling equipment and delivered to the road site. If truck agitators are used, the concrete shall be continuously agitated at not less than one (1) nor more than six (6) rpm as directed by the City.
- e. The maximum size of the concrete batch, absolute volume, shall not exceed one hundred twenty percent (120%) of the rated size of the mixer (40.8 cubic feet maximum batch for the 34-cubic foot paver). Spilling of material from the

mixer drum shall be corrected by reducing the size of the batch. Retempering or remixing of concrete will not be permitted.

- f. The initial batch of concrete mixed after each time the mixer is washed out shall be enriched by additional mortar. The additional mortar shall be one (1) sack of cement and three (3) parts sand.
- g. Mobile batch trucks and/or volumetric trucks will not be permitted for use for any concrete. **(ADDED PER ADDENDUM NO. 1)**

(Rev 1/2022)

2. Weather Conditions

- a. All weather temperatures will be based on readings forecasted by the National Oceanic and Atmospheric Administration (NOAA).
- b. Concrete shall not be placed until ambient temperature reaches thirty-five (35) degrees with a projected high of forty (40) degrees (minimum). Operations shall cease when temperature falls below forty (40) degrees. Temperature shall be taken in the shade and away from artificial heat.
- c. The Contractor shall be responsible for the quality and strength of concrete under cold weather conditions and any concrete damaged by freezing shall be removed and replaced at his/her expense.

3. Mixing Verification

Before unloading and prior to concrete placement, delivery tickets shall be furnished for the batch of concrete containing the information required for TxDOT Form 596. The City will verify all required information is provided on the delivery tickets and may suspend concrete operations until the corrective actions are implemented if the delivery tickets do not provide the required information.

4. Placing Concrete

- a. Moisture shall be applied to the subgrade prior to placement of concrete. Concrete shall be placed only on approved subgrade or subbase, and unless otherwise indicated on plans, the full width of the pavement shall be constructed monolithically. The concrete shall be rapidly deposited on the subgrade in successive batches and shall be distributed to the required depth and for the entire width of the pavement by shoveling or other approved methods. Workmen will not be permitted to walk in the concrete with any foreign material on their boots or shoes.
- b. The placing operation shall be continuous. At the end of the day, or in case of unavoidable interruption or delay of more than thirty (30) minutes, work shall terminate at the nearest regularly established joint.

- c. When the concrete is to be placed in separate lanes, the junction line shall not deviate from the true line more than ½-inch at any point and shall be finished as shown on plans.
- d. Concrete shall be distributed to such depth that when consolidated and finished, the slab thickness required by plans will be obtained at all points and the surface shall not, at any point, be below the established grade. Special care shall be exercised in placing and spading concrete against forms and at all joints to prevent the forming of honeycombs and voids.
- e. If a central mixer is used, the Contractor shall provide a system satisfactory to the City for determining that concrete delivered to the road meets the specified requirements for mixing and time of placing.

5. Time

- a. Concrete shall not be placed before the time of sunrise and shall not be placed later than shall permit the finishing of the pavement during sufficient natural light in accordance with NCTCOG Specification 303.5.5 below.

<b>Temperature/Time Requirements</b>		
Concrete Temp (At Point of Placement)	Max Time (No Retarding Agent) Minutes	Max Time <sup>(1)</sup> (With Retarding Agent) Minutes
<b>Non-Agitated Concrete</b>		
All temperatures	30	45
<b>Agitated Concrete</b>		
Above 90F	45	75
Above 75F thru 90F	60	90
75F and Below	90	120

<sup>(1)</sup>Normal dosage of retarder

- b. Any concrete not placed as herein prescribed within the time limits specified will be rejected.

6. Hot Weather Concrete Placing

- a. Concrete with a temperature of 85°F or higher will require a retarding agent admixture.
- b. The maximum temperature of concrete at the time of placement will not exceed 100°F. All concrete that exceeds this temperature will be rejected.
- c. It shall be the Contractor's and/or his/her supplier's responsibility to take steps to control the temperature below 100°F.

7. Reinforcing Steel and Joint Assemblies

- a. Reinforcement must be stored above the ground on platforms, skids, or other supports, and be protected from damage and deterioration. Reinforcement must be free from dirt, paint, grease, oil, and other foreign materials when placed in the work. Reinforcement shall be free from defects such as cracks and delamination. Rust, surface seams, surface irregularities, or mill scale will not be cause for rejection if the minimum cross-sectional area of a hand wire-brushed specimen meets the requirements for the size of steel specified.
- b. Stainless reinforcing steel shall not be in direct contact with uncoated reinforcing steel, nor with galvanized reinforcing steel. This does not apply to stainless steel wires and ties. Stainless reinforcing steel shall be stored separately off the ground on wooden supports.
- c. Lap-splice, weld-splice, or mechanically splice bars as shown on the plans. Additional splices not shown on the plans will require approval by the City. Splices not shown on the plans will be allowed in slabs no more than 15-inches in thickness, columns, walls, and parapets.
- d. Unless otherwise approved, bars shall not be spliced less than 30-feet in plan length. For bars extending 30-feet in plan length, the distance center-to-center of splices must be 30-feet minimum 1 splice length, with no more than 1 individual bar length less than 10-feet. Lap splices not shown on plans, but otherwise permitted shall be in accordance with the following table. The specified concrete cover and spacing at splices must be maintained the lap-spliced bars placed in contact, and securely tied together.

Minimum Lap Requirements for Steel Bar Sizes through No. 11

Bar Size Number (inches)	Uncoated Lap Length	Coated Lap Length
3	1 ft. 4 in.	2 ft. 0 in.
4	1 ft. 9 in.	2 ft. 8 in.
5	2 ft. 2 in.	3 ft. 3 in.
6	2 ft. 7 in.	3 ft. 11 in.
7	3 ft. 5 in.	5 ft. 2 in.
8	4 ft. 6 in.	6 ft. 9 in.
9	5 ft. 8 in.	8 ft. 6 in.
10	7 ft. 3 in.	10 ft. 11 in.
11	8 ft. 11 in.	13 ft. 5 in.

- Do not lap No. 14 or No. 18 bars.
- Lap spiral steel at least 1 turn.
- Splice WWR using a lap length that includes the overlap of at least two (2) cross wires plus 2-inches on each sheet or roll. Splices using bars that develop equivalent strength and are lapped in accordance with the above table will be allowed.

- Lap the existing longitudinal bars with the new bars shown in the above table for box culvert extensions with less than 1-foot of fill. Lap at least 1-foot for extensions with more than 1-foot of fill.
  - Welded splices shall conform to the requirements of the plans and of TxDOT Item 448 “Structural Field Welding”. Field-prepare ends of reinforcing bars if they will be butt-welded. Delivered bars must be long enough to permit weld preparation.
  - Install mechanical coupling devices in accordance with the manufacturer’s recommendations at locations shown on the plans. Threaded male or female connections must be protected and the threaded connections cleaned when making the connection. Damaged or repaired threads will not be permitted.
  - Mechanical coupler alternate equivalent strength arrangements, to be accomplished by substituting larger sizes or more bars, will be considered if approved in writing before fabrication of the systems.
- e. All reinforcing steel, including tie bars, dowel bars, and dowel support baskets shall be accurately placed and secured in position in accordance with details shown on plans (use TxDOT latest approved Reinforcing Steel Mill List). Reinforcing bars shall be securely wired together at alternate intersections, following a pattern approved by the City, and at all splices, and shall be securely wired to each dowel intersected. Tie bars shall be installed in the required position by the method and device shown on plans or by approved method and device equivalent thereto. Bar coatings required by plans, and of material specified, shall be completed and the bars and coating shall be free of dirt or other foreign matter at the time of installation of the concrete.
- f. Tightly adhered scale or rust which resists removal by vigorous wire brushing need not be removed except that excessive loss of section to the reinforcement due to rust shall be cause for rejection. Excessive loss of section shall be defined as loss of section to the extent that the reinforcement will no longer meet the physical requirements for the size and grade of steel specified.
- g. Where plans require an assembly of parts of pavement joints, the assembly shall be completed, placed at required location and elevation, and all parts rigidly secured in required position by the method and devices shown on plans or by approved method and devices equivalent thereto. Dowel bars shall be accurately installed in joint assemblies in accordance with plans and details, each parallel to the pavement surface and to the center line of the pavement and shall be rigidly secured in required position by such means (as shown on plans, or approved equivalent thereto) that will prevent their displacement during placing and finishing of the concrete. Unless specifically authorized by the City in writing, the dowel support baskets, shall be accurately installed in joint assemblies in accordance with plans and details, each unit vertical with its length parallel to the center line of the pavement, and all units shall be rigidly secured in required position by such means (as shown on plans, or approved equivalent thereof) that will prevent their displacement during placing and

finishing of the concrete. Header boards, joint filler and other material used for forming joints shall be accurately notched to receive each dowel support basket. All dowel support baskets shall be free of rust and clean when installed in the concrete.

- h. Pre-set L bars shall not be straightened in new concrete before three (3) days of cure. Drilling for dowel or rebar installation shall not take place before three (3) days of cure on new concrete.

8. Construction Joints

- a. Intentional stoppage of the concrete placement shall be at either an expansion joint or at a weakened plane joint. The following provisions shall govern for each type of joint at which the concrete placement is stopped.

- i. When the concrete placement is stopped at an expansion joint, the complete joint assembly shall be installed and rigidly secured in required position as shown on plans. A bulkhead of sufficient cross-sectional area to prevent deflection, accurately notched to receive the dowel support baskets or dowels and shaped accurately to the cross-section of the pavement shall be provided and installed as a back-up for the joint filler and rigidly secured in required position to permit accurate finishing of the concrete up to the joint. After the concrete has been finished to the joint, formation of the joint shall be executed as specified herein and in accordance with plan requirements. The back-up bulkhead shall remain in place until immediately prior to the time when concrete placing is resumed, when it shall be carefully removed in such manner that no element of the joint assembly will be disturbed. The exposed portion of the joint assembly shall be free to adherent concrete, dirt or other material at the time concrete placement is resumed.

- b. When concrete placement is stopped at a weakened plane joint, all applicable provisions of paragraph (a) above shall apply in addition to the following requirements:

- i. The Contractor shall have available a bulkhead shaped to the section of the pavement. This bulkhead must be drilled to permit the continuation of all longitudinal reinforcing steel through the construction joint and shall be of sufficient section and strength to prevent deflection.
- ii. Immediately upon the unintended stoppage of the concrete placement, the Contractor shall place the available concrete to a line and install the above described bulkhead at right angles to the centerline of the pavement, perpendicular to the surface and at the required elevation. Concrete shall be placed and finished to this bulkhead. Any concrete remaining on the subgrade ahead shall be removed and disposed of as directed. When concrete placement is resumed before the concrete has set to the extent that the concrete will stand on removal of the bulkhead, the new concrete

shall be vibrated with the first. An edge created by a construction joint of this type shall have a tooled joint and shall be sealed as required for contraction joints.

G. JOINTS:

1. General

- a. All transverse and longitudinal joints when required in the pavement shall be of the type or alternate type shown on plans and shall be constructed at required location, on required alignment, in required relationship to tie bars and joint assemblies, and in accordance with details shown on the plans. Such stakes, braces, brackets or other devices shall be used as necessary to keep the entire joint assembly in true vertical and horizontal position.
- b. Joints shall be installed as shown on the plans. A rigid transverse bulkhead, for the reinforcing steel, shall be installed and shaped accurately to the cross-section of the pavement when concrete placement is stopped. (Rev 2/2020)
- c. Careful workmanship shall be exercised in the construction of all joints, to ensure that the concrete sections are completely separated by an open joint or by the joint materials and to ensure that the joints will be true to the outline indicated.

2. Expansion Joints

Transverse expansion joints shall be formed perpendicular to the centerline and surface of the pavement and shall be constructed in accordance with the sequence of operations shown on plans. After the transverse finishing machine and before the longitudinal finishing machine have passed over the joint, the Contractor shall test the joint filler for correctness of position and make any required adjustment in position of the filler and shall install the tooled joint form in accordance with plans. After removal of the joint seal form as required by plans, the tooled joint above the joint filler shall be thoroughly sandblasted or machine routed to remove all projecting concrete, laitance, dirt or foreign matter. The concrete faces of the tooled joint shall be left true to line and section throughout the entire length of the joint. On completion of curing of the pavement, the joint sealing filler of the type specified shall be placed in accordance with plans. The faces of the tooled joint shall be clean and surface dry at the time joint sealing filler is placed. On completion of the joint seal, the pavement adjacent to the joint shall be left free of joint sealing material. The tooled joint shall be exactly above and not narrower than the joint filler with no concrete over hangings.

3. Weakened Plane Joints

- a. Weakened plane joints shall consist of transverse contraction joints and longitudinal joints and shall be sawed as specified on the plans. The saw shall be power driven, shall be manufactured especially for the purpose of sawing concrete, and shall be capable of performing the work. Saw blades shall be designed to make a clean smooth cut having a width and depth of cut as detailed on the plans. Tracks adequately anchored, chalk, string line or other approved methods shall be used to provide true alignment of the joints. The concrete saw

shall be maintained in good operating condition and the Contractor shall keep a stand-by power saw on the project at all times when concrete operations are under way. No concrete shall be sawed without the use of water.

b. If membrane curing is used, the portion of the seal which has been disturbed by sawing operations shall be restored by the Contractor by spraying the areas with additional curing seal.

i. **Contraction joints:** Transverse contraction joints shall be sawed joints perpendicular to the centerline and the surface of the pavement and shall be constructed by the method, and in sequence of operations, as shown on plans. Where sawed joints are used, contraction joints at intervals shown on the plans shall be sawed as soon as sawing can be accomplished without damage to the pavement and before twenty-four (24) hours after the concrete has been placed. The remaining contraction joints shall be sawed in a uniform pattern as directed by the City, and they shall be completed before uncontrolled cracking of the pavement takes place. All joints shall be completed before placing concrete in succeeding lanes and before permitting traffic to use the pavement.

ii. **Longitudinal Joints:** Longitudinal joints shall be of the type or alternate types shown on plans and shall be constructed of specified materials in accordance with provisions of the plans. Longitudinal joints shall be constructed accurately to required lines, shall be perpendicular to the pavement surface at the joint, and the pavement surface over and adjacent to the joint shall be finished as specified.

Longitudinal joints shall be sawed as soon as sawing can be accomplished without damage to the pavement and before twenty-four (24) hours after the concrete has been placed, the exact time to be approved by the City. Sawing shall not cause damage to the pavement and the groove shall be cut with a minimum of spalling.

#### 4. Joint Sealers

a. Joint sealants will not be required on concrete pavement that is to be overlaid with asphaltic materials. Excessive spalling of the joint saw groove shall be repaired using an approved method before installing the sealant. All joints shall be sealed before opening the pavement to all traffic. (Rev. 2/2020)

b. Prior to sealing, joints shall be routed to the proper depth. Joints shall be cleaned and sealed in accordance with TxDOT Item 438 "Cleaning and Sealing Joints". All slurry waste shall be removed immediately. All joints shall be sealed no sooner than seven (7) days and no later than twenty-eight (28) days from time of placement, unless otherwise directed by the City. (Rev. 2/2020)

c. **Hot Poured Rubber:** This material shall be melted in an approved oil-bath kettle equipped with temperature indicators and continuously operated mechanical

agitators. The material shall not be heated above 450°F and any material heated above that temperature will be rejected.

5. Asphalt Board

Asphalt expansion materials, wherever used, shall be anchored to the concrete on one side of the joint by means of copper wire or nails not lighter than No. 12 B & S gage. Such anchorage shall be sufficient to overcome the tendency of the material to fall out of the joint.

6. Curbs

a. The curb shall be constructed in lengths equal to the adjoining pavement slab lengths, and expansion joints shall be provided in the curb opposite each transverse expansion joint in the pavement. Expansion joint material shall be of the same thickness, as specified for the pavement and shall be of the section as shown for the curb. All expansion joints shall be carried through the curb.

b. Transverse contraction joints shall be sawed across the curb at the same location and at the same time as sawing of the transverse contraction joints in the pavement are sawed.

H. SPREADING AND FINISHING:

1. Machine Finishing

a. All concrete pavement shall be finished mechanically with approved power-driven machines, except as herein provided. Hand finishing will be permitted on the transition from a crowned section to a super-elevated section without crown on curves, and on straight line super-elevation sections less than 100-feet in length. Hand finishing will also be permitted on that portion of a widened pavement outside the normal pavement width, on sections where the pavement width is not uniform, or required monolithic widths are greater than that of available finishing machines.

b. Machine finishing of pavement shall include the use of power-driven spreaders, power-driven vibrators, power-driven transverse strike-off, and screed, or such alternate equipment as may be substituted and approved under the latest TxDOT Standard Specifications. Further, any machine finishing equipment that rides on previously placed forms will be prohibited on any roadway with a total width of more than 28-feet, nor will they be allowed on any divided roadway of any width.

c. All concrete pavement shall be consolidated by a mechanical vibrator. As soon as the concrete has been spread between the forms, the approved mechanical vibrator shall be operated to consolidate the concrete and remove all voids. Hand manipulated vibrators shall be used for areas not covered by the mechanical vibratory unit. A wet Burlap Drag will be required on all machine paving.

- d. Concrete shall be of a consistency that allows completion of all finishing operations without addition of water to the surface. Minimal amount of water fog mist may be used to maintain a moist surface. If float or straightedge operations result in excess slurry, fogging shall be reduced.
- e. After finishing is complete and the concrete is still workable, the surface shall be tested for trueness with an approved 10-foot steel straightedge. The straightedge shall be operated from the side of the pavement, placed parallel to the pavement centerline and passed across the slab to reveal any high spots or depressions. Straightedge operations shall begin with twenty-five percent (25%) of straightedge on new concrete and seventy-five percent (75%) on the existing concrete, advancing to no more than half its length. Practically perfect contact of the straightedge with the surface will be required, and the pavement shall be leveled to this condition, in order to ensure conformity with the surface test required below after the pavement has fully hardened. Any correction of the surface required shall be accomplished by adding concrete, if required, and by operating the longitudinal float over the area. The surface test with the straightedge shall then be repeated.
- f. For one-lane pavement placement and uniform widening, the equipment for machine finishing of concrete pavement shall be as directed by the City but shall not exceed the requirements of these specifications.
- g. After completion of the straightedge operation, the first pass of the baker broom shall be made as soon as construction operations permit and before the water sheen has disappeared from the surface. This shall be followed by as many passes as required to produce the desired uniform texture depth satisfactory to the City. There shall be no unnecessary delays between passes. The baker broom shall be free from encrusted mortar.

## 2. Hand Finishing

- a. Hand finishing will only be permitted with prior authorization from the City. Six sacks of cement per cubic yard shall be required for all hand finish concrete.
- b. When hand finishing is permitted, the concrete shall be struck off with an approved strike-off screed to such elevation that when consolidated and finished the surface of the pavement shall conform to the required section and grade.

## 3. Surface Testing

After the concrete has been placed twelve (12) hours or more, if necessary the City may test the surface of the pavement with a 10-foot straightedge. The surface shall not vary from the straightedge by more than 1/8-inch between any two (2) contacts, when measured longitudinally or transversely. Any high spots causing a departure from the straightedge in excess of that specified shall be ground down by the Contractor to meet the surface test requirements. Where the texture of the pavement

is removed by extensive grinding, the texture shall be restored by grooving the concrete to meet the surface finishing requirements.

I. CURING:

1. All concrete pavement shall be cured by protecting it against loss of moisture for a period of not less than seventy-two (72) hours from the beginning of curing operations. After finishing operations have been completed and immediately after the water shown has dissipated from the surface, the entire surface of the newly laid concrete shall be covered and cured in accordance with the requirements specified. Failure to provide sufficient cover material or failure to maintain saturation in wet curing methods, lack of water to adequately take care of both curing and other requirements, or other failures to comply with curing requirements shall be cause for immediate suspension of concreting operations and removal of any sections which are improperly cured.
2. The covering material used in curing shall be removed as necessary to saw joints or to comply with the requirements for "Surface Test." The concrete surface shall be maintained wet with a water spray, if required, and the covering material replaced immediately on completion of sawing and testing and any required surface correction.

J. PROTECTION OF PAVEMENT AND OPENING TO TRAFFIC:

1. Weather Conditions

Contractor shall monitor the weather and be aware that paving that is rained upon is no longer compliant with specifications and must be removed and replaced at Contractor's expense. No topping of any kind will be allowed to serve as a riding surface. No concrete will be allowed to stay in place when:

- Water/cement ratio has been exceeded
- Curing compound has been placed on it and the subsequently finished
- Concrete has been covered with plastic for so long that normal finishing activities cannot provide the proper finish for the pavement surface

2. Protection of Pavement

- a. The Contractor shall erect and maintain the barricades required by plans and such other standard and approved devices as will exclude public traffic and traffic of his/her employees and agents from the newly placed pavement for the periods of time hereinafter prescribed. Portions of the roadway, or crossings of the roadbed required to be maintained open for use by traffic, shall not be obstructed by the above required barricades. Crossings of the pavement required by plans, or by construction sequence, during the period prior to opening to traffic as herein specified, shall be provided with an adequate and substantial bridge, approved by the City.
- b. It shall be the responsibility of the Contractor to protect concrete finish from any type of damage. Any concrete finish that has been damaged will be removed and replaced at the Contractor's expense.

3. Opening Pavement to Traffic

- a. The pavement shall be closed to all traffic, including vehicles of the Contractor, until the concrete is at least seven (7) days old but not before concrete has achieved seventy percent (70%) of design strength. This period of closure to all traffic may be extended if, in the opinion of the City, weather or other conditions make it advisable to provide an extension of the time of protection.
- b. At the end of the seven (7) day period and as long thereafter as determined by the City, the pavement may be opened for use by vehicles of the Contractor provided the gross weight (vehicle plus load) of such vehicles does not exceed fourteen thousand (14,000) pounds. Such opening, however, shall in no manner relieve the Contractor from his/her responsibility for the work. On the sections of the pavement that will be opened to traffic, all joints shall first be sealed, the pavement cleaned and soil placed against the pavement edges. This seven (7) day policy shall also apply to other types of operations, such as sealing, backfill, etc., where traffic movements could affect results of the work performed.
- c. After the concrete in any section is fourteen (14) days old, or as long thereafter as determined by the City, such section of pavement may be opened to all traffic as required by plans or when all other required work, as directed by City, has been performed for safety purposes.
- d. When High Early Strength Concrete resulting from the use of Type III cement as required by plans or special provisions is used, the pavement may be opened to all traffic after the concrete is seven (7) days old, or as long thereafter as deemed necessary by the City, subject to the same provisions governing the opening after fourteen (14) days as above prescribed.
- e. Where the Contractor desires to move any equipment not licensed for operation on public highways, on or across any pavement opened to traffic, he shall protect the pavement from all damage.

4. Emergency Opening to Traffic

- a. The City may require the opening of pavement to traffic prior to the minimum time specified above under conditions of emergency which in his/her opinion require such action in the interest of the public. In no case, shall the City order the opening of the pavement to traffic within less than seventy-two (72) hours after the last concrete in the section is placed.
- b. The Contractor shall remove all obstructing materials, place soil against the pavement edges and perform other work involved in providing for the safety of traffic as required by the City in ordering emergency opening. Orders for emergency opening of the pavement to traffic will be issued by the City in writing.

K. PENALTY FOR DEFICIENT PAVEMENT THICKNESS:

1. Refer to The North Texas Council of Governments (NCTCOG) Specification 303.8.2.
2. No additional payment over the contract unit price will be made for any pavement of a thickness exceeding that required by the plans.

L. MEASUREMENT: When provided by plans and PROPOSAL, concrete pavement will be measured by the square yard of the surface area of completed and accepted work. The measurement shall include the portion of the pavement slab extending beneath the curb. When concrete pavement is to be measured by the square yard and monolithic curb is required, monolithic curb will be subsidiary to the item for reinforced concrete pavement.

M. PAYMENT:

1. The work performed and materials furnished as prescribed by this item and measured as provided under "Measurement" will be paid for at the unit price bid for Reinforced Concrete pavement, or the adjusted unit price for pavement for deficient thickness as provided under "Penalty for Deficient Pavement Thickness," which price shall be full compensation for shaping and fine grading the roadbed, including furnishing and applying all water required; for furnishing, loading and unloading, storing, hauling and handling all concrete ingredients, including all freight and royalty involved; for placing and adjusting forms, including supporting material or preparing track grade; for mixing, placing, finishing, sawing, cleaning and sealing joints, and curing all concrete; for furnishing and installing all reinforcing steel; for furnishing all materials for sealing joints and placing longitudinal, expansion and weakened plane joints, including all steel dowel caps and dowel support baskets required, and wire and devices for placing, holding and supporting the steel bars, dowel support baskets and joint filler material in proper position, for coating steel bars where required by plans, and for manipulations, labor, equipment, appliances, tools, traffic provisions and incidentals necessary to complete the work.
2. Excavation required by this item in the preparation of the subgrade and for the completion of the shoulders and slopes will be measured and paid for in accordance with the provisions governing the Items of "Unclassified Roadway Excavation."
3. Sprinkling and rolling required for the compaction of the rough subgrade in advance of fine grading will be measured and paid for as indicated in the governing items of excavation. Maintenance of a moist condition of the subgrade in advance of fine grading and concrete placing will not be paid for directly but shall be considered subsidiary work, as provided above.

**13-17 CONCRETE MEDIANS:**

- A. All concrete for concrete medians and median noses shall have a minimum thickness of 12-inches. Reinforcement shall be No. 4 bars on 18-inches centers both ways or as shown on the plans. All Class "C" concrete shall have a minimum cement content of five and a half (5.5) sacks per cubic yard and a minimum compressive strength at twenty-eight (28)

days of thirty-six hundred (3,600) pounds per square inch. All concrete shall be vibrated. Measurement and payment is included in the Reinforced Concrete Pavement pay item.

(Rev. 9/2019)

- B. Redwood expansion joints shall be placed at the end of the monolithic nose radius and at every 40-feet. Curing shall be in accordance with Special Project Specification Section 13-18 "Membrane Curing." Curing and reinforcement shall be considered subsidiary to the various bid items.
- C. Refer to Section 13-16 for additional concrete specifications.

**13-18 MEMBRANE CURING:**

A. **DESCRIPTION:**

This item shall consist of curing concrete pavement, curbs, gutters, sidewalks, driveways, medians, islands, concrete channel/slope, concrete structures, and other concrete as indicated on the plans by impervious membrane method.

B. **MATERIALS:**

1. The membrane curing compound shall comply with the "Standard Specification for Liquid Membrane-forming Compounds for Curing Concrete," ASTM Designation: C 309, Type 1 clear or translucent, or Type 2 white pigmented. The material shall have a minimum flash point of 80°F when tested by the "Pensky-Martin Closed Cup Method."
2. It shall be of such consistency that it can be satisfactorily applied as a fine mist through an atomizing nozzle by means of approved pressure spraying equipment at atmospheric temperatures above 40°F.
3. It shall be of such nature that it will not produce permanent discoloration of concrete surfaces nor react deleteriously with the concrete or its components. Type 1 compound shall contain a fugitive dye that will be distinctly visible not less than four (4) hours nor more than seven (7) days after application.
4. The compound shall produce a firm, continuous, uniform moisture impermeable film free from pinholes and shall adhere satisfactorily to the surfaces of damp concrete. It shall, when applied to the damp concrete surface, at the rate of coverage specified herein, dry to touch in not more than four (4) hours and shall adhere in a tenacious film without running off or appreciably sagging. It shall not disintegrate, check peel or crack during the required curing period.
5. The compound shall not peel or pick up under traffic and shall disappear from the surface of the concrete by gradual disintegration.
6. The compound shall be delivered to the job only in the manufacturer's original containers, which shall be clearly labeled with the manufacturer's name, the trade name of the material, and a batch number or symbol with which test samples may be correlated.

7. The water retention test shall be in accordance with Test Method Tex-219-F. Percentage loss shall be defined as the water lost after the application of the curing material was applied. The permissible percentage moisture loss (at the rate of coverage specified herein) shall not exceed the following:

24 hours after application.....2 percent

72 hours after application.....4 percent

C. CONSTRUCTION METHODS:

1. The membrane curing compound shall be applied after the surface finishing has been completed, and immediately after the free surface moisture has disappeared. The surface shall be sealed with a single uniform coating of the specified type of curing compound applied at the rate of coverage recommended by the manufacturer and directed by the City, but not less than one (1) gallon per one hundred eighty (180) square feet of area. The Contractor shall provide satisfactory means and facilities to properly control and check the rate of applications of the compound.
2. The compound shall be thoroughly agitated during its use and shall be applied by means of approved power pressure sprayers. The sprayers shall be equipped with satisfactory atomizing nozzles. Only on small miscellaneous items will the Contractor be permitted to use hand-powered spray equipment.
3. The compounds shall not be applied to a dry surface and if the surface of the concrete has become dry, it shall be thoroughly moistened prior to application of membrane by fogging or mist application. Sprinkling or coarse spraying will not be allowed.
4. At locations where the coating shows discontinuities, pinholes, or other defects; or if rain falls on the newly-coated surface before the film has dried sufficiently to resist damage, an additional coat of the compound shall be applied immediately at the same rate of coverage specified herein.
5. To ensure proper coverage, the City shall inspect all treated areas after application of the compound for the period of time designated in the governing specification for curing, either for membrane curing or for other methods. Dry areas are identifiable because of the lighter color or dry concrete as compared to damp concrete. All suspected areas shall be tested by placing a few drops of water on the suspected areas. If the water stands in rounded beads or small pools which can be blown along the surface of the concrete without wetting the surface, the water-impervious film is present. If the water wets the surface of the concrete as determined by obvious darkening of the surface, or by visible soaking into the surface, no water-impervious film is present. Should the foregoing test indicate that any area during the curing period is not protected by the required water-impervious film, an additional coat or coats of compound shall be applied immediately, and the rate of application of the membrane compound shall be increased until all areas are uniformly covered by the required water-impervious film.

6. When temperatures warrant protection against freezing, curing by this method shall be supplemented with an approved insulating material capable of protecting the concrete for the specified curing period.
7. If at any time there is reason to believe that this method of curing is unsatisfactory or is detrimental to the work, the Contractor shall immediately cease the use of this method and shall change to curing by one of the other methods specified under this contract.

**D. MEASUREMENT AND PAYMENT:**

Work and materials prescribed herein will not be paid for directly but shall be included in the unit price bid for the items of construction in which these materials are used.

**13-19 ASPHALTIC PRIME COAT:** A prime coat shall be used on the stabilized base material immediately after the base material has been compacted to specified density and cut to grade. The prime coat shall be a liquid asphalt complying with the specification of the Asphalt Institute for type MS-2 Emulsified Asphalt. The prime coat shall be applied to the surface of the base at a rate of 0.20 to 0.40 gallons per square yard of surface and allowed to penetrate as far as possible. The cost of furnishing and installing the asphalt prime coat shall be considered subsidiary to the unit prices bid for subgrade.

**13-20 TACK COAT: N/A**

**13-21 NON-TRACKING TACK COAT:** The unit bid prices for coarse graded base course and fine graded surface course shall include the application of a non-tracking tack coat to each layer of asphaltic concrete before the next layer is applied and a non-tracking tack coat shall also be applied to any exposed concrete edges that shall abuts any hot mix asphaltic concrete. The non-tracking tack coat shall be applied to each layer at a rate not to exceed 0.05 gallons per square yard of surface.

**Non-Tracking Tack Coat Emulsion**

Property	Test Procedure	Quick Setting QS-1HH	
		Min	Max
Viscosity, Saybolt Furol, 77° F,sec	T 72	15	--
Storage stability, 1 Day, %	T 59	--	1
Settlement, 5-day, %	T 59	2	5
Sieve test, %	T 59	--	0.30
Distillation test: <sup>1</sup>	T 59		
Residue by distillation, % by wt.		50	--
Oil distillate, by volume of emulsion		--	1.0
Test on residue from distillation:			
Penetration, 77°F, 100 g, 5 sec.	T 49	--	20
Solubility in trichloroethylene, %	T 44	97.5	--
Softening point, °F	T 53	150	
Dynamic shear, G*/sin(δ), 82°C, 10 rad/s, kPa	T 315	1.0	--

**Non-Tracking Tack Coat Emulsion**

<b>Property</b>	<b>Test Procedure</b>	<b>Quick Setting</b>	
		<b>QS-1HH</b>	
		<b>Min</b>	<b>Max</b>

1. Exception to AASHTO T-59: Bring the temperature on the lower thermometer slowly to 350°F +/- 10°F. Maintain at this temperature for 20 min. Complete total distillation in 60 +/- 5 min. from first application of heat.

**13-22 HOT MIX ASPHALTIC CONCRETE:**

A. PLACEMENT:

HMAC cannot be laid until ambient temperature reaches forty (40) degrees with a projected high of fifty (50) degrees (minimum). Operations shall cease when temperature falls below fifty (50) degrees.

B. PAVING MIXTURES:

1. Mixture Design

Mixture shall be in accordance with TxDOT Standard Specification, Item 340.

2. Stability and Density

The mixture shall be designed to produce an acceptable mixture within tolerance, at or near optimum density. The mixture molded in the laboratory in accordance with TXDOT Test Method Tex-206-F and the bulk specific gravity of the laboratory compacted mixture determined in accordance with TXDOT Test Method Tex-207-F should have the following percent of maximum theoretical density as measured by TXDOT Test Method Tex-227-F and stability conforming to TXDOT Test Method Tex-208-F:

Optimum Density Range  
95 to 97 Percent

Stability, Percent  
Not Less than 42

3. Sampling and Testing for Field Control

Extraction tests for bitumen content and aggregate gradation shall be made for each five hundred (500) tons produced or fraction thereof. Extraction tests shall conform to TXDOT Test Method Tex-210-F. Tests for stability of the asphalt mixture shall conform to TXDOT Test Method Tex-208-F. The mixture shall not vary from the grading proportions of the aggregate and the asphalt content by more than the respective tolerances and shall be within the limits specified for master grading.

4. Recycled Asphalt Pavement (RAP)

All RAP Material must meet TxDOT item number 340. Do not exceed fifteen percent (15%) RAP by weight in Type "B" mixtures; or five percent (5%) RAP by weight in Type "D" mixtures.

5. Recycled Asphalt Shingles (RAS): No RAS will be allowed in any mixtures.

C. IN-PLACE COMPACTION CONTROL:

1. In-place compaction control is required for all mixtures:
  - a. Asphaltic concrete should be laid and compacted to contain no more than eight percent (8%) nor less than three percent (3%) air voids unless otherwise indicated. The percent air voids will be calculated using the maximum theoretical specific gravity of the mixture determined according to TXDOT Test Method Tex-227-F. Roadway specimen, which shall either be cores or sections of asphalt pavement, will be tested according to TXDOT Test Method Tex-207-F. The same specimen shall be used for determining both the maximum theoretical density and field density. Specimens used for field density determinations shall be carefully crumbled, using heat, if necessary, and the maximum theoretical density determined as specified. If heating is necessary, the specimen shall be heated to the lowest temperature required for proper preparation of the sample. The use of nuclear field density determinations shall not be accepted as the basis for acceptance with respect to density. However, an approved nuclear gauge may be used to establish a rolling pattern.
  - b. The Contractor shall be responsible for assuring that the compaction of the asphaltic concrete being laid will attain between three (3) and eight (8) percent air voids. The Contractor's responsibility for the required compaction includes the selection of rolling equipment and the selection of rolling patterns to achieve the required compaction within the guidelines provided herein. The above selections of equipment and procedures must provide the required qualities of profile, smooth riding surface, and consistent workmanship in appearance.
2. Initial testing will be the responsibility of the City. Any retest will be the responsibility of the Contractor. Additional information is provided in Section 11-20 Quality Assurance/Quality Control (QA/QC).

D. ASPHALT TRANSITIONS:

Transitional asphalt shall have a minimum thickness of 4-inches Type "B" HMAC and 2-inches Type "D" HMAC or shall match existing pavement thickness, whichever is greater. Transition width shall be a minimum 2-feet for temporary and a minimum of 4-feet for permanent with 8-inches CTB. Unless a separate item is included in the PROPOSAL, asphalt transition shall be subsidiary.

**13-23 PAVING FABRIC (PETRO-MAT): N/A**

**13-24 STEEL GUARD RAIL:** For this project, the steel guard rail shall be "Galvanized Steel Beam Guard Fence" conforming to the details shown on the plans and to the requirements of Item 560, "Metal Beam Guard Fence," of the latest TxDOT Standard Specifications.

**13-25 GPS MONUMENT:**

- A. Contractor shall Furnish and Install two (2) Berntsen Top Security Rod Monuments with logo # 200016 or two (2) Berntsen C35D - 3 1/2" Aluminum concrete markers with E logo #E432 or any combination of both (at the City Surveyor's discretion) complete and in

place. Location of said Monuments/Markers shall be marked by the City Surveyor. Contractor shall notify the City Surveyor two (2) weeks before planned installation date.

- B. Contractor shall have a Registered Professional Land Surveyor survey the Berntsen Monuments/Markers, publish and certify GPS data sheets that meet and/or exceed Second Order Specifications using the Global Positioning System (GPS). Data Sheet horizontal coordinates shall be NAD 83 (2007 Adjustment) or be based on the latest adjustment of the City's GPS Monument Manual (located on Public Works & Transportation's web page). Please specify which adjusted datum is used for the project. Data Sheet vertical datum for the Berntsen Monuments/Markers shall be based on NAVD88 derived from calculating by applying vertical shifts derived from Geoid model 2012A or Geoid model 2003 or Geoid model 2009 to ellipsoid heights calculated from GPS/GNSS observations referenced to the North American Datum of 1983 (2007) or later datum or meet and/or exceed Third Order Specifications using conventional leveling methods.
- C. Contractor shall notify City Surveyor beforehand of exact date of installation of Berntsen Monuments/Markers so City Surveyor can inspect procedures of the installation of Berntsen Monuments/Markers.

**13-26 TEMPORARY BATCH PLANT:**

- A. If the Contractor chooses to construct a temporary batch plant, the following conditions (at a minimum) must be satisfied prior to approval from the City.
  - a. Batch plant must be permitted by the City. A copy of Notice of Intent (NOI) and approved Storm Water Pollution Prevention Plan must be on the premises.
  - b. Location map must be provided indicating routes for raw material delivery.
  - c. Location map must be provided indicating that the nearest recreational area, school, or residence is located at least 300-feet away.
  - d. Letter of Permission must be provided by the City of the property (on which the batch plant is to be constructed) requiring that the Contractor leaves the site in as good or better condition.
  - e. The start and stop dates for operation of the plant must be provided.
  - f. It must be stated that the batch plant will be used to provide concrete for no other project(s) without written approval from the City.
- B. No additional pay will be made for the temporary batch plant.

END OF SECTION

## SECTION NO. 14

### SPECIAL PROVISIONS – WATER AND SANITARY SEWER SPECIFICATIONS

#### NUMERICAL LISTING

Section No.	
14-01	POLY-VINYL CHLORIDE (PVC) WATER PIPE AND FITTINGS
14-02	EMBEDMENT REQUIREMENTS FOR WATER PIPE & FITTINGS
14-03	THRUST BLOCKINGS
14-04	VALVE OPERATIONS NOTIFICATION
14-05	INTERRUPTION OF WATER SERVICE
14-06	CLEANING OF NEW WATER MAIN
14-07	FIRE HYDRANTS
14-08	RELOCATION OF EXISTING FIRE HYDRANTS
14-09	REMOVE/SALVAGE EXISTING FIRE HYDRANTS
14-10	GATE VALVES
14-11	WATER SERVICES
14-12	WATER METER REPLACEMENT
14-13	WATER METER RELOCATION OR ADJUSTMENT
14-14	WATER METER BOX REPLACEMENT
14-15	ABANDONING EXISTING VALVE BOX AND MANHOLE
14-16	POLY-VINYL CHLORIDE (PVC) SANITARY SEWER PIPE & FITTINGS
14-17	EMBEDMENT REQUIREMENTS FOR SANITARY SEWER PIPE & FITTINGS
14-18	LOW PRESSURE AIR TEST OF SANITARY SEWER LINES
14-19	DEFLECTION TESTING OF FLEXIBLE SANITARY SEWER
14-20	SANITARY SEWER SERVICE
14-21	BYPASS PUMPING
14-22	CAST-IN-PLACE MANHOLES
14-23	CCTV INSPECTION OF SANITARY SEWER MAINS
14-24	DISPOSAL OF EXCESS MATERIAL
14-25	PIPE HANDLING
14-26	TYING INTO EXISTING LINES
14-27	PLUGGING EXISTING LINES TO BE ABANDONED
14-28	DUCTILE IRON PIPE – N/A
14-29	DUCTILE IRON FITTINGS
14-30	GPS DATA ON WATER & SANITARY SEWER INSTALLATION

## SECTION NO. 14

### SPECIAL PROVISIONS – WATER AND SANITARY SEWER SPECIFICATIONS

Water and Sanitary Sewer improvements shall be in accordance with the latest version of the CITY OF ARLINGTON STANDARD SPECIFICATIONS FOR WATER & SANITARY SEWER CONSTRUCTION located at the City's web page,

[https://www.arlingtontx.gov/city\\_hall/departments/public\\_works\\_transportation/engineering/standard\\_specifications\\_special\\_provisions](https://www.arlingtontx.gov/city_hall/departments/public_works_transportation/engineering/standard_specifications_special_provisions), hereinafter referred to as "Standard Specifications".

References in parentheses located in the heading of each section below correspond to sections of the Standard Specifications.

(Rev. 4/2019)

**14-01 POLY-VINYL CHLORIDE (PVC) WATER PIPE & FITTINGS (B 4A and B 4B):** The poly-vinyl chloride (PVC) water pipe 4-inch through 60-inch shall in all respects comply with the latest revision of AWWA C900-16 (DR 18) Pressure Class 235 psi. All fittings shall be mechanical joint ductile iron fittings with polyethylene encasement.

(Rev 11-2018)

**14-02 EMBEDMENT REQUIREMENTS FOR WATER PIPE & FITTINGS (B 19 & C 3.14):** Unless otherwise specified, all water pipes shall be in accordance with Class "C" embedment detail.

**14-03 THRUST BLOCKINGS (C 4.11 and C 6.10):**

- A. Thrust blocking shall be placed at fire hydrants, valves, tapping sleeves, bends, tees, wyes, crosses, plugs and bends of five (5) degree or greater in the main water line. Each block, except those for upward thrusts, shall be placed so as to rest against firm undisturbed foundation of trench bottom. The supporting area shall be sufficient to withstand the thrust, including water hammer which may develop. All concrete used for thrust blocking shall conform to the section "Thrust Blocking" of the Standard Specifications. This is not a separate pay item but will be considered subsidiary to the various bid items.
- B. Blocking at bends shall be computed based upon pipe thrust at bends, or tees, with internal pressure of one hundred fifty (150) psi. Where upward thrusts are to be blocked, the thrust blocking shall be of sufficient weight to resist the thrust and the concrete shall be reinforced as directed by the City. Other blocking sizes shall be computed based upon a maximum safe allowable soil bearing pressure of twenty-five hundred (2,500) pounds per square foot of undisturbed earth.
- C. The thrust blocking shall be placed against undisturbed trench walls, with a minimum of 18-inches between trench wall and pipe. Blocking shall extend a minimum of 0.75 X pipe diameter below and above the centerline of pipe and shall not extend beyond any joints. If requested by the City, the ends of the thrust blockings shall be contained in wood or metal forms. Where upward thrusts are to be blocked, tie-down blocking shall be used in accordance with the details.

**14-04 VALVE OPERATIONS NOTIFICATION:** The Contractor shall provide a minimum of five (5) business days notification to the City prior to the scheduled water tie-ins that require operation of any valves. For pigging, pressure testing, and chlorinating the new water line, the

Contractor shall provide a minimum of two (2) business days notification to the City prior to any valve operation. Under no circumstances shall Contractor operate any valves without the proper approval by the City.

**14-05 INTERRUPTION OF WATER SERVICE:**

- A. When work performed has the potential of disrupting businesses or homestead, including but not limited to water cutoff or driveway reconstruction, Contractor shall notify the business owners, occupants and residents in writing minimum forty-eight (48) hours prior to commencing work. Contractor will be responsible to provide and place door hangers by the required time. Door hangers shall be printed in English & Spanish. See Section 11-25 Owner Notification for sample of door hangers.
- B. Scheduled water shut-offs that affect critical water customers (as identified by the City); that prevent the operation of a business or industry; or that are longer than eight (8) hours in duration shall require accommodations to minimize the disruption to service. All accommodations shall be coordinated with and approved by the Inspector and the Arlington Water Utilities Department.

**14-06 CLEANING OF NEW WATER MAIN (C 20.6):**

- A. The Contractor shall "run" the poly pigs prior to pressure testing of the new main, chlorinating the line, the obtaining of the safe water sample, and the final tie-in being made. The locations for inserting and exiting the poly pigs may be decided during the Pre-construction meeting. This work will be considered subsidiary to various bid items. The Contractor will also be required to pull a swab through the water pipe. As each joint of pipe is being laid, it shall be swabbed with a clean and effective cleaning tool as approved by the City.
- B. Contractor shall include in the pipe installation with appropriate cleaning wyes and associated appurtenances required to successfully complete the "pigging" operations. All poly pigs, cleaning wyes, and associated appurtenances shall be subsidiary to the linear foot unit price for each size and class of water line.

**14-07 FIRE HYDRANTS (B 9):** Refer to the latest fire hydrant specifications and detail at <http://www.arlingtontx.gov/details>. (Rev. 4/2019)

**14-08 RELOCATION OF EXISTING FIRE HYDRANTS (C 12):** The unit price bid for relocating existing fire hydrants shall include the cost of the necessary fittings and extensions to relocate the fire hydrants as specified on the plans and to adjust them to the finished top of curb grade.

**14-09 REMOVE/SALVAGE EXISTING FIRE HYDRANT:** The unit price bid shall include cost of removing and cleaning the excess concrete from the exterior of the existing fire hydrants and delivery to the City of Arlington South Services Center, 1100 SW Green Oaks Boulevard. (Rev. 4/2019)

**14-10 GATE VALVES (B 10):**

- A. Refer to the latest gate valve specifications and detail at <http://www.arlingtontx.gov/details>. (Rev. 4/2019)

B. No bypass valves shall be installed for all resilient-seated gate valves, unless otherwise specified on the plans or bid PROPOSAL.

C. Valves 12-inches or smaller shall be furnished and installed by Contractor, unless otherwise noted in the PROPOSAL. Valves 16-inches or larger will be furnished by the City. The unit price in the PROPOSAL for the installation of the 16-inches or larger valves shall include cost for pickup and loading at the South Service Center Warehouse (1100 SW Green Oaks Boulevard) and transporting to the job site. The Contractor will be responsible for inspecting the valves and ensuring good working condition of entire valve assembly prior to transporting it to the jobsite. Any damage or repairs needed to the valve assembly once it leaves the warehouse will be the responsibility of the Contractor.

**14-11 WATER SERVICES:**

A. Refer to the latest water services details at <http://www.arlingtontx.gov/details>. (Rev. 4/2019)

B. The cost of the water service shall include trench and trench safety at various depths.

C. The contractor shall furnish, install & maintain temporary trench repair in accordance with Section 12-36 Temporary Street Repair immediately after service line installation.

(Rev. 10/2019)

**14-12 WATER METER REPLACEMENT:**

A. **NEW METER:**

AMI meters required for this project will be furnished by the City. The new AMI meter sizes shall match the existing meter sizes unless called out differently on the plans. The unit price in the PROPOSAL for installation of the meters shall include cost for pickup and loading at the South Service Center Warehouse (1100 SW Green Oaks Boulevard) and transporting to the job site. The Contractor will be responsible for inspecting the meters and ensuring good working condition of the entire meter assembly prior to transporting it to the jobsite. Any damage or repairs needed to the meter once it leaves the warehouse will be the responsibility of the Contractor.

B. **METER REPLACEMENT SCHEDULING:**

Contractor shall coordinate with Inspector to ensure City Meter Services Representative will be available to pick up the old meters and take final readings. Contractor to verify size of meter prior to installation. New or replacement meters shall not be installed until after concrete flatwork is complete. (Rev. 4/2019)

C. **METER REPLACEMENT:**

Contractor shall check for running water prior to commencing meter change-out. Contractor shall notify customer prior to water service disruption. Contractor will be responsible for turning off the water to the building. Contractor shall then replace the meter, using new gaskets or washers. Contractor shall put plastic caps on the inlet and outlet of the old meter and handle the meter with care in the event of post-removal testing. All meter adapters, bushings, or other hardware necessary to install the new water meter in the customer's existing meter setup must be furnished by the Contractor. Contractor is required to install standard connections (meter couplings) for all 5/8-inch through 2-inches meters if none exist currently. These couplings must receive prior approval from the City.

Contractor shall be responsible for bringing meter to the final grade based on the latest details with all necessary pipe and fittings. Contractor shall ensure meter wire is left in neat, working, and accessible condition. **All work on the customer side shall be completed by a licensed plumber and considered as subsidiary to the bid item for meter replacement.** (Rev. 4/2019)

D. EXISTING METER:

Contractor shall leave the old meter inside the new meter box for City Meter Services Representative to pick up and to take final readings. Contractor shall complete new meter tag information legibly written, and attach to old meter. (Rev. 4/2019)

E. DIRT OR WATER AROUND METER:

Contractor shall ensure the meter in the meter box has proper access, including removing and disposing any excess dirt. Dirt shall be removed such that there is a minimum of 2-inches clearance below the meter. If the water meter is fully or partially submerged, the Contractor shall remove the water prior to changing the meter. Contractor must ensure that the water service is not contaminated in any way, including intermittently by standing water in the meter box.

**14-13 WATER METER RELOCATION OR ADJUSTMENT:**

- A. If no meter replacement is required, the Contractor shall be responsible for relocating or adjusting (horizontal and vertical) water services, water meters to finished grade. This shall include the relocation or adjustment of the service line on the City's side of meter (from main to the meter), the quarter bend, the curb stop or angle valve, depending on service size, and the meter. The meter with curb stop or angle valve shall be adjusted accordingly with the water service detail. Relocation or adjustment of the customer's service line shall be performed by a licensed plumber. The Contractor shall also be responsible for disconnection and reconnection of antenna for AMI meters. It will be the Contractor's responsibility to notify the Inspector of any pre-existing damages prior to the relocation or adjustments.
- B. The Contractor shall also endeavor to keep meters accessible during the project construction for reading purposes. In the event the meters are covered during construction, the Contractor shall mark their locations with stakes and shall uncover the meters within twenty-four (24) hours when notified to do so by the Inspector.

**14-14 WATER METER BOX REPLACEMENT:**

- A. Water meter boxes will be furnished by the City. The Contractor shall provide a minimum of two (2) weeks notice to the Inspector prior to picking the meter boxes from the South Service Center Warehouse, 1100 SW Green Oaks Boulevard, and transporting to the job site. Water meter boxes damaged by the Contractor shall be replaced at the Contractor's expense.
- B. The Contractor shall also be responsible for disconnection and reconnection of antenna used for AMI meters. All meter boxes shall be set to the finished grade. All work related to meter boxes and antenna shall be considered subsidiary to the various bid items unless otherwise indicated in the bid PROPOSAL as a pay item. It will be the Contractor's responsibility to notify the Inspector of any pre-existing damages prior to the replacement.

**14-15 ABANDONING EXISTING VALVE BOX AND MANHOLE:**

(Rev 10/2018)

- A. The unit price for abandoning existing valve boxes shall include removing the top 10-inches or top section, fill void area with sand or approved material, backfill and compact per backfill specifications, and repair pavement if located in street, or replace with 2-inches of topsoil including hydromulch or sod if located at back of curb.
- B. The unit price for abandoning existing manholes shall include removing the cone or top section, plugging all penetrations with concrete, fill void with sand or an approved material, backfill and compact per backfill specifications from top of manhole section to subgrade if within pavement limits or to 2-inches below grade if outside pavement limits. Repair pavement per permanent or temporary pavement repair specifications or install 2-inches of topsoil including hydromulch or sod to match existing grade if located at back of curb.

**14-16 POLY-VINYL CHLORIDE (PVC) SEWER PIPE & FITTINGS (B 7):**

**A. SCOPE:**

This specification designates general requirements for unplasticized, poly-vinyl chloride (PVC), plastic gravity sewer pipe with integral wall bell and spigot joints for the conveyance of domestic sewage. The pipe and fittings shall be in accordance with the latest ASTM D3034 or F679 SDR 26 pipe, or as specified in the bid PROPOSAL.

**B. MATERIALS:**

Pipe shall be made from clean, virgin, approved Class 12454 BC PVC compound conforming to ASTM resin specification D 1784. Clean reworked material generated from the manufacturer's own production may be used.

**C. PIPE:**

All pipe shall be suitable for use as a gravity sewer conduit. Provisions must be made for contraction and expansion at each joint with a rubber ring. The rings shall securely lock the solid cross section rubber ring into position. Standard lengths shall be 20-feet and 13-feet, +/- 1-inch.

**D. FITTINGS:**

All fittings and accessories shall be as manufactured and furnished by the pipe supplier or approved equal and have bell and spigot configurations identical to that of the pipe. Adapters appropriate for the existing pipe material shall be used to tie into existing pipe for the service lines and laterals. No separate payment will be made for adapters, tees, bends or other necessary fittings used in the installation of this line but shall be considered to be subsidiary to the unit prices for pipe and services.

**E. PHYSICAL AND CHEMICAL REQUIREMENTS:**

Pipe shall be designated to pass all tests at seventy-three (73) degrees F (+/- three (3) degrees F).

**F. PIPE STIFFNESS:**

Minimum "pipe stiffness" (F/Y at 5% deflection) shall be calculated in accordance with ASTM Designation D 2412, External Loading Properties of Plastic Pipe by Parallel-Plate Loading.

G. JOINT TIGHTNESS:

Assemble two sections of pipe in accordance with the manufacturer's recommendations. Subject the joint to an internal hydrostatic pressure of twenty-five (25) psi for one hour. Consider any leakage failure of the test requirements.

H. FLATTENING:

There shall be no evidence of splitting, cracking, or breaking when the pipe is tested as follows:

Flatten specimen of pipe, 6-inches long between parallel plates in a suitable press until the distance between the plates is forty percent (40%) of the outside diameter of the pipe. The rate of loading shall be uniform and such that the compression is completed within two (2) to five (5) minutes.

I. DROP IMPACT TEST:

Pipe (6-inches (long section) shall be subjected to impact from a free falling tup (20 lb. Tup A) in accordance with ASTM method D 2444. No shattering or splitting (denting is not a failure) shall be evident when the following energy is impacted:

<u>Nominal Size</u>	4"	6"	8"	10"	12"
<u>Ft. - Lbs.</u>	150	210	210	220	220

J. ACETONE IMMERSION TEST:

After two (2) hours immersion in a sealed container of anhydrous (99.5% pure) acetone, a 1-inch long sample ring shall show no visible spalling or cracking. (Swelling or softening is not a failure when tested in accordance with ASTM D 2152.)

K. PAYMENT:

The price bid per linear foot for PVC pipe at the various depths shall be full compensation for all material, labor, equipment, and incidental work required to complete the line ready for use, including embedment and seepage collars. The cost of trenching, embedment, seepage collars, backfill, compaction of backfill and exfiltration testing should be included in the unit price bid per linear foot, complete in place.

**14-17 EMBEDMENT REQUIREMENTS FOR SANITARY SEWER PIPE & FITTINGS (B 19 & C 3.14):** Unless otherwise specified, all sanitary sewer pipes shall be in accordance with Class "B" embedment detail.

**14-18 LOW PRESSURE AIR TEST OF SANITARY SEWER LINES (C 29):**

A. After completing backfill of a section of sanitary sewer line, the Contractor shall, at his/her expense, conduct a Line Acceptance Test using low-pressure air. The test shall be performed using the below stated equipment according to stated procedures and under the supervision of the City.

1. EQUIPMENT: The equipment used shall meet the following minimum requirements:

- a. Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe to be inspected.
- b. Pneumatic plugs shall resist internal test pressures without requiring external bracing or blocking.
- c. All air used shall pass through a single control panel.
- d. Three individual hoses shall be used for the following connections:
  - i. From the control panel to pneumatic plugs for inflation.
  - ii. From the control panel to a sealed line for introducing the low-pressure air.
  - iii. From a sealed line to control panel for continually monitoring the air pressure rise in the sealed line.

2. GENERAL PROCEDURE:

- a. All pipe shall be backfilled prior to air testing.
- b. Air tests shall be made by the pressure drop versus time method. The air test shall be performed by testing sections of pipe of various lengths. The Contractor shall furnish all material, equipment and labor necessary to perform the air test. Air gauges shall be recently calibrated and shall be stamped showing the date of calibration. Should the sanitary sewer system fail air tests, the Contractor shall repair the leaks and retest at his/her own expense.

3. TESTING PIPE LESS THAN 36 INCHES IN DIAMETER:

- a. Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe to be inspected. Pneumatic plugs shall resist internal test pressures without requiring external bracing or blocking. All air used shall pass through a single control panel.
- b. Three individual hoses shall be used for the following connections: from the control panel to pneumatic plugs for inflation; from the control panel to a sealed line for introducing the low-pressure air; and from a sealed line to the control panel for continually monitoring the air pressure rise in the sealed line.
- c. The air compressor shall be of adequate capacity for charging the system.
- d. The following procedure shall be used for air testing a sewer system: all pneumatic plugs shall be seal-tested before being used in the actual test installation; one length of pipe shall be laid on the ground and sealed at both ends with the pneumatic plugs to be checked; air shall be introduced into the plugs to twenty-five (25) psig; the sealed pipe shall be pressurized to five (5) psig; the

plugs shall hold against this pressure without bracing and without movement of the plugs out of this pipe.

- e. After a manhole-to-manhole reach of pipe has been backfilled and the pneumatic plugs checked, the plugs shall be placed in the line and inflated to twenty-five (25) psig. Low pressure air shall be injected into the line until the internal pressure reaches four (4) psig. Two (2) minutes shall then be allowed for the pressure to stabilize.
  - f. In areas where ground water is known to exist, the Contractor shall install a ½-inch diameter capped pipe nipple, approximately 10-inches long, through the manhole. This shall be done at the time the sewer line is installed. Immediately prior to the performance of the Line Acceptance Test, the ground water shall be determined by removing the pipe cap, blowing air through the pipe nipple into the ground so as to clean it, and then connecting a clear plastic tube to the pipe nipple. The hose shall be held vertically and a measurement of the height (in feet) of water over the invert of the pipe shall be taken after the water has stopped rising in this plastic tube. The height shall be divided by 2.3-feet to establish the pounds of pressure that will be added to all readings.
  - g. After the pipe pressure has stabilized at three and a half (3.5) psig or the adjusted pressure due to ground water submergence, a stop watch shall be started and the time required for the internal pressure to reach two and a half (2.5) psig determined. Minimum permissible holding time for runs of single pipe diameter are indicated in the table under Section C 29.
4. EXAMPLE: If the height of water is 11½-feet, then the added pressure will be psig. This will increase the three and a half (3.5) psig to eight and a half (8.5) psig and the two and a half (2.5) psig to seven and a half (7.5) psig. The allowable drop and the timing remain the same. Refer to the City's Standard Specification for Water and Sanitary Sewer Construction, Section C 29 for air test tables.
5. TESTING PIPE 36 INCHES AND LARGER IN DIAMETER: For pipes 36-inches in diameter and over, the air test may be performed by testing each joint connection individually utilizing a joint tester similar to the Cherne Joint Tester. No joint shall be air tested until the pipe has been backfilled. At no time shall pipe installation exceed 100-feet from the latest joint tested. The method of testing shall be described in this section. The time allowed for the pressure drop for three and a half (3.5) psig to two and a half (2.5) psig shall be ten (10) seconds. Failure to pass the air test shall be cause for rejection. Rejected pipe shall be removed. Reinstallation and/or repairs may be made at the option of the City.
6. MEASUREMENT AND PAYMENT: No separate payment will be made for the tests specified herein, but the cost thereof shall be subsidiary to the various bid items.

B. IF THE INSTALLATION FAILS TO MEET THIS REQUIREMENT, THE CONTRACTOR SHALL DETERMINE, AT HIS/HER OWN EXPENSE, THE SOURCE

OF LEAKAGE. CONTRATOR SHALL REPLACE ALL DEFECTIVE MATERIALS AND/OR WORKMANSHIP UNTIL RETEST(S) IS IN COMPLIANT.

**14-19 DEFLECTION TESTING OF FLEXIBLE SANITARY SEWER (C 27):**

- A. PVC and any other flexible sewer pipe shall pass a deflection test conducted under the inspection of the City. A rigid mandrel shall be used to measure deflection. The rigid mandrel shall have an outside diameter (OD) equal to ninety-five percent (95%) of the inside diameter (ID) of the pipe. The inside diameter of the pipe, for the purpose of determining the outside diameter of the mandrel, shall be the average outside diameter minus two (2) minimum wall thicknesses for an OD controlled pipe and the average inside diameter for an ID controlled pipe. Statistical or other tolerance packages shall not be considered in mandrel sizing.
- B. Deflection tests shall be conducted after the final backfill has been in place at least thirty (30) days. No pipe shall exceed a deflection of five percent (5%). If a pipe fails to pass the deflection test, the Contractor, at his/her own expense, shall replace one complete length of pipe at the point of failure.
- C. No separate payment will be made for the tests specified herein, but the cost thereof shall be included and considered subsidiary to the various other items.

**14-20 SANITARY SEWER SERVICE:**

- A. The cost of the 4-inch or larger sanitary sewer service shall include connecting into the main and existing service, embedment, trench and trench safety, and other materials and labor for the installation at various depths.
- B. The contractor shall furnish, install & maintain temporary trench repair in accordance with Section 12-36 Temporary Street Repair immediately after service line installation.

(Rev. 10/2019)

**14-21 BYPASS PUMPING:** Bypass pumping required for performance of the project will be considered subsidiary to the unit prices bid on this project unless otherwise indicated in the bid PROPOSAL as a pay item.

**14-22 CAST-IN-PLACE MANHOLES (C 18.3):**

- A. Cast-in-place concrete manholes shall have a minimum inside diameter at the base of 4-feet or 5-feet. The Contractor shall not remove any forms until twenty-four (24) hours after the concrete is placed. No backfill shall begin until ninety-six (96) hours after the concrete is placed.
- B. Rim elevation of manholes shall be adjusted to match existing grade.
- C. A fiberglass manhole marker shall be installed 3-feet from the edge of the concrete pad. The marker shall be embedded at least 6-inches into the ground and shall extend at least 72-inches above the top of the concrete pad. The marker shall be white with a white on green, ultra-violet light resistant label indicating SANITARY SEWER MANHOLE.

**14-23 CCTV INSPECTION OF SANITARY SEWER MAINS (C 28):**

- A. SCOPE

This section of the specifications covers the City inspection of sanitary sewer mains by closed circuit television (CCTV).

B. GENERAL

The final inspection on all projects shall include a CCTV inspection of the completed sanitary sewer main installation, exclusive of services. The CCTV inspection, including furnishing of necessary personnel, equipment and materials, shall be performed by the Contractor. All defects in the installed facility revealed by the CCTV inspection shall be remedied by the Contractor prior to the acceptance of the project.

C. CONTRACTOR'S RESPONSIBILITIES

1. Prior to pavement placement (if sanitary sewer is under pavement) or prior to sanitary sewer main acceptance (if sanitary sewer is in parkway), the Contractor shall inspect all newly constructed mains, excluding services, by CCTV in accordance to the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment & Certification Program (PACP) standards, latest edition. The Contractor shall provide the City a CCTV inspection video and a PACP inspection report summarizing the inspection with all PACP observation codes with their corresponding Structural Grade and O&M condition grades clearly marked. The inspection shall be performed by a NASSCO PACP Certified Inspector, and the report shall clearly show the CCTV Inspector's name and registration number. In addition to defects noted for NASSCO PACP sanitary sewer standards, the CCTV Inspector shall note any defects that meet the NASSCO PACP definition of 'Joint Offset Small (JOS)', Joint Separated Small (JSS)', or 'Joint Angular Small (JAS)'. Such defects shall be clearly highlighted, embolden, circled or marked in a way to distinguish them from the other observation codes.
2. The sanitary sewer main shall be thoroughly cleaned and flushed with water, by the Contractor, prior to CCTV inspection. The pipe shall have flow depth less than a quarter (1/4) pipe full unless approved by the City in writing.
3. The Contractor will be held liable for all damages to the public and private property caused directly and/or indirectly by the CCTV inspection or by surcharging of sanitary sewer mains. The Contractor is responsible for any fines, penalties or other costs imposed upon the City by any agency or private party as a result of the CCTV inspection or improper discharges by the Contractor. The Contractor shall ensure no equipment or other obstructions remain in the line after inspection. All costs associated with retrieving any lodged equipment, shall be incidental to the inspection.

D. BASIS FOR CCTV REPORT ACCEPTANCE

CCTV inspection report must indicate under C 28.3 has a PACP Overall Pipe Structural and O&M Rating of 0, and contains no defects meeting the NASSCO PACP definition of JOS, JSS, or JAS. Any defects observed shall be corrected and re-inspected by the Contractor prior to completion at the Contractor's expense.

E. MEASUREMENT AND PAYMENT

Payment will be at the unit price bid per linear foot of CCTV inspection of sanitary sewer mains.

**14-24 DISPOSAL OF EXCESS MATERIAL (C 3.12):** The disposal of excess material resulting from construction **including asbestos-cement pipe** shall be removed and disposed of by the Contractor. Removal and disposal of **asbestos-cement pipe** shall be in accordance with the latest Federal and State regulations. The location of suitable disposal sites is solely the responsibility of the Contractor; the City shall in no way be responsible for the actions of the Contractor. Unless otherwise indicated in the bid PROPOSAL, this work will be considered subsidiary to various bid items.

**14-25. PIPE HANDLING:**

- A. Pipe, fittings, valves and other accessories shall at all times be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists, cranes or rolled on skidways in a manner which avoids sudden shock. Under no circumstance shall pipe be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground. Pipe shall be placed on the site of the work parallel with the trench alignment and with the bell ends facing the direction in which the work will proceed.
- B. Proper implements, tools, equipment and facilities shall be provided and used by the Contractor for the correct and safe execution of the work. All pipe, fittings, specials, valves, etc. shall be lowered into the trench by means of a suitable machine and shall not be rolled or dumped into the trench. The equipment shall have sufficient capacity to handle the pipe. The method of construction shall be subject to the City's approval. Before being lowered into the trench, each joint of pipe shall be inspected and any unsound or damaged pipe shall be repaired or rejected.
- C. Pipe shall be kept free of all debris during the laying operation. The pipe shall be swept or swabbed prior to installation. At the close of each operating day, the open end of the pipe shall be effectively sealed with an approved water tight plug. The swab and plug shall be of a design acceptable to the City. No pipe shall be laid in water or when the trench conditions or the weather are unsuitable for such work, except in an emergency and then only upon permission of the City.
- D. All pipe shall be laid accurately to established lines and grades with valves and fittings at the required locations and with joints centered and spigots pushed home. Where it becomes necessary to make deflections in the line of the pipe, sections of pipe beveled ends or fabricated fittings shall be used. Minor deflection of the line of the pipe may be obtained in standard pipe joints; however, the maximum joint opening caused by such deflection shall not exceed the recommendations of the pipe manufacturer. Random length pipe and/or grade adapters may be used to make unforeseen changes in the field.

**14-26 TYING INTO EXISTING LINES (C 25):** The unit price bid for tying into existing lines shall include all labor and material necessary to tie the old main into the new main. The Contractor shall furnish all labor, material, equipment, and services required for the locating and uncovering of the existing line, the making of cuts in the line, the removal, relocation, and lowering or raising of existing lines as required, de-watering of the trench, connecting of the existing line into the new main

and all appurtenant work required for a complete connection. This shall include the cost of offset bends as necessary for vertical and/or horizontal alignment. The new water lines will have to be tested, chlorinated, and a good sample received before the old lines can be plugged or abandoned and the new line tied in.

**14-27 PLUGGING EXISTING LINES TO BE ABANDONED:** All dead ends and abandoned lines shall be capped or plugged accordingly. Bell ends shall be plugged whereas spigot ends and plain ends shall be capped. Unit price for plugging existing lines shall include the cost of all labor and material necessary to perform this work.

**14-28 DUCTILE IRON PIPE (B 5):** N/A

**14-29 DUCTILE IRON FITTINGS (B 15):**

- A. All fittings shall comply with the latest revision of ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53, and designed for a working pressure of not less than one hundred fifty (150) psi.
- B. Ductile iron fittings for water lines shall have a "Standard Thickness" cement mortar lining and bituminous seal coat over the cement mortar lining in accordance with the latest revision of ANSI/AWWA C104/A21.4 and ANSI/AWWA C110/A21.10,
- C. Ductile iron fittings for sanitary sewer shall be lined with Protecto 401 Ceramic Epoxy coating of 40 mils nominal thickness.
- D. All fittings shall be installed with a double layer of polyethylene wrap in compliance with A.W.W.A Standard C105 (ANSI A21.5).
- E. Only those manufacturers whose ductile iron fittings have been specifically approved by Arlington Water Utilities Department can be used in the City's water and sanitary sewer system.
- F. Ductile iron fittings, including polywrap, blocking, bolts, gaskets, or any other joint accessories, shall be subsidiary to the price bid for pipe.

**14-30 GPS DATA ON WATER & SANITARY SEWER INSTALLATION:** (Rev 6/2020)

City crew will collect the GPS data on the water and sanitary sewer attributes installed with this project, including construction of new or adjustment and relocation of existing water and sanitary attributes. Examples of water and sewer attributes includes: Gate Valves, Blow-off Valves, Air Release Valves, Fire Hydrants, Meter Boxes, Pig Wye Vaults, Manhole Lids and Flowlines, and Cleanout Lids.

Contractor shall notify the Project Inspector prior to the final walk through that all the attributes are ready for GPS data collections.

The final payment will not be processed until any missing attributes are exposed and brought to the final grades.

END OF SECTION

**SECTION NO. 15**

**SPECIAL PROVISIONS – DRAINAGE SPECIFICATIONS**

**NUMERICAL LISTING**

New Section  
No.

- 15-01 REINFORCED CONCRETE PIPE
- 15-02 ~~HIGH DENSITY POLYETHYLENE PIPE (HDPE) – N/A~~
- 15-03 UNCLASSIFIED DRAINAGE STRUCTURAL EXCAVATION
- 15-04 CONCRETE DRAINAGE STRUCTURES
- 15-05 UNCLASSIFIED CHANNEL EXCAVATION
- 15-06 REINFORCED CONCRETE CHANNEL/SLOPE
- 15-07 CCTV INSPECTIONS OF STORM DRAIN SYSTEMS
- 15-08 GPS DATA ON STORMWATER ATTRIBUTES
- 15-09 TEMPORARY SHORING

## SECTION NO. 15

### SPECIAL PROVISIONS – DRAINAGE SPECIFICATIONS

#### **15-01 REINFORCED CONCRETE PIPE:**

- A. Pipe for storm drains and culverts shall conform to the latest TxDOT Standard Specifications Item 462. All pipes shall be machine made by a process which will provide for uniform placement of zero slump concrete in the form of compaction by mechanical devices which will assure a dense concrete in the finished product. All excavation, bedding, jointing, and backfilling shall be done in accordance with the latest NCTCOG Specifications unless as modified in these Special Provisions.
- B. At the request of the City, the Contractor will be required to furnish and use a laying schedule supplied by the manufacturer showing location of all bends, fittings, and beveled end joints required to accurately construct the system, including curves, as shown on the plans. The pipe will not be laid until the requested laying schedule has been reviewed and accepted by the City for construction purposes.
- C. The laying schedule shall be based on all pipe joints constructed to the "home" or normal position and the distance between the ends of adjacent pipe sections will be essentially uniform around the periphery of the pipe. OMNI-FLEX® (or approved equal) joint sealer shall be used on all joints and the joint gap range shall not exceed the manufacturer's recommendations.
- D. After the trench has been cut to depth below the barrel of the pipe, the bedding shall be brought up to a point slightly above the grade. Bell holes shall be formed, a trough scooped out to grade and the pipe laid and jointed as specified.
- E. The pipe shall be bedded in a minimum of 6-inches crushed stone except in rock or in wet or unstable trenches where an additional 3-inches of crushed stone will be added to the standard bedding requirements. Crushed stone shall meet the latest NCTCOG Specifications 504.2.2.1 Crushed Stone Embedment - Aggregate Grade 4. River rock/gravel will be allowed as long as it meets this gradation requirement.
- F. After the pipe has been laid and the joints made, crushed stone shall be placed from the bottom of the pipe to the top of pipe. The material shall be placed uniformly on both sides of the pipe in order to prevent disturbance of the pipe and, if necessary, blocking shall be placed against the sides of the trench to prevent displacement of the pipe. The material shall be worked under the haunches of the pipe during the time it is being placed. Filter fabric shall be placed over the full width of the embedment prior to trench backfill operations.
- G. For the remaining backfill operations, see respective trench backfill specifications in these Special Provisions.
- H. Payment for all reinforced concrete pipe shall be based on the contract unit price bid per linear foot of pipe measured along the centerline of the pipe in the trench and shall be full

compensation for all labor and materials necessary to make the complete installation, including but not limited to excavation, bedding, jointing, backfilling and joint sealer. The cost of constructing concrete collars, tees, and wyes shall be considered subsidiary to the unit prices bid for reinforced concrete pipe, unless an item has been provided in the PROPOSAL.

- I. If cast in place reinforced box culvert is used, it shall be constructed in accordance with TxDOT Item 462. If multiple precast box sections are used and the void space between culvert walls is less than 6-inches, it shall be backfilled using flowable fill of at least six hundred (600) psi concrete. If the void is 6-inches or more, standard embedment material shall be used.
- J. Payment for the box culvert shall be measured by the linear foot of box culvert, including the reinforcing steel using the length between the ends of the culvert barrel along the central axis as constructed. Payment shall be complete in place, including excavation and backfill, furnishing all materials, labor and incidentals, and performing all work necessary to complete the work.

**15-02 HIGH DENSITY POLYETHYLENE PIPE (HDPE): N/A**

**15-03 UNCLASSIFIED DRAINAGE STRUCTURAL EXCAVATION:** The excavation for the construction of the inlets, box culverts, and junction boxes is not classified. Payment for the excavation shall be subsidiary to the unit price bid for each structure in the bid PROPOSAL.

**15-04 CONCRETE DRAINAGE STRUCTURES:**

- A. Junction Boxes and inlets shall be constructed to the size and location shown on the plans. Construction shall be in accordance with "Manhole and Inlets" of the latest TXDOT Specifications unless otherwise noted on the plans or in these Special Provisions.
- B. Concrete for all concrete drainage structures, junction boxes, and inlets shall be Class "C" with a minimum compressive strength of thirty-six hundred (3,600) psi at twenty-eight (28) days.
- C. The desired slump for Class "C" concrete shall be 3-inches and the maximum allowable slump shall be 4-inches.
- D. Air entrainment (4.5 %, +/- 1.5%) is required for all exposed concrete.
- E. All concrete shall be vibrated and be cured for a minimum of four (4) curing days. The acceptable methods for curing the concrete are as follows:
  - 1. FORM CURING: Forms left in place in contact with the concrete.
  - 2. WATER CURING: Water curing using either wet mats, water spray or ponding.
  - 3. MEMBRANE CURING: Compound may be used.

- F. All weight supporting forms shall remain in place a minimum of four (4) curing days or until seventy percent (70%) of design strength is achieved, whichever occurs first.
- G. No precast inlets will be allowed. The unit prices bid for curb inlets shall include all structural excavation, reinforcing steel, manhole rings and covers, transition curb and gutter as shown, and backfilling. Providing neat lines can be cut in the soil, outside forms will not be required from the bottom to the construction joint. Inlet tops shall not be cast until pavement is complete. All inlets will be backfilled by mechanically tamping native material in layers not exceeding 6-inches and compacted to at least ninety-five percent (95%) density per ASTM D698, +/- two percent (2%) optimum moisture content.
- H. Payment shall be made for the concrete drainage structures complete in place at the unit price bid in the PROPOSAL. The payment shall include all work and materials necessary to complete the structure, including excavation and backfill. No additional pay will be made for manhole ring and lid, or grade rings.
- I. No precast junction boxes will be allowed unless approved by the City prior to construction. If allowed, the precast junction box must be specifically designed for each application.
- J. Refer to Section 13-16 for additional concrete specifications. **(ADDED PER ADDENDUM NO. 1)** (Rev. 1/2022)

**15-05 UNCLASSIFIED CHANNEL EXCAVATION:**

- A. Channel excavation shall be in accordance with NCTCOG Specifications. Any fill required to bring the channel to the required lines, grades and cross-sections will be subsidiary to this pay item.
- B. Payment for excavation is based on plan quantity. Contractor shall verify excavation/fill quantities and shall notify City in writing of concurrence or disagreement with plan quantities prior to start of construction. Any discrepancies in quantities shall be resolved prior to beginning excavation. No adjustments to plan quantities shall be allowed once excavation/fill activities have begun.

**15-06 REINFORCED CONCRETE CHANNEL/SLOPE:**

- A. Concrete channel/slope shall be used, at the direction of the City, for slope protection. Concrete for channel lining and slope protection shall also be Class "C" concrete having a minimum compressive strength of thirty-six hundred (3,600) psi at twenty-eight (28) days.
- B. Payment for this work shall be at the price bid per square yard and include all excavation, slope grading and shaping, concrete, reinforcing steel, and all materials necessary for completion of this item.
- C. Refer to Section 13-16 for additional concrete specifications. **(ADDED PER ADDENDUM NO. 1)** (Rev. 1/2022)

**15-07 CCTV INSPECTIONS OF STORM DRAIN SYSTEMS:**

This section covers the inspection of storm drain systems by closed circuit television (CCTV).

- A. The final inspection on all projects shall include a CCTV inspection of the storm drain system installation, including all lateral connections. The CCTV inspection, including furnishing of necessary personnel, equipment, and materials, shall be performed by the Contractor. All defects in the installed facility revealed by the CCTV inspection shall be remedied by the Contractor prior to the acceptance of the project.
  
- B. Prior to pavement placement (if storm drain system is under pavement) or prior to storm drain system acceptance (if storm drain system is in parkway), the Contractor shall inspect all newly constructed storm drain systems by CCTV in accordance to the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment & Certification Programs (PACP) standards, version 7. The Contractor shall provide the City a CCTV inspection video and a PACP inspection report summarizing the inspection with all PACP observation codes with their corresponding Structural Grade and O&M condition grades clearly marked. The video shall be in MP4 video file format with an h.264 codec. The inspection shall be performed by a NASSCO PACP Certified Inspector, and the report shall clearly show the CCTV Inspector's name and registration number. In addition to defects noted for NASSCO PACP standards, the CCTV Inspector must note defects that meet NASSCO PACP definition of 'Joint Offset Small' (JOS), 'Joint Separated Small' (JSS), or 'Joint Angular Small' (JAS). Such defects shall be clearly highlighted, emboldened, circled, or marked in a way to distinguish them from the other observation codes.
  
- C. The storm drain system must be thoroughly cleaned and flushed with water by the Contractor prior to CCTV Inspection.
  
- D. The Contractor will be held liable for all damages to public and private property caused directly and/or indirectly by the CCTV inspection. The Contractor is responsible for any fines, penalties, or other costs imposed upon by the City by any agency or private party as a result of the CCTV inspection or improper discharges by the Contractor. The Contractor must ensure no equipment or other obstructions remain in the line after inspection. All costs associated with retrieving any lodged equipment shall be incidental to the inspection.
  
- E. CCTV inspection report will be accepted by the City if the inspection has a PACP Overall Pipe Structural and O&M rating of 0, and contains no defects meeting the NASSCO PACP definition of JOS, JSS, or JAS. Any defects observed must be corrected by the contractor prior to the acceptance by the City.
  
- F. Payment will be at the unit price per bid per linear foot of CCTV inspection of the storm drain system. (Rev. 9/2021)

**15-08 GPS DATA ON STORMWATER ATTRIBUTES:**

- A. A bid item has been designated in the PROPOSAL to have the Contractor provide the City with GPS data on stormwater attributes installed with this project. Installation includes, but not limited to, construction of new and adjustment or relocation of existing stormwater attributes. Examples of stormwater attributes include: Culverts, Fittings, Inlets, Junction

Boxes, Manholes, Open Channels, Bends, Outfalls and Pipes elevations of flowlines within inlets, manholes and at headwalls. Horizontal accuracy will be up to a sub-centimeter. The data will need to be formatted to the following base datum and be based on the latest version of the City's GPS Monument Manual located on Public Works and Transportation's web page:

Note: Coordinates must be attained in Grid Coordinates not Surface Coordinates.

Projected Coordinate System:

NAD\_1983\_StatePlane\_Texas\_North\_Central\_FIPS\_4202\_Feet

Projection: Lambert\_Conformal\_Conic  
False\_Easting: 968500.0000000  
False\_Northing: 6561666.66666667  
Central\_Meridian: -98.50000000  
Standard\_Parallel\_1: 32.13333333  
Standard\_Parallel\_2: 33.96666667  
Latitude\_Of\_Origin: 31.66666667  
Linear\_Unit: Foot\_US

Geographic Coordinate System: GCS\_North\_American\_1983  
Datum: D\_North\_American\_1983  
Prime\_Meridian: Greenwich  
Angular\_Unit: Degree

- B. The Contractor shall provide the City with GPS data in an ESRI shapefile or geodatabase format on a flash/usb data storage device. The points collected in the field must have a description field that includes a general description of each feature collected such as 10-foot curb inlet and/or the construction plan stationing. The City Staff will need to verify the data and approve it before payment can be made on this item.

**15-09 TEMPORARY SHORING:** All shoring plans required by the plans or required for the excavation and installation of above ground structures over 4-feet tall shall be sealed by a professional engineer and submitted to the City for approval along with required Trench Safety plans. Soil Nails are allowable as a shoring method, but their location will require City's approval prior to installation. Soil Nails shall be entirely contained within a permanent easement or may be installed within a temporary construction easement if they will be removed prior to the project completion. This work shall be considered subsidiary to structure or excavation bid items.

(Rev. 6/2020)

END OF SECTION

## SECTION NO. 16

### TRENCH SAFETY AND OSHA

- A. Pursuant to law, trench safety systems are required for all trench excavations that exceed a depth of five feet and shall require a safety program which governs the presence and activities of individuals working in and around the trench excavation. The trench safety systems and safety program shall be in accordance with current Occupational Safety and Health Administration (OSHA) standards. A copy of the 2012 OSHA standards is included for the Contractor's convenience. However, the Contractor must check current and future OSHA Rules as they may change from time to time.
- B. The low bidder shall be required to submit a trench safety plan to the project engineer at least 10 days prior to beginning work on the project that will involve trenching operations. The trench safety plan shall be in accordance with current OSHA rules and regulations. The trench safety plan shall specify the method or methods of trench safety to be used with specific information given for each. If the Contractor chooses to use an option from OSHA in the design of sloping and benching systems or design of support systems, shield systems, and other protective systems which requires that the soil be classified as Type A, B, or C, the Contractor shall be required to provide soil investigations and testing necessary to classify the soil type. Soil investigation information must include location and depth. The review of the trench safety plan by the City of Arlington is only for general conformance with OSHA rules and regulations and to ensure sufficient information for inspection purposes. The review in no way relieves the Contractor from responsibility for trench safety in accordance with current law.
- C. Each bidder shall satisfy himself, by personal examination of the location of the proposed work and by such other means as he may prefer, as to the requirements of the work to enable him to construct his proposal intelligently. The bidder shall make himself familiar with all of the Contract Documents and other instructions before submitting his proposal (bid) in order that no misunderstanding shall exist in regard to the nature and character of the work to be done. No allowance will be made for any claim that the proposal is based upon incomplete information as to the nature and character of the site or the work involved. Conditional proposals will not be accepted.
- D. The Contractor shall make daily inspections of the Trench Safety Systems to ensure that the systems meet OSHA requirements. Daily inspection is to be made by a "competent person" provided by the Contractor. If evidence of possible cave-ins or slides is apparent, all work in the trench shall cease until the necessary precautions have been taken by the Contractor to safeguard personnel entering the trench. It is the sole duty, responsibility and prerogative of the

Contractor, not the owner or the Engineer, to determine the specific applicability of the designed trench safety systems to each field condition encountered on the project.

- E. **The Contractor shall indemnify and hold harmless the City, its employees and agents, from any and all damages, costs, (including, but not limited to, attorney's fees, court costs, and costs of investigation) judgments or claims by anyone for damage to property, injury or death or persons resulting from the collapse or failure of any trenches, ditches or other excavations constructed under or associated with this contract.**

**It is the express intention of the parties, both Contractor and the City, and the Contractor acknowledges and agrees that this indemnity provision provides indemnity by the Contractor to indemnify and protect the City from the consequences of the City's own negligence, whether that negligence is the sole or concurring cause of the injury, death or damage and in the case the City is negligent either by act or omission in providing for trench safety, including but not limited to inspections, failure to issue stop work orders, and the hiring of the Contractor.**

- F. **Included in the proposal is a separate pay item for the trench safety system and the trench safety program. This pay item will be a linear foot basis and will be full compensation for labor, tools, materials, equipment, and incidentals to complete the work. All requirements as outlined in this section will be incorporated within this bid item. Should conditions during construction require that alternate methods of trench safety be used, the Contractor shall submit a revised trench safety plan following the same guidelines as in B. There will be no additional compensation for changes in the trench safety plan as may be required during construction due to changes in conditions.**
- 9/27/04

(c) *Coaming*—The raised frame, as around a hatchway in the deck, to keep out water.

(d) *Jacob's ladder*—A marine ladder of rope or chain with wooden or metal rungs.

(e) *Rail*, for the purpose of § 1926.605, means a light structure serving as a guard at the outer edge of a ship's deck.

### Subpart P—Excavations

**AUTHORITY:** Sec. 107, Contract Worker Hours and Safety Standards Act (Construction Safety Act) (40 U.S.C. 333); Secs. 4, 6, 8, Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657); Secretary of Labor's Order No. 12-71 (36 FR 8754), 8-76 (41 FR 25059), or 9-83 (48 FR 35736), as applicable, and 29 CFR part 1911.

**SOURCE:** 54 FR 45959, Oct. 31, 1989, unless otherwise noted.

#### § 1926.650 Scope, application, and definitions applicable to this subpart.

(a) *Scope and application.* This subpart applies to all open excavations made in the earth's surface. Excavations are defined to include trenches.

(b) *Definitions applicable to this subpart.*

*Accepted engineering practices* means those requirements which are compatible with standards of practice required by a registered professional engineer.

*Aluminum Hydraulic Shoring* means a pre-engineered shoring system comprised of aluminum hydraulic cylinders (crossbraces) used in conjunction with vertical rails (uprights) or horizontal rails (walers). Such system is designed, specifically to support the sidewalls of an excavation and prevent cave-ins.

*Bell-bottom pier hole* means a type of shaft or footing excavation, the bottom of which is made larger than the cross section above to form a belled shape.

*Benching* (Benching system) means a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

*Cave-in* means the separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support

system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

*Competent person* means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

*Cross braces* mean the horizontal members of a shoring system installed perpendicular to the sides of the excavation, the ends of which bear against either uprights or wales.

*Excavation* means any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

*Faces or sides* means the vertical or inclined earth surfaces formed as a result of excavation work.

*Failure* means the breakage, displacement, or permanent deformation of a structural member or connection so as to reduce its structural integrity and its supportive capabilities.

*Hazardous atmosphere* means an atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

*Kickout* means the accidental release or failure of a cross brace.

*Protective system* means a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

*Ramp* means an inclined walking or working surface that is used to gain access to one point from another, and is constructed from earth or from structural materials such as steel or wood.

*Registered Professional Engineer* means a person who is registered as a professional engineer in the state where the work is to be performed. However, a professional engineer, registered in any

state is deemed to be a "registered professional engineer" within the meaning of this standard when approving designs for "manufactured protective systems" or "tabulated data" to be used in interstate commerce.

*Sheeting* means the members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system.

*Shield* (Shield system) means a structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Additionally, shields can be either premanufactured or job-built in accordance with §1926.652 (c)(3) or (c)(4). Shields used in trenches are usually referred to as "trench boxes" or "trench shields."

*Shoring* (Shoring system) means a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

*Sides.* See "Faces."

*Sloping* (Sloping system) means a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.

*Stable rock* means natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed. Unstable rock is considered to be stable when the rock material on the side or sides of the excavation is secured against caving-in or movement by rock bolts or by another protective system that has been designed by a registered professional engineer.

*Structural ramp* means a ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock are not considered structural ramps.

*Support system* means a structure such as underpinning, bracing, or shoring, which provides support to an adja-

cent structure, underground installation, or the sides of an excavation.

*Tabulated data* means tables and charts approved by a registered professional engineer and used to design and construct a protective system.

*Trench* (Trench excavation) means a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet (4.6 m). If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet (4.6 m) or less (measured at the bottom of the excavation), the excavation is also considered to be a trench.

*Trench box.* See "Shield."

*Trench shield.* See "Shield."

*Uprights* means the vertical members of a trench shoring system placed in contact with the earth and usually positioned so that individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with or interconnected to each other, are often called "sheeting."

*Wales* means horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system or earth.

#### § 1926.651 Specific excavation requirements.

(a) *Surface encumbrances.* All surface encumbrances that are located so as to create a hazard to employees shall be removed or supported, as necessary, to safeguard employees.

(b) *Underground installations.* (1) The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation.

(2) Utility companies or owners shall be contacted within established or customary local response times, advised of

the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation. When utility companies or owners cannot respond to a request to locate underground utility installations within 24 hours (unless a longer period is required by state or local law), or cannot establish the exact location of these installations, the employer may proceed, provided the employer does so with caution, and provided detection equipment or other acceptable means to locate utility installations are used.

(3) When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means.

(4) While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard employees.

(c) *Access and egress*—(1) *Structural ramps*. (i) Structural ramps that are used solely by employees as a means of access or egress from excavations shall be designed by a competent person. Structural ramps used for access or egress of equipment shall be designed by a competent person qualified in structural design, and shall be constructed in accordance with the design.

(ii) Ramps and runways constructed of two or more structural members shall have the structural members connected together to prevent displacement.

(iii) Structural members used for ramps and runways shall be of uniform thickness.

(iv) Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping.

(v) Structural ramps used in lieu of steps shall be provided with cleats or other surface treatments on the top surface to prevent slipping.

(2) *Means of egress from trench excavations*. A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are 4 feet (1.22 m) or more in depth so as to require no more than 25 feet (7.62 m) of lateral travel for employees.

(d) *Exposure to vehicular traffic*. Employees exposed to public vehicular traffic shall be provided with, and shall wear, warning vests or other suitable garments marked with or made of reflectorized or high-visibility material.

(e) *Exposure to falling loads*. No employee shall be permitted underneath loads handled by lifting or digging equipment. Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped, in accordance with §1926.601(b)(6), to provide adequate protection for the operator during loading and unloading operations.

(f) *Warning system for mobile equipment*. When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilized such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

(g) *Hazardous atmospheres*—(1) *Testing and controls*. In addition to the requirements set forth in subparts D and E of this part (29 CFR 1926.50-1926.107) to prevent exposure to harmful levels of atmospheric contaminants and to assure acceptable atmospheric conditions, the following requirements shall apply:

(i) Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation shall be tested before employees enter excavations greater than 4 feet (1.22 m) in depth.

(ii) Adequate precautions shall be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous

atmospheres. These precautions include providing proper respiratory protection or ventilation in accordance with subparts D and E of this part respectively.

(iii) Adequate precaution shall be taken such as providing ventilation, to prevent employee exposure to an atmosphere containing a concentration of a flammable gas in excess of 20 percent of the lower flammable limit of the gas.

(iv) When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, testing shall be conducted as often as necessary to ensure that the atmosphere remains safe.

(2) *Emergency rescue equipment.* (i) Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment shall be attended when in use.

(ii) Employees entering bell-bottom pier holes, or other similar deep and confined footing excavations, shall wear a harness with a life-line securely attached to it. The lifeline shall be separate from any line used to handle materials, and shall be individually attended at all times while the employee wearing the lifeline is in the excavation.

(h) *Protection from hazards associated with water accumulation.* (1) Employees shall not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect employees adequately vary with each situation, but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline.

(2) If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operations shall be monitored by a competent person to ensure proper operation.

(3) If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person and compliance with paragraphs (h)(1) and (h)(2) of this section.

(i) *Stability of adjacent structures.* (1) Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning, shall be provided to ensure the stability of such structures for the protection of employees.

(2) Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees shall not be permitted except when:

(i) A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure; or

(ii) The excavation is in stable rock; or

(iii) A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity; or

(iv) A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.

(3) Sidewalks, pavements, and appurtenant structure shall not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse of such structures.

(j) *Protection of employees from loose rock or soil.* (1) Adequate protection shall be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide equivalent protection.

(2) Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least 2 feet (.61 m) from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

(k) *Inspections.* (1) Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard increasing occurrence. These inspections are only required when employee exposure can be reasonably anticipated.

(2) Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

(1) Walkways shall be provided where employees or equipment are required or permitted to cross over excavations. Guardrails which comply with §1926.502(b) shall be provided where walkways are 6 feet (1.8 m) or more above lower levels.

[54 FR 45959, Oct. 31, 1989, as amended by 59 FR 40730, Aug. 9, 1994]

**§ 1926.652 Requirements for protective systems.**

(a) *Protection of employees in excavations.* (1) Each employee in an excavation shall be protected from cave-ins by an adequate protective system designed in accordance with paragraph (b) or (c) of this section except when:

(i) Excavations are made entirely in stable rock; or

(ii) Excavations are less than 5 feet (1.52m) in depth and examination of the ground by a competent person provides no indication of a potential cave-in.

(2) Protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

(b) *Design of sloping and benching systems.* The slopes and configurations of sloping and benching systems shall be selected and constructed by the employer or his designee and shall be in accordance with the requirements of paragraph (b)(1); or, in the alternative, paragraph (b)(2); or, in the alternative, paragraph (b)(3), or, in the alternative, paragraph (b)(4), as follows:

(1) *Option (1)—Allowable configurations and slopes.* (i) Excavations shall be sloped at an angle not steeper than one and one-half horizontal to one vertical (34 degrees measured from the horizontal), unless the employer uses one of the other options listed below.

(ii) Slopes specified in paragraph (b)(1)(i) of this section, shall be excavated to form configurations that are in accordance with the slopes shown for Type C soil in appendix B to this subpart.

(2) *Option (2)—Determination of slopes and configurations using Appendices A and B.* Maximum allowable slopes, and allowable configurations for sloping and benching systems, shall be determined in accordance with the conditions and requirements set forth in appendices A and B to this subpart.

(3) *Option (3)—Designs using other tabulated data.* (1) Designs of sloping or benching systems shall be selected from and be in accordance with tabulated data, such as tables and charts.

(ii) The tabulated data shall be in written form and shall include all of the following:

(A) Identification of the parameters that affect the selection of a sloping or benching system drawn from such data;

(B) Identification of the limits of use of the data, to include the magnitude and configuration of slopes determined to be safe;

(C) Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data.

(iii) At least one copy of the tabulated data which identifies the registered professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system. After that time the data may be stored off the jobsite, but a copy of the data shall be made available to the Secretary upon request.

(4) *Option (4)—Design by a registered professional engineer.* (i) Sloping and benching systems not utilizing Option (1) or Option (2) or Option (3) under paragraph (b) of this section shall be approved by a registered professional engineer.

(ii) Designs shall be in written form and shall include at least the following:

(A) The magnitude of the slopes that were determined to be safe for the particular project;

(B) The configurations that were determined to be safe for the particular project; and

(C) The identity of the registered professional engineer approving the design.

(iii) At least one copy of the design shall be maintained at the jobsite while the slope is being constructed. After that time the design need not be at the jobsite, but a copy shall be made available to the Secretary upon request.

(c) *Design of support systems, shield systems, and other protective systems.* Designs of support systems shield systems, and other protective systems shall be selected and constructed by the employer or his designee and shall be in accordance with the requirements of paragraph (c)(1); or, in the alternative, paragraph (c)(2); or, in the alternative, paragraph (c)(3); or, in the alternative, paragraph (c)(4) as follows:

(1) *Option (1)—Designs using appendices A, C and D.* Designs for timber shoring in trenches shall be determined in accordance with the conditions and requirements set forth in appendices A and C to this subpart. Designs for aluminum hydraulic shoring shall be in accordance with paragraph (c)(2) of this section, but if manufacturer's tabulated data cannot be utilized, designs shall be in accordance with appendix D.

(2) *Option (2)—Designs Using Manufacturer's Tabulated Data.* (i) Design of support systems, shield systems, or other

protective systems that are drawn from manufacturer's tabulated data shall be in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer.

(ii) Deviation from the specifications, recommendations, and limitations issued or made by the manufacturer shall only be allowed after the manufacturer issues specific written approval.

(iii) Manufacturer's specifications, recommendations, and limitations, and manufacturer's approval to deviate from the specifications, recommendations, and limitations shall be in written form at the jobsite during construction of the protective system. After that time this data may be stored off the jobsite, but a copy shall be made available to the Secretary upon request.

(3) *Option (3)—Designs using other tabulated data.* (i) Designs of support systems, shield systems, or other protective systems shall be selected from and be in accordance with tabulated data, such as tables and charts.

(ii) The tabulated data shall be in written form and include all of the following:

(A) Identification of the parameters that affect the selection of a protective system drawn from such data;

(B) Identification of the limits of use of the data;

(C) Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data.

(iii) At least one copy of the tabulated data, which identifies the registered professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system. After that time the data may be stored off the jobsite, but a copy of the data shall be made available to the Secretary upon request.

(4) *Option (4)—Design by a registered professional engineer.* (i) Support systems, shield systems, and other protective systems not utilizing Option 1, Option 2 or Option 3, above, shall be approved by a registered professional engineer.

(ii) Designs shall be in written form and shall include the following:

(A) A plan indicating the sizes, types, and configurations of the materials to be used in the protective system; and

(B) The identity of the registered professional engineer approving the design.

(iii) At least one copy of the design shall be maintained at the jobsite during construction of the protective system. After that time, the design may be stored off the jobsite, but a copy of the design shall be made available to the Secretary upon request.

(d) *Materials and equipment.* (1) Materials and equipment used for protective systems shall be free from damage or defects that might impair their proper function.

(2) Manufactured materials and equipment used for protective systems shall be used and maintained in a manner that is consistent with the recommendations of the manufacturer, and in a manner that will prevent employee exposure to hazards.

(3) When material or equipment that is used for protective systems is damaged, a competent person shall examine the material or equipment and evaluate its suitability for continued use. If the competent person cannot assure the material or equipment is able to support the intended loads or is otherwise suitable for safe use, then such material or equipment shall be removed from service, and shall be evaluated and approved by a registered professional engineer before being returned to service.

(e) *Installation and removal of support*—(1) *General.* (i) Members of support systems shall be securely connected together to prevent sliding, falling, kickouts, or other predictable failure.

(ii) Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses, or from being struck by members of the support system.

(iii) Individual members of support systems shall not be subjected to loads exceeding those which those members were designed to withstand.

(iv) Before temporary removal of individual members begins, additional precautions shall be taken to ensure the safety of employees, such as in-

stalling other structural members to carry the loads imposed on the support system.

(v) Removal shall begin at, and progress from, the bottom of the excavation. Members shall be released slowly so as to note any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation.

(vi) Backfilling shall progress together with the removal of support systems from excavations.

(2) *Additional requirements for support systems for trench excavations.* (i) Excavation of material to a level no greater than 2 feet (.61 m) below the bottom of the members of a support system shall be permitted, but only if the system is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the support system.

(ii) Installation of a support system shall be closely coordinated with the excavation of trenches.

(f) *Sloping and benching systems.* Employees shall not be permitted to work on the faces of sloped or benched excavations at levels above other employees except when employees at the lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment.

(g) *Shield systems*—(1) *General.* (i) Shield systems shall not be subjected to loads exceeding those which the system was designed to withstand.

(ii) Shields shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads.

(iii) Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields.

(iv) Employees shall not be allowed in shields when shields are being installed, removed, or moved vertically.

(2) *Additional requirement for shield systems used in trench excavations.* Excavations of earth material to a level not greater than 2 feet (.61 m) below the bottom of a shield shall be permitted, but only if the shield is designed to resist the forces calculated for the full

depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the shield.

APPENDIX A TO SUBPART P OF PART  
1926—SOIL CLASSIFICATION

(a) *Scope and application*—(1) *Scope*. This appendix describes a method of classifying soil and rock deposits based on site and environmental conditions, and on the structure and composition of the earth deposits. The appendix contains definitions, sets forth requirements, and describes acceptable visual and manual tests for use in classifying soils.

(2) *Application*. This appendix applies when a sloping or benching system is designed in accordance with the requirements set forth in §1926.652(b)(2) as a method of protection for employees from cave-ins. This appendix also applies when timber shoring for excavations is designed as a method of protection from cave-ins in accordance with appendix C to subpart P of part 1926, and when aluminum hydraulic shoring is designed in accordance with appendix D. This appendix also applies if other protective systems are designed and selected for use from data prepared in accordance with the requirements set forth in §1926.652(c), and the use of the data is predicated on the use of the soil classification system set forth in this appendix.

(b) *Definitions*. The definitions and examples given below are based on, in whole or in part, the following: American Society for Testing Materials (ASTM) Standards D653-85 and D2488; The Unified Soils Classification System, The U.S. Department of Agriculture (USDA) Textural Classification Scheme; and The National Bureau of Standards Report BSS-121.

*Cemented soil* means a soil in which the particles are held together by a chemical agent, such as calcium carbonate, such that a hand-size sample cannot be crushed into powder or individual soil particles by finger pressure.

*Cohesive soil* means clay (fine grained soil), or soil with a high clay content, which has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical sideslopes, and is plastic when moist. Cohesive soil is hard to break up when dry, and exhibits significant cohesion when submerged. Cohesive soils include clayey silt, sandy clay, silty clay, clay and organic clay.

*Dry soil* means soil that does not exhibit visible signs of moisture content.

*Fissured* means a soil material that has a tendency to break along definite planes of fracture with little resistance, or a material that exhibits open cracks, such as tension cracks, in an exposed surface.

*Granular soil* means gravel, sand, or silt, (coarse grained soil) with little or no clay content. Granular soil has no cohesive

strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry.

*Layered system* means two or more distinctly different soil or rock types arranged in layers. Micaceous seams or weakened planes in rock or shale are considered layered.

*Moist soil* means a condition in which a soil looks and feels damp. Moist cohesive soil can easily be shaped into a ball and rolled into small diameter threads before crumbling. Moist granular soil that contains some cohesive material will exhibit signs of cohesion between particles.

*Plastic* means a property of a soil which allows the soil to be deformed or molded without cracking, or appreciable volume change.

*Saturated soil* means a soil in which the voids are filled with water. Saturation does not require flow. Saturation, or near saturation, is necessary for the proper use of instruments such as a pocket penetrometer or shear vane.

*Soil classification system* means, for the purpose of this subpart, a method of categorizing soil and rock deposits in a hierarchy of Stable Rock, Type A, Type B, and Type C, in decreasing order of stability. The categories are determined based on an analysis of the properties and performance characteristics of the deposits and the environmental conditions of exposure.

*Stable rock* means natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

*Submerged soil* means soil which is underwater or is free seeping.

*Type A* means cohesive soils with an unconfined compressive strength of 1.5 ton per square foot (tsf) (144 kPa) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. However, no soil is Type A if:

- (i) The soil is fissured; or
- (ii) The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or
- (iii) The soil has been previously disturbed; or
- (iv) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or
- (v) The material is subject to other factors that would require it to be classified as a less stable material.

*Type B* means:

- (i) Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa); or
- (ii) Granular cohesionless soils including: angular gravel (similar to crushed rock),

silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam.

(iii) Previously disturbed soils except those which would otherwise be classed as Type C soil.

(iv) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or

(v) Dry rock that is not stable; or

(vi) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

*Type C* means:

(i) Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or

(ii) Granular soils including gravel, sand, and loamy sand; or

(iii) Submerged soil or soil from which water is freely seeping; or

(iv) Submerged rock that is not stable, or

(v) Material in a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or steeper.

*Unconfined compressive strength* means the load per unit area at which a soil will fail in compression. It can be determined by laboratory testing, or estimated in the field using a pocket penetrometer, by thumb penetration tests, and other methods.

*Wet soil* means soil that contains significantly more moisture than moist soil, but in such a range of values that cohesive material will slump or begin to flow when vibrated. Granular material that would exhibit cohesive properties when moist will lose those cohesive properties when wet.

(c) *Requirements*—(1) *Classification of soil and rock deposits.* Each soil and rock deposit shall be classified by a competent person as Stable Rock, Type A, Type B, or Type C in accordance with the definitions set forth in paragraph (b) of this appendix.

(2) *Basis of classification.* The classification of the deposits shall be made based on the results of at least one visual and at least one manual analysis. Such analyses shall be conducted by a competent person using tests described in paragraph (d) below, or in other recognized methods of soil classification and testing such as those adopted by the American Society for Testing Materials, or the U.S. Department of Agriculture textural classification system.

(3) *Visual and manual analyses.* The visual and manual analyses, such as those noted as being acceptable in paragraph (d) of this appendix, shall be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify properly the properties, factors, and conditions affecting the classification of the deposits.

(4) *Layered systems.* In a layered system, the system shall be classified in accordance with its weakest layer. However, each layer may be classified individually where a more stable layer lies under a less stable layer.

(5) *Reclassification.* If, after classifying a deposit, the properties, factors, or conditions affecting its classification change in any way, the changes shall be evaluated by a competent person. The deposit shall be reclassified as necessary to reflect the changed circumstances.

(d) *Acceptable visual and manual tests*—(1) *Visual tests.* Visual analysis is conducted to determine qualitative information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil taken as samples from excavated material.

(i) Observe samples of soil that are excavated and soil in the sides of the excavation. Estimate the range of particle sizes and the relative amounts of the particle sizes. Soil that is primarily composed of fine-grained material is cohesive material. Soil composed primarily of coarse-grained sand or gravel is granular material.

(ii) Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does not stay in clumps is granular.

(iii) Observe the side of the opened excavation and the surface area adjacent to the excavation. Crack-like openings such as tension cracks could indicate fissured material. If chunks of soil spall off a vertical side, the soil could be fissured. Small spalls are evidence of moving ground and are indications of potentially hazardous situations.

(iv) Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground structures, and to identify previously disturbed soil.

(v) Observe the opened side of the excavation to identify layered systems. Examine layered systems to identify if the layers slope toward the excavation. Estimate the degree of slope of the layers.

(vi) Observe the area adjacent to the excavation and the sides of the opened excavation for evidence of surface water, water seeping from the sides of the excavation, or the location of the level of the water table.

(vii) Observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the stability of the excavation face.

(2) *Manual tests.* Manual analysis of soil samples is conducted to determine quantitative as well as qualitative properties of soil and to provide more information in order to classify soil properly.

(i) *Plasticity.* Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8-inch in diameter. Cohesive material can be successfully rolled into

threads without crumbling. For example, if at least a two inch (50 mm) length of 1/8-inch thread can be held on one end without tearing, the soil is cohesive.

(ii) *Dry strength.* If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is granular (any combination of gravel, sand, or silt). If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand or silt. If the dry soil breaks into clumps which do not break up into small clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered unfissured.

(iii) *Thumb penetration.* The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. (This test is based on the thumb penetration test described in American Society for Testing and Materials (ASTM) Standard designation D2488—"Standard Recommended Practice for Description of Soils (Visual—Manual Procedure).") Type A soils with an unconfined compressive strength of 1.5 tsf can be readily indented by the thumb; however, they can be penetrated by the thumb only with very great effort. Type C soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb, and can be molded by light finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as practicable after excavation to keep to a minimum the effects of exposure to drying influences. If the excavation is later exposed to wetting influences (rain, flooding), the classification of the soil must be changed accordingly.

(iv) *Other strength tests.* Estimates of unconfined compressive strength of soils can also be obtained by use of a pocket penetrometer or by using a hand-operated shearvane.

(v) *Drying test.* The basic purpose of the drying test is to differentiate between cohesive material with fissures, unfissured cohesive material, and granular material. The procedure for the drying test involves drying a sample of soil that is approximately one inch thick (2.54 cm) and six inches (15.24 cm) in diameter until it is thoroughly dry:

(A) If the sample develops cracks as it dries, significant fissures are indicated.

(B) Samples that dry without cracking are to be broken by hand. If considerable force is necessary to break a sample, the soil has significant cohesive material content. The soil can be classified as a unfissured cohesive material and the unconfined compressive strength should be determined.

(C) If a sample breaks easily by hand, it is either a fissured cohesive material or a granular material. To distinguish between

the two, pulverize the dried clumps of the sample by hand or by stepping on them. If the clumps do not pulverize easily, the material is cohesive with fissures. If they pulverize easily into very small fragments, the material is granular.

#### APPENDIX B TO SUBPART P OF PART 1926—SLOPING AND BENCHING

(a) *Scope and application.* This appendix contains specifications for sloping and benching when used as methods of protecting employees working in excavations from cave-ins. The requirements of this appendix apply when the design of sloping and benching protective systems is to be performed in accordance with the requirements set forth in §1926.652(b)(2).

##### (b) *Definitions.*

*Actual slope* means the slope to which an excavation face is excavated.

*Distress* means that the soil is in a condition where a cave-in is imminent or is likely to occur. Distress is evidenced by such phenomena as the development of fissures in the face of or adjacent to an open excavation; the subsidence of the edge of an excavation; the slumping of material from the face or the bulging or heaving of material from the bottom of an excavation; the spalling of material from the face of an excavation; and raveling, i.e., small amounts of material such as pebbles or little clumps of material suddenly separating from the face of an excavation and trickling or rolling down into the excavation.

*Maximum allowable slope* means the steepest incline of an excavation face that is acceptable for the most favorable site conditions as protection against cave-ins, and is expressed as the ratio of horizontal distance to vertical rise (H:V).

*Short term exposure* means a period of time less than or equal to 24 hours that an excavation is open.

(c) *Requirements—(1) Soil classification.* Soil and rock deposits shall be classified in accordance with appendix A to subpart P of part 1926.

(2) *Maximum allowable slope.* The maximum allowable slope for a soil or rock deposit shall be determined from Table B-1 of this appendix.

(3) *Actual slope.* (1) The actual slope shall not be steeper than the maximum allowable slope.

(ii) The actual slope shall be less steep than the maximum allowable slope, when there are signs of distress. If that situation occurs, the slope shall be cut back to an actual slope which is at least 1/2 horizontal to one vertical (1/2H:1V) less steep than the maximum allowable slope.

(iii) When surcharge loads from stored material or equipment, operating equipment, or traffic are present, a competent person shall

determine the degree to which the actual slope must be reduced below the maximum allowable slope, and shall assure that such reduction is achieved. Surcharge loads from

adjacent structures shall be evaluated in accordance with §1926.651(i).

(4) *Configurations.* Configurations of sloping and benching systems shall be in accordance with Figure B-1.

TABLE B-1  
MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V) [1] FOR EXCAVATIONS LESS THAN 20 FEET DEEP [3]
STABLE ROCK TYPE A [2] TYPE B TYPE C	VERTICAL (90°) 3/4 : 1 (53°) 1:1 (45°) 1½ : 1 (34°)

**NOTES:**

1. Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.
2. A short-term maximum allowable slope of 1/2H:1V (63°) is allowed in excavations in Type A soil that are 12 feet (3.67 m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be 3/4H:1V (53°).
3. Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

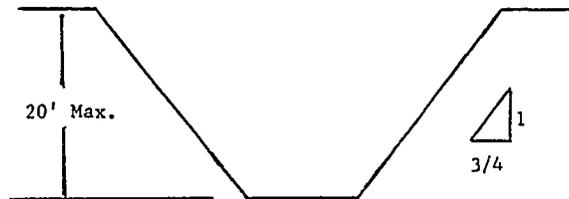
Figure B-1

Slope Configurations

(All slopes stated below are in the horizontal to vertical ratio)

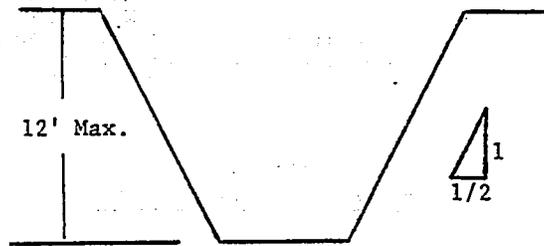
B-1.1 Excavations made in Type A soil.

1. All simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of ¾:1.



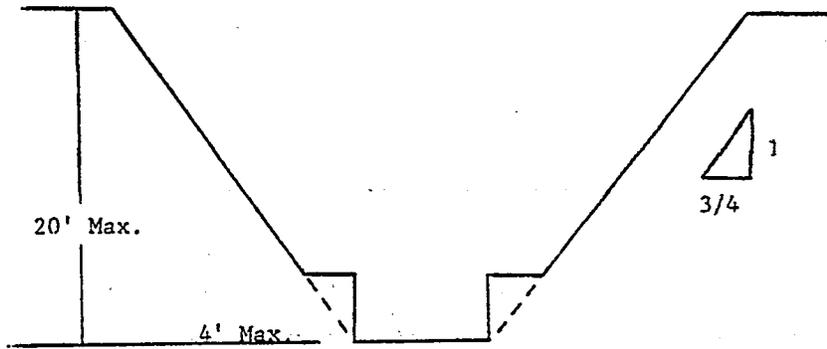
SIMPLE SLOPE—GENERAL

Exception: Simple slope excavations which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have a maximum allowable slope of ½:1.

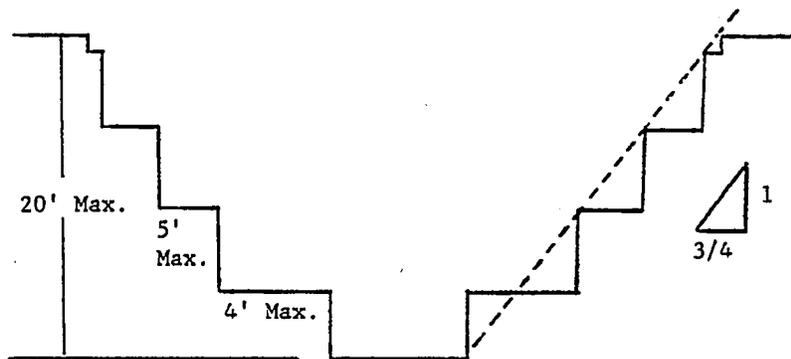


SIMPLE SLOPE—SHORT TERM

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of  $\frac{3}{4}$  to 1 and maximum bench dimensions as follows:

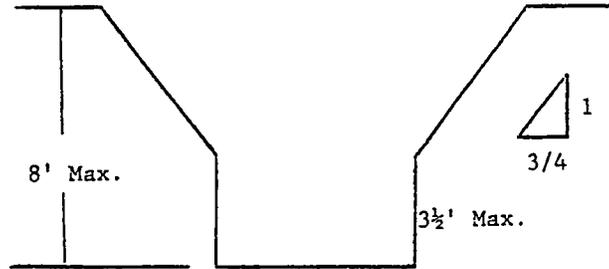


SIMPLE BENCH



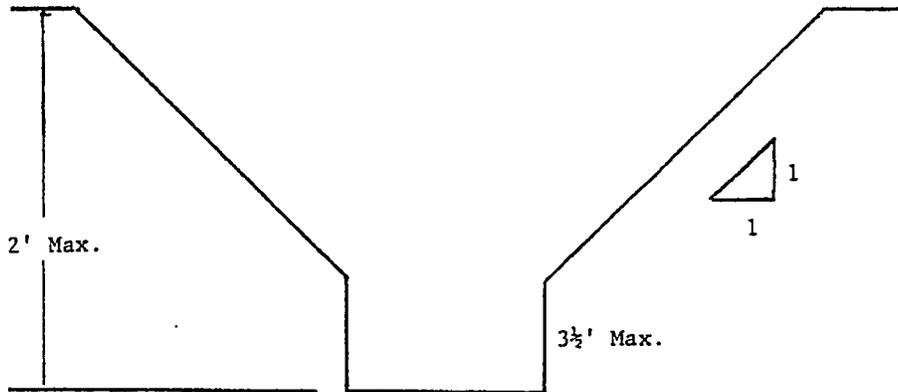
MULTIPLE BENCH

3. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of  $3\frac{1}{2}$  feet.



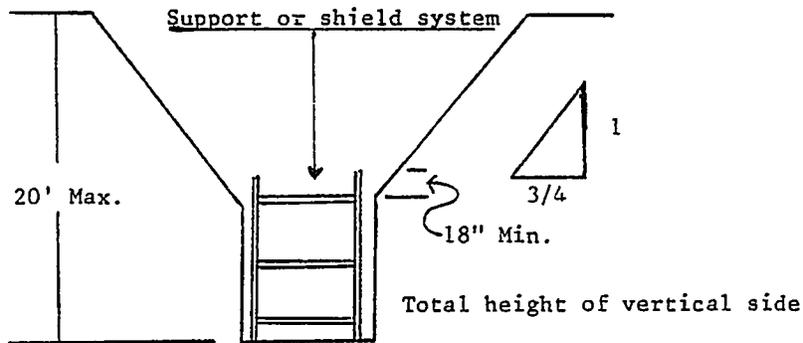
UNSUPPORTED VERTICALLY SIDED LOWER PORTION—MAXIMUM 8 FEET IN DEPTH

All excavations more than 8 feet but not more than 12 feet in depth which unsupported vertically sided lower portions shall have a maximum allowable slope of 1:1 and a maximum vertical side of 3½ feet.



UNSUPPORTED VERTICALLY SIDED LOWER PORTION—MAXIMUM 12 FEET IN DEPTH

All excavations 20 feet or less in depth which have vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of ¾:1. The support or shield system must extend at least 18 inches above the top of the vertical side.

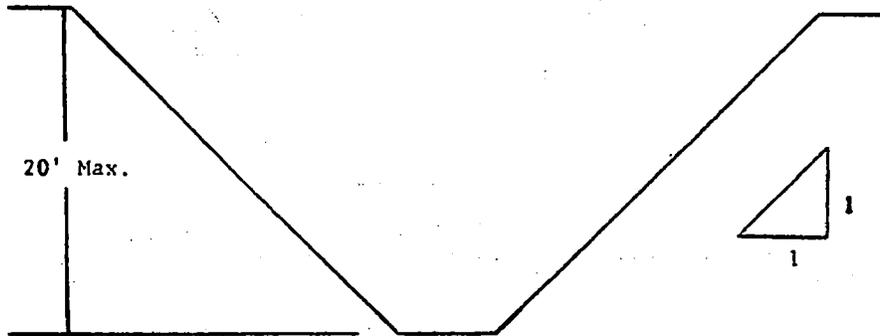


SUPPORTED OR SHIELDED VERTICALLY SIDED LOWER PORTION

4. All other simple slope, compound slope, and vertically sided lower portion excavations shall be in accordance with the other options permitted under §1926.652(b).

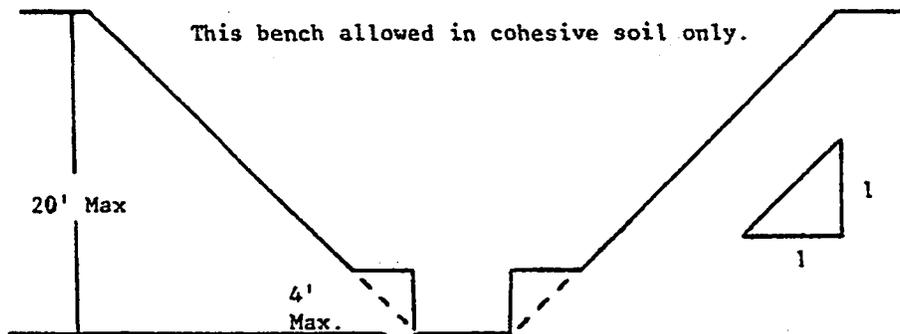
*B-1.2 Excavations Made in Type B Soil*

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.

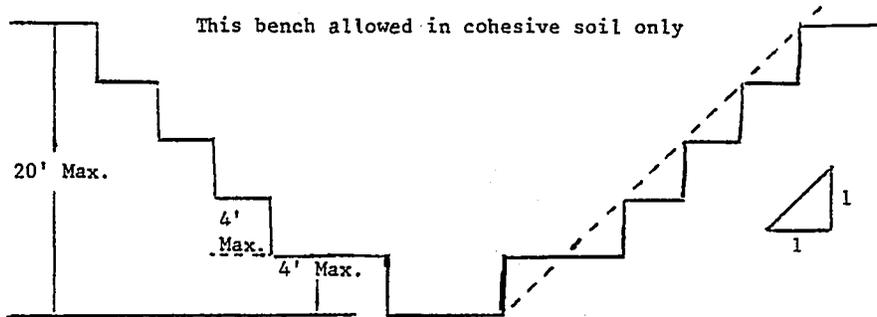


SIMPLE SLOPE

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions as follows:

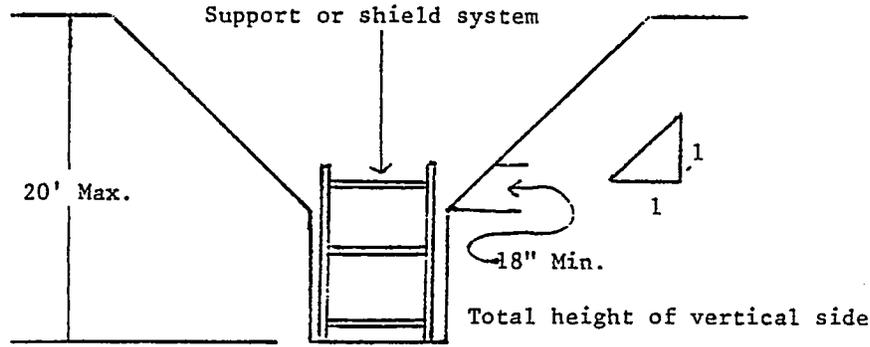


SINGLE BENCH



MULTIPLE BENCH

3. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.

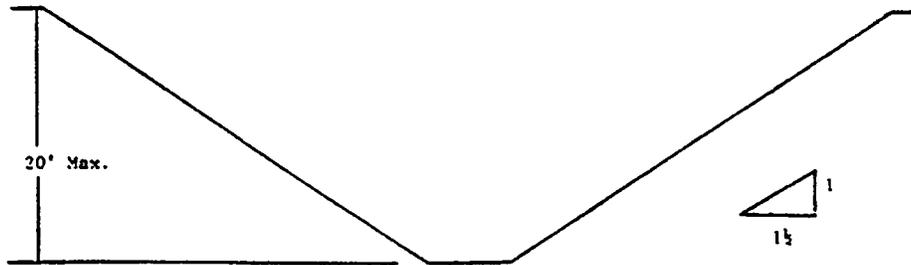


VERTICALLY SIDED LOWER PORTION

4. All other sloped excavations shall be in accordance with the other options permitted in §1926.652(b).

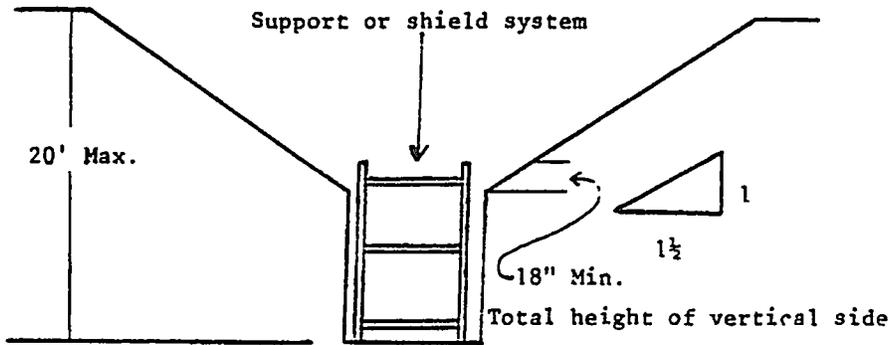
*B-1.3 Excavations Made in Type C Soil*

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1.



SIMPLE SLOPE

2. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.

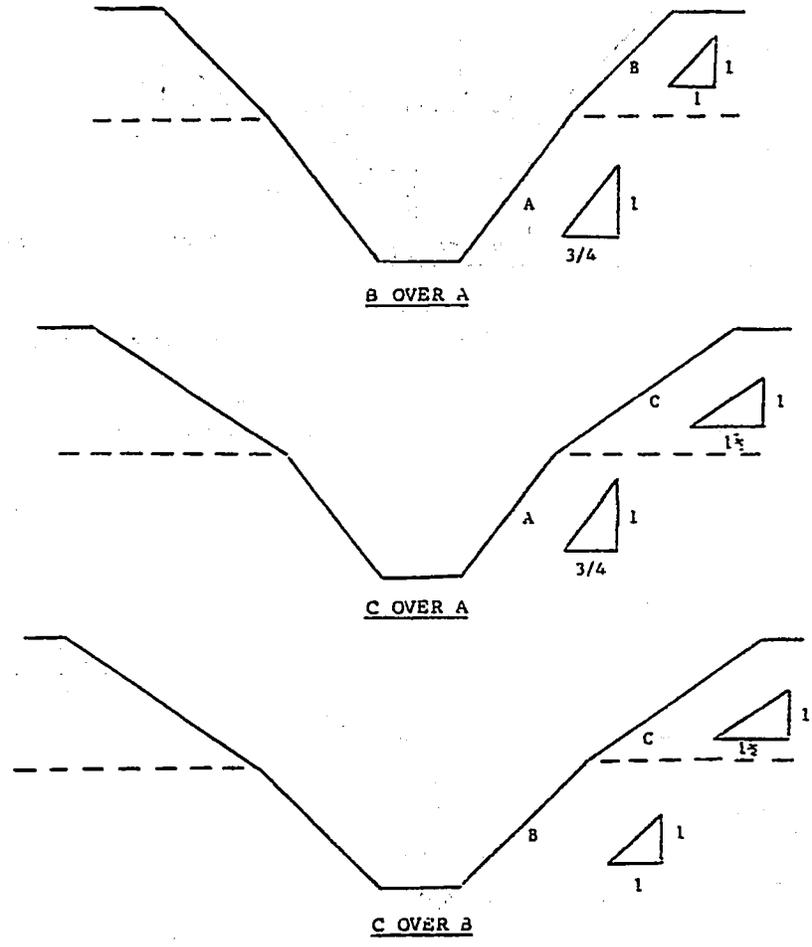


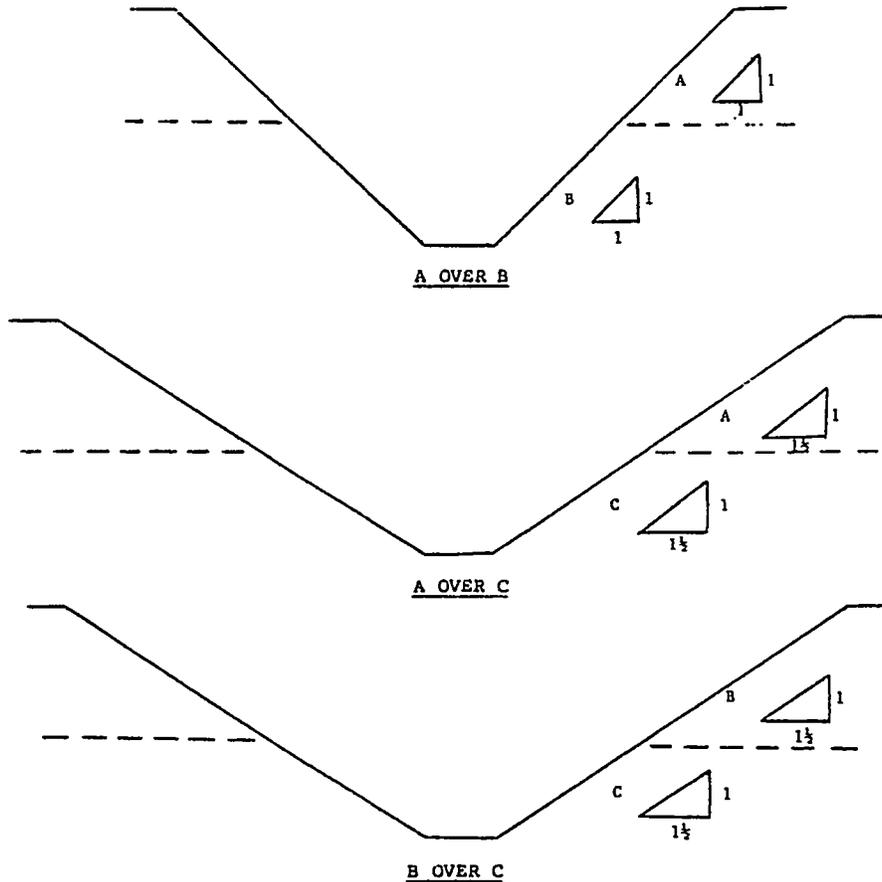
VERTICAL SIDED LOWER PORTION

3. All other sloped excavations shall be in accordance with the other options permitted in §1926.652(b).

*B-1.4 Excavations Made in Layered Soils*

1. All excavations 20 feet or less in depth made in layered soils shall have a maximum allowable slope for each layer as set forth below.





2. All other sloped excavations shall be in accordance with the other options permitted in §1926.652(b).

APPENDIX C TO SUBPART P OF PART 1926—TIMBER SHORING FOR TRENCHES

(a) *Scope.* This appendix contains information that can be used timber shoring is provided as a method of protection from cave-ins in trenches that do not exceed 20 feet (6.1 m) in depth. This appendix must be used when design of timber shoring protective systems is to be performed in accordance with §1926.652(c)(1). Other timber shoring configurations; other systems of support such as hydraulic and pneumatic systems; and other protective systems such as sloping, benching, shielding, and freezing systems must be designed in accordance with the requirements set forth in §1926.652(b) and §1926.652(c).

(b) *Soil Classification.* In order to use the data presented in this appendix, the soil type or types in which the excavation is made must first be determined using the soil classification method set forth in appendix A of subpart P of this part.

(c) *Presentation of Information.* Information is presented in several forms as follows:

(1) Information is presented in tabular form in Tables C-1.1, C-1.2, and C-1.3, and Tables C-2.1, C-2.2 and C-2.3 following paragraph (g) of the appendix. Each table presents the minimum sizes of timber members to use in a shoring system, and each table contains data only for the particular soil type in which the excavation or portion of

the excavation is made. The data are arranged to allow the user the flexibility to select from among several acceptable configurations of members based on varying the horizontal spacing of the crossbraces. Stable rock is exempt from shoring requirements and therefore, no data are presented for this condition.

(2) Information concerning the basis of the tabular data and the limitations of the data is presented in paragraph (d) of this appendix, and on the tables themselves.

(3) Information explaining the use of the tabular data is presented in paragraph (e) of this appendix.

(4) Information illustrating the use of the tabular data is presented in paragraph (f) of this appendix.

(5) Miscellaneous notations regarding Tables C-1.1 through C-1.3 and Tables C-2.1 through C-2.3 are presented in paragraph (g) of this Appendix.

(d) *Basis and limitations of the data*—(1) *Dimensions of timber members.* (i) The sizes of the timber members listed in Tables C-1.1 through C-1.3 are taken from the National Bureau of Standards (NBS) report, "Recommended Technical Provisions for Construction Practice in Shoring and Sloping of Trenches and Excavations." In addition, where NBS did not recommend specific sizes of members, member sizes are based on an analysis of the sizes required for use by existing codes and on empirical practice.

(ii) The required dimensions of the members listed in Tables C-1.1 through C-1.3 refer to actual dimensions and not nominal dimensions of the timber. Employers wanting to use nominal size shoring are directed to Tables C-2.1 through C-2.3, or have this choice under §1926.652(c)(3), and are referred to The Corps of Engineers, The Bureau of Reclamation or data from other acceptable sources.

(2) *Limitation of application.* (i) It is not intended that the timber shoring specification apply to every situation that may be experienced in the field. These data were developed to apply to the situations that are most commonly experienced in current trenching practice. Shoring systems for use in situations that are not covered by the data in this appendix must be designed as specified in §1926.652(c).

(ii) When any of the following conditions are present, the members specified in the tables are not considered adequate. Either an alternate timber shoring system must be designed or another type of protective system designed in accordance with §1926.652.

(A) When loads imposed by structures or by stored material adjacent to the trench weigh in excess of the load imposed by a two-foot soil surcharge. The term "adjacent" as used here means the area within a horizontal distance from the edge of the trench equal to the depth of the trench.

(B) When vertical loads imposed on cross braces exceed a 240-pound gravity load distributed on a one-foot section of the center of the crossbrace.

(C) When surcharge loads are present from equipment weighing in excess of 20,000 pounds.

(D) When only the lower portion of a trench is shored and the remaining portion of the trench is sloped or benched unless: The sloped portion is sloped at an angle less steep than three horizontal to one vertical; or the members are selected from the tables for use at a depth which is determined from the top of the overall trench, and not from the toe of the sloped portion.

(e) *Use of Tables.* The members of the shoring system that are to be selected using this information are the cross braces, the uprights, and the wales, where wales are required. Minimum sizes of members are specified for use in different types of soil. There are six tables of information, two for each soil type. The soil type must first be determined in accordance with the soil classification system described in appendix A to subpart P of part 1926. Using the appropriate table, the selection of the size and spacing of the members is then made. The selection is based on the depth and width of the trench where the members are to be installed and, in most instances, the selection is also based on the horizontal spacing of the crossbraces. Instances where a choice of horizontal spacing of crossbracing is available, the horizontal spacing of the crossbraces must be chosen by the user before the size of any member can be determined. When the soil type, the width and depth of the trench, and the horizontal spacing of the crossbraces are known, the size and vertical spacing of the crossbraces, the size and vertical spacing of the wales, and the size and horizontal spacing of the uprights can be read from the appropriate table.

(f) *Examples to Illustrate the Use of Tables C-1.1 through C-1.3.*

(1) *Example 1.*

A trench dug in Type A soil is 13 feet deep and five feet wide.

From *Table C-1.1*, for acceptable arrangements of timber can be used.

*Arrangement #B1*

Space 4x4 crossbraces at six feet horizontally and four feet vertically.

Wales are not required.

Space 3x8 uprights at six feet horizontally. This arrangement is commonly called "skip shoring."

*Arrangement #B2*

Space 4x6 crossbraces at eight feet horizontally and four feet vertically.

Space 8x8 wales at four feet vertically.

Space 2x6 uprights at four feet horizontally.

*Arrangement #B3*

Space 6x6 crossbraces at 10 feet horizontally and four feet vertically.

Space 8x10 wales at four feet vertically.

Space 2x6 uprights at five feet horizontally.

*Arrangement #B4*

Space 6x6 crossbraces at 12 feet horizontally and four feet vertically.

Space 10x10 wales at four feet vertically.

Spaces 3x8 uprights at six feet horizontally.

*(2) Example 2.*

A trench dug in Type B soil in 13 feet deep and five feet wide. From Table C-1.2 three acceptable arrangements of members are listed.

*Arrangement #B1*

Space 6x6 crossbraces at six feet horizontally and five feet vertically.

Space 8x8 wales at five feet vertically.

Space 2x6 uprights at two feet horizontally.

*Arrangement #B2*

Space 6x8 crossbraces at eight feet horizontally and five feet vertically.

Space 10x10 wales at five feet vertically.

Space 2x6 uprights at two feet horizontally.

*Arrangement #B3*

Space 8x8 crossbraces at 10 feet horizontally and five feet vertically.

Space 10x12 wales at five feet vertically.

Space 2x6 uprights at two feet vertically.

*(3) Example 3.*

A trench dug in Type C soil is 13 feet deep and five feet wide.

From Table C-1.3 two acceptable arrangements of members can be used.

*Arrangement #B1*

Space 8x8 crossbraces at six feet horizontally and five feet vertically.

Space 10x12 wales at five feet vertically.

Position 2x6 uprights as closely together as possible.

If water must be retained use special tongue and groove uprights to form tight sheeting.

*Arrangement #B2*

Space 8x10 crossbraces at eight feet horizontally and five feet vertically.

Space 12x12 wales at five feet vertically.

Position 2x6 uprights in a close sheeting configuration unless water pressure must be resisted. Tight sheeting must be used where water must be retained.

*(4) Example 4.*

A trench dug in Type C soil is 20 feet deep and 11 feet wide. The size and spacing of members for the section of trench that is over 15 feet in depth is determined using Table C-1.3. Only one arrangement of members is provided.

Space 8x10 crossbraces at six feet horizontally and five feet vertically.

Space 12x12 wales at five feet vertically.

Use 3x6 tight sheeting.

Use of Tables C-2.1 through C-2.3 would follow the same procedures.

*(g) Notes for all Tables.*

1. Member sizes at spacings other than indicated are to be determined as specified in §1926.652(c), "Design of Protective Systems."

2. When conditions are saturated or submerged use Tight Sheeting. Tight Sheeting refers to the use of specially-edged timber planks (e.g., tongue and groove) at least three inches thick, steel sheet piling, or similar construction that when driven or placed in position provide a tight wall to resist the lateral pressure of water and to prevent the loss of backfill material. Close Sheeting refers to the placement of planks side-by-side allowing as little space as possible between them.

3. All spacing indicated is measured center to center.

4. Wales to be installed with greater dimension horizontal.

5. If the vertical distance from the center of the lowest crossbrace to the bottom of the trench exceeds two and one-half feet, uprights shall be firmly embedded or a mudsill shall be used. Where uprights are embedded, the vertical distance from the center of the lowest crossbrace to the bottom of the trench shall not exceed 36 inches. When mudsills are used, the vertical distance shall not exceed 42 inches. Mudsills are wales that are installed at the toe of the trench side.

6. Trench jacks may be used in lieu of or in combination with timber crossbraces.

7. Placement of crossbraces. When the vertical spacing of crossbraces is four feet, place the top crossbrace no more than two feet below the top of the trench. When the vertical spacing of crossbraces is five feet, place the top crossbrace no more than 2.5 feet below the top of the trench.

TABLE C-1.1  
 TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS \*  
 SOIL TYPE A  $P_a = 25 \times H + 72$  psf (2 ft Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (ACTUAL) AND SPACING OF MEMBERS **										UPRIGHTS							
	CROSS BRACES					HALES					MAXIMUM ALLOWABLE HORIZONTAL SPACING							
	HORIZ. SPACING (FEET)		WIDTH OF TRENCH (FEET)		VERT. SPACING (FEET)	UP TO		UP TO	UP TO	UP TO	UP TO	VERT. SPACING (FEET)	CLOSE		4	5	6	8
5	UP TO 6	4X4	4X4	4X6	6X6	4	6X6	6X6	6X6	6X6	4	Not Req'd						
	UP TO 8	4X4	4X4	4X6	6X6	4	6X6	6X6	6X6	6X6	4	Not Req'd					2X6	2X8
10	UP TO 10	4X6	4X6	4X6	6X6	4	6X6	6X6	6X6	6X6	4	8X8			2X6			
	UP TO 12	4X6	4X6	6X6	6X6	4	6X6	6X6	6X6	6X6	4	8X8					2X6	
10	UP TO 6	4X4	4X4	4X6	6X6	4	6X6	6X6	6X6	6X6	4	Not Req'd						
	UP TO 8	4X6	4X6	6X6	6X6	4	6X6	6X6	6X6	6X6	4	8X8		2X6				
15	UP TO 10	6X6	6X5	6X6	6X8	4	6X8	6X8	6X8	6X8	4	8X10			2X6			
	UP TO 12	6X6	6X6	6X6	6X8	4	6X8	6X8	6X8	6X8	4	10X10					3X8	
15	UP TO 6	6X6	6X6	6X6	6X8	4	6X8	6X8	6X8	6X8	4	6X8					3X6	
	UP TO 8	6X6	6X6	6X6	6X8	4	6X8	6X8	6X8	6X8	4	8X8					3X6	
20	UP TO 10	8X8	8X8	8X8	8X10	4	8X10	8X10	8X10	8X10	4	8X10					3X6	
	UP TO 12	8X8	8X8	8X8	8X10	4	8X10	8X10	8X10	8X10	4	10X10					3X6	
OVER 20	SEE NOTE 1																	

\* Mixed oak or equivalent with a bending strength not less than 850 psi.  
 \*\* Manufactured members of equivalent strength may be substituted for wood.

**TABLE C-1.2**  
**TIMBER TRENCH SHORING --- MINIMUM TIMBER REQUIREMENTS \***  
**SOIL TYPE B P<sub>a</sub> = 45 X H + 72 psf (2 ft. Surcharge)**

DEPTH OF TRENCH (FEET)	SIZE (ACTUAL) AND SPACING OF MEMBERS**												UPRIGHTS		
	CROSS BRACES						MALES						MAXIMUM ALLOWABLE HORIZONTAL SPACING		
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)			VERT. SPACING (FEET)			SIZE (IN)	VERT. SPACING (FEET)	CLOSE	2	3	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)		
5	UP TO 6	4X6	4X6	6X6	6X6	6X6	5	6X8	5				2X6		
	UP TO 8	6X6	6X6	6X6	6X8	6X8	5	8X10	5				2X6		
	UP TO 10	6X6	6X6	6X6	6X8	6X8	5	10X10	5				2X6		
10	See Note 1														
	UP TO 6	6X6	6X6	6X6	6X8	6X8	5	8X8	5				2X6		
	UP TO 8	6X8	6X8	6X8	8X8	8X8	5	10X10	5				2X6		
15	UP TO 10	8X8	8X8	8X8	8X8	8X10	5	10X12	5				2X6		
	See Note 1														
	UP TO 6	6X8	6X8	6X8	8X8	8X8	5	8X10	5				3X6		
20	UP TO 8	8X8	8X8	8X8	8X8	8X10	5	10X12	5				3X6		
	UP TO 10	8X10	8X10	8X10	8X10	10X10	5	12X12	5				3X6		
	See Note 1														
OVER 20	SEE NOTE 1														

\* Mixed oak or equivalent with a bending strength not less than 850 psi.  
 \*\* Manufactured members of equivalent strength may be substituted for wood.

TABLE C-1.3  
 TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS \*  
 SOIL TYPE C P<sub>a</sub> = 80 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	CROSS BRACES										UPRIGHTS		
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)					VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET) (See Note 2)			
		UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15				CLOSE			
5	UP TO 6	6X8	6X8	6X8	8X8	8X8	5	8X10	5	2X6			
TO	UP TO 8	8X8	8X8	8X8	8X8	8X10	5	10X12	5	2X6			
10	UP TO 10	8X10	8X10	8X10	8X10	10X10	5	12X12	5	2X6			
	See Note 1												
10	UP TO 6	8X8	8X8	8X8	8X8	8X10	5	10X12	5	2X6			
TO	UP TO 8	8X10	8X10	8X10	8X10	10X10	5	12X12	5	2X6			
15	See Note 1												
	See Note 1												
15	UP TO 6	8X10	8X10	8X10	8X10	10X10	5	12X12	5	3X6			
TO	See Note 1												
20	See Note 1												
	See Note 1												
OVER 20	SEE NOTE 1												

\* Mixed Oak or equivalent with a bending strength not less than 850 psi.  
 \*\* Manufactured members of equivalent strength may be substituted for wood.



TABLE C-2.2  
 TIMBER TRENCH SHORING --- MINIMUM TIMBER REQUIREMENTS \*  
 SOIL TYPE B P = 45 X H + 72 psf (2 ft. Surcharge)  
a

DEPTH OF TRENCH (FEET)	SIZE (S4S) AND SPACING OF MEMBERS **										UPRIGHTS					
	CROSS BRACES					WALES					MAXIMUM ALLOWABLE HORIZONTAL SPACING		HORIZONTAL SPACING (FEET)			
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)		VERT. SPACING (FEET)		SIZE (IN)	VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	CLOSE	VERT. SPACING (FEET)	3	4	6		
5	UP TO 6	4X6	4X6	4X6	6X6	6X6	5	6X8	5	6X8	5			4X12		
TO 8	UP TO 6	4X6	4X6	4X6	6X6	6X6	5	8X8	5	8X8	5	3X8		4X8		
TO 10	UP TO 6	4X6	4X6	4X6	6X6	6X6	5	8X10	5	8X10	5					
	See Note 1															
10	UP TO 6	6X6	6X6	6X6	6X8	6X8	5	8X8	5	8X8	5	3X6	4X10			
TO 8	UP TO 6	6X8	6X8	6X8	8X8	8X8	5	10X10	5	10X10	5	3X6	4X10			
TO 15	UP TO 6	6X8	6X8	6X8	8X8	8X8	5	10X12	5	10X12	5	3X6	4X10			
	See Note 1															
15	UP TO 6	6X8	6X8	6X8	6X8	6X8	5	8X10	5	8X10	5	4X6				
TO 8	UP TO 6	6X8	6X8	6X8	6X8	6X8	5	10X12	5	10X12	5	4X6				
TO 20	UP TO 6	8X8	8X8	8X8	8X8	8X8	5	12X12	5	12X12	5	4X6				
	See Note 1															
OVER 20	SEE NOTE 1															

\* Douglas fir or equivalent with a bending strength not less than 1500 psi.  
 \*\* Manufactured members of equivalent strength may be substituted for wood.

TABLE C-2.3  
 TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS \*  
 SOIL TYPE C P<sub>a</sub> = 80 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (SIZES) AND SPACING OF MEMBERS **										UPRIGHTS	
	CROSS BRACES					WALES					MAXIMUM ALLOWABLE HORIZONTAL SPACING	
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)		VERT. SPACING (FEET)		VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	CLOSE			
UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15								
5	UP TO 6	6X6	6X6	6X6	8X8	5	8X8	5	3X6			
TO 8	6X6	6X6	6X6	8X8	8X8	5	10X10	5	3X6			
UP TO 10	6X6	6X6	8X8	8X8	8X8	5	10X12	5	3X6			
See Note 1												
UP TO 10	6X8	6X8	6X8	8X8	8X8	5	10X10	5	4X6			
TO 15	8X8	8X8	8X8	8X8	8X8	5	12X12	5	4X6			
See Note 1												
See Note 1												
UP TO 15	8X8	8X8	8X8	8X10	8X10	5	10X12	5	4X6			
See Note 1												
See Note 1												
See Note 1												
See Note 1												
OVER 20	SEE NOTE 1											

\* Douglas fir or equivalent with a bending strength not less than 1500 psi.  
 \*\* Manufactured members of equivalent strength may be substituted for wood.

APPENDIX D TO SUBPART P OF PART 1926—ALUMINUM HYDRAULIC SHORING FOR TRENCHES

(a) *Scope.* This appendix contains information that can be used when aluminum hydraulic shoring is provided as a method of protection against cave-ins in trenches that

do not exceed 20 feet (6.1m) in depth. This appendix must be used when design of the aluminum hydraulic protective system cannot be performed in accordance with §1926.652(c)(2).

(b) *Soil Classification.* In order to use data presented in this appendix, the soil type or types in which the excavation is made must

first be determined using the soil classification method set forth in appendix A of subpart P of part 1926.

(c) *Presentation of Information.* Information is presented in several forms as follows:

(1) Information is presented in tabular form in Tables D-1.1, D-1.2, D-1.3 and E-1.4. Each table presents the maximum vertical and horizontal spacings that may be used with various aluminum member sizes and various hydraulic cylinder sizes. Each table contains data only for the particular soil type in which the excavation or portion of the excavation is made. Tables D-1.1 and D-1.2 are for vertical shores in Types A and B soil. Tables D-1.3 and D-1.4 are for horizontal waler systems in Types B and C soil.

(2) Information concerning the basis of the tabular data and the limitations of the data is presented in paragraph (d) of this appendix.

(3) Information explaining the use of the tabular data is presented in paragraph (e) of this appendix.

(4) Information illustrating the use of the tabular data is presented in paragraph (f) of this appendix.

(5) Miscellaneous notations (footnotes) regarding Table D-1.1 through D-1.4 are presented in paragraph (g) of this appendix.

(6) Figures, illustrating typical installations of hydraulic shoring, are included just prior to the Tables. The illustrations page is entitled "Aluminum Hydraulic Shoring; Typical Installations."

(d) *Basis and limitations of the data.* (1) Vertical shore rails and horizontal wales are those that meet the Section Modulus requirements in the D-1 Tables. Aluminum material is 6061-T6 or material of equivalent strength and properties.

(2) Hydraulic cylinders specifications. (1) 2-inch cylinders shall be a minimum 2-inch inside diameter with a minimum safe working capacity of no less than 18,000 pounds axial compressive load at maximum extension. Maximum extension is to include full range of cylinder extensions as recommended by product manufacturer.

(ii) 3-inch cylinders shall be a minimum 3-inch inside diameter with a safe working capacity of not less than 30,000 pounds axial compressive load at extensions as recommended by product manufacturer.

(3) Limitation of application.

(1) It is not intended that the aluminum hydraulic specification apply to every situation that may be experienced in the field. These data were developed to apply to the situations that are most commonly experienced in current trenching practice. Shoring systems for use in situations that are not covered by the data in this appendix must be otherwise designed as specified in § 1926.652(c).

(ii) When any of the following conditions are present, the members specified in the Ta-

bles are not considered adequate. In this case, an alternative aluminum hydraulic shoring system or other type of protective system must be designed in accordance with § 1926.652.

(A) When vertical loads imposed on cross braces exceed a 100 Pound gravity load distributed on a one foot section of the center of the hydraulic cylinder.

(B) When surcharge loads are present from equipment weighing in excess of 20,000 pounds.

(C) When only the lower portion or a trench is shored and the remaining portion of the trench is sloped or benched unless: The sloped portion is sloped at an angle less steep than three horizontal to one vertical; or the members are selected from the tables for use at a depth which is determined from the top of the overall trench, and not from the toe of the sloped portion.

(e) *Use of Tables D-1.1, D-1.2, D-1.3 and D-1.4.* The members of the shoring system that are to be selected using this information are the hydraulic cylinders, and either the vertical shores or the horizontal wales. When a waler system is used the vertical timber sheeting to be used is also selected from these tables. The Tables D-1.1 and D-1.2 for vertical shores are used in Type A and B soils that do not require sheeting, and Type C soils that always require sheeting are found in the horizontal wale Tables D-1.3 and D-1.4. The soil type must first be determined in accordance with the soil classification system described in appendix A to subpart P of part 1926. Using the appropriate table, the selection of the size and spacing of the members is made. The selection is based on the depth and width of the trench where the members are to be installed. In these tables the vertical spacing is held constant at four feet on center. The tables show the maximum horizontal spacing of cylinders allowed for each size of wale in the waler system tables, and in the vertical shore tables, the hydraulic cylinder horizontal spacing is the same as the vertical shore spacing.

(f) *Example to Illustrate the Use of the Tables:*

(1) Example 1:

A trench dug in Type A soil is 6 feet deep and 3 feet wide. From Table D-1.1: Find vertical shores and 2 inch diameter cylinders spaced 8 feet on center (o.c.) horizontally and 4 feet on center (o.c.) vertically. (See Figures 1 & 3 for typical installations.)

(2) Example 2:

A trench is dug in Type B soil that does not require sheeting, 13 feet deep and 5 feet wide. From Table D-1.2: Find vertical shores and 2 inch diameter cylinders spaced 6.5 feet o.c. horizontally and 4 feet o.c. vertically. (See Figures 1 & 3 for typical installations.)

(3) A trench is dug in Type B soil that does not require sheeting, but does experience some minor raveling of the trench face. The

trench is 16 feet deep and 9 feet wide. From Table D-1.2: Find vertical shores and 2 inch diameter cylinder (with special oversleeves as designated by footnote #B2) spaced 5.5 feet o.c. horizontally and 4 feet o.c. vertically, plywood (per footnote (g)(7) to the D-1 Table) should be used behind the shores. (See Figures 2 & 3 for typical installations.)

(4) Example 4: A trench is dug in previously disturbed Type B soil, with characteristics of a Type C soil, and will require sheeting. The trench is 18 feet deep and 12 feet wide. 8 foot horizontal spacing between cylinders is desired for working space. From Table D-1.3: Find horizontal wale with a section modulus of 14.0 spaced at 4 feet o.c. vertically and 3 inch diameter cylinder spaced at 9 feet maximum o.c. horizontally. 3x12 timber sheeting is required at close spacing vertically. (See Figure 4 for typical installation.)

(5) Example 5: A trench is dug in Type C soil, 9 feet deep and 4 feet wide. Horizontal cylinder spacing in excess of 6 feet is desired for working space. From Table D-1.4: Find horizontal wale with a section modulus of 7.0 and 2 inch diameter cylinders spaced at 6.5 feet o.c. horizontally. Or, find horizontal wale with a 14.0 section modulus and 3 inch diameter cylinder spaced at 10 feet o.c. horizontally. Both wales are spaced 4 feet o.c. vertically. 3x12 timber sheeting is required at close spacing vertically. (See Figure 4 for typical installation.)

(g) *Footnotes, and general notes, for Tables D-1.1, D-1.2, D-1.3, and D-1.4.*

(1) For applications other than those listed in the tables, refer to §1926.652(c)(2) for use of manufacturer's tabulated data. For trench depths in excess of 20 feet, refer to §1926.652(c)(2) and §1926.652(c)(3).

(2) 2 inch diameter cylinders, at this width, shall have structural steel tube (3.5x3.5x0.1875) oversleeves, or structural oversleeves of manufacturer's specification, extending the full, collapsed length.

(3) Hydraulic cylinders capacities. (1) 2 inch cylinders shall be a minimum 2-inch inside diameter with a safe working capacity of not less than 18,000 pounds axial compressive load at maximum extension. Maximum extension is to include full range of cylinder extensions as recommended by product manufacturer.

(ii) 3-inch cylinders shall be a minimum 3-inch inside diameter with a safe work capacity of not less than 30,000 pounds axial compressive load at maximum extension. Maximum extension is to include full range of cylinder extensions as recommended by product manufacturer.

(4) All spacing indicated is measured center to center.

(5) Vertical shoring rails shall have a minimum section modulus of 0.40 inch.

(6) When vertical shores are used, there must be a minimum of three shores spaced equally, horizontally, in a group.

(7) Plywood shall be 1.125 in. thick softwood or 0.75 inch. thick, 14 ply, arctic white birch (Finland form). Please note that plywood is not intended as a structural member, but only for prevention of local raveling (sloughing of the trench face) between shores.

(8) See appendix C for timber specifications.

(9) Wales are calculated for simple span conditions.

(10) See appendix D, item (d), for basis and limitations of the data.

### ALUMINUM HYDRAULIC SHORING TYPICAL INSTALLATIONS

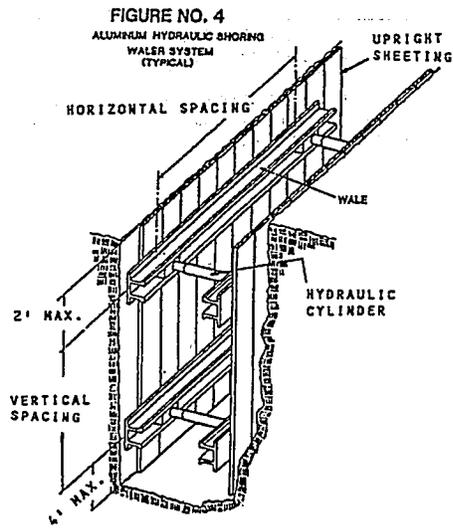
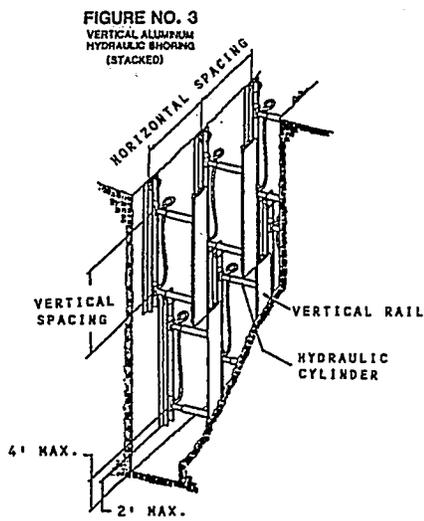
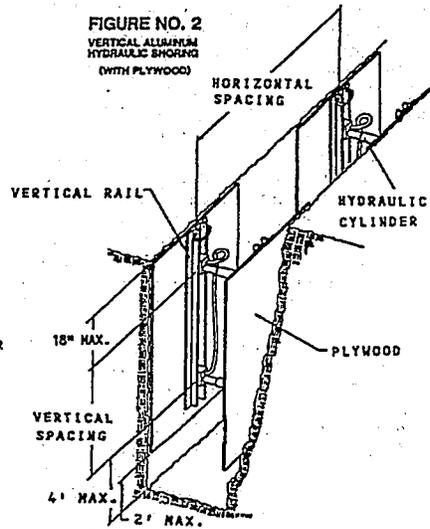
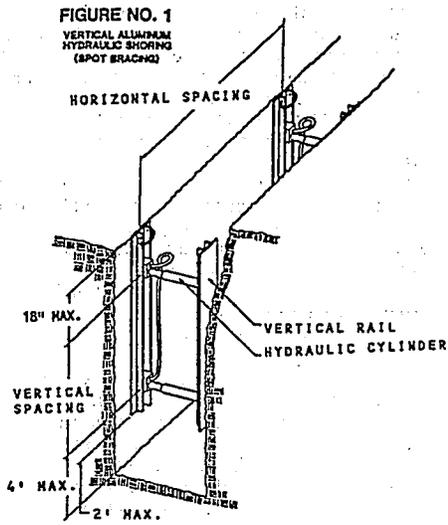


TABLE D - 1.1  
ALUMINUM HYDRAULIC SHORING  
VERTICAL SHORES  
FOR SOIL TYPE A

DEPTH OF TRENCH (FEET)	HYDRAULIC CYLINDERS		
	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)	WIDTH OF TRENCH (FEET)
OVER 5 UP TO 10	8	4	UP TO 8
OVER 10 UP TO 15	8		OVER 8 UP TO 12
OVER 15 UP TO 20	7		OVER 12 UP TO 15
OVER 20	NOTE (1)		2 INCH DIAMETER
			2 INCH DIAMETER NOTE (2)
			3 INCH DIAMETER

Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)

Note (1): See Appendix D, Item (g) (1)

Note (2): See Appendix D, Item (g) (2)

TABLE D - 1.2  
ALUMINUM HYDRAULIC SHORING  
VERTICAL SHORES  
FOR SOIL TYPE B

HYDRAULIC CYLINDERS				
DEPTH OF TRENCH (FEET)	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)	WIDTH OF TRENCH (FEET)	
			UP TO 8	OVER 8 UP TO 12
OVER 5 UP TO 10	8	4	2 INCH DIAMETER	OVER 12 UP TO 15
OVER 10 UP TO 15	6.5			2 INCH DIAMETER NOTE (2)
OVER 15 UP TO 20	5.5			3 INCH DIAMETER
OVER 20	NOTE (1)			

Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)

Note (1): See Appendix D, Item (g) (1)

Note (2): See Appendix D, Item (g) (2)

TABLE D - 1.3  
ALUMINUM HYDRAULIC SHORING  
WALER SYSTEMS  
FOR SOIL TYPE B

DEPTH OF TRENCH (FEET)	WALES		HYDRAULIC CYLINDERS								TIMBER UPRIGHTS	
	VERTICAL SPACING (FEET)	SECTION MODULUS * (IN <sup>3</sup> )	WIDTH OF TRENCH (FEET)								MAX. HORIZ. SPACING (ON CENTER)	SOLID SHEET
			UP TO 8		OVER 8 UP TO 12		OVER 12 UP TO 15		2 FT.	3 FT.		
			HORIZ. SPACING	CYLINDER DIAMETER	HORIZ. SPACING	CYLINDER DIAMETER	HORIZ. SPACING	CYLINDER DIAMETER				
OVER 5 UP TO 10	4	3.5	8.0	2 IN	8.0	NOTE(2)	8.0	3 IN				
			9.0	2 IN	9.0	NOTE(2)	9.0	3 IN				3x12
			14.0	3 IN	12.0	3 IN	12.0	3 IN				
OVER 10 UP TO 15	4	3.5	6.0	2 IN	6.0	NOTE(2)	6.0	3 IN				
			8.0	3 IN	8.0	3 IN	8.0	3 IN				3x12
			14.0	3 IN	10.0	3 IN	10.0	3 IN				
OVER 15 UP TO 20	4	3.5	5.5	2 IN	5.5	NOTE(2)	5.5	3 IN				
			6.0	3 IN	6.0	3 IN	6.0	3 IN				3x12
			14.0	3 IN	9.0	3 IN	9.0	3 IN				
OVER 20			NOTE (1)									

Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)

Notes (1): See Appendix D, item (g) (1)

Notes (2): See Appendix D, Item (g) (2)

\* Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

TABLE D - 14.  
ALUMINUM HYDRAULIC SHORING  
WALER SYSTEMS  
FOR SOIL TYPE C

DEPTH OF TRENCH (FEET)	WALES		HYDRAULIC CYLINDERS						TIMBER UPRIGHTS	
	VERTICAL SPACING (FEET)	SECTION MODULUS (IN <sup>3</sup> ) *	WIDTH OF TRENCH (FEET)						MAX. HORIZ. SPACING (ON CENTER)	TRENCH WIDTH (FEET)
			UP TO 8	OVER 8 UP TO 12	OVER 12 UP TO 15	OVER 15 UP TO 20	OVER 20 UP TO 25	OVER 25 UP TO 30		
			HORIZ. SPACING (FEET)	CYLINDER DIAMETER (IN)	HORIZ. SPACING (FEET)	CYLINDER DIAMETER (IN)	HORIZ. SPACING (FEET)	CYLINDER DIAMETER (IN)	HORIZ. SPACING (FEET)	CYLINDER DIAMETER (IN)
OVER 5 UP TO 10	4	3.5	6.0	2 IN	6.0	2 IN	6.0	3 IN	SOLID SHEET	2 FT. 3 FT.
			6.5	2 IN	6.5	NOTE(2)	6.5	3 IN		
			10.0	3 IN	10.0	3 IN	10.0	3 IN		
OVER 10 UP TO 15	4	3.5	4.0	2 IN	4.0	NOTE(2)	4.0	3 IN	3x12	—
			5.5	3 IN	5.5	3 IN	5.5	3 IN		
			8.0	3 IN	8.0	3 IN	8.0	3 IN		
OVER 15 UP TO 20	4	3.5	3.5	2 IN	3.5	NOTE(2)	3.5	3 IN	3x12	—
			5.0	3 IN	5.0	3 IN	5.0	3 IN		
			6.0	3 IN	6.0	3 IN	6.0	3 IN		
OVER 20			NOTE (1)							

Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)

Notes (1): See Appendix D, Item (g) (1)

Notes (2): See Appendix D, Item (g) (2)

\* Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

APPENDIX E TO SUBPART P OF PART 1926—ALTERNATIVES TO TIMBER SHORING

Figure 1. Aluminum Hydraulic Shoring

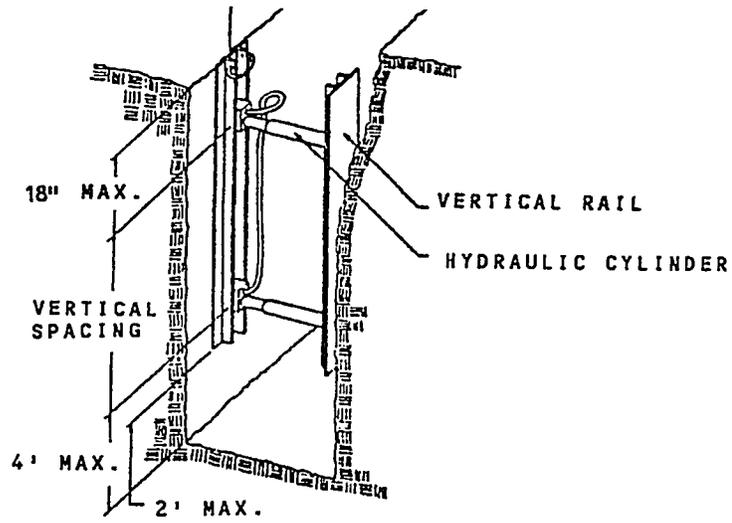


Figure 2. Pneumatic/hydraulic Shoring

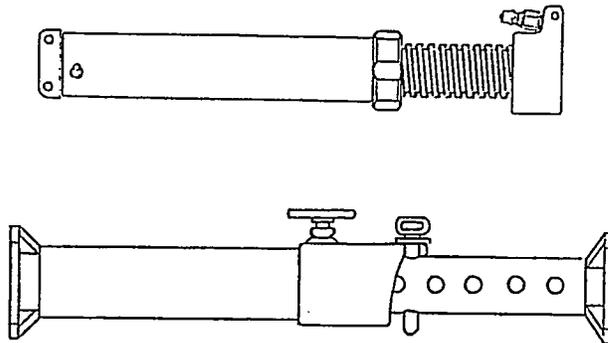


Figure 3. Trench Jacks (Screw Jacks)

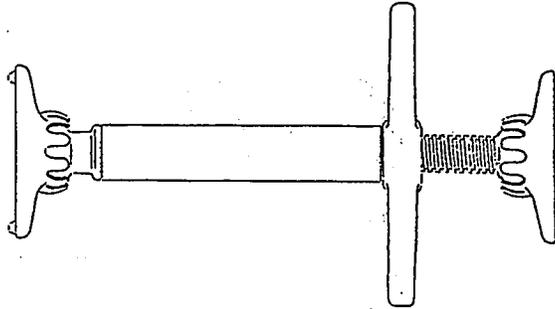
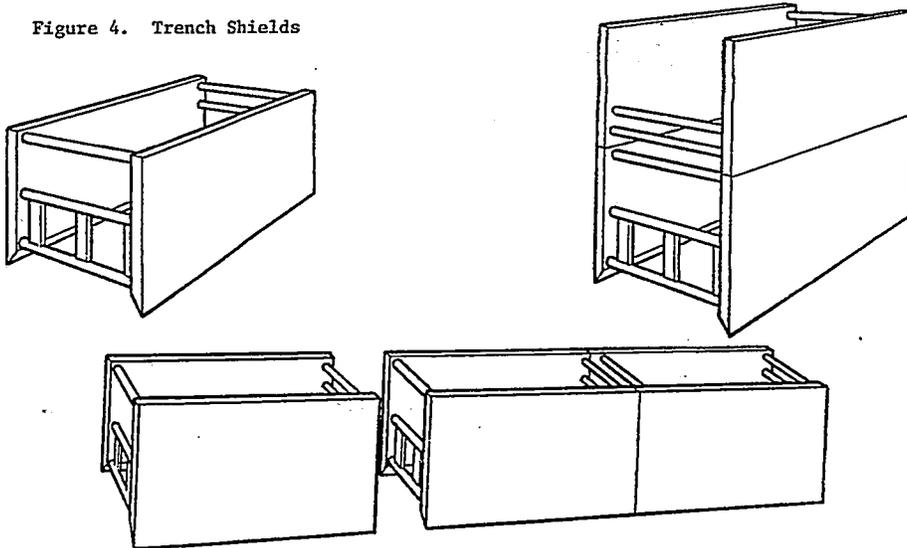


Figure 4. Trench Shields



APPENDIX F TO SUBPART P OF PART  
1926—SELECTION OF PROTECTIVE  
SYSTEMS

The following figures are a graphic summary of the requirements contained in sub-

part P for excavations 20 feet or less in depth. Protective systems for use in excavations more than 20 feet in depth must be designed by a registered professional engineer in accordance with §1926.652 (b) and (c).

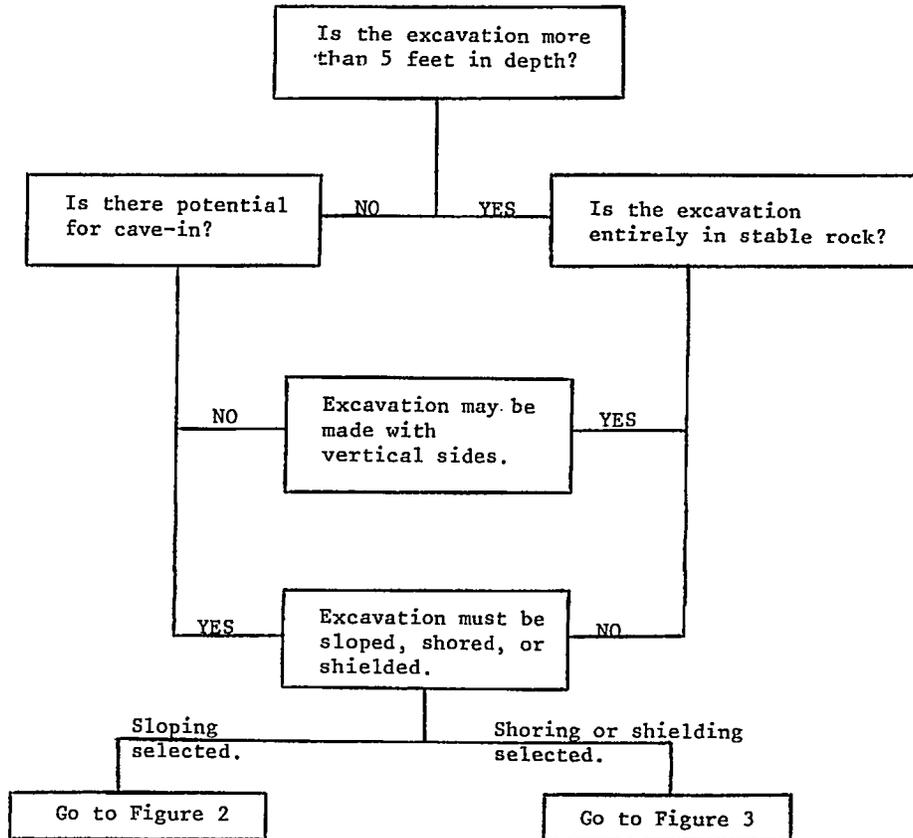


FIGURE 1 - PRELIMINARY DECISIONS

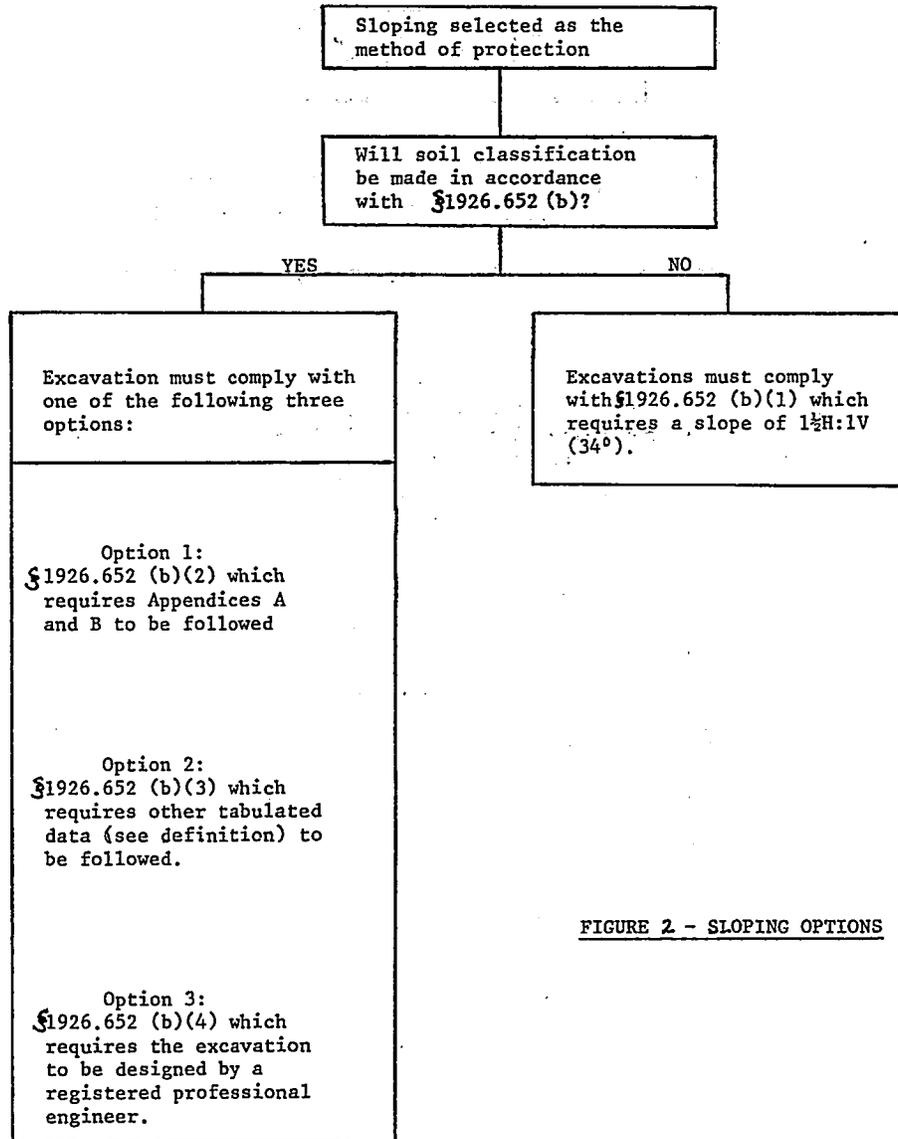


FIGURE 2 - SLOPING OPTIONS

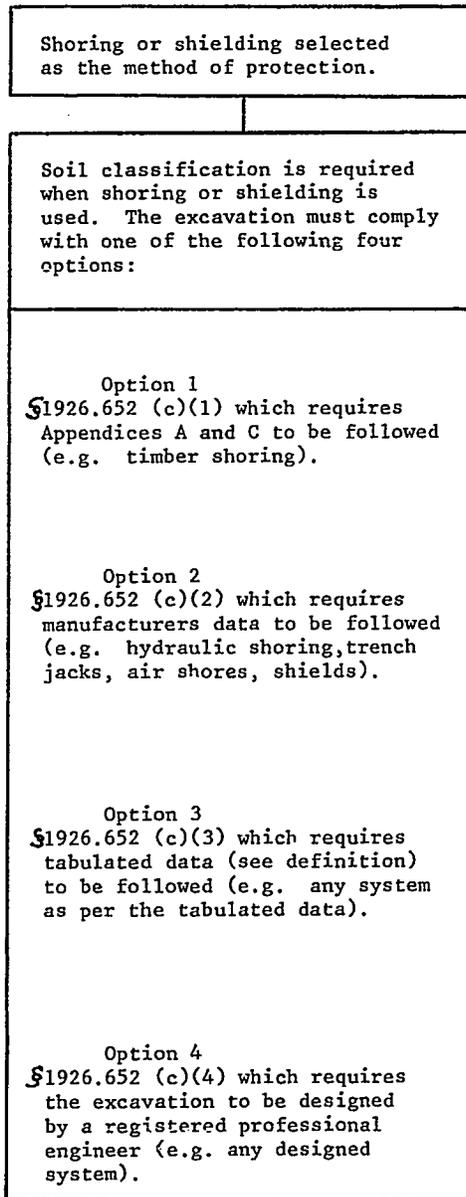
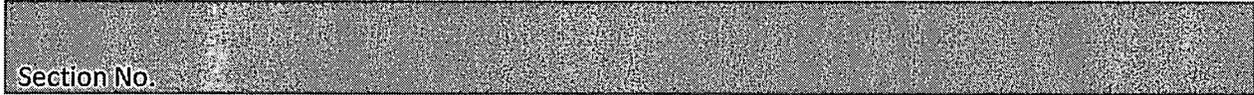


FIGURE 3 - SHORING AND SHIELDING OPTIONS

**SECTION NO. 17**

**SPECIAL PROVISIONS – LANDSCAPING AND IRRIGATION SPECIFICATIONS**

**NUMERICAL LISTING**



Section No.	
17-01	DESCRIPTION OF WORK
17-02	APPLICABLE STANDARDS
17-03	QUALIFICATIONS
17-04	SUBMITTALS
17-05	UTILITY VERIFICATION
17-06	MATERIALS
17-07	EXECUTION
17-08	GUARANTEE PERIOD AND REPLACEMENTS
17-09	FINAL INSPECTION AND FINAL ACCEPTANCE
17-10	TURF MAINTENANCE SPECIFICATIONS
17-11	IRRIGATION EQUIPMENT AND MATERIALS
17-12	IRRIGATION SYSTEM SPECIFICATIONS
17-13	IRRIGATION INSTALLATION PROCEDURES
17-14	IRRIGATION METERS AND WATER ACCOUNT

## SECTION NO. 17

### SPECIAL PROVISIONS – LANDSCAPING AND IRRIGATION SPECIFICATIONS

#### **17-01 DESCRIPTION OF WORK:**

- A. Provide all exterior planting as shown on the drawings or inferable there from and/or as specified in accordance with the requirements of the Contract Documents.
- B. These specifications include standards necessary for and incidental to the execution and completion of planting, including hauling and spreading of topsoil, and finished grading as indicated on the prepared drawings and specified herein.
- C. Protection of existing features. During construction, protect all existing trees, shrubs, and other specified vegetation, site features and improvements, structures, and utilities specified herein and/or on submitted drawings. Removal or destruction of existing plantings is prohibited unless specifically authorized by the owner.

#### **17-02 APPLICABLE STANDARDS:**

- A. *American National Standards for Tree Care Operations, ANSI A300.* American National Standards Institute, 11 West 42<sup>nd</sup> Street, New York, N.Y. 10036.
- B. *American Standard for Nursery Stock, ANSI Z60.1.* American Nursery and Landscape Association, 1250 Eye Street. NW, Suite 500, Washington, D.C. 20005.
- C. All standards shall include the latest additions and amendments as of the date of advertisement for bids.

**17-03 QUALIFICATIONS:** Landscape planting and related work shall be performed by a firm with a minimum of five years experience specializing in this type of work. All contractors and their sub-contractors who will be performing any landscape work included in this section of the specification shall be approved by the Urban Forestry and Land Manager.

#### **17-04 SUBMITTALS:**

- A. **Manufacturer's Data:** Submit copies of the manufacturer's and/or source data for all materials specified, including soils.
- B. **Samples:** Submit samples of all topsoil, soil mixes, mulches, and organic materials. Samples shall weigh 1 kg (2 lb) and be packaged in plastic bags. Samples shall be typical of the lot of material to be delivered to the site and provide an accurate indication of color, texture, and organic makeup of the material.
- C. **Plant Photographs:** Submit color photographs of representative specimens of each type of tree and shrub on the plant list. Photos shall be 75 x 125 mm (3 x 5 in.) taken from angle that depicts the size and condition of the typical plant to be furnished. A scale rod or other measuring device shall be included in the photograph. For species where more than 20 plants are required, include a minimum of three photos that show the average plant, the

best quality plant, and the worst quality plant to be provided. Label each photograph with the plant name, plant size, and name of the growing nursery.

- D. Nursery Sources: Submit a list of all nurseries that will supply plants, along with a list of the plants they will provide and the location of the nursery.
- E. Soil Testing: Submit the manufacturers' particle size analysis and the pH analysis and provide a description and source location for the content material of all organic materials.

**17-05 UTILITY VERIFICATION:** The contractor shall contact the local utility companies for verification of the location of all underground utility lines in the area of the work. The contractor shall be responsible for all damage resulting from neglect or failure to comply with this requirement.

**17-06 MATERIALS:**

A. Topsoil

1. Imported Topsoil:

- a. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, and loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by City of Arlington Forestry and Beautification Department. Regardless, topsoil shall not be a mixture of contrasting textured sub-soils and shall contain less than 5 % by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 " in diameter.
- b. The subsoil shall be tilled to a minimum depth of 6-inches before placement of topsoil.
- c. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 lbs per 1000 sq ft) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil.
- d. Topsoil shall be tested and amended as per soil test recommendations.

2. Existing Topsoil:

- a. Existing topsoil may be used if it meets the requirements for imported topsoil or if approved by the Urban Forest and Land Manger. Provide a minimum of one soil sample with accompanying soil test report for each topsoil type found at the site. Following the completion of the soil testing, the contractor and the Urban Forest and Land Manger shall meet at the site prior to beginning of topsoil stripping and establish the limitations of areas where existing topsoil may be used and the depth of topsoil stripping permitted. *(NOTE: The Urban Forestry and Land Manager may test the existing soil prior to bidding the project and include the areas and depths of topsoil availability in the bid documents along with the soil test results.)*

- b. Topsoil shall not be stripped, transported, or graded if moisture content exceeds field capacity or if the soil is frozen.
- c. Topsoil stockpiles shall be protected from erosion and contamination.
- d. Amendments required to be added as indicated on the soil test report shall be added by the contractor at the time of spreading and/or grading.

**B. Plants:**

- 1. Plants shall be true to species and variety specified and nursery-grown in accordance with good horticultural practices under climatic conditions similar to those in the locality of the project for at least two years. They shall have been freshly dug (during the most recent favorable harvest season). Plants shall be native or adapted to this region and must be approved by the Urban Forestry and Land Manager.
  - a. All plant names and descriptions shall be as defined in Hortus Third.
  - b. All plants shall be grown and harvested in accordance with the American Standard for Nursery Stock.
  - c. Unless approved by the Urban Forestry & Land Manager, plants shall have been grown at latitude not more than 325 km (200 miles) north or south of the latitude of the project unless the provenance of the plant can be documented to be compatible with the latitude and cold hardiness zone of the planting location.
- 2. Delivery and Inspection: All trees must be approved by the Forester or Urban Forestry & Land Manager prior to installation. The Forestry and Beautification Department may approve plants at the nursery, a designated holding area, or on site at the discretion of the Department. Contractors are responsible for notifying Forestry and Beautification prior to delivery of plant material. Plants shall be subject to inspection for conformity to specification requirements and approval by the Urban Forestry and Land Manager at their place of growth and upon delivery. Such approval shall not impair the right of inspection and rejection during progress of the work.

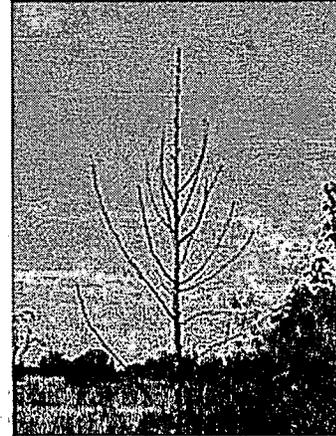
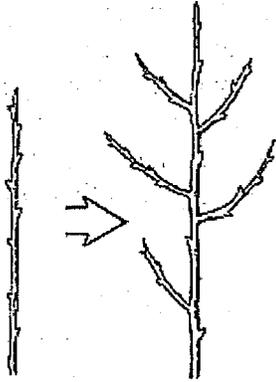
(Rev. 6/2018)

  - a. A written request for the inspection of plant material at their place of growth shall be submitted to the Urban Forestry and Land Manager at least ten calendar days prior to digging. This request shall state the place of growth and the quantity of plants to be inspected. The Urban Forestry and Land Manager may refuse inspection at this time if, in his or her judgment, sufficient quantities of plants are not available for inspection.

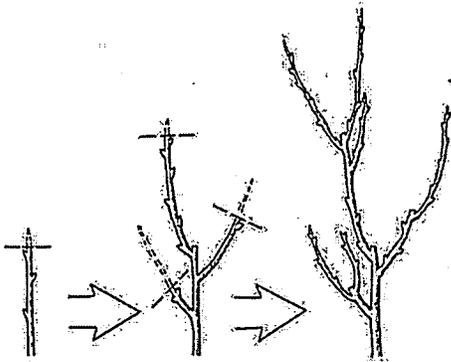
(Rev. 6/2018)
  - b. All plants shall be selected and tagged by the Urban Forest and Land Manager at their place of growth. For distant material, photographs may be submitted for pre-inspection review.

- c. All field grown deciduous trees shall be marked to indicate the trees north orientation in the nursery. Place a 1-in. diameter spot of white paint onto the north side of the tree trunk within the bottom 12 inches of the trunk. (Rev. 6/2018)
3. Unless specifically noted, all plants shall be of specimen quality, exceptionally heavy, symmetrical, and so trained or favored in development and appearance as to be unquestionably and outstandingly superior in form, compactness, and symmetry. They shall be sound, healthy, vigorous, well branched, and densely foliated when in leaf; free of disease and insects, eggs, or larvae; and shall have healthy, well-developed root systems. They shall be free from physical damage or other conditions that would prevent vigorous growth.
  - a. Trees with multiple leaders, unless specified, will be rejected. Trees with a damaged or crooked leader, bark abrasions, sunscald, disfiguring knots, insect damage, or cuts of limbs over 3/4 in. in diameter that are not completely closed will be rejected.
  - b. An inspection of the crown, trunk, and roots shall find the following characteristics:
    4. Crown Form: The form or shape of the crown is typical for a young specimen of the species/cultivar. The crown is not significantly deformed by wind, pruning practices, pests or other factors.
    5. Leaves: The size, color and appearance of leaves are typical for the time of year and stage of growth of the species/cultivar. Leaves are not stunted, misshapen, tattered, discolored (chlorotic or necrotic) or otherwise atypical.
    6. Branches: Shoot growth (length and diameter) throughout the crown is typical for the age/size of the species/cultivar. Trees do not have dead, diseased, broken, distorted or other serious branch injuries.
    7. Trunk: The tree trunk should be straight, vertical and free of wounds (except properly-made pruning cuts), sunburned areas, conks (fungal fruiting bodies), wood cracks, bleeding areas, signs of boring insects, galls, cankers/lesions and girdling ties.
    8. Tree height and trunk diameter are typical for the age, species/cultivar and container size.
    9. Roots: The root system is free of injury from biotic (insects, pathogens, etc.) and abiotic agents (herbicide toxicity, salt injury, excess irrigation, etc.). Root distribution is uniform throughout the soil mix or growth media and growth is typical for the species/cultivar.
      - a. Central Leader: Trees shall have a single, relatively straight central leader and tapered trunk, free of co-dominant stems and vigorous, upright branches that

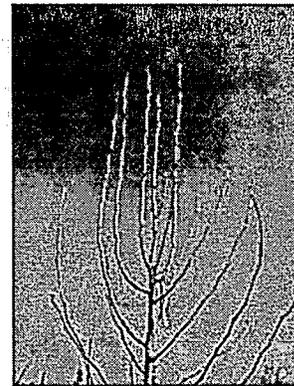
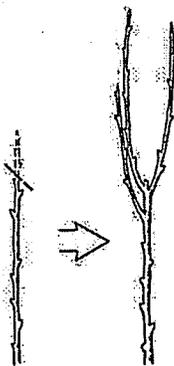
compete with the central leader. If the original leader has been headed, a new leader at least ½ (one-half) the diameter of the original leader shall be present.



Maintaining a single, central leader is preferable.



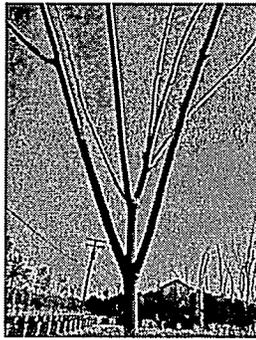
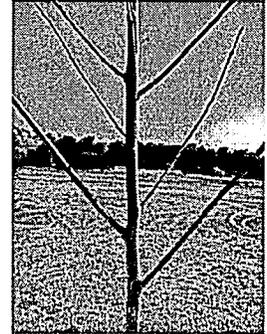
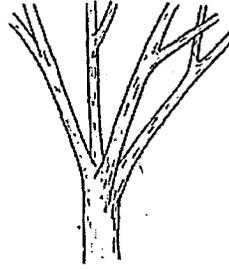
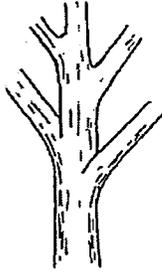
Heading and retaining a leader is acceptable.



Heading without retaining a leader is unacceptable.

b. Main Branches (scaffolds): Branches should be distributed radially around and vertically along the trunk, forming a generally symmetrical crown typical for the species.

1. Main branches, for the most part, shall be well spaced.



preferable

unacceptable  
unacceptable

preferable

2. Branch diameter shall be no greater than 2/3 (two thirds) the diameter of the trunk, measured 1" (one inch) above the branch.



preferable



unacceptable

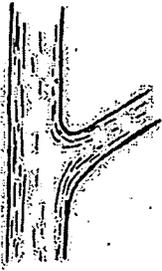


preferable



unacceptable

3. The attachment of scaffold branches shall be free of included bark.



preferable



unacceptable

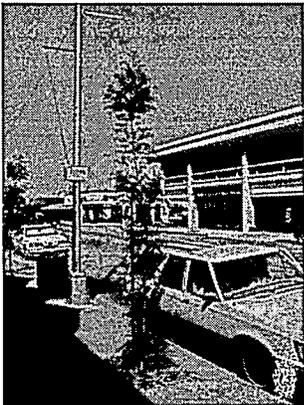


preferable

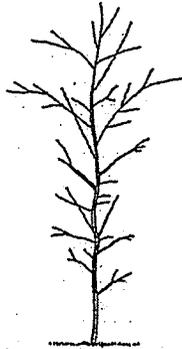


unacceptable

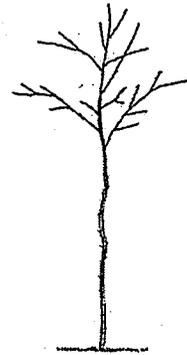
- c. Temporary branches: Temporary branches should be present along the lower trunk, particularly for trees less than 1-1/2" (one and one-half inches) in trunk diameter. They should be no greater than 3/8" (three-eighths inch) in diameter. Heading of temporary branches is often necessary to limit their growth.



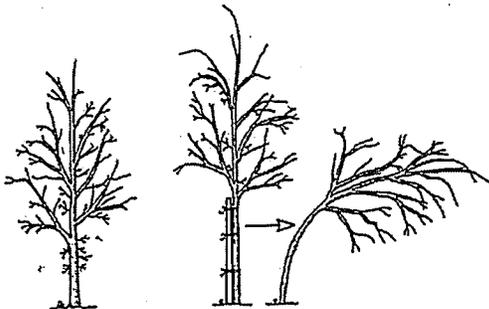
Good



Not as Good



- d. Trunk diameter and taper shall be sufficient so that the tree will remain vertical without the support of a nursery stake.

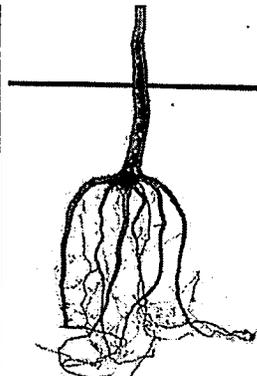
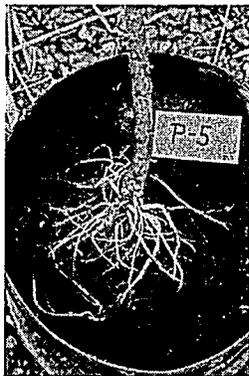


e. The trunk shall be free of wounds (except properly-made pruning cuts), sunburned areas, conks (fungal fruiting-bodies), wood cracks, bleeding areas, signs of boring insects, galls, cankers and/or lesions.

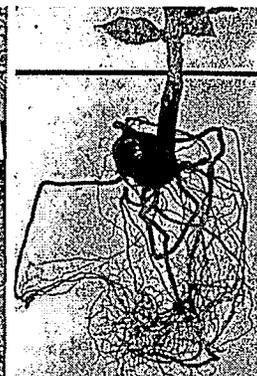
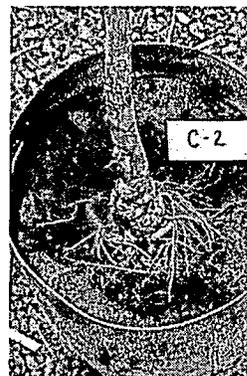
f. Trunk diameter at 6" (six inches) above the soil surface shall be within the diameter range shown for each container size below:

<u>Container Size</u>	<u>Trunk Diameter (inches)</u>
# 5 (gallon)	0.5" to 0.75"
# 15 (gallon)	0.75" to 1.5"
24 inch box	1.5" to 2.5"

g. The trunk, root collar (root crown) and large roots shall be free of circling and/or kinked roots. Soil removal near the root collar may be necessary to inspect for circling and/or kinked roots.

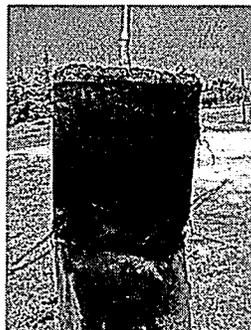


preferable



unacceptable

h. The tree shall be well rooted in the soil mix. When the container is removed, the root ball shall remain intact. When the trunk is carefully lifted both the trunk and root system shall move as one.



preferable

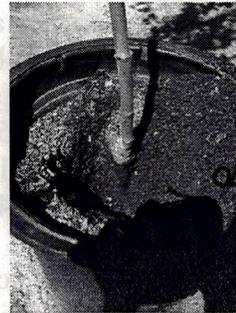


unacceptable

- i. The upper-most roots or root collar shall be within 1" (one inch) above or below the soil surface.

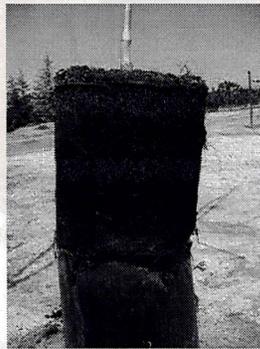


preferable

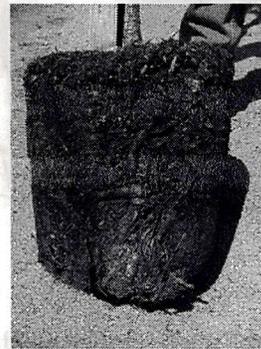


unacceptable

- j. The rootball periphery should be free of large circling and bottom-matted roots. The acceptable diameter of circling peripheral roots depends on species and size of rootball. The maximum acceptable size should be indicated for the species (if necessary).



preferable



unacceptable

- k. At time of inspection and delivery, the root ball shall be moist throughout. The crown shall show no signs of moisture stress as indicated by wilted, shriveled or dead leaves or branch dieback. The roots shall show no signs of excess soil moisture conditions as indicated by poor root growth, root discoloration, distortion, death or foul odor.
10. The owner reserves the right to reject trees that do not meet specifications as set forth in these guidelines or as specified by the owner. If a particular defect or substandard element or characteristic can be easily corrected, appropriate remedies shall be required. If destructive inspection of a root ball(s) is to be done, the owner and contractor should have a prior agreement as to the time and place of inspection, minimum number of trees or percentage of a species or cultivar to be inspected and financial responsibility for the inspected trees.
11. Plants shall conform to the measurements specified, except that plants larger than those specified may be used if approved by the Urban Forestry and Land Manager.

Use of larger plants shall not increase the contract price. If larger plants are approved, the root ball shall be increased in proportion to the size of the plant.

- a. Caliper measurements shall be taken on the trunk 6 in. above the natural ground line for trees up to and including 4 in. in caliper, and 12 in. above the natural ground line for trees over 4 in. in caliper. Height and spread dimensions specified refer to the main body of the plant and not from branch tip to branch tip. Plants shall be measured when branches are in their normal position. If a range of sizes is given, no plant shall be less than the minimum size, and no less than 50 percent of the plants shall be as large as the maximum size specified. Measurements specified are minimum sizes acceptable after pruning, where pruning is required. Plants that meet measurements but do not possess a standard relationship between height and spread, according to the American Standards for Nursery Stock, shall be rejected.
12. Substitutions of plant materials will not be permitted unless authorized in writing by the Urban Forestry and Land Manager. If proof is submitted in writing that a plant specified is not obtainable, consideration will be given to the nearest available size or similar variety, with a corresponding adjustment of the contract price.
  13. The plant list at the end of this section, or in the plans, is for the contractor's information only, and no guarantee is expressed or implied that quantities therein are correct or that the list is complete. The contractor shall ensure that all plant materials shown in the plans are included in his or her bid.
  14. All plants shall be labeled by plant name. Labels shall be attached securely to all plants, bundles, and containers of plant materials when delivered. Plant labels shall be durable and legible, with information given in weather-resistant ink or embossed process lettering.
  15. Anti-Desiccants: Anti-desiccants, if specified, are to be applied to plants in full leaf immediately before digging or as required by the Urban Forestry and Land Manager. Anti-desiccants are to be sprayed so that all leaves and branches are covered with a continuous protective film.
  16. Balled and Burlapped (B&B) Plant Materials: Trees designated B&B shall not be used unless specifically approved by the Urban Forestry and Land Manager.
  17. Container Plants:
    - a. Plants grown in containers shall be of appropriate size for the container as specified in the most recent edition of the American Standard for Nursery Stock and be free of circling roots on the exterior and interior of the root ball.
    - b. Container plants shall have been grown in the container long enough to have established roots throughout the growing medium.

18. Bareroot and Collected Plants:
  - a. Plants designated as bareroot or collected plants shall conform to the American Standard for Nursery Stock.
  - b. Bareroot material shall not be dug or installed after bud break or before dormancy.
19. Immediately after harvesting plants, protect from drying and damage until shipped and delivered to the planting site. Rootballs shall be checked regularly and watered sufficiently to maintain root viability.
20. Transportation and Storage of Plant Material:
  - a. Branches shall be tied with rope or twine only, and in such a manner that no damage will occur to the bark or branches.
  - b. During transportation of plant material, the contractor shall exercise care to prevent injury and drying out of the trees. Should the roots be dried out, large branches broken, balls of earth broken or loosened, or areas of bark torn, the Urban Forestry and Land Manager may reject the injured tree(s) and order them replaced at no additional cost to the owner. All loads of plants shall be covered at all times with tarpaulin or canvas. Loads that are not protected will be rejected.
  - c. All bareroot stock sent from the storage facility shall be adequately covered with wet soil, sawdust, woodchips, moss, peat, straw, hay, or other acceptable moisture-holding medium, and shall be covered with a tarpaulin or canvas. Loads that are not protected in the above manner may be rejected.
  - d. Plants must be protected at all times from sun or drying winds. Those that cannot be planted immediately on delivery shall be kept in the shade, well protected with soil, wet mulch, or other acceptable material, and kept well watered. Plants shall not remain unplanted any longer than three days after delivery. Plants shall not be bound with wire or rope at any time so as to damage the bark or break branches. Plants shall be lifted and handled with suitable support of the soil ball to avoid damaging it.
21. Mechanized Tree Spade Requirements: Trees may be moved and planted with an approved mechanical tree spade. The tree spade shall move trees limited to the maximum size allowed for a similar B&B root-ball diameter according to the American Standard for Nursery Stock or the manufacturer's maximum size recommendation for the tree spade being used, whichever is smaller. The machine shall be approved by the Urban Forestry and Land Manager prior to use. Trees shall be planted at the designated locations in the manner shown in the plans and in accordance with applicable sections of the specifications.

C. Materials for Planting:

1. Mulch: shall be finely shredded native hardwood. Material shall be mulching grade, uniform in size, and free of foreign matter. Submit sample for approval.
2. Anti-desiccant: shall be an emulsion specifically manufactured for agricultural use, which provides a protective film over plant surfaces. Anti-desiccants shall be delivered in containers of the manufacturer and shall be mixed according to the manufacturer's directions. Submit manufacturer literature for approval.
3. Tree Shelter: shall be extruded, twin-walled polypropylene tubes, 80 mm to 105 mm (3-1/4 to 4-1/4 in.) in diameter; 600 mm (2 ft) tall, with manufacturer-supplied oak stakes and bird screen. Submit manufacturer literature for approval.
4. Tree Wrap:
  - a. Option 1 Extruded, translucent, twin-walled polypropylene protection board sheets; 3 mm thick. 1800mm (6 ft) long tree shelters may be utilized for short trunk trees 75 mm (3 in.) caliper or less. Submit manufacturer literature for approval.
  - b. Option 2 Breathable synthetic fabric tree wrap. White in color, delivered in 75 mm (3 in.) wide rolls, specifically manufactured for tree wrapping. Tree wrap shall be "Breathable Fabric Tree Wrap" as manufactured by the Dewitt Company, Inc., Sikeston, MO, or approved equal. Submit manufacturer literature for approval.
  - c. Tree wrap shall be secured to the trunk using bio-degradable tape suitable for nursery use and which is expected to degrade in sunlight in less than two years after installation.
5. Biostimulants: Biostimulants shall contain soil conditioners, VAM, and endomycorrhizal and ectomycorrhizal fungi spores and soil bacteria appropriate for existing soil conditions. Submit manufacturer literature for approval.

D. Materials for Soil Amendment:

Planting Mix

Contents:

Hammermilled, screened and aerobically composted organics including compost (approx. 35%), decomposed pine bark (approx. 35%), screened fine sand (approx. 10%), Expanded Shale (approx.10%), and Texas Green Sand (approx 10%).

**17-07 EXECUTION:**

A. Excavation of Planted Areas:

1. Locations for plants and/or outlines of areas to be planted are to be staked out at the site. Locate and mark all subsurface utility lines. Approval of the stakeout by the Urban Forestry and Land Manager is required before excavation begins.

2. Tree, shrub, and groundcover beds are to be excavated to the depth and widths indicated on the drawings. If the planting area under any tree is initially dug too deep, the soil added to bring it up to the correct level should be thoroughly tamped.
  - a. The sides of the excavation of all planting areas shall be sloped at 45 degrees. The bottom of all beds shall slope parallel to the proposed grades or toward any subsurface drain lines within the planting bed. The bottom of the planting bed directly under any tree shall be horizontal such that the tree sits plumb.
  - b. Maintain all required angles of repose of the adjacent materials as shown on the drawings. Do not excavate compacted subgrades of adjacent pavement or structures.
  - c. Subgrade soils shall be separated from the topsoil, removed from the area, and not used as backfill in any planted or lawn area. Excavations shall not be left uncovered or unprotected overnight.
3. For trees and shrubs planted in individual holes in areas of good soil that is to remain in place and/or to receive amendment in the top 150-mm (6 in.) layer, excavate the hole to the depth of the root ball and to widths shown on the drawing. Slope the sides of the excavation at a 45 degree angle up and away from the bottom of the excavation.
  - a. In areas of slowly draining soils, the root ball may be set up to 75 mm (3 in.) or 1/8 of the depth of the root ball above the adjacent soil level.
  - b. Save the existing soil to be used as backfill around the tree.
  - c. On steep slopes, the depth of the excavation shall be measured at the center of the hole and the excavation dug as shown on the drawings.
4. Detrimental soil conditions: The Urban Forestry and Land Manager is to be notified, in writing, of soil conditions encountered, including poor drainage, that the contractor considers detrimental to the growth of plant material. When detrimental conditions are uncovered, planting shall be discontinued until instructions to resolve the conditions are received from the Urban Forestry and Land Manager.
5. Obstructions: If rock, underground construction work, utilities, tree roots, or other obstructions are encountered in the excavation of planting areas, alternate locations for any planting shall be determined by the Urban Forestry and Land Manager.

**B. Installation of Topsoil and Planting Mix:**

1. Prior to the installation or modification of topsoil and planting mix, install subsurface drains, irrigation main lines, lateral lines, and irrigation risers shown on the drawings.
2. The Urban Forestry and Land Manager shall review the preparation of subgrades prior to the installation or modification of topsoil or planting mix.

3. Do not proceed with the installation of topsoil and planting mix until all utility work in the area has been installed.
4. Protect adjacent walls, walks, and utilities from damage or staining by the soil. Use 12-mm (1/2 in.) plywood and/or plastic sheeting as directed to cover existing concrete, metal, masonry work, and other items as directed during the progress of the work.
  - a. Clean up any soil or dirt spilled on any paved surface at the end of each working day.
  - b. Any damage to the paving or architectural work caused by the soils installation contractor shall be repaired by the general contractor at the soils installation contractors' expense.
5. Till the subsoil into the bottom layer of topsoil or planting mix.
  - a. Loosen the soil of the subgrade to a depth of 50 to 75 mm (2 to 3 in.), unless more extensive depth is specified in plans, with a rototiller or other suitable device.
  - b. Spread a layer of the specified topsoil or planting mix 50 mm (2 in.) deep over the subgrade. Thoroughly till the planting mix and the subgrade together.
  - c. Immediately install the remaining topsoil or planting mix in accordance with the following specifications. *Protect the tilled area from traffic. DO NOT allow the tilled subgrade to become compacted.*
  - d. In the event that the tilled area becomes compacted, till the area again prior to installing the planting mix.
6. Subsoiling: When subsoiling is indicated on the drawings, use a chisel plow subsoil ripping tool mounted on a machine of sufficient power to make vertical trenches 500 mm (18 in.) deep into the subsoil 600 mm (24 in.) apart. Run the ripping tool over each area in opposite directions so that each area is ripped twice to thoroughly break up the compacted subgrade material prior to the installation of topsoil and planting mix.
7. Install the remaining topsoil or planting mix in 200- to 250-mm (8- to 10-in.) lifts to the depths and grades shown on the drawing. The depths and grades shown on the drawings are the final grades after soil settlement and shrinkage of the organic material. The contractor shall install the soil at a higher level to anticipate this reduction of soil volume, depending on predicted settling properties for each type of soil.
  - a. Phase the installation of the soil such that equipment does not have to travel over already-installed topsoil or planting mixes.
  - b. Compact each lift sufficiently to reduce settling but not enough to prevent the movement of water and feeder roots through the soil. The soil in each lift should

feel firm to the foot in all areas and make only slight heel prints. Over compaction shall be determined by the following field percolation test.

1. Dig a hole 250 mm (10 in.) in diameter and 250 mm (10 in.) deep.
2. Fill the hole with water and let it drain completely. Immediately refill the hole with water, and measure the rate of fall in the water level.
3. In the event that the water drains at a rate less than 25 mm (1 in.) per hour, till the soil to a depth required to break the over compaction.
4. The Urban Forestry and Land Manager shall determine the need for, and the number and location of percolation tests based on observed field conditions of the soil.

- c. Maintain moisture conditions within the soils during installation to allow for satisfactory compaction. Suspend installation operations if the soil becomes wet. Do not place soils on wet or frozen subgrade.
- d. Provide adequate equipment to achieve consistent and uniform compaction of the soils. Use the smallest equipment that can reasonably perform the task of spreading and compaction.
- e. Add lime, sulfur, fertilizer, and other amendments during soil installation. Spread the amendments over the top layer of soil and till into the top 100 mm (4 in.) of soil. Soil amendments may be added at the same time that organic matter, when required, is added to the top layer of soil.
- f. Protect soil from over compaction after placement. An area that becomes over compacted shall be tilled to a depth of 125 mm (6 in.). Uneven or settled areas shall be filled and regraded.

C. Installation of Organic Matter Layer:

1. After the specified topsoil or planting mix is installed and just prior to fine grading and the installation of tree, shrub, or flower plantings, spread 100 mm (4 in.) of organic matter over all bed areas designated on the drawings and rototill into the top 100 mm (4 in.) of the planting mix or topsoil.
2. Allow the finished grades to remain 50 to 75 mm (2-3 in.) higher than the grades on the grading plan to anticipate settlement over the first year. At the end of the planting guarantee period, reset the grades in this area, if required, to the final grades shown on the grading plan.

D. Fine Grading:

1. Grade the surface of all planted or lawn areas to meet the grades shown on the drawings after the 12-month settling period. Set grades at time of installation high enough relative to the type of soil mix and settlement anticipated so that the soil will be at the correct grades after the settlement period. Adjust the finish grades to meet field conditions as directed.
  - a. Provide for positive drainage from all areas toward the existing inlets and drainage structures.

- b. Provide smooth transitions between slopes of different gradients and direction. Modify the grade so that the finish grade is flush with all paving surfaces or as directed by the drawings.
2. Fill all dips and remove any bumps in the overall plane of the slope.
    - a. The tolerance for dips and bumps in lawn areas shall be a 12-mm (1/2 in.) deviation from the plane in 3,000 mm (10 ft).
    - b. The tolerance for dips and bumps in shrub planting areas shall be a 25-mm (1 in.) deviation from the plane in 3,000 mm (10 ft).
    - c. All fine grading shall be inspected and approved by the Urban Forestry and Land Manager prior to planting, mulching, sodding, or seeding.
- E. Planting Operations: see <http://bit.ly/UrbanTreePlanting> for detailed drawings (Rev. 6/2018)
1. Plants shall be set on flat-tamped or unexcavated pads at the same relationship to finished grade as they were to the ground from which they were dug, unless otherwise noted on the drawings. Plants must be set plumb and braced in position until topsoil or planting mix has been placed and tamped around the base of the root ball. Improper compacting of the soil around the root ball may result in the tree settling or leaning. Plants shall be set so that they will be at the same depth and so that the root ball does not shift or move laterally one year later.
    - a. Determine the elevation of the root flare and ensure that it is planted at grade. This may require that the tree be set higher than the grade in the nursery.
    - b. If the root flare is less than 50 mm (2 in.) below the soil level of the root ball, plant at the tree the appropriate level above the grade to set the flare even with the grade. If the flare is more than 50 mm (2 in) above the soil level at the center of the root ball/trunk the tree shall be rejected.
  2. Lift plants only from the bottom of the root balls or with belts or lifting harnesses of sufficient width not to damage the root balls. Do not lift trees by their trunk or use the trunk as a lever in positioning or moving the tree in the planting area.
  3. Remove plastic, paper, or fiber pots from containerized plant material. Pull roots out of the root mat and cut circling roots with a sharp knife. Loosen the potting medium and shake away from the root mat. Immediately after removing the container, install the plant such that the roots do not dry out. Pack planting mix around the exposed roots while planting.
  4. The roots of bare-root trees shall be pruned at the time of planting to remove damaged or undesirable roots (those likely to become a detriment to future growth of the root system). Bare-root trees shall have the roots spread to approximate the natural position of the roots and shall be centered in the planting pit. The planting-soil

backfill shall be worked firmly into and around the roots, with care taken to fill in completely with no air pockets.

5. Cut ropes or strings from the top of shrub root balls and trees smaller than 3 in. caliper after plant has been set. Remove burlap or cloth wrapping and any wire baskets from around top half of balls. Do not turn under and bury portions of burlap at top of ball.
  - a. Do not immediately remove the ropes and burlap from trees larger than 3 in. caliper. Return to each tree three months after planting (six months for fall-planted material), and cut all ropes around the trunks and tops of the root balls of these trees.
  - b. Completely remove any waterproof or water-repellant strings or wrappings from the root ball and trunk before backfilling.
6. Set balled and burlapped trees in the hole with the north marker facing north unless otherwise approved by the Urban Forestry and Land Manager.
7. Place native soil, topsoil, or planting mix into the area around the tree, tamping lightly to reduce settlement.
  - a. For plants planted in individual holes in existing soil, add any required soil amendments to the soils, as the material is being backfilled around the plant. Ensure that the amendments are thoroughly mixed into the backfill.
  - b. For plants planted in large beds of prepared soil, add soil amendments during the soil installation process.
  - c. When required by the Urban Forestry and Land Manager, add biostimulants at the time of planting in the area directly around the plant root ball.
  - d. Ensure that the backfill immediately around the base of the root ball is tamped with foot pressure sufficient to prevent the root ball from shifting or leaning.
8. Thoroughly water all plants immediately after planting. Apply water by hose directly to the root ball and the adjacent soil.
9. Remove all tags, labels, strings, etc. from all plants.
10. Remove any excess soil, debris, and planting material from the job site at the end of each workday.
11. Form watering saucers 100 mm (4 in.) high immediately outside the area of the root ball of each tree as indicated on the drawings.

F. Staking and Guying:

1. Staking and guying methods shall be approved by the Urban Forestry & Land Manager. All below-ground staking material shall be capable of decomposing through biological

activity in the soil. Belowground staking methods that consist primarily of metals or other non-biodegradable material are not permitted. Below-ground staking methods shall not encircle the tree and shall not restrict the future growth of stem. (Rev 6/2018)

2. Below-ground Staking: see <https://goo.gl/S0zxft> for detailed drawings (Rev. 6/2018)
  - a. Materials
    - i. Root ball stakes
      1. Stake length will be no less than 40 inches.
      2. Stake diameter will be no less than 0.75 inches.
      3. Minimum 3 stakes per tree.
      4. For trees larger than 3 caliper inches, an additional stake will be required for each caliper inch.
    - ii. Lock
      1. Trees will be secured by placing a lock on each stake which prevents the lifting of the tree from the stakes.
      2. The lock must be less than 1 inch in height.
  - b. Planting
    - i. The planting well shall be excavated no deeper than the height of the root ball to minimize disturbance of underlying soil.
    - ii. Install root ball into planting pit per drawings / details.
    - iii. Backfill with placement of specified topsoil mixture and compact to firmly hold root ball against surrounding soil.
  - c. Adjustment
    - i. Verify placement, direction and verticality.
    - ii. Adjust as necessary.
    - iii. Re-compact surrounding soil.
  - d. Prepare Root Ball
    - i. Remove loose and extra soil, mulch, etc. from top of root ball to a point where density is consistent or coarse roots (greater than 0.25 inches diameter) are encountered.
    - ii. Ensure root ball is free of burlap, wire, plastic, nylon, or any other foreign material.
  - e. Stake Installation
    - i. Install the specified quantity of stakes based on caliper inches of the tree.
    - ii. Stakes shall be placed equally proportionate around the trunk and no more than 120 degrees apart.
    - iii. Stakes shall be placed approximately 6 inches from the trunk or root flare laterally and not less than 6 inches from the outer edge of the root ball.
    - iv. Stakes shall be driven a minimum of 6 inches into undisturbed soil while also leaving 1-2 inches above the root ball for installation of the lock.
  - f. Lock installation
    - i. Each stake must have a lock to secure the root ball.
    - ii. The lock should be oriented perpendicular to the trunk and should be no less than 4 inches from the trunk or root flare.
    - iii. Locks should be secured evenly with the top of the root ball to minimize gaps.

- iv. Locks shall not bind irrigation lines or prevent proper operation of emitters.
- 3. Above-ground Staking: see <https://bit.ly/2I9UOaR> for detailed drawings (Rev. 6/2018)
  - a. Where guys are attached around the tree, the trunk shall be protected with 20-mm (3/4 in.) diameter rubber hose, black in color, and of sufficient length to extend past the trunk by more than 105 mm (6 in.). The guy must be placed around the stem with sufficient space for trunk growth during tree establishment.
- 4. Stakes and guys shall be installed immediately upon approval or planting, and shall be removed at the end of the first growing season except in the case of biodegradable below-ground staking methods. Any tree that is not stable at the end of this time shall be rejected. (Rev. 6/2018)

G. Wrapping:

- 1. Wrap the trunk of any tree only when necessary for the specific conditions encountered and with the approval of the Urban Forestry and Land Manager. Wrapping may be required for thin-barked species in unusual circumstances such as trees planted adjacent to South- or West-facing reflective surfaces, or when it is impossible to plant the tree with the trunk oriented to the same north orientation that it held in the growing nursery.
- 2. When required, wrapping methods shall be approved by the Urban Forestry and Land Manager. If no wrapping requirements appear on the drawings, submit for approval a drawing of the wrapping method to be used. Wrapping material shall be as specified in this specification. Wrapping material shall be fastened using a biodegradable tape. All tape shall be loosely wrapped around the wrapping material in single layer to permit its breakdown in sunlight and permit a minimum of 25 mm (1 in.) of unrestricted trunk growth. Stapling or tying the wrap with non- or slowly biodegradable tape or any synthetic or natural fiber string shall be prohibited.
- 3. Wrapping material shall be applied from the base of the tree to the first branch.
- 4. All wrapping material shall be removed no later than at the end of the year after planting or as specified by the Urban Forestry and Land Manager.

H. Pruning:

- 1. Plants shall not be heavily pruned at the time of planting. Pruning is required at planting time to correct defects in the tree structure, including removal of injured branches, double leaders, waterspouts, suckers, and interfering branches. Healthy lower branches and interior small twigs should not be removed except as necessary to clear walks and roads. In no case should more than one-quarter of the branching structure be removed. Retain the normal or natural shape of the plant.
- 2. All pruning shall be completed using clean, sharp tools. All cuts shall be clean and smooth, with the bark intact with no rough edges or tears.

3. Except in circumstances dictated by the needs of specific pruning practices, tree paint shall not be used. The use of tree paint shall be only upon approval of the Urban Forestry and Land Manager. Tree paint, when required, shall be paint specifically formulated and manufacturing for horticultural use.
4. Pruning of large trees shall be done from a hydraulic man-lift such that it is not necessary to climb the tree.

I. Mulching:

1. All trees, shrubs, and other plantings will be mulched with mulch previously approved by the Urban Forestry and Land Manager. The mulch on trees and shrubs shall be to the depths shown on the drawing. Mulch must not be placed within 8 cm (3 in.) of the trunks of trees or shrubs.
2. Mulch will be 3" thick and in a 7' diameter circle around the base of the tree.

J. Turfgrass Planting:

1. This work includes labor, material, and equipment for soil preparation, fertilization, planting, and other requirements regarding turfgrass planting areas shown on the plan.
2. Delivery Receipts and Invoices: All delivery receipts and copies of invoices for materials used for this work shall be subject to checking by the Urban Forestry & Land Manager and shall be subsequently delivered to the office of the Urban Forestry & Land Manager.
3. Samples and Producers' Specifications: Various samples, certificates, and specifications of seed, fertilizer, sand, compost, other soil amendments and other materials shall be submitted for approval as required by subsequent sections of this specification.
4. Buffalograss Sod or Bermuda Grass Sod: Turfgrass sod shall be "Buchloe dactyloides" (Buffalograss) 'Prairie Grass' variety or "Cynodon dactylon" Common Bermuda Grass. Sod shall consist of stolons, leaf blades, rhizomes, and roots with a healthy, virile system of dense, thickly matted roots throughout the soil of the sod for a thickness not less than three-quarters inch (3/4"). Sod shall be alive, healthy, vigorous, free of insects, disease, stones, and undesirable foreign materials and grasses. The grass shall have been mowed prior to sod cutting so that the height of the grass shall not exceed two inches (2"). Sod shall have been produced on growing beds of clay or clay-loam topsoil. Sod shall not be harvested or planted when its moisture condition is so excessively wet or dry that its survival will be affected. All sod is to be harvested, delivered, and planted within a thirty-six (36) hour period of time. Sod shall be protected from exposure to wind, sun and freezing. If sod is stacked, it shall be kept moist and shall be stacked roots-to-roots and grass-to-grass. If the work is completed in portion of an area where existing grass will remain around the work area; match the new sod to the existing sod species.

(Rev. 6/2016)

5. Dimensions: All sod shall be machine cut to uniform soil thickness of one inch (1") plus or minus one-quarter inch (1/4"). All sod shall be of the same thickness. Rectangular sections of sod may vary in length, but all shall be of equal width and of a size that permits the sod to be lifted, handled, and rolled without breaking. Broken pads and torn, uneven ends will be unacceptable.
6. Solid Sodding: Prior to laying the sod, the planting beds shall be raked smooth to true grade and moistened to a depth of four inches (4"), but not to the extent causing puddling. The sod shall be laid smoothly, tightly butted edge to edge, and with staggered joints. The sod shall be pressed firmly into contact with the sod bed by rolling or by hand tamping with an approved tamper so as to eliminate all air pockets, provide a true and even surface, and insure knitting without displacement of the sod or deformation of the surfaces of sodded areas. Following compaction, fine screened soil of good quality shall be used to fill all cracks between sods. Excess soil shall be worked into the grass with suitable equipment and shall be well watered. The quantity of fill soil shall be such that it will cause no smothering of the grass.
7. If sod is placed after September 15, final acceptance on the grass will not occur until after April 15. The grass shall not be over seeded with rye. The Contractor shall water the grass until the grass is accepted.

K. Maintenance of Trees, Shrubs, and Vines:

1. Maintenance shall begin immediately after each plant is planted and continue until its acceptance has been confirmed by the Urban Forestry and Land Manager.
2. Maintenance shall consist of pruning, watering, cultivating, weeding, mulching, tightening and repairing guys and stakes, resetting plants to proper grades or upright position, restoring of the planting saucer, and furnishing and applying such sprays or other materials as necessary to keep plantings free of insects and diseases and in vigorous condition.
3. Planting areas and plants shall be protected at all times against trespassing and damage of all kinds for the duration of the maintenance period. If a plant becomes damaged or injured, it shall be treated or replaced as directed by the Urban Forestry and Land Manager at no additional cost.
4. Watering: Contractor shall irrigate as required to maintain vigorous and healthy tree growth. Overwatering or flooding shall not be allowed. The contractor shall monitor, adjust, and use existing irrigation facilities, if available, and furnish any additional material, equipment, or water to ensure adequate irrigation. Root balls of all trees and large shrubs shall be spot watered using handheld hoses during the first four months after planting, as required to ensure adequate water within the root ball.
5. During periods of restricted water usage, all governmental regulations (permanent and temporary) shall be followed. The contractor may have to transport water from

ponds or other sources, at no additional expense to the owner when irrigation systems are unavailable.

6. Vegetation planted in floodplains, streams, streambanks, ditches, or runoff flow paths shall be secured to ensure that they are protected from high velocities and flood inundation until they are fully established and accepted by the City. Vegetation lost to rain events prior to establishment shall be replaced at no cost to the City.”

(Rev. 6/2020)

L. Acceptance:

1. The Urban Forestry and Land Manager shall inspect all work for acceptance upon written request of the contractor. The request shall be received at least ten calendar days before the anticipated date of inspection.
2. Acceptance of plant material shall be for general conformance to specified size, character, and quality and shall not relieve the contractor of responsibility for full conformance to the contract documents, including correct species.
3. Upon completion and re-inspection of all repairs or renewals necessary in the judgment of the Urban Forestry and Land Manager, the Urban Forestry and Land Manager shall certify in writing that the work has been accepted.

- M. Acceptance in Part: Work may be accepted in parts when the Urban Forestry and Land Manager and contractor deem that practice to be in their mutual interest. Approval must be given in writing by the Urban Forestry and Land Manager to the contractor verifying that the work is to be completed in parts. Acceptance of work in parts shall not waive any other provision of this contract.

**17-08 GUARANTEE PERIOD AND REPLACEMENTS:**

- A. The guarantee period for trees and shrubs shall begin at the date of acceptance.
- B. The contractor shall guarantee all plant material to be in healthy and flourishing condition for a period of two year from the date of acceptance.
- C. When work is accepted in parts, the guarantee periods extend from each of the partial acceptances to the terminal date of the guarantee of the last acceptance. Thus, all guarantee periods terminate at one time.
- D. The contractor shall replace, without cost, as soon as weather conditions permit, and within a specified planting period, all plants determined by the Urban Forestry and Land Manager to be dead or in an unacceptable condition during and at the end of the guarantee period. To be considered acceptable, plants shall be free of dead or dying branches and branch tips and shall bear foliage of normal density, size, and color. Replacements shall closely match adjacent specimens of the same species. Replacements shall be subject to all requirements stated in this specification.
- E. The guarantee of all replacement plants shall extend for an additional period of one year

from the date of their acceptance after replacement. In the event that a replacement plant is not acceptable during or at the end of said extended guarantee period, the Urban Forest and Land Manger may elect subsequent replacement or credit for that item.

- F. At the end of the guarantee, the contractor shall reset grades that have settled below the proposed grades on the drawings.
- G. The contractor shall make periodic inspections, at no extra cost, during the guarantee period to determine what changes, if any, should be made in the maintenance program. If changes are recommended, they shall be submitted in writing to the Urban Forestry and Land Manager. Claims by the contractor that the owner's maintenance practices or lack of maintenance resulted in dead or dying plants will not be considered if such claims have not been documented by the contractor during the guarantee period.

**17-09 FINAL INSPECTION AND FINAL ACCEPTANCE:** At the end of the guarantee period and upon written request of the contractor, the Urban Forestry and Land Manager will inspect all guaranteed work for final acceptance. The request shall be received at least ten calendar days before the anticipated date for final inspection. Upon completion and re-inspection of all repairs or renewals necessary in the judgment of the Urban Forestry & Land Manager at that time, the Urban Forestry & Land Manager shall certify, in writing, that the project has received final acceptance.

**17-10 TURF MAINTENANCE SPECIFICATIONS:**

- A. **Description:** Upon beginning a public works construction project, the General Contractor shall initiate and sustain turf maintenance requirements in inaccessible areas until receiving official acceptance at the final inspection. These minimum requirements are stated to insure that the City of Arlington receives a quality end product and an aesthetically acceptable construction area
- B. **Maintenance Schedules:** For the duration of the construction project, the General Contractor will be required to provide lawn maintenance services to the surrounding area. These areas of maintenance are not limited to the project footprint, but also include adjacent medians, rights-of-way and other properties that are difficult to access during construction. Turf areas are to be mowed, trimmed, edged and blown bi-weekly. Regular and consistent maintenance should be provided as described below.
- C. **Turf Watering:**
  - 1. Upon completion of turf installations, the General Contractor should utilize watering trucks to provide a minimum of one inch of precipitation weekly. Environmental changes will dictate how often truck watering is required, but a minimum standard of one inch per week must be maintained. Within the construction area, if previously existing grass, trees, plant material, flower beds etc. are present, the General Contractor is responsible for watering if these areas were currently being watered. These watering expectations will be consistent with newly installed turf areas (1" per week) to ensure proper establishment and healthy turf.

2. Performance measure: **Maintain a consistent and acceptable precipitation rate to sustain healthy turf and plant material.**

D. Mowing and Trimming:

1. Turf areas are to be mowed, trimmed, edged and blown to keep the area in code compliance. Maintenance should be regular and consistent on a fourteen day schedule.
2. Mowing times shall be between the hours of 7:30am and 8:00pm central standard time for each calendar week day.
3. Contractor shall remove all trash and litter from the entire Project Area prior to initiating any mowing of the turf areas.
4. Turf shall be cut at a height of two inches (2") in a professional manner as not to scalp turf or leave areas of uncut grass. Equipment must be operated at a speed to provide the optimal desired "manicured" cut designated by the Urban Forestry & Land Manager.
5. Use of chemicals for trimming and edging is not acceptable.
6. Performance measure: **Mowed area shall be FREE of clumped grass, trash, grass over-hanging the curb, grass in the gutter and along the curb, and tire tracks or ruts from the mowing equipment repaired.**

E. Removal of Grass Clippings:

1. Removal of cut grass from the turf area where growth occurred will not be required unless grass is clumped. Cut grass and debris which falls or is thrown upon the pavement, streets, sidewalks, driveways, adjacent properties, or other hard surface through the action of the work crew shall be removed from the Project Area prior to the exit of the work crew from the work site.
2. The City of Arlington has the authority to issue citations and impose fines beginning at \$250 per offense, per Article 2 of the "Industrial Waste and Water Pollution Control" Chapter of the Code of the City of Arlington, as amended.
3. Performance measure: **No visibly cut vegetation on pavement, streets, sidewalks, driveways, adjacent properties, or any other hard surfaces shall be present when the work crew exits the work site.**

F. Trimming:

1. Contractor shall cut and remove of all plant material immediately adjacent to or under Project Area structures, poles, trees (not within 2" of tree trunks), signs, fences, planting beds, etc. This shall also include the removal of all plant material from expansion joints and any other cracks in curbs, sidewalks (both sides), driveways and any other hard surface.

2. Special care shall be given to trimming around small trees as not to inflict damage to the bark of the trees.
3. All trimming shall be accomplished maintaining the required 2" cutting height.
4. All trimming must be accomplished concurrently with mowing operations.
5. Use of chemicals for trimming and edging is not acceptable.
6. Performance measure: **No vegetation taller than existing turf around structures and obstacles.**

G. Edging:

1. All sidewalks, curbs, and steps must be mechanically edged to a one-inch (1") depth and one-quarter-inch (1/4") width where they exist exposing the concrete surface. This must be completed before final acceptance will be given by the Urban Forestry & Land Manager.
2. Performance measure: **Visible separation of turf from concrete and no vegetation overhanging onto sidewalks, curbs, steps, drives or other concrete surfaces.**

H. Litter/Debris Removal:

1. Litter pick up is required prior to each mowing.
2. Contractor shall on each visit to a site clean and sweep all paved areas, remove all clippings, bottles, cans, paper, fallen limbs, rocks, and other debris from all site grounds which is not intended to be present as part of the landscape.
3. All trash and litter, including debris in the parking lots, shall be removed by the Contractor and disposed of through their waste disposal provider at an off-site location. Contractor is not allowed to utilize City dumpsters to dispose of collected litter and trash bags, and is therefore solely responsible for pick up and disposal of said litter.
4. Miscellaneous items: Should unique items be found in Project Areas, such as abandoned barrels, roofing materials, appliances, etc., it will be necessary for Contractor to notify city's representative. It will be the responsibility of the Contractor to notify the City of any potential hazardous materials found on site, as well as report any branding on container if possible.
5. Performance measure: **Zero visible litter and debris on finished maintenance areas.**

I. Weed and Pest Control and Chemical Application: In the event of excessive weed growth or pest infestation, the City of Arlington (at its discretion), may require a professional

chemical application. The applicator must be accredited with appropriate licensing and all chemical applications must be approved by the Urban Forestry & Land Manager.

**17-11 IRRIGATION EQUIPMENT AND MATERIALS:**

**A. General:**

1. All materials shall be new and without flaws or defects of any type and shall be the best of their class and kind. All materials shall have a minimum guarantee of two year against material defects or defective workmanship.
2. All materials shall be of the brands and types noted on the drawings or as specified herein, or approved by the Urban Forestry & Land Manager as equal. (Rev. 3/09)
3. The irrigation system was designed around equipment manufactured by specific companies as a standard. Approved as equal equipment by other manufacturers may be used only with the approval of the Urban Forestry & Land Manager five days prior to the opening of bids.
4. Submittal of approved equal shall be per the following: If the approved equal deals with any portion of the irrigation system that can affect or alter the hydraulics of said system, the submittal for approved equal shall list the equipment along with the manufacturer's technical design data along with a 24" X 36" plan showing the substitution as well as complete hydraulic calculations. All design work must be prepared by a current State of Texas Licensed Irrigator. Drawings/plans must be signed and sealed and in accordance with current City Ordinances. (Rev. 3/09)

**B. Cements, Cleaners/Primers, and Joint Compounds:**

1. Cement shall be No. 2200 series Uni-Weld or Rectorseal Gold low temperature plastic pipe cement for use on all sizes and schedules of PVC pipe and fittings. Cement must be NSF approved and meet ASTM D 2564 specifications.
2. Cleaner/primer shall be No. 8700 United Elchem hi-etch cleaner/primer. Cleaner/primer must be any color other than clear.
3. All threaded connections between PVC and metal pipe shall be made using Rectorseal No. 100 virgin heavy duty sealing paste or plasto-joint stick as manufactured by Lake Chemical Company or Teflon tape.
4. All metal to metal connections shall be made using Rectorseal No. 5, slow dry, and soft set pipe thread compound. All PVC-to-PVC threaded connections shall use Teflon tape.
5. "O"-ring gasket and pipe spigot ends shall be lubricated using the lubricant recommended or supplied by the pipe manufacturer. If the pipe manufacturer does not provide a lubricant for the pipe, use IPS Weld-On No. 787 gasket lube as manufactured by Industrial Polychemical Service.

- C. Polyvinyl Chloride Pipe (PVC Pipe):
1. Applicable Standards.
    - a. ASTM - D2241 - Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
    - b. ASTM - D2464 - Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Threaded, Schedule 40
    - c. ASTM - D2466 - Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Socket Type, Schedule 40
    - d. ASTM - D2564 - Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
    - e. ASTM - D2855 - Making Solvent - Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings
  2. Marking and identification of PVC pipe shall be continuously and permanently marked with following information:
    - a. Manufacturers' name, size, type of pipe and materials, SDR number, Product Standard number and the NSF (National Sanitation Foundation) Seal.
  3. PVC pipe fittings shall be of the same material as the PVC pipe specified and compatible with PVC pipe furnished. Solvent weld type shall be Schedule 40.
  4. PVC pipe shall be Schedule 40 solvent weld, SDR-PR, PS22-70 for all sizes 1/2" - 2".
- D. 4" Pop-Up Bubbler Heads: Bubbler heads shall have a minimum four-inch (4") pop-up. The sprinkler body on all related parts shall be plaster, cycolac or polycarbonate. They shall have a spring retraction for positive return action of the pop-up nozzle. The spring for retraction and the fixed flow nozzle shall be made of corrosion resistant materials. Four inch (4") pop-up bubbler heads shall be Rain Bird 1404, 2 - 50 (.5 gal) each side of tree or 1 - 10 (1 gal) on up side of tree. (Rev 6/2016)
- E. Drip Irrigation Tubing: Drip tubing shall be used for all landscape beds and the tubing shall be Netafim .9 tubing with 12" spacing. No other tubing or spacing shall be used without the written approval of the Urban Forestry and Land Manager.
- F. Wire And Splices: All wire shall be single strand solid copper, minimum 14 gauge with type UF insulation which is Underwriters Laboratory approved for direct underground burial when used in a National Electrical Code Class II Circuit (30 volts AC or less) as per Articles 725 and 300. Voltage drop shall be taken into consideration. All wire shall be color coded so that the common wire shall have white insulation and the signal wires shall have red insulation. All wire connectors shall have a pre-filled insulator tube with a Scotchlok Y or R connector, which, when pressed together, forms a permanent, one-piece, moisture-proof wire splice. All connectors shall be U.L. listed and rated 600 volts

maximum as a wire connector system for use with underground conductors. All direct bury wire splice kits shall be DBY-6 or DBR-6 as manufactured by the Electrical Products Division of 3M Corporation.

- G. Swing Joints: Swing joints for quick coupling valves shall be Lasco Model G17B-212 with one-half inch (1/2") brass insert stabilizer elbow or approved equal.
- H. Ball Valves: Ball valves two inch (2") and smaller shall be made of PVC, shall have a non-shock rating of 200 psi, shall have ball seals made of teflon, shall have Viton O-rings and threaded end connectors. Ball valves shall be Spears "Safe-T-Shear" compact or approved equal.
- I. Flexible PVC Risers (Nipples): All flexible PVC nipples shall be made from virgin PVC material, shall comply with ASTM D2287, and shall be tested at 200 P.S.I. Flexible PVC pipe nipples shall be "Excalibur" or approved equal.
- J. Valve Boxes:
1. A box shall be provided for all backflow preventers, electric valves, quick coupling valves, and wire splices. Valve boxes for quick coupling valves and wire splices shall be made of high strength plastic, shall have covers with bolt down or locking mechanisms and shall be colored green or black. Valve boxes for electric remote control valves and backflow preventers or any box located within 10' of any traffic flow shall be made of concrete with a concrete cover and cast iron hinged lid. Boxes shall be suitable in size and configuration for the operability and adjustment of the valve. Extension sections will be used as appropriate to the depth of piping. All boxes shall be set with bricks or extensions under the base of the box. (Rev. 3/09)
  2. Electric Valves: Boxes for remote control electric valves two inch (2") and smaller shall be 65 Series or approved equal as manufactured by Brooks Products, Inc.
  3. Quick Coupling Valves: Boxes for quick coupling valves shall be Model 910 or approved equal as manufactured by Carson-Brooks Plastics, Inc. (800) 255-6340.
  4. Backflow Preventers: Boxes for backflow preventers two inches (2") or smaller shall be 65 Series or approved equal as manufacture by Brooks Products, Inc. (817) 465-0080.
  5. Wire Splices: Boxes for wire splices shall be Model 910 or approved equal as manufactured by Carson-Brooks Plastics, Inc.
- K. Quick Coupling Valves: Quick coupling valves shall be heavy-duty brass construction with a locking purple thermoplastic rubber cover and shall be marked with special "Do Not Drink!" warnings in English and Spanish for use on non-potable systems. Quick coupling valves shall be Rain Bird Model 44 NP or approved equal. They need to be housed in a plastic coupler valve box with a purple lid. Provide two (2) 44k keys and two (2) SH-2

swivel hose ends. Each quick coupler must have a ball valve in front of it to allow quick shut off for leak emergencies.

L. **Backflow Preventer:** The backflow preventer shall be a double gate valve, double check assembly, shall have all-bronze construction, shall be located and sized as shown on the plans, shall be installed in a box and shall conform to City of Arlington's plumbing codes. The backflow preventer shall be Fabio Model 805Y or approved equal.

M. **Irrigation Controller; Remote Control Compatible:**

1. **Electrical Controller:** In parks or municipal property where 120 volt, 60 cycle AC is available the controller shall be a Rain Bird ESP – LXME Controller. (Rev. 3/09)
2. **Solar Battery Powered Controllers:** Use the Hunter XCH battery powered controller with the Hunter solar panel for SC hybrid battery operated controller model SPXCH, on all tree areas. (Rev. 6/2016)
3. All landscape beds use Motorola/Irrinet controls. (Rev. 6/2016)

N. **Electric Remote Control Valves:**

1. Electric Remote Control Valves shall have plastic bodies and covers and shall be globe-type diaphragm valves. Operation shall be accomplished by means of an integrally mounted heavy-duty 24 VAC or 24 VDC solenoid complying with National Electrical Code, Class II Circuit. A flow stem adjustment shall be included for each valve.
2. 24 VAC: MCplus-B electric remote control valves used with the Irri-Trol MCplus-B controller shall be Rain Bird PGA Series with 24 VAC solenoid as manufactured by the Rain Bird Company.
3. 24 VDC: Valves used with the Hunter XCH battery powered controller are the Rain Bird Valve model DVF. These valves should be coupled with the Rain Bird TBOS potted latching Solenoid model K80920.
4. Drip Irrigation Valves and Pressure Reducers: Drip irrigation valves with pressure reducers and filters shall be Rain Bird XCZ 100 PRS.

**17-12 IRRIGATION SYSTEM SPECIFICATIONS:**

- A. **Design Pressure:** Irrigation systems shall be designed to operate with a minimum static inlet water pressure at the point of connection to the city water supply as shown on the drawings. The Contractor shall take a pressure reading prior to beginning construction. If the pressure reading is less than shown on the drawings, the Contractor shall notify the Urban Forestry & Land Manager for instructions as to further action.
- B. **Contractor Responsibility:** The contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in equipment usage, area dimensions or static water pressure exist that

might not have been considered in the design. Such obstructions or differences shall be brought to the attention of the Urban Forestry & Land Manager. In the event this notification is not performed, the contractor shall assume full responsibility for any revision necessary at no additional cost to the Owner.

- C. Staking: Before installation begins, the Contractor shall place a stake or flag where each bubbler shall be located in accordance with drawing. Staking shall be approved by the Urban Forestry & Land Manager before proceeding.
  
- D. Piping Layout: Piping layout is diagrammatic. The Contractor shall route piping around existing trees, shrubs and any existing utilities or other underground improvements in such manner as to avoid damage to plantings. The Contractor shall not dig within the ball of newly planted trees or shrubs or in the drip line of mature trees without written approval from the Urban Forestry & Land Manager. In areas where trees are present, trenches will be adjusted on site to provide a minimum clearance of ten times the trunk diameter of the tree (at its base) between any tree and any trench. If spacing is limited boring under 24" under the root zone is preferred. (Rev. 3/09)
  
- E. Submittals: The contractor shall submit to the Urban Forestry & Land Manager two (2) copies of shop drawings or manufacturer's "cut sheet" for each type of sprinkler head, pipe, controller, valves, check valve assemblies, valve boxes, wire, conduit, fittings and all other types of fixtures and equipment which will be installed on the job. The submittal shall include the manufacturer's name, model number, equipment capacity and manufacturer's installation recommendation, if applicable, for each proposed item. No partial submittal will be accepted and submittals shall be neatly bound into a brochure and logically organized. After the submittal has been approved, substitutions will not be allowed except by written consent of the Urban Forestry & Land Manager. Shop drawings shall include dimensions, elevation, construction detail, arrangements and capacity of equipment, as well as manufacturer's installation recommendations.
  
- F. Codes/Permits:
  - 1. All work under this contract shall comply with the provisions of these specifications, as illustrated on the accompanying drawings, or as directed by the Urban Forestry & Land Manager and shall satisfy all applicable City of Arlington codes, ordinances, or regulations of the governing bodies and all authorities having jurisdiction over this project. Installation of equipment and material shall be done in accordance with the requirements of the National Electric Code, City of Arlington Plumbing codes and standard plumbing procedures. The drawings and these specifications are intended to comply with all the necessary rules and regulations; however, some discrepancies may occur. Where such discrepancies occur, the Contractor shall immediately notify the Urban Forestry & Land Manager in writing of the discrepancies and apply for an interpretation. Should the discovery and notification occur after the execution of a contract, any additional work required for compliance with the regulations shall be paid for as covered by these contract documents.

2. The Contractor shall give all necessary notices, obtain all permits and pay all costs (including all costs for water meters and impact fees) and fees in connection with his or her work; file with all governmental departments having jurisdiction; obtain all required certificates of inspection for work and deliver to the Urban Forestry & Land Manager before request of final acceptance for the work. The Contractor shall include in the work any labor, materials, services, apparatus or drawings in order to comply with all applicable laws, ordinances, rules and regulations whether or not shown on the drawings and/or specified.
3. The installation of the irrigation system shall be made by an individual or firm duly licensed under Article No. 8751 VTCS, titled "Licensed Irrigators Act," S.B. No. 259, as passed by the 66th Texas Legislature.

G. Existing Utilities:

1. Locations and elevations of various utilities included with the scope of this work have been obtained from the most reliable sources available and should serve as a general guide without guarantee to accuracy. The Contractor shall examine the site and verify to their satisfaction the location and elevation of all utilities, availability of utilities and services required, and their relation to the work and the submission of bids shall be deemed as evidence thereof. The Contractor shall repair at their expense, and to the satisfaction of the Urban Forestry & Land Manager, any damage to any utility including existing irrigation systems shown or not shown on the plans. Should utilities not shown on the plans be found during excavations, Contractor shall promptly notify the Urban Forestry & Land Manager for instructions as to further action.
2. Contractor shall make necessary adjustments in the layout to connect to existing stubouts, should such stubouts not be located exactly as shown on the plans. Contractor shall also make necessary adjustments required to work around existing work, at no increase in cost to the Owner. All such work will be recorded on record drawings and turned over to the Urban Forestry & Land Manager prior to initial acceptance.

H. Record Drawings:

1. Record dimensioned locations and depths for each of the following:
  - a. Point of connection to City water supply.
  - b. Irrigation pressure line routing. (Provide dimensions for each 100 lineal feet [maximum] along each routing, and for each change in directions.)
  - c. Quick coupling valves.
  - d. Electric remote control valves.
  - e. Control wire routing.

- f. Pressure relief valves.
- g. Other related items as may be directed by the Urban Forestry & Land Manager.
2. Locate all dimensions from two permanent points (buildings, monuments, sidewalks, curbs or pavements).
3. Record all changes that are made from the Contract Drawings, including changes in the pressure and non-pressure lines.
4. Record all required information on a set of blackline prints of the Drawings. Do not use these prints for any other purpose.
5. Maintain information daily. Keep drawings at the site at all times and available for review by the Owner.
6. Transfer all information to a set of reproducible mylars using permanent India ink when record drawings have been approved by the Owner. Changes using ballpoint pen are not acceptable. Make dimensions accurately at the same scale used on the original drawings, or larger. If photo reduction is required to facilitate controller chart housing, notes or dimensions must be a minimum one-fourth inch (1/4") in size.
7. Reproducible mylars will be furnished by the Owner.

I. Controller Charts:

1. Do not prepare charts until the Urban Forestry & Land Manager has approved record drawings.
2. Provide one controller chart for each automatic controller installed.
3. Chart may be a reproduction of the Record Drawing, if the scale permits fitting the controller door. If photo reduction prints are required, keep reduction to maximum size possible to retain full legibility.
4. Chart shall be black line print of the actual system, showing the area covered by that controller.
5. Identify the area of coverage of each remote control valve, using a distinctly different pastel color, drawn over the entire coverage.
6. Following approval of charts by the Urban Forestry & Land Manager, they shall be hermetically sealed between two layers of 20-mil thick plastic sheet.
7. Charts must be completed and approved prior to final acceptance of the irrigation system.

J. Operation and Maintenance Manuals:

1. Provide two individually bound manuals detailing operation and maintenance requirements for irrigation systems.
2. Manuals shall be delivered to the Urban Forestry & Land Manager no later than 10 days prior to initial acceptance of the work.
3. Provide descriptions of all installed materials and systems in sufficient detail to permit maintenance personnel to understand, operate and maintain the equipment.
4. Provide the following in each manual:
  - a. Index sheet, stating Irrigation Contractor's name, address, telephone number and name of person to contact.
  - b. Duration of guarantee period is two years.
  - c. Equipment list providing the following for each item:
    1. Manufacturer's name.
    2. Make and model number.
    3. Name and address of local manufacturer's representative.
    4. Spare parts list in detail.
    5. Detailed operation and maintenance instructions of major equipment.
    6. Serial numbers.
  - d. The serial number for each irrigation controller and controller enclosure as well as the address for its corresponding electrical service. Contractor shall independently lock each controller and furnish key to Urban Forestry & Land Manager.

K. Electric Power: The Contractor shall be responsible for providing 120 volt, 60 cycle AC electrical power to the irrigation controller whenever it is necessary.

L. Water for Testing: The Contractor shall furnish all water necessary for testing and flushing.

**17-13 IRRIGATION INSTALLATION PROCEDURES:**

A. General:

1. This section includes installation specifications for all items installed as a part of the irrigation systems. Certain construction procedures or minor equipment installation procedures may have been omitted from these specifications. If no specification, detail or plan provides adequate instructions for installation, the Contractor shall install per the manufacturer's recommendation.
2. A Licensed Irrigator or Licensed Irrigation Installer shall be present at the project site at all times as work is in progress. The Urban Forestry & Land Manager may demand that work stop until the Contractor provides for a Licensed Irrigator or Licensed Irrigation Installer to be present at the project site and supervising all irrigation work.

3. A pre-construction site observation will be conducted prior to construction to observe conditions and note features which may be considered inoperable or have prior damage.
  4. Irrigation plans are diagrammatic due to scale. Significant system modifications required by field conditions are permitted with consent from the Urban Forestry & Land Manager. In no situation shall the Contractor install valves or heads under or in concrete paving areas. In any situation that the plans show a conflict in the actual site conditions, it shall be the Contractor's responsibility to notify the Urban Forestry & Land Manager of the conflict to receive direction. Irrigation work shown on the drawings within tree dripline areas is not diagrammatic, and must be constructed exactly as shown on the drawings.
- B. Product Handling: The Contractor shall be responsible for correct procedures in loading, unloading, staking, transporting, and handling all materials to be used in the system. The Contractor shall avoid rough handling which could affect the useful life of equipment. Pipe shall be handled in accordance with the manufacturer's published recommendations on loading, unloading, and storage.
- C. Excavation and Trenching:
1. The Contractor shall perform all excavation to the depth indicated in these specifications and drawings. The banks of trenches shall be kept as nearly vertical as practicable. The width of the trenches shall not be greater than necessary to permit proper jointing, tamping, backfilling, bedding or any other installation procedures that may be necessary. Trencher shall be wide enough to allow a minimum of four inches (4") between parallel pipelines or electrical wiring. Pipes shall not be vertically stacked. Where rock excavation is required, or where stones are encountered in the bottom of the trench that would create a concentrated pressure on the pipe, rock or stones shall be removed to a depth of six inches (6") minimum below the trench depth indicated. The overdepth rock excavation and all excess trench excavation shall be backfilled with loose, moist earth or sand, thoroughly tamped. Whenever wet or otherwise unstable soil that is incapable of properly supporting the pipe is encountered in the trench bottom, such shall be removed to a depth and length required, and the trench backfilled to trench bottom grade as hereinafter specified with course sand, fine gravel or other suitable material.
  2. Excavation and trenching shall be true to line and at the width and depth specified in other sections of these specifications. The full length of each section of the pipe shall rest solidly upon the pipe bed. Bottom of trench grade shall be continued past ground surface deviations to avoid air pockets and low collection points in the line. The minimum cover specifications shall govern regardless of variations in ground surface profile and the occasional deeper excavation required at banks and other field conditions. Excavation shall be such that a uniform trench grade variation will occur in all cases where variations are necessary.

3. Trench excavation shall comprise the satisfactory removal and disposition of all materials and shall include all shoring and sheeting required to protect the excavation and to safeguard employees.
4. During excavation, material suitable for backfilling shall be stockpiled in an orderly manner a sufficient distance back from edge of trenches to avoid overloading and prevent slides or cave-ins. Material unsuitable for backfilling shall be removed from the site as directed by the Urban Forestry & Land Manager. When excavated material is of a rocky nature and the topsoil or any other layer of excavated material is suitable for pipe bedding and backfill in the vicinity of the pipe, such material shall be separately stockpiled for use in such bedding and pipe backfill operations, unless satisfactory imported material is used.
5. All excavations and backfill shall be unclassified and covered in the basic bid. No additional compensation will be allowed for rock encountered.
6. The Contractor shall restore all surfaces and/or existing underground installations damaged or cut as a result of the excavations to their original conditions in a manner acceptable to the Urban Forestry & Land Manager.

D. Depth of Bury:

1. There shall be a minimum of 18 inches and a maximum of 20 inches of cover from proposed grade to top of pipe for all pipe installed in parks and public buildings.
2. There shall be a minimum of 24 inches and a maximum of 36 inches of cover from adjacent top of curb to top of pipe for all pipe installed in street medians. There shall be a minimum of 24 inches and a maximum of 36 inches of cover from adjacent top of curb to top of pipe for all pipe installed in parkways.

E. Pipe and Fittings:

1. Installation of plastic pipe and fittings shall be in accordance with the specifications list within and, when specifications do not clearly depict the scope, install per the manufacturer's recommendation.
2. Caution shall be exercised by the Contractor in handling, loading, unloading, and storing of PVC pipe and fittings. All PVC pipe shall be stored and transported in a vehicle with a bed long enough to allow the pipe to lie flat without subjecting it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged or in any other way found to be defective, either before or after laying, shall be replaced with sound pipe without additional expense to the Owner.
3. Material storage in median areas is not permitted.
4. Before installing the pipe, all rubbish and rocks shall be removed from the trenches. Before installation, the inside of the pipe shall be cleaned of all direct and foreign

matter and shall be kept in a cleaned condition during and after laying of the pipe. When work is not in progress, open ends of pipe and fittings shall be securely closed so that no trench water, earth, or other foreign substances will enter the pipe or fittings. Where pipe ends are left for future expansion or connections, they shall be valved and capped, as directed on the drawings.

5. All PVC pipe and fittings shall be assembled to permit the pipe or fittings to be joined at the true parallel position of the fitting. Placement of pipe in curving trenches which causes bending and stress on pipe and fittings will not be permitted. No excess piping or fittings shall be permitted in the installation of the system, which may increase pressure loss or potential blockage.
6. Pipe shall not be laid in water or when trench or weather conditions are unsuitable for the work. Any water which may be encountered or may accumulate in the trenches or excavation shall be pumped out or otherwise removed as necessary to keep the bottom of the trench or excavation free and clear of water during the progress of the work.
7. PVC pipe will expand or contract at the rate of one (1) inch per 100 feet per 10 degrees F change in temperature. Therefore, the pipe shall be installed in a manner so as to provide for expansion and contraction as recommended by the manufacturer.
8. Unless otherwise specified on the drawings, all piping passing under sidewalks, roadways, parking lots, etc., shall be sleeved in a SCH 40 PVC pipe two sizes larger than the pipe to be sleeved.
9. When more than one pipe is installed in the same trench, at all times the four (4)-inch separation shall be maintained.
10. PVC pipe and fittings shall be assembled with the following requirements:
  - a. Solvent. Use only solvent recommended by manufacturer to make solvent-welded joints following standards noted herein. Thoroughly clean pipe and fittings of dirt, dust and moisture with an approved PVC primer before applying solvent.
  - b. PVC to Metal Connection. Work metal connections first. Use a non-hardening pipe dope such as Permatex No. 2 or "Teflon" tape on threaded PVC to metal joints. Use only light wrench pressure.
  - c. Threaded PVC Connections. Where required, use threaded PVC adapters into which pipe may be welded.
11. After all irrigation piping, risers, valves, thrust blocks, etc., have been installed and partially backfilled as specified in other parts of these specifications, the control valve shall be opened and a full head of water used to flush out the system. After the system is thoroughly flushed, risers shall be capped off and the system pressure tested in

accordance with the testing section of these specifications. At the conclusion of the pressure test, the heads shall be installed and the backfill operation completed. No backfill shall occur before the Urban Forestry & Land Manager inspects the piping and approves the work.

F. Solvent Welding:

1. PVC plastic pipe shall be squarely cut.
2. Burrs left from cutting shall be wiped off with a clean, dry cloth.
3. Utilizing a colored cleaner/primer, thoroughly clean the mating pipe end and the fitting socket with a clean dry cloth.
4. Apply a uniform coat of solvent cement to the outside of the pipe end with a non-synthetic brush or dauber.
5. In like manner, apply a thin coating of solvent cement to the inside of the fitting socket.
6. Re-apply a light coat of solvent cement to the pipe and quickly insert it into the fitting to the full depth of the fitting socket.
7. Rotate the pipe or fitting approximately 1/4 turn to insure even distribution of the solvent cement.
8. Hold in position for approximately 30 seconds.
9. Wipe off any excess solvent cement that forms as a bead around the outer shoulder.
10. Care should be taken so as not to use an excess amount of solvent cement that could cause burrs or obstructions to form on the inside of the pipe joint.
11. Solvent weld joints shall be allowed to cure for at least 24 hours before pressure is applied to the system.

G. Tree Bubbler Heads: Each tree shall have two bubblers each they must be placed one must be placed on the upward slope of the tree and the other on the side of the tree that is on the inner median side. No bubblers may be placed on the lower slope or curb side of the tree. The bubbler placement should allow full water flow to cover the entire rootball. All bubblers must be hard piped in; no funny pipe is allowed.

H. Drip Irrigation Tube: The Netafim .9 tubing shall be placed 12" apart and stapled down to keep the tubing from rising up and popping up through the mulch. The emitters shall be triangulated providing optimum watering. Each drip zone must have at least one air release valve at the end of the run.

I. Ball Valves: Each zone shall have a ball valve in front of it to shut down only that section if a repair must be made.

J. Backfilling:

1. Underground inspection shall be made after trenches or ditches are excavated, piping and control wiring installed and before any backfill is put in place in accordance with current City Ordinance. After completion and acceptance of the hydrostatic test, wiring and piping inspection for a particular section of the irrigation system, the backfill operation can be completed. (Rev. 3/09)

2. All backfill material shall be subject to approval by the Urban Forestry & Land Manager. Backfill material shall be free from rubbish, rock large stones, brush, sod, frozen material or other unsuitable substances that may damage pipe during the backfilling operations.

3. In the event that the material from the excavation or trenching is found to be unsuitable for use in backfill, it shall be removed from the site and properly disposed of by the Contractor and at the Contractor's expense. The Contractor shall then, at no additional cost to the Owner, arrange for, purchase, and furnish suitable backfill material consisting of earth, loam, sandy clay, sand, or other approved materials free of large clods of earth or sharp stones.

4. Backfill shall be placed in horizontal layers "lifts" not exceeding six (6) inches in depth and shall be thoroughly tamped, rolled or otherwise compacted. Backfill shall be placed to the original ground level or to the limits the installer feels that total settlement in three (3) months shall be flush to finish grade. If settlement of trenches below finished grade occurs any time within the two-year warranty period, it shall be the Contractor's responsibility to refill trenches and re-seed or sod the repaired areas. The Contractor shall be notified in writing of areas that have settled, and the Contractor shall fix the settled ditches within five (5) working days.

K. 4" Pop-Up Bubbler Heads: Contractor shall provide heads and nozzles as specified and install in locations as shown on the drawings. Pop-up bubbler heads shall be installed on a flexible PVC nipple directly on to lateral piping as detailed on drawings/plans. Heads shall be installed with the top of head flush with the finished grade. Contractor will be required to adjust heads as necessary after establishment of trees so that bubblers are located inside tree wells and away from curbside. In areas where slope is prominent, install heads on the high side of the tree.

L. Irrigation Heads:

1. Irrigation heads shall not utilize above-ground spray emission devices in landscapes that are less than 60 inches not including the impervious surfaces in either length or width and which contain impervious pedestrian or vehicular traffic surfaces along two or more perimeters. Qualifying areas less than 60 inches may be irrigated utilizing subsurface or drip irrigation, pressure compensating tubing, or be designed without irrigation. If pop-up sprays or rotary sprinkler heads are used in a new

irrigation system, the sprinkler heads must direct flow away from any adjacent surface and shall not be installed closer than 4 inches from a hardscape, such as, but not limited to, a building foundation, fence, concrete, asphalt, pavers, or stones set with mortar in accordance with current City Ordinances. Heads shall be installed in the vertical positions, hand backfilled, and compacted to near original density. Spray heads must be Rain Bird 1800 PRS Series with Rain Bird MPR fixed pattern spray nozzle. Any rotors will be Rain Bird 5000 Series PRS. (Rev.6/2016)

2. Irrigation head spacing shall not exceed the spacing shown on the drawings and shall be in the approximate locations and configuration as shown on the drawings. Contractor shall verify area dimensions while staking irrigation head locations. Irrigation heads shall be spaced so that they are equal distance from one another for the given lengths and widths of the area to achieve uniform coverage.
3. After all piping and risers are in place and connected, and before installation of the irrigation heads, all control valves for a given section shall be fully opened and a full head of water shall be used to flush out the system.
4. If water pressure without the heads installed is not sufficient to provide adequate water flow from end risers, the Contractor shall cap off enough heads closest to the water source to provide adequate flushing of the end riser assemblies.

M. Electrical Remote Control Valves and Valve Boxes:

1. All electric remote control valves shall be of the type and size as indicated on the drawings and shall be installed where shown on the drawings, following the published recommendations of the manufacturer and in accordance with these specifications and drawings.
2. A ball valve and remote control electric valve, in that order or as detailed on the drawings, shall be installed in a rectangular valve box as specified and shall be set with a minimum of six inches (6") of space between their top surface and the bottom of the valve box. Valves shall be fully opened and fully closed to ensure that all parts are in operating condition. Valve boxes shall be set plumb, vertical and concentric with the valve stem with top of box flush with finished grade. Any valve box which has moved from this required position after final acceptance and during the guarantee period shall be reset by the Contractor at his or her own expense.
3. Any DC-powered system must provide automatic valve DC latching solenoids at no additional cost to Owner.
4. The valve boxes shall be locking and of the size and type as shown on the drawings. Valve boxes shall be installed as shown on the drawings.
5. Valve wire splices shall be waterproofed using dry splice connectors. The Contractor shall leave 24 inches of wire coiled to facilitate raising the wire out of the valve box for repairs.

- N. Quick Coupling Valves: Quick coupling valves shall be installed on a swing-joint assembly as detailed on the drawings. Under the warranty, the Contractor shall return after grass is established and adjust the valve boxes to the proper grade.
- O. Mainline Manual Drain Valves:
1. No 90° ells shall be accepted or used in mainlines. Mainlines are “all pipe downstream of water meter and upstream of station valves”.
  2. If shown on plan, manual drain valves of the size and type indicated on the drawings shall be installed at all low points of mainline piping, or at any other points that may be indicated on the irrigation system drawings or indicated elsewhere in these specifications.
- P. Sleeved Crossings and Electrical Conduit:
1. Sleeves and electrical conduits shall be installed as noted on the drawings. Contractor shall be responsible for locating all sleeves and conduits at no additional cost to the Owner.
  2. Unless otherwise noted on drawings, all piping installed under sidewalks, roadways, parking lots, etc., shall be one, 4” sleeve for both wire and pipe.
  3. Every effort shall be made by the Contractor to install sleeving prior to the pouring or construction of the sidewalks, roadways, parking lots, etc. If prior sleeving is not possible, all crossings must be bored unless written authorization for an open cut is obtained from the Urban Forestry & Land Manager. Reference typical irrigation sleeve under paving.
- Q. Thrust Blocks: Thrust blocks shall be constructed at all direction changes and/or termination points, or at any point of the system that will result in an unbalanced thrust. Thrust blocks shall be poured against undisturbed earth and in accordance with the drawings and details. Do not obstruct the outlets of fittings that are intended for future connections.
- R. Controller Enclosure: The Contractor shall install the enclosure according plan and manufacturer specifications. The Contractor shall provide, in the controller enclosure, one (1) ground fault interrupter duplex receptor, the clock and all sensors required by the manufacturer and ordinances.
- S. Controller:
1. The controller location is indicated on the drawings. The Contractor shall be familiarized with the requirements of making power connections. Installation shall be performed by a licensed electrician. The electrical power for the controller shall be considered a part of this contract but bid as an incidental item to the controller, and is not a pay item.

2. The controller shall be mounted and wired according to the manufacturer's recommended procedures and as specified in these specifications and on the drawings.
3. Electric control valves shall be connected to controller in the numerical sequences as shown on the drawings.
4. Controller shall be installed in a locking controller enclosure as specified on the drawings.
5. In situations where a computerized central controller system is utilized, the Contractor is responsible for providing and installing the flow sensor wire to the water meter or electronic valve.
6. Contractor shall provide a green wire for the common flow wire, and a blue wire for the pulse signal on the flow meter. Ground wire and rod shall be installed inside the controller pedestal.
7. All wiring is subsidiary to controller installation.

T. 24-Volt Control Valve Wiring:

1. All control wire less than one thousand feet (1,000') in length shall be continuous without splices or joints from the controller to the valves. Connections to the electric valves shall be made within eighteen inches (18") of the valve using connectors specified. ALL wire splices shall be covered with a valve box. All wire passing under existing or future paving, sidewalk, construction, etc., shall be encased in PVC Schedule 40 conduit extending at least thirty-six inches (36") below the top of curb..
2. All wire installation procedures as described herein shall be checked to conform to local electrical codes.
3. All wire used for the 24 volt wiring from the controller to the electric control valves shall be type "UF", 600 volt, solid copper, single conductor, PVC insulated and bear UL approval for direct burial underground feeder cable. Unless otherwise specified on the drawings, the 24 volt common wires shall be wire No. 12 AWG and the remaining 24 volt control wires shall be No. 12 AWG, and of colors other than white. These colors shall be noted on the "as-built" record drawings.
4. The Contractor shall install the 24 volt control valve wiring in the same trench as the irrigation system mainline. In no situation shall the wire be installed above the spring line of the mainline. The wires shall be laid loose in the trench to allow for contraction. Control wires shall be taped together in 10'0" increments.
5. Wire splices, other than at valve box locations, shall be kept to a minimum. If needed, they shall be made only at common splice points and placed in a concrete valve box, reference irrigation electric valve detail. The location of these wire splice boxes shall

- be shown on the "as-built" record drawings. No buried wire splices shall be permitted. All wire splices shall be made waterproof using dry splice connectors.
6. In no case shall wires of different colors be spliced together.
  7. Control wires shall be identified with E-Z Coder WDR Series Tape at each valve and at the controller and at splices. Valves shall be numbered on the "as-built" record drawings.
  8. All wiring shall be subsidiary to control valve installation.

U. 120 Volt Controller Power Wiring:

1. The Contractor shall familiarize himself/herself with the work required to complete this portion of the installation. All 120 volt wiring shall be installed in accordance with State and local electrical codes and regulations. The 120 volt service shall consist of one black and one white wire. The neutral wire must be bonded. All wiring is subsidiary to project.
2. Contractor shall provide and install 120 volt power to the controller location. All electrical work shall be performed by a Licensed Electrician.

V. Hydrostatic Tests:

1. Upon completion of the irrigation system's mainline; the entire mainline shall be tested for a four (4) hour period at 100 psi. Prior to testing, the mainline shall be partially backfilled, leaving all joints and connections exposed for visual observation. All dirt shall be flushed from the system and the line filled with water to remove air. The mainline shall be brought to static pressure. A pressure gauge and temporary valve shall be installed at the end of the mainline to permit hydrostatic pressure to be applied to the main. A pressure of 100 psi must be retained for a four (4) hour period. Any leaks resulting in the four (4) hour pressure test shall be repaired and the system retested until the system passes the test.
2. Upon completion of the irrigation mainline, all lateral irrigation piping must be pressure tested for one (1) hour at 100 psi. The procedure shall be the same as used for the mainline. If after one (1) hour no visual leakage has occurred and the 100-psi pressure has been retained, the heads shall be installed, and the backfill operation completed. Any leaks resulting from the hydrostatic test shall be repaired and the system retested until the system passes the test.

W. Final Adjustment:

1. After installation has been completed, the Contractor shall make final adjustment of irrigation system prior to Urban Forestry & Land Manager final inspection.
2. The Contractor shall completely flush system to remove debris from lines by removing bubbler head nozzles and turning system on.

3. After lateral lines have been thoroughly flushed, the Contractor shall replace nozzles and check each bubbler for proper operation.
4. The Contractor shall operate each section as long as necessary to insure all bubblers are working properly.

**17-14 IRRIGATION METERS AND WATER ACCOUNT:** Contractor will be responsible for payment of the impact fee and activation fee for the irrigation meter(s) on this project. Contractor shall establish the water account under their name and inform the Water Customer Care representative that the meter(s) are for a City's project and that it will later be owned by the Parks and Recreation Department. Once the irrigation system is tested, inspected, and accepted by the Parks and Recreation Department, the Parks and Recreation Department will have the water account transferred to the City. A bid item is included in the PROPOSAL for reimbursement of this expense. (Rev. 6/2016)

END OF SECTION

**SECTION NO. 18**

**SPECIAL PROVISIONS - PAVEMENT MARKING SPECIFICATIONS**

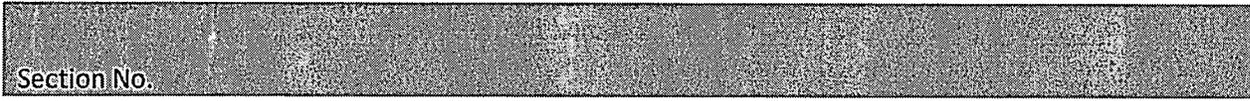
- A. Pavement markings shall include Reflectorized Pavement Markings, Prefabricated Pavement Markings, and Raised Pavement Markers and shall be in accordance with the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges as published by the Texas Department of Transportation, latest edition. Contractor shall place markings in accordance with the surface condition, moisture, and temperature requirements.
- B. Reflectorized Pavement Markings that are considered the final and permanent markings shall be Type I "Hot Applied Thermoplastic, unless otherwise noted on the plans or approved by the City. Prefabricated pavement markings shall be placed in accordance with the manufacturer's specifications.
- C. Payment for pavement markings shall be lump sum as shown in the PROPOSAL.

END OF SECTION

**SECTION NO. 19**

**SPECIAL PROVISIONS – STREETLIGHT SPECIFICATIONS**

**NUMERICAL LISTING**



- 19-01 STREETLIGHT SPECIFICATIONS
- 19-02 QUALIFICATIONS
- 19-03 BURN-IN PERIOD
- 19-04 RESPONSE TIME
- 19-05 TEMPORARY LIGHTING
- 19-06 MATERIALS
- 19-07 INSTALLATION AND CONSTRUCTION
- 19-08 SALVAGE OF CABLE AND EQUIPMENT

## SECTION NO. 19

### SPECIAL PROVISIONS – STREETLIGHT SPECIFICATIONS

**19-01 STREETLIGHT SPECIFICATIONS:** The street lighting portion of this project shall be constructed in accordance with the STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES as issued by the Texas Department of Transportation (TxDOT), as it may be amended from time to time.

**19-02 QUALIFICATIONS:** All electrical work must be performed by an electrical contractor licensed in the State of Texas and be prequalified for Streetlights by the City of Arlington. Contractor must also be certified by Oncor to perform the connection of the controller to the power source. City reserves the right to require documentation of credentials prior to any work being performed. (Rev. 8/2018)

**19-03 BURN-IN PERIOD:** If this contract involves the installation of luminaires and their connection to the lighting system, final acceptance of the work will not be made until the luminaires have been energized with electrical power for at least three (3) calendar days without a failure occurring. The Contractor shall correct, at his own expense, all failures that occur prior to the final acceptance of the work. In the event that more than five percent (5%) of the luminaires or their components fail prior to final acceptance of the work, the City may direct the Contractor to replace, at the Contractor's expense, all luminaires included in the work with a new lot of luminaires acceptable to the City.

**19-04 RESPONSE TIME:** Contractor shall repair any failure within forty-eight (48) hours after receipt of notification from the City. If the Contractor fails to make repairs within the forty-eight (48) hour period, the City may make the necessary repairs and bill the Contractor accordingly.

**19-05 TEMPORARY LIGHTING:** The Contractor shall maintain existing lighting levels throughout the construction process, unless otherwise approved by the City. Contractor shall provide for installation, maintenance, and removal of temporary lighting systems. Items are considered subsidiary to unit prices bid for roadway lighting.

**19-06 MATERIALS:**

A. **POLES:**

The design of the completed assembly of poles and hardware shall equal or exceed the latest AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. Poles shall be in accordance with the City's Street Lighting Poles details. Each pole shall be 2-section steel davit type luminaire poles and include either single or twin davit type arms to support the luminaires. Each pole shall also include anchor bolts and, transformer bases. Guys, struts, rods, stay braces, or clamps of U-bolts shall not be used, unless otherwise noted. (Rev 2/2021)

1. Pole Assemblies: When the term pole is used, it shall include the entire pole assembly including the pole, the davit arm(s), the transformer base, the anchor bolts, the bolt covers, and all other appurtenances required for a complete and in place installation.

2. Mounting Height: The pole assembly shall provide a luminaire mounting height of 40-feet for major collectors and arterials. The pole assembly shall provide a luminaire mounting height of 28-feet for local and minor collector streets.

B. DAVIT ARMS:

The single davit arm or twin davit arms shall be a separate section that telescopes the pole shaft by 1-foot. Each arm shall have a 9-foot span and a nominal radius of 9-feet for major collectors and arterials. The arm shall have a 9-foot nominal arm span for local and minor collectors, in accordance with the City's Assembly Luminaire Arm detail.

C. TRANSFORMER BASE:

1. The transformer base (TB-17) shall be cast aluminum with all necessary fittings and attachments in accordance with the City's Twin Davit Pole details. The transformer base shall be so designed to afford the lighting standard the quality of "breaking away" under vehicular impact. The base shall break upon impact of a vehicle weighing approximately two thousand (2,000) pounds and traveling at a speed of twenty (20) miles per hour or faster. It shall meet the structural and wind load requirements specified above and shall conform to the requirements of the latest AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
2. A door opening with a removable door shall be provided in the side of the base approximately 8.56-inches x 8.94-inches x 11-inches in size. Each transformer base shall be furnished with four (4) galvanized, 1-inch diameter bolts, each with a hex nut and two (2) washers suitable for attaching the pole to the transformer base.

D. SURFACE PREPARATION:

After fabrication, all welds shall be mechanically cleaned to remove detrimental weld flux slag deposits. All exposed surfaces of the pole assembly shall have a galvanized finish.

1. Poles located in the Entertainment District or the Downtown Overlay Districts shall be powder coated black over a galvanized finish.
2. Poles located in any minor/major arterial or minor/major collector shall be powder coated bronze over a galvanized finish.
3. Poles located in neighborhoods shall have a galvanized finish. (Rev. 4/20/2021)

E. LUMINAIRES:

All arterial and collector street LED luminaires shall be RoadFocus LED Cobrahead, Duralight Cobra Head (DURA-ST25-4K-120-2-BK-SC)), or equivalent 100W Type II LED roadway lighting horizontal luminaire. All residential street LED luminaires shall be RoadFocus LED Cobrahead, Duralight Cobra Head (DURA-STR15-4K-120-2 or 4-BK-SC), or equivalent 55W Type II or Type IV LED roadway lighting horizontal luminaire. The residential 55W Type II LED luminaires shall be used on straight stretch roads and the residential 55W Type IV LED luminaires shall be used on courts and intersections. All

luminaire coloring shall match the pole and davit arm they are attached to. All fixtures shall have ANSI 7-wire photocontrol receptacle.  
(Rev. 9/2021)

F. LIGHTING SYSTEM CONTROLLERS:

A LED rated ANSI C136.10 solid state photocontrol shall be furnished with each fixture. The photocontrol MOV shall have a rating of 1280J/40kA. The base shall be 140C rated. Enclosure shall be double thick and have a double thick lens. Electronics shall be full wave rectified, and have dual Zener diodes. Design life shall be 20+ years to match fixture life.

The Contractor shall furnish lighting system controllers. Each lighting system controller shall be 30 or 60 ampere, single or double pole relay rated for 120/240 volt control. The controller shall include a cast aluminum outdoor cabinet. The cabinet shall be finished with acrylic enamel.

G. EMS MARKERS:

The Contractor shall furnish Electronic Marker System (EMS) markers equivalent to 3M type 1256.

H. IN-LINE FUSE:

The Contractor shall furnish in-line fuses, disconnecting fuse holders and disconnect kits on arterials and major collectors as per the list below. Type 2 fuses and fuse holders shall be waterproofed and rated for 0 amperes at 600 volts.

Type of Fuse Holder or <u>Disconnect Kit</u>	<u>Homac</u> <u>Series</u>	<u>Fused?</u>
1F	SLK	Yes
1D	SDK	No
3F	FYC	Yes
3D	DYC	No
4F	YFC	Yes
4D	YDC	No

I. WIRE AND CABLE:

1. The wire and cable shall be furnished in the appropriate American Wire Gage (A.W.G.) sizes shown on the plans.
2. Ground wire shall be used to connect poles and other devices to grounding electrodes (ground rods). Ground wire shall be bare soft drawn copper wire having a size of A.W.G. No.6 unless otherwise noted.
3. Streetlight cable shall be used to connect streetlights to their power source or controller.

4. Bare wire grounding conductors shall be annealed, uncoated copper conforming to the NATIONAL ELECTRICAL CODE.
5. The complete assembly shall be packaged on reels having sufficient diameter to prevent inducing permanent set or injury to the cable. Each reel shall be adequately labeled to indicate the voltage, the insulation type, the number and size of conductors, the length of cable on the reel, and the trade name of the manufacturer.

**19-07 INSTALLATION AND CONSTRUCTION:**

**A. GENERAL:**

1. Unless otherwise specified, the work and materials required by this section shall be considered incidental to the system and no direct payment will be made for them.
2. **Contractor shall stake all new street light locations. The locations shall be accepted by the City prior to beginning work. The Contractor is solely responsible for verification of vertical and horizontal separation requirements of all utilities. The Contractor shall notify the City of any perceived conflicts with existing utilities. The City may select a more desirable location or to avoid utility conflicts.**

**B. ELECTRICAL AND WIRING REQUIREMENTS:**

1. Grounding and the NATIONAL ELECTRICAL CODE: All electrical equipment shall be fabricated and connected in accordance with the NATIONAL ELECTRICAL CODE published by the National Fire Protection Association and with all State and City codes.
  - a. All equipment, housings, cabinets and pedestals shall be grounded and bonded in accordance with the NATIONAL ELECTRICAL CODE.
  - b. All housings, enclosures, cabinets and pedestals shall be grounded with a third wire (equipment) ground.
  - c. All metal conduit shall be grounded and bonded in accordance with the NATIONAL ELECTRICAL CODE.
  - d. Metallic cable sheaths, metal conduit, transformer bases, anchor bolts, and metal poles and pedestals shall be made mechanically and electrically secure to form a continuous system and shall be effectively grounded. Bonding and grounding jumpers shall be copper wire or copper strap of not less than the same cross-sectional area as A.W.G. No.6.
  - e. A ground electrode shall be furnished and installed at each new or revised service point unless otherwise noted on the plans. When so noted, an existing ground electrode may be used. Ground electrodes shall be of copper weld ground rod having a diameter of at least 5/8-inch, with at least 8-feet of the length being driven into undisturbed earth. The overall length of the ground

electrode shall be sufficient to accommodate this requirement. Grounding conductors shall be at least A.W.G. No.6 and shall be of copper. Exposed grounding conductors on poles shall be enclosed in ½-inch (minimum) diameter conduit to a height of at least 8-feet above the ground.

2. Wiring Requirements

- a. The Contractor shall furnish and install all wire, cable, connectors and other incidental materials necessary to connect all new equipment and all existing equipment which is to be incorporated in or connected to the work to form a fully functional and properly operating installation and system, as applicable.
- b. Splices in cables and wiring that are part of the work shall be made only in pole bases or weatherproof cabinets. No in-line splices shall be made at any point in the work other than at such locations. No splices in any cable or wiring shall be made in conduits, in manholes or in pull boxes unless otherwise noted.

C. CONDUIT:

- 1. The Contractor shall furnish and install all conduits necessary to complete the work in accordance with the typical drawings, the plans and the other contract documents. Conduit and its installation shall conform to the NCTCOG SPECIFICATIONS unless otherwise noted. Unless otherwise noted, the type of conduit to be used shall be in conformance with the following:
  - a. **U-Guard** shall be used on the exterior surfaces of poles.
  - b. **Schedule 40 PVC Conduit** shall generally be used underground and in other conditions unless otherwise set forth above.
- 2. Conduit runs are shown in the plans and site sketches in schematic fashion and may be changed, if approved by the City and if the revised route will not result in increased cost to the City. To the extent practical, conduit runs shall be combined in the same trench to minimize the amount of trenching and backfilling.
- 3. Underground conduit shall be placed at a minimum depth of 36-inches measured from the top of curb. If the electric power is in the rear adjacent yard, the conductor trench shall be located as shown in the City's Standard Front Line Construction Easement Layout to Transformer detail.
- 4. Underground secondary service pole connections shall comply with the City's Underground to Overhead Electrical Connections details.
- 5. Conduits entering concrete foundations for poles, pedestals or control equipment cabinets shall extend approximately 2-inches above the foundations.
- 6. All metal conduits shall be equipped with bushings to protect the wires and cables from damage.

7. The open ends of all outside vertical conduits that are exposed to rain shall be equipped with weather heads. The weather heads shall be considered incidental to the associated conduit.
8. Power service shall not be located in the same conduit or pull box as other circuits.
9. A nylon pull string shall be placed in all empty conduit prior to the placement of paving.

D. FOUNDATIONS:

1. The Contractor shall install foundations, including all necessary reinforcing steel, for equipment and poles as required by the City's Foundation Details, the plans and these special provisions. Unless otherwise noted, Class "A" concrete shall be used for all foundations. Pre-cast foundations will not be allowed.
2. Foundations shall be monolithic with the exposed surfaces formed and finished to present a neat, smooth appearance. The Contractor shall ensure that the tops of all foundations for poles and pedestals are level and not more than 2-inches above finish grade for proper mounting of the poles. The bottom of each foundation shall rest on undisturbed earth. The concrete edges of the pier shall be chamfered.
3. The Contractor shall furnish and install in the foundation a copper clad steel ground rod with a diameter of at least 5/8-inch. The ground rod shall be installed, as shown in the typical drawings so that it extends into the surrounding undisturbed earth at an angle from the side of the foundation for a minimum of 8-feet. The ground rod shall be driven into place.
4. Unless otherwise noted, the ground rod shall extend approximately 3-inches above the foundation. The location of the ground rod shall not interfere with the entry, dressing or connection cables.
5. Forms for the concrete shall be rigid and securely braced in place. Templates shall be used to properly position and hold in place the necessary conduit, anchor bolts and the ground rod. Immediately prior to pouring the concrete, both the forms and the earth which will be in contact with the concrete, shall be thoroughly moistened.
6. After concrete is placed and the top smoothed off, the concrete shall be covered with wet cotton or burlap mats for at least ninety-six (96) hours. All bracing for anchor bolts shall not be subjected to any applied strain during this curing process.
7. Drill shaft shall be protected at all times.

E. LIGHTING SYSTEM CONTROLLERS:

1. The Contractor shall install lighting system controllers in accordance with the typical drawings and the plans. Such installation shall include:
  - a. Installation of electrical service;

- b. U-guard on power pole to connect the controller with the streetlights and the streetlighting system;
  - c. Furnishing and installing needed wire and cable;
  - d. Connection of the controller to the power source, the streetlights, the system and other devices; and
  - e. Furnishing and installing needed mounting hardware.
2. The Contractor shall connect the controller to the system and the luminaires to be controlled to form a fully functional system.
  3. As part of installing an electrical service or controller, the Contractor shall furnish and install a ground rod and shall ground the electrical service and the cabinet to the ground rod, furnishing and installing all needed wire, grounding clamps and miscellaneous material.
  4. As part of installing the electrical service or controller, the Contractor shall furnish and install the in-line fuse/fuse holder required by the plans and Special Provisions. Fuses for local streets and minor collectors shall be in accordance with the City's Underground Source details.
  5. **CONTRACTOR SHALL CONNECT THE ELECTRICAL SERVICE TO THE POWER SOURCE AND TEST FOR A FULLY FUNCTIONAL SYSTEM.**
  6. The Contractor shall touch up any scratches in the finish of the lighting system controller's enclosure.

**F. STREETLIGHT POLES:**

1. The Contractor shall install streetlight poles and transformer bases and shall install the davit arms on the poles in accordance with the requirements of the typical drawings, the plans and the following requirements.
2. Direct bury of poles will not be allowed. The Contractor shall install the streetlight poles so that the pole is within two (2) degrees of vertical when loaded with the davit arms and luminaires shown on the plans.
3. The Contractor shall ground the pole to the ground rod.
4. When tightening bolts, there shall be no gaps between the base plate or transformer base and the foundation on all four bolts. If shims are necessary for leveling there shall be no gaps between the base plate or transformer base, the shims, and the foundation. All four bolts shall be tightened securely.
5. Following installation and plumbing of the pole, the Contractor shall install the bolt covers.

6. The Contractor shall touch up any damage to the finish of the pole, the davit arms, and the transformer bases which occurred during installation. Said touch up shall be performed in accordance with the paint manufacturer's recommendations.
7. The wiring and connections in the pole bases and transformer bases shall conform to the requirements of the typical drawings. In the event that a connection case arises that is not shown in the typical drawings, the principles implied by the cases shown shall be adhered to and the connections shall be subject to the approval of the City.
8. As part of the pole installation, the Contractor shall furnish and install disconnecting in-line fuse holders, with fuses, and disconnect kits in the pole base or transformer base. They shall be installed in a manner that will allow them to disconnect in the event that the pole is struck and knocked down or grossly deformed by the impact of a vehicle. The fuse holders and disconnect kits shall be connected to the streetlight circuit as shown on the typical drawings and the plans.

G. LUMINAIRES: The Contractor shall install luminaires of the sizes and types shown on the plans. The installations shall conform to the requirements of the typical drawings. As part of the luminaire installation, the Contractor shall do the following:

1. The Contractor shall assemble the luminaire as necessary and shall clean the entire optical system as necessary to render it free of dust, dirt, and other foreign material. The Contractor shall conform to cleaning instructions furnished by the luminaire manufacturer so as not to damage the optical system.
2. The Contractor shall furnish and install insulated conductors from the luminaire to the transformer base, connecting them to the luminaire, the in-line fuse and the streetlight circuits, to form a fully functioning streetlight system. The conductors shall be rated for 600 volts, A.W.G. No.12.
3. The Contractor shall install shorting caps in each fixture for streetlighting systems, or photo cells when applicable. If installing photo cells, the Contractor is to ensure the photo cells face the correct position on top of the fixture.

H. CABLE AND WIRE INSTALLATION:

1. Wherever cable or wire must be installed as part of the work, the Contractor shall furnish and install the appropriate type of cable or wire, including all necessary mounting, attachment and connection hardware, cable guys, anchors, guy guards, wire wrap, wire ties, terminal blocks, spade lugs, solderless connectors, in-line fuses and fuse holders, tape, waterproofing, ground rods and all other material necessary for proper installation in accordance with the requirements of the plans and typical drawings.
2. If a separate bid item is included for streetlight cable, it shall be the actual number of linear feet of each type of streetlight cable which has been furnished and installed under this section. For the purposes of payment, the measurement shall be the actual horizontal distance measured along the line of each span or conduit run. No

allowance will be given for cable risers on or within poles and no allowance will be given for any vertical runs below grade or within foundations:

- a. **No Splices:** Except as otherwise specifically noted in each instance, no splices shall be permitted in any wire or cable except in pole bases or equipment cabinets:
- b. **Protection of Wire and Cable Ends:** The Contractor shall water and moisture proof the raw ends of the wires and cables until they are properly terminated.
- c. **Cable in Conduit:**
  - i. **Cable Lubrication:** The Contractor shall lubricate cables and wires entering a conduit with talc, powdered soapstone, or other approved lubricant to prevent damage to the insulation during the installation process.
  - ii. Installation with existing circuits will not be allowed.
  - iii. Direct bury of cables will not be allowed.

I. **EXCAVATING AND BACKFILLING:**

1. Excavations required for the installation of conduit, cable, foundations and other equipment shall be performed so as to cause the least possible damage to the streets, sidewalks and other improvements. However, such excavations shall be sufficiently wide to permit effective repair of the pavement, sidewalks and improvements in a manner that will not require excessive maintenance. All such excavations shall be made in accordance with the typical drawings. Trenches shall not be wider than necessary for the proper installation of equipment, materials or foundations to be installed.
2. The Contractor shall furnish all materials necessary for backfilling and finishing the excavations. All backfill shall be in accordance with Section 12-31 Backfill & Backfill Material and with Section 12-32 Mechanically Compacted Backfill specifications.
3. Excavations shall not begin until immediately before the installation of the equipment or materials to be installed.
4. The Contractor shall maintain all backfilled excavations in a well filled and well maintained state to provide a smooth and well drained surface until final paving and grading is accomplished.

J. **SITE RESTORATION:**

Improvements such as pavement surfaces, sidewalks, curbs, gutters, curbs and gutters, base material and other improvements which are disturbed, and to the extent practical, shall be restored to the same texture and finish. The Contractor shall accomplish such restoration of all surfaces that are damaged by the Contractor in any way, whether such damage was

necessary or unnecessary. All such restoration shall be in accordance with the City's standard specifications and details.

**19-08 SALVAGE OF CABLE AND EQUIPMENT:** All equipment which is removed by the Contractor and not reused in the work shall be salvaged. Contractor shall coordinate with the City to determine which equipment is salvageable. Contractor shall provide five (5) business days notification to the City prior to start of construction to allow the City to conduct a walkthrough and identify salvageable equipment and poles. Contractor shall remove the identified salvageable poles and equipment and deliver to the City at 801 W. Main Street, Arlington, Texas 76013. Contractor shall coordinate with the City for delivery time of the salvaged poles and equipment. Existing wire, cables, direct bury streetlight poles, and any equipment that cannot be salvaged shall be removed and disposed of by the Contractor.

END OF SECTION

**SECTION NO. 20**

**SPECIAL PROVISIONS - SIGN SPECIFICATIONS**

- A. Contractor shall furnish, fabricate, and erect sign assemblies consisting of the signs, sign supports, foundations, and associated mounting hardware in accordance with the City's details.
- B. Contractor shall remove and dispose of all existing signs, poles, and foundation; and furnish and install new signs as shown on the construction plans. All signs must meet current TMUTCD design and reflectivity requirements. Contractor shall prevent scarring and marring of poles and signs. Any damaged components shall be replaced with new material at the Contractors expense, as directed by the City.
- C. Payment shall be made in accordance with the lump sum bid item in the PROPOSAL.

END OF SECTION

**SECTION NO. 21**

SPECIAL PROVISIONS - SIGNALS SPECIFICATIONS

**NOT APPLICABLE**

**SECTION NO. 22**

SPECIAL PROVISIONS – MILL & OVERLAY/RECLAMATION SPECIFICATIONS

**NOT APPLICABLE**



Innovative approaches  
Practical results  
Outstanding service

[www.freese.com](http://www.freese.com)

## SECTION NO. 23

### Technical Specifications

The following Freese and Nichols, Inc. technical specifications (FNI Specifications) shall supplement the Technical Specifications:

31 37 00	Riprap and Bedding
32 30 20	Waterway Structures
32 31 13	Chain Link and Wire Fencing
33 39 13.1	Coating for Sanitary Utility Sewage Manholes, Frames, and Covers

**31 37 00 RIPRAP AND BEDDING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. The WORK includes excavation, grading, and installation of riprap, buried soil riprap, and bedding placed at the locations shown on the DRAWINGS. The materials to be used and the construction of such structures shall be as specified herein.

**1.02 REFERENCES**

- A. The following is a list of standards which may be referenced in this section:
  - 1. American Association of State Highway and Transportation Officials (AASHTO):
    - a. T85, Standard Method of Test for Specific Gravity and Absorption of Coarse Aggregate.
    - b. T96, Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
    - c. T103, Standard Method of Test for Soundness of Aggregates by Freezing and Thawing.
    - d. T104, Standard Method of Test for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate.
    - e. T248, Reducing Field Samples of Aggregate Test Size.
  - 2. ASTM International (ASTM): D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).

**1.03 SUBMITTALS**

- A. CONTRACTOR shall cooperate with ENGINEER in obtaining and providing samples of all specified materials.
- B. CONTRACTOR shall submit certified laboratory test certificates for all items required in this section.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. RIPRAP
  - 1. Riprap used shall be the type designated on the DRAWINGS and shall conform to Table 1.

**Table 1: Riprap Gradation**

Riprap Designation	% Smaller Than Given Size By Weight	Intermediate Rock Dimension (Inches)	d <sub>50</sub> * (Inches)
Type 6"	70 - 100	12	6**
	50 - 70	9	
	35 - 50	6	
	2 - 10	2	
Type 9"	70 - 100	15	9**
	50 - 70	12	
	35 - 50	9	
	2 - 10	3	
Type 12"	70 - 100	21	12**
	50 - 70	18	
	35 - 50	12	
	2 - 10	4	
Type 18"	70 - 100	30	18
	50 - 70	24	
	35 - 50	18	
	2 - 10	6	
Type 24"	70 - 100	41	24
	50 - 70	33	
	35 - 50	24	
	2 - 10	9	

\*d<sub>50</sub> = Mean Particle Size  
\*\*Mix 6", 9" and 12" riprap with 35% topsoil (by volume) and bury it with 4 to 6 inches of topsoil, all vibration compacted, and revegetate.

2. The riprap designation and total thickness of riprap shall be as shown on the DRAWINGS. The maximum stone size shall not be larger than the thickness of the riprap.
3. Neither width nor thickness of a single stone of riprap shall be less than one-third (1/3) of its length.
4. The specific gravity of the riprap shall be two and one-half (2.5) or greater.
5. Riprap specific gravity shall be according to the bulk-saturated, surface-dry basis, in accordance with AASHTO T85.
6. The bulk density for the riprap shall be 1.3 ton/cy or greater.
7. The riprap shall have a percentage loss of not more than forty percent (40%) after five hundred (500) revolutions when tested in accordance with AASHTO T96.
8. The riprap shall have a percentage loss of not more than ten percent (10%) after 5 cycles when tested in accordance with AASHTO T104 for ledge rock using sodium sulfate.
9. The riprap shall have a percentage loss of not more than ten percent (10%) after twelve (12) cycles of freezing and thawing when tested in accordance with AASHTO T103 for ledge rock, procedure A.
10. Rock shall be free of calcite intrusions.
11. Gradation:
  - a. Each load of riprap shall be reasonably well graded from the smallest to the largest size specified.
  - b. Stones smaller than the two to ten percent (2 to 10%) size will not be permitted in an amount exceeding ten percent (10%) by weight of each load.

- c. Control of gradation shall be by visual inspection. However in the event ENGINEER determines the riprap to be unacceptable, ENGINEER shall pick two (2) random truckloads to be dumped and checked for gradation.
  - 1) Mechanical equipment and labor needed to assist in checking gradation shall be provided by CONTRACTOR at no additional cost.

12. Color:

- a. The color of the riprap shall be approved by ENGINEER prior to delivery to the PROJECT site.
- b. Color shall be consistent on the entire PROJECT and shall match the color of rock to be used for all other portions of the WORK.

13. Broken concrete or asphalt pavement shall not be acceptable for use in the WORK.

14. Rounded riprap (river rock) is not acceptable, unless specifically designated on the DRAWINGS.

B. BURIED SOIL RIPRAP

- 1. Rock requirements are to comply with riprap as specified in Article Materials.
- 2. The soil material shall be native or topsoil and mixed with sixty-five percent (65%) riprap and thirty-five percent (35%) soil by volume.
- 3. Buried soil riprap shall consist of a uniform mixture of soil and riprap without voids.

Table 2: Mix Requirements for Type 6" and 9" Void-Filled Riprap without River Cobble

Approximate Proportions (loader buckets)	Material Type	Material Description
6	Riprap	Type 6" or 9"
1	Void-fill material	VTC (Vehicle Tracking Control) rock (crushed rock with 100% passing 4-inch sieve, 50-70% passing 3-inch sieve, 0-10% passing 2-inch sieve)
1	Void-fill material	4-inch minus pit run surge (round river rock and sand, well graded, 90-100% passing 4-inch sieve, 70-80% passing 1.5-inch sieve, 40-60% passing 3/8-inch sieve, 10-30% passing #16 sieve)
1	Void-fill material	Type II bedding
1/2 to 1	Void-fill material	Native topsoil

Note: Mix proportions and material gradations are appropriate and are subject to adjustment by the ENGINEER.

**Table 3: Mix Requirements for Type 12" and 18" Void-Filled Riprap without River Cobble**

Approximate Proportions (loader buckets)	Material Type	Material Description
6	Riprap	Type 12" or 18"
2	Void-fill material	7-inch minus crushed rock surge (100% passing 7-inch sieve, 80-100% passing 6-inch sieve, 35-50% passing 3-inch sieve, 10-20% passing 1.5-inch sieve)
1	Void-fill material	VTC (Vehicle Tracking Control) rock (crushed rock with 100% passing 4-inch sieve, 50-70% passing 3-inch sieve, 0-10% passing 2-inch sieve)
1	Void-fill material	4-inch minus pit run surge (round river rock and sand, well graded, 90-100% passing 4-inch sieve, 70-80% passing 1.5-inch sieve, 40-60% passing 3/8-inch sieve, 10-30% passing #16 sieve).
1	Void-fill material	Type II bedding
½ to 1	Void-fill material	Native topsoil

Note: Mix proportions and material gradations are appropriate and are subject to adjustment by the ENGINEER.

**C. BEDDING:**

1. Gradation for granular bedding shall conform to Table 4.
2. Granular bedding designation and total thickness of bedding shall be as shown on the DRAWINGS.
3. Granular bedding shall meet the same requirements for specific gravity, absorption, abrasion, sodium sulfate soundness, calcite intrusion, and freeze-thaw durability as required for riprap.
  - a. Broken concrete asphalt pavement or sledge, shall not be acceptable for use in the WORK. Rounded river rock is not acceptable unless specifically designated on the DRAWINGS.
  - b. The requirements for the wear test in AASHTO T96 shall not apply.

**Table 4: Granular Bedding Gradation**

U.S. Standard Sieve Size	Percent by Weight Passing Square-Mesh Sieves	
	Type I (CDOT Sect. 703.01)	Type II (CDOT Sect. 703.09 Class A)
3 inches	-	90 - 100
1½ inches	-	-
¾ inch	-	20 - 90
¾ inch	100	-
No. 4	95 - 100	0 - 20
No. 16	45 - 80	-
No. 50	10 - 30	-
No. 100	2 - 10	-
No. 200	0 - 2	0 - 3

## PART 3 EXECUTION

### 3.01 PREPARATION

- A. Channel slope, bottom, or other areas that are to be protected with buried soil riprap shall be free of brush, trees, stumps, and other objectionable material and be graded to a smooth compacted surface as shown on the DRAWINGS.
- B. CONTRACTOR shall excavate areas to receive riprap to the subgrade as shown on the DRAWINGS accounting for granular bedding.
- C. Subgrade Materials:
  - 4. The subgrade materials shall be stable.
  - 5. If unsuitable materials are encountered, they shall be removed and replaced.
- D. Additional Compaction:
  - 1. Additional compaction shall not be required unless specified by ENGINEER.
  - 2. When subgrade is built up with embankment material it shall be compacted to ninety-five percent (95%) maximum density (ASTM D698).
- E. Bedding:
  - 1. After an acceptable subgrade is established, bedding shall be immediately placed and leveled to the specified elevation on the DRAWINGS.
  - 2. Immediately following the placement of the bedding material, the riprap shall be placed.
  - 3. If bedding material is disturbed for any reason, it shall be replaced and graded at CONTRACTOR's expense.
  - 4. Contamination:
    - a. In-place bedding materials shall not be contaminated with soils, debris or vegetation before the riprap is placed.
    - b. If contaminated, the bedding material shall be removed and replaced at CONTRACTOR's expense.

### 3.02 PLACEMENT

#### A. RIPRAP

- 1. Following acceptable placement of granular bedding, riprap placement shall commence as follows:
  - a. Machine Placed Riprap:
    - 1). Riprap shall be placed on the prepared slope or channel bottom areas in a manner which will produce a reasonably well graded mass of stone with the minimum practicable percentage of voids.
    - 2). Riprap shall be machine placed, unless otherwise stipulated in the DRAWINGS or SPECIFICATIONS.
    - 3). It is the intent of these SPECIFICATIONS to produce a fairly compact riprap protection in which all sizes of material are placed in their proper proportions.

Unless otherwise authorized by ENGINEER, the riprap protection shall be placed in conjunction with the construction of embankment or channel bottom with only sufficient delay in construction of the riprap protection, as may be necessary, to allow for proper construction of the portion of the embankment and channel bottom which is to be protected.

- b. Slope Placement:
  - 1). When riprap is placed on slope, placement shall commence at the bottom of the slope working up the slope.
  - c. The entire mass of riprap shall be placed on either channel slope or bottom so as to be in conformance with the required gradation mixture and to line, grade, and thickness shown on the DRAWINGS.
  - d. Riprap shall be placed to full course thickness at one operation and in such a manner as to avoid displacing the underlying bedding material. Placing of riprap in layers, or by dumping into chutes, or by similar methods shall not be permitted.
  - e. All material used for riprap protection for channel slope or bottom shall be placed and distributed such that there shall be no large accumulations of either the larger or smaller sizes of stone. Some hand placement may be required to achieve this distribution.
  - f. The basic procedure shall result in larger materials flush to the top surface with faces and shapes arranged to minimize voids, and smaller material below and between larger materials.
  - g. Surface grade shall be a plane or as indicated, but projections above or depressions under the finished design grade by more than ten percent (10%) of the rock layer thickness shall not be allowed.
  - h. Smaller rock shall be securely locked between the larger stone. It is essential that the material between the larger stones not be loose or easily displaced by flow or by vandalism.
  - i. The stone shall be consolidated by the bucket of the back hoe or other means that will cause interlocking of the material.
  - j. All rock is to be placed in a dewatered condition beginning at the toe of the slope or other lowest point.
  - k. CONTRACTOR shall maintain the riprap protection until accepted. Any material displaced for any reason shall be replaced to the lines and grades shown on the DRAWINGS at no additional cost to OWNER. If the bedding materials are removed or disturbed, such material shall be replaced prior to replacing the displaced riprap.
- 2. Hand Placed Riprap:
  - a. Hand placed riprap shall be performed during machine placement of riprap and shall conform to all the requirements of PART 2 above.
  - b. Hand placed riprap shall also be required when the depth of riprap is less than two (2) times the nominal stone size, or when required by the DRAWINGS or SPECIFICATIONS.

- c. After the riprap has been placed, hand placing or rearranging of individual stones by mechanical equipment shall be required to the extent necessary to secure a flat uniform surface and the specified depth of riprap, to the lines and grades as shown on the DRAWINGS.

3. Soil Replacement Over Riprap:

- a. Where riprap is designated to be buried, place onsite excavated material that is free from trash and organic matter in riprap voids by washing and rodding.
- b. Prevent excessive washing of material into stream.
- c. When voids are filled and the surface accepted by ENGINEER, place a nominal six (6) inches of topsoil over the area, or as designated on the DRAWINGS.
- d. Find grade, seed, and mulch per the SPECIFICATIONS.

B. BURIED SOIL RIPRAP

1. Adjacent stockpiles of riprap and soil shall be created and mixing done at the stockpile location, not at the location where buried soil riprap is to be placed.
2. Mix thirty-five (35%) soil by volume with stockpiled riprap, using additional moisture and control procedures that ensure a homogenous mixture; where the soil fills the inherent voids in the riprap without displacing riprap.
3. With prior approval of ENGINEER, layering the riprap and soil instead of premixing may be allowed if the native soil is granular.
4. Place a first layer of smaller soil riprap of approximate  $d_{50}$  thickness. Then place the top layer with surface rocks that are largely  $d_{50}$  or greater, filling voids as necessary with smaller planted riprap. Create a smooth plane.
5. The mixture shall be consolidated by large vibratory equipment or backhoe bucket to create a tight, dense interlocking mass.
6. The soil shall be further wetted to encourage void filling with soil.
7. Any large voids shall be filled with rock and small voids filled with soil.
8. Excessively thick zones of soil prone to washing away shall not be created (for example, no thickness greater than six (6) inches).
9. For buried soil riprap, the top surface shall be covered with four (4) inches of topsoil such that no rock points are protruding.
10. The final surface shall be thoroughly wetter for good compaction, smoothed and compacted by vibrating equipment; the surface shall then be hand raked to receive planting or seeding.

3.03 REJECTION OF WORK AND MATERIALS:

- A. ENGINEER will reject placed riprap, buried soil riprap and bedding that do not conform to this section. CONTRACTOR shall immediately remove and re-lay the riprap, soil riprap, and bedding to conform to SPECIFICATIONS.
- B. Riprap, buried soil riprap, and bedding that do not conform to this section shall be rejected, whether delivered to the job site or placed.

- C. Rejected riprap, soil riprap and bedding shall be removed from the PROJECT site by CONTRACTOR at CONTRACTOR's expense.

**END OF SECTION**

## **SECTION 32 30 20 WATERWAY STRUCTURES**

### **SECTION 1 GENERAL**

#### **1.1 DESCRIPTION**

The work covered by this section consists of furnishing materials and installation of in-stream structures at locations designated on the Plans.

#### **1.2 SUMMARY**

A. Section Includes:

1. Rock Drop Structure

#### **1.3 DEFINITIONS**

- A. Bed Material: Graded stone materials placed within the stream channel.
- B. Constructed Riffle: As shown on the detail on the constructed riffles consist of Boulders placed at alternating locations, left of center then right of center, etc., on top of Bed Material along the length of the riffle in a manner as to create a meander of the flow path along the riffle. Individual stones are placed in a manner that directs flow towards the center of the channel so as not direct flow around the stone and into the bank.
- C. Floodplain Block: Graded Boulder mounds, keyed into existing ground in floodplain areas, with the intent of preventing scour during high flow events that could undermine the newly constructed channel and/or create an alternate channel.
- D. Riffle Material: Graded stone materials placed within a riffle section of the stream channel, specifically where larger material is required as shown on the Plans is required as shown on the Plans.
- E. Thalweg: Lowest point of the stream channel at any given section. Depth and location within the stream channel will vary depending on stream feature (i.e. riffle, run, pool, glide).

#### **1.4 SUBMITTALS**

- A. **Material Sources:** Within fifteen (15) days of the award of the Contract, the Contractor shall forward in writing a complete listing of the sources of all stone materials to the Engineer.
- B. **Product Certificates:** For geotextile, geosynthetic clay liner, nails, and rebar from the manufacturer.

#### **1.5 QUALITY ASSURANCE**

- A. **Contractor's Qualifications:** Submit a list of personnel working on the project including name, title, and statements of their current positions and previous experiences. Selected personnel must have been involved in cross vane construction projects similar to the proposed work within the last 5 years. Selected personnel must have successfully completed cross vane construction on at least 3 projects.

#### **1.6 DELIVERY**

- A. Stone materials will be inspected and approved by the Engineer at the time of delivery. Material not meeting the requirements herein shall be removed from the Site by the Contractor at the Contractor's expense.

#### **1.7 PROJECT CONDITIONS**

- A. **Weather Limitations:** Installation of materials shall progress only under favorable weather conditions, during the proper season for such work, and in accordance with locally accepted practice.

#### **1.8 OTHER**

- A. All conditions listed under subsections Planting Seasons and Conditions; Quality; Delivery, Storage, and Handling; Inspections; and Project Conditions shall apply for the application of Live Stakes under this Section.

### **SECTION 2 PRODUCTS**

#### **2.1 STONE**

- A. **Stackable:** Stackables shall consist of natural fieldstone, natural river rock or blasted quarry stone. The stone shall be sound, tough, dense, resistant to the action of air and water, free of fractures, and suitable in all respects for the purpose intended. Stackables used in the construction of Rock Drop Structure shall be a minimum height and width of two (2) feet, minimum length of three (3) feet, and a minimum weight of one (1) ton each. Maximum height of stackables shall be three (3) feet, maximum width shall be five (5) feet, and

maximum length shall be six (6) feet. Specific sizes are shown on the Plans for structures within these minimum and maximum ranges shall be installed.

Stackables shall be relatively flat on either side in the long dimensions. Rectangular boulders are preferred; round boulders will not be accepted. Sizes may vary based on the rock available, but the Contractor is required to strictly adhere to maximum and minimum dimensions shown on the Plans unless otherwise directed by the Engineer.

- B. Bedding Material shall meet the requirements as specified on the plans.
- C. Stone Filling – Fine shall meet the requirements as specified on the plans.
- D. Stone Filling – Medium shall meet the requirements as specified on the plans.

## 2.2 OTHER

- A. Drainage Geotextile: shall meet the requirements as specified on the plans.
- B. Nails: Nails shall be galvanized roofing nails.
- C. Staples: Staples shall be galvanized steel.
- D. Rebar: Rebar shall be #8 Rebar.

## SECTION 3 EXECUTION

### 3.1 PREPARATION

- A. Excavate or place fill to subgrade areas as shown on Plans. In-stream structures shall not be placed against existing riprap or other existing structures unless approval is received from the Engineer. Any damage to structures resulting from the Contractor's operations shall be repaired at the Contractor's expense.

### 3.2 INSTALLATION

- A. In general, the overall shape of structures that extend into the channel bed shall follow a parabolic cross section to maintain low flows in the area of the thalweg; however, the location and depth of the thalweg shall vary depending on the locations of the stream features (riffles and pools) as per the Plans.
- B. The quantity of stone to be installed will be affected by the actual conditions that occur during the construction of the project and may be increased, decreased, or eliminated entirely at the

direction of the Engineer. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

- C. Rock Drop Structure shall be constructed according to the detail shown on the Plans; field conditions may dictate changes as directed by the Engineer. Rocks placed at the apex, or cross portion, hold back streambed material and prevent it from washing downstream. Wings are constructed from the cross portion, creating a rough "U" shape so that water flowing downstream is forced over the structure towards the middle of the channel on either side of the structure. Rock sills are constructed perpendicular to the channel at the downstream end of the wings to prevent the stream from cutting around the structure in high flows. The Engineer shall approve the stackable selection prior to in-stream structure placement to ensure conformity with the specifications and field conditions.

Place footer rocks and header rocks in the middle of the channel to create the cross portion as shown on the Plans. Place the footer rocks into the existing ground or fill subgrade as shown on the Plans, then place header rocks atop the footer rocks so that the upstream side of the header rock is at the upstream bed elevation. For the wing portions, place the footer rocks into the existing ground or fill subgrade as shown on the Plans, then place header rocks atop the footer rocks in such a manner as they slope up from the bed elevation at the cross portion towards the bank. The angles formed by the wings and the channel bank, as well as specific structure dimensions are indicated on the Plans. Header and footer rocks at the bank shall be embedded securely into the bank, connected to the sill rocks in such a way that eliminates the possibility of water diverting around the structure.

Along cross portions and wings of the Rock Drop Structure, *individual header and footer rocks* shall be fitted tightly such that water flows over the structure and not through the individual rocks. The rocks must be placed such that the ends butt up against each other; gaps are not acceptable. However, where voids occur between rocks due to the jagged surfaces, install stone filling from both the upstream and downstream sides of the structure to fill the voids as shown on the Plans. Depending upon field conditions, the Engineer may direct the Contractor to leave gaps between the header rocks installed in the cross portions to allow water to flow between these header rocks.

Within the stream channel, at the upstream side of the cross portions and wings, install geotextile atop subgrade and up along the upstream side of the header and footer rocks; geotextile shall extend below the footer rocks as shown on the Plans. Install bedding material atop the geotextile. Depth of bedding material and width will be as shown on the Plans. Drainage geotextile that overlaps the header rocks shall be trimmed after backfilling with bedding material, so that a maximum of two (2) inches is exposed.

At the downstream end of the Rock Drop Structure install modular block toe protection into the channel bank to create a sill/tie-in; embed the blocks into the bank, set to elevation to the depth and length shown on the Plans, and backfill with excavated materials or stone filling as shown on the Plans. The Contractor shall make adjustments to the structure as directed by the Engineer after water has been returned to the channel at no additional cost.

Cross vanes connected to proposed modular block toe wall shall abut up to the proposed toe wall as shown in the plans. An embedded sill is not needed into the channel bank in these locations.

**END OF SECTION**

## 32 31 13 CHAIN LINK AND WIRE FENCING

### DESCRIPTION

- A. Furnish and install chain link fence, wire fence, and gates.

### MATERIALS

- A. Furnish materials in accordance with details shown on the plans and with the requirements of this technical specification.
- B. Chain Link Fence
1. Wire Fabric. Provide wire fabric with:
    - a. 9 gauge (0.148 in. diameter) steel wire with a minimum breaking strength of 1,290 lb. meeting ASTM A392 Class I or ASTM A491;
    - b. mesh size of 2 in.  $\pm$ 1/8 in. between parallel wires with at least 7 meshes in a vertical dimension of 23 in. along the diagonals of the openings; and
    - c. knuckled selvages at the top and bottom edge of the fabric, unless otherwise shown on the plans.
  2. Posts. Provide posts of the size and weight shown on the plans. Do not provide rerolled or open-seam posts. Use material for all posts meeting ASTM F1043 Group 1A Regular Grade or Group 1C High Strength.
  3. Post Caps. Provide malleable iron post caps designed to exclude all moisture. Furnish post caps with an opening for the top rail if top rail is shown on the plans. Post caps must have a 2-in. skirt.
  4. Gates. Provide gates fabricated from round sections of pipe of the size and weight shown on the plans. Use material for all gate pipes meeting ASTM F1043 Group 1A Regular Grade or Group 1C High Strength. For each gate, include:
    - a. corner and tee fittings of malleable iron or pressed steel with means for attaching diagonal bracing members;
    - b. hinges of malleable iron allowing a full 180° swing, easily operated by one person;
    - c. ball-and-socket-type bottom hinges that do not twist or turn from the action of the gate and prevent the closed gate from being lifted off the hinges;
    - d. a positive stop that prevents any portion of the gate from swinging over an adjacent traffic lane;
    - e. malleable iron pulley systems for roll type gate (only when required);
    - f. diagonal braces consisting of 3/8-in. diameter cable with turnbuckles, 2 to each gate frame, and, for vehicle gates, a vertical pipe brace of the size and weight shown on the plans at the center of each gate leaf;
    - g. latches of malleable iron or steel for single gates with a single-fork latch and padlock eye that will keep the gate closed;



- a). Outside—minimum 0.9 oz./sq. ft. galvanized zinc weight with a verifiable polymer overcoat.
  - b). Inside—minimum 0.9 oz./sq. ft. galvanized zinc weight before forming, or minimum 0.3 mils zinc-based coating after forming containing a minimum 90% zinc dust, by weight.
  - c). Fittings, Bolts, and Other Miscellaneous Hardware. Galvanize all fittings, bolts, and miscellaneous hardware in conformance with Item 445, "Galvanizing."
  - d). Tension Wire. Zinc-coat tension wire with a minimum coating of 0.80 oz./sq. ft. or aluminum-coat with a minimum coating of 0.30 oz./sq. ft.
  - e). Pull Cable. Zinc-coat pull cable with a minimum coating of 0.80 oz./sq. ft. of individual-wire surface when tested in conformance with ASTM A116.
- C. Wire Fence
1. Metal Posts and Braces. Furnish steel pipe in accordance with ASTM A53 if used for posts and braces. Use steel that meets ASTM A702 for T-posts. Use only new steel. Do not use rerolled or open-seam material. Furnish galvanized steel sections. Use the size, weight, and area of posts, braces, and anchor plates shown on the plans.
  2. Gates and Gateposts. Furnish materials to the dimensions shown on the plans or as directed.
  3. Barbed Wire. Furnish barbed wire in accordance with ASTM A121, Class 1. Use barbed wire consisting of 2 strands of 12-1/2 gauge wire, twisted with 2-point 14 gauge barbs spaced no more than 5 in. apart, or other barbed wire as directed.
  4. Wire Mesh. Furnish wire mesh fabric in accordance with ASTM A116, Class 1 to the height and design shown on the plans. Use at least 10 gauge wire for the top and bottom wires and at least 12-1/2 gauge wire for the intermediate wires and vertical stays.
  5. Miscellaneous. Furnish galvanized bolts, nuts, washers, braces, straps, and suitable devices for holding barbed wire and wire mesh firmly to metal posts. Use material of good commercial quality and design. Provide galvanized staples at least 1-1/2 in. long.

## CONSTRUCTION

### A. Chain Link Fence

1. Erect the chain link fence to the lines and grades established on the plans. Overall height of the fence when erected is the height above the grade shown.
  - a). Clearing and Grading. Clear all brush, rocks, and debris necessary for the installation of this fencing.
  - b). Stake the locations for corner posts and terminal posts unless otherwise shown on the plans. Follow the finished ground elevations for fencing panels between corner and terminal posts. Level off minor irregularities in the path of the fencing.
  - c). Erection of Posts. Install posts as shown on the plans. Plumb and permanently position posts with anchorages firmly set before fabric is placed. Brace corner and pull posts as shown on the plans.

d. Postholes.

- 1). Drill holes for concrete footings for all posts to provide footings of the dimensions shown on the plans.
- 2). Penetrate solid rock by at least 12 in. (18 in. for end, corner, gate, and pull posts) or to plan depth where the rock is encountered before reaching plan depth. Drill holes in the solid rock with a diameter at least 1 in. greater than the outside diameter of the post.
- 3). Fill the hole in the solid rock with grout consisting of 1 part hydraulic cement and 3 parts clean, well-graded sand after the posts are set and plumbed. If desired, other grouting materials may be used only if approved. Thoroughly work the grout into the hole, leaving no voids. Construct concrete footings from the solid rock to the top of the ground.

e. Gate Posts.

- 1). Align the tops of all gate frames with the fencing top tension wire or top rail. Provide vehicular gates that are greater in overall height than the adjacent fencing by the height necessary to extend to within 2 in. of the pavement between the curbs if curbs are shown on the plans.

f. Concrete Footings.

- 1). Center posts in their footings. Place concrete and compact by tamping or other approved methods. Machine mix all batches of concrete over 1/2 cu. yd. Hand mixing concrete is allowed on batches under 1/2 cu. yd.
- 2). Use forms for footings where the ground cannot be satisfactorily excavated to neat lines. Crown the concrete or grout (for solid rock) to carry water from the post. Keep the forms in place for at least 24 hr. Backfill the footing with moistened material as soon as each form is removed, and thoroughly tamp. Cover concrete with at least 4 in. of loose moist material, free of clods and gravel, immediately after placing concrete. No other curing is required.
- 3). Spread all excess excavated and loose material used for curing neatly and uniformly. Remove excess concrete and other construction debris from the site.

g. Erection of Fabric.

- 1). Place the fabric with the cables drawn taut with the turnbuckles after all posts have been permanently positioned and anchorages firmly set. Secure one end and apply enough tension to the other end to remove all slack before making attachments. Cut the fabric and independently attach each span at all corner posts and pull posts unless otherwise shown on the plans.
- 2). Follow the finished contour of the site with the bottom edge of fabric located approximately 2 in. above the grade. Grade uneven areas so the maximum distance between the bottom of fabric and ground is 6 in. or less.
- 3). Fasten fabric at 12 in. intervals to the top and bottom tension wires between posts. Fasten the fabric in the same manner when top rail is shown on the plans. Fasten the fabric on gate frames to the top and bottom of the frame at 12 in. intervals. Use steel wire fabric ties of 9 gauge steel or larger. Fasten fabric to

terminal posts by steel stretcher bars and stretcher bar bands fitted with carriage bolts and nuts of the size and spacing shown on the plans. Use stretcher bars to fasten end posts, pull posts, corner posts, and gateposts with stretcher bar bands at intervals of no more than 15 in. Attach stretcher bars to terminal posts with 1 × 1/8 in. flat steel bands with 3/8-in. carriage bolts at intervals up to 15 in.

h. Electrical Grounds.

- 1). Provide at least one electrical ground for each 1,000 ft. of fence, located near the center of the run. Provide additional grounds directly under the point where power lines pass over the fence.
- 2). Vertically drive or drill in the grounding rod until the top of the rod is approximately 6 in. below the top of the ground. Connect a No. 6 solid copper conductor to the rod and to the fence by a UL-listed method so that each element of the fence is grounded.

B. Wire Fence

1. Space fence posts as shown on the plans. Set fence posts plumb and firm at the intervals, depth, and grade shown on the plans. Brace corner and pull posts in 2 directions. Brace end posts and gateposts in one direction. Install a corner post where the alignment changes 30° or more. Brace the angle post to the adjacent line posts with diagonal tension wires at alignment angles between 15° and 30°.
2. Snub or guy fencing at the critical point of grade depressions where stresses tend to pull posts out of the ground with a double 9 gauge galvanized wire. Connect the wire to the top horizontal line of the barbed wire or to the top and bottom wire or wire mesh fabric, and to a deadman weighing at least 100 lb. Stretch the fence before guying and snubbing.
3. Install corner, end, or angle post assembly before stretching the wire between posts. Connect existing cross fences to the new fences and corner posts at junctions with existing fences. Fasten to posts using galvanized ties or staples while drawing barbed wire and wire fabric taut, or as shown on the plans. Install pull post assemblies at 500-ft. intervals for steel posts and at 1,000-ft. intervals for wood posts. Metal line posts may be driven provided driving does not damage the posts. Metal corners, ends, pull posts, and braces must be set in concrete footings crowned at the top to shed water. Thoroughly tamp backfill in 4-in. layers.

**MEASUREMENT**

A. Chain Link Fence

1. Chain link fence will be measured by the linear foot of fence installed measured at the bottom of the fabric along the centerline of the fence from center to center of posts, excluding gates. Gates will be measured as each gate installed.

B. Wire Fence

1. Fencing will be measured by the foot of wire fence, excluding gates. Gates will be measured as each gate.

**PAYMENT**

**A. Chain Link Fence**

1. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Chain Link Fence" of the height specified or "Chain Link Fence Gate" of the height and width of opening specified.
2. 6-foot Chain Link Fence. This price is full compensation for furnishing and installing fencing, except gates; cleaning, grading, and backfilling; removing and disposing of surplus material; and equipment, labor, tools, and incidentals.
3. 6-foot x 6-foot Chain Link Fence Gate. This price is full compensation for installing gate and for providing materials, center anchorages, equipment, labor, tools, and incidentals.

**B. Wire Fence**

1. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Wire Fence" or "Gate" of the type specified. This price is full compensation for furnishing, preparing, hauling, and installing fence and gate materials; excavation, backfilling, and disposal of surplus material; removal and trimming of brush and tree limbs; and equipment, labor, tools, and incidentals.

**END OF SECTION**

**33 39 13.1 COATING FOR SANITARY UTILITY SEWAGE MANHOLES, FRAMES AND COVERS****1.00 GENERAL****1.01 WORK INCLUDED**

- A. Contractor will furnish all labor, materials, equipment and incidentals necessary to apply manhole protective coatings and/or liner as shown on the Drawings or as specified herein, including the preparation and/or repair of surfaces prior to application.
- B. Contain, treat, and dispose of any dust, spray, drainage, or spillage resulting from coating operations. It will be the Contractor's responsibility to determine if the materials to be disposed of are classified as Hazardous Waste. Disposal of waste, hazardous or otherwise, will be in accordance with applicable regulations. Contractor will be aware of and understand the regulations concerning disposal of waste generated by coating operations.
- C. Contractor will ensure that coating manufacturer's technical representative will be on-site for the initial surface preparation and coating application processes. The technical representative will confirm, with a follow-up report, that surface preparation and coating application processes were performed in compliance with the coating manufacturer's written guidelines.

**1.02 QUALITY ASSURANCE**

- A. Manufacturer's Qualifications:
  - 1. Certified in compliance with latest version of ISO 9001 Quality Standards for formulation (research and development), manufacture, and technical support.
  - 2. Manufacturer must provide an authorized technical specialist to assist the Contractor, if necessary.
  - 3. Products will be manufactured in the United States.
- B. Applicator's Qualifications: Applicators must be qualified in this line of work and have a minimum of 5 years of experience in the successful application of the protective coatings of the types specified herein. Submit a list of five recent projects, completed within the last 3 years, including names of references with contact information for those projects. Submit manufacturer's approved applicator and training certificates for those who will be installing the coating. Applicator's qualifications and training certificates to be included in coating submittal and will be filed as Record Data.

1.03 SUBMITTALS

A. Submittals shall include:

1. Manufacturer's product data sheet for each coating type, including surface preparation requirements, recommended spreading rates, application procedures, recommended primers, environmental limits (temperature, humidity, and dew point) and other instructions.
2. Material Safety Data Sheets (MSDS) for all coatings, solvents, etc.
3. Applicator's qualifications, including training certificates for those who will be performing the coating application.
4. Manufacturer's statement regarding applicator instruction on product use and application.
5. Warranty documentation.
6. Certified Material Test Reports.
7. Documentation of Field Testing: The location and results of the thickness tests will be documented during field testing. The documentation will include test method and procedure used, equipment used, air temperature, surface temperature, humidity, dew point, quantity of structure(s) lined (square footage covered), number of gallons of lining compound expended and materials used. If a location fails a test, the failing result will be included in the documentation along with what actions were taken to repair the failing area and the results of the subsequent retest of the area. After successful completion of the coating installation, this documentation will be submitted to the Owner as Record Data. This documentation shall be included in the weekly inspection reports.
8. Coating Plan:
  - a. Anticipated coating process schedule by date, including dates when hold-point inspections are anticipated. Schedule must indicate detailed activities performed daily.
  - b. Detailed procedures and schedule for all pre-cleaning, surface preparation and application of coating, including touch-up and repair procedures for all coating systems.
  - c. Recoat schedule on the submitted coating materials.
  - d. Data sheets complete with a graduated scale or curve, produced by the coating manufacturer, with curing characteristics and recommendations regarding complete coating curing.
  - e. Provide a written plan documenting how spent cleaning debris and/or paint over-spray or droplets will be contained/confined to the Site during the surface preparation and coating application operations. Reasonable care must be exercised by the Contractor to prevent damage, nuisance, or hazardous conditions to adjacent or nearby property owners. Include all materials and method to be used for

protection of exterior surfaces and allow for recovery and disposal of paint scraps and blast media.

- f. Provide written plan documenting how paint and/or abrasive damage to automobiles and property will be addressed, including a process for quick removal of the paint or abrasive, and how the Work will be accomplished (this will not relieve the Contractor from the responsibility of setting claims for damage, but is intended to expedite and minimize said claims).

9. Required items for corrosion protection

- a. Product Data, Technical Data and Material Safety Data Sheet.
- b. Certification of Applicators and Local Field Services.
- c. Certified Material Test Report.

1.04 REFERENCE SPECIFICATIONS

- A. City of Arlington Section No. 14 Water and Sanitary Sewer Specifications

1.05 WARRANTY

- A. Contractor will warrant all work against defects in materials and workmanship for a period of 10 years from the date of final acceptance of the project. Contractor will, within a reasonable time after receipt of written notice thereof, repair defects in materials or workmanship which may develop during said 10-year period, and any damage to other work caused by such defects or the repairing of same, at his own expense and without cost to the Owner. If the manufacturer's standard warranty does not extend to 10 years, manufacturer will provide documentation of extended warranty.
- B. A warranty inspection will be conducted annually for the entire warranty period with the manufacturer present. Any defective work discovered will be corrected by the Contractor in accordance with specifications at no additional cost to the Owner. Other corrective measures may be required during the warranty period.

1.06 DELIVERY AND STORAGE

- A. Deliver coating products to the Site in original unopened containers, with manufacturer's label, batch number, warning labels, contents (by volume) attached. Do not apply products until the Owner's field representative has approved the product for use.
- B. Use one location at each site for the storage of coating products. Protect the area from spills and other damage. Protect the products from extreme heat or cold. Keep containers covered. Keep the storage rooms clean of trash and debris. Dispose of oily or used rags daily. Under no circumstances will they be allowed to accumulate. Take precautions to prevent fires. The storage of flammable liquids will comply with city, state, or other fire codes.
- C. Storage of coating products and associated materials must be in accordance with the manufacturer's requirements. Coatings that have been damaged or not stored properly must not be used and will be removed from the Site.

- D. All products and coatings that have not been approved for the Project will be immediately removed from the Project Site.
- E. All materials must be delivered to the Site in original sealed containers with the date of manufacture and batch number stamped thereon by the coating manufacturer. Materials shall be subject to random observations by the Owner's representative at the Site.

## 2.00 PRODUCTS

### 2.01 MATERIALS

- A. Liner: Spray on wall liner.
- B. Coating:
  - 1. All components of the coating system must have a flash point above 203 F.
  - 2. The resurfacer, primer and topcoat composite will contain no chemicals classified by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), or the Occupational Safety and Health Administration (OSHA) as carcinogenic, nor suspected carcinogenic chemicals.
  - 3. Raw materials of the resurfacer, primer and topcoat composite will not contain any non-reactive diluents or solvents.
  - 4. To ensure correct mix ratios are achieved, the packaging of each component will be pre-measured to the correct mix ratio and in the quantities that will be mixed on the job site. Each discrete batch size will not exceed 1.25 cubic feet in volume.
  - 5. The material must be suitable for overhead, vertical and horizontal surfaces, and be spray applied, as recommended by the manufacturer.

### 2.02 MANUFACTURED PRODUCTS

- A. Corrosion Protection Manhole Liner:
  - 1. Resurfacing Material:
    - a. Provide resurfacing material to fill cavities and resurface exposed aggregate where it is impossible to achieve a pinhole-free membrane at the specified total topcoat film thickness.
  - 2. Topcoat:
    - a. Manufacturer: SprayRoqp, or approved equal.
    - b. The material must be suitable for overhead, vertical and horizontal surfaces, and be spray applied, as recommended by the manufacturer.

- c. The material must provide a permanent impermeable, high strength, monolithic lining for concrete structures that is sulfuric acid corrosion, abrasion and impact resistant.

Performance Testing	
Flexural Strength	ASTM D790
Compressive Strength, Yield	ASTM D695
Tensile Strength	ASTM D638
Tensile Ultimate Elongation	ASTM D638
Hardness, Shore D	ASTM D2240
Impact, IZOD	ASTM D256
Water Vapor Transmission	ASTM D1653, Method B
Taber Abrasion, CS17 Wheel	ASTM D4060
Adhesion	ASTM D4541
Temperature Resistance	200 F

### 3.00 EXECUTION

#### 3.01 INSTALLATION

##### A. CORROSION PROTECTION

- a. Surface must be clean and structurally sound. Repair and resurface any defective areas prior to surface preparation. Apply resurfacing material in accordance with the manufacturer's recommendation.
2. Clean and dry the concrete by dry abrasive brush blast removing laitance, form release agents, curing membranes and contaminants to provide a sound, firm surface with no loose matter. Wet abrasive blasting is allowed provided that the water produced does not hinder application. Water blasting alone will not be allowed except for decontamination. Abrasive blasting must produce an anchor pattern on the surface, similar to sandpaper, suitable for coating. Avoid opening excessive cavities during abrasive blast. Round off any sharp edges by chipping, wire brushing or any other method.
3. Alternate methods of surface preparation, i.e. acid etch or high pressure water wash, may be used with prior written approval of the liner manufacturer.
4. Repair all hydrostatic leaks in the structure prior to applying the liner system. Use a cement base, quick-setting, hydraulic leak repair compound which instantly stops water or seepage and expands as it sets.
  - a. If the manhole is to be located in an area where water infiltration through the concrete is expected, then an exterior coating shall be applied.

- b. The exterior surface shall be coated with two coats of an approved bituminous coating to obtain a minimum total thickness of 23 mil.
  - c. Prior to application dirt, dust, oil or other contaminants that can interfere with adhesion of the coating shall be removed.
  - d. 3 days of cure time for the coating shall be given before backfilling around the structure is permitted.
- B. Application Procedure:
1. Clean the surface of any blasting residue, either with dry air or brushing.
  2. Apply properly mixed materials by conventional high pressure airless spray, brush or roller. Apply material on the prepared surfaces in a single application, as specified by the manufacturer (consult manufacturer for theoretical coverage in square feet per gallon).
  3. Apply the topcoat within the ambient temperature, material temperature and relative humidity ranges specified by the manufacturer.
  4. Take the precaution in applying one or more test patches to determine the optimum method and rate of application.
  5. A minimum 12 hours after application, inspect top coat with high-voltage holiday detection equipment (spark-tester). An induced holiday made on the coated concrete surface will serve to delimit the minimum/maximum voltage to be used in testing the coating for holidays at that particular area. Initially set the spark tester at 100 volts per 1 mil of film thickness applied but increase if it is insufficient to detect the induced holiday. Mark all detected holidays and repair per the manufacturer's recommendations.
  6. Minimum cure time prior to immersion or exposure to fluids must be 8 hours at 72 F. Allow 72 hours cure time before exposure to abrasive or impact conditions.
  7. Dry Film Thickness Inspection: At the Owner's direction, perform destructive dry film thickness measurements in accordance with SSPC-PA-2 guidelines for frequency of sampling, averaging of sample results, minimum acceptable value for any one sample result, etc. The average dry film thickness of the liner system must be 120 mils or as recommended by manufacturer. A magnetic reading may be utilized, provided metal plates are over coated in the application process.
  8. Application Log: Keep a daily log showing date, weather conditions, quantity of structure(s) lined (square footage covered), and number of gallons of lining compound expended.
  9. Adhesion Testing: The fully cured manhole structure shall be subjected to adhesion testing at the direction of the Owner. Use an elcometer testing device to verify an adhesion value of 300 psi.

**END OF SECTION**

**SECTION NO. 24**

**Supplement Contract Conditions And Instructions**

**(TWDB-0550)**



**Texas Water Development Board  
Supplemental Contract Conditions for  
Clean Water State Revolving Fund  
(Equivalency) and Drinking Water State  
Revolving Fund**

**For Construction Services for Projects Funded  
through the CWSRF Equivalency  
and DWSRF Programs**

## Table of Contents

I. INSTRUCTIONS FOR APPLICANTS.....	5
1. Applicability .....	5
2. Use of Conditions .....	5
3. Modifications to Provisions.....	5
4. Good Business Practices .....	5
5. Other Requirements.....	6
6. Advertisements for Bids .....	6
7. Bid Proposal.....	8
8. Bidding Process .....	8
9. Debarment and Suspension Certification.....	8
10. Release of Funds .....	9
II. INSTRUCTIONS TO BIDDERS .....	11
1. Contingent Award of Contract.....	11
2. Disadvantaged Business Enterprise Goals.....	11
3. Davis-Bacon Wage Rate Requirements.....	11
4. American Iron and Steel .....	12
5. Equal Employment Opportunity and Affirmative Action.....	12
6. Debarment and Suspension Certification.....	12
7. Bid Guarantee .....	12
III. SUPPLEMENTAL CONTRACT CONDITIONS.....	14
1. Supersession.....	14
2. Privity of Contract.....	14
3. Definitions .....	14
4. Laws to be Observed.....	14
5. Review by Owner and TWDB.....	14
6. Performance and Payment Bonds .....	15
7. Payment Schedule and Cost Breakdown .....	15
8. Workman’s Compensation Insurance Coverage (as applicable, consistent with Texas Labor Code § 406.096).....	15
9. American Iron & Steel .....	16
10. Davis-Bacon Wage Rate Requirements.....	17
(a) Compliance Procedures .....	17

(b) Subcontracts ..... 18

(c) Davis-Bacon General Wage Determinations..... 18

11. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment..... 20

Option 1 – Applies to Governmental Entities (such as Cities and Districts)..... 21

Option 2 – Applies to Non-Governmental Entities (such as Water Supply Corporations and Private Companies) ..... 29

11. Payments..... 36

12. Equal employment opportunity and affirmative action ..... 38

13. Debarment and Suspension..... 40

14. Disadvantaged Business Enterprises..... 41

15. Archeological Discoveries and Cultural Resources..... 43

16. Endangered Species ..... 43

17. Hazardous Materials ..... 43

18. Project Signage ..... 44

19. Changes..... 44

20. Operation and Maintenance Manuals and Training ..... 45

21. As-Built Dimensions and Drawings ..... 46

22. Close-Out Procedures ..... 46

23. Additional Forms and Information ..... 46

**Forms and Guidance:**

The Texas Water Development Board (TWDB) forms and guidance documents noted in this instruction document may be accessed through the TWDB Financial Assistance website at:

<http://www.twdb.texas.gov/financial/instructions/index.asp>

Search by either the document number or name.

## I. INSTRUCTIONS FOR APPLICANTS

### 1. Applicability

These Supplemental Contract Conditions contain provisions that are worded to comply with certain statutes and regulations which specifically relate to all Drinking Water State Revolving Fund (DWSRF) projects and Clean Water State Revolving Fund (CWSRF) Equivalency Program projects. Provisions which are applicable to the project's funding source or dollar value of the contract are so noted within these provisions.

### 2. Use of Conditions

The conditions and forms listed under *Section II: Instructions to Bidders* are to be included in the instructions to bidders for construction services. The provisions listed under *Section III: Construction Contract Supplemental Conditions* shall be included, in their entirety, with the other general and special conditions that are typically included in the construction contract documents by the design engineer.

### 3. Modifications to Provisions

These provisions shall be included as a stand-alone section in the contract documents. The Applicant may need to modify parts of these provisions to better fit the other provisions of the construction contract. The Applicant and the consulting engineer should carefully study these provisions before incorporating them into the construction contract documents. In particular, Water Districts and other types of Districts should be aware of statutes relating to their creation and operation which may affect the application of these conditions. The TWDB Project Engineer/Reviewer should be consulted if the Applicant thinks there is a need to modify parts of these provisions.

The Applicant is to determine and incorporate the affirmative action goals for the project into Supplemental Contract Condition No. 12. Supplemental Condition No. 15, Archeological Discoveries and Cultural Resources, and Condition No. 16, Endangered Species, may be superseded or modified by project specific conditions established during the environmental review process.

These documents may confer certain duties and responsibilities on the consulting engineer that are beyond, or short of, what the Applicant intends to delegate. The Applicant should ensure that the contractual agreement with the Engineer provides for the appropriate services. Otherwise the Applicant should revise the wording in these special conditions to agree with actually delegated functions.

### 4. Good Business Practices

There are other contract provisions that the Applicant and Engineer need to include as a matter of good business practice. It is recommended that provisions addressing the following matters be included in the construction contract.

- (a) Specifying the time frame for accomplishing the construction of the project, and the consequences of not completing on time, including liquidation damages.
- (b) Specifying the type and dollar value of and documentation of insurance the Contractor is to carry. At a minimum, the Contractor should carry worker's compensation, liability and builder's risk insurance.
- (c) Identifying the responsibility of the Contractor - responsibility and warranty of work.
- (d) Price reduction for defective pricing of negotiated costs.
- (e) Differing site conditions - notice and claims regarding site conditions differing from indicated conditions.
- (f) Covenants against contingent fees - prohibit contingent fees for securing business.
- (g) Gratuities - prohibitions against offering and accepting gratuities.
- (h) Audit and access records.
- (i) Suspension of work - conditions under which the Applicant may suspend work.
- (j) Termination - conditions under which the Applicant may terminate.
- (k) Remedies - how disputes will be remedied.

## **5. Other Requirements**

There may be other local government requirements and applicable Federal and State statutes and regulations which are not included by these conditions. It is the Loan/Principal Forgiveness Applicant's responsibility to ensure that the project and all contract provisions are consistent with the relevant statutes and regulations.

## **6. Advertisements for Bids**

State procurement statutes require advertising a contract for bid for at least two (2) consecutive weeks. By not following this requirement, the project may need to be re-advertised. The official advertisement for bids that is published in newspapers should include certain information such as, but not limited to, the following:

- (a) A clear description of what is being procured.
- (b) How to obtain plans and specifications (P&S), necessary forms and information.
- (c) The date and time by which bids are to be submitted (deadline).
- (d) The address where bids are to be provided.
- (e) This contract is contingent upon release of funds from the Texas Water Development Board (TWDB).
- (f) Any contract or contracts awarded under this Invitation for Bid (IFB), Request for Proposals (RFP), or Request for Qualifications (RFQ) are expected to be funded in part by financial assistance from the TWDB. Neither the U.S. Environmental Protection Agency (EPA) or the State of Texas, nor any of its departments, agencies, or employees, are or will be a party to this IFB, RFP, RFQ, or any resulting contract.
- (g) For CWSRF, include – Any contract(s) awarded under this Invitation for Bids is/are subject to the American Iron and Steel (AIS) requirements of Section 608 of the Federal Water Pollution Control Act.  
For DWSRF, include – Any contract(s) awarded under this Invitation for Bids is/are subject to the American Iron and Steel (AIS) requirements of federal law, including federal appropriation acts.

- (h) This contract is subject to the Environmental Protection Agency's (EPA) Disadvantaged Business Enterprise (DBE) Program, which includes EPA-approved fair share goals toward procurement of Minority and Women-owned Business Enterprise (M/WBE) businesses. EPA rules require that applicants and prime contractors make a good faith effort to award a fair share of contracts, subcontracts, and procurements to M/WBEs through demonstration of the six affirmative steps. For more details of the DBE Program and the current, applicable fair share goals, please visit <http://www.twdb.texas.gov/dbe>.
- (i) Equal Opportunity in Employment - All qualified Applicants will receive consideration for employment without regard to race, color, religion, sex (including pregnancy), sexual orientation, gender identity, national origin, age (40 or older), disability, or genetic information. Bidders on this work will be required to comply with the Department of Labor regulations at 41 CFR Part 60-4, relating to Construction Contractors--Affirmative Action Requirements, which include the President's Executive Order No. 11246, as amended by Executive Order No. 11375 and Executive Order No. 13672, in the award and administration of contracts awarded under TWDB financial assistance agreements. Failure by the Contractor to carry out these requirements is a material breach, which may result in the termination of the awarded financial assistance.
- (j) Acknowledgement of any special requirements such as mandatory pre-bid conference.
- (k) Right to reject any and all bids.
- (l) Davis-Bacon prevailing wage requirements apply to the construction, alteration or repair of treatment works carried out, in whole or in part, with assistance made available by the Clean Water State Revolving Fund (CWSRF) or a construction project financed, in whole or in part, from the Drinking Water State Revolving Fund (DWSRF).
- (m) The Davis-Bacon prevailing wage requirements apply to Contractors and Subcontractors performing on federally funded or assisted contracts in excess of \$2,000 for the construction, alteration or repair (including painting) of a treatment works project under the CWSRF or a construction project under the DWSRF.
- (n) For prime contracts in excess of \$100,000, Contractors and Subcontractors must also, under the provisions of the Contract Work Hours and Safety Standards Act, as amended, pay laborers and mechanics, including guards and watchmen, at least one and one-half times their regular rate of pay for all hours worked over 40 in a workweek. The Fair Labor Standards Act may also apply to Davis-Bacon covered contracts.
- (o) Any contracts or subcontracts in excess of \$2,000 must include the provisions of the Davis-Bacon Wage Rate Requirements found in TWDB Guidance No. DB-0156.
- (p) Wage Determinations - U.S. Department of Labor (DOL) wage determination must be included in the bidding and contract documents. DOL wage determinations may be obtained online at <http://www.wdol.gov/>.  
Once it is determined that Davis-Bacon wage rates will apply to a construction contract, the Applicant must state in the solicitation that Davis-Bacon prevailing wage rates are applicable and bid packages must include the current Davis-Bacon general wage determination for the area where construction will occur. While the solicitation remains open, the Applicant must monitor [www.wdol.gov](http://www.wdol.gov/) on a weekly basis to ensure that the wage determination contained in the solicitation remains current.

The Applicant must amend the solicitation if the DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the Applicant may request a finding from TWDB that there is not reasonable time to notify interested Contractors of the modification of the wage determination.

- (q) For additional information on Davis-Bacon Wage Rate Requirements and its applicability to this contract, please consult TWDB Guidance No. DB-0156.

## 7. Bid Proposal

The Bid proposal form should account for the following:

- (a) If a lump sum bid, include a list of the materials used and associated costs.
- (b) Distinguish Eligible and Ineligible items.
- (c) Accommodate Trench Safety requirements with separate per unit pay item for trench excavation safety protection, Health and Safety Code Chapter 756, Subchapter C.
- (d) Include space for the Contractor to acknowledge receipt of each Addendum issued during the bidding process.

## 8. Bidding Process

The Plans and Specifications, P&S, should include an explanation of how the bids will be processed and should include the following components:

- (a) Whether a Pre-bid Conference will be held, whether it is optional or mandatory, where and when it will be held.
- (b) Specify the criteria and process for determining responsiveness and responsibility of the bidder.
- (c) Specify the method of determining the successful bidder and award (e.g., award to the lowest responsive, responsible bidder, accounting for any multiple parts to bids).
- (d) Allow for withdrawal of a bid due to a material mistake.
- (e) Identify the time frame that the bids may be held by the Applicant before awarding a contract (i.e., typically for 60 or 90 days).
- (f) Acknowledge right of the Applicant to reject any and all bids.

## 9. Debarment and Suspension Certification

Financial assistant recipients must fully comply with the requirements of Subpart C of 2 CFR Part 180 – “*Responsibilities of Participants Regarding Transactions Doing Business with Other Persons*” - as implemented and supplemented by 2 CFR Part 1532. The recipient is responsible for ensuring that any lower tier covered transaction, as described in Subpart B of 2 CFR Part 180 – “*Covered Transactions*” – includes a term or condition requiring compliance with Subpart C.

The recipient is fully responsible for requiring the inclusion of a similar term or condition in any subsequent lower tier covered transactions.

Recipient acknowledges that failing to disclose the information required under 2 CFR 180.355 may result in the delay or negation of the financial assistance, or pursuance of legal remedies including debarment and suspension.

The recipient must complete and submit certification No. **SRF-404: Debarment / Suspension Certification**, certifying that it has checked the federal System for Award Management website (<http://www.sam.gov>) and determined that the Contractor is not an "excluded party" that is debarred, suspended or otherwise excluded from participation in federal assistance programs under Executive Order 12549, as required by 2 CFR Part 180 and 2 CFR Part 1532.

## 10. Release of Funds

Prior to the TWDB approval to issue a notice to proceed (NTP), and subsequent release of funds for construction (according to program specific requirements), the Applicant and its consultant shall provide the following bid documents:

**(a) Submittal of Bid Documents to TWDB Project Engineer/Reviewer to allow contingent award of contract:**

Advertisement and Affidavit of advertisement,

Bid tabulation,

All Addenda submitted and approved for the contract,

Bid proposal of apparent low bidder (or chosen bidder with explanation) with bid bond,

Entity's Disadvantaged Business Enterprise forms TWDB 0216 and TWDB 373,

Contractor's Disadvantaged Business Enterprise forms TWDB 0216, 0217, and 0373

Site Certificate (ED-101),

Consulting engineer's recommendation to award letter,

A description of any bidding irregularities,

Construction inspection proposal,

Bidder's Certifications Form (WRD-255).

**(b) Following contingent award of the contract, TWDB Project Engineer/Reviewer should receive a bound copy of the executed contract documents (including specifications). This document should include:**

Executed agreement,

Contractor's Act of Assurance (TWDB Form ED -103),

Contractor's Act of Assurance Resolution (TWDB Form ED-104),

Payment and Performance Bonds (must be executed on or after the date of the contract),

Contractor's Certificate of Insurance,

Sufficiency of Funds letter.

After reviewing and approving the executed bid documents, the TWDB will issue an authorization for the Applicant to issue a notice to proceed. At this time, TWDB staff can begin releasing construction funds in accordance with program requirements.

Once construction begins, the Applicant must submit monthly, with each Outlay Request, the following documents:

- DB-0154 – Monthly Davis Bacon Wage Rate Certificate of Compliance.
- TWDB-1106-A – Monthly American Iron and Steel Certificate.

Failure to provide these certificates will result in denial of release of funds.

For any questions or proposed modifications to these conditions, please contact your TWDB Project Engineer/Reviewer.

## II. INSTRUCTIONS TO BIDDERS

The language and conditions listed in this Section shall be included in the "Instructions to Bidders" section of the construction contract documents.

### 1. Contingent Award of Contract

This contract is contingent upon release of funds from the Texas Water Development Board. Any contract(s) awarded under this Invitation for Bids is/are expected to be funded in part by a loan or loan with principal forgiveness from the Texas Water Development Board and a grant from the United States Environmental Protection Agency, U.S. EPA. Neither the State of Texas, the U.S. EPA, nor any of its departments, agencies, or employees, are or will be a party to this Invitation for Bids or any resulting contract.

### 2. Disadvantaged Business Enterprise Goals

The Texas Water Development Board's (TWDB) Clean Water and Drinking Water State Revolving Fund programs receive federal funds from the U. S. Environmental Protection Agency (EPA). As a condition of federal grant awards, EPA regulations require that loan recipients make a "good faith effort" to award a fair share of work to Disadvantaged Business Enterprises (DBE) who are Minority Business Enterprises (MBE's), and Women-owned Business Enterprises (WBE's) whenever procuring construction, supplies, services and equipment. More information on DBE requirements is available in the Supplemental Contract Conditions section of this guidance No. 14. *Disadvantaged Business Enterprises.*

The current fair share goals for the State of Texas are as follows:

<u>CATEGORY</u>	<u>MBE</u>	<u>WBE</u>
Construction	19.44%	9.17%
Equipment	16.28%	11.45%
Services	20.41%	13.66%
Supplies	25.34%	8.82%

### 3. Davis-Bacon Wage Rate Requirements

- (a) Davis-Bacon prevailing wage requirements apply to the construction, alteration or repair of treatment works carried out, in whole or in part, with assistance made available by the Clean Water State Revolving Fund (CWSRF) or a construction project financed, in whole or in part, from the Drinking Water State Revolving Fund (DWSRF).
- (b) The Davis-Bacon prevailing wage requirements apply to Contractors and Subcontractors performing on federally funded or assisted contracts in excess of \$2,000 for the construction, alteration or repair (including painting) of a treatment works project under the CWSRF or a construction project under the DWSRF.
- (c) For prime contracts in excess of \$100,000, Contractors and Subcontractors must also, under the provisions of the Contract Work Hours and Safety Standards Act, as amended, pay laborers and mechanics, including guards and watchmen, at least one and one-half times their regular rate of pay for all hours worked over 40 in a workweek.  
The Fair Labor Standards Act may also apply to Davis-Bacon covered contracts.

- (d) Any contracts in excess of \$2,000 must include the provisions of the Davis-Bacon Wage Rate Requirements. If the Owner (sub-recipient) is a governmental entity such as a city or district, it must insert in full the contract clauses found in TWDB Guidance DB-0156, Appendix 1: Section 3, Section 4 if the contract exceeds \$100,000, and Section 5. If the Owner (sub-recipient) is a non-governmental entity such as a water supply corporation or a private company, it must insert in full the contract clauses found in TWDB Guidance DB-0156, Appendix 2: Section 3, Section 4 if the contract exceeds \$100,000, and Section 5. The Owner (sub-recipient) must ensure all prime contracts require the same full text in any subcontracts. See TWDB Guidance DB-0156 for the text of the contract language that must be included.

Additional information on Davis-Bacon Wage Rate Requirements and its applicability to this contract can be found in TWDB Guidance DB-0156.

#### **4. American Iron and Steel**

Any contract(s) awarded under this Invitation for Bids is/are subject to the American Iron and Steel (AIS) requirements of 33 U.S.C §1388 for Clean Water State Revolving Fund projects or Public Law 114-113, Consolidated Appropriations Act, 2016, or subsequent appropriations acts, for Drinking Water State Revolving Fund projects. The Contractor must complete the statement of understanding regarding this requirement, found in Supplemental Contract Conditions, Item No. 9.

#### **5. Equal Employment Opportunity and Affirmative Action**

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex (including pregnancy), sexual orientation, gender identity, national origin, age (40 or older), disability, or genetic information. Bidders on this work will be required to comply with the Department of Labor regulations at 41 CFR Part 60-4, relating to Construction Contractors--Affirmative Action Requirements, which include the President's Executive Order No. 11246, as amended by Executive Order No. 11375 and Executive Order No. 13672, in the award and administration of contracts awarded under TWDB financial assistance agreements. Failure by the Contractor to carry out these requirements is a material breach, which may result in the termination of the awarded financial assistance.

#### **6. Debarment and Suspension Certification**

This contract is subject to the federal requirements of Subpart C of 2 CFR Part 180 and Part 1532 regarding Debarment and Suspension. The Contractor will comply with the assurances provided with the bid that leads to a contract.

#### **7. Bid Guarantee**

Each bidder shall furnish a bid guarantee equivalent to five percent of the bid price (Water Code 17.183). If a bid bond is provided, the Contractor shall utilize a surety company which is authorized to do business in Texas in accordance with Surety Bonds and Related Instruments, Chapter 3503 of the Insurance Code.

**Forms to be submitted with Bid:**

- WRD-255, Bidder's Certifications regarding Equal Employment Opportunity and Non-Segregated Facilities.
- SRF-404, Certification Regarding Debarment, Suspension and Other Responsibility Matters, (to be completed and submitted by the sub-recipient).
- Disadvantaged Business Enterprise (DBE) Construction Contract Phase Forms

<b>Form</b>	<b>Prime Contractor</b>	<b>Submit Form To</b>
TWDB-0216	Required	TWDB
TWDB-0217	Required	TWDB
TWDB-0373	Required	TWDB

### **III. SUPPLEMENTAL CONTRACT CONDITIONS**

#### **1. Supersession**

The Owner and the Contractor agree that the TWDB Supplemental Conditions apply to that work eligible for Texas Water Development Board assistance to be performed under this contract and these clauses supersede any conflicting provisions of this contract.

#### **2. Privity of Contract**

Funding for this project is expected to be provided in part by the Texas Water Development Board. Neither the State of Texas, nor any of its departments, agencies or employees is, or will be, a party to this contract or any lower tier contract. This contract is subject to applicable provisions 31 TAC Chapter 371 (DWSRF) or 375 (CWSRF) in effect on the date of the assistance award for this project.

#### **3. Definitions**

- (a) The term "Owner" means the local entity contracting for the construction services.
- (b) The term "TWDB" means the Executive Administrator of the Texas Water Development Board, or other person who may be at the time acting in the capacity or authorized to perform the functions of such Executive Administrator, or the authorized representative thereof.
- (c) The term "Engineer" means the engineer the Owner has authorized to work on the project.

#### **4. Laws to be Observed**

In the execution of the Contract, the Contractor must comply with all applicable Local, State and Federal laws, including but not limited to laws concerned with labor, safety, minimum wages, and the environment. The Contractor shall make himself familiar with and at all times shall observe and comply with all Federal, State, and Local laws, ordinances and regulations which in any manner affect the conduct of the work, and shall indemnify and save harmless the Owner, Texas Water Development Board, and their representatives against any claim arising from violation of any such law, ordinance or regulation by the Contractor, their Subcontractor or their employees.

#### **5. Review by Owner and TWDB**

- (a) The Owner, authorized representatives and agents of the Owner, and TWDB shall, at all times have access to and be permitted to observe and review all work, materials, equipment, payrolls, personnel records, employment conditions, material invoices, and other relevant data and records pertaining to this Contract, provided, however that all instructions and approval with respect to the work will be given to the Contractor only by the Owner through authorized representatives or agents.
- (b) Any such inspection or review by the TWDB shall not subject the State of Texas, or its representatives, to any action for damages.

## 6. Performance and Payment Bonds

Each Contractor awarded a construction contract must furnish performance and payment bonds:

- (a) The performance bond shall include without limitation guarantees that work done under the contract will be completed and performed according to approved plans and specifications and in accordance with sound construction principles and practices;
- (b) The performance and payment bonds shall be in a penal sum of not less than 100 percent of the contract price and remain in effect for one year beyond the date of approval by the Engineer of the political subdivision; and
- (c) The Contractor shall utilize a surety company which is authorized to do business in Texas in accordance with Surety Bonds and Related Instruments, Chapter 3503 of the Insurance Code.

## 7. Payment Schedule and Cost Breakdown

- (a) The Contractor shall submit for approval immediately after execution of the Agreement, a carefully prepared Progress Schedule, showing the proposed dates of starting and completing each of the various sections of the work, the anticipated monthly payments to become due to the Contractor, and the accumulated percent of progress each month.
- (b) The following paragraph applies only to contracts awarded on a lump sum contract price:

COST BREAKDOWN - The Contractor shall submit to the Owner a detailed breakdown of the estimated cost of all work to be accomplished under the contract, arranged and itemized as to meet the approval of the Owner or funding agencies. This breakdown shall be submitted promptly after execution of the agreement and before any payment is made to the Contractor for the work performed under the contract. After approval by the Owner the unit prices established in the breakdown shall be used in estimating the amount of partial payments to be made to the Contractor.

## 8. Workman's Compensation Insurance Coverage (as applicable, consistent with Texas Labor Code § 406.096)

- (a) The Contractor shall certify in writing that the Contractor provides workers' compensation insurance coverage for each employee of the Contractor employed on the public project.
- (b) Each Subcontractor on the public project shall provide such a certificate relating to coverage of the Subcontractor's employees to the general Contractor, who shall provide the Subcontractor's certificate to the governmental entity.
- (c) A Contractor who has a contract that requires workers' compensation insurance coverage may provide the coverage through a group plan or other method satisfactory to the governing body of the governmental entity.
- (d) The employment of a maintenance employee by an employer who is not engaging in building or construction as the employer's primary business does not constitute engaging in building or construction.
- (e) In this section:

- i. "Building or construction" includes:
  - erecting or preparing to erect a structure, including a building, bridge, roadway, public utility facility, or related appurtenance;
  - remodeling, extending, repairing, or demolishing a structure; or
  - otherwise improving real property or an appurtenance to real property through similar activities.
- ii. "Governmental entity" means this state or a political subdivision of this state. The term includes a municipality.

## 9. American Iron & Steel

The following statement must be completed by the Contractor and made a part of the agreement between the Owner and the Contractor:

*The Contractor acknowledges to and for the benefit of the Owner ("Purchaser") and the Texas Water Development Board (TWDB) that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as "American Iron and Steel" that requires all of the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Owner and the TWDB that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Owner or the TWDB. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner to enforce this Agreement and recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Owner resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the TWDB or any damages owed to the TWDB by the Owner). While the Contractor has no direct contractual privity with the TWDB, as a lender to the Owner for the funding of its project, the Owner and the Contractor agree that the TWDB is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the TWDB.*

**Additional information on the American Iron and Steel (AIS) and its applicability to this contract can be found in the TWDB-1106 guidance.**

It is recommended the Owner receive and maintain files documenting the Contractor's use of AIS. Monthly compliance with AIS will be verified by the Owner through the submittal of the TWDB form TWDB-1106-A.

## 10. Davis-Bacon Wage Rate Requirements

### (a) Compliance Procedures

In order to be held in compliance and satisfy this federal requirement, the following must be fulfilled:

- i. **Wage Determinations** - U.S. Department of Labor (DOL) wage determination must be included in the bidding and contract documents. DOL wage determinations may be obtained online at <http://www.wdol.gov/>. Once it is determined that Davis-Bacon wage rates will apply to a construction contract, the Owner must state in the solicitation that Davis-Bacon prevailing wage rates are applicable and bid packages must include the current Davis-Bacon general wage determination for the area where construction will occur. While the solicitation remains open, the Owner must monitor [www.wdol.gov](http://www.wdol.gov/) on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The Owner must amend the solicitation if the DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the Owner may request a finding from the TWDB that there is not a reasonable time to notify interested Contractors of the modification of the wage determination.
- ii. **Insert wage rate requirements in full for all contracts and subcontracts in excess of \$2,000** - If the Owner is a governmental entity such as a city or district, it must insert in full the contract clauses shown below as Option 1: Section 3, Section 4 if the contract exceeds \$100,000, and Section 5. If the Owner is a non-governmental entity such as a water supply corporation or a private company, it must insert in full the contract clauses shown below as Option 2: Section 3, Section 4 if the contract exceeds \$100,000, and Section 5. The Owner must ensure all prime contracts require the same full text in any subcontracts.
- iii. **Monthly Certification** – The Owner must complete and submit monthly a Davis Bacon Wage Rate Certificate of Compliance once construction has begun. (Use **Monthly Davis Bacon Wage Rate Certificate of Compliance Submittal by Owner (Subrecipient) DB-0154**).
- iv. **Contractor Payroll Requirements** - The Contractor is required to pay the prevailing wage rates on a weekly basis to laborers and mechanics in accordance with the requirements of 29 CFR 5.5, which are incorporated into the actual construction contract. Contractors/ Subcontractors must furnish weekly a statement with respect to the wages paid to each employee during the preceding week. They may use the Department of Labor (DOL) Payroll Form WH-347 and weekly Statement of Compliance on the reverse, or their own payroll form with all of the same data elements as the DOL Payroll Form WH-347, and the TWDB's form, Statement of Compliance Certification by Contractor for SRF, DB-0155. The DOL Payroll Form WH-347 can be found under the forms section of this document or at the following link: <http://www.dol.gov/whd/programs/dbra/wh347.htm>.

- v. **Interviews** - The Owner must periodically interview a sufficient number of employees entitled to the Davis-Bacon prevailing wages to verify that Contractors or Subcontractors are paying the appropriate wage rates. All interviews must be conducted in confidence. The Owner must use Standard Form 1445 (SF 1445) found in the forms section of TWDB guidance document TWDB-0156 or equivalent documentation to memorialize the interviews. The Owner must establish and follow an interview schedule based on its assessment of the risks of noncompliance with Davis-Bacon posed by Contractors or Subcontractors and the duration of the contract or subcontract. The Owner must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the Contractor or Subcontractor is not complying with Davis-Bacon. The Owner must immediately conduct interviews in response to an alleged violation of the prevailing wage requirements.
- vi. **Payroll Records** - Certified payroll records are required to be retained by the Owner and Contractor for three years after completion of the construction project. The Owner must periodically conduct spot checks of a representative sample of weekly payroll data to verify that Contractors or Subcontractors are paying the appropriate wage rates.
- vii. **Wage Rate Poster** – The Contractor must post the required Poster (WH-1321) and applicable wage rates at the construction site. The wage rate poster may be found at under the forms section of TWDB Guidance DB-0156 or at <http://www.dol.gov/whd/programs/dbra/wh1321.htm>.
- viii. **Report Violations** – The Owner must immediately report violations of the Davis-Bacon prevailing wage requirements to the EPA Davis-Bacon Coordinator listed in the assistance agreement and to the appropriate DOL WHD Office listed at <http://www.dol.gov/dol/contact/index.htm>.

**(b) Subcontracts**

The Contractor will insert in full the required wage rate requirement in any subcontract in excess of \$2,000 as specified in (a)(ii) of this section.

**(c) Davis-Bacon General Wage Determinations**

A "wage determination" is the listing of wage and fringe benefit for each classification of laborers and mechanics which the Administrator of the Wage and Hour Division of the U.S. DOL has determined to be prevailing in a given area for a construction. The Davis-Bacon Wage Determinations are classified by the nature of the construction projects performed, specifically listed as "schedules": residential, building, highway, and heavy construction. A brief outline of the definitions for each schedule is listed below.

- **Construction Type: Heavy determination**

This determination includes those projects that are not properly classified as either "building," "highway," or "residential." Unlike these classifications, heavy construction is not a homogenous classification. Because of this catch-all nature, projects within the heavy classification may sometimes be distinguished on the basis of their particular project characteristics, and separate schedules may be issued for dredging projects, water and sewer line projects, dams, major bridges, and flood control projects.

- **Construction Type: Highway determination**  
This determination includes construction, alteration or repair of roads, streets, highways, runways, taxiways, alleys, trails, paths, parking areas, and other similar projects not incidental to building or heavy construction.
- **Construction Type: Building determination**  
This determination includes construction of sheltered enclosures with walk-in access for the purpose of housing persons, machinery, equipment or supplies; all construction of such structures; the installation of utilities and of equipment, both above and below grade levels; as well as incidental grading, utilities and paving. Such structures need not be "habitable" to be building construction. Also, the installation of heavy machinery and/or equipment does not generally change the project's character as a building.
- **Construction Type: Residential**  
This determination includes the construction, alteration or repair of single-family houses, apartment buildings of no more than four stories in height. This includes all incidental items such as site work, parking areas, utilities, streets, and sidewalks.

The Owner should review their Contractor's wage decisions and confirm they provide an adequate classification of the labor required for the specific construction contract. Most CWSRF and DWSRF projects will fall under the "Heavy" construction type, but Owners should ask their consulting Engineers if unsure. Some contracts or projects may require more than one general schedule to be included depending on the nature and extent of the work (i.e. a building is constructed in a water treatment facility). This is described in more detail in DOL's All Agency Memorandum 130 with Addendum 131. See the DOL's website <http://www.dol.gov/whd/programs/dbra/memorand.htm>. In such cases, the TWDB would designate the work to which each wage determination or part thereof applies per Federal Acquisition Regulations (FAR) 22.404-2 thru 404-3 <https://www.acquisition.gov/browse/far/22?&searchTerms=Regulations+%28FAR%29+22.404-2+thru+404-3> Should overlaps occur in the wage classification schedules for the contract(s), the Owner may consider adopting the higher rate classification.

In all cases, the Owner is responsible to insure an adequate classification is provided to insure compliance with the law. Where a Contractor alerts the Owner that the classification is inadequate, the Owner should work with the Contractor and the DOL to address any valid concerns.

All questions regarding Davis-Bacon guidance can be directed to: U.S. Department of Labor Wage and Hour Division 1-866-4USWAGE (1-866-487-9243), TTY: 1-877-889-5627, Monday-Friday 8 a.m. to 8 p.m. Eastern Time.

If you require further information about Davis-Bacon and how to apply it to your project, please contact the Texas Water Development Board Project Team Manager for your region or Clay Schultz, Director, Regional Water Project Development, (512) 463-6277.

The Owner and Contractor may obtain additional information on the Davis-Bacon Wage Rates requirements in the TWDB's Guidance DB-0156 – *"Guidance on Davis-Bacon Wage Rate Requirements"*.

## 11. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment

Effective August 13, 2020, all recipients of CWSRF and DWSRF Equivalency funding, regardless of the date of the TWDB commitment, closing date, or Intended Use Plan, must comply with regulations at 2 CFR 200.216, *Prohibition on certain telecommunication and video surveillance services or equipment*, implementing section 889 of Public Law 115-232.

The condition below must be included in all project construction contracts associated with equivalency assistance agreements. It must also be in any sub-contract that involves the purchase of telecommunications or video surveillance services or equipment.

### **Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment**

This term and condition implements 2 CFR 200.216 and is effective for obligations and expenditures of EPA financial assistance funding on or after 8/13/2020.

As required by 2 CFR 200.216, EPA recipients and subrecipients, including borrowers under EPA funded revolving loan fund programs, are prohibited from obligating or expending loan or grant funds to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

Recipients, subrecipients, and borrowers also may not use EPA funds to purchase:

- a. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
- b. Telecommunications or video surveillance services provided by such entities or using such equipment.
- c. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

Consistent with 2 CFR 200.471, costs incurred for telecommunications and video surveillance services or equipment such as phones, internet, video surveillance, and cloud servers are allowable except for the following circumstances:

- a. Obligating or expending EPA funds for covered telecommunications and video surveillance services or equipment or services as described in 2 CFR 200.216 to:
  - (1) Procure or obtain, extend or renew a contract to procure or obtain;
  - (2) Enter into a contract (or extend or renew a contract) to procure; or
  - (3) Obtain the equipment, services, or systems.

Certain prohibited equipment, systems, or services, including equipment, systems, or services produced or provided by entities identified in section 889, are recorded in the System for Award Management (<https://sam.gov/content/home>) exclusion list.

**Additional details:**

Neither TWDB nor EPA have an exhaustive list of components and services that fall under the prohibition. EPA recommends recipients be mindful of automatic meter reading (AMR) technology and advanced metering infrastructure (AMI), instrumentation control systems (e.g., process control systems, distributed control systems and programmable logic controls), and security cameras and other electronic security measures to ensure that those items are procured from a non-excluded entity. Items included in the prohibition are not eligible SRF costs and the TWDB SRF programs cannot reimburse recipients for these costs.

**Option 1 – Applies to Governmental Entities (such as Cities and Districts)**

**1. Applicability of the Davis-Bacon (DB) prevailing wage requirements.**

DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by the Clean Water State Revolving Fund and to any construction project carried out in whole or in part by assistance made available by the Drinking Water State Revolving Fund. If an Owner encounters a unique situation at a site that presents uncertainties regarding DB applicability, the Owner must discuss the situation with the TWDB before authorizing work on that site.

**2. Obtaining Wage Determinations.**

(a) Owners shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that Subcontractors follow the wage determination incorporated into the prime contract.

- (i) While the solicitation remains open, the Owner shall monitor [www.wdol.gov](http://www.wdol.gov) weekly to ensure that the wage determination contained in the solicitation remains current. The recipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the Owners may request a finding from the TWDB that there is not a reasonable time to notify interested Contractors of the modification of the wage determination. The TWDB will provide a report of its findings to the Owner.
- (ii) If the Owner does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the TWDB, at the request of the Owner, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The Owner shall monitor [www.wdol.gov](http://www.wdol.gov) on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the Owner carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing Contractor (ordering instrument) rather than by publishing a solicitation, the Owner shall insert the appropriate DOL wage determination from [www.wdol.gov](http://www.wdol.gov) into the ordering instrument.

(c) Owners shall review all subcontracts subject to DB entered into by prime Contractors to verify that the prime Contractor has required its Subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to an Owner's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the Owner has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the Owner shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The Owner's Contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

### **3. Contract and Subcontract provisions.**

(a) The Owner(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in 29 CFR 5.1, the Water Resources Reform and Development Act of 2014 for a CWSRF-funded project or the Consolidated Appropriations Act, 2016 (or subsequent federal law) for a DWSRF-funded project, the following clauses:

#### **(1) Minimum wages.**

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Owners may obtain wage determinations from the U.S. Department of Labor's web site, [www.dol.gov](http://www.dol.gov).

(ii)(A) The Owner(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The TWDB shall approve a request for an

additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Owner(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the Owner (s) to the TWDB.

The TWDB will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the TWDB or will notify the TWDB within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the Owner(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the TWDB shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the TWDB, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The Owner(s) shall, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the

wages required by the contract, the EPA may, after written notice to the Contractor, sponsor, applicant, or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid.

Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the Owner, that is, the entity that receives the funds from the TWDB. Such documentation shall be available on request of the TWDB or EPA. As to each payroll copy received, the Owner shall provide written confirmation in a form satisfactory to the TWDB indicating whether the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all Subcontractors. Contractors and Subcontractors shall maintain the full social security number and current address of each covered worker and shall provide them upon request to the Owner(s) for transmission to the TWDB or EPA if requested by EPA, the TWDB, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a Subcontractor to provide addresses and social security numbers to the prime Contractor for its own records, without weekly submission to the Owner(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or Subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5(a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5(a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or

indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The Contractor or Subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the TWDB, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the required records or to make them available, the EPA or TWDB may, after written notice to the Contractor, sponsor, applicant, or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### (4) Apprentices and trainees

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program.

If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll as a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The Contractor or Subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any Subcontractor or lower tier Subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and Owner(s), TWDB, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

- (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

**4. Contract Provision for Contracts in Excess of \$100,000.**

(a) **Contract Work Hours and Safety Standards Act.** The Owner shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) **Overtime requirements:** No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (a)(1) of this section the Contractor and any Subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) **Withholding for unpaid wages and liquidated damages.** The Owner, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or Subcontractor under any such contract or any other Federal contract with the same prime Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.

(4) **Subcontracts.** The Contractor or Subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any Subcontractor or lower tier Subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Owner shall insert a clause requiring that the Contractor or Subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Owner shall insert in any such contract a clause providing that

the records to be maintained under this paragraph shall be made available by the Contractor or Subcontractor for inspection, copying, or transcription by authorized representatives of the EPA, TWDB, and the Department of Labor, and the Contractor or Subcontractor will permit such representatives to interview employees during working hours on the job.

## 5. Compliance Verification

(a) The Owner shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that Contractors or Subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The Owner must use Standard Form 1445 (SF 1445) found in the forms section of TWDB guidance document TWDB-0156 or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are also available from EPA on request.

(b) The Owner shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by Contractors or Subcontractors and the duration of the contract or subcontract. Owners must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the Contractor or Subcontractor is not complying with DB. Owners shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."

(c) The Owner shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that Contractors or Subcontractors are paying the appropriate wage rates. The Owner shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by Contractors or Subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the Owner should spot check payroll data within two weeks of each Contractor or Subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Owners must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the Contractor or Subcontractor is not complying with DB. In addition, during the examinations the Owner shall verify evidence of fringe benefit plans and payments there under by Contractors and Subcontractors who claim credit for fringe benefit contributions.

(d) The Owner shall periodically review Contractors and Subcontractor's use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that Contractors and Subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Owners must immediately report potential violations of the DB prevailing wage requirements to the EPA Region 6 DB Coordinator, TWDB, and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/whd/america2.htm>.

## Option 2 – Applies to Non-Governmental Entities (such as Water Supply Corporations and Private Companies)

### 1. Applicability of the Davis-Bacon (DB) prevailing wage requirements.

DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by the CWSRF and to any construction project carried out in whole or in part by assistance made available by the DWSRF. If an Owner encounters a unique situation at a site that presents uncertainties regarding DB applicability, the Owner must discuss the situation with the TWDB before authorizing work on that site.

### 2. Obtaining Wage Determinations.

(a) Owners must obtain proposed wage determinations for specific localities at [www.wdol.gov](http://www.wdol.gov). After the Owner obtains its proposed wage determination, it must submit the wage determination to the TWDB for approval prior to inserting the wage determination into a solicitation, contract or issuing task orders, work assignments or similar instruments to existing Contractors (ordering instruments unless subsequently directed otherwise by the TWDB.)

(b) Owners shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that Subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the Owner shall monitor [www.wdol.gov](http://www.wdol.gov) on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The recipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the Owners may request a finding from the TWDB that there is not a reasonable time to notify interested Contractors of the modification of the wage determination. The TWDB will provide a report of its findings to the Owner.

(ii) If the Owner does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the TWDB, at the request of the Owner, obtains an extension of the 90-day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The Owner shall monitor [www.wdol.gov](http://www.wdol.gov) on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(c) If the Owner carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing Contractor (ordering instrument) rather than by publishing a solicitation, the Owner shall insert the appropriate DOL wage determination from [www.wdol.gov](http://www.wdol.gov) into the ordering instrument.

(d) Owners shall review all subcontracts subject to DB entered into by prime Contractors to verify that the prime Contractor has required its Subcontractors to include the applicable wage determinations.

(e) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to an Owner's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the Owner has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument.

If this occurs, the Owner shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The Owner's Contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

### 3. Contract and Subcontract provisions.

(a) The Owner(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in 29 CFR 5.1, the Water Resources Reform and Development Act of 2014 for a CWSRF-funded project or the Consolidated Appropriations Act, 2016 (or subsequent federal law) for a DWSRF-funded project, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Owners may obtain wage determinations from the U.S. Department of Labor's web site, [www.dol.gov](http://www.dol.gov).

(ii)(A) The Owner(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The TWDB shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Owner(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the Owner(s) to the TWDB. The TWDB will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the TWDB or will notify the TWDB within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the Owner(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the TWDB shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the TWDB, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The Owner(s) shall, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the EPA may, after written notice to the Contractor, sponsor, applicant, or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the

site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the Owner, that is, the entity that receives the funds from the TWDB. Such documentation shall be available on request of the TWDB or EPA. As to each payroll copy received, the Owner shall provide written confirmation in a form satisfactory to the TWDB indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all Subcontractors. Contractors and Subcontractors shall maintain the full social security number and current address of each covered worker and shall provide them upon request to the Owner(s) for transmission to the TWDB or EPA if requested by EPA, the TWDB, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a Subcontractor to provide addresses and social security numbers to the prime Contractor for its own records, without weekly submission to the Owner(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or Subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The Contractor or Subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the TWDB, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the required records or to make them available, the EPA or TWDB may, after written notice to the Contractor, sponsor, applicant, or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### (4) Apprentices and trainees

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the

applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The Contractor or Subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any Subcontractor or lower tier Subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and Owner(s), TWDB, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

#### 4. Contract Provision for Contracts in Excess of \$100,000.

(a) Contract Work Hours and Safety Standards Act. The Owner shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the Contractor and any Subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The Owner shall upon the request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or Subcontractor under any such contract or any other Federal contract with the same prime Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.

(4) Subcontracts. The Contractor or Subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any Subcontractor or lower tier Subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Owner shall insert a clause requiring that the Contractor or Subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Owner shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the Contractor or Subcontractor for inspection, copying, or transcription by authorized representatives of the EPA, TWDB, and the Department of Labor, and the Contractor or Subcontractor will permit such representatives to interview employees during working hours on the job.

## 5. Compliance Verification

(a) The Owner shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that Contractors or Subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The Owner must use Standard Form 1445 (SF 1445) found in the forms section of TWDB guidance document TWDB-0156 or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are also available from EPA on request.

(b) The Owner shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by Contractors or Subcontractors and the duration of the contract or subcontract. Owners must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the Contractor or Subcontractor is not complying with DB. Owners shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."

(c) The Owner shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that Contractors or Subcontractors are paying the appropriate wage rates. The Owner shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by Contractors or Subcontractors and the duration of the contract or subcontract. At a minimum, if practicable the Owner should spot check payroll data within two weeks of each Contractor or Subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Owners must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the Contractor or Subcontractor is not complying with DB. In addition, during the examinations the Owner shall verify evidence of fringe benefit plans and payments there under by Contractors and Subcontractors who claim credit for fringe benefit contributions.

(d) The Owner shall periodically review Contractors and Subcontractor's use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that Contractors and Subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Owners must immediately report potential violations of the DB prevailing wage requirements to the EPA Region 6 DB Coordinator, TWDB, and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/whd/america2.htm>.

## 11. Payments

### (a) Progress Payments:

- i. The Contractor shall prepare their requisition for progress payment as of the last day of the payment month and submit it, with the required number of copies, to the Engineer for review. Except as provided in paragraph (iii) of this subsection, the amount of the payment due to the Contractor shall be determined by adding to the total value of work completed to date, the value of materials properly stored on the site and deducting (1) five percent (5%) minimum of the total amount, as a retainage and (2) the amount of all previous payments. The total value of work completed to date shall be based on the actual or estimated quantities of work completed and on the

unit prices contained in the agreement (or cost breakdown approved pursuant to section 7.b relating to lump sum bids) and adjusted by approved change orders. The value of materials properly stored on the site shall be based upon the estimated quantities of such materials and the invoices prices.

Copies of all invoices shall be available for inspection by the Engineer.

- ii. The Contractor shall be responsible for the care and protection of all materials and work upon which payments have been made until final acceptance of such work and materials by the Owner. Such payments shall not constitute a waiver of the right of the Owner to require the fulfillment of all terms of the contract and the delivery of all improvements embraced in the contract complete and satisfactory to the Owner in all details.
  - iii. This clause applies to contracts when the Owner is a District or Authority. The retainage shall be ten (10%) percent minimum of the amount otherwise due until at least fifty (50%) of the work has been completed. After the project is fifty (50%) percent completed, and if the District or Authority's Board finds that satisfactory progress is being made, then the District may authorize any of the remaining progress payments to be made in full. The District is not obligated to pay interest earned on the first 50% of work completed (Texas Water Code Sec. 49.276(d)).
  - iv. The five (5%) percent retainage of the progress payments due to the Contractor may not be reduced until the building of the project is substantially complete and a reduction in the retainage has been authorized by the TWDB.
- (b) Withholding Payments. The Owner may withhold from any payment otherwise due to the Contractor so much as may be necessary to protect the Owner and if so elects may also withhold any amounts due from the Contractor to any Subcontractors or material dealers for work performed or material furnished by them. The foregoing provisions shall be construed solely for the benefit of the Owner and will not require the Owner to determine or adjust any claims or disputes between the Contractor and his Subcontractors or material dealers, or to withhold any monies for their protection unless the Owner elects to do so.

The failure or refusal of the Owner to withhold any monies from the Contractor shall in no way impair the obligations of any surety or sureties under any bond or bonds furnished under this contract.

- (c) Payments Subject to Submission of Certificates. Each payment to the Contractor by the Owner shall be made subject to submission by the Contractor of all written certifications required of him and his Subcontractors by general and special conditions pertaining to this contract.

(d) Final Payment.

- i. Upon satisfactory completion of the work performed under this contract,  
  
as a condition before final payment under this contract or as a termination settlement under this contract the Contractor shall execute and deliver to the Owner a release of all claims against the Owner arising under, or by virtue of, this contract, except claims which are specifically exempted by the Contractor to be set forth therein. Unless otherwise provided in this contract, by State law or otherwise expressly agreed to by the parties to this contract, final payment under this contract or settlement upon termination of this contract shall not constitute a waiver of the Owner's claims against the Contractor or his sureties under this contract or applicable performance and payment bonds.
- ii. After final inspection and acceptance by the Owner of all work under the contract, the Contractor shall prepare their requisition for final payment which shall be based upon the carefully measured or computed quantity of each item of work at the applicable unit prices stipulated in the Agreement or cost breakdown (if lump sum), as adjusted by approved change orders. The total amount of the final payment due the Contractor under this contract shall be the amount computed as described above less all previous payments.
- iii. The retainage and its interest earnings, if any, shall not be paid to the Contractor until the TWDB has authorized a reduction in, or release of, retainage on the contract work.
- iv. Withholding of any amount due to the Owner, under general and/or special conditions regarding "Liquidated Damages," shall be deducted from the final payment due the Contractor.

**12. Equal employment opportunity and affirmative action**

This provision applies to Clean Water State Revolving Fund Program and Drinking Water State Revolving Fund projects where the contract agreement is for more than \$10,000.

During the performance of this contract, the Contractor agrees as follows:

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex (including pregnancy), sexual orientation, gender identity, national origin, age (40 or older), disability, or genetic information. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for

training, including apprenticeship.

The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

- (2) The Contractor will, in all solicitations or advancements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.
- (4) The Contractor will send to each labor union or representative of workers with which the Contractor has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The Contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept. 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

- (8) The Contractor will include the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the notice which contains the applicable goals set for minority and female participation and which is set forth in the solicitations from which this contract resulted.

### **13. Debarment and Suspension**

This provision applies only to Clean Water State Revolving Fund Equivalency Program projects and Drinking Water State Revolving Fund projects. This contract is subject to the Title 40 Code of Federal Regulations Part 32 concerning Debarment and Suspension. The Contractor will comply with the assurances provided with the bid that led to this contract.

#### **Instructions for Certification**

- (a) By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.
- (b) The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- (c) The prospective lower tier participant shall provide immediate written notice to the person to whom this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or had become erroneous by reason of changed circumstances.
- (d) The terms covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this clause, have the meaning set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- (e) The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is proposed for debarment under 48

- CFR part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- (f) The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
  - (g) A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, ineligible, or voluntarily excluded from covered transactions, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the List of Parties Excluded from Federal Procurement and Non-procurement Programs.
  - (h) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
  - (i) Except for transactions authorized under paragraph (e) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

***Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion—Lower Tier Covered Transactions.***

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

**14. Disadvantaged Business Enterprises**

The Texas Water Development Board's (TWDB) Clean Water and Drinking Water State Revolving Fund programs receive federal funds from the U. S. Environmental Protection Agency (EPA). As a condition of federal grant awards, EPA regulations require that loan recipients make a "good faith effort" to award a fair share of work to DBE's who are Minority Business Enterprises (MBE's), and Women-owned Business Enterprises (WBE's) whenever procuring construction, supplies, services and equipment.

The current fair share goals for the State of Texas are as follows:

Category	MBE	WBE
Construction	19.44%	9.17%
Equipment	16.28%	11.45%
Services	20.41%	13.66%
Supplies	25.34%	8.82%

After loan commitment, but prior to closing, Owners (Applicants) must provide forms TWDB-0216 and TWDB-0373. The project’s Prime Engineer, Financial Advisor, and Bond Counsel must complete a TWDB-0217 form and indicate if any subcontracting opportunities will be available or if the Contractor will be self-performing the contract. Regardless of the procurement’s outcome, all entities must submit a TWDB-0373 and list the Contractors selected by the Owner for the project. Failure to include a Contractor and contract amount will result in denial of payment until the proper documentation has been reviewed and approved.

For each construction contract, Owners are required to submit a TWDB-0216 and TWDB-0373 for the procurement of the project’s Prime Contractor. If the Prime Contractor is utilizing Subcontractors for the project, then additional TWDB-0216 and TWDB-0373 forms will be required for submittal prior to request for payment.

The following forms are required for each contract:

Form	Prime Contractor	Submit Form To
TWDB-0216	Required	TWDB
TWDB-0217	Required	TWDB
TWDB-0373	Required	TWDB

- (a) The Contractor shall, if awarding sub-agreements, to the extent appropriate for the goals listed in the instructions to bidders make a good faith effort to award a fair share of work to DBE’s who are Minority Business Enterprises (MBE’s) and Women-owned Business Enterprises (WBE’s) as sources of supplies, construction, equipment and services by taking the following steps:
  - i. Ensure DBEs are made aware of contracting opportunities by including qualified small, minority, and women's businesses on solicitation lists;
  - ii. Assuring that small, minority, and women's businesses are solicited whenever they are potential sources;
  - iii. Dividing total requirements, when economically feasible, into small tasks or quantities to permit maximum participation of small, minority, and women's businesses;
  - iv. Establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small, minority, and women's businesses; and

- v. Using the services and assistance of the Small Business Administration, Minority Business Development Agency of the U.S. Department of Commerce, and Texas Marketplace, as appropriate.

### **15. Archeological Discoveries and Cultural Resources**

No activity which may affect properties listed or properties eligible for listing in the National Register of Historic Places or eligible for designation as a State Archeological Landmark is authorized until the Owner has complied with the provisions of the National Historic Preservation Act and the Antiquities Code of Texas.

The Owner has previously coordinated with the appropriate agencies and impacts to known cultural or archeological deposits have been avoided or mitigated. However, the Contractor may encounter unanticipated cultural or archeological deposits during construction.

If archeological sites or historic structures which may qualify for designation as a State Archeological Landmark according to the criteria in 13 TAC Chapter 26, or that may be eligible for listing on the National Register of Historic Places in accordance with 36 CFR Part 800, are discovered after construction operations are begun, the Contractor shall immediately cease operations in that particular area and notify the Owner, the TWDB, and the Texas Historical Commission, 1511 N. Colorado St., P.O. Box 12276, Capitol Station, Austin, Texas 78711-2276. The Contractor shall take reasonable steps to protect and preserve the discoveries until they have been inspected by the Owner's representative and the TWDB. The Owner will promptly coordinate with the State Historic Preservation Officer and any other appropriate agencies to obtain any necessary approvals or permits to enable the work to continue. The Contractor shall not resume work in the discovery until authorized to do so by the Owner.

### **16. Endangered Species**

No activity is authorized that is likely to jeopardize the continued existence of a threatened or endangered species as listed or proposed for listing under the Federal Endangered Species Act (ESA), and/or the State of Texas Parks and Wildlife Code on Endangered Species, or to destroy or adversely modify the habitat of such species.

If a threatened or endangered species is encountered during construction, the Contractor shall immediately cease work in the area of the encounter and notify the Owner, who will immediately implement actions in accordance with the ESA and applicable State statutes. These actions shall include reporting the encounter to the TWDB, the U. S. Fish and Wildlife Service, and the Texas Parks and Wildlife Department, obtaining any necessary approvals or permits to enable the work to continue, or implement other mitigation actions. The Contractor shall not resume construction in the area of the encounter until authorized to do so by the Owner.

### **17. Hazardous Materials**

Materials utilized in the project shall be free of any hazardous materials, except as may be specifically provided for in the specifications.

If the Contractor encounters existing material on sites owned or controlled by the Owner or in material sources that are suspected by visual observation or smell to contain hazardous materials, the Contractor shall immediately notify the Engineer and the Owner.

The Owner will be responsible for the testing and removal or disposal of hazardous materials on sites owned or controlled by the Owner. The Owner may suspend the work, wholly or in part during the testing, removal or disposal of hazardous materials on sites owned or controlled by the Owner.

## 18. Project Signage

The Owner must implement one of the signage options below as described in TWDB Guidance TWDB-1109:

- Online signage placed on community website or social media outlet;
- Press release;
- Posters or wall signage in a public building or location;
- Newspaper or periodical advertisement for project construction, groundbreaking ceremony, or operation of the new or improved facility; or
- Standard on-site signage erected in a prominent location at the construction project site or along a major thoroughfare within the community as directed by the Owner.

If a recipient decides on a public or media event to publicize the accomplishment of significant events related to construction of the project, the U.S Environmental Protection Administration, Region 6, must be provided with at least a ten working day notice of the event and provided the opportunity to attend and participate. Please contact Associate Director Claudia Hosch, who can be reached at (214) 665-6464 or [Hosch.Claudia@epa.gov](mailto:Hosch.Claudia@epa.gov).

## 19. Changes

\*Provisions identified with an asterisk below are consistent with Local Government Code 271.060. Counties and Municipalities may modify the identified provisions, when applicable, to conform to Local Government Code 262.031 (Counties) or 252.048 (Municipalities).

- (a) The Owner may at any time, without notice to any surety, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including but not limited to changes:
  - i. In the specifications (including drawings and designs);
  - ii. In the time, method or manner of performance of the work;
  - iii. To decrease or increase the quantity of work to be performed or materials, equipment or supplies to be furnished;
- (b) \*The total price of a contract may not be increased by a change order unless provision has been made for the payment of the added cost by the appropriation of current funds or bond funds for that purpose, by the authorization of the issuance of certificates, or by a combination of those procedures.
- (c) \*A contract with an original contract price of \$1 million or more may not be increased by more than 25 percent. If a change order for a contract with an original contract price of less than \$1 million increases the contract amount to \$1 million or more, subsequent change orders may not increase the revised contract amount by more than 25 percent.

- (d) \*A governing body may grant authority to an official or employee responsible for purchasing or for administering a contract to approve a change order that involves an increase or decrease of \$50,000 or less.
- (e) Changes that involve an increase in price will be supported by documentation of the cost components. For projects funded through the EDAP program, or with grant proceeds, TWDB staff may request this information to be provided in a format equivalent to the Cost and Pricing Information form (No. WRD-277).
- (f) Any change orders involving a change in the project requiring a relocation of project components, sizing, or process may require additional environmental approval. A map and description of the proposed changes should be sent to the TWDB Environmental Reviewer for coordination and approval as soon as possible to avoid any delay.

## 20. Operation and Maintenance Manuals and Training

- (a) The Contractor shall obtain installation, operation, and maintenance manuals from manufacturers and suppliers for equipment furnished under the contract. The Contractor shall submit three copies of each complete manual to the Engineer within 90 days after approval of shop drawings, product data, and samples, and not later than the date of shipment of each item of equipment to the project site or storage location.
- (b) The Owner shall require the Engineer to promptly review each manual submitted, noting necessary corrections and revisions. If the Engineer rejects the manual, the Contractor shall correct and resubmit the manual until it is acceptable to the Engineer as being in conformance with the design concept of the project and for compliance with information given in the Contract Documents. Owner may assess the Contractor a charge for reviews of the same items in excess of three (3) times. Such procedure shall not be considered cause for delay.
- (c) Acceptance of manuals by Engineer does not relieve the Contractor of any requirements of terms of Contract.
- (d) The Contractor shall provide the services of trained, qualified technicians to check final equipment installation, to assist as required in placing same in operation, and to instruct operating personnel in the proper manner of performing routine operation and maintenance of the equipment.
- (e) Operations and maintenance manuals specified hereinafter are in addition to any operation, maintenance, or installation instructions required by the Contractor to install, test, and start-up the equipment. Each manual is to be bound in a folder and labeled to identify the contents and project to which it applies. The manual shall contain the following applicable items:
  - i. A listing of the manufacturer's identification, including order number, model, serial number, and location of parts and service centers.
  - ii. A list of recommended stock of parts, including part number and quantity.
  - iii. Complete replacement parts list.
  - iv. Performance data and rating tables.
  - v. Specific instructions for installation, operation, adjustment, and maintenance.
  - vi. Exploded view drawings for major equipment items.

- vii. Lubrication requirements.
- viii. Complete equipment wiring diagrams and control schematics with terminal identification.

## 21. As-Built Dimensions and Drawings

- (a) Contractor shall make appropriate daily measurements of facilities constructed and keep accurate records of location (horizontal and vertical) of all facilities.
- (b) Upon completion of each facility, the Contractor shall furnish the Owner with one set of direct prints, marked with red pencil, to show as-built dimensions and locations of all work constructed. As a minimum, the final drawings shall include the following:
  - i. Horizontal and vertical locations of work.
  - ii. Changes in equipment and dimensions due to substitutions.
  - iii. "Nameplate" data on all installed equipment.
  - iv. Deletions, additions, and changes to scope of work.
  - v. Any other changes made.

## 22. Close-Out Procedures

To close-out the contract and release final retainage, the following steps must be completed:

- (a) TWDB Staff must conduct a construction contract final inspection (CCFI);
- (b) The following submittals must be received, reviewed, and accepted by the TWDB:
  - i. The final change order, adjustment of quantities, or a statement that all change orders have previously been submitted and there will be no more change orders;
  - ii. The final pay request from the Contractor;
  - iii. An affidavit by the Contractor that all bills have been paid;
  - iv. Certification by the consulting Engineer that the work has been completed and was constructed in accordance with the approved plans and specifications and sound engineering principals and construction practices;
  - v. Acceptance of the project by the Owner in the form of a written resolution or other formal action;
  - vi. Notification of the beginning date of the warranty period for the contract; and
  - vii. Confirmation that the Owner has received the as-built drawings from the Contractor.
- (c) TWDB will issue a Certificate of Approval allowing the release of retainage.

## 23. Additional Forms and Information

The following forms and guidance documents, mentioned throughout this Guidance, are available on the TWDB site at: <http://www.twdb.texas.gov/financial/instructions/index.asp>

### Forms:

- Contractor's Act of Assurance (ED-103)
- Contractor's Resolution on Authorized Representative (ED-104)
- Debarment / Suspension Certification (SRF-404)
- Bidder's Certifications- EEO (WRD – 255)

DBE Affirmative Steps solicitation Report (TWDB 0216)  
DBE Prime Contractor Affirmative Steps Certification & Goals (TWDB 0217)  
DBE Loan/Grant Participation Summary (TWDB 0373)  
Monthly American Iron and Steel Certificate (TWDB-1106-A)  
American Iron and Steel (AIS) De Minimis Log (TWDB-1106-B)

Monthly Davis Bacon Wage Rate Certificate of Compliance Submittal by Owner (Sub-Recipient) (DB-0154)

**Guidance Documents:**

TWDB-0210 Disadvantaged Business Enterprise Guidance  
Requirements for American Iron and Steel (AIS) Guidance (TWDB-1106)  
Guidance on Davis-Bacon Wage Rate Requirements for State Revolving Fund Projects (DB-0156)

**Monthly Davis-Bacon Wage Rate Certificate of Compliance  
Submittal by Owner (Subrecipient)**

**TWDB Project No.** \_\_\_\_\_

**Loan No.** \_\_\_\_\_

**This executed certificate must be submitted with each Outlay report for labor included within construction contracts. This Certificate applies only for Financial Assistance CLOSED AFTER 10/30/2009.**

I, \_\_\_\_\_, \_\_\_\_\_ of  
(Name) (Title)

\_\_\_\_\_ hereby certify that periodic reviews of a  
(Name of entity)  
representative sample of the weekly payroll data, and contractor weekly payroll certifications, such as OMB No. 1235-0008, have been performed to verify that contractors and subcontractors are paying the appropriate wage rate for compliance with section 513 of the Federal Water Pollution Control Act (33 U.S.C. §1372) for the Clean Water State Revolving Fund or with section 1452(a)(5) of the Safe Drinking Water Act (42 U.S.C. §300j-12(a)(5)) for the Drinking Water State Revolving Fund. These laws require payment of prevailing wages in accordance with 40 U.S.C. §§ 3141–3144, 3146, and 3147 (contained within the Davis-Bacon Act, as amended).

I understand that a false statement herein may subject me to penalties under federal and state laws relating to filing false statements and other relevant statutes.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

### CONTRACTOR'S ACT OF ASSURANCE

STATE OF TEXAS §

COUNTY OF Dallas §

BEFORE ME Melanie R Taylor, a Notary Public duly commissioned and qualified in and for the County of Dallas in the State of Texas came and appeared TISED PAVING CO, as represented by Louis TISED, the Corporation's PRESIDENT, who declares he/she is authorized to represent TISED PAVING CO pursuant to provisions of a resolution adopted by said Corporation on the 7 day of Nov, 2018 (a duly certified copy of such resolution is attached to and is hereby made a part of this document).

Louis TISED, as the representative of TISED PAVING CO declares that TISED PAVING CO assures the Texas Water Development Board that it will construct Bowman Springs project at ARLINGTON, Texas, in accordance with sound construction practice, all laws of the State of Texas, and the rules of the Texas Water Development Board.

GIVEN UNDER MY HAND and seal of office this 14 day of April, 2022

Melanie R Taylor (Notary Public in and for the State of Texas)

Melanie R Taylor (Print Name)



[SEAL]

TISEO PAVING CO.

UNANIMOUS CONSENT OF DIRECTORS  
IN LIEU OF A SPECIAL MEETING

November 7, 2018

The undersigned, being all of the Directors of Tiseo Paving Co., a Michigan corporation ("Corporation"), pursuant to Section 1 of Article IV of the Bylaws as amended and Section 450.1525 of the Michigan Business Corporation Act, do hereby consent to and adopt in all respects the following resolutions, and such consent shall have the same force and effect as a vote by the undersigned at a properly called and convened meeting.

RESOLVED, the Directors approve and adopt the Second Amendment to the Bylaws of the Corporation attached as Exhibit A.

RESOLVED, that the following persons shall be, and they hereby are, elected to serve as officers of the Corporation until such time as their successors shall be elected and qualified:

Chief Executive Officer	Arthur Tiseo
President	Louis Tiseo
Vice-President	Robert Caudill
Vice-President	Angelo Tiseo
Secretary	Louis Tiseo
Treasurer	Louis Tiseo

RESOLVED FURTHER, that all actions taken by the officers of the Corporation from the date of their last election to the date hereof are hereby ratified, confirmed and approved.

IN WITNESS WHEREOF, the undersigned have executed this Consent as of the day and year first above written. By execution of this Consent, the undersigned Directors hereby waive notice of this special meeting.



Arthur Tiseo, Director

Date: 11.07.2018

Louis Tiseo, Director

Date: 11.07.2018

Robert Caudill, Director

Date: 11.07.2018

Angelo Tiseo, Director

Date: 11.07.2018

# CONTRACTOR'S ACT OF ASSURANCE RESOLUTION

I hereby certify that it was RESOLVED by a quorum of the directors of the  
TISED PAVING CO. (Name of Corporation),  
meeting on the 7 day of NOV 20 18, that:

Authorized Representative(s):

LOUIS TISED, PRESIDENT

be, and hereby is/are authorized to act on behalf of TISED PAVING CO.  
(Name of Corporation), as its representative in all business transactions conducted in the State of  
Texas, and;

That all above resolution was unanimously ratified by the Board of Directors at said  
meeting and that the resolution has not been rescinded or amended and is now in full forces and  
effect; and;

In authentication of the adoption of this resolution, I subscribe my name and affix the seal  
of the Corporation this 14 day of April, 20 22.

 (Secretary)  
LOUIS TISED

[SEAL]

# Debarment / Suspension Certification

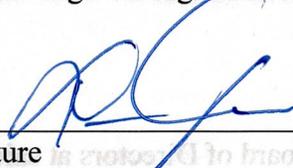
I, Louis Tiseo, hereby certify that I have checked on the federal  
(Authorized Representative of Recipient)

System for Award Management ([www.sam.gov](http://www.sam.gov)) website and determined that

Tiseo Paving Company is not shown as an "excluded party" that is debarred,  
(Name of entity)

suspended or otherwise excluded from or ineligible for participation in federal assistance programs under Executive Order 12549. (See 2 CFR Part 180 and 2 CFR Part 1532 for additional information on the federal governmentwide debarment and suspension system for nonprocurement programs and activities.)

I understand that a false statement herein may subject me to penalties under federal and state laws relating to filing false statements and other relevant statutes.

  
Signature

4/14/2022  
Date

President  
Title

Louis Tiseo  
Name of Recipient

**Verifying prime contractors and subcontractors for construction, equipment, supplies and services:** Using the [www.sam.gov](http://www.sam.gov) website, the recipient must verify prior to awarding the contract that the prime contractor is not listed as an "excluded party" that is debarred, suspended or otherwise excluded from or ineligible. Once any subcontractors are known, they also must be verified as not listed as an "excluded party" prior to award of a subcontract. The recipient must print a dated record of the verification from the [www.sam.gov](http://www.sam.gov) website and retain a copy that is available for review by TWDB. The prime contractors and subcontractors must be verified prior to the contract award or the costs may be disallowed.

## Debarment / Suspension Certification

I, Ashley Brown, hereby certify that I have checked on the federal  
(Authorized Representative of Recipient)  
System for Award Management ([www.sam.gov](http://www.sam.gov)) website and determined that  
City of Arlington is not shown as an “excluded party” that is debarred,  
(Name of entity)  
suspended or otherwise excluded from or ineligible for participation in federal assistance  
programs under Executive Order 12549. (See 2 CFR Part 180 and 2 CFR Part 1532 for  
additional information on the federal governmentwide debarment and suspension system for  
nonprocurement programs and activities.)

I understand that a false statement herein may subject me to penalties under federal and state  
laws relating to filing false statements and other relevant statutes.

  
\_\_\_\_\_  
Signature  
Capital Projects Coordinator  
\_\_\_\_\_  
Title  
City of Arlington  
\_\_\_\_\_  
Name of Recipient

3-31-2022  
\_\_\_\_\_  
Date

**Verifying prime contractors and subcontractors for construction, equipment, supplies and services:** Using the [www.sam.gov](http://www.sam.gov) website, the recipient must verify prior to awarding the contract that the prime contractor is not listed as an “excluded party” that is debarred, suspended or otherwise excluded from or ineligible. Once any subcontractors are known, they also must be verified as not listed as an “excluded party” prior to award of a subcontract. The recipient must print a dated record of the verification from the [www.sam.gov](http://www.sam.gov) website and retain a copy that is available for review by TWDB. The prime contractors and subcontractors must be verified prior to the contract award or the costs may be disallowed.

FOR OFFICE USE ONLY  
Commitment # \_\_\_\_\_

**TWDB-0216  
TEXAS WATER DEVELOPMENT BOARD  
AFFIRMATIVE STEPS SOLICITATION REPORT**

**I. PROJECT INFORMATION**

TWDB Project Number	Applicant/Entity Name	Total TWDB Funding Request	Program Type (insert "X" for all that apply)	
<b>73827</b>	<b>City of Arlington</b>	\$ 5,151,695.00	<input type="checkbox"/>	Drinking Water SRF (DWSRF)
			<input checked="" type="checkbox"/>	Clean Water SRF (CWSRF)

**Project Name:** Bowman Springs (I-20 to Enchanted Bay) \_\_\_\_\_

**Solicitation By:**  Applicant/Entity OR  Prime Contracted Business: \_\_\_\_\_

**Project Phase:**  Prior to Closing       Release of funding for PADs       Construction Contract # PWST18001 \_\_\_\_\_

**II. SOLICITATION METHOD(S) UTILIZED**

At least two methods of solicitation are required. Select the method(s) utilized for the solicitation. Copies of the actual postings, direct contact email/phone log, etc. must be attached to this form as support documentation for each method used. Failure to adequately follow these steps will result in the requirement to complete additional steps in order to become compliant.

- Newspaper Advertisements       Meetings or Conferences       Trade Association Publications  
 Minority Media       Internet & Web Postings       Other Government Publications  
 Direct Contact by Phone, Fax, USPS Mail, or Email\*

*\*If using direct contact, entities must solicit to a **minimum of 3** businesses/firms (at least one being a DBE) for each category of contract sought (i.e., construction, supplies, equipment, or services) to demonstrate a Good Faith Effort.*

**III. PROJECT BIDDERS LIST:**

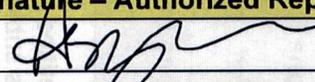
List on the following table, or provide on a separate list, each business entity directly solicited for procurement or that submitted a bid for consideration.

<b>Instructions for Columns 1 - 4</b>	1 - Full business name (line one) & point of contact (line two) 2 - Business address 3 - Telephone number 4 - Email address for the business
<b>Instructions for Column 5</b>	Enter one of the following procurement or contract categories: <b>CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES</b> <i>For detailed definitions, review guidance document, TWDB-0210.</i>
<b>Instructions for Column 6</b>	Enter the type of business: <b>MBE</b> - Minority Business Enterprise, <b>WBE</b> - Women-owned Business Enterprise, or <b>OTHER</b> - Company or firm is Non-MBE or WBE

**Notice:** Entities receiving State Revolving Fund financial assistance must create and maintain a Bidders List if the entity is subject to, or chooses to follow, competitive bidding. The Bidders List must include all firms that bid or quoted on contracts under EPA assisted projects, including both MBE/WBEs and non-MBE/WBEs. Entities must keep all Bidders Lists until project completion or the recipient is no longer receiving EPA funding under the loan, whichever is later. Entities with loans totaling less than \$250,000 during a state fiscal year are exempt from the Bidders List requirement, but must still meet DBE program requirements. The Bidders List requirement also applies to all Prime Contracted Businesses/Firms that make subcontracting.

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Business Name & Point of Contact	Business Address	Telephone Number	E-Mail Address	Procurement Category	MBE/WBE Status
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						

Use additional sheets if necessary

Signature – Authorized Representative	Title (print legibly)	Date
	Capital Projects Coordinator	03/31/2022

**IV. TWDB APPROVAL SIGNATURE**

Signature indicates the form meets DBE requirements.

DBE Coordinator	Approval Date

## Amy Powell

---

**From:** Lori Du  
**Sent:** Monday, May 16, 2022 10:31 AM  
**To:** Sabino Martin; Amy Powell  
**Subject:** FW: Arlington 73827 CID 02 / Sanitary Sewer (Bowman Springs) I20 to Enchanted Bay / TWDB Concurrence and NTP

See below yellow.

---

**From:** Dennis Newman <Dennis.Newman@twdb.texas.gov>  
**Sent:** Monday, May 16, 2022 10:00 AM  
**To:** Brad Franklin <Brad.Franklin@arlingtontx.gov>  
**Cc:** Lori Du <Lori.Du@arlingtontx.gov>; Ashley Brown <Ashley.Brown@arlingtontx.gov>  
**Subject:** [EXTERNAL EMAIL] Arlington 73827 CID 02 / Sanitary Sewer (Bowman Springs) I20 to Enchanted Bay / TWDB Concurrence and NTP

---

**External Email: Stop, Look, Think before clicking attachment or link. Report Phishing.**

---

Brad:

The TWDB NTP letter will be provided in the future. The City of Arlington may **use this email as the TWDB NTP.**

The executed construction contract documents (electronic) for the referenced project have been reviewed and placed in the Texas Water Development Board (TWDB) files. The City of Arlington (City) issued four (4) addendums during the bidding period.

Addendum No. 1 updates the project drawings and technical specifications to:

1. Clarify TXDOT coordination and Section 11-02.
2. Revise section Culvert C1.
3. Address northbound and one-way traffic.
4. Update Davis-bacon wage rates.
5. Revise Section 11-15 Time for Completion and Liquidated Damage.
6. Revise Section 11-23 Holiday Inspection.
7. Add Section 11-31 As-Built Plans.
8. Revise Sections 12-34 (Backfill), 13-10 to 13-16, 15-04 and 15-06 (Concrete).
9. Revise drawing RAB-01 (Traffic).
10. Revise bid form, Total Summary.

Addendum No. 2 responds to questions and adds the Pre-Bid Meeting Agenda.

Addendum No. 3 updates the project drawings and technical specifications to:

1. Clarify property owners.
2. Add Temporary Driveway Access and Cattle Guard Details plan sheets.
3. Revises Section 11-02 to include new paragraph H.
4. Revises bid items 238, 239, and 344 and Total Summary sheet.
5. Responds to questions and adds the Pre-Bid Meeting Agenda.

Addendum No. 4 revises bid item 607.

TWDB staff has reviewed these documents for compliance with TWDB programmatic requirements and compliance with 30 Texas Administrative Code Chapter 217 (Design Criteria for Domestic Wastewater Systems). Addendums No.1 through No. 4 are approved by the TWDB.

After evaluation of bids, the City decided to award the project to the lowest responsible bidder that met the qualification requirements of the City. The bidder selected was Tiseo Paving Company of Texas. The TWDB concurs with the issuance of a Notice to Proceed (NTP) for the following contract.

<b>Contract</b>	<b>Contractor</b>	<b>TWDB Funded Amount</b>	<b>Local Funds Amount</b>	<b>Total Contract Amount</b>
CID 02: Sanitary Sewer (Bowman Springs) I20 To Enchanted Bay	Tiseo Paving Company of Texas 419 US HWY East Mesquite, TX 75150	\$923,590.61(*)	\$12,394,408.40(*)	\$13,317,999.00(*)

(\*) Note on pages 61-63 of the executed contract package, the TWDB is funding bid Items 601-631 (TWDB Funded Amount). Local Funds are being used to address Total Contract Amount. The City is required to keep track of TWDB bids items to be eligible for reimbursement through Outlays.

For our records, we note that the contract time is 450 calendar days. Please copy TWDB staff on the City's NTP to the contractor. In addition to ensure eligibility for funding, change orders must be submitted for our review and approval prior to execution.

This concurrence does not relieve the City and design engineer of legal responsibility for the integrity of the design. The materials and methods of construction are to be in accordance with specifications provided by the engineer of record.

Also, please remember that prior to the release of final retainage on the contract, the TWDB must have issued a Certificate of Approval. A list of documents needed for project closeout can be found in the Supplemental Contract Conditions document (TWDB-0550) located on our website at: <http://www.twdb.texas.gov/financial/instructions/index.asp>.

Should you have any questions, do not hesitate to contact me at via email at [dennis.newman@twdb.texas.gov](mailto:dennis.newman@twdb.texas.gov).

Regards, Dennis

Dennis L. Newman, P.E.  
Engineer  
Regional Water Project Development – Northeast  
Texas Water Development Board  
1515 E Kearney St # 401, Mesquite, TX 75149  
Ph: (972) 289-9908

## Request for Proposal

Published in Fort Worth Star-Telegram on February 13, 2022

### Location

Tarrant County, Texas

### Notice Text

CITY OF ARLINGTON

NOTICE TO BIDDERS

This project primarily consists of reconstructing the county type roadway to a three-lane roadway, including storm drain improvements, water & sanitary sewer renewals, street lights, pavement markings, street signs, sidewalks, hike & bike trail, fiber optic conduit, and a roundabout (at Bowman Springs/ Greenspring/ future Pleasant Ridge intersection) with landscaping and irrigation. The Engineer's estimate for this project is \$8.5M.

Sealed bids will be received by the City of Arlington, Texas, at the Office of the Director of Public Works and Transportation, 2nd Floor, City Hall, 101 W. Abram Street, Arlington TX, 76010, until 3:00 p.m. on TUESDAY, MARCH 8, 2022, for the construction of BOWMAN SPRINGS ROAD (IH 20 to ENCHANTED BAY BOULEVARD), PROJECT NO. PWST18001 as listed in the contract documents, at which time and place they will be publicly opened and read aloud in the Public Works Conference Room . Any bid received after closing time will be returned unopened.

All bidders and subcontractors on this project must be pre-qualified in the appropriate work category as outlined in the Instructions to Bidders of the contract documents.

Contract documents, including plans, specifications, and addendums may be reviewed and/or downloaded from the City's vendor/supplier portal, IonWave, accessible via the City's web page, [https://arlingtontx.gov/city\\_hall/departments/finance](https://arlingtontx.gov/city_hall/departments/finance). Look for "Vendor/Supplier" under "Services".

A cashier's check or an acceptable Bidder's Bond payable to the City of Arlington, Texas, in an amount of not less than five percent (5%) of the largest possible total for the bid submitted, must accompany the bid.

A Performance Bond and a Payment Bond, each for one hundred percent (100%) of the contract price, will be required. The successful bidder shall also furnish to the City a Maintenance Bond covering defects of material and workmanship for two calendar years following the City's approval and acceptance of the construction.

Not less than the prevailing wage rates adopted by the City of Arlington, Texas, and as set forth in the contract documents, must be paid on this project.

The City reserves the right to request bidders to provide Minority/Women Business Enterprises (MWBE) information. This is for information only and no preference shall be given, nor will this information affect the results of the contract award.

In case of ambiguity or lack of clearness in stating prices in the Proposal, the City reserves the right to accept the most advantageous construction thereof to the City or to reject the proposal.

The City reserves the right to reject any or all bids and waive any or all informalities. No bid may be withdrawn until the expiration of ninety (90) days from the date bids are opened.

All inquiries must be submitted to the City in accordance with the Instructions to Bidders of the contract documents.

This contract is contingent upon release of funds from the Texas Water Development Board (TWDB). Refer to TWDB INSTRUCTIONS TO BIDDERS for details.

A PRE-BID Teleconference/Meeting will be held for this project on Tuesday, February 22, 2022 at 10:00 a.m. in the Public Works and Transportation Conference Room, 2nd Floor, City Hall, 101 W. Abram Street, Arlington, TX 76010. Prospective bidders are encouraged to participate either in person or by teleconference. If participating by teleconference, please contact Sabino Martin, Civil Engineer at 817-459-6582 or at Sabino.Martin@arlingtontx.gov no later than Friday, February 18, 2022 at 5:00 p.m. to register for the call.

IPL0059873

Feb 13, 20 2022

## Request for Proposal

Published in Fort Worth Star-Telegram on February 20, 2022

### Location

Tarrant County, Texas

### Notice Text

CITY OF ARLINGTON  
NOTICE TO BIDDERS

This project primarily consists of reconstructing the county type roadway to a three-lane roadway, including storm drain improvements, water & sanitary sewer renewals, street lights, pavement markings, street signs, sidewalks, hike & bike trail, fiber optic conduit, and a roundabout (at Bowman Springs/ Greenspring/ future Pleasant Ridge intersection) with landscaping and irrigation. The Engineer's estimate for this project is \$8.5M.

Sealed bids will be received by the City of Arlington, Texas, at the Office of the Director of Public Works and Transportation, 2nd Floor, City Hall, 101 W. Abram Street, Arlington TX, 76010, until 3:00 p.m. on TUESDAY, MARCH 8, 2022, for the construction of BOWMAN SPRINGS ROAD (IH 20 to ENCHANTED BAY BOULEVARD), PROJECT NO. PWST18001 as listed in the contract documents, at which time and place they will be publicly opened and read aloud in the Public Works Conference Room . Any bid received after closing time will be returned unopened.

All bidders and subcontractors on this project must be pre-qualified in the appropriate work category as outlined in the Instructions to Bidders of the contract documents.

Contract documents, including plans, specifications, and addendums may be reviewed and/or downloaded from the City's vendor/supplier portal, IonWave, accessible via the City's web page, [https://arlingtontx.gov/city\\_hall/departments/finance](https://arlingtontx.gov/city_hall/departments/finance). Look for "Vendor/Supplier" under "Services".

A cashier's check or an acceptable Bidder's Bond payable to the City of Arlington, Texas, in an amount of not less than five percent (5%) of the largest possible total for the bid submitted, must accompany the bid.

A Performance Bond and a Payment Bond, each for one hundred percent (100%) of the contract price, will be required. The successful bidder shall also furnish to the City a Maintenance Bond covering defects of material and workmanship for two calendar years following the City's approval and acceptance of the construction.

Not less than the prevailing wage rates adopted by the City of Arlington, Texas, and as set forth in the contract documents, must be paid on this project.

The City reserves the right to request bidders to provide Minority/Women Business Enterprises (MWB) information. This is for information only and no preference shall be given, nor will this information affect the results of the contract award.

In case of ambiguity or lack of clearness in stating prices in the Proposal, the City reserves the right to accept the most advantageous construction thereof to the City or to reject the proposal.

The City reserves the right to reject any or all bids and waive any or all informalities. No bid may be withdrawn until the expiration of ninety (90) days from the date bids are opened.

All inquiries must be submitted to the City in accordance with the Instructions to Bidders of the contract documents. This contract is contingent upon release of funds from the Texas Water Development Board (TWDB). Refer to TWDB INSTRUCTIONS TO BIDDERS for details.

A PRE-BID Teleconference/Meeting will be held for this project on Tuesday, February 22, 2022 at 10:00 a.m. in the Public Works and Transportation Conference Room, 2nd Floor, City Hall, 101 W. Abram Street, Arlington, TX 76010. Prospective bidders are encouraged to participate either in person or by teleconference. If participating by teleconference, please contact Sabino Martin, Civil Engineer at 817-459-6582 or at [Sabino.Martin@arlingtontx.gov](mailto:Sabino.Martin@arlingtontx.gov) no later than Friday, February 18, 2022 at 5:00 p.m. to register for the call.

IPL0059873

Feb 13, 20 2022



Login

### Bid Opportunity Detail

[Return To Listing](#) [Supplier Registration](#)

#### Bid Information

**Type:** Bid Posting - Offline  
**Status:** Unsealed  
**Number:** PWST18001 Addendum 4 (Bowman Springs Road (IH20 - Enchanted Bay Boulevard))  
**Issue Date & Time:** 2/14/2022 08:00:02 AM (CT)  
**Close Date & Time:** 3/8/2022 03:00:00 PM (CT)  
**Duration:** 22 days 6 hours 59 minutes 57 seconds

#### Contact Information

**Name:** Sabino Martin  
**Address:** 101 W Abram Street  
 Arlington, TX 76010 USA  
**Phone:** (817) 459-6582  
**Fax:**  
**Email:** Sabino.Martin@arlingtontx.gov

**Notes:** The Department of Public Works and Transportation has issued a bid opportunity. Please login to retrieve the documents. This project primarily consists of reconstructing the county type roadway to a three-lane roadway, including storm drain improvements, water & sanitary sewer renewals, street lights, pavement markings, street signs, sidewalks, hike & bike trail, fiber optic conduit, and a roundabout (at Bowman Springs/Greenspring/future Pleasant Ridge Intersection) with landscaping and irrigation.

#### Bid Attachments

File Name	Description	File Size
Bid Spec - Bowman Springs - PWST18001.pdf (please login to view this document)	Bid Specs	17.63 MB
Notice to Bidders - Bowman Springs Road - PWST18001.pdf (please login to view this document)	Notice to Bidders	95 KB
Geotech report - Bowman Spgs, PWST18001.pdf (please login to view this document)	Geotech Report	8.73 MB
PWST18001 - Bowman Springs Road - Full Size.pdf (please login to view this document)	Full Size Plans	116.96 MB
PWST18001 - Bowman Springs Road - Half Size.pdf (please login to view this document)	Half Size Plans	116.93 MB
Bowman Springs Addendum #1.pdf (please login to view this document)	Addendum No. 1	1.33 MB
Addendum No. 2 - Bowman Springs Road - PWST18001.pdf (please login to view this document)	Addendum No. 2	619 KB
Addendum No. 3 - Bowman Springs Road - PWST18001.pdf (please login to view this document)	Addendum No. 3	1.83 MB
Addendum No. 4 - Bowman Springs Road - PWST18001.pdf (please login to view this document)	Addendum No. 4	175 KB

#### Bid Event Participation Activity

Activity Date	Activity Name	Description
> 2/22/2022 10:00:00 AM (CT)	Pre-Bid Teleconference/Meeting	A pre-bid teleconference/meeting will be held to discuss the scope of work. This meeting is not mandatory but highly recommended.

FOR OFFICE USE ONLY  
Commitment # \_\_\_\_\_

**TWDB-0216  
TEXAS WATER DEVELOPMENT BOARD  
AFFIRMATIVE STEPS SOLICITATION REPORT**

**I. PROJECT INFORMATION**

TWDB Project Number	Applicant/Entity Name	Total TWDB Funding Request	Program Type (insert "X" for all that apply)
73827	City of Arlington	\$ 5,151,695.00	<input type="checkbox"/> Drinking Water SRF (DWSRF) <input checked="" type="checkbox"/> Clean Water SRF (CWSRF)

**Project Name:** Bowman Springs Road (IH 20 - Enchanted Bay Boulevard)

**Solicitation By:**  Applicant/Entity OR  Prime Contracted Business: Tiseo Paving Company

**Project Phase:**  Prior to Closing     Release of funding for PADs     Construction Contract # PWST18001

**II. SOLICITATION METHOD(S) UTILIZED**

At least two methods of solicitation are required. Select the method(s) utilized for the solicitation. Copies of the actual postings, direct contact email/phone log, etc. must be attached to this form as support documentation for each method used. Failure to adequately follow these steps will result in the requirement to complete additional steps in order to become compliant.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Newspaper Advertisements                                      | <input type="checkbox"/> Meetings or Conferences            | <input type="checkbox"/> Trade Association Publications |
| <input checked="" type="checkbox"/> Minority Media                                     | <input checked="" type="checkbox"/> Internet & Web Postings | <input type="checkbox"/> Other Government Publications  |
| <input checked="" type="checkbox"/> Direct Contact by Phone, Fax, USPS Mail, or Email* |   |   |

*\*If using direct contact, entities must solicit to a **minimum of 3** businesses/firms (at least one being a DBE) for each category of contract sought (i.e., construction, supplies, equipment, or services) to demonstrate a Good Faith Effort.*

**III. PROJECT BIDDERS LIST:**

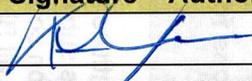
List on the following table, or provide on a separate list, each business entity directly solicited for procurement or that submitted a bid for consideration.

<b>Instructions for Columns 1 - 4</b>	1 - Full business name (line one) & point of contact (line two) 2 - Business address 3 - Telephone number 4 - Email address for the business
<b>Instructions for Column 5</b>	Enter one of the following procurement or contract categories: <b>CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES</b> <i>For detailed definitions, review guidance document, TWDB-0210.</i>
<b>Instructions for Column 6</b>	Enter the type of business: <b>MBE</b> - Minority Business Enterprise, <b>WBE</b> - Women-owned Business Enterprise, or <b>OTHER</b> - Company or firm is Non-MBE or WBE

**Notice:** Entities receiving State Revolving Fund financial assistance must create and maintain a Bidders List if the entity is subject to, or chooses to follow, competitive bidding. The Bidders List must include all firms that bid or quoted on contracts under EPA assisted projects, including both MBE/WBEs and non-MBE/WBEs. Entities must keep all Bidders Lists until project completion or the recipient is no longer receiving EPA funding under the loan, whichever is later. Entities with loans totaling less than \$250,000 during a state fiscal year are exempt from the Bidders List requirement, but must still meet DBE program requirements. The Bidders List requirement also applies to all Prime Contracted Businesses/Firms that make subcontracting.

	Column 1 Business Name & Point of Contact	Column 2 Business Address	Column 3 Telephone Number	Column 4 E-Mail Address	Column 5 Procurement Category	Column 6 MBE/WBE Status
1.						
2.			* Please See Attached *			
3.						
4.						
5.						
6.						
7.						
8.						
9.						

Use additional sheets if necessary

Signature – Authorized Representative	Title (print legibly)	Date
	President	4/14/2022

**IV. TWDB APPROVAL SIGNATURE**

Signature indicates the form meets DBE requirements.

DBE Coordinator	Approval Date

## Amy Powell

---

**From:** Lori Du  
**Sent:** Monday, May 16, 2022 10:31 AM  
**To:** Sabino Martin; Amy Powell  
**Subject:** FW: Arlington 73827 CID 02 / Sanitary Sewer (Bowman Springs) I20 to Enchanted Bay / TWDB Concurrence and NTP

See below yellow.

---

**From:** Dennis Newman <Dennis.Newman@twdb.texas.gov>  
**Sent:** Monday, May 16, 2022 10:00 AM  
**To:** Brad Franklin <Brad.Franklin@arlingtontx.gov>  
**Cc:** Lori Du <Lori.Du@arlingtontx.gov>; Ashley Brown <Ashley.Brown@arlingtontx.gov>  
**Subject:** [EXTERNAL EMAIL] Arlington 73827 CID 02 / Sanitary Sewer (Bowman Springs) I20 to Enchanted Bay / TWDB Concurrence and NTP

---

**External Email: Stop, Look, Think before clicking attachment or link. Report Phishing.**

---

Brad:

The TWDB NTP letter will be provided in the future. The City of Arlington may **use this email as the TWDB NTP.**

The executed construction contract documents (electronic) for the referenced project have been reviewed and placed in the Texas Water Development Board (TWDB) files. The City of Arlington (City) issued four (4) addendums during the bidding period.

Addendum No. 1 updates the project drawings and technical specifications to:

1. Clarify TXDOT coordination and Section 11-02.
2. Revise section Culvert C1.
3. Address northbound and one-way traffic.
4. Update Davis-bacon wage rates.
5. Revise Section 11-15 Time for Completion and Liquidated Damage.
6. Revise Section 11-23 Holiday Inspection.
7. Add Section 11-31 As-Built Plans.
8. Revise Sections 12-34 (Backfill), 13-10 to 13-16, 15-04 and 15-06 (Concrete).
9. Revise drawing RAB-01 (Traffic).
10. Revise bid form, Total Summary.

Addendum No. 2 responds to questions and adds the Pre-Bid Meeting Agenda.

Addendum No. 3 updates the project drawings and technical specifications to:

1. Clarify property owners.
2. Add Temporary Driveway Access and Cattle Guard Details plan sheets.
3. Revises Section 11-02 to include new paragraph H.
4. Revises bid items 238, 239, and 344 and Total Summary sheet.
5. Responds to questions and adds the Pre-Bid Meeting Agenda.

Addendum No. 4 revises bid item 607.

TWDB staff has reviewed these documents for compliance with TWDB programmatic requirements and compliance with 30 Texas Administrative Code Chapter 217 (Design Criteria for Domestic Wastewater Systems). Addendums No.1 through No. 4 are approved by the TWDB.

After evaluation of bids, the City decided to award the project to the lowest responsible bidder that met the qualification requirements of the City. The bidder selected was Tiseo Paving Company of Texas. The TWDB concurs with the issuance of a Notice to Proceed (NTP) for the following contract.

<b>Contract</b>	<b>Contractor</b>	<b>TWDB Funded Amount</b>	<b>Local Funds Amount</b>	<b>Total Contract Amount</b>
CID 02: Sanitary Sewer (Bowman Springs) I20 To Enchanted Bay	Tiseo Paving Company of Texas 419 US HWY East Mesquite, TX 75150	\$923,590.61(*)	\$12,394,408.40(*)	\$13,317,999.00(*)

(\*) Note on pages 61-63 of the executed contract package, the TWDB is funding bid Items 601-631 (TWDB Funded Amount). Local Funds are being used to address Total Contract Amount. The City is required to keep track of TWDB bids items to be eligible for reimbursement through Outlays.

For our records, we note that the contract time is 450 calendar days. Please copy TWDB staff on the City's NTP to the contractor. In addition to ensure eligibility for funding, change orders must be submitted for our review and approval prior to execution.

This concurrence does not relieve the City and design engineer of legal responsibility for the integrity of the design. The materials and methods of construction are to be in accordance with specifications provided by the engineer of record.

Also, please remember that prior to the release of final retainage on the contract, the TWDB must have issued a Certificate of Approval. A list of documents needed for project closeout can be found in the Supplemental Contract Conditions document (TWDB-0550) located on our website at: <http://www.twdb.texas.gov/financial/instructions/index.asp>.

Should you have any questions, do not hesitate to contact me at via email at [dennis.newman@twdb.texas.gov](mailto:dennis.newman@twdb.texas.gov).

Regards, Dennis

Dennis L. Newman, P.E.  
Engineer  
Regional Water Project Development – Northeast  
Texas Water Development Board  
1515 E Kearney St # 401, Mesquite, TX 75149  
Ph: (972) 289-9908

North Dallas Gazette

(Division of Minority Opportunity News)

P.O. Box 763866

Dallas, Texas 75376-3866

RECEIVED

JAN 18 2022

Invoice

DATE	INVOICE #
1/13/2022	13092

<b>BILL TO</b>
Tisco Paving Company c/o Ms. Melanie Taylor P.O. Box 270040 Dallas, TX 75227-0040

<b>TEAR SHEET TO</b>
Tisco Paving Company c/o Ms. Melanie Taylor P.O. Box 270040 Dallas, TX 75227-0040

P.O. NO.	TERMS
Job Line	Net 10

DESCRIPTION	QTY	RATE	AMOUNT
News Advertisement for PO_ Job Line		135.00	135.00
Description of Services __ Advertising_			
Print run date 1.13.22			
Web run date January 2022		350.00	350.00
Web (300 x 250) " Complimentary		-350.00	-350.00
		<b>Total</b>	\$135.00

Payments/Credits	\$0.00
<b>Balance Due</b>	\$135.00

U.S. Citizen or permanent resident

### Ongoing Census Bureau

The Census Bureau conducts continuous surveys to supply the nation with important statistics on people, places, and our economy. Call field workers know our communities best and instrumental in conducting surveys with residents on a variety of topics. Visit [census.gov](http://census.gov) to apply.

### Ongoing City of Dallas

The City of Dallas HR Dept. is currently accepting apps for the Budget and Intract Administrator position. Bachelor's degree in a business/public administration, human resources, or health care administration field, plus 7 yrs. exp. For more info and to apply, visit <http://bit.ly/2NcCfVP>.

around 8,000 professionals and 500 recruiting companies. The data science and software development focussed career fairs is delivered right at your desk top. No need to travel anywhere, just sign up and wait for FA@ar to organize your interactions.

### On-Going Customer Rep job fairs

Pro Staff in Arlington will be hosting an in-office Customer Service Representative Job Fair for a call center located downtown Dallas every Tuesday and Thursday from 10 a.m. to 1 p.m. at 700 Highlander Blvd. Suite 110. The positions pay between \$12-\$13.50 per hour plus up to \$1.50 an hour in performance pay. The work days will vary, must be available 7 a.m. to 11 p.m. with overtime as needed. Must have at least one year of customer service experience.

### Looking for a Career Change

### Then We Need You!!

If you're looking for full or parttime work with flexible hours, income ranging from \$800.00 to \$2,000.00 plus weekly. No Experience Needed we will license and train.

For more information call (214) 238-6855

Ask for Shun

Email: [info@cbsolutionsplus.com](mailto:info@cbsolutionsplus.com)

## TISEO PAVING COMPANY

419 E. Hwy. 80, Mesquite, TX 75150

Tel: (972) 289-0723 Fax: (972) 216-5637

[www.tiseopaving.com](http://www.tiseopaving.com)

Performing Concrete Street Paving  
in the Metroplex Area

We Accept Subcontracting Bids

For All Public Works Projects

in the Dallas Area

We Are Accepting Applications for Concrete Mixer Drivers and Heavy Equipment Mechanics

Equal Opportunity Employer

### CIVIL SERVICE ENTRANCE EXAM

[www.cityofirving.org](http://www.cityofirving.org)

*The City of Irving does not discriminate on the basis of race, sex, religion, age or disability in employment or the provision of services.*

### NAN Chapter President

The National Action Network is looking for a President for its upcoming Dallas chapter. This is a volunteer position that requires an activist heart and an interest in civil rights.

The President:

- Presides at meetings and acts as Chairman/Chairwoman of the Executive Committee.
  - Appoints all committees not directly elected by the Chapter.
  - Between meetings of the Executive Committee and subject to the approval thereof, exercises executive authority on behalf of the Chapter.
  - The President shall be an ex-officio member of all committees.
  - Shall work with other members of the Executive Committee to develop a program agenda for a defined fiscal year.
  - Acknowledges he/she is the primary force within the Chapter in establishing a working relationship and communication with the National and Regional Office(s); ensures that these offices receive all reports, including quarterly reports, and reports of elections.
  - Is familiar with pertinent governing documents including The NAN by-laws and Chapter rules.
- Interested parties should contact Robert D. Bush, president of the Las Vegas Chapter, at (702) 626-0158.

North Dallas Gazette

(Division of Minority Opportunity News)

P.O. Box 763866

Dallas, Texas 75376-3866

RECEIVED

JAN 24 2022

Invoice

DATE	INVOICE #
1/20/2022	13100

<b>BILL TO</b>
Tiseo Paving Company c/o Ms. Melanic Taylor P.O. Box 270040 Dallas, TX 75227-0040

<b>TEAR SHEET TO</b>
Tiseo Paving Company c/o Ms. Melanic Taylor P.O. Box 270040 Dallas, TX 75227-0040

P.O. NO.	TERMS
Job Line	Net 10

DESCRIPTION	QTY	RATE	AMOUNT
News Advertisement for PO_ Job Line Description of Services __ Advertising_ Print run date 1.20.22 Web run date January 2022 Web (300 x 250) " Complimentary		135.00	135.00
		350.00	350.00
		-350.00	-350.00

<b>Total</b>	\$135.00
<b>Payments/Credits</b>	\$0.00
<b>Balance Due</b>	\$135.00

half-resident

### Ongoing Census Bureau

The Census Bureau conducts continuous surveys to supply the nation with important statistics on people, places and our economy. Local field workers know their communities best and are instrumental in conducting surveys with residents on a variety of topics. Visit [census.gov](http://census.gov) to apply.

### Ongoing City of Dallas

The City of Dallas HR Dept is currently accepting apps for the Budget and Contract Administrator position.

Bachelor's degree in a business/public administration, human resources or healthcare administration field, plus 7 yrs.exp.

For more info. and to apply, visit: <http://bit.ly/2NcCFVP>

panies, the data science and software development focussed career fair is delivered right at your desk-top. No need to travel anywhere, just signup and wait for TAO's to organize your interactions.

### On-Going Customer Rep job fairs

Pro Staff in Arlington will be hosting an in office Customer Service Representative Job Fair for a call center located downtown Dallas every Tuesday and Thursday from 10 a.m. to 1 p.m. at 700 Highlander Blvd. Suite 110. The positions pay between \$12-\$13.50 per hour plus up to \$1.50 an hour in performance pay. The work days will vary, must be available 7 a.m. to 11 p.m. with overtime as needed. Must have at least one year of customer service experience.

If you're looking for full or parttime work with flexible hours, income ranging from \$800.00 to \$2,000.00 plus weekly. No Experience Needed we will license and train.  
**For more information call (214) 238-6855**  
**Ask for Shun**  
**Email: [info@cbsolutionsplus.com](mailto:info@cbsolutionsplus.com)**

## TISEO PAVING COMPANY

419 E. Hwy 80, Mesquite, TX 75150  
Tel: (972) 289-0723 Fax (972) 216-5637  
[www.tiseopaving.com](http://www.tiseopaving.com)

Performing Concrete Street Paving  
in the Metroplex Area.  
We Accept Subcontracting Bids  
For All Public Works Projects  
in the Dallas Area.  
We Are Accepting Applications for Concrete Mixer Drivers and Heavy Equipment Mechanics

**Equal Opportunity Employer**

[www.cityofirving.org](http://www.cityofirving.org)

*The City of Irving does not discriminate on the basis of race, sex, religion, age or disability in employment or the provision of services.*

### NAN Chapter President

The National Action Network is looking for a President for its upcoming Dallas chapter. This is a volunteer position that requires an activist heart and an interest in civil rights.

The President:

- a. Presides at meetings and acts as Chairman/Chairwoman of the Executive Committee;
- b. Appoints all committees not directly elected by the Chapter;
- c. Between meetings of the Executive Committee and subject to the approval thereof, exercises executive authority on behalf of the Chapter;
- d. The President shall be an ex-officio member of all committees;
- e. Shall work with other members of the Executive Committee to develop a program agenda for a defined fiscal year;
- f. Acknowledges he/she is the primary force within the Chapter in establishing a working relationship and communication with the National and Regional Office(s); ensures that these offices receive all reports, including quarterly reports and reports of elections;
- g. Is familiar with pertinent governing documents including The NAN by-laws and Chapter rules.

Interested parties should contact Robert D. Bush, president of the Las Vegas Chapter, at (702) 626-0158.

**From:** Jesica Cardenas  
**To:** Grant Brown  
**Cc:** Ryan Thompson  
**Bcc:** Abigail Rodriguez; Alex Hammes ; Alfredo; als est; AMET; Andy Nord ; Arian Mirtaneri; Artie Melton; B Kohler; Beatrice Camarillo; Bob Trawick; Bobby Bounds ; Bobby Dixon; Booder McWhorter; Brad Berland ; Brad Catlett (brad@acadiabx.com); Brian Collin; Bruce Telford; Bruce Walton; Bryan A. Robertson (brobertson@ratliffco.com); C Greenead; Caleb Chalmers; Cary Bassham; Cary Francis ; Chada ; Charlie Daniels; Chase; CHERISH (cherish@tsqmaterials.com); Chris Crosby ; CHRIS FALES ; Chris Kumnick; Christopher ; CHRISTOPHER MARTIN MARIETTA; Cole Benton; Craig Janecka; D Patterson; dallas lights; David Gonzales; Derek ; dlw; dnichols@rumseyllc.com; Donnie Ives; DOUG HAEUSSLER; Driskoll Tubbs; EARTHBUILDERS INC.; Ed Massey; Eduardo M Hernandez, P.E; Esk; estimating ; estimating stenson ; Ethan Sanders; Four Star; Frank Ciaravino ; Gary Beene; Gary Hinson; Gary Ishmael; Gaspar Ramirez; Giles Ludwig; Glenn; Greg; Greg Hommel; Hermilo Montesdeoca ; hunter ; hunter cook ; Iron Concrete; Ismael Coronado ; J Hernandez; Jacob Brown ; James ; Jason; Jason Crandall ; javier Hernandez; Jeasby; Jeff; Jeff Hall; Jeff Paice (paicej@vmcmail.com); Jennifer; Jeremy Martin; Jerry Simpson; JIM SMITH; Joe Angelone; Joe Lipscomb; John Bosco; John Casev; John Moreland; Johnny Heine; Joshua Allred ; Joshua Ivy; jr; Julia Mendez; Julian Varqas ; Justin Smith ; K&S UTIL; KAYE (kaye@tsqmaterials.com); Kendo; kristin; Kurt Millman; kurtpremier; Kyle Riggs; L Nelson; La Banda ; Larry; Larry Hart; Iharari; Lisa McBurrows ; LJohnson ; Logan Tassi; Lorenzo Torres ; Louie Tiseo; Luiqi ; lyndon (craig.lyndon@gmail.com); Mark Bradley; Mark Herndon; Mark Lewis; Mark Medlin; Mark.Alsobrook@Hanson.com; Matt; Matt Miller; mattstenson73@gmail.com; melissa unvi.; Mels Electric ; Mike ; Mike Albert; Mike Holleman ; Mike Marcom; Mlee; Morrie Gaminini; Nikole Brock ; PAT THORPE; Phillip Snoddy ; Preston ; Randy Harding; RAUL CANALES ; Ray Smith; RCTX ; Ricardo Hurtado; Richard Lough; Rob ; robbi bentz; Robert; Robert Caudill; Rodney ; Ron Johnson; Ron Simons; Ronnie Stone; RPMx; Rudy; sam mcada ; Scott; Sean Foley; Shane Pate; Shelton ; sravank; stenson; Steve Hugdol; stevel@buyersbarricades.com; tim; Tiny Lewis; Tomas Coronado ; wade blake (wblake@rpxconstruction.com); William; William Richmond; Woody Leath; Young Hui ; Zach  
**Subject:** TISEO PAVING CO JOBS BIDDING  
**Date:** Friday, March 4, 2022 12:10:00 PM  
**Attachments:** TISEO PAVING CO JOBS BIDDING.pdf

---

Good afternoon,

Attached above is the updated Tiseo paving jobs bidding list.

**Please note:** The bid date has changed for the following:

- Dallas County- Wildlife Parkway to **MARCH 24, 2022 @ 2:00**

Thank you!

Jesica Cardenas  
Tiseo Paving Company  
Office (972) 289-0723  
Fax (972)216-5637



All email are sent BCC onto one email advertising upcoming jobs Tiseo is bidding:

These are all the email addresses Tiseo Paving sends for upcoming jobs bidders list.

Abigail Rodriguez <Abigail@InletStructureSpecialties.com>; Alex Hammes <ahammes@ibctx.com>; Alfredo <alfredo@hardscapespecialtiesinc.com>; als est <amj@americanlandscapesystems.com>; AMET <amet@trexcavation.com>; Andy Nord <nord@daggercontracting.com>; Arian Mirtaneri <Arian@irsvcs.com>; Artie Melton <amelton@anchortexas.com>; B Kohler <bkohler@williamhcompany.com>; Beatrice Camarillo <bcamarillo1@hotmail.com>; Bob Trawick <bob.trawick@ramtool.com>; Bobby Bounds <bobby@bmfbcconcrete.com>; Bobby Dixon <bdixon@meadegroup.net>; Booder McWhorter <bmcwhorter@ratliffco.com>; Brad Berland <bberland@ctands.com>; Brad Catlett (brad@acadiatx.com); Brian Collin <brian@earthbasics.net>; Bruce Telford <btelford@barnsco.com>; Bruce Walton <bwalton@teamconsultants.net>; Bryan A. Robertson (brobertson@ratliffco.com); C Greenead <cgreenead@us-concrete.com>; Caleb Chalmers <cchalmers@woeconstruction.com>; Cary Bassham <cbassham@argos-us.com>; Cary Francis <cfrancis@1constructiongroup.com>; Chada <chadawalters@yahoo.com>; Charlie Daniels <cdaniels@reynoldsasphalt.com>; Chase <chace@pccontractorsllc.com>; CHERISH (cherish@tsgmaterials.com); Chris Crosby <crosby@vmcmail.com>; CHRIS FALES <cfales@us-concrete.com>; Chris Kumnick <ckumnick@aertellusaqua.com>; Christopher <Christopher.Crosby@us-concrete.com>; CHRISTOPHER MARTIN MARIETTA <christopher.moretti@martinmarietta.com>; Cole Benton <cole@buyersbarricades.com>; Craig Janecka <cjanecka@us-concrete.com>; D Patterson <dpatterson@readycable.net>; dallas lights <jaygaller@sbcglobal.net>; David Gonzales <david@melselectric.com>; Derek <derek@panioloconstruct.com>; dlw <dlw@americanlandscapesystems.com>; dnichols@rumseyllc.com; Donnie Ives <DIves@landteceng.com>; DOUG HAEUSSLER <dwhbandabros@yahoo.com>; Driskoll Tubbs <dtubbs@jbcco.com>; EARTHBUILDERS INC. <TODD@EARTHBASICS.NET>; Ed Massey <edward.massey@att.net>; Eduardo M Hernandez, P.E <eduardo.hernandez@flow-lineconstruction.com>; Esk <esk@trexcavation.com>; estimating <estimating@mossutilities.com>; estimating stenson <estimating@stensonland.com>; Ethan Sanders <ethans@thmtx.com>; Four Star <fourstarexcavating@gmail.com>; Frank Ciaravino <frankciaravino65@gmail.com>; Gary Beene <jwbeene@gmail.com>; Gary Hinson <GHinson@tbarfence.com>; Gary Ishmael <gary.ishmael@dlbinc.net>; Gaspar Ramirez <gaspar@paveprousa.com>; Giles Ludwig <giles.ludwig@fabcos.com>; Glenn <gthibbard@aol.com>; Greg <greg@metroplexpavementmarkings.com>; Greg Hommel <greg.hommel@aggregate-us.com>; Hermilo Montesdeoca <hermiem@montesexcavation.com>; hunter <hunter@aalctx.com>; hunter cook <hunter.cook@ashgrove.com>; Iron Concrete <ironconstruction@sbcglobal.net>; Ismael Coronado <texasstartrans@aol.com>; J Hernandez <Jhernandez@labandallc.com>; Jacob Brown <jacob@sitebarricades.com>; James <james@srhtrees.com>; Jason <jason.daniels@interstatepipeline.com>; Jason Crandall <dfwsiteservices@gmail.com>; javier Hernandez <j.hernandez@bridges-and-roads.com>; Jeasby <Jeasby@nctxdirtworks.com>; Jeff <jeff@mpxco.com>; Jeff Hall <jeff@avantitx.com>; Jeff Paice (paicej@vmcmail.com); Jennifer <estimating@concretepaversystems.com>; Jeremy Martin <jeremy.martin@martinmarietta.com>; Jerry Simpson <jsimpson@dustrol.com>; JIM SMITH <JIMSMITH@PAVERSYSTEMS.NET>; Joe Angelone <jta@americanlandscapesystems.com>; Joe Lipscomb <jlipscomb@wrightconst.com>; John Bosco <john@mpxco.com>; John Casey <john\_casey@jecinstall.com>; John Moreland

<jmoreland@alphatesting.com>; Johnny Heine <johnny@melselectric.com>; Joshua Allred <jallred@texasenviro.com>; Joshua Ivy <ortegalandclearing@gmail.com>; jr <jr@asphaltdallastx.com>; Julia Mendez <jmendez@tiseopaving.com>; Julian Vargas <julian.vargas@martinmarietta.com>; Justin Smith <justin@stensonland.com>; K&S UTIL <GLENDA@KSUTILITY.COM>; KAYE (kaye@tsgmaterials.com); Kendo <office@kendocontract.com>; kristin <kristin@calcontex.com>; Kurt Milliman <kurt.milliman@lehighhanson.com>; kurtpremier <khinds@premierpavingltd.com>; Kyle Riggs <KyleRiggs@uslm.com>; L Nelson <lnelson@ingramconcrete.com>; La Banda <labandallc@gmail.com>; Larry <Larry@ashlartx.com>; Larry Hart <larry.hart@fabcous.com>; Iharari <lharari@axiscontracting.com>; Lisa McBurrows <lisa@ratliffhardscape.com>; Ljohnson <ljohnson.cntsales@gmail.com>; Logan Tassi <logantassi@icloud.com>; Lorenzo Torres <lorenzo.torres@amxcompanies.com>; Louie Tiseo <ltiseo@TiseoPaving.com>; Luigi <luigisconcrete17@yahoo.com>; lyndon (craig.lyndon@gmail.com); Mark Bradley <'Mbradley@argos-us.com'>; Mark Herndon <herndonmarka@gmail.com>; Mark Lewis <mlewis@crossroadslp.com>; Mark Medlin <MMedlin@venusconstruction.com>; Mark.Alsobrook@Hanson.com; Matt <matt@swerosioncontrol.com>; Matt Miller <trinitymillerllc@gmail.com>; mattstenson73@gmail.com; melissa unvi. <melissa@universalfencecompany.com>; Mels Electric <melselectric@melselectric.com>; Mike <mike@greeniverse.com>; Mike Albert <mike@mikealbertinc.com>; Mike Holleman <mholleman@barsonutilities.com>; Mike Marcom <mmarcom@marcomsmowingservice.com>; Mlee <mlee@urbaniconstruct.com>; Morrie Gamini <roadwaysolutions@aol.com>; Nikole Brock <nikoleb@txswppps.com>; PAT THORPE <PTHORPE@LARRETTINC.COM>; Phillip Snoddy <phillip.snoddy@amxcompanies.com>; Preston <preston@unitedsandandgravel.com>; Randy Harding <rharding@bccclp.com>; RAUL CANALES <rcanales@oryxcommercial.com>; Ray Smith <arlpaver@flash.net>; RCTX <estimating@2rcstx.com>; Ricardo Hurtado <tuneros1@sbcglobal.net>; Richard Lough <estimating@usaerosioninc.com>; Rob <rsmith182@gmail.com>; robbi bentz <rbentz@Lindamood.net>; Robert <robert.herman@burnco.com>; Robert Caudill <rcaudill@TiseoPaving.com>; Rodney <rodney@barricadesplustx.com>; Ron Johnson <rjohnsonpaving@aol.com>; Ron Simons <ron.simons@aggregate-us.com>; Ronnie Stone <ronnie@texasinlets.com>; RPMx <planroom@rpmxconstruction.com>; Rudy <rudy.liraelectric@yahoo.com>; sam mcada <smcada@venusconstruction.com>; Scott <scott.hickfang@burnco.com>; Sean Foley <sean.foley@martinmarietta.com>; Shane Pate <spate@TiseoPaving.com>; Shelton <shelton@irsvcs.com>; sravank <sravank@axiscontracting.com>; stenson <slestimating@gmail.com>; Steve Hugdol <steve@bluestarutilities.com>; stevel@buyersbarricades.com; tim <tim@melselectric.com>; Tiny Lewis <tletwis@sllstexas.com>; Tomas Coronado <toconora@gmail.com>; wade blake (wblake@rpmxconstruction.com); William <WilliamT@vilhauerenterprises.com>; William Richmond <americanstriping@msn.com>; Woody Leath <wleath@aol.com>; Young Hui <young@genesisearthssolutions.com>; Zach <zach@ntexcon.com>

# TISEO PAVING JOBS BIDDING

**MARCH 4, 2022**

<b>TUESDAY</b>	<b>MARCH</b>	<b>08</b>	<b>3:00</b>	<b>CITY OF ARLINGTON</b>	<b>BOWMAN SPRINGS ROAD</b>
<b>WEDNESDAY</b>	<b>MARCH</b>	<b>09</b>	<b>1:00</b>	<b>CITY OF PLANO</b>	<b>17<sup>th</sup> STREET PROJECT NO.7222</b>
<b>FRIDAY</b>	<b>MARCH</b>	<b>11</b>	<b>11:00</b>	<b>COLLIN COUNTY</b>	<b>BRIDGEWATER, LENNAR HOMES</b>
<b>THURSDAY</b>	<b>MARCH</b>	<b>24</b>	<b>2:00</b>	<b>DALLAS COUNTY</b>	<b>WILDLIFE PARKWAY</b>
<b>FRIDAY</b>	<b>MARCH</b>	<b>25</b>	<b>10:00</b>	<b>CITY OF SOUTHLAKE</b>	<b>CREEKSIDE DRIVE</b>

**TWDB-0217**  
**TEXAS WATER DEVELOPMENT BOARD (TWDB)**  
**PRIME CONSULTANT/CONTRACTOR CERTIFICATION**

**I. PROJECT INFORMATION**

TWDB Project Number	Applicant/Entity Name	Total of TWDB Funding	Program Type (insert "X" for all that apply)	
73827	City of Arlington	\$ 5,151,695.00	<input type="checkbox"/>	Drinking Water SRF (DWSRF)
			<input checked="" type="checkbox"/>	Clean Water SRF (CWSRF)

Prime Consultant/Contractor: Tiseo Paving CompanyContract Number: PWST18001 Contract Amount: \$ 13,318,000.00**II. GOOD FAITH EFFORT (Applicable to all subcontracts awarded by the prime contractor/consultant)**

I understand that it is my responsibility to comply with all state and federal regulations and guidance in the utilization of Minority and Women-owned Businesses in procurement. I certify that I will make a "good faith effort" to afford opportunities for Minority Business Enterprise (MBE), and Women-owned Business Enterprise (WBE) by:

1. Including qualified MBEs and WBEs on procurement solicitation lists
2. Soliciting potential MBEs and WBEs
3. Reducing contract size/quantities when economically feasible to permit maximum participation by MBEs and WBEs
4. Establishing delivery schedules to encourage participation by MBEs and WBEs
5. Using the services and assistance of the Small Business Administration, Minority Business Development Agency, U.S. Department of Commerce, and Texas Marketplace
6. Submitting documentation to the Applicant/Entity to verify good faith effort, steps 1-5.

**EXCEPTION:** As the Prime Consultant/Contractor, I certify that I have reviewed the contract requirements and found no available subcontracting opportunities. I also certify that I will fulfill 100 percent of the contract requirements with my own employees and resources. (Check if applicable)

Signature – Prime Consultant/Contractor	Title (print legibly)	Certification Date
	LOUIS TISEO, PRESIDENT	4/4/22

**III. PROJECT PARTICIPATION ESTIMATES**

The Cost Categories mentioned below are goals. These goals are neither standards nor quotas. Recipients of financial assistance are not required to meet the fair share objectives. They must, however, acknowledge that they are aware of and are actively pursuing the fair share objectives with their procurements.

	Potential MBE Participation	Potential WBE Participation
Cost Category	Goal	Goal
Construction	19.44%	9.17%
Supplies	25.34%	8.82%
Equipment	16.28%	11.45%
Services	20.41%	13.66%

*The fair share goals listed above are required by 40 CFR Part 33 Subpart D and are directly negotiated with EPA Region 6. Entities receiving federal financial assistance are subject to the TWDB's goals and may not be substituted with other agency or program goals.*

**IV. TWDB APPROVAL SIGNATURE**

Signature indicates the form meets DBE Requirements.

DBE Coordinator	Approval Date

## Amy Powell

---

**From:** Lori Du  
**Sent:** Monday, May 16, 2022 10:31 AM  
**To:** Sabino Martin; Amy Powell  
**Subject:** FW: Arlington 73827 CID 02 / Sanitary Sewer (Bowman Springs) I20 to Enchanted Bay / TWDB Concurrence and NTP

See below yellow.

---

**From:** Dennis Newman <Dennis.Newman@twdb.texas.gov>  
**Sent:** Monday, May 16, 2022 10:00 AM  
**To:** Brad Franklin <Brad.Franklin@arlingtontx.gov>  
**Cc:** Lori Du <Lori.Du@arlingtontx.gov>; Ashley Brown <Ashley.Brown@arlingtontx.gov>  
**Subject:** [EXTERNAL EMAIL] Arlington 73827 CID 02 / Sanitary Sewer (Bowman Springs) I20 to Enchanted Bay / TWDB Concurrence and NTP

---

**External Email: Stop, Look, Think before clicking attachment or link. Report Phishing.**

---

Brad:

The TWDB NTP letter will be provided in the future. The City of Arlington may **use this email as the TWDB NTP.**

The executed construction contract documents (electronic) for the referenced project have been reviewed and placed in the Texas Water Development Board (TWDB) files. The City of Arlington (City) issued four (4) addendums during the bidding period.

Addendum No. 1 updates the project drawings and technical specifications to:

1. Clarify TXDOT coordination and Section 11-02.
2. Revise section Culvert C1.
3. Address northbound and one-way traffic.
4. Update Davis-bacon wage rates.
5. Revise Section 11-15 Time for Completion and Liquidated Damage.
6. Revise Section 11-23 Holiday Inspection.
7. Add Section 11-31 As-Built Plans.
8. Revise Sections 12-34 (Backfill), 13-10 to 13-16, 15-04 and 15-06 (Concrete).
9. Revise drawing RAB-01 (Traffic).
10. Revise bid form, Total Summary.

Addendum No. 2 responds to questions and adds the Pre-Bid Meeting Agenda.

Addendum No. 3 updates the project drawings and technical specifications to:

1. Clarify property owners.
2. Add Temporary Driveway Access and Cattle Guard Details plan sheets.
3. Revises Section 11-02 to include new paragraph H.
4. Revises bid items 238, 239, and 344 and Total Summary sheet.
5. Responds to questions and adds the Pre-Bid Meeting Agenda.

Addendum No. 4 revises bid item 607.

TWDB staff has reviewed these documents for compliance with TWDB programmatic requirements and compliance with 30 Texas Administrative Code Chapter 217 (Design Criteria for Domestic Wastewater Systems). Addendums No.1 through No. 4 are approved by the TWDB.

After evaluation of bids, the City decided to award the project to the lowest responsible bidder that met the qualification requirements of the City. The bidder selected was Tiseo Paving Company of Texas. The TWDB concurs with the issuance of a Notice to Proceed (NTP) for the following contract.

<b>Contract</b>	<b>Contractor</b>	<b>TWDB Funded Amount</b>	<b>Local Funds Amount</b>	<b>Total Contract Amount</b>
CID 02: Sanitary Sewer (Bowman Springs) I20 To Enchanted Bay	Tiseo Paving Company of Texas 419 US HWY East Mesquite, TX 75150	\$923,590.61(*)	\$12,394,408.40(*)	\$13,317,999.00(*)

(\*) Note on pages 61-63 of the executed contract package, the TWDB is funding bid Items 601-631 (TWDB Funded Amount). Local Funds are being used to address Total Contract Amount. The City is required to keep track of TWDB bids items to be eligible for reimbursement through Outlays.

For our records, we note that the contract time is 450 calendar days. Please copy TWDB staff on the City's NTP to the contractor. In addition to ensure eligibility for funding, change orders must be submitted for our review and approval prior to execution.

This concurrence does not relieve the City and design engineer of legal responsibility for the integrity of the design. The materials and methods of construction are to be in accordance with specifications provided by the engineer of record.

Also, please remember that prior to the release of final retainage on the contract, the TWDB must have issued a Certificate of Approval. A list of documents needed for project closeout can be found in the Supplemental Contract Conditions document (TWDB-0550) located on our website at: <http://www.twdb.texas.gov/financial/instructions/index.asp>.

Should you have any questions, do not hesitate to contact me at via email at [dennis.newman@twdb.texas.gov](mailto:dennis.newman@twdb.texas.gov).

Regards, Dennis

Dennis L. Newman, P.E.  
Engineer  
Regional Water Project Development – Northeast  
Texas Water Development Board  
1515 E Kearney St # 401, Mesquite, TX 75149  
Ph: (972) 289-9908

**TWDB-0373  
TEXAS WATER DEVELOPMENT BOARD  
PARTICIPATION SUMMARY**

**I. PROJECT INFORMATION**

TWDB Project Number	Applicant/Entity Name	Total TWDB Funding Request	Program Type (insert "X" for all that apply)	
73827	City of Arlington	\$ 5,151,695.00	<input type="checkbox"/>	Drinking Water SRF (DWSRF)
			<input checked="" type="checkbox"/>	Clean Water SRF (CWSRF)

**Project Name:** Bowman Springs Road (IH 20 - Enchanted Bay Boulevard)

**Solicitation By:**  Applicant/Entity OR  Prime Contracted Business: Tiseo Paving Company

**Project Phase:**  Prior to Closing  Release of funding for PADs  Construction Contract # PWST18001

Instructions	
<b>Column 1</b>	Enter the full name, street address, city/state/zip for each firm awarded a contract for the project.
<b>Column 2</b>	Enter one of the following procurement or contract categories: <b>CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES</b>
<b>Column 3</b>	Enter the type of business: <b>MBE (Minority Business Enterprise), WBE (Women-owned Business Enterprise), or OTHER (NOTE: OTHER = Company or firm is Non-MBE or WBE)</b>
<b>Column 4</b>	Enter the exact amount of the awarded contract.
<b>Column 5</b>	Enter the exact date the contract was executed or the proposed date of contract execution.

If valid MBE/WBE firms are awarded contracts, a copy of their certification is required to be attached with this form for each MBE/WBE business listed.

**Notice:** Brokers may not be listed below as an MBE or WBE. A broker is a firm that does not perform, manage, or supervise the work of its sub/contract in a manner consistent with the normal business practices for sub/contractors in its line of business. For more specifics, review guidance document, TWDB-0210.

**II. LIST OF ACTUAL CONTRACTS/PROCUREMENTS**

	Column 1 Name & Address of Contracted Firm/Vendor	Column 2 Procurement Category	Column 3 MBE/WBE Status	Column 4 Contract Amount (\$)	Column 5 Contract Execution Date
1.					
2.					
3.					
4.					
5.					
6.					

*\* Please see Attached \**

*(Table continues on the next page)*

	Column 1 Name & Address of Contracted Firm/Vendor	Column 2 Procurement Category	Column 3 MBE/WBE Status	Column 4 Contract Amount (\$)	Column 5 Contract Execution Date
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					

Use additional sheets if necessary

Signature - Authorized Representative	Title (print legibly)	Date
	LOUIS TISED, PRESIDENT	4/14/22

**III. TWDB APPROVAL SIGNATURE**

Signature indicates the form meets DBE requirements.

DBE Coordinator	Approval Date

## Amy Powell

---

**From:** Lori Du  
**Sent:** Monday, May 16, 2022 10:31 AM  
**To:** Sabino Martin; Amy Powell  
**Subject:** FW: Arlington 73827 CID 02 / Sanitary Sewer (Bowman Springs) I20 to Enchanted Bay / TWDB Concurrence and NTP

See below yellow.

---

**From:** Dennis Newman <Dennis.Newman@twdb.texas.gov>  
**Sent:** Monday, May 16, 2022 10:00 AM  
**To:** Brad Franklin <Brad.Franklin@arlingtontx.gov>  
**Cc:** Lori Du <Lori.Du@arlingtontx.gov>; Ashley Brown <Ashley.Brown@arlingtontx.gov>  
**Subject:** [EXTERNAL EMAIL] Arlington 73827 CID 02 / Sanitary Sewer (Bowman Springs) I20 to Enchanted Bay / TWDB Concurrence and NTP

---

**External Email: Stop, Look, Think before clicking attachment or link. Report Phishing.**

---

Brad:

The TWDB NTP letter will be provided in the future. The City of Arlington may **use this email as the TWDB NTP.**

The executed construction contract documents (electronic) for the referenced project have been reviewed and placed in the Texas Water Development Board (TWDB) files. The City of Arlington (City) issued four (4) addendums during the bidding period.

Addendum No. 1 updates the project drawings and technical specifications to:

1. Clarify TXDOT coordination and Section 11-02.
2. Revise section Culvert C1.
3. Address northbound and one-way traffic.
4. Update Davis-bacon wage rates.
5. Revise Section 11-15 Time for Completion and Liquidated Damage.
6. Revise Section 11-23 Holiday Inspection.
7. Add Section 11-31 As-Built Plans.
8. Revise Sections 12-34 (Backfill), 13-10 to 13-16, 15-04 and 15-06 (Concrete).
9. Revise drawing RAB-01 (Traffic).
10. Revise bid form, Total Summary.

Addendum No. 2 responds to questions and adds the Pre-Bid Meeting Agenda.

Addendum No. 3 updates the project drawings and technical specifications to:

1. Clarify property owners.
2. Add Temporary Driveway Access and Cattle Guard Details plan sheets.
3. Revises Section 11-02 to include new paragraph H.
4. Revises bid items 238, 239, and 344 and Total Summary sheet.
5. Responds to questions and adds the Pre-Bid Meeting Agenda.

Addendum No. 4 revises bid item 607.

TWDB staff has reviewed these documents for compliance with TWDB programmatic requirements and compliance with 30 Texas Administrative Code Chapter 217 (Design Criteria for Domestic Wastewater Systems). Addendums No.1 through No. 4 are approved by the TWDB.

After evaluation of bids, the City decided to award the project to the lowest responsible bidder that met the qualification requirements of the City. The bidder selected was Tiseo Paving Company of Texas. The TWDB concurs with the issuance of a Notice to Proceed (NTP) for the following contract.

<b>Contract</b>	<b>Contractor</b>	<b>TWDB Funded Amount</b>	<b>Local Funds Amount</b>	<b>Total Contract Amount</b>
CID 02: Sanitary Sewer (Bowman Springs) I20 To Enchanted Bay	Tiseo Paving Company of Texas 419 US HWY East Mesquite, TX 75150	\$923,590.61(*)	\$12,394,408.40(*)	\$13,317,999.00(*)

(\*) Note on pages 61-63 of the executed contract package, the TWDB is funding bid Items 601-631 (TWDB Funded Amount). Local Funds are being used to address Total Contract Amount. The City is required to keep track of TWDB bids items to be eligible for reimbursement through Outlays.

For our records, we note that the contract time is 450 calendar days. Please copy TWDB staff on the City's NTP to the contractor. In addition to ensure eligibility for funding, change orders must be submitted for our review and approval prior to execution.

This concurrence does not relieve the City and design engineer of legal responsibility for the integrity of the design. The materials and methods of construction are to be in accordance with specifications provided by the engineer of record.

Also, please remember that prior to the release of final retainage on the contract, the TWDB must have issued a Certificate of Approval. A list of documents needed for project closeout can be found in the Supplemental Contract Conditions document (TWDB-0550) located on our website at: <http://www.twdb.texas.gov/financial/instructions/index.asp>.

Should you have any questions, do not hesitate to contact me at via email at [dennis.newman@twdb.texas.gov](mailto:dennis.newman@twdb.texas.gov).

Regards, Dennis

Dennis L. Newman, P.E.  
Engineer  
Regional Water Project Development – Northeast  
Texas Water Development Board  
1515 E Kearney St # 401, Mesquite, TX 75149  
Ph: (972) 289-9908

**TWDB-0373  
TEXAS WATER DEVELOPMENT BOARD  
PARTICIPATION SUMMARY**

**I. PROJECT INFORMATION**

TWDB Project Number	Applicant/Entity Name	Total TWDB Funding Request	Program Type (insert "X" for all that apply)	
73827	City of Arlington	\$ 5,151,695.00	<input type="checkbox"/>	Drinking Water SRF (DWSRF)
			<input checked="" type="checkbox"/>	Clean Water SRF (CWSRF)

Project Name: Bowman Springs Road (IH 20 - Enchanted Bay Boulevard)

Solicitation By:  Applicant/Entity OR  Prime Contracted Business: Tiseo Paving Company

Project Phase:  Prior to Closing  Release of funding for PADs  Construction Contract # PWST18001

Instructions	
Column 1	Enter the full name, street address, city/state/zip for each firm awarded a contract for the project.
Column 2	Enter one of the following procurement or contract categories: <b>CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES</b>
Column 3	Enter the type of business: MBE (Minority Business Enterprise), WBE (Women-owned Business Enterprise), or OTHER (NOTE: OTHER = Company or firm is Non-MBE or WBE)
Column 4	Enter the exact amount of the awarded contract.
Column 5	Enter the exact date the contract was executed or the proposed date of contract execution.

If valid MBE/WBE firms are awarded contracts, a copy of their certification is required to be attached with this form for each MBE/WBE business listed.

Notice: Brokers may not be listed below as an MBE or WBE. A broker is a firm that does not perform, manage, or supervise the work of its sub/contract in a manner consistent with the normal business practices for sub/contractors in its line of business. For more specifics, review guidance document, TWDB-0210.

**II. LIST OF ACTUAL CONTRACTS/PROCUREMENTS**

Column 1	Column 2	Column 3	Column 4	Column 5
Name & Address of Contracted Firm/Vendor	Procurement Category	MBE/WBE Status	Contract Amount (\$)	Contract Execution Date
1. <u>Axis Contracting</u> P.O. Box 360715 Dallas, TX 75032	<u>construction</u>	<u>WBE</u>	<u>\$1,963,700.00</u>	<u>4/22/22</u>
2. <u>Texas Sweep Services</u> 519 E 1-30 #604 Rockwall TX 75082	<u>construction</u>	<u>WBE</u>	<u>\$ 26,190.00</u>	<u>4/22/22</u>
3. <u>JBCTx, LLC</u> 507 MAIN ST Suite B LAKE DAVID, TX 75065	<u>construction</u>	<u>other</u>	<u>\$ 1,616,610.00</u>	<u>4/22/22</u>
4. <u>Mel's Electric</u> PO Box 40 Wilmer TX 75172	<u>construction</u>	<u>other</u>	<u>\$ 313,658.20</u>	<u>4/22/22</u>
5. <u>Stetson Landscaping</u> P.O. Box 79430 LAKE DAVID, TX 75065	<u>Construction</u>	<u>other</u>	<u>\$ 221,942.50</u>	<u>4/22/22</u>
6. <u>Venus Construction</u> 1426 S. MAIN ST. MANSFIELD TX	<u>Construction</u>	<u>other</u>	<u>\$ 2,242,109.00</u>	<u>4/22/22</u>

(Table continues on the next page)

	Column 1 Name & Address of Contracted Firm/Vendor	Column 2 Procurement Category	Column 3 MBE/WBE Status	Column 4 Contract Amount (\$)	Column 5 Contract Execution Date
7.	Industrial Tivoli 3427 Kingsley Rd Suite 7, Garland TX	Supplies	MBE	\$59,900	4/22/22
8.	TBAR Fence 1912 Peyco Dr Arlington TX 76001	construction	Other	\$58,607.00	4/22/22
9.	Fourstar Excavation 6925 Levelland Rd Suite 28 Dallas TX	Construction	Other	\$1,384,293.00	4/22/22
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					

Use additional sheets if necessary

Signature - Authorized Representative	Title (print legibly)	Date
	LOUIS TISED, PRESIDENT	4/14/22

III. TWDB APPROVAL SIGNATURE

Signature indicates the form meets DBE requirements.

DBE Coordinator	Approval Date



Women Business Enterprise (WBE)  
Texas SWPPP Services DBA NiKole Brock-  
Martin DBA Texas SWPPP Services

## **Texas SWPPP Services DBA NiKole Brock- Martin DBA Texas SWPPP Services**

has filed with the Agency an Affidavit as defined by NCTRCA Women Business Enterprise (WBE) Policies & Procedures and is hereby certified to provide service(s) in the following areas:

**NAICS 541330: ENGINEERING SERVICES**

**NAICS 541620: ENVIRONMENTAL CONSULTING SERVICES**

**NAICS 561730: HYDROSEEDING SERVICES (E.G., DECORATIVE, EROSION CONTROL PURPOSES)**

This Certification commences April 12, 2022 and supersedes any registration or listing previously issued. This certification must be updated every two years by submission of an Annual Update Affidavit. At any time there is a change in ownership, control of the firm or operation, notification must be made immediately to the North Central Texas Regional Certification Agency for eligibility evaluation.

Certification Expiration: April 30, 2024  
Issued Date: April 12, 2022  
CERTIFICATION NO. OFWB33377N0424

---

Certification Administrator

THIS CERTIFIES THAT

# Industry Junction, Inc.



\* Nationally certified by the: **DALLAS/FORT WORTH MINORITY SUPPLIER DEVELOPMENT COUNCIL**

\*NAICS Code(s): 423830; 423510; 423850; 423610; 423720

\* Description of their product/services as defined by the North American Industry Classification System (NAICS)

04/15/2019

**Issued Date**

DL01157

**Certificate Number**

05/31/2020

**Expiration Date**

*Adrienne C. Trimble*  
Adrienne Trimble

*Margo J. Posey*

**Margo J. Posey, President**

By using your password (NMSDC issued only), authorized users may log into NMSDC Central to view the entire profile: <http://nmsdc.org>

*Certify, Develop, Connect, Advocate.*

\* MBEs certified by an Affiliate of the National Minority Supplier Development Council, Inc.®



Women Business Enterprise (WBE)  
Axis Contracting, Inc.

## Axis Contracting, Inc.

has filed with the Agency an Affidavit as defined by NCTRCA Women Business Enterprise (WBE) Policies & Procedures and is hereby certified to provide service(s) in the following areas:

**NAICS 237110: WATER AND SEWER LINE AND RELATED STRUCTURES CONSTRUCTION**  
**NAICS 238110: POURED CONCRETE FOUNDATION AND STRUCTURE CONTRACTORS**  
**NAICS 484220: SPECIALIZED FREIGHT (EXCEPT USED GOODS) TRUCKING, LOCAL**

This Certification commences January 16, 2020 and supersedes any registration or listing previously issued. This certification must be updated every two years by submission of an Annual Update Affidavit. At any time there is a change in ownership, control of the firm or operation, notification must be made immediately to the North Central Texas Regional Certification Agency for eligibility evaluation.

Certification Expiration: January 31, 2022  
Issued Date: January 16, 2020  
CERTIFICATION NO. WFWB47703N0122



*Ericia Mitchell*

---

Certification Administrator

**TWDB-0373  
TEXAS WATER DEVELOPMENT BOARD  
PARTICIPATION SUMMARY**

**I. PROJECT INFORMATION**

TWDB Project Number	Applicant/Entity Name	Total TWDB Funding Request	Program Type (insert "X" for all that apply)	
			<input type="checkbox"/>	Drinking Water SRF (DWSRF)
			<input type="checkbox"/>	Clean Water SRF (CWSRF)

**Project Name:** \_\_\_\_\_

**Solicitation By:**  Applicant/Entity OR  Prime Contracted Business: \_\_\_\_\_

**Project Phase:**  Prior to Closing  Release of funding for PADs  Construction Contract # \_\_\_\_\_

**Instructions**

<b>Column 1</b>	Enter the full name, street address, city/state/zip for each firm awarded a contract for the project.
<b>Column 2</b>	Enter one of the following procurement or contract categories: <b>CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES</b>
<b>Column 3</b>	Enter the type of business: <b>MBE (Minority Business Enterprise), WBE (Women-owned Business Enterprise), or OTHER (NOTE: OTHER = Company or firm is Non-MBE or WBE)</b>
<b>Column 4</b>	Enter the exact amount of the awarded contract.
<b>Column 5</b>	Enter the exact date the contract was executed or the proposed date of contract execution.

If valid MBE/WBE firms are awarded contracts, a copy of their certification is required to be attached with this form for each MBE/WBE business listed.

**Notice:** Brokers may not be listed below as an MBE or WBE. A broker is a firm that does not perform, manage, or supervise the work of its sub/contract in a manner consistent with the normal business practices for sub/contractors in its line of business. For more specifics, review guidance document, TWDB-0210.

**II. LIST OF ACTUAL CONTRACTS/PROCUREMENTS**

	<b>Column 1</b> Name & Address of Contracted Firm/Vendor	<b>Column 2</b> Procurement Category	<b>Column 3</b> MBE/WBE Status	<b>Column 4</b> Contract Amount (\$)	<b>Column 5</b> Contract Execution Date
1.					
2.					
3.					
4.					
5.					
6.					

*(Table continues on the next page)*

	<b>Column 1</b>	<b>Column 2</b>	<b>Column 3</b>	<b>Column 4</b>	<b>Column 5</b>
	Name & Address of Contracted Firm/Vendor	Procurement Category	MBE/WBE Status	Contract Amount (\$)	Contract Execution Date
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					

Use additional sheets if necessary

<b>Signature - Authorized Representative</b>	<b>Title (print legibly)</b>	<b>Date</b>
		

**III. TWDB APPROVAL SIGNATURE**

Signature indicates the form meets DBE requirements.

<b>DBE Coordinator</b>	<b>Approval Date</b>

## Amy Powell

---

**From:** Lori Du  
**Sent:** Monday, May 16, 2022 10:31 AM  
**To:** Sabino Martin; Amy Powell  
**Subject:** FW: Arlington 73827 CID 02 / Sanitary Sewer (Bowman Springs) I20 to Enchanted Bay / TWDB Concurrence and NTP

See below yellow.

---

**From:** Dennis Newman <Dennis.Newman@twdb.texas.gov>  
**Sent:** Monday, May 16, 2022 10:00 AM  
**To:** Brad Franklin <Brad.Franklin@arlingtontx.gov>  
**Cc:** Lori Du <Lori.Du@arlingtontx.gov>; Ashley Brown <Ashley.Brown@arlingtontx.gov>  
**Subject:** [EXTERNAL EMAIL] Arlington 73827 CID 02 / Sanitary Sewer (Bowman Springs) I20 to Enchanted Bay / TWDB Concurrence and NTP

---

**External Email: Stop, Look, Think before clicking attachment or link. Report Phishing.**

---

Brad:

The TWDB NTP letter will be provided in the future. The City of Arlington may **use this email as the TWDB NTP.**

The executed construction contract documents (electronic) for the referenced project have been reviewed and placed in the Texas Water Development Board (TWDB) files. The City of Arlington (City) issued four (4) addendums during the bidding period.

Addendum No. 1 updates the project drawings and technical specifications to:

1. Clarify TXDOT coordination and Section 11-02.
2. Revise section Culvert C1.
3. Address northbound and one-way traffic.
4. Update Davis-bacon wage rates.
5. Revise Section 11-15 Time for Completion and Liquidated Damage.
6. Revise Section 11-23 Holiday Inspection.
7. Add Section 11-31 As-Built Plans.
8. Revise Sections 12-34 (Backfill), 13-10 to 13-16, 15-04 and 15-06 (Concrete).
9. Revise drawing RAB-01 (Traffic).
10. Revise bid form, Total Summary.

Addendum No. 2 responds to questions and adds the Pre-Bid Meeting Agenda.

Addendum No. 3 updates the project drawings and technical specifications to:

1. Clarify property owners.
2. Add Temporary Driveway Access and Cattle Guard Details plan sheets.
3. Revises Section 11-02 to include new paragraph H.
4. Revises bid items 238, 239, and 344 and Total Summary sheet.
5. Responds to questions and adds the Pre-Bid Meeting Agenda.

Addendum No. 4 revises bid item 607.

TWDB staff has reviewed these documents for compliance with TWDB programmatic requirements and compliance with 30 Texas Administrative Code Chapter 217 (Design Criteria for Domestic Wastewater Systems). Addendums No.1 through No. 4 are approved by the TWDB.

After evaluation of bids, the City decided to award the project to the lowest responsible bidder that met the qualification requirements of the City. The bidder selected was Tiseo Paving Company of Texas. The TWDB concurs with the issuance of a Notice to Proceed (NTP) for the following contract.

<b>Contract</b>	<b>Contractor</b>	<b>TWDB Funded Amount</b>	<b>Local Funds Amount</b>	<b>Total Contract Amount</b>
CID 02: Sanitary Sewer (Bowman Springs) I20 To Enchanted Bay	Tiseo Paving Company of Texas 419 US HWY East Mesquite, TX 75150	\$923,590.61(*)	\$12,394,408.40(*)	\$13,317,999.00(*)

(\*) Note on pages 61-63 of the executed contract package, the TWDB is funding bid Items 601-631 (TWDB Funded Amount). Local Funds are being used to address Total Contract Amount. The City is required to keep track of TWDB bids items to be eligible for reimbursement through Outlays.

For our records, we note that the contract time is 450 calendar days. Please copy TWDB staff on the City's NTP to the contractor. In addition to ensure eligibility for funding, change orders must be submitted for our review and approval prior to execution.

This concurrence does not relieve the City and design engineer of legal responsibility for the integrity of the design. The materials and methods of construction are to be in accordance with specifications provided by the engineer of record.

Also, please remember that prior to the release of final retainage on the contract, the TWDB must have issued a Certificate of Approval. A list of documents needed for project closeout can be found in the Supplemental Contract Conditions document (TWDB-0550) located on our website at: <http://www.twdb.texas.gov/financial/instructions/index.asp>.

Should you have any questions, do not hesitate to contact me at via email at [dennis.newman@twdb.texas.gov](mailto:dennis.newman@twdb.texas.gov).

Regards, Dennis

Dennis L. Newman, P.E.  
Engineer  
Regional Water Project Development – Northeast  
Texas Water Development Board  
1515 E Kearney St # 401, Mesquite, TX 75149  
Ph: (972) 289-9908



### BIDDER'S CERTIFICATIONS

Project Name: Bowman Springs RD

Project Number: RUST18001

Contract For: CITY OF ARLINGTON

**The following certifications must be completed by the bidder for each contract.**

#### A. EQUAL EMPLOYMENT OPPORTUNITY:

I have developed and have on file at each establishment affirmative action programs pursuant to 41 CFR Part 60-1.7.

I have:

participated in previous contract(s) or subcontract(s) subject to the equal opportunity clause under Executive Orders 11246 and 11375. I have filed all notices, contract specifications, and compliance reports due under the requirements contained in 41 CFR Part 60-4.

not participated in previous contracts(s) subject to the equal opportunity clause under Executive Orders 11246 and 11375 and 41 CFR Chapter 60.

#### B. NONSEGREGATED FACILITIES

I certify that I do not and will not maintain any facilities provided for my employees in a segregated manner, or permit my employees to perform their services at any location under my control where segregated facilities are maintained; and that I will obtain a similar certification prior to the award of any federally assisted subcontract exceeding \$10,000 which is not exempt from the equal opportunity clause as required by 41 CFR Part 60-1.8.

I will obtain a similar certification from any proposed subcontractor(s), when appropriate.

I understand that a false statement on this certification may be grounds for rejection of this bid proposal or termination of the contract award.

LOUIS TISED, PRESIDENT  
Typed Name and Title of Bidder's Authorized Representative

 4/14/2022  
Signature of Bidder's Authorized Representative Date

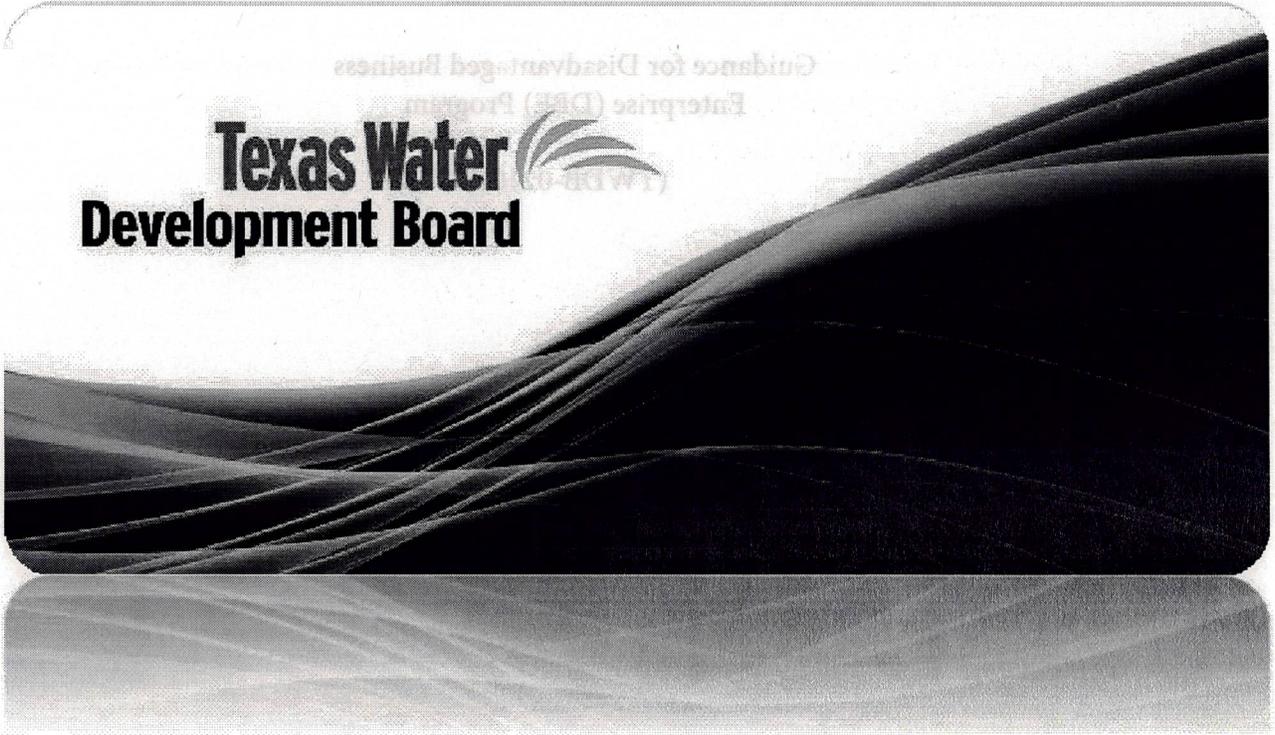
TISED PAVING Co. 419 US Hwy 80E  
MESQUITE, TX 75150  
Name and Address of Bidder

SECTION NO. 25

Guidance for Disadvantaged Business  
Enterprise (DBE) Program

(TWDB-0210)

Guidance for Disadvantaged Business  
Enterprise (DBE) Program



**Disadvantaged Business Enterprises for  
State Revolving Fund Projects**

Updates to this guidance include:

- *Fiscal Year 2018 Negotiated Minority Business Enterprise and Women's Business Enterprise (MBE/WBE) Goals (pg. 2)*
- *Updated TWDB-0215 (Attachment 1)*
- *Updated TWDB-0217 (Attachment 3)*
- *Updated DBE Program Links (pg. 16)*
- *Updated definition for Trade Association method (pg. 7)*
- *Updated language: Introduction to Federal Requirements (pg. 2)*

# DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

TWDB-0210 GUIDANCE

## TABLE OF CONTENTS

Introduction to Federal Requirements .....	2
Compliance with the Requirements .....	3
Six Good Faith Efforts.....	3
When to Submit.....	4
Required Documentation.....	5
Special Circumstances.....	5
Procurement Steps .....	7
Applicant's Review of Prime Consultant's/Contractor's Procurements .....	13
Contract Administration Requirements.....	15
DBE Program Links .....	16
Appendix A. Glossary .....	1
Appendix B. Example Advertisements (Request for Qualifications).....	1
Appendix C. How to Search the CMBL and HUB Directory .....	1
Appendix D. Examples of Direct Solicitations .....	1

### Attachments (examples of required forms):

1. TWDB-0215
2. TWDB-0216
3. TWDB-0217
4. TWDB-0373

# DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

## INTRODUCTION TO FEDERAL REQUIREMENTS

The Texas Water Development Board (TWDB) intends to ensure that applicants, consultants and contractors are provided with information and guidance to successfully meet the U.S. Environmental Protection Agency's (EPA) Disadvantaged Business Enterprise (DBE) program requirements.

The TWDB's Clean and Drinking Water State Revolving Fund programs receive federal funding from the EPA to provide financial assistance for water and wastewater projects. Recipients of financial assistance (e.g., municipalities, towns, public water systems) and their sub-recipients (e.g., prime consultants, prime contractors, purchase order vendors) are **required** to make a "Good Faith Effort" to award a fair share of work to contractors who are certified as Minority Business Enterprises (MBE) and Women-owned Business Enterprises (WBE) whenever procuring construction, supplies, services, and equipment (40 CFR, Section 33.301). This requirement currently applies to Clean Water State Revolving Fund Equivalency projects and all Drinking Water State Revolving Fund Equivalency projects. Recipients of financial assistance are required to show evidence that they have performed the six steps showing a "Good Faith Effort" (referred to as the Six Good Faith Efforts) for all procurements (40 CFR, Section 33.301).

The DBE program is an outreach, education, and goal oriented program designed to increase the participation of MBEs and WBEs in procurements funded by EPA assistance agreements through the State Revolving Funds. The DBE program goals, also referred to as *Fair Share Objectives*, are negotiated every three years between the TWDB and the EPA. The TWDB's current negotiated fair share goals are:

<u>Category</u>	<u>MBE</u>	<u>WBE</u>
Construction	19.44%	9.17%
Equipment	16.28%	11.45%
Supplies	25.34%	8.82%
Services	20.41%	13.66%

*Effective 08/14/2018 – 09/01/2021*

The MBE/WBE goals are neither standards nor quotas; they are goals. Recipients of financial assistance are not required to meet the fair share objectives. They must, however, acknowledge that they are aware of and are actively pursuing the fair share objectives with their procurements.

Recipients of financial assistance **must** maintain all records documenting compliance with all applicable federal and state requirements. They are also subject to additional contract administration requirements (40 CFR, Section 33.302).

This guide will cover the Six Good Faith Efforts, procurement instructions, and the TWDB's DBE review process. All of the required DBE forms as well as a few situational examples are included for reference. Clear definitions of all of the terms used throughout the guidance document may be found within the Glossary (Appendix A). The terms "recipient of financial assistance", "applicant", or "entity" may be used interchangeably.

## COMPLIANCE WITH THE REQUIREMENTS

Compliance is achieved by: 1) applying the Six Good Faith Efforts to all procurements utilizing applicable State Revolving Fund program funds, 2) submitting TWDB's DBE forms in a timely manner, 3) ensuring all necessary documentation and language is included in bid advertisements and solicitations, and 4) maintaining detailed documents showing compliance with the DBE requirements. In the event that a recipient of financial assistance fails to comply with any of the DBE program requirements, EPA may take remedial action under 40 CFR, Section 33.105. A failure to comply with the DBE process outlined in this guidance document accurately and in a timely manner may also result in the withholding of payments or project delays.

## SIX GOOD FAITH EFFORTS

The Six Good Faith Efforts undertaken by a recipient of financial assistance and its prime consultant(s)/contractor(s) ensures that DBE businesses are made aware of procurement opportunities.

According to 40 CFR § 33.301, a recipient of financial assistance is required to complete the following Six Good Faith Efforts whenever procuring construction, equipment, services and supplies under an EPA financial assistance agreement:

- (1) Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
- (2) Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
- (3) Consider in the contracting process whether businesses competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
- (4) Encourage contracting with a consortium of DBEs when a contract is too large for one of these businesses to handle individually.
- (5) Use the services and assistance of the Small Business Administration (SBA) and the Minority Business Development Agency of the Department of Commerce.
- (6) If the Prime Contractor awards subcontracts, require the prime contractor to take the complete steps (1) through (5) listed above.

**Note: Step-by-step guides are available in future sections of this guidance to explain these six steps (pp. 7-15).**

## WHEN TO SUBMIT

Recipients of financial assistance through the SRF Programs will be required to submit DBE documentation at different phases during the project's lifecycle (Application, Prior to Closing, Release of Planning/Design funds, and Construction Contract Phases). *Note: Submitting DBE forms to the TWDB alone will not meet EPA's fair share policy. Review the section, Required Documentation, for the additional steps that **must** be completed.*

### **Application (must be submitted with a financial application)**

- **TWDB-0215 (from Applicant/Entity)** certifies that the entity understands they **must** follow the Six Good Faith Efforts and attempt to meet the Fair Share Objectives for MBE/WBE participation.

### **Prior to Closing (must be submitted, reviewed and approved by TWDB staff prior to closing)**

- **TWDB-0216 (from Applicant/Entity)** identifies the methods of solicitation used for procurements, all businesses directly solicited for procurement (at this stage, typically the Financial Advisor, Bond Counsel, and Engineer), their contact information, and their MBE/WBE status.
- **TWDB-0373 (from Applicant/Entity)** identifies the businesses awarded a contract, their contact information, their MBE/WBE status, an actual or anticipated executed contract date, and contract amount. *Note: Any businesses operating as brokers may not be listed on the TWDB-0373 as an MBE or WBE.<sup>1</sup>*
- **TWDB-0217 (from Prime Consultants)** certifies that the Prime Consultant (at this stage, typically the Financial Advisor, Bond Counsel, and Engineer) understand they **must** follow the Six Good Faith Efforts and attempt to meet the Fair Share Objectives for MBE/WBE participation.

### **Release of Planning/Design Phase funds**

- **TWDB-0216 (from Applicant/Entity)** identifies the methods of solicitation used for procurements, all businesses directly solicited for procurement, their contact information, and their MBE/WBE status. This form is required at this stage only, if the entity pursues procuring additional businesses (e.g., Environmental, Other Legal Services, Surveying) for construction (if applicable), equipment, services, or supplies after closing.
- **TWDB-0373 (from Applicant/Entity)** identifies the businesses awarded a contract, their contact information, their MBE/WBE status, an actual or anticipated executed contract date, and contract amount. This form is required, at this step only, if the entity pursues procuring additional businesses (e.g., Environmental, Other Legal Services, Surveying) for construction (if applicable), equipment, services, or supplies after closing. *Note: Any businesses operating as brokers may not be listed on the TWDB-0373 as an MBE or WBE.<sup>1</sup>*
- **TWDB-0216 (from Prime Consultants/Contractors)** indicates all businesses solicited for procurement, their contact information, and their MBE/WBE status.

---

<sup>1</sup> A broker is a business that does not perform, manage, or supervise the work of its sub/contract in a manner consistent with the normal business practices for sub/contractors in its line of business.

- **TWDB-0373 (from Prime Consultants/Contractors)** identifies all businesses awarded a subcontract, their contact information, their MBE/WBE status, an actual or anticipated executed contract date, and contract amount. *Note: Any businesses operating as brokers may not be listed on the TWDB-0373 as an MBE or WBE.*<sup>2</sup>

#### **Construction Contracts**

- **TWDB-0216 (from Applicant/Entity)** identifies the methods of solicitation used for procurements, all businesses directly solicited for procurement (at this stage, typically a construction contractor), their contact information, and their MBE/WBE status.
- **TWDB-0373 (from Applicant/Entity)** identifies the businesses awarded a contract, their contact information, their MBE/WBE status, an actual or anticipated executed contract date, and contract amount.
- **TWDB-0216 (from Prime Consultants/Contractors)** indicates all businesses solicited for procurement, their contact information, and their MBE/WBE status.
- **TWDB-0217 (from Prime Contractor)** certifies that the Prime Contractor understands they must follow the Six Good Faith Efforts and attempt to meet the Fair Share Objectives for MBE/WBE participation.
- **TWDB-0373 (from Prime Contractor)** identifies all businesses awarded a contract, their contact information, their MBE/WBE status, an actual or anticipated executed contract date, and contract amount. *Note: Any businesses operating as brokers may not be listed on the TWDB-0373 as an MBE or WBE.*<sup>2</sup>

#### **REQUIRED DOCUMENTATION**

In addition to the forms that must be submitted to the TWDB for review and approval prior to a project progressing through its lifecycle, recipients of financial assistance are required to maintain the following sets of documents or files related to the DBE program for the duration of the project:

- All copies of advertisements, solicitation postings, and communications to publish public solicitation including publishers' affidavits, U.S. certified mail receipts, and emails.
- Bidder's List(s) of Prime Contracts if procurement was through an open-competitive bidding process.
- All forms submitted to the TWDB and the EPA for the DBE program.
- All documentation submitted by the Prime Consultant(s) and Contractor(s) depicting their compliance with EPA's fair share policy (review the section, Procurement Steps, for more details).

#### **SPECIAL CIRCUMSTANCES**

In some circumstances, a recipient of financial assistance may not be able to make a good faith effort in procuring DBEs. If this circumstance is encountered, communication with the TWDB's DBE Coordinator should take place well in advance of making the decision to execute a procurement/contract not following the TWDB's DBE program. The DBE Coordinator will determine whether the circumstance may qualify for a sole-source method of procurement. The sole-source method requires that the recipient of financial assistance produce a letter explaining why they were unable to follow the DBE program, submit the documentation to the TWDB for official review, and retain a copy of the letter within the project file.

<sup>2</sup> A broker is a business that does not perform, manage, or supervise the work of its sub/contract in a manner consistent with the normal business practices for sub/contractors in its line of business.

**Example:**

After pilot testing a specific treatment process for a treatment plant, the Texas Commission on Environmental Quality (TCEQ) has required a specific piece of equipment that only a single manufacturer produces, or a sole-source. In this instance, two key items are needed for DBE program compliance: a letter from the recipient of financial assistance detailing the circumstances related to the sole-source, and the exemption letter from the TCEQ identifying the specific equipment. These items should be sent to the TWDB and saved within the recipient of financial assistance's project file. Communication should be given to the TWDB's DBE Coordinator upon receipt and review of the TCEQ's exemption letter.

There may be instances when a recipient of financial assistance would like to contract for services or contract with a supplier(s) for an extended period of time. These **multi-year contracts** are allowed and acceptable under the EPA's DBE program, so long as certain steps are followed. When the TWDB's DBE Coordinator reviews any submitted DBE documentation, they will ensure the solicitation language contains the expected scope of work and the applicable timeframes of the contract. The solicitation should also reference the TWDB's negotiated fair share objectives through use of the TWDB's solicitation statement within the advertisement. Including the solicitation statement ensures the multi-year contract is procured under the TWDB's current negotiated fair share objectives. If any of this information is missing, the TWDB's DBE Coordinator may not be able to approve the submitted DBE documentation and may require additional steps in order to meet compliance.

The recipient of financial assistance **must** follow the EPA's DBE process in procuring the multi-year contract(s). A multi-year contract will not be accepted if the contract solicitation and award date occurred more than three years from the date of submission to the TWDB's DBE Coordinator. Multi-year contracts exceeding this timeframe may be evaluated by the TWDB on a case-by-case basis. Advanced notice of this type of procurement should be given to the TWDB's DBE Coordinator before making the decision to execute a procurement/contract.

**Example:**

The Town of Medgar (Town), is preparing to execute a contract with a consultant engineering firm for engineering services covering all line replacement work within its public water supply system. The Town has drafted a solicitation for water line replacement work for all projects that are or may possibly be funded through the TWDB's Drinking Water State Revolving Fund (DWSRF) and has received an approval for use by the TWDB's DBE Coordinator. The multi-year contract is structured to be in effect for no longer than three years. Following the standard DBE process, the Town posts the solicitation, awards the contract, and then submits the applicable forms to the TWDB for review. Three years later, the Town chooses to take on additional water line replacement work funded through new DWSRF financing. To show compliance, they submit the DBE forms showing their original procurement of the engineering firm to the TWDB's DBE Coordinator. Following this process allows the Town to utilize one consultant engineering firm for all water line replacement projects within the system that are planned and/or implemented within the three years after executing the contract.

In instances where a recipient of financial assistance wants their own staff to perform services, their approval process would follow a **force account** process. Under a force account, the recipient of financial assistance submits a written request to the TWDB's DBE Coordinator describing the scope of work covered by their staff and indicating their participation through the force account process. This letter should remain within their project files. The TWDB's DBE Coordinator will acknowledge its receipt, review for applicability, and respond with a determination before any work proceeds.

## PROCUREMENT STEPS

Included in these instructions are steps to successfully perform your DBE solicitation. Please read them carefully. These steps should be taken when procuring construction, equipment, services, and/or supplies. The terms "recipients of financial assistance", "applicant", or "entity" may be used interchangeably. The term "Prime(s)" refers to both "Consultants" and "Contractors".

### STEP 1. DETERMINE YOUR PROCUREMENT NEEDS

For all of the categories listed below, you are required to solicit by any of the listed methods identified in Step 2 DBE businesses qualified and capable of completing the work requested. You should also determine whether it is economically feasible to divide the proposed project into smaller tasks or quantities to permit maximum participation by DBE businesses.

#### Procurement Categories

**Construction** contracts generally relate to the bidding process for a prime contractor. **Equipment** contracts relate to the purchase of equipment from vendors. **Services** contracts relate to the hiring of consultants or any other service related work. **Supply** contracts relate to the purchase of supplies directly from vendors.

#### Examples

1. If your project consists of one general construction contract, you will need to solicit DBE prime contractors within the regional vicinity of the project that are capable of completing the work.
2. If your own workforce will be performing all of the work, but you will need to purchase supplies or equipment, then you will need to solicit DBE vendors within the regional project area capable of providing supplies or equipment to your proposed project.

### STEP 2. DETERMINE YOUR METHODS OF SOLICITATION

You may choose from a list of seven methods of solicitation. At least TWO methods **must** be chosen. These may be performed in conjunction with any required local or state procurement laws:

- Newspaper Advertisements
- Direct Contact by Phone, Fax, USPS Mail, Email (any combination of these still counts as ONE method)
- Meetings or Conferences
- Minority Media Postings
- Internet Website Postings
- Trade Association Publications ( i.e., publishing a solicitation within a newsletter, email list, webpage, etc. for a grouping of all who come together in an organized attempt to interest, persuade, or influence the actions, policies, or decisions of government officials, for the advancement and recruitment of contracting opportunities.)
- Other Government Publications (i.e., publishing a solicitation within other governmental publications)

If you choose to solicit via direct contact, additional steps are required to ensure fairness (see Step 2B. Directly Solicit Businesses). To reiterate, depending on your entity or businesses' makeup, you **must** ensure that you meet all applicable local and state procurement laws.

---

## STEP 2A. ADVERTISE YOUR PROJECT

Draft the content of your solicitation. Example advertisement and request for qualifications language is available in appendix B.

To be compliant with the DBE program, all solicitations, both publicly advertised and via direct contact, should address 1) fair share goals; 2) good faith efforts; 3) the involvement of federal EPA funding; and 4) encouragement of MBEs, WBEs, and other DBEs to bid on prime and subcontracts.

To ensure compliance, the TWDB recommends including the following solicitation statement in all solicitations:

*This contract is subject to the Environmental Protection Agency's (EPA) Disadvantaged Business Enterprise (DBE) Program, which includes EPA-approved fair share goals toward procurement of Minority and Women-owned Business Enterprise (M/WBE) businesses. EPA rules require that applicants and prime contractors make a good faith effort to award a fair share of contracts, subcontracts, and procurements to M/WBEs through demonstration of the six affirmative steps. For more details of the DBE Program and the current, applicable fair share goals, please visit [www.twdb.texas.gov/dbe](http://www.twdb.texas.gov/dbe).*

The TWDB encourages you to publish your solicitation at least 30 days prior to the bid closing date to allow sufficient time for potential prime or subconsultants/contractors to submit bids and proposals. The solicitation statement may be used within a newspaper advertisement, a posting to minority media or internet website, or posting within any other trade association or government publications. A copy of the actual solicitation found within/on the publication or web page **must** be kept with the project files and submitted along with the form TWDB-0216.

When advertising your project through a newspaper, it is important to retrieve a publisher's affidavit showing the dates of the posting(s) and the content of the advertisement. This support information **must** be saved with the project files and submitted along with the form TWDB-0216. For entities and projects required by state procurement law to perform an open competitive bidding process (i.e., political subdivisions of the state or districts soliciting for contract(s) more than a specific dollar amount as directed by state procurement law), a posting at least once a week, for two consecutive weeks, in a newspaper published in the municipality (or county) in which the district is located is required (TEX. LOC. GOV'T CODE § 252.041 and TEX. WATER CODE § 49.273).

Note: Sufficient documentation for meetings or conferences held as a method of solicitation include announcements of the meeting or meeting minutes AND a sign-in sheet. Posting items to a government-run plan room is considered the "Other Government Publications" method listed within the previous step. Posting items to a privately-run plan room is considered the "Trade Association Publications" method listed within the previous step. Conducting and submitting a search of businesses does not count as any one of the methods listed within the previous step. Search results are only accepted when accompanied with a detailed, signed explanation to document your inability to locate DBE businesses meeting the qualifications solicited and/or their inability to bid on your project.

---

## STEP 2B: DIRECTLY SOLICIT BUSINESSES

You may directly solicit businesses utilizing phone, fax, USPS mail, or email communications. All documentation of such activity must be saved with the project files. When communicating via phone, an electronic or hand-written call log may be used as support. Remember to document the name of the firm solicited, the person contacted, a telephone number, their MBE/WBE status, and the category of work requested.

You must make contact with at least three qualified businesses for the specific procurement and at least one of those businesses must be a certified MBE/WBE business. An example of submitted direct solicitation documentation is available in Appendix D. To determine a business' certification, review Step 3. Determining a Business' DBE Status.

---

## STEP 3. DETERMINING A BUSINESS' DBE STATUS

A DBE is a business owned by a socially and economically disadvantaged individual and certified as such by the EPA or another organization whose certification standards meet or exceed that of the EPA's (See Appendix A for a full definition of DBE). To assist you in identifying, soliciting, and utilizing qualified DBE businesses, the TWDB encourages you to refer to the following list of acceptable DBE certification agencies made available at the local, statewide, and national levels.

- Texas Procurement and Support Services (TPASS) The Centralized Master Bidders List (CMBL) – Historically Underutilized Business (HUB) Directory Search is a statewide database managed by the TPASS. This database contains contact information on all vendors registered to do business with the State, including TPASS-certified HUB vendors. The CMBL & HUB search is an online system available to the public free of charge.
- Small Business Administration
- Texas Department of Transportation
- City of Austin Located on the right-hand side of the webpage are links to the MBE/WBE/DBE Certified Vendor Search and SBE Certified Vendors directories.
- City of Houston

A list of other Minority & Women-owned Business Organizations that you may contact directly to obtain a list of qualified vendors for your procurement opportunities may be found at [www.twdb.texas.gov/dbe](http://www.twdb.texas.gov/dbe).

Please note that MBE, WBE, or Historically Underutilized Business (HUB) certifications provided by the Texas Small Businesses Association or the Texas Certification Directory will not be accepted by the TWDB or the U.S. Environmental Protection Agency (EPA) as they do not meet EPA certification requirements.

---

## STEP 4. UNDERSTANDING ROLES AND RESPONSIBILITIES

### **For Applicants:**

As the recipient of financial assistance, you are responsible for ensuring that your project meets EPA's fair share policy for all procurements funded utilizing State Revolving Fund program funds. This includes the subcontracts of your Prime Consultant(s) and Contractor(s). You should review the Prime Consultant's and Contractor's DBE documentation and determine them to be in compliance before you submit the TWDB forms and support for official review.

You may request DBE documentation from your Prime Consultant(s) and Contractor(s) at the time of bid or after you have awarded a contract. Keep in mind your project schedule and the timeframes in which you need to obtain TWDB's approvals to continue progressing with your project. Receiving and reviewing forms earlier ensures that you receive approval well in advance of critical deadlines.

If your Prime Consultant's and Contractor's documented DBE process comes back with any errors, it is your responsibility to work with them to achieve compliance. Be mindful that contracts procured without following requirements may result in the need for re-procurement or be funded utilizing an alternate source of funds other than State Revolving Fund program funds. The TWDB's DBE Coordinator is available to assist you in correcting any deficiencies of your Prime Consultant's and Contractor's procurements. For more detailed instructions, review the section, Applicant's Review of Prime Consultant's/Contractor's Procurements.

If the contract amount for any of your Prime Consultant(s)/Contractor(s) changes from the time of your initial DBE submission, you **must** submit an updated TWDB-0373 listing the final, actual contract dollar amounts.

**Note: In the event you change your Prime Consultant/Contractor or any subcontractors, for any reason, you or your Prime Consultant/Contractor must follow the DBE process when re-procuring. This will require you to re-submit a new TWDB-0373 reflecting actual contract dollar amounts and any supporting certification documentation.**

**For the Prime:**

As the Prime, you are responsible for ensuring that your project meets EPA's fair share policy for all procurements funded utilizing State Revolving Fund program funds. You should review the subcontractors' DBE documentation and determine them to be in compliance before you submit the TWDB forms and support to the Entity awarding you a contract.

You may request DBE documentation from your subcontractor(s) at the time of bid or after you have been awarded a contract. Keep in mind your project schedule and the timeframes in which you need to obtain TWDB's approvals to continue progressing with your project. Receiving and reviewing forms earlier ensures that you receive approval well in advance of critical deadlines.

Be mindful that should any DBE forms or support documentation come back with any errors, it is your responsibility to correct any deficiencies to achieve compliance. A contract procured without following all of the necessary requirements may result in the need for re-procurement or be funded utilizing an alternate source of funds other than State Revolving Fund program funds. The TWDB's DBE Coordinator is available to assist you in correcting any deficiencies.

If the contract amount for any of your subcontractors change from the time of your initial DBE submission, you **must** submit an updated TWDB-0373 listing the final, actual contract dollar amounts.

**Note: In the event you change any of your subcontractors, for any reason, you must follow the DBE process when re-procuring. This will require you to re-submit a new TWDB-0373 reflecting actual contract dollar amounts and any supporting certification documentation.**

---

## STEP 5. CREATING A BIDDERS LIST (APPLICANTS-ONLY)

As a recipient of financial assistance, you **must** create and maintain a Bidders List if your solicitation is subject to competitive bidding requirements. The list must include all firms that bid or quote on contracts and/or subcontracts. You **must** keep the bidders list until the project is complete, the project period has expired, and you are no longer receiving EPA funding under the financing agreement.

The following information **must** be retained on the Bidders List:

- The firm's name with point of contact
- The firm's mailing address, telephone number and email address
- The procurement on which the firm bid or quoted, and when
- The firm's status as an MBE/WBE.

The TWDB's form, Affirmative Steps Solicitation Report (TWDB-0216), may be used as the official Bidders List.

You may be exempt from the Bidders List requirement if you have received no more than \$250,000 for any single EPA financial assistance agreement OR no more than a combined total of \$250,000 for multiple EPA financial assistance agreements within any one federal fiscal year.

---

## STEP 6. COMPLETING THE NECESSARY DBE FORMS

If you are completing these steps **prior to closing** on a TWDB financial assistance award:

**Applicant:** The forms you must complete and sign are the TWDB-0216 and TWDB-0373. These forms document the methods of solicitation used, who was directly solicited and/or made a bid, and who was ultimately awarded a contract. You may have chosen one or more Prime Consultants (typically an Engineer, Financial Advisor, and/or Bond Counsel).

**Prime(s):** You must complete and sign the TWDB-0217 acknowledging you understand the DBE program requirements.

All three of these forms are needed well in advance of your (applicant's) anticipated closing date, as they must be reviewed and approved by TWDB staff before the closing is initiated. Confirm all forms are accurately completed, the required support documentation has been attached, and dated signatures from the appropriate authorized representatives are included.

If you are completing these steps for the **release funds for the planning, acquisition, and/or design phases:**

**Prime(s):** In addition to having the above referenced forms completed, you will need to complete and submit additional forms if you have selected subcontractors. Forms TWDB-0216 and TWDB-0373 should be completed and submitted to the Entity awarding you a contract. These forms document the methods of solicitation used, who was directly solicited and/or made a bid, and who was ultimately awarded a contract. All of these forms are needed in advance of the desired date for release of funds, as they **must** be reviewed and approved by TWDB staff before the release is initiated. Confirm that all forms are accurately completed, the required support documentation has been attached, and dated signatures from the appropriate authorized representatives are included.

If you are completing these steps for a **construction contract(s)**:

**Applicant:** Forms TWDB-0216 and TWDB-0373 are required showing your selection process for a Prime Contractor(s).

**Prime(s):** Form TWDB-0217 **must** be completed acknowledging that you understand the DBE program requirements. If subcontractors are utilized, complete forms TWDB-0216 and TWDB-0373 showing your selection process.

These forms are needed in advance of the desired date for release of funds, as they **must** be reviewed and approved by TWDB staff before the release is initiated. Confirm that all forms are accurately completed, the required support documentation has been attached, and dated signatures from the appropriate authorized representatives are included.

**Note:** In the event you change any of your subcontractors, for any reason, you must follow the DBE process when re-procuring. This will require you to re-submit a new TWDB-0373 reflecting actual contract dollar amounts and any supporting certification documentation.

In the event you run out of space on any of the TWDB forms, you can use your own additional spreadsheet or word document and attach.

---

## STEP 7. SUMMARIZING THE PROCESS

The following is a summary of the necessary steps to complete in order to receive a notice of compliance with the DBE program requirements.

- **Applicant:** Publish, post, contact, and/or distribute advertisements soliciting for a Prime Consultant(s)/Contractor(s) for the proposed project. It is recommended that this occur at least 30-days prior to the close of accepting bids. The solicitation advertisement should contain the TWDB's recommended solicitation statement.
- **Applicant:** If applicable, create and retain a copy of a Bidders List (refer to Step 5).
- **Primes:** Complete and submit the Prime Consultant/Contractor Certification form (TWDB-0217) to the Entity awarding you a contract. If instructed to do so by the Entity, also submit the completed form to the TWDB Review Engineer. If sent electronically, copy [DBE@twdb.texas.gov](mailto:DBE@twdb.texas.gov).
- **Primes:** If subcontracting, publish, post, contact, and/or distribute advertisements soliciting subcontractor(s) for the proposed project. It is recommended that this occur at least 30-days prior to the close of accepting bids. The solicitation advertisement should contain the TWDB's recommended solicitation statement.
- **All:** Save all copies, correspondence, etc. documenting the solicitation(s).
- **All:** Based upon the stage of the project, complete all necessary forms associated with the solicitation and award of the contract(s) for Prime Consultant(s)/Contractor(s) or subcontractor(s) (refer to Step 6 for the required forms).
- **All:** Compile all necessary forms from your selected Prime Consultant(s)/Contractor(s) or subcontractor, based upon the stage of the project. Ensure accuracy and completeness of the forms. Coordinate with the submitter should there be any errors.
- **All:** Submit all required documentation to the TWDB Project Reviewer / Engineer assigned to the project. If submitting electronically, copy [DBE@twdb.texas.gov](mailto:DBE@twdb.texas.gov) with the submission.

---

## STEP 8. CHANGES TO SELECTED CONSULTANTS OR CONTRACTORS

In the event there is a change of Consultant(s)/Contractor(s) or any subcontractor(s), you **must** follow the DBE process when re-procuring.

### APPLICANT'S REVIEW OF PRIME CONSULTANT'S/CONTRACTOR'S PROCUREMENTS

**Before submitting any DBE documentation to the TWDB for an official review, look over the DBE documentation from your Prime Consultants/Contractors to confirm the documents are in order and the procurements are in compliance.**

As a recipient of financial assistance, it is important to remember you are responsible for the Prime Consultant's/Contractor's soliciting of DBE businesses (DBE includes both MBEs and WBEs) for any procurements needed to complete your proposed project. This includes all construction, services, supplies and/or equipment.

If you encounter any errors, most can be corrected for compliance after the bid opening date as long as no awards have been made.

If you are unsure of any information presented to you during the review of the Prime Consultant(s)/Contractor(s) efforts, please contact the TWDB's DBE Coordinator for further instruction or recommendation at (512) 463-0991 or at [DBE@twdb.texas.gov](mailto:DBE@twdb.texas.gov).

Included in these instructions are steps to successfully perform your review of your Prime Consultant(s)/Contractor(s) DBE documentation for this project. Please read them carefully. The term Prime(s) refers to both Consultants and Contractors. The terms recipient of financial assistance, applicant, or entity may be used interchangeably.

---

## STEP 1. REVIEW ANY DRAFT SOLICITATIONS

Prior to the Prime Consultant(s)/Contractor(s) making any solicitations for subcontractor opportunities, you should review the draft solicitation to ensure that the TWDB's recommended solicitation statement, or the statement with the required solicitation components (see p. 8) is included. For reference, the following should appear in all solicitations:

*This contract is subject to the Environmental Protection Agency's (EPA) Disadvantaged Business Enterprise (DBE) Program, which includes EPA-approved fair share goals toward procurement of Minority and Women-owned Business Enterprise (M/WBE) businesses. EPA rules require that applicants and prime contractors make a good faith effort to award a fair share of contracts, subcontracts, and procurements to M/WBEs through demonstration of the six affirmative steps. For more details of the DBE Program and the current, applicable fair share goals, please visit [www.twdb.texas.gov/dbe](http://www.twdb.texas.gov/dbe).*

If this or another form of acceptable language is not included, procurements made through the solicitation may not be compliant with the EPA's DBE Program.

---

## STEP 2. ENSURE THAT ALL DOCUMENTATION HAS BEEN PROVIDED BY THE PRIME(S)

The Prime Consultant(s)/Contractor(s) should provide you, the Applicant:

- TWDB-0217 This form acknowledges that the Prime Consultant/Contractor understands that they **must** follow the DBE program when soliciting for subcontractors.
- TWDB-0216 If subcontractors are utilized, this form should be submitted. The form indicates all businesses solicited for procurement, their contact information, and their MBE/WBE status. The Prime Consultant/Contractor **must** include support documentation demonstrating they have met the Six Good Faith Efforts and followed the correct steps for their selected method(s) of solicitation.
- TWDB-0373 If subcontractors are utilized, this form should be submitted. The form identifies the businesses awarded a procurement contract, their contact information, their MBE/WBE status, an actual or anticipated executed contract date, and contract amount. If any MBE/WBE businesses are contracted, the Prime Consultant/Contractor should include the DBE certification along with the form as support documentation. You **must** review the certification to ensure that the certification comes from an agency acceptable to the EPA. A list of acceptable DBE certification agencies may be found at [www.twdb.texas.gov/dbe](http://www.twdb.texas.gov/dbe). *Note: Any businesses operating as brokers may not be listed on the TWDB-0373 as an MBE or WBE.*<sup>3</sup>

---

## STEP 3. REVIEW THE SUPPORTING SOLICITATION DOCUMENTATION

The DBE solicitation should specifically describe the construction work, supplies, equipment, or services that are being solicited, and include the following required DBE language:

*This contract is subject to the Environmental Protection Agency's (EPA) Disadvantaged Business Enterprise (DBE) Program, which includes EPA-approved fair share goals toward procurement of Minority and Women-owned Business Enterprise (M/WBE) businesses. EPA rules require that applicants and prime contractors make a good faith effort to award a fair share of contracts, subcontracts, and procurements to M/WBEs through demonstration of the six affirmative steps. For more details of the DBE Program and the current, applicable fair share goals, please visit [www.twdb.texas.gov/dbe](http://www.twdb.texas.gov/dbe).*

Similar to the solicitation you performed for your Prime Consultant(s)/Contractor(s), the TWDB recommends solicitations for subcontractors be published at least 30 days prior to the bid closing date to allow sufficient time for potential subcontractors to submit bids and proposals. You should ensure that a copy of the actual solicitation found within/on the publication or web page is kept with their and your project files. This information will be needed for submission to the TWDB for official review of DBE compliance.

If the Prime Consultant(s)/Contractor(s) is advertising through a newspaper, it is important to ensure that they have retained a publisher's affidavit showing the dates of the posting(s) and the content of the advertisement. You should also ensure that this support information is saved with their and your project files, as the information will be needed for submission to the TWDB for official review. Be mindful of your applicable local and state procurement laws as they relate to your Prime Consultant's/Contractor's solicitation of subcontractors.

---

<sup>3</sup>A broker is a business that does not perform, manage, or supervise the work of its sub/contract in a manner consistent with the normal business practices for sub/contractors in its line of business.

---

**STEP 3A. REVIEW PHONE LOGS, FAX TRANSMITTAL LOGS, EMAIL DELIVERY RECIEPTS, MEETING SIGN-IN SHEET, MINORITY MEDIA POSTING, INTERNET & WEB POSTINGS, TRADE ASSOCIATION PUBLICATIONS AND OTHER GOVERNMENT PUBLICATIONS**

If the Prime Consultant(s)/Contractor(s) chose one of the solicitation methods mentioned above, they are **required** to provide support documentation showing that the TWDB's required solicitation statement was included or mentioned. Review all support documentation to ensure that this requirement was met.

---

**STEP 4. CLOSE COORDINATION**

It is important for you and your Prime Consultant(s)/Contractor(s) to coordinate closely during all phases of your project to ensure that all DBE requirements have been met. Failure to do so may result in project delays or the inability to make use of State Revolving Fund program funds.

---

**STEP 5. NOW THAT YOU HAVE COMPLETED YOUR REVIEW**

Once you have completed your review of the Prime Consultant's/Contractor's solicitation efforts and have determined that they are in compliance, you should keep all documentation on file in the event it is requested for review by the TWDB or the U.S. Environmental Protection Agency. All of the Prime Consultant's/Contractor's DBE solicitation documentation should be included in the DBE compliance package submitted to TWDB.

---

**CONTRACT ADMINISTRATION REQUIREMENTS**

Each procurement contract signed by a recipient of financial assistance must include the following term and conditions:

The contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.

Additionally, the following U.S. EPA DBE regulations apply:

- A recipient **must** require its Prime Contractor to pay its subcontractor for satisfactory performance no more than 30 days from the Prime Contractor's receipt of payment from the recipient.
- A recipient **must** be notified in writing by its Prime Contractor prior to any termination of a DBE subcontractor for convenience by the Prime Contractor.
- If a DBE subcontractor fails to complete work under the subcontract for any reason, the recipient **must** require the Prime Contractor to employ the Six Good Faith Efforts described in 40 CFR § 33.301 if soliciting a replacement subcontractor.
- A recipient **must** require its Prime Contractor to employ the Six Good Faith Efforts even if the Prime Contractor has achieved its fair share objectives.

## DBE PROGRAM LINKS

TWDB DBE Program Webpage: [www.twdb.texas.gov/dbe](http://www.twdb.texas.gov/dbe)

DBE Rules (40 CFR Parts 33, 35, and 40): [www.epa.gov/sites/production/files/2013-09/documents/final\\_dbe\\_rule.pdf](http://www.epa.gov/sites/production/files/2013-09/documents/final_dbe_rule.pdf)

MBE/WBE Certification Fact Sheet: [www.epa.gov/sites/production/files/2013-09/documents/mbe\\_wbe\\_certification.pdf](http://www.epa.gov/sites/production/files/2013-09/documents/mbe_wbe_certification.pdf)

How do I get DBE Certified & Finding Certified firms:

[https://19january2017snapshot.epa.gov/sites/production/files/2013-09/documents/dbe\\_certification\\_process.pdf](https://19january2017snapshot.epa.gov/sites/production/files/2013-09/documents/dbe_certification_process.pdf)

DBE Frequently Asked Questions: <https://www.epa.gov/grants/frequently-asked-questions-disadvantaged-business-enterprises>

## APPENDIX A. GLOSSARY

- **Applicant** – a public or private utility seeking Equivalency funding from the Clean Water State Revolving Fund or the Drinking Water State Revolving Fund.
- **Broker** – a business that does not perform, manage, or supervise the work of its contract or subcontract in a manner consistent with the normal business practices for contractors or subcontractors in its line of business.
- **Construction** – the erection, alteration, or repair (including dredging, excavating, and painting) of buildings, structures, or other improvements to real property, and activities in response to a release or a threat of release of a hazardous substance into the environment, or activities to prevent the introduction of a hazardous substance into a water supply.
- **Disadvantaged Business Enterprises (DBE)** – an entity owned or controlled by a socially and economically disadvantaged individual as described by Public Law 102-389 (42 U.S.C. §4370d) or an entity owned and controlled by a socially and economically disadvantaged individual as described by Title X of the Clean Air Act Amendments of 1990 (42 U.S.C. §7601 note); a Small Business Enterprise (SBE); a Small Business in a Rural Area (SBRA); or a Labor Surplus Area Firm (LSAF), a Historically Underutilized Business (HUB) Zone Small Business Concern, or a concern under a successor program. This term includes Minority Business Enterprises (MBE) and Women-owned Business Enterprises (WBE).
- **Entity** – See “Applicant”.
- **Equipment** – items procured under a financial assistance agreement as defined by applicable regulations for the particular type of financial assistance received.
- **Equivalency funding** – a term used to categorize projects within the Clean Water State Revolving Fund program identified by the TWDB whose cumulative funding is in an amount equal to the capitalization grant awarded by EPA to the TWDB.
- **Fair Share Goals / Objectives** – are goals based upon the capacity and availability of qualified, certified MBEs and WBEs within the state for the procurement categories of construction, equipment, services, and supplies, compared to the number of all qualified entities within the state for the same procurement categories. The goals are negotiated every three years between the TWDB and EPA. A fair share objective is not a quota; a recipient cannot be penalized for not meeting its fair share objectives; and, once negotiated, fair share objectives remain in place for three years.
- **Fair Share Policy** – a policy maintained by the EPA relating to the “Good Faith Effort” to award a fair share of the work to contractors who are certified as Minority Business Enterprises (MBEs) and Women-owned Business Enterprises (WBEs) whenever procuring construction, supplies, services and equipment. The TWDB’s current negotiated fair share goals are available on page 2. Recipients are not required to meet the fair share goals; however, the EPA may take remedial action under 40 CFR §33.105 for failure to comply with DBE program requirements.
- **Financial Assistance Agreement** – a binding legal agreement between the recipients of financial assistance and the TWDB outlining the terms and conditions for the funding provided and the recipient’s obligations.

- **Force Account** – the part of the expense account of a public body (as a municipality) resulting from the employment of a labor force usually distinguished from the part resulting from contracting similar services with commercial agencies
- **Historically Underutilized Business (HUB)** – a small business organization that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.
- **Minority Business Enterprises (MBE)** – a Disadvantaged Business Enterprise (DBE) owned and/or controlled by a socially and economically disadvantaged individual other than a Small Business Enterprise (SBE), Labor Surplus Area Firm (LSAF), Small Business in Rural Areas (SBRA), or Women-owned Business Enterprise (WBE).
- **Prime Consultant** – consultants awarded a contract by the recipient of financial assistance, typically during the initial phases of a project; primarily the project’s consulting Engineer, Financial Advisor, and Bond/Legal Counsel.
- **Prime Contractor** – contractors awarded a contract by the recipient of financial assistance, typically during the construction phase of a project.
- **Procurement** – the act of obtaining construction work, equipment, services, or supplies.
- **Recipient** – See “Applicant”.
- **Services** – a contractor’s labor, time or efforts provided in a manner consistent with normal business practices which do not involve the delivery of a specific end item, other than documents (e.g., reports, design drawings, specifications).
- **Six Affirmative Steps** – also referred to as the Six Good Faith Efforts, are the steps every recipient of financial assistance through the State Revolving Fund must follow, along with their Prime Consultant(s)/Contractor(s), in order to adequately offer the opportunity to make bids for work paid using these funds.
- **Six Good Faith Efforts** – See “Six Affirmative Steps”.
- **Small Business Enterprises (SBE)** – an organization, including its affiliates, independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR Part 121.
- **Subcontractor** – a business awarded a contract by a Prime Consultant/Contractor for specific work, services, supplies, or equipment.
- **Supplies** – items procured under a financial assistance agreement as defined by applicable regulations for the particular type of financial assistance received.
- **Women-owned Business Enterprises (WBE)** – a business which is at least 51% owned or controlled by women for purposes of EPA’s 8% statute or a business concern which is at least 51% owned and controlled by women for purposes of EPA’s 10% statute. Determination of ownership by a married woman in a community property jurisdiction will not be affected by her husband’s 50% interest in her share. Similarly, a business which is more than 50% owned by a married man will not become a qualified WBE by virtue of his wife’s 50% interest in his share.

**APPENDIX B. EXAMPLE ADVERTISEMENTS (REQUEST FOR QUALIFICATIONS)**

**ADVERTISEMENT / INVITATION FOR BIDS REQUEST FOR SEALED PROPOSALS**

The City of \_\_\_\_ will receive bids for the Lift Station and Sanitary Sewer Rehabilitation Project at \_\_\_\_ City Hall until 3:00 p.m., on the \_\_\_\_ day of \_\_\_\_, 2011, at the City \_\_\_\_ City Hall located on 123 Example St., \_\_\_\_, Texas 78516, at which time all bids will be received and publicly opened and read. Bids received after the closing time will be returned unopened. NO PRE-BID CONFERENCE WILL BE CONDUCTED.

This contract is subject to the Environmental Protection Agency's (EPA) Disadvantaged Business Enterprise (DBE) Program, which includes EPA-approved fair share goals toward procurement of Minority and Women-owned Business Enterprise (M/WBE) businesses. EPA rules require that applicants and prime contractors make a good faith effort to award a fair share of contracts, subcontracts, and procurements to M/WBEs through demonstration of the six affirmative steps. For more details on the DBE Program and the current, applicable fair share goals, please visit [www.twdb.texas.gov/dbe](http://www.twdb.texas.gov/dbe).

This contract is to be funded through a loan obtained from the Texas Water Development Board as part of the Clean Water State Revolving Fund. There are a number of special provisions for this funding that bidders, by submitting a bid, acknowledge understanding, including the following: A contract is contingent upon release of funds from the TWDB. Any contract or contracts awarded under this Notice to Bidders are expected to be funded in part by financial assistance from the TWDB. Neither the State of Texas nor any of its departments, agencies, or employees are or will be a party to this Invitation for Bids or any resulting contract.

Equal Opportunity in Employment - All qualified applicants will receive consideration for employment without regard to race, color, national origin, sex, religion, age, or handicap. The contractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under TWDB financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach, which may result in the termination of the awarded financial assistance.

The project will consist of the following:

The City of \_\_\_\_ intends to replace/install/upgrade electrical controls and minor rehab for eight (8) lift stations remove and replace approx. 616 linear feet of 8" sanitary sewer line, remove and replace approx. 1,758 linear feet of 12" clay sanitary sewer line with a 15" PVC sanitary sewer line, remove and replace ten (10) 48" brick manholes with 48" fiberglass manholes.

Contract Documents, including Drawings and Technical Specifications are on file at the City of \_\_\_\_ City Hall or at the office of \_\_\_\_, at \_\_\_\_, \_\_\_\_. Please direct questions to \_\_\_\_\_.

Copies of the Contract Documents and Construction Plans can be examined at \_\_\_\_\_. Bidders, suppliers or sub-contractors may obtain copies of the Contract Documents for bidding purposes at \_\_\_\_ for a non-refundable payment of \$100.00 per set, checks made payable to \_\_\_\_\_. A Certified check or bank draft, payable to the order of City of \_\_\_\_\_ or negotiable U.S. Government Bonds (at par value) or a satisfactory Bid Bond executed by the Bidder of an acceptable surety in an amount equal to five percent (5%) of the total bid shall be submitted with each bid.

The City of \_\_\_\_\_ reserves the right to reject any or all bids or to waive any informality in the bidding. Bids may be held by the City of \_\_\_\_\_ for a period not to exceed sixty (60) days from the date of the bid opening for the purpose of reviewing the bids and investigating the bidders' qualifications prior to the contract award.

Small and minority firms are encouraged to submit bids for this project.

**ENGINEER, BOND COUNSEL, and FINANCIAL ADVISOR - REQUEST FOR QUALIFICATIONS**

The City of \_\_\_\_\_ requests the submission of qualifications statements, which will lead to the possible award of a contract to provide \_\_\_\_\_ services for a project involving the City's Water Treatment Facilities.

Scope of Work

The services to be obtained for the **Engineer** require: \_\_\_\_\_

The services to be obtained for the **Bond Counsel** require: \_\_\_\_\_

The services to be obtained for the **Financial Advisor** require: \_\_\_\_\_

Guidelines for Content of Qualification Statements

DO NOT INCLUDE COST INFORMATION with the qualification statement. Responses that include cost or pricing information will be rejected and will not be considered by the City.

Detailed instructions on preparation of the qualification statement must be obtained from the City. For more information on preparing and submitting the qualification statement, contact \_\_\_\_\_, City Administrator, at \_\_\_\_\_. This information should be requested as soon as possible in order to allow time to prepare the document and comply with the procedures.

Submittal Deadline

Three copies of the qualifications statement must be filed with the City by: \_\_\_\_\_.

Minimum Qualifications and Selection Criteria

The City will evaluate the proposals to determine which firm has the best qualifications.

Contract Terms and Negotiation Schedule

The consultant for *Bond Counsel, Financial Advisor, Engineering and Rate Consultant* services is expected to negotiate an agreement for services that is acceptable to the City. If an acceptable contract cannot be negotiated, the City may formally end negotiations and begin negotiating with the next highest qualified person or firm.

This contract is contingent upon release of funds from the Texas Water Development Board (TWDB). Any contract or contracts awarded under this Invitation for Bid (IFB) or Request for Qualifications (RFQ) are expected to be funded in part by a loan from the TWDB. Neither the State of Texas nor any of its departments, agencies, or employees are or will be a party to this IFB, RFQ, or any resulting contract. RFQ's are issued in accordance with Section 2254 of the Texas Government Code (Professional Services Act).

This contract is subject to the Environmental Protection Agency's (EPA) Disadvantaged Business Enterprise (DBE) Program, which includes EPA-approved fair share goals toward procurement of Minority and Women-owned Business Enterprise (M/WBE) firms. EPA rules require that applicants and prime contractors make a good faith effort to award a fair share of contracts, subcontracts, and procurements to M/WBEs through demonstration of the six affirmative steps. For more details of the DBE Program and the current, applicable fair share goals, please visit [www.twdb.texas.gov/dbe](http://www.twdb.texas.gov/dbe).

The City of \_\_\_\_\_ is an affirmative action/equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age, handicap or national origin. Small, minority, and women-owned business enterprises are encouraged to submit proposals.

## APPENDIX C. HOW TO SEARCH THE CMBL AND HUB DIRECTORY

Visit the [Texas Procurement and Support Services \(TPASS\)](https://mycpa.cpa.state.tx.us/tpasscmbsearch/index.jsp) website at <https://mycpa.cpa.state.tx.us/tpasscmbsearch/index.jsp>.

The screenshot shows a web browser window titled "Window on State Government" displaying the "Centralized Master Bidders List (CMBL) & Historically Underutilized Business (HUB) Search" page. The page includes a search form with the following fields and options:

- Search:** Radio buttons for "CMBL only", "HUBs on CMBL", "HUBs not on CMBL", "HUB Mentor Protege", and "All Vendors".
- Vendor ID:** Text input field.
- Vendor Number:** Text input field.
- Vendor Name:** Text input field with a dropdown menu for "begins with" and a "Name" label.
- Include Inactive Vendors:** Checkmark box.
- Small Businesses Only:** Radio buttons for "Yes" and "No".
- Selection 1, 2, 3:** Each has fields for "Class Code", "Item", and "District".
- Class Code | Item Code | District:** A row of three text input fields.
- Texas County:** Dropdown menu.
- City:** Text input field with a dropdown menu for "begins with".
- Zip:** Text input field with a dropdown menu for "begins with".
- Sort by:** Dropdown menu set to "Vendor Name".
- Output as:** Dropdown menu set to "Detail List".
- Results:** Text input field set to "return all matches".
- Submit Search:** Button.

On the right side, there is a "Help" icon with a tooltip that says "Click this Help icon for information and tips on generating search lists and files". Below the tooltip is a "Related Links" section with the following links:

- CMBL Registration
- HUB Directory
- HUB Mentor Protege Agreement Listing
- System for Award Management (EPLS)
- Debarred Vendors List

At the bottom of the page, there is a note: "Output may contain coded information in Hub Status and Reason Off CMBL".

NIGP Class-Item Codes contain 5-digits. To obtain the five-digit code, combine the three-digit class code with its corresponding two-digit item number.

**Step 1:** Go to the TPASS website.

**Step 2:** Select the type of business search: CMBL only, HUBs on CMBL, HUBs not on CMBL, HUB mentor protégé, or all vendors.

**Step 3:** Enter the respective commodity class, item and district codes (please see next page for related water and wastewater commodities) and click on Search.

**Step 4:** On the following page, select the information you would like to obtain from the database: contact information, address, business description, gender, ethnicity, and website.

**Step 5:** Search Results will appear with the requested information.

**Step 6:** Click on the Vendor ID or business name to pull up detailed vendor information to confirm HUB status (A = Active, N = Not HUB), contact information, and registered commodities.

**Step 7:** Gather physical or email contact information from the search results list.

## Example National Institute of Government Purchasing (NIGP) Commodity Codes

Class	Item(s)	Description
890 (Water Supply, Groundwater, Sewage Treatment, and Related Equipment)	01 - 95	Equipment (various)
907 (Architectural and Engineering Services – Non-Professional)	42	Geotechnical – Soils
907 (Architectural and Engineering Services – Non-Professional)	75	Site Assessment and Site Field Observation
907 (Architectural and Engineering Services – Non-Professional)	83	Testing Services
912 (Construction Services, General)	16	Boring, Drilling, Testing, Soundings
912 (Construction Services, General)	23	Construction, General (Backfill Services, Digging, Ditching, Road Grading, Rock Stabilization)
912 (Construction Services, General)	40	Demolition Services
912 (Construction Services, General)	44	Excavation Services
912 (Construction Services, General)	75	Quality Control Testing Services
913 (Construction Services, Heavy – Including Maintenance and Repairs)	39	Construction, Pipe Culvert
913 (Construction Services, Heavy – Including Maintenance and Repairs)	40	Construction, Pipeline
913 (Construction Services, Heavy – Including Maintenance and Repairs)	45	Construction, Sewer and Storm Drain
913 (Construction Services, Heavy – Including Maintenance and Repairs)	47	Construction, Sidewalk and Driveway
913 (Construction Services, Heavy – Including Maintenance and Repairs)	56	Construction, Utility/Underground Projects
913 (Construction Services, Heavy – Including Maintenance and Repairs)	59	Construction and Upgrades, Wastewater Treatment Plant
913 (Construction Services, Heavy – Including Maintenance and Repairs)	60	Construction, Water System/Plants, Main and Service Line
913 (Construction Services, Heavy – Including Maintenance and Repairs)	63	Lime Slurry Removal Services
913 (Construction Services, Heavy – Including Maintenance and Repairs)	77	Maintenance and Repair, Pipe Culvert
913 (Construction Services, Heavy – Including Maintenance and Repairs)	78	Maintenance and Repair, Pipeline (Includes Removal and Relocation)
913 (Construction Services, Heavy – Including Maintenance and Repairs)	81	Maintenance and Repair, Sewer and Storm Drain (Including Removal)
913 (Construction Services, Heavy – Including Maintenance and Repairs)	82	Maintenance and Repair, Sidewalk and Driveway (Including Removal)
913 (Construction Services, Heavy – Including Maintenance and Repairs)	89	Maintenance and Repair, Utility/Underground Projects
913 (Construction Services, Heavy – Including Maintenance and Repairs)	91	Maintenance and Repair, Wastewater Treatment Plant
913 (Construction Services, Heavy – Including Maintenance and Repairs)	92	Maintenance and Repair, Water System, Main and Service Line
914 (Construction Services, Trade (New Construction))	27 -88	Construction Trades (various)
918 (Consulting Services)	16	Archeological Consulting
918 (Consulting Services)	41	Energy Conservation Consulting

Class	Item(s)	Description
918 (Consulting Services)	42	Engineering Consulting
918 (Consulting Services)	43	Environmental Consulting
918 (Consulting Services)	46	Feasibility Studies (Consulting)
918 (Consulting Services)	55	Geological Consulting and Study
918 (Consulting Services)	72	Lakes, Rivers, and Other Waterway Management Consulting Services
918 (Consulting Services)	74	Legal Consulting
918 (Consulting Services)	97	Utilities: Gas, Water, Electric Consulting
925 (Engineering Services, Professional)	17	Civil Engineering
925 (Engineering Services, Professional)	24	Desalination (Process and Facilities) Engineering
925 (Engineering Services, Professional)	28	Drainage Engineering
925 (Engineering Services, Professional)	33	Engineer Services, Professional
925 (Engineering Services, Professional)	34	Energy Management Engineering
925 (Engineering Services, Professional)	35	Environmental Engineering
925 (Engineering Services, Professional)	36	Engineering Services (Not Otherwise Classified)
925 (Engineering Services, Professional)	37	Facilities Design Services, Engineering
925 (Engineering Services, Professional)	44	General Construction: Management, Scheduling, Cost Estimation – Engineering
925 (Engineering Services, Professional)	45	Geological Engineering
925 (Engineering Services, Professional)	46	Geotechnical Engineering
925 (Engineering Services, Professional)	58	Irrigation; Drainage: Flood Control/Engineering
925 (Engineering Services, Professional)	61	Land Development and Planning/Engineering
925 (Engineering Services, Professional)	70	Municipal Engineering
925 (Engineering Services, Professional)	77	Pollution Control Engineering
925 (Engineering Services, Professional)	78	Power Generation, Transmission, Distribution - Engineering
925 (Engineering Services, Professional)	83	Sanitary Engineering
925 (Engineering Services, Professional)	87	Sewage Collection, Treatment, and Disposal Engineering
925 (Engineering Services, Professional)	96	Waste Water Treatment Engineering
925 (Engineering Services, Professional)	97	Water Supply, Treatment, and Distribution/Engineering
926 (Environmental and Ecological Services)	14	Air Pollution Control Services (Including Data Collection Research and Development, etc.)
926 (Environmental and Ecological Services)	23	Auditing Services, Environment
926 (Environmental and Ecological Services)	29	Contaminated Groundwater Services (Including Discharge Pipe Installation)
926 (Environmental and Ecological Services)	40	Ecological Services
926 (Environmental and Ecological Services)	41	Ecosystem Development, Management and Protection Services
926 (Environmental and Ecological Services)	42	Environmental Services (Not Otherwise Classified)
926 (Environmental and Ecological Services)	52	Impact Studies, Environmental
926 (Environmental and Ecological Services)	62	Noise Testing Services
926 (Environmental and Ecological Services)	70	Permitting Services, Environmental
926 (Environmental and Ecological Services)	72	Planning and Advisory Services, Environmental
926 (Environmental and Ecological Services)	83	Site Assessment, Environmental
926 (Environmental and Ecological Services)	85	Soil, Soil Vapor, and Groundwater Sampling and Analysis (Including Disposal)
926 (Environmental and Ecological Services)	88	Storm Water Discharge Testing Services
926 (Environmental and Ecological Services)	90	Subsurface Testing, Environmental

Class	Item(s)	Description
926 (Environmental and Ecological Services)	91	Tank Testing and Disposal Services, Storage (Including Underground Types)
926 (Environmental and Ecological Services)	94	Water Pollution Services
926 (Environmental and Ecological Services)	95	Water/Wastewater Conservation Services
926 (Environmental and Ecological Services)	96	Wetland Delineations (Including Assessments)
946 (Financial Services)	25	Banking Services
946 (Financial Services)	30	Cash/Securities and Bonding Services
946 (Financial Services)	38	Custom Brokerage Services (Including Stocks and Bonds)
946 (Financial Services)	48	Financial Advisor
946 (Financial Services)	49	Financial Services (Not Otherwise Classified)
946 (Financial Services)	56	Investment Management Services
946 (Financial Services)	60	Loan Administration
946 (Financial Services)	66	Monetary Systems (Including Analysis, Liquidity, Policy, etc.)
946 (Financial Services)	75	Securities and Commodities Market Services (Including Direct or Indirect Purchases, Sales and Transactions of Equities, Fixed Income, Options, and Derivatives on an Agency and Principal Basis)
946 (Financial Services)	85	Trusts, Estates and Agency Accounts
958 (Management Services)	05	Asset Management Services
958 (Management Services)	12	Bio-Solids Management Services
958 (Management Services)	26	Construction Management Services
958 (Management Services)	39	Financial Management Services
958 (Management Services)	77	Project Management Services
958 (Management Services)	85	Soil and Land Management Services (Including Testing, Protection, Preparation, Planning, etc.)
961 (Miscellaneous Services, No 1. ( Not Otherwise Classified))	01	Archeological Services
961 (Miscellaneous Services, No 1. ( Not Otherwise Classified))	32	Environmental Impact Studies
961 (Miscellaneous Services, No 1. ( Not Otherwise Classified))	49	Legal Services, Attorney
961 (Miscellaneous Services, No 1. ( Not Otherwise Classified))	85	Utility Services, Water
961 (Miscellaneous Services, No 1. ( Not Otherwise Classified))	91	Water and Petroleum Pipeline Services
962 (Miscellaneous Services, No 2. ( Not Otherwise Classified))	14	Blue Printing Services: Blue Prints, Blue Line, Large Engineering
962 (Miscellaneous Services, No 2. ( Not Otherwise Classified))	39	Hauling Services
962 (Miscellaneous Services, No 2. ( Not Otherwise Classified))	50	Leak Detection Services: Gas, Water, Chemical
962 (Miscellaneous Services, No 2. ( Not Otherwise Classified))	52	Mapping Services (Including Cartography and Surveying Services (Not Aerial – See 902-33 and 905-10 for Aerial Mapping and Surveying Services)
962 (Miscellaneous Services, No 2. ( Not Otherwise Classified))	92	Video Scanning of Sewers, Water Wells, etc.
962 (Miscellaneous Services, No 2. ( Not Otherwise Classified))	94	Water Services, Bottled and Bulk Delivery (Tanker Services)

<b>Class</b>	<b>Item(s)</b>	<b>Description</b>
962 (Miscellaneous Services, No 2. ( Not Otherwise Classified))	96	Well Services (Including Oil, Gas, and Water): Drilling, Plugging, Consulting, Maintenance and Repair
968 (Public Works and Related Services)	18	Back Flow Preventer Testing Services
968 (Public Works and Related Services)	47	Inspection Services, Construction Type
968 (Public Works and Related Services)	63	Relocation and/or Removal Services for Utility Works
968 (Public Works and Related Services)	66	Right of Way Services (Including Title, Appraisal, Negotiation, Closing, Relocation, Condemnation, etc.)
968 (Public Works and Related Services)	73	Storm Drain Cleaning, Repair, and Sludge Removal Services
968 (Public Works and Related Services)	78	Tank Installation, Removal, Disposal, and Related Services (Including Septic and Underground Type)
968 (Public Works and Related Services)	91	Water Supply Analysis, Infrastructure Analysis, Water Quality Analysis, and Long-Term Planning
968 (Public Works and Related Services)	92	Water Supply Plant Operating and Monitoring System Services (Including Water Resources Development and Water Quality Management Services)
968 (Public Works and Related Services)	96	Water and Wastewater Treatment Services

**APPENDIX D. EXAMPLES OF DIRECT SOLICITATIONS**

**Example Call/Fax Log**

For facsimiles, a copy of one of the faxed information should be provided with the completed TWDB-0216 form submission.

**DBE Call Log  
City of Yaleville Water Treatment Plant Project  
DWSRF**

Date: 10/15/16  
 Contact: Carl Sagan, Manager  
 Company: Goldberg Instruments LLC  
 Phone No.: 313.555.7199  
 Certification: NOT a MBE/WBE  
 Comments: Requested a quote on lab equipment for water quality testing. Emailed the ad used in The Yaleville Herald classifieds.

Date: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Phone No.: \_\_\_\_\_  
 Certification: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Date: 10/15/16  
 Contact: Neil deGrasse Tyson, Owner  
 Company: N.E.G. Instruments, LLC  
 Phone No.: 313.555.1000  
 Certification: MBE, Certified by City of Austin  
 Comments: Requested a quote on lab equipment for water quality testing. Emailed the ad from The Yaleville Herald classifieds.

Date: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Phone No.: \_\_\_\_\_  
 Certification: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Date: 10/16/16  
 Contact: Michio Kaku, President  
 Company: Bottom Page Instrument Company  
 Phone No.: 313.557.4322  
 Certification: MBE, Certified by Texas D.O.T.  
 Comments: Requested a quote on lab equipment for water quality testing.

Date: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Phone No.: \_\_\_\_\_  
 Certification: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Date: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Phone No.: \_\_\_\_\_  
 Certification: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Date: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Phone No.: \_\_\_\_\_  
 Certification: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Date: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Phone No.: \_\_\_\_\_  
 Certification: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Date: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Phone No.: \_\_\_\_\_  
 Certification: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**Example Email**

**From:** Felix Stanton  
**Sent:** Monday, November 28, 2016 4:32 PM  
**To:** Rose Mendoza (rmendoza@shiplap.com)  
**Subject:** Yaleville WTP RFT

**Importance:** High

**Attachments:** Yaleville WTP Project RFT

Ms. Mendoza,

The City of Yaleville is seeking a response to this Request for Tender (RFT) for lab equipment for water quality testing.

**Example US Mail**

Along with the Certified mail receipts (shown below), a copy of one of the mailed letters should be provided with the completed TWDB-0216 form submission.

7011 3500 0000 7522 1288

**U.S. Postal Service™**  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ 00.45	0085
Certified Fee	\$2.95	15 Postmark Here
Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
<b>Total Postage &amp; Fees</b>	<b>\$ 03.40</b>	<b>12/12/2012</b>

Sent to: [Redacted]  
 Street, Apt. No. or PO Box No. [Redacted]  
 City, State, ZIP [Redacted]  
 PS Form 3800

**Thompson Terrace**  
**Colleyville, Texas 76034**

7011 3500 0000 7522 1285

**U.S. Postal Service™**  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ 00.45	0085
Certified Fee	\$2.95	15 Postmark Here
Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
<b>Total Postage &amp; Fees</b>	<b>\$ 03.40</b>	<b>12/12/2012</b>

Sent to: [Redacted]  
 Street, Apt. No. or PO Box No. [Redacted]  
 City, State, ZIP [Redacted]  
 PS Form 3800

**Northcross Drive, Suite 211**  
**Austin, Texas 78757**

7011 3500 0000 7522 1301

**U.S. Postal Service™**  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ 00.45	0085
Certified Fee	\$2.95	15 Postmark Here
Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
<b>Total Postage &amp; Fees</b>	<b>\$ 03.40</b>	<b>12/12/2012</b>

Sent to: [Redacted]  
 Street, Apt. No. or PO Box No. [Redacted]  
 City, State, ZIP [Redacted]  
 PS Form 3800

**Lost Oasis Hollow**  
**Austin, Texas 78759**

7011 3500 0000 7522 1312

**U.S. Postal Service™**  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ 00.45	0085
Certified Fee	\$2.95	15 Postmark Here
Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
<b>Total Postage &amp; Fees</b>	<b>\$ 03.40</b>	<b>12/12/2012</b>

Sent to: [Redacted]  
 Street, Apt. No. or PO Box No. [Redacted]  
 City, State, ZIP [Redacted]  
 PS Form 3800

**Turtle Creek Boulevard,**  
**Suite 1151**  
**Dallas, Texas 75219**

7011 3500 0000 7522 1325

**U.S. Postal Service™**  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ 00.45	0085
Certified Fee	\$2.95	15 Postmark Here
Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
<b>Total Postage &amp; Fees</b>	<b>\$ 03.40</b>	<b>12/12/2012</b>

Sent to: [Redacted]  
 Street, Apt. No. or PO Box No. [Redacted]  
 City, State, ZIP [Redacted]  
 PS Form 3800

**Southwest Freeway, Suite 227**  
**Sugar Land, Texas 77479**

To download this document, view [TWDB-0215](#) from the TWDB website.

FOR OFFICE USE ONLY: Commitment #

TWDB-0215  
Revised 08/14/2013

**TWDB-0215  
APPLICANT/ENTITY  
TEXAS WATER DEVELOPMENT BOARD  
AFFIRMATIVE STEPS CERTIFICATION and GOALS**

**I. PROJECT INFORMATION**

TWDB Project Number	Applicant/Entity Name	Total of TWDB Funding Request	Program Type (insert "X" for all that apply)	
			<input checked="" type="checkbox"/>	Drinking Water SRF (DWSRF)
			<input checked="" type="checkbox"/>	Clean Water SRF (CWSRF)

**II. GOOD FAITH EFFORT (Applicable to all PRIME contracts awarded by the applicant/entity)**

I understand that it is my responsibility to comply with all state and federal regulations and guidance in the utilization of Minority and Women-Owned Businesses in procurement. I certify that I will make a good faith effort to afford opportunities for Minority Business Enterprise (MBE), and Women-Owned Business Enterprise (WBE) by:

- Including qualified MBEs and WBEs on procurement solicitation lists
- Soliciting potential MBE's and WBE's
- Reducing contract size/quantities when economically feasible to permit maximum participation by MBE's and WBE's
- Establishing delivery schedules to encourage participation by MBE's and WBE's
- Using the services and assistance of the Small Business Administration, Minority Business Development Agency, U.S. Department of Commerce, and Texas Marketplaces
- Requiring all Prime Consultants/Contractors to follow steps 1-5 listed above in employing MBE and WBE Subcontractors

Signature - Applicant/Entity Representative	Title (print legibly)	Date

**III. PROJECT PARTICIPATION ESTIMATES**

The Cost Categories mentioned below are goals. These goals are neither standards nor quotas. Recipients of financial assistance are not required to meet the fair share objectives. They must, however, acknowledge that they are aware of and are actively pursuing the fair share objectives with their procurements.

Cost Category	Potential MBE Participation Goal	Potential WBE Participation Goal
Construction	19.44%	9.17%
Supplies	25.34%	8.82%
Equipment	16.28%	11.45%
Services	20.41%	13.66%

The fair share goals listed above are required by 40 CFR Part 33 Subpart D and are directly negotiated with EPA Region 6. Entities receiving federal financial assistance are subject to the TWDB's goals and may not be substituted with other agency or program goals.

**IV. TWDB APPROVAL SIGNATURE**

Signature indicates the form meets DBE Requirements.

DBE Coordinator	Approval Date

To download this document, view TWDB-0216 from the TWDB website.

Page 1 of 2

FOR OFFICE USE ONLY  
Commitment # \_\_\_\_\_

TWDB-0216  
Revised 11/13/2017

**TWDB-0216  
TEXAS WATER DEVELOPMENT BOARD  
AFFIRMATIVE STEPS SOLICITATION REPORT**

**I. PROJECT INFORMATION**

TWDB Project Number	Applicant/Entity Name	Total TWDB Funding Request	Program Type (insert "X" for all that apply)
			<input type="checkbox"/> Drinking Water SRF (DWSRF)
			<input type="checkbox"/> Clean Water SRF (CWSRF)

Project Name: \_\_\_\_\_  
 Solicitation By:  Applicant/Entity OR  Prime Contracted Business: \_\_\_\_\_  
 Project Phase:  Prior to Closing  Release of funding for PADs  Construction Contract# \_\_\_\_\_

**II. SOLICITATION METHOD(S) UTILIZED**

At least two methods of solicitation are required. Select the method(s) utilized for the solicitation. Copies of the actual postings, direct contact email/phone log, etc. must be attached to this form as support documentation for each method used. Failure to adequately follow these steps will result in the requirement to complete additional steps in order to become compliant.

- Newspaper Advertisements     Meetings or Conferences     Trade Association Publications  
 Minority Media     Internet & Web Postings     Other Government Publications  
 Direct Contact by Phone, Fax, USPS Mail, or Email\*

\*If using direct contact, entities must solicit to a **minimum of 3 businesses/firms** (at least one being a DBE) for each category of contract sought (i.e., construction, supplies, equipment, or services) to demonstrate a Good Faith Effort.

**III. PROJECT BIDDERS LIST:**

List on the following table, or provide on a separate list, each business entity directly solicited for procurement or that submitted a bid for consideration.

Instructions for Columns 1 - 4	1 - Full business name (line one) & point of contact (line two) 2 - Business address 3 - Telephone number 4 - Email address for the business
Instructions for Column 5	Enter one of the following procurement or contract categories: <b>CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES</b> For detailed definitions, review guidance document, TWDB-0210.
Instructions for Column 6	Enter the type of business: <b>MBE - Minority Business Enterprise, WBE - Women-owned Business Enterprise, or OTHER - Company or firm is Non-MBE or WBE</b>

**Notice:** Entities receiving State Revolving Fund financial assistance must create and maintain a Bidders List if the entity is subject to, or chooses to follow, competitive bidding. The Bidders List must include all firms that bid or quoted on contracts under EPA assisted projects, including both MBE/WBEs and non-MBE/WBEs. Entities must keep all Bidders Lists until project completion or the recipient is no longer receiving EPA funding under the loan, whichever is later. Entities with loans totaling less than \$250,000 during a state fiscal year are exempt from the Bidders List requirement, but must still meet DBE program requirements. The Bidders List requirement also applies to all Prime Contracted Businesses/Firms that make subcontracting.

To download this document, view [TWDB-0217](#) from the TWDB website.

FOR OFFICE USE ONLY: Commitment #	TWDB-0217 Revised 08/14/2013		
<b>[TWDB-0217</b> <b>TEXAS WATER DEVELOPMENT BOARD (TWDB)</b> <b>PRIME CONSULTANT/CONTRACTOR CERTIFICATION</b>			
<b>I. PROJECT INFORMATION</b>			
TWDB Project Number	Applicant/Entity Name	Total of TWDB Funding	Program Type (insert "X" for all that apply)
			<input type="checkbox"/> Drinking Water SRF (DWSRF) <input type="checkbox"/> Clean Water SRF (CWSRF)

Prime Consultant/Contractor: \_\_\_\_\_  
 Contract Number: \_\_\_\_\_ Contract Amount: \_\_\_\_\_

**II. GOOD FAITH EFFORT (Applicable to all subcontracts awarded by the prime contractor/consultant)**

I understand that it is my responsibility to comply with all state and federal regulations and guidance in the utilization of Minority and Women-owned Businesses in procurement. I certify that I will make a "good faith effort" to afford opportunities for Minority Business Enterprise (MBE), and Women-owned Business Enterprise (WBE) by:

1.	Including qualified MBEs and WBEs on procurement solicitation lists						
2.	Soliciting potential MBEs and WBEs						
3.	Reducing contract size/quantities when economically feasible to permit maximum participation by MBEs and WBEs						
4.	Establishing delivery schedules to encourage participation by MBEs and WBEs						
5.	Using the services and assistance of the Small Business Administration, Minority Business Development Agency, U.S. Department of Commerce, and Texas Marketplace						
6.	Submitting documentation to the Applicant/Entity to verify good faith effort, steps 1-5.						
<input type="checkbox"/>	<b>EXCEPTION:</b> As the Prime Consultant/Contractor, I certify that I have reviewed the contract requirements and found no available subcontracting opportunities. I also certify that I will fulfill 100 percent of the contract requirements with my own employees and resources. (Check if applicable)						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Signature – Prime Consultant/Contractor</td> <td style="width: 30%; padding: 5px;">Title (print legibly)</td> <td style="width: 20%; padding: 5px;">Certification Date</td> </tr> <tr> <td style="height: 30px;"></td> <td></td> <td></td> </tr> </table>	Signature – Prime Consultant/Contractor	Title (print legibly)	Certification Date			
Signature – Prime Consultant/Contractor	Title (print legibly)	Certification Date					

**III. PROJECT PARTICIPATION ESTIMATES**

The Cost Categories mentioned below are goals. These goals are neither standards nor quotas. Recipients of financial assistance are not required to meet the fair share objectives. They must, however, acknowledge that they are aware of and are actively pursuing the fair share objectives with their procurements.

Cost Category	Potential MBE Participation Goal	Potential WBE Participation Goal
<b>Construction</b>	<b>19.44%</b>	<b>9.17%</b>
<b>Supplies</b>	<b>25.34%</b>	<b>8.82%</b>
<b>Equipment</b>	<b>16.28%</b>	<b>11.45%</b>
<b>Services</b>	<b>20.41%</b>	<b>13.66%</b>

*The fair share goals listed above are required by 40 CFR Part 33 Subpart D and are directly negotiated with EPA Region 6. Entities receiving federal financial assistance are subject to the TWDB's goals and may not be substituted with other agency or program goals.*

**IV. TWDB APPROVAL SIGNATURE**

Signature indicates the form meets DBE Requirements.

DBE Coordinator	Approval Date

To download this document, view TWDB-0373 from the TWDB website.

Page 1 of 2

FOR OFFICE USE ONLY  
Commitment # \_\_\_\_\_

TWDB-0373  
Revised 11/13/2017

**TWDB-0373  
TEXAS WATER DEVELOPMENT BOARD  
PARTICIPATION SUMMARY**

**I. PROJECT INFORMATION**

TWDB Project Number	Applicant/Entity Name	Total TWDB Funding Request	Program Type (insert "X" for all that apply)
			<input checked="" type="checkbox"/> Drinking Water SRF (DWSRF)
			<input checked="" type="checkbox"/> Clean Water SRF (CWSRF)

Project Name: \_\_\_\_\_

Solicitation By:  Applicant/Entity OR  Prime Contracted Business: \_\_\_\_\_

Project Phase:  Prior to Closing  Release of funding for PADs  Construction Contract # \_\_\_\_\_

Instructions	
Column 1	Enter the full name, street address, city/state/zip for each firm awarded a contract for the project.
Column 2	Enter one of the following procurement or contract categories: <b>CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES</b>
Column 3	Enter the type of business: <b>MBE (Minority Business Enterprise), WBE (Women-owned Business Enterprise), or OTHER (NOTE: OTHER = Company or firm is Non-MBE or WBE)</b>
Column 4	Enter the exact amount of the awarded contract.
Column 5	Enter the exact date the contract was executed or the proposed date of contract execution.

If valid MBE/WBE firms are awarded contracts, a copy of their certification is required to be attached with this form for each MBE/WBE business listed.

**Notice:** Brokers may not be listed below as an MBE or WBE. A broker is a firm that does not perform, manage, or supervise the work of its sub/contract in a manner consistent with the normal business practices for sub/contractors in its line of business. For more specifics, review guidance document, TWDB-0210.

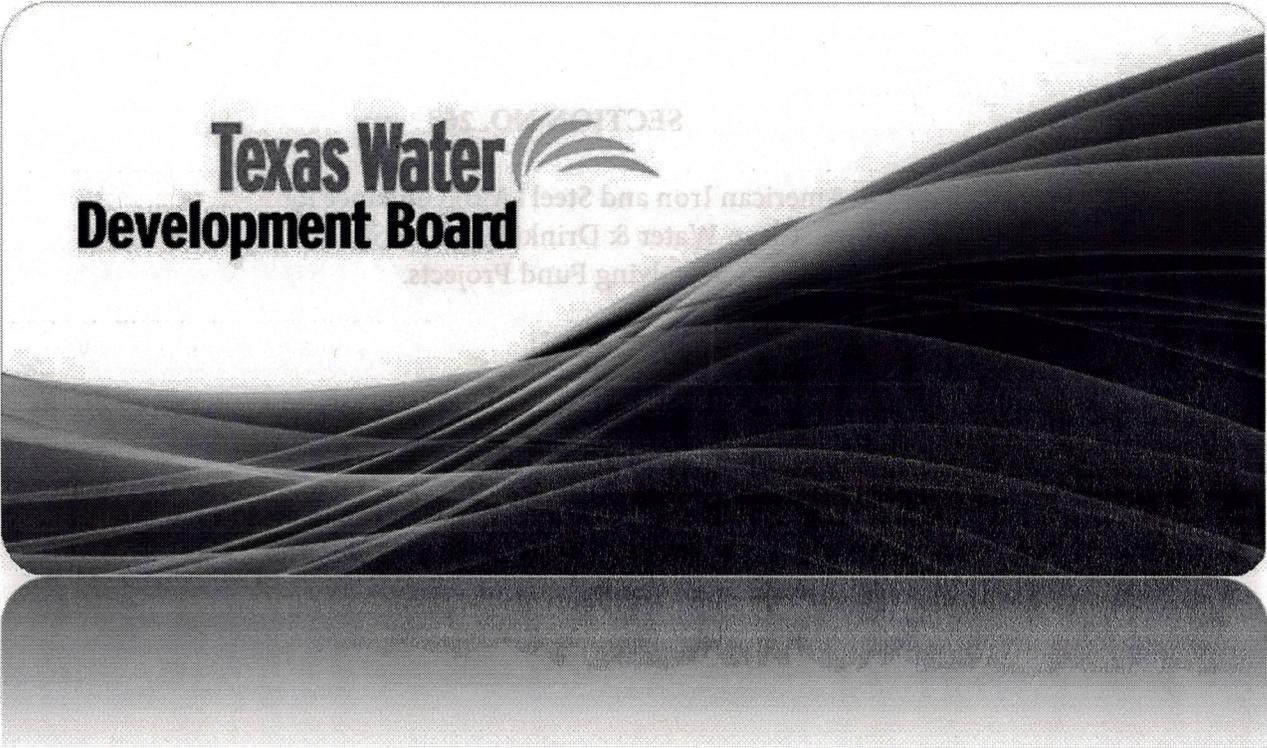
**II. LIST OF ACTUAL CONTRACTS/PROCUREMENTS**

	Column 1 Name & Address of Contracted Firm/Vendor	Column 2 Procurement Category	Column 3 MBE/WBE Status	Column 4 Contract Amount (\$)	Column 5 Contract Execution Date
1.					
2.					
3.					
4.					
5.					
6.					

*(Table continues on the next page)*

**SECTION NO. 26**

**American Iron and Steel (AIS) Guidance for  
Clean Water & Drinking Water State  
Revolving Fund Projects.**



**Texas Water  
Development Board**

**American Iron and Steel (AIS)  
Guidance for  
Clean Water & Drinking Water  
State Revolving Fund Projects**

This document is not a comprehensive representation of the federal requirements. For complete details of the federal requirements visit: <https://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement>

In any instance when there may be a discrepancy between this guidance and the actual federal requirements, program participants must adhere to the federal requirements.

TWDB-1106  
Rev 05/19

# Table of Contents

---

Overview .....	4
Effective Dates .....	4
United States (U.S.) Environmental Protection Agency (EPA) Guidance .....	5
Covered Iron and Steel Products .....	5
Waivers .....	6
Waiver Process .....	6
Compliance .....	7
TWDB Compliance Procedures .....	7
Recommendations and Best Management Practices .....	9
Attachment 1: American Iron and Steel Requirement Guidance (March 20, 2014) .....	10
Attachment 2: Questions and Answers Part 1: Valves and Hydrants (May 30, 2014, <u>updated</u> <u>October 27, 2015</u> ) .....	11
Attachment 3: Questions and Answers Part 2: Products, Projects and Process (September 10, 2014) .....	12
Attachment 4: Questions and Answers Part 3: Plans and specifications dates, Refinancing and Coatings (March 16, 2015) .....	13
Attachment 5: EPA Approved Waivers .....	14
a. De Minimis waiver pursuant to Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA) (April 15, 2014) .....	14
b. Nationwide Plans and Specs waiver pursuant to Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA) (April 15, 2014) .....	15
c. Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (February 18, 2015) .....	16
d. National Product Waiver for Pig Iron and Direct Reduced Iron (February 18, 2015) .....	17
e. National Product Waiver for Minor Components in Iron and Steel Products (with Cost Ceiling) (October 27, 2015) .....	18
f. One-Year Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts Used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (February 22, 2016)..	19
g. One-Year Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts Used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (January 18, 2017)....	20

h. Final Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts Used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (August 24, 2018) .....	21
Attachment 6: EPA Waiver Request .....	22
Information Checklist for Waiver Request .....	22
EPA Checklist for Waiver Request .....	23
Attachment 7: Construction Contract Language .....	24
Attachment 8: Sample Certifications.....	25
Final Manufacturer Certification - Version 1 – AIS Products Delivered to Project Site .....	26
Final Manufacturer Certification - Version 2 – AIS Products Purchased from Supplier .....	27
Step Certification .....	28
Step Certification Letter .....	28
Step Certification Log .....	29
De Minimis Log .....	30
Attachment 9: American Iron and Steel Certificate .....	31

## Overview

It is the intent of the Texas Water Development Board (TWDB) to ensure that applicants, consultants and contractors are provided with procedures and recommendations for implementation of the American Iron and Steel (AIS) provisions for the Clean and Drinking Water State Revolving Funds. These provisions are currently contained in Section 608 of the Federal Water Pollution Control Act (33 U.S.C. §1388) for the Clean Water State Revolving Fund (CWSRF) program and in federal laws, including the federal appropriation acts and Section 1452(a)(4) of the Safe Drinking Water Act (42 U.S.C. §300j-12(a)(4)), as applicable, for the Drinking Water State Revolving Fund (DWSRF) program.

The AIS provisions require CWSRF and DWSRF assistance recipients to use iron and steel products that are produced in the United States for projects for the construction, alteration, maintenance, or repair of a public water system or treatment works. **For the CWSRF program, the AIS requirements apply only to the construction, alteration, maintenance, or repair of treatment works<sup>1</sup> projects. For the DWSRF program, the AIS requirements apply to all public water system projects.** Based on the statutory provisions, the effective date depends on the date the TWDB loan was closed and varies by program.

## Effective Dates

### CWSRF:

If the loan closes on or after October 1, 2014:	
(a) If the Plans and Specifications for the project were approved by TWDB prior to June 10, 2014	Exempt from AIS
(b) If the Plans and Specifications for the project were approved by TWDB on or after June 10, 2014	AIS applies

### DWSRF:

The American Iron and Steel provisions generally apply to any financial assistance closed on or after January 17, 2014. There may be statutory exceptions to the AIS requirements based on the date of approval of plans and specifications by a state agency. The entity should contact the project's Team Manager or Project Manager if there are questions regarding AIS exceptions.

### CWSRF and DWSRF

Planning, Acquisition, and Design funded separately from the Construction Phase:

If the original loan for the planning and/or design of a project closed prior to January 17, 2014, then the AIS provision would not apply to the construction phase of the same project.

<sup>1</sup>. "Treatments works" is defined in 33 U.S. Code § 1292 (2).

## **United States (U.S.) Environmental Protection Agency (EPA) Guidance**

EPA has provided guidance through the following resources:

1. American Iron and Steel Requirement Guidance (March 20, 2014) (**Attachment 1**)
2. Questions and Answers Part 1: Valves and Hydrants (May 30, 2014) (**Attachment 2**)
3. Questions and Answers Part 2: Products, Projects and Process (September 10, 2014) (**Attachment 3**)
4. Questions and Answers Part 3: Plans and specifications dates, Refinancing and Coatings (March 16, 2015) (**Attachment 4**)
5. EPA's American Iron and Steel webpage - <https://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement>

Please contact TWDB with any questions regarding applicability of AIS requirements.

### **Covered Iron and Steel Products**

If the project receiving CWSRF or DWSRF funds must comply with the AIS requirements, then all covered iron and steel products must be made in the United States, no matter whether the CWSRF or DWSRF was the source of funds used to purchase a particular covered iron and steel product. The entity may not use funds from non-State Revolving Fund sources, including the entity's own funds, to pay for a non-compliant iron or steel product used in the project.

AIS requirements apply to the following products made primarily of iron or steel, permanently incorporated into the public water system or treatment works:

- Lined or unlined pipes or fittings;
- Manhole Covers;
- Municipal Castings;
- Hydrants;
- Tanks;
- Flanges;
- Pipe clamps and restraints;
- Valves;
- Structural steel;
- Reinforced precast concrete; and
- Construction materials.

Mechanical and electrical components, equipment, and systems are not considered iron and steel products, and are exempt from AIS requirements. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system.

## **Waivers**

AIS provisions permit EPA to issue waivers for a case or category of cases where EPA finds (1) that applying these requirements would be inconsistent with the public interest; (2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

EPA has granted nationwide waivers, which are attached hereto as **Attachment 5**:

1. De Minimis waiver pursuant to Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA) (April 15, 2014). The De Minimis waiver permits the use of products when they occur in de minimis incidental components to the project. Funds used for de minimis incidental components cumulatively may not exceed 5% of the total cost of the materials used in and incorporated into the project; the cost of an individual item may not exceed 1% of the total cost of materials used in and incorporated into the project.
2. Nationwide Plans and Specs waiver pursuant to Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA) (April 15, 2014)
3. Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (February 18, 2015)
4. National Product Waiver for Pig Iron and Direct Reduced Iron (February 18, 2015)
5. National Product Waiver for Minor Components in Iron and Steel Products (with Cost Ceiling) (October 27, 2015)
6. One-Year Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts Used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (February 22, 2016)
7. One-year Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts Used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (January 18, 2017)
8. Final Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts Used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (August 24, 2018)

EPA's American Iron and Steel webpage includes any waivers issued -

<https://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement>

## ***Waiver Process***

EPA has implemented a waiver application process to allow the State, on behalf of the applicant, to apply for waivers of the AIS requirement directly to EPA Headquarters. Only waiver requests received from the State will be considered. A waiver application may be submitted at any time during the project, however until a waiver is granted by EPA, the AIS requirement stands.

In order to apply for a project waiver, the assistance recipient should email the request in the form of a Word document (.doc) to the TWDB project engineer. Proper and sufficient documentation must be provided by the assistance recipient.

After receiving an application for waiver of the AIS requirements, EPA Headquarters will publish the request on its website for 15 days and receive informal comment. EPA Headquarters will then determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver – that it is quantitatively and qualitatively sufficient – and to determine whether or not to grant the waiver.

EPA will notify TWDB that a waiver request has been approved or denied as soon as such a decision has been made. Approved waivers will be posted on the EPA website. The applicant should keep a copy of the signed waiver in their AIS Certification File.

## **Compliance**

In order to ensure compliance with the AIS requirement, specific AIS contract language must be included in each contract, including the construction material purchase agreements. The applicant should be aware that AIS requirements will apply to the project through the TWDB commitment resolution.

It is the applicant's responsibility to assure that all construction and purchase contracts are executed in compliance with AIS, and a record of all forms and certifications necessary to demonstrating compliance with AIS is maintained. To demonstrate compliance with AIS requirements either the final manufacturer that delivers the iron or steel product to the worksite, vendor, or contractor, may provide a certification asserting that all manufacturing processes occurred in the United States, or the applicant may use step certification process, similar to the Federal Highway Administration. The applicant is also responsible for monitoring De Minimis Logs to ensure all iron and steel products listed on the log meet the requirements of the EPA's De Minimis waiver.

TWDB relies on self-certification by the applicant to document compliance with AIS, and requires the applicant to submit a Monthly American Iron and Steel Certificate of Compliance Submittal with each outlay report covering requests for funds associated within construction contracts. Failure to submit the Monthly American Iron and Steel Certificate of Compliance could delay the release of funds.

### ***TWDB Compliance Procedures***

In order to be in compliance and satisfy TWDB's requirements for implementation of AIS requirements, entities will need to do the following:

1. The applicant shall prepare and submit any waiver request to the TWDB project engineer. TWDB will forward all requests to EPA. Any waiver to the AIS requirements must be issued by the EPA. A checklist detailing the types of information required for a waiver to be

processed, and EPA's waiver determination checklist is attached as **Attachment 6**.

2. Applicants shall include the following language in the advertisement for bids for all applicable construction contracts funded by the TWDB's DWSRF or CWSRF:

*For CWSRF, include - Any contract(s) awarded under this Invitation for Bids is/are subject to the American Iron and Steel (AIS) requirements of Section 608 of the Federal Water Pollution Control Act (33 U.S.C. §1388)."*

*For DWSRF, include - "Any contract(s) awarded under this Invitation for Bids is/are subject to the American Iron and Steel (AIS) requirements of federal law, including federal appropriation acts and Section 1452(a)(4) of the Safe Drinking Water Act (42 U.S.C. §300j-12(a)(4)), as applicable."*

3. Applicants shall include the AIS requirements in all applicable construction contracts, which are attached as **Attachment 7**.
4. Applicants shall include the following language on the General Notes Plan Sheet(s).

*For CWSRF, include - "This project is subject to the American Iron and Steel (AIS) requirements of Section 608 of the Federal Water Pollution Control Act (33 U.S.C. §1388). All iron and steel products for construction, alteration, maintenance, or repairs incorporated in these plans must be produced in the United States"*

*For DWSRF, include - "This project is subject to the American Iron and Steel (AIS) requirements of federal law, including federal appropriation acts and Section 1452(a)(4) of the Safe Drinking Water Act (42 U.S.C. §300j-12(a)(4)), as applicable. All iron and steel products for construction, alteration, maintenance, or repairs incorporated in these plans must be produced in the United States"*

5. The applicant and prime construction contractor must obtain certifications from the final manufacturer that delivers the iron and steel product to the worksite, vendor, or contractor asserting that all manufacturing processes occurred in the United States (Version 1 of the sample letter on page 26). For products not delivered to the project site, the applicant and prime contractor must obtain the Final Manufacturer's certification from the supplier (Version 2 of the sample letter on page 27). The supplier must certify that the projects being provided to the contractor for the project are AIS compliant and the contractor and applicant must retain copies of the supplier's certification. Note: EPA has determined that a comparable manufacturer's certification letter that makes reference to the USDA Rural Utilities Service Water and Environmental Programs' American Iron & Steel requirements instead of EPA's AIS requirements would be acceptable.

6. The prime construction contractor and applicant are responsible for inspecting iron and steel products for any readily visible identification labels indicating the country of origin.
7. The prime construction contractor and applicant will be required to maintain a file that contains the certifications from the final manufacturers, any approved waivers, and the De Minimis log. This file must be available for review by TWDB representatives. Sample Certification letters, step certification log, and De Minimis Log are included in **Attachment 8**.
8. The applicant must submit a Monthly American Iron and Steel Certificate of Compliance Submittal with each outlay report requesting funds associated with construction contracts (i.e., covering construction-related invoices), attached as **Attachment 9**.
9. The applicant will provide a final certification, after the completion of the construction contract and prior to issuance of a Certificate of Approval by the TWDB, stating the project was completed in compliance with the AIS requirements, **Attachment 10**.

### ***Recommendations and Best Management Practices***

The following recommendations are not required but should be considered by the applicant in implementation of the AIS requirements:

1. AIS requirements should be addressed in the engineering feasibility study to determine availability of AIS products, and determine if any requests for waivers need to be initiated.
2. While a waiver application may be submitted at any time during the project, the applicant should consider EPA's review schedule (15-day comment period plus review time) when scheduling projects. It is not recommended to request a waiver after the advertisement for bids or start of construction unless absolutely necessary.
3. Develop procedures for maintaining a record of AIS documentation.
4. Distinguish separate bid items that must comply with AIS requirements on the Bid Form.
5. Consideration of AIS compliance documentation when developing the contractor submittal procedures for shop drawings, material lists, and manufacturer certifications, etc.
6. Discuss AIS requirements during pre-bid conference and pre-construction meetings, to address contractor's responsibilities, and availability of iron and steel products needed to complete the project.

Attachment 1 - American Iron and Steel Requirement Guidance (March 20, 2014)  
(Double click on the embedded Acrobat version below for a clear copy of the entire document)



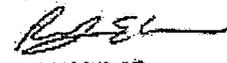
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

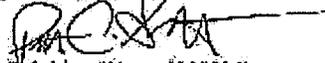
MAR 20 2014

OFFICE OF WATER

**MEMORANDUM**

**SUBJECT:** Implementation of American Iron and Steel provisions of P.L. 113-76, Consolidated Appropriations Act, 2014

**FROM:** For Andrew D. Sawyers, Director   
Office of Wastewater Management (4201M)

Peter C. Grevall, Director   
Office of Ground Water and Drinking Water (4601M)

**TO:** Water Management Division Directors  
Regions I - X

P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), includes an "American Iron and Steel (AIS)" requirement in section 436 that requires Clean Water State Revolving Loan Fund (CWSRF) and Drinking Water State Revolving Loan Fund (DWSRF) assistance recipients to use iron and steel products that are produced in the United States for projects for the construction, alteration, maintenance, or repair of a public water system or treatment works if the project is funded through an assistance agreement executed beginning January 17, 2014 (enactment of the Act), through the end of Federal Fiscal Year 2014.

Section 436 also sets forth certain circumstances under which EPA may waive the AIS requirement. Furthermore, the Act specifically exempts projects where engineering plans and specifications were approved by a State agency prior to January 17, 2014.

The approach described below explains how EPA will implement the AIS requirement. The first section is in the form of questions and answers that address the types of projects that must comply with the AIS requirement, the types of products covered by the AIS requirement, and compliance. The second section is a step-by-step process for requesting waivers and the circumstances under which waivers may be granted.

Internet Address (URL): <http://www.epa.gov>  
Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Postconsumer, Process Chlorine Free Recycled Paper

Attachment 2 - Questions and Answers Part 1: Valves and Hydrants (May 30, 2014,  
updated October 27, 2015)

(Double click on the embedded Acrobat version below for a clear copy of the entire document)

May 30, 2014

**American Iron & Steel (AIS) Requirement of the Consolidated Appropriations Act of 2014 (Public Law  
113-76) Q&A Part 1: Valves and Hydrants**

**Q1: Does the AIS requirement of the Consolidated Appropriations Act of 2014 require minor, miscellaneous components within a covered valve or hydrant, such as nuts, bolts and washers, to be made in the U.S.?**

**A1: The definition of "iron and steel products" that must either be domestically produced or subject to a waiver in order to comply with the AIS requirement of the Consolidated Appropriations Act of 2014**

**Question 1 has been superseded by the National Minor Components Waiver signed on October 27, 2015. This waiver can be found here: [https://www.epa.gov/sites/production/files/2015-10/documents/minor\\_components\\_waiver\\_signed\\_10\\_27\\_15\\_508.pdf](https://www.epa.gov/sites/production/files/2015-10/documents/minor_components_waiver_signed_10_27_15_508.pdf)**

**products" that must either be made domestically, or otherwise must comply with the AIS requirement. The minor components represent a very small percentage of the iron and steel in the hydrants and valves that are defined as "iron and steel products." These minor components, which EPA has learned through our research are currently difficult to find domestically in sufficient quantity, such as minor nuts, bolts, and washers, are not required to be of U.S. origin.**

**Q2: Do the actuators/control systems attached to valves have to comply with the AIS requirement, or just the valve itself?**

**A2: The AIS requirement of the Consolidated Appropriations Act of 2014 includes valves in its definition of "iron and steel products" that recipients must make certain are either domestically made or subject to a waiver in order to comply with the AIS requirement. Actuators and control systems are not included in the definition. Only the valve itself is required to be either domestically produced or subject to a waiver in order to be compliant with the AIS requirement. Absent a waiver, EPA considers valves and hydrants to be domestically produced if the significant iron and steel components of a covered valve or hydrant—the body, bonnet, shoe, stem, and wedge/disc/gate/ball—if made of iron or steel, is produced in the U.S. See Q1 above for a discussion about minor components. The valves and actuators, while often purchased and shipped together, are two unique products that are manufactured separately and typically attached together during the final step of the process. Valves are included in the definition of "iron and steel products" in the AIS requirement. Actuators, whether manual, electric, hydraulic or pneumatic, are not listed as an "iron and steel product" under the AIS requirement of the Consolidated Appropriations Act of 2014, nor are they considered construction materials. Therefore, they do not need to be domestically produced in the U.S. in order to comply with the requirement.**

1 of 2

Attachment 3 - Questions and Answers Part 2: Products, Projects and Process  
(September 10, 2014)

(Double click on the embedded Acrobat version below for a clear copy of the entire document)

September 10, 2014

American Iron & Steel (AIS) Requirement of the Consolidated Appropriations Act of 2014  
(Public Law 113-76)

Q&A Part 2

**PRODUCT QUESTIONS**

**1. Q: Do all fasteners qualify for de minimis exemption?**

**A:** No. There is no broad exemption for fasteners from the American Iron and Steel (AIS) requirements. Significant fasteners used in SRF projects are not subject to the de minimis waiver for projects and must comply with the AIS requirements. Significant fasteners include fasteners produced to industry standards (e.g., ASTM standards) and/or project specifications, special ordered or those of high value. When bulk purchase of unknown-origin fasteners that are of incidental use and small value are used on a project, they may fall under the national de minimis waiver for projects. The list of potential items could be varied, such as big-box/hardware-store-variety screws, nails, and staples. The key characteristics of the items that may qualify for the de minimis waiver would be items that are incidental to the project purpose (such as drywall screws) and not significant in value or purpose (such as common nails or brads). See the following: [http://water.epa.gov/grants\\_funding/upload/Deminimis-Waiver-04-15-14.pdf](http://water.epa.gov/grants_funding/upload/Deminimis-Waiver-04-15-14.pdf).

EPA also clarifies that minor components of two listed products – valves and hydrants – may not need to meet the AIS requirements if the minor components comprise a very small quantity of minor, low-cost fasteners that are of unknown origin. See EPA's questions and answers on the subject at the following: [http://water.epa.gov/grants\\_funding/upload/AIS-QandA-Part-1-Valves-and-Hydrants-final.pdf](http://water.epa.gov/grants_funding/upload/AIS-QandA-Part-1-Valves-and-Hydrants-final.pdf).

**2. Q: Does PCCP pipe have to be domestically produced?**

**A:** Yes. Pre-stressed concrete cylinder pipe (PCCP) or other similar concrete cylinder pipes would be comparable to pre-cast concrete which is specifically listed in the Consolidated Appropriations Act of 2014 as a product subject to the AIS requirement.

**3. Q: If the iron or steel is made from recycled metals will the vendor/supplier have to provide a certification document certifying that the recycled metals are domestically produced?**

**A:** No. Recycled source materials used in the production of iron and steel products do not have to come from the U.S. Iron or steel scrap, for instance, are considered raw materials that may come from anywhere. While certification is not required for the raw material, EPA does recommend that additional final processing of iron and steel be certified to have occurred in the U.S.

**4. Q: Do tanks used for filtration systems, if delivered to the construction site separately and then filled with filtration media onsite, have to be domestically produced?**

Attachment 4 - Questions and Answers Part 3: Plans and specifications dates,  
Refinancing and Coatings

(March 16, 2015)

(Double click on the embedded Acrobat version below for a clear copy of the entire document)

March 2015

American Iron & Steel Requirement for the Clean Water and Drinking Water State Revolving Funds

Q&A Part 3

*For CWSRF and DWSRF: On January 17, 2014, Public Law 113-76, the "Consolidated Appropriations Act, 2014," was enacted and included an American Iron and Steel requirement for the Clean Water and Drinking Water State Revolving Fund programs through the end of fiscal year 2014. Since then, the AIS requirement has continued for both programs, but through different statutes, with a few changes as described in the questions and answers provided below.*

*For CWSRF: On June 10, 2014, the Water Resources Reform and Development Act amended the Clean Water Act to include permanent requirements for the use of AIS products in CWSRF assistance agreements. Section 608 of the CWA now contains requirements for AIS that repeat those of the Consolidated Appropriations Act, 2014. All CWSRF assistance agreements must comply with Section 608 of the CWA for implementation of the permanent AIS requirement.*

*For DWSRF: On December 16, 2014, the President signed Public Law 113-235, the "Consolidated and Further Continuing Appropriations Act, 2015," which provides fiscal year 2015 full-year appropriations through September 30, 2015. This law continues the requirement for the use of AIS products in DWSRF assistance agreements through September 30, 2015.*

**CWSRF PROGRAM**

- 1. Q:** The Water Resources Reform and Development Act amended the Clean Water Act to include permanent requirements for the use of AIS for CWSRF funded assistance agreements. Does the CWA include an exemption for plans and specifications approved prior to the enactment of the legislation similar to the exemption included in the Consolidated Appropriations Act (CAA) 2014?

**A:** Yes. The WRRDA amendment to the CWA, which included AIS requirements, included a similar exemption as the CAA 2014. For any CWSRF assistance agreement signed on or after October 1, 2014, if the plans and specifications were approved prior to June 10, 2014 (the enactment of WRRDA), then the project is exempt from AIS requirements. For assistance agreements signed prior to October 1, 2014, the previous dates in the CAA 2014 apply (see March 20, 2014, AIS guidance document).

If a project does not require approved engineering plans and specifications, the bid advertisement date will count in lieu of the plans and specifications approval date for purposes of this exemption in Section 608 (f).

The following table summarizes AIS exemptions based on the plans and specifications approval date for CWSRF funded projects.

3/16/2015

## Attachment 5 – EPA Approved Waivers

- a. De Minimis waiver pursuant to Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA) (April 15, 2014)

*(Double click on the embedded Acrobat version below for a clear copy of the entire document).*



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON D.C. 20460

OFFICE OF WATER

### DECISION MEMORANDUM

**SUBJECT:** De Minimis Waiver of Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA), 2014

**FROM:** Nancy K. Stoner  
Acting Assistant Administrator

The EPA is hereby granting a nationwide waiver pursuant to the "American Iron and Steel (AIS)" requirements of P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), section 436 under the authority of Section 436(b)(1) (public interest waiver) for de minimis incidental components of eligible water infrastructure projects. This action permits the use of products when they occur in de minimis incidental components of such projects funded by the Act that may otherwise be prohibited under section 436(a). Funds used for such de minimis incidental components cumulatively may comprise no more than a total of 5 percent of the total cost of the materials used in and incorporated into a project; the cost of an individual item may not exceed 1 percent of the total cost of the materials used in and incorporated into a project.

P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), includes an "American Iron and Steel" (AIS) requirement in section 436 that requires Clean Water State Revolving Loan Fund (CWSRF) and Drinking Water State Revolving Loan Fund (DWSRF) assistance recipients to use specific domestic iron and steel products that are produced in the United States if the project is funded through an assistance agreement executed beginning January 17, 2014 (enactment of the Act), through the end of Fiscal Year 2014, unless the agency determines it necessary to waive this requirement based on findings set forth in Section 436(b). The Act states, "[t]he requirements shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency... finds that— (1) applying subsection (a) would be inconsistent with the public interest" 436(b)(1).

In implementing section 436 of the Act, the EPA must ensure that the section's requirements are applied consistent with congressional intent in adopting this section and in the broader context of the purposes, objectives, and other provisions applicable to projects funded under the SRF. Water infrastructure projects typically contain a relatively small number of high-cost components incorporated into the project. In bid solicitations for a project, these high-cost components are generally described in detail via project specific technical specifications. For these major components, utility owners and their contractors are generally familiar with the conditions of availability, the potential alternatives for each detailed specification, the approximate cost, and the country of manufacture of the available components.

Internet Address (URL) - <http://www.epa.gov>  
Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Postconsumer Process Chlorine Free Recycled Paper

- b. Nationwide Plans and Specs waiver pursuant to Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA) (April 15, 2014)  
(Double click on the embedded Acrobat version below for a clear copy of the entire document)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF WATER

**DECISION MEMORANDUM**

**SUBJECT:** Plans and Specifications Waiver of Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA), 2014

**FROM:** Nancy K. Stoner  
Acting Assistant Administrator

The EPA is hereby granting a nationwide waiver of the American Iron and Steel requirement pursuant to Section 436(b)(1) (public interest waiver) of the Consolidated Appropriations Act (CAA), 2014, for eligible projects that had engineering plans and specifications submitted to an appropriate state agency prior to and including January 17, 2014, the date of enactment of the CAA, and approved between and including January 17, 2014, and the date of this waiver, where the state agency that approved such plans and specifications did so under the normal course of business for that agency. This action permits the use of non-domestic iron and steel products in such projects funded by a Clean or Drinking Water State Revolving Fund that may otherwise be prohibited under section 436.

If a project does not require approved engineering plans and specifications, the bid advertisement date will count in lieu of the plans and specifications approval date for purposes of this national waiver.

The basis for the nationwide waiver is that due to the uncertainty about whether an American Iron and Steel requirement would be included in this year's appropriation, potential assistance recipients did not have the opportunity to plan for a possible American Iron and Steel requirement. Until detailed guidance was issued, potential assistance recipients were unable to solicit bids from construction firms with appropriate definitions of key terms contained in the CAA language. Additionally, projects that submitted engineering plans and specifications prior to and including January 17, 2014, without knowledge of the American Iron and Steel requirement, and with the anticipation that such plans would be quickly approved, but such approval did not occur until on or after January 17, 2014, would be required to redesign elements of the project, investigate potential domestic products, revise engineering drawings and bid specifications, and resubmit such plans and specifications for approval, thereby delaying the initiation of construction substantially. Those projects which do not require approved plans and specifications, but were bid prior to the guidance being issued, also could be required to rebid the project or submit change orders to comply with the new requirements, which would also delay initiation of construction.

1

Internet Address (URL): <http://www.epa.gov>  
Recycled/Recyclable • Printed with Vegetable Oil Based Ink on 100% Postconsumer, Process Chlorine Free Recycled Paper

- c. Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (February 18, 2015)  
(Double click on the embedded Acrobat version below for a clear copy of the entire document)



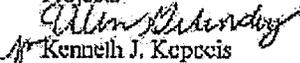
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

FEB 18 2015

OFFICE OF WATER

**DECISION MEMORANDUM**

**SUBJECT:** Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles for State Revolving Fund Projects.

**FROM:**   
Kenneth J. Keppis  
Deputy Assistant Administrator

The U.S. Environmental Protection Agency is hereby granting a national product waiver pursuant to the "American Iron and Steel" provisions of the Clean Water Act and Public Law 113-215, the "Consolidated and Further Continuing Appropriations Act, 2015."<sup>1</sup> The waiver permits the use of non-domestically produced stainless steel nuts and bolts in balling-type pipe couplings, restraints, joints, flanges and repair saddles in iron and steel products for projects funded by a Clean Water or Drinking Water State Revolving Fund that may otherwise be prohibited absent this waiver. This national product waiver is short-term, applying to the covered products if those products are purchased up until one year after the waiver's signature date. The waiver is retroactive and also applies to products purchased before the signature date. Covered products purchased prior to the waiver's signature date or within the one-year period may be used subsequent to the waiver expiration date.

**Coverage:** The specific product categories covered by this waiver include bolted expansion joints, bolted dismantling joints, bolted pipe couplings, bolted pipe restraints, bolted pipe flanges, bolted flange adapters, bolted pipe repair or service saddles, bolted mechanical joints, and pipe hangers and supports. Non-domestic stainless steel nuts and bolts may be incorporated into these specific products; however, all other iron and steel components in these products, unless subject to a waiver, must still meet the AIS requirements. In other words, this waiver does not exempt the whole product, or any of the main iron or steel components such as the ring, sleeve, body, flange spool or mechanical joint, from the AIS requirements just because stainless steel nuts and bolts are used. Any project that receives funds from the CWSRF or DWSRF since the enactment of P.L. 113-76, the "Consolidated Appropriations Act, 2014," is required to comply with the AIS provisions.

<sup>1</sup> Absent a waiver, all treatment works and drinking water facilities that are constructed, in whole or in part, with funds from the CWSRF or the DWSRF, must use American made iron and steel. EPA is allowed under certain circumstances to provide waivers of this requirement.

- d. National Product Waiver for Pig Iron and Direct Reduced Iron (February 18, 2015)  
(Double click on the embedded Acrobat version below for a clear copy of the entire document)



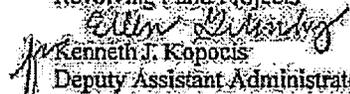
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

FEB 18 2015

OFFICE OF WATER

**DECISION MEMORANDUM**

**SUBJECT:** National Product Waiver for Pig Iron and Direct Reduced Iron for State Revolving Fund Projects

**FROM:**   
Kenneth J. Kopocis  
Deputy Assistant Administrator

The U.S. Environmental Protection Agency is hereby granting a national product waiver pursuant to the "American Iron and Steel" provisions of the Clean Water Act and Public Law 113-235, the "Consolidated and Further Continuing Appropriations Act, 2015," for certain intermediate goods used in the manufacture of iron and steel products. This waiver permits the use of pig iron and direct reduced iron manufactured outside of the United States in domestic manufacturing processes for iron and steel products used in projects funded by a Clean Water or Drinking Water State Revolving Fund that may otherwise be prohibited absent this waiver. The waiver is retroactive and thus also applies to the use of non-domestic pig iron and direct reduced iron before the signature date.

**Background:** Pig iron and direct reduced iron are intermediate products of iron and steel manufacturing used as material feed sources in iron and steel foundries and steel mills. Pig iron is a product of iron ore smelting in a blast furnace. It is made from molten iron, which has been cast in the shape of "pigs" as it comes from the blast furnace. Direct reduced iron ore is produced from iron ore, pellets or fines, which are reduced in a solid state using natural gas. Hot-briquetted iron, or HBI, is a compacted form of direct reduced iron with enhanced physical characteristics for shipment and storage.

**Coverage:** This waiver permits the use of iron and steel products that were manufactured using non-domestic pig iron and direct reduced iron in projects that receive funds from either the CWSRF or DWSRF. Any project that received or will receive funds from the CWSRF or DWSRF beginning with the enactment of P.L. 113-76, the "Consolidated Appropriations Act, 2014," may use this waiver for iron and steel that use these intermediate goods.

**Rationale:** The AIS provisions require CWSRF and DWSRF assistance recipients to use specific domestic iron and steel products that are produced in the United States if the project is funded

<sup>1</sup>Absent a waiver, all treatment works and drinking water facilities that are constructed, in whole or in part, with funds from the CWSRF or the DWSRF, must use American made iron and steel. EPA is allowed under certain circumstances to provide waivers of this requirement.

Internet Address (URL): <http://www.epa.gov>  
Recycled/Recyclable: (Printed with Vegetable Oil Based Ink on 100% Post Consumer, Process Chlorine Free, Recycled Paper)

- e. National Product Waiver for Minor Components in Iron and Steel Products (with Cost Ceiling)  
(October 27, 2015)  
(Double click on the embedded Acrobat version below for a clear copy of the entire document)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OCT 27 2015

OFFICE OF WATER

**DECISION MEMORANDUM**

**SUBJECT:** National Product Waiver for Minor Components within Iron and Steel Products (with Cost Ceiling) for State Revolving Fund Projects

**FROM:** Kenneth J. Kopceis *Kenneth J. Kopceis*  
Deputy Assistant Administrator

The U.S. Environmental Protection Agency is hereby granting a national product waiver pursuant to the "American Iron and Steel" provisions of the Clean Water Act and Public Law 113-235, the "Consolidated and Further Continuing Appropriations Act, 2015," (hereinafter referred to as "the Acts") for minor components within a product under an established cost ceiling.<sup>1</sup> The waiver will permit projects funded by the Clean Water State Revolving Fund or Drinking Water State Revolving Fund to use non-domestically produced miscellaneous minor components within an otherwise domestically produced iron and steel product for up to 5 percent of the total material cost of the product. These products could be prohibited absent this waiver. This waiver is retroactive, and so also applies to products purchased before the signature date of this waiver.

**Coverage:** The items covered by this waiver include miscellaneous minor components within iron and steel products as defined in the AIS provisions of the Acts. The specific minor components in covered iron and steel products will vary by product and manufacturer. Pursuant to this waiver, non-domestically produced miscellaneous minor components comprising up to 5 percent of the total material cost of an otherwise domestically produced iron and steel product may be used. This waiver does not exempt the whole product from the AIS requirements, and the primary iron or steel components of the product must be produced domestically. Unless subject to a separate waiver, all other iron and steel components in these products must still meet the AIS requirements. Valves and hydrants are also subject to the cost ceiling requirements described here. This waiver supersedes the EPA's previous guidance issued on May 30, 2014, (Question 1) related to minor components in valves and hydrants.

The coverage of this waiver is different from that of the existing national de minimis waiver. While the national de minimis waiver covers entire products (when those products are generally of low cost and incidental to the construction of the project), this waiver covers minor components within an iron and steel product. In addition, the national de minimis waiver is intended for assistance recipients to use for their projects, while this minor components waiver is intended to allow manufacturers to certify that their products comply with the AIS requirements.

<sup>1</sup> Absent a waiver, all treatment works and drinking water facilities that are constructed, in whole or in part, with funds from the CWSRF or the DWSRF, must use American made iron and steel. The EPA is allowed under certain circumstances to provide waivers of this requirement.

- f. One-Year Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts Used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (February 22, 2016)  
(Double click on the embedded Acrobat version below for a clear copy of the entire document)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

FEB 22 2016

OFFICE OF WATER

**DECISION MEMORANDUM**

**SUBJECT:** One-Year Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges and Saddles for State Revolving Fund Projects

**FROM:** Joel Beauvais  
Deputy Assistant Administrator

A handwritten signature in black ink that reads "Joel Beauvais".

The U.S. Environmental Protection Agency hereby grants a one-year extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges and Saddles for State Revolving Fund Projects, pursuant to the "American Iron and Steel" requirements of the Clean Water Act Section 608 and P.L. 114-113, the "Consolidated Appropriations Act, 2016." The original waiver was signed on February 18, 2015. With the one-year extension, the waiver will expire February 18, 2017. This waiver permits the use of non-domestically produced stainless steel nuts and bolts in bolting-type pipe couplings, restraints, joints and repair saddles in iron and steel products for projects funded by a Clean Water or Drinking Water State Revolving Fund that may otherwise be prohibited absent this waiver.

The original, approved waiver (attached) provides details regarding the specific types of products covered by this waiver as well as the rationale for issuance of the original waiver. This national product waiver extension is short-term, applying to the covered products if those products are purchased up until February 18, 2017.

**Rationale:** The EPA reassessed the market for and supply of stainless steel nuts and bolts for the products of interest and was unable to gather sufficient evidence that there is an adequate domestic supply of stainless steel nuts and bolts for the subject products. Through the research effort, the agency found that the domestic supply of stainless steel nuts and bolts has increased since fall 2014 and there may be manufacturers that have the capability to meet the demand for stainless steel nuts and bolts. However, manufacturers were generally unable, or unwilling, to provide information about their production capacity. The agency did not receive evidence that there is an adequate national availability of stainless steel nuts and bolts.

In addition, the agency received five responses from manufacturers and suppliers after posting a draft version of this Decision Memorandum during a 15-day public comment period. Most comments were in favor of the waiver extension. Comments in support of the waiver extension claimed a remaining significant shortage in the supply of stainless steel nuts and bolts.

Internet Address (URL) - <http://www.epa.gov>  
Recycled/Recyclable - Filled with Vegetable Oil Based Ink from 100% Postconsumer, Process Chlorine Free, Recycled Paper

- g. One-year Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts Used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (January 18, 2017)  
(Double click on the embedded Acrobat version below for a clear copy of the entire document)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20450

JAN 19 2017

OFFICE OF WATER

**DECISION MEMORANDUM**

**SUBJECT:** One-Year Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges and Saddles for State Revolving Fund Projects

**FROM:** Michael H. Shapiro *Michael Shapiro*  
Deputy Assistant Administrator

The U.S. Environmental Protection Agency hereby grants a one-year extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges and Saddles for State Revolving Fund Projects, pursuant to the "American Iron and Steel" requirements of the Clean Water Act Section 608 and Public Law 114-254, the "Further Continuing and Security Assistance Appropriations Act, 2017." The original waiver was signed on February 18, 2015 and was granted a one-year extension on February 22, 2016. With this additional one-year extension, the waiver will expire February 18, 2018. This waiver permits the use of non-domestically produced stainless steel nuts and bolts in bolting-type pipe couplings, restraints, joints and repair saddles in iron and steel products for projects funded by a Clean Water or Drinking Water State Revolving Fund that may otherwise be prohibited absent this waiver.

The original, approved waiver (attached) provides details regarding the specific types of products covered by this waiver as well as the rationale for issuance of the original waiver. This national product waiver extension is short-term, applying to the covered products if those products are purchased up until February 18, 2018.

**Rationale:** In 2016, the EPA reassessed the market for and supply of stainless steel nuts and bolts for the products of interest and was unable to gather sufficient evidence that there is an adequate domestic supply of these products. Through the research effort, the agency found that the domestic supply of stainless steel nuts and bolts for the subject products has increased slightly since fall 2015. The EPA received anecdotal evidence from a few manufacturers that they increased their supply of stainless steel nuts and bolts used in the subject products by small amounts, but the slight increase does not represent a significant change in the manufacturing capacity of the domestic products. Furthermore, the domestic supply of the stainless steel nuts and bolts is not readily quantifiable because manufacturers were generally unable, or unwilling, to provide information about their production capacity. In addition, the agency received no responses from manufacturers and suppliers after posting a draft version of this Decision Memorandum during a 15-day public comment period.

Lacking evidence that manufacturers of stainless steel nuts and bolts used in the subject products can meet current demands, the agency is extending the national waiver for another year. Prior to the

Internet Address/URL: <http://www.epa.gov>  
Recycled/Recyclable: Product with 50% or More Recycled Content, 100% Postconsumer Waste Recycled Paper

- h. Final Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts Used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles (August 24, 2018)  
(Double click on the embedded Acrobat version below for a clear copy of the entire document)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

AUG 24 2018

**DECISION MEMORANDUM**

OFFICE OF WATER

**SUBJECT:** Final Extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles for State Revolving Fund Projects

**FROM:** David P. Ross  
Assistant Administrator

The U.S. Environmental Protection Agency (EPA) hereby grants an extension of the Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles for State Revolving Fund Projects, pursuant to the "American Iron and Steel" (AIS) requirements of the Clean Water Act. The original waiver was signed on February 18, 2015, and was granted a one-year extension on February 22, 2016. A second extension was granted until February 18, 2018. With this third and final extension, the waiver will retroactively cover nuts and bolts purchased since February 18, 2018, and be extended 18 months from the signing date of this waiver (sunset date). This waiver will not be renewed after the sunset date. This waiver permits the purchase and use of non-domestically produced stainless steel nuts and bolts in bolting-type pipe couplings, restraints, joints, and repair saddles in iron and steel products for projects funded by a Clean Water State Revolving Fund (CWSRF) or Drinking Water State Revolving Fund (DWSRF) that may otherwise be prohibited absent this waiver.

The original, approved waiver provides details regarding the specific types of products covered by and the rationale for issuance of the waiver (see: <https://www.epa.gov/sites/production/files/2015-09/documents/short-term-national-waiver-for-ss-nuts-bolts-021815.pdf>). This national product waiver extension is short-term, applying to the covered products if those products are purchased by the assistance recipient or their representatives (i.e. construction contractor) up until the sunset date.

The EPA is granting this national product waiver extension on a short-term basis in order to provide the time U.S. manufacturers need to increase the domestic production of the specified stainless steel nuts and bolts. Upon the production of these parts, the EPA stands ready to provide assistance to states and others to help identify AIS compliant products consistent with the April 2017 Buy American and Hire American Executive Order.

**Attachments:**

1. Rationale and Legal Authority
2. Summary of Comments Received During 15-Day Informal Public Input Period on Short-Term Waiver Extension for Stainless-Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles for State Revolving Fund (SRF) Projects

## Attachment 6: EPA Waiver Request

### *Information Checklist for Waiver Request*

The purpose of this checklist is to help ensure that all appropriate and necessary information is submitted to EPA. EPA recommends that States review this checklist carefully and provide all appropriate information to EPA. This checklist is for informational purposes only and does not need to be included as part of a waiver application.

Items	<input checked="" type="checkbox"/>	Notes
<b>General</b> <ul style="list-style-type: none"> <li>• Waiver request includes the following information:               <ul style="list-style-type: none"> <li>○ Description of the foreign and domestic construction materials</li> <li>○ Unit of measure</li> <li>○ Quantity</li> <li>○ Price</li> <li>○ Time of delivery or availability</li> <li>○ Location of the construction project</li> <li>○ Name and address of the proposed supplier</li> <li>○ A detailed justification for the use of foreign construction materials</li> </ul> </li> <li>• Waiver request was submitted according to the instructions in the memorandum</li> <li>• Assistance recipient made a good faith effort to solicit bids for domestic iron and steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime contractor</li> </ul>	<input checked="" type="checkbox"/>	
<b>Cost Waiver Requests</b> <ul style="list-style-type: none"> <li>• Waiver request includes the following information:               <ul style="list-style-type: none"> <li>○ Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products</li> <li>○ Relevant excerpts from the bid documents used by the contractors to complete the comparison</li> <li>○ Supporting documentation indicating that the contractor made a reasonable survey of the market, such as a description of the process for identifying suppliers and a list of contacted suppliers</li> </ul> </li> </ul>	<input checked="" type="checkbox"/>	
<b>Availability Waiver Requests</b> <ul style="list-style-type: none"> <li>• Waiver request includes the following supporting documentation necessary to demonstrate the availability, quantity, and/or quality of the materials for which the waiver is requested:               <ul style="list-style-type: none"> <li>○ Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials</li> <li>○ Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers.</li> <li>○ Project schedule</li> <li>○ Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials</li> </ul> </li> <li>• Waiver request includes a statement from the prime contractor and/or supplier confirming the non-availability of the domestic construction materials for which the waiver is sought</li> </ul> <p>Has the State received other waiver requests for the materials described in this waiver request, for comparable projects?</p>	<input checked="" type="checkbox"/>	

## EPA Checklist for Waiver Request

Instructions: To be completed by EPA. Review all waiver requests using the questions in the checklist, and mark the appropriate box as Yes, No or N/A. Marks that fall inside the shaded boxes may be grounds for denying the waiver. If none of your review markings fall into a shaded box, the waiver is eligible for approval if it indicates that one or more of the following conditions applies to the domestic product for which the waiver is sought:

1. The iron and/or steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.
2. The inclusion of iron and/or steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

Review Items	Yes	No	N/A	Notes
<b>Cost of Waiver Request</b>				
<ul style="list-style-type: none"> <li>• Does the waiver request include the following information?               <ul style="list-style-type: none"> <li>○ Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products</li> </ul> </li> </ul>				
<ul style="list-style-type: none"> <li>○ Relevant excerpts from the bid documents used by the contractors to complete the comparison</li> </ul>				
<ul style="list-style-type: none"> <li>○ A sufficient number of bid documents or pricing information from domestic sources to constitute a reasonable survey of the market</li> </ul>				
<ul style="list-style-type: none"> <li>• Does the Total Domestic Project exceed the Total Foreign Project Cost by more than 25%?</li> </ul>				
<b>Availability Waiver Requests</b>				
<ul style="list-style-type: none"> <li>• Does the waiver request include supporting documentation sufficient to show the availability, quantity, and/or quality of the iron and/or steel product for which the waiver is requested?               <ul style="list-style-type: none"> <li>○ Supplier information or other documentation indicating availability/delivery date for materials</li> <li>○ Project schedule</li> <li>○ Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of materials</li> </ul> </li> </ul>				
<ul style="list-style-type: none"> <li>• Does supporting documentation provide sufficient evidence that the</li> </ul>				
<ul style="list-style-type: none"> <li>• Contractors made a reasonable effort to locate domestic suppliers of materials, such as a description of the process for identifying suppliers and a list of contacted suppliers?</li> </ul>				
<ul style="list-style-type: none"> <li>• Based on the materials delivery/availability date indicated in the supporting documentation, will the materials be unavailable when they are needed according to the project schedule? (By item, list schedule date and domestic delivery quote date or other relevant information)</li> </ul>				
<ul style="list-style-type: none"> <li>• Is EPA aware of any other evidence indicating the non-availability of the materials for which the waiver is requested? Examples include:               <ul style="list-style-type: none"> <li>○ Multiple waiver requests for the materials described in this waiver request, for comparable projects in the same State</li> <li>○ Multiple waiver requests for the materials described in this waiver request, for comparable projects in other States</li> <li>○ Correspondence with construction trade associations indicating the non-availability of the materials</li> </ul> </li> <li>• Are the available domestic materials indicated in the bid documents of inadequate quality compared those required by the project plans, specifications, and/or permits?</li> </ul>				

## **Attachment 7: Construction Contract Language**

The following language must be included in all construction and purchase contracts associated with a TWDB CWSRF or DWSRF loan:

The Contractor acknowledges to and for the benefit of the Applicant (“Purchaser”) and the Texas Water Development Board (TWDB) that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as “American Iron and Steel;” that requires all of the iron and steel products used in the project to be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the TWDB that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the TWDB. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser to enforce this Agreement and recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Purchaser resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the TWDB or any damages owed to the TWDB by the Purchaser). While the Contractor has no direct contractual privity with the TWDB, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the TWDB is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the TWDB.

## **Attachment 8: Sample Certifications**

AIS Certification must document the location of the manufacturing process involved with the production of steel and iron materials. Each handler (supplier, fabricator, manufacturer, processor, etc.) of the iron and steel products and their step in the process must be recorded and certified as domestically performed.

The applicant may utilize either

- (1) a Final Manufacturer Certification process, in which the final manufacturer that delivers the iron or steel product to the worksite, vendor, or contractor, may provide a certification identifying all handlers of the iron or steel product, and asserting that all manufacturing processes occurred in the US; or
- (2) a Step Certification process in which each handler of the iron or steel product provides a separate certification letter certifying that their step in the process was domestically performed.

***Final Manufacturer Certification – Version 1 – AIS Products Delivered to Project Site***

The following information is provided as a sample letter of certification for AIS compliance. Documentation must be provided on company letterhead. The Final Manufacturer’s Certification should list everyone who has handled the product, starting with the processor of the raw iron or steel through the contractor who installs the final product.

*Date*

*Company Name*  
*Company Address*  
*City, State Zip*

*Subject: American Iron and Steel Certification for Project (XXXXXX)*

*I, (company representative), certify that the following products and/or materials shipped/provided to the project site below are in full compliance with the American Iron and Steel requirement as mandated in EPA’s State Revolving Fund Programs.*

*Project Site location (City, State): \_\_\_\_\_*

*Project’s Prime Contractor Name: \_\_\_\_\_*

*List for all Items, Products and/or Materials (Include all the predecessor manufacturing processes before the final manufacturer for each item on the list):*

*Item 1: \_\_\_\_\_*  
*Predecessor Manufacturing Process: \_\_\_\_\_*  
*Manufacturer’s Name: \_\_\_\_\_*  
*Manufacturing location (City, State): \_\_\_\_\_*

*Predecessor Manufacturing Process: \_\_\_\_\_*  
*Manufacturer’s Name: \_\_\_\_\_*  
*Manufacturing location (City, State): \_\_\_\_\_*

*Item 2: \_\_\_\_\_*  
*Predecessor Manufacturing Process: \_\_\_\_\_*  
*Manufacturer’s Name: \_\_\_\_\_*  
*Manufacturing location (City, State): \_\_\_\_\_*

*Predecessor Manufacturing Process: \_\_\_\_\_*  
*Manufacturer’s Name: \_\_\_\_\_*  
*Manufacturing location (City, State): \_\_\_\_\_*

*If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the project engineer.*

*Signed by company representative*

**Final Manufacturer Certification – Version 2 – AIS Products Purchased from Supplier**

The Final Manufacturer's Certification should list everyone who has handled the product, starting with the processor of the raw iron or steel through to the Supplier.

Date \_\_\_\_\_

Company Name \_\_\_\_\_  
Company Address \_\_\_\_\_  
City, State Zip \_\_\_\_\_

Subject: American Iron and Steel Certification for Project (XXXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the Supplier listed below are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

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

List for all Items, Products and/or Materials (Include all the predecessor manufacturing processes before the final manufacturer for each item on the list):

Item 1: \_\_\_\_\_  
Predecessor Manufacturing Process: \_\_\_\_\_  
Manufacturer's Name: \_\_\_\_\_  
Manufacturing location (City, State): \_\_\_\_\_

Predecessor Manufacturing Process: \_\_\_\_\_  
Manufacturer's Name: \_\_\_\_\_  
Manufacturing location (City, State): \_\_\_\_\_

Item 2: \_\_\_\_\_  
Predecessor Manufacturing Process: \_\_\_\_\_  
Manufacturer's Name: \_\_\_\_\_  
Manufacturing location (City, State): \_\_\_\_\_

Predecessor Manufacturing Process: \_\_\_\_\_  
Manufacturer's Name: \_\_\_\_\_  
Manufacturing location (City, State): \_\_\_\_\_

If any of the above compliance statements change while providing material to this project we will immediately notify the Supplier.

Signed by company representative

1

## ***Step Certification***

A step certification is a process under which each handler (supplier, fabricator, manufacturer, processor, etc.) of the iron and steel products certifies that their step in the process was domestically performed. The Step Certification process requires you receive a separate letter from everyone who handles the product, starting with the processor of the raw iron or steel through the contractor who installs the final product.

## ***Step Certification Letter***

The following information is provided as a sample letter of step certification for AIS compliance. Documentation must be provided on company letterhead of each handler responsible for that process of the iron or steel product.

*Date*

*Company Name*  
*Company Address*  
*City, State ZIP Code*

*Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)*

*I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for (project site \_\_\_\_\_ or to \_\_\_\_\_ company) is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.*

*Item 1: \_\_\_\_\_  
Manufacturing location (City, State): \_\_\_\_\_*

*Item 2: \_\_\_\_\_  
Manufacturing location (City, State): \_\_\_\_\_*

*If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.*

*Signed by company representative*

**Step Certification Log**

The following information is provided as a sample log to keep track of step certification for AIS compliance. The TWDB makes no claims regarding the legality of the step certification log with respect to AIS compliance.

**American Iron and Steel  
Step Certification Log for**

\_\_\_\_\_ **(Iron or Steel Product)**

Contractor: \_\_\_\_\_  
(Name) (Item)

Supplier: \_\_\_\_\_  
(Name) (Item)

Final Manufacturer: \_\_\_\_\_  
(Name) (Item) (Process)

Predecessor Manufacturer 1: \_\_\_\_\_  
(Name) (Item) (Process)

Predecessor Manufacturer 2: \_\_\_\_\_  
(Name) (Item) (Process)

Processor (e.g., foundry): \_\_\_\_\_  
(Name) (Item) (Process)

# De Minimis Log

The following information is provided as a sample De Minimis log for AIS compliance. The TWDB makes no claims regarding the legality of the De Minimis log with respect to AIS compliance.

Figure 1 - Information contained in the log example: Owner Name, Project Name, TWDB SRF Number, Contractor Name, Total Project Cost, Total Material Cost followed by data entered for each of the following categories: Item Number, Iron or Steel Product, Unit Cost, Quantity, Total Cost, Percent of Total Material Cost Less Than One Percent, Cumulative Cost, Percent of Total Material Cost Less Than Five Percent.

American Iron and Steel de minimis log									
	Owner Name:	City					Total Project Cost:	\$130,000.00	
	Project Name:	CID 01 - Project					Total Material Cost:	\$100,000.00	
	TWDB SRF No.:	####							
	Contractor Name:	Contractor							
Item No.	Iron or Steel Product	Unit Cost	Quantity	Total Cost	% Mat Cost (<1%)	Cum Cost	% Mat Cost (<5%)		
1	Steel Door	\$400.00	1	\$ 400.00	0.40%	\$ 400.00	0.40%		
2	Bolts	\$100.00	1	\$ 100.00	0.10%	\$ 500.00	0.50%		
3	Welding rods	\$30.00	1	\$ 30.00	0.03%	\$ 530.00	0.53%		
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									

**Attachment 9: Monthly American Iron and Steel Certificate**

**Compliance Submittal by Owner (Sub-Recipient)**

TWDB Project No. \_\_\_\_\_

Loan No. \_\_\_\_\_

***This executed certificate must be submitted with each Outlay report requesting funds associated with construction contracts for all iron and steel products and/or materials included within the project's construction contracts.***

I, \_\_\_\_\_, \_\_\_\_\_ of \_\_\_\_\_

(Name)

(Title)

\_\_\_\_\_ hereby certify that all iron and steel products and/or materials incorporated into the construction, alteration, maintenance, or repair of the subject project are in full compliance with the American Iron and Steel requirements of Section 608 of the Federal Water Pollution Control Act (33 U.S.C. §1388) for the Clean Water State Revolving Fund or federal law, including federal appropriation acts and Section 1452(a)(4) of the Safe Drinking Water Act (42 U.S.C. §300j-12(a)(4)), as applicable, for the Drinking Water State Revolving Fund, or comply with waivers granted by the U.S. Environmental Protection Agency.

**I understand that a false statement herein may subject me to penalties under federal and state laws relating to filing false statements and other relevant statutes.**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Attachment 10: Final American Iron and Steel Certification**

**Compliance Submittal by Owner (Sub-Recipient)**

TWDB Project No. \_\_\_\_\_  
Loan No. \_\_\_\_\_

*This executed certification must be submitted after the completion of the construction contract and prior to issuance of a Certificate of Approval by the TWDB, stating the project was completed in compliance with the AIS requirements.*

I, \_\_\_\_\_, \_\_\_\_\_ of  
(Name) (Title)

\_\_\_\_\_ hereby certify that all iron and steel products and/or materials incorporated into the construction, alteration, maintenance, or repair of the subject project were in full compliance with the American Iron and Steel requirements of Section 608 of the Federal Water Pollution Control Act (33 U.S.C. §1388) for the Clean Water State Revolving Fund or federal law, including federal appropriation acts and Section 1452(a)(4) of the Safe Drinking Water Act (42 U.S.C. §300j-12(a)(4)), as applicable, for the Drinking Water State Revolving Fund, or comply with waivers granted by the U.S. Environmental Protection Agency.

**I understand that a false statement herein may subject me to penalties under federal and state laws relating to filing false statements and other relevant statutes.**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Date**

**SECTION NO. 27**

Floodplain Permit



# City of Arlington FLOODPLAIN DEVELOPMENT PERMIT

PERMIT # ARL051921-01

Applicant Name: City of Arlington Public Works & Transportation / Sabino Martin Date of Application: 05/19/2021  
 Mailing Address: 101 W Abram Street Arlington, Texas 76010 Phone Number: 817-459-6582  
 Affected Property location/address: 4400,4404, 4408, 4412 Blackberry Dr; 7122, 7124 Forestview Dr; 7109 Layla Rd; 4501, 4601 Bowman Springs Rd  
 Contact Person: Sabino Martin Phone Number: 817-459-6582  
sabino.martin@arlingtontx.gov

**A. Description of Work (Complete for all work):**

1. Proposed Development Description: Check all areas that describe the type of proposed activity

**NEW BUILDING**  
 Residential  
 Nonresidential  
 Manufactured Home  
 Installation

**EXISTING STRUCTURE**  
 Alteration  
 Vertical Addition  
 Horizontal Addition  
 Materials Storage

**SITE WORK**  
 Filling/Grading  
 Excavation  
 Utility Installation  
 Concrete/Asphalt  
 Parking Lot  
 Other: Rebuilding roadway and construction of new box culvert

2. List the size and legal description of the proposed development (ensure site plan is attached): The project is a realignment and widening of Bowman Springs Rd. It includes a replacement of the culvert crossing with 3-12x12' RCB and reconstruction of the left and right bank to address structural problems.

3. List the Special Flood Hazard Area (Zones A, AE, A1-A30, AH or AO) and the FIRM panel number:

Zone: A Panel Number: 48439C0340K

4. Are other Federal, State, or local permits required (Including Section 404 U.S. Army Corps of Engineers Permit?)  Yes  No  
Type: The USACE has issued verification the project qualifies for NWP 14.

5. Is the proposed development in an identified floodway? Yes  No

6. If yes to #5, is required "No Rise Certification Attached"? Yes  No  N/A

7. Is a Conditional Letter of Map Revision (CLOMR) required?  Yes  No  N/A

8. Is a Letter of Map Revision (LOMR) required?  Yes  No  N/A

9. If a regulatory floodway has not been designated and the new construction, substantial improvement, or other development (including fill) is in Zone A or AE then it must be demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the watershed? Has this requirement been met? Yes  No  N/A

10. If no to #9, construction must be denied See Section 1.04(6) of Flood Damage Prevention Ordinance.

11. Is project within the review area of the Trinity River Corridor? Yes  No

12. If yes to #11, has a Corridor Development Certificate been approved by the Floodplain Administrator? Yes  No

**B. Complete for New Structures (including Additions), Substantial Improvements/Damage and Building Sites:**

1. List the Base Flood Elevation (BFE) at the site (per FIRM or Engineer's Specification): NA feet NGVD.

2. List the lowest floor elevation (including basement & finished garage) of the proposed structure: NA feet NGVD. It is required that the lowest floor elevation (including basement & finished garage) must be 2 feet above the 100-year fully urbanized BFE. Has this requirement been met? Yes  No

**C. Complete for Alterations or Improvements to Existing Structures:**

1. What is the estimated market value of the existing structure? \$ NA

2. What is the cost of the proposed construction? \$ NA

3. If the cost of the proposed construction equals or exceeds 25 percent of the market value of the structure, then the substantial improvement provisions shall apply. Complete section B and provide additional Substantial Improvement/Damage documentation.

**D. Complete for ALL Residential Projects:**

- 1. Has a grading and drainage plan been approved by a City official? Yes No  N/A
- 2. Are all home services (water heater, furnace, air conditioner, etc.) elevated 2 feet above the 100-year fully urbanized BFE? Yes No  N/A

**E. Complete for Non-Residential Floodproofed Construction:**

- 1. Type of floodproofing method: NA
- 2. The required floodproofing elevation is: NA feet NGVD
- 3. Are the openings in any enclosures below the lowest floor certified by a registered professional engineer or architect and equipped with vents? [See Section 5.02 (3a-c) of Flood Damage Prevention Ordinance] Yes No  N/A
- 4. Are flood resistant materials utilized for enclosures below the BFE? Yes No  N/A
- 5. All attendant utilities, including all heating and electrical equipment and ductwork must be elevated 2 feet above the fully urbanized BFE or floodproofed. Has this requirement been met? Yes No  N/A
- 5. Floodproofing certification by a registered engineer is attached. Yes No  N/A

**F. Complete for Subdivisions and Planned Unit Developments:**

- 1. Will the subdivision or other development contain 50 lots or 5 acres? Yes No  N/A  
(See Section 5.03(3) of Flood Damage Prevention Ordinance)
- 2. If yes to #1, does the plat or proposal clearly identify base flood elevations? Yes No  N/A
- 3. Are the 100 Year Floodplain and Floodway delineated on the site plan? Yes No

**ADMINISTRATION**

Permit Approved    Permit Denied    (See Section 4.03 of Flood Damage Prevention Ordinance)

Reason(s) for Denial: \_\_\_\_\_

- 2. Elevation Certificate attached: Yes No  N/A
- 3. If no to #2, Elevation Certificate must be submitted prior to final inspection.
- 3. As-Build lowest floor elevation: N/A feet NVGD
- 4. Comments/Conditions: CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS PRIOR TO THE COMPLETION OF THIS PROJECT.

5. Floodplain Administrator's or Designee's Signature: [Signature] Date: 05/19/2021

**(BECOMES A PERMIT WHEN SIGNED BY FLOODPLAIN ADMINISTRATOR OR DESIGNEE)**

The undersigned hereby makes application for a permit to develop in a designated floodplain area. The work to be performed is described above and in attachments hereto. The undersigned agrees that all such work shall be done in accordance with the requirements of the City of Arlington Flood Damage Prevention Ordinance and with all other applicable local, State and Federal regulations. This application does not create liability on the part of the City of Arlington or any officer or employee thereof for any flood damage that results from reliance on this application or any administrative decision made lawfully thereunder.

I hereby acknowledge that I have read the instructions and provisions of this permit and ordinances of the City of Arlington and agree to assume all duties and obligations provided therein.

Applicant's Signature: [Signature] Sabino Martin 2021.05.19 14:35:06 -05'00' Date: \_\_\_\_\_

**(The Floodplain Development Permit shall expire 2 years after the approval date unless development has commenced)**