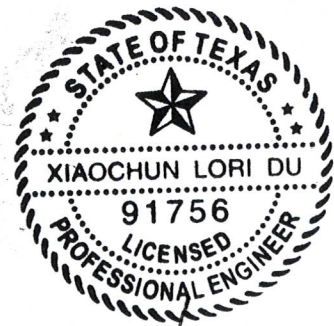




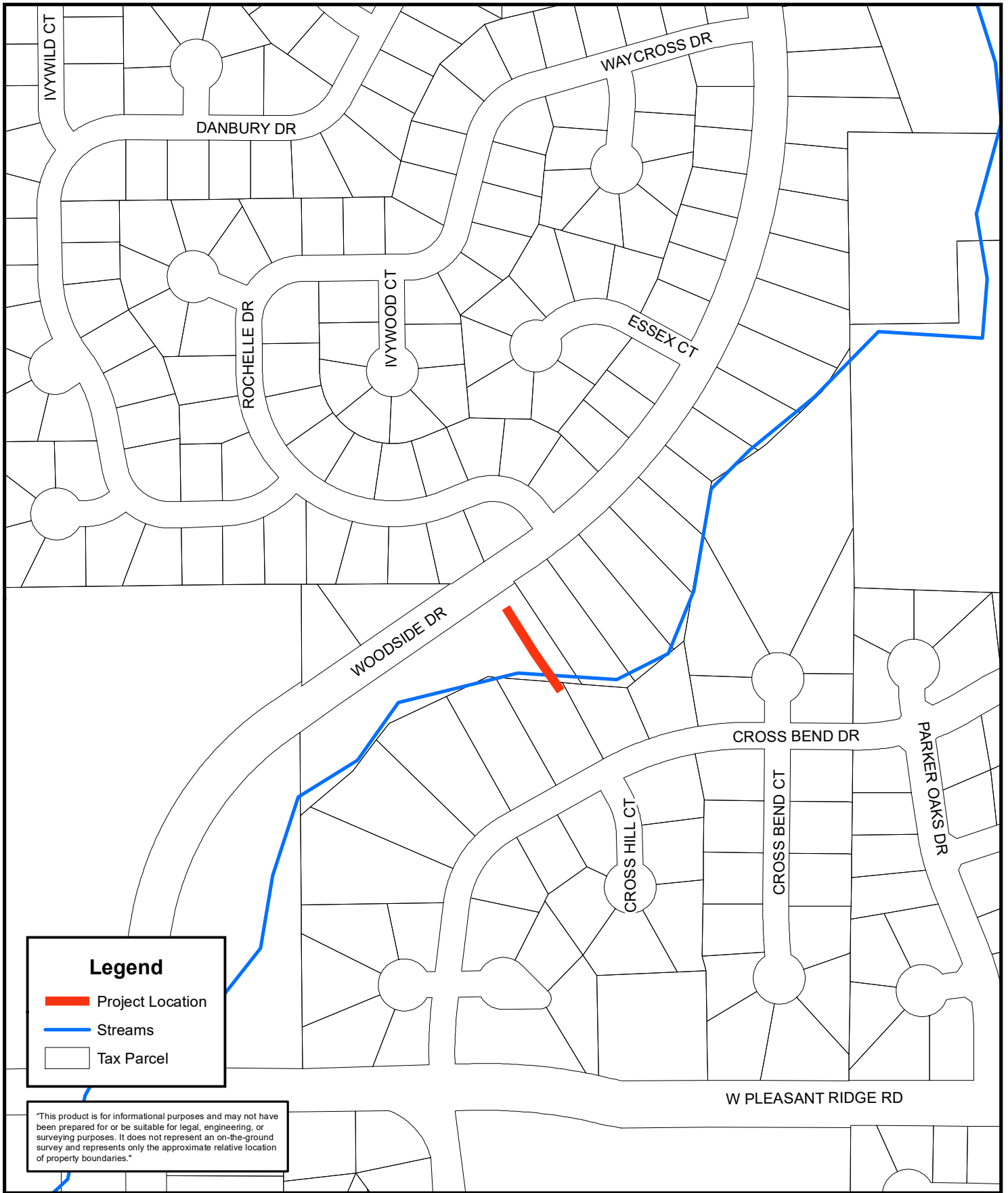
**Woodside Drive
Sanitary Sewer Main Replacement**

**CITY OF ARLINGTON
PROJECT NO. WUWS18016**

**Prepared by
City of Arlington
Department of Water Utilities**



Lori Du
11/10/2021



**Woodside Drive
Sanitary Sewer Main Replacement
Project No. WUWS18016**



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
4	Affidavit Against Prohibited Acts
5	Affidavit Against 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 (N/A)
14	Special Provisions – Water & Sanitary Sewer Specifications
15	Special Provisions – Drainage Specifications
16	Trench Safety and OSHA
17	Special Provisions - Special Specifications (by Stantec)
18	TWDB - Supplemental Contract Conditions (TWDB-0550)
19	TWDB - Guidance for Disadvantaged Business Enterprise (DBE) TWDB-0210)
20	TWDB - American Iron and Steel (AIS) Guidance (TWDB-1106)
21	TWDB - Site Certificates (ED-101)
22	Floodplain Development 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 Water Utilities, 2nd 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) {last page of Section No. 18 TWDB-0550}*
 - *MWBE Utilization Plan (MWBE certifications for each firm must be included), located at the end of the INSTRUCTIONS TO BIDDERS*
- **All potential bidders MUST submit the following forms located at the end of the INSTRUCTIONS TO BIDDERS to Lori Du, P. E., at Lori.Du@Arlingtontx.gov no later than **2:00 p.m. CDT, on Monday, February 7, 2022.****
- *Letter of Intent as a Subcontractor (needed for each subcontractor)*
- *Good Faith Effort Checklist (GFE) 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 **35.50%**.

Trades identified for this solicitation includes: **Sanitary Sewer, Channel Improvement, Excavation & Fill, and Landscaping.**

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.

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.

The City reserves the right to review, accept or reject any certification from agencies not listed.

In addition, the lowest responsible bidder will be required to submit cost information related to minority/woman businesses in accordance with Section 11-25.

5. PREQUALIFICATION OF BIDDERS: All Bidders on this project must be prequalified to perform Sanitary Sewer 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:

Natural Stream Stabilization
Storm 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 shall email the engineer for an interpretation. **Inquiries received seven (7) business days or less prior to opening of bids may not be entertained.** 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: Soil investigation was not performed for this project.
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 within five (5) working days of the bid opening on City's web page, https://www.arlingtontx.gov/city_hall/departments/finance/purchasing/bidding_procurement, under "Current Bid Opportunities", "Water Utilities".
15. AFFIDAVIT AGAINST PROHIBITED ACTS: It shall be the lowest responsible bidder's responsibility to complete this affidavit (Sections 4, 4A and 4B 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.

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. VERIFICATION RELATING TO ENERGY BOYCOTT: New State legislation, Chapter 2274 of the Texas Government Code prohibits a city from entering into a contract with a value of \$100,000 or more that is to be paid from public funds with a company with more than 10 full-time employees for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott energy companies; and (2) will not boycott energy companies during the term of the contract. It shall be the lowest responsible bidder's responsibility to complete this verification (Section 4A 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.

20. VERIFICATION RELATING TO FIREARMS BOYCOTT: New State legislation, Chapter 2274 of the Texas Government Code (1) prohibits a governmental entity from entering into a contract with a value of \$100,000 or more that is to be paid from public funds with a company with more than 10 full-time employees for the purchase of goods or services unless the contract contains a written verification from the company that it: (a) does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (b) will not discriminate during the term of the contract against a firearm entity or firearm trade association; and (2) provides that the prohibition in (1) does not apply to a city that (a) contracts with a sole-source provider, or (b) the city does not receive any bids from a company that is able to provide the required verification required by (1). It shall be the lowest responsible bidder's responsibility to complete this verification (Section 4B 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.

21. PROCUREMENT OF GOODS AND SERVICES FROM ARLINGTON BUSINESSES: 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.

22. 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. 18 – Supplemental Contract Conditions (TWDB-0550)

- Vendor Compliance with Reciprocity on Non-Resident (TWDB-0459)

- 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. 19 – Guidance for Disadvantaged Business Enterprise (DBE) (TWDB-0210)

Section No. 20 – American Iron and Steel (AIS) Guidance (TWDB-1106)

Section No. 21 – Site Certificate (ED-101)

Section No. 22 – Floodplain Development Permit for construction within the 100-year floodplain

23. TEXAS WATER DEVELOPMENT BOARD PROJECT SPECIFIC CONDITIONS:

1. Compliance with the terms and conditions of the United States Army Corps of Engineers (USACE) Nationwide Permit 43 for Stormwater Management Facilities, with pre-construction notification to the USACE;
2. Compliance with the terms and conditions of the Floodplain Development Permit issued by the City of Arlington Floodplain Administrator pursuant to the requirements of the National Flood Insurance Program;
3. Standard emergency condition for the discovery of cultural resources; and,
4. Standard emergency condition for the discovery of threatened and endangered species.

24. TEXAS WATER DEVELOPMENT BOARD INSTRUCTIONS TO BIDDERS: See following pages.

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.

END OF SECTION



Office of Business Diversity

MWBE UTILIZATION PLAN

Project Name _____

Project No: _____ Date: _____

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)

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

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 _____

Signature of Main Contact Person _____



MINORITY/WOMEN BUSINESS ENTERPRISE (MWBE)

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, should 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 _____ **HAS** or **HAS NOT** complied as per the City’s M/WBE Special Provisions.

Verified Goal attainment:

MBE ____% WBE ____%

Reviewer

Date:



Office of Business Diversity

LETTER OF INTENT TO SUBCONTRACT

Project Number: _____

Project Title: _____

_____ (“Prime Contractor”) agrees to enter into a contractual agreement with _____ (“MWBE Subcontractor”), 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).

for an estimated amount of \$ _____ or _____ of the total estimated contract value.

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

Signature – Prime Contractor

Signature – MWBE Subcontractor

Print Name

Print Name

Title

Date

Title

Date

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:

Title

Date:



MWBE SPECIAL CONTRACT PROVISIONS: SEALED BID

POLICY STATEMENT

On March 30, 2021, the Arlington City Council approved the resolution to adopt the City's Minority/Woman Business Enterprise (MWBE) Policy & Procedures Manual. This MWBE Policy seeks to reduce race- and gender-based barriers and foster participation with minority and woman-owned businesses in contracting and procurement opportunities with the City of Arlington by increasing the capacities of such firms to perform as prime vendors and subcontractors as well as suppliers.

The City of Arlington reaffirms that it will not, nor will its contractors, discriminate based on race, age, color, religion, sex, 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 of Arlington's Office of Business Diversity (OBD) 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>.

MWBE PROJECT GOAL

The City's MWBE goal, for this project is **35.50 %**.

Trades identified for this solicitation includes: **Sanitary Sewer, Channel Improvement, Excavation & Fill, and Landscaping.**

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 listed on Good Faith Effort Form.

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

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.

A contractor cannot require a MWBE to sign an exclusive arrangement for the purpose of a bid/proposal submittal or enter a non-compete arrangement post award.

SUBMITTAL OF REQUIRED DOCUMENTATION

The following documents must be received by the assigned City Project Manager or Department Designee within the allocated times shown in order for the bid or proposal to be considered responsive to the specification. The Offeror shall **DELIVER OR EMAIL** the MWBE documentation to the assigned City Project Manager or Department Designee; a faxed copy will not be accepted.

MWBE Utilization Plan	Received on bid opening date and time.
Good Faith Effort Form and supporting documentation (if participation is less than stated goal)	Received no later than 2:00 pm CST, on the <u>two (2)</u> City business day after the bid opening or proposal due date. <u>Should be sent to agent of record.</u>
Intent to Perform as a Subcontractor	Received no later than 2:00 pm, on the <u>two (2)</u> City business day after the bid opening or proposal due date. <u>Should be sent to agent of record.</u>

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

MWBE CERTIFICATIONS

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.

The City reserves the right to review, accept, or reject any certification from agencies not listed.

POST AWARD COMPLIANCE

If change orders, amendments, or any Contract modifications are issued, the contractor has a contractual commitment to meet and/or exceed their MWBE utilization goal. Contractor is obligated to immediately notify OBD, in writing, of any agreed increase or decrease in the scope of work that will impact the MWBE participation on the contract.

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

All payments must be submitted to our supplier diversity portal B2GNow: <https://arlingtonx.diversitycompliance.com/>

For vendors who are not users of B2Gnow and would like to be added, please send an email to The Office of Business Diversity mwbe@arlingtonx.gov. Please include your first name, last name, email address, full company address and phone number to be added when you email the City of Arlington. Any missing information will result in your account not being created.

For training on how to utilize B2Gnow, please sign up at <https://arlingtonx.diversitycompliance.com/> and click on System Training.

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

Form	Prime Contractor	Submit Form To
TWDB-0216	Required	TWDB
TWDB-0217	Required	TWDB
TWDB-0373	Required	TWDB

SECTION NO. 1

ADVERTISEMENT FOR BIDS

This project primarily consists of replacing approximately 260 linear feet of 8-inch creek crossing sanitary sewer main and protect the creek bank and bottom to prevent continued erosion activities. The Engineer's estimate for this project is \$1,620,000.

Sealed bids will be received by the City of Arlington, Texas, at the Office of the Director of Water Utilities, 2nd Floor, City Hall, 101 W. Abram Street, Arlington TX, 76010, **until 2 p.m. on Thursday, February 3, 2022** for the construction of **Woodside Drive Sanitary Sewer Main Replacement, PROJECT NO. WUWS18016** 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 / lobby area. 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. 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 the INSTRUCTIONS TO BIDDERS for details.

A PRE-BID MEETING (not mandatory) will be held for this project on **Thursday, January 20, 2022 at 2 p.m.** in the Public Works and Transportation Conference Room, 2nd Floor, City Hall, 101 W. Abram Street, Arlington, TX 76010.

If you have any questions concerning this project, please contact Lori Du, P.E., Water Utilities/Engineering, City of Arlington, at (817) 459-6636 or email at Lori.Du@Arlingtontx.gov.

***Arlington Star-Telegram* publication dates:** Wednesday, 01/12/2022 & Wednesday, 01/19/2022

CONTRACTOR STATUS INFORMATION

Instructions: Please fill in the appropriate section below, completing all blanks within the section. This information is necessary to ensure that the contract and bonds are in the correct form.

SECTION 1: If the contractor is a sole proprietor, fill in this section only:

Name: _____

First

Middle

Last

Name under which you are engaged in business (if operating under an assumed name):

Residence: _____

Street

City

County

State

ZIP

Business: _____

Street

City

County

State

ZIP

Principal place of business: _____

City

County

State

ZIP

Contact Person: _____

Name

Phone

Email Address

SECTION 2: If the contractor is a partnership, fill in this section only:

Name of Partner: _____

First

Middle

Last

Residence: _____

Street

City

County

State

ZIP

Name of Partner: _____

First

Middle

Last

Residence: _____

Street

City

County

State

ZIP

Name under which contractor conducts business (if operating under an assumed name):

Business Address: _____

Street

City

County

State

ZIP

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: _____

Doing business as: _____

Date charter expires: _____

State of corporation: _____

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

Registered Agent: _____
First Middle Last

Address: _____
Street City County State ZIP

Location of Corporation principal office:

Street City County State ZIP

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

Name: _____
First Middle Last

Title: _____

Address: _____
Street City County State ZIP

Telephone Number: _____

Contact Person: _____
Name Phone Email Address

END OF SECTION

SECTION NO. 2

PREVAILING WAGE RATES

"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)

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.

Modification Number Publication Date
 0 01/07/2022

* PLUM0146-002 05/01/2021

	Rates	Fringes
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.

=====

THE STATE OF TEXAS §
COUNTY OF _____ §

AFFIDAVIT

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, 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 _____. I am of sound mind and capable of making this affidavit.

"I am _____ for _____, which company entered into a contract on the ___ day of _____, 20___, to construct **Woodside Drive Sanitary Sewer Main Replacement**, City of Arlington Project No. **WUWS18016**, 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 _____ day of _____, 20____.

Notary Public In and For The State of Texas

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

Company

By _____
(Please Print)

Address

Signature

City State Zip

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 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

Date

ATTEST (if corporation)

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 Woodside Drive Sanitary Sewer Main Replacement, City of Arlington project No. WUWS18016.

BY: _____

Name: _____

Title: _____

Witness:

Signature

Name

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 **Woodside Drive Sanitary Sewer Main Replacement**, City of Arlington project No. **WUWS18016**.

BY: _____

Name: _____

Title: _____

Witness:

Signature

Name

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 **Woodside Drive Sanitary Sewer Main Replacement**, City of Arlington project No. **WUWS18016**.

BY: _____

Name: _____

Title: _____

Witness:

Signature

Name

Title

END OF SECTION

SECTION NO. 6

PROPOSAL

Proposal of: _____

Address: _____

City/State/ZIP: _____

Federal ID# _____

Date of Bid Opening: _____

TO THE CITY OF ARLINGTON, 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 **Woodside Drive Sanitary Sewer Main Replacement**, City of Arlington Project No. **WUWS18016**, 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 (101 – 102) TWDB FUNDING

Item No.	Quantity & Unit	Description & Price In Words	Prices in Figures	
			Unit Price	TOTAL
101	1 LS	Mobilization & Bonds in accordance with Section 11-10, for the sum of _____ Fifty Thousand _____ dollars and _____ Zero _____ cents per Lump Sum.	\$50,000.00	\$50,000.00
102	1 LS	Design, Implement & Maintain Storm Water Pollution Prevention Plan, complete and in place for the sum of _____ Fifteen Thousand _____ dollars and _____ Zero _____ cents per Lump Sum.	\$15,000.00	\$15,000.00

**SUBTOTAL MOBILIZATION & SWPPP
(Items 101 – 102)**

\$ 65,000.00

**SANITARY SEWER AND CHANNEL IMPROVEMENTS
(Items 201 - 247) TWDB FUNDING**

Item No.	Quantity & Unit	Description & Price In Words	Prices in Figures	
			Unit Price	TOTAL
201	260 LF	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 sum of dollars and _____ cents per Linear Foot.	\$	\$
202	260 LF	Furnish & Install Trench Safety System for Sanitary Sewer Lines for all depths in accordance with Trench Safety Plan & the latest OSHA Standards, complete and in place for the sum of dollars and _____ cents per Linear Foot.	\$	\$
203	1 EA	Furnish & Install Standard 5-foot Diameter Watertight Sanitary Sewer Manhole (0-6 foot depth), complete and in place for the sum of dollars and _____ cents per Each.	\$	\$
204	1 EA	Furnish & Install Standard 5-foot Diameter Watertight Outside Drop Sanitary Sewer Manhole (0-6 foot depth) over Existing 8-inch Sanitary Sewer Main, complete and in place for the sum of dollars and _____ cents per Each.	\$	\$
205	14 VF	Extra Depth for 5-foot Diameter Manhole, work fully performed for the sum of dollars and _____ cents per Vertical Foot.	\$	\$
206	1 EA	Connect to Existing Manhole by Coring & Rework Invert, work fully performed for the sum of dollars and _____ cents per Each.	\$	\$
207	1 EA	Connect to Existing 8-inch Sanitary Sewer Line, work fully performed for the sum of dollars and _____ cents per Each.	\$	\$

Item No.	Quantity & Unit	Description & Price In Words	Prices in Figures	
			Unit Price	TOTAL
208	25 CY	Furnish & Install Concrete Encasement (Sheet C108 for details), complete and in place for the sum of dollars and _____ cents per Cubic Yard.	\$	\$
209	1 LS	Remove and Dispose of Concrete/Structures on Existing Sanitary Sewer Line crossing creek, work fully performed for the sum of dollars and _____ cents per Lump Sum.	\$	\$
210	1 EA	Cut & Plug Existing Sanitary Sewer Line, work fully performed for the sum of dollars and _____ cents per Each.	\$	\$
211	260 LF	Remove & Dispose Existing Sanitary Sewer Line at the locations in conflict with construction, work fully performed for the sum of dollars and _____ cents per Linear Foot.	\$	\$
212	1 LS	Furnish, Install, & Maintain Bypass Pumping, including removal after construction, work fully performed for the sum of dollars and _____ cents per Lump Sum.	\$	\$
213	290 LF	Post-Television All New Sanitary Sewer Mains and New Storm Pipe within project, refer to Section 14-23 for details, work fully performed for the sum of dollars and _____ cents per Linear Foot.	\$	\$
214	30 LF	Furnish & Install 30-inch Class III Reinforced Concrete Pipe, including embedment & backfill, complete and in place for the sum of dollars and _____ cents per Linear Foot.	\$	\$

Item No.	Quantity & Unit	Description & Price In Words	Prices in Figures	
			Unit Price	TOTAL
215	30 LF	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 sum of dollars and _____ cents per Linear Foot.	\$	\$
216	1 EA	Furnish & Install 30-inch CIP Headwall, complete and in place for the sum of dollars and _____ cents per Each.	\$	\$
217	1 EA	Furnish & Install 6-foot x 6-foot Storm Drain Junction Box, work fully performed for the sum of dollars and _____ cents per Each.	\$	\$
218	1 EA	Connect to Existing 30-inch RCP, work fully performed for the sum of dollars and _____ cents per Each.	\$	\$
219	30 LF	Remove and Dispose of Existing 30-inch RCP, work fully performed for the sum of dollars and _____ cents per Linear Foot.	\$	\$
220	1 LS	Clear & Grub Area for Construction Activities within Easements, including tree trimming and protection, work fully performed for the sum of dollars and _____ cents per Lump Sum.	\$	\$
221	15 EA	Tree Removal (all tree removal shall be approved by Project Inspector), work fully performed for the sum of dollars and _____ cents per Each.	\$	\$
222	1 LS	Furnish, Install, & Maintain 12-foot Wide Temporary Access Road and Entrance, including restoring to the original condition after construction, work fully performed for the sum of dollars and _____ cents per Lump Sum.	\$	\$

Item No.	Quantity & Unit	Description & Price In Words	Prices in Figures	
			Unit Price	TOTAL
223	1 LS	Dewatering, work fully performed for the sum of dollars and _____ cents per Lump Sum.	\$	\$
224	1,200 LF	Furnish, Install, & Maintain Temporary Safety Fence, including removal after construction, work fully performed for the sum of dollars and _____ cents per Linear Foot.	\$	\$
225	450 LF	Furnish, Install, & Maintain Temporary Silt Fence, including removal after construction, work fully performed for the sum of dollars and _____ cents per Linear Foot.	\$	\$
226	1 EA	Furnish & Install Rock Check Dam, complete and in place for the sum of dollars and _____ cents per Each.	\$	\$
227	1 EA	Furnish & Install Oil Boom, complete and in place for the sum of dollars and _____ cents per Each.	\$	\$
228	2,000 SY	Furnish & Install Erosion Control Matting, complete and in place for the sum of dollars and _____ cents per Square Yard.	\$	\$
229	3,700 SY	Furnish & Install Temporary Seeding, complete and in place for the sum of dollars and _____ cents per Square Yard.	\$	\$
230	700 SY	Furnish & Install Channel Rock Cascade, including rock boulders, complete and in place for the sum of dollars and _____ cents per Square Yard.	\$	\$

Item No.	Quantity & Unit	Description & Price In Words	Prices in Figures	
			Unit Price	TOTAL
231	80 CY	Furnish & Install Channel Transition Material, complete and in place for the sum of dollars and _____ cents per Cubic Yard.	\$	\$
232	2 EA	Furnish & Install Bank Transition Grading, including 15-inch rip rap, complete and in place for the sum of dollars and _____ cents per Each.	\$	\$
233	70 LF	Furnish & Install Pool Construction, including channel run material, complete and in place for the sum of dollars and _____ cents per Linear Foot.	\$	\$
234	55 LF	Furnish & Install Rock Swale, including rock rip rap, complete and in place for the sum of dollars and _____ cents per Linear Foot.	\$	\$
235	800 SY	Furnish & Install Grass Sodding to Match Existing Yard Condition, complete and in place for the sum of dollars and _____ cents per Square Yard.	\$	\$
236	4,000 SY	Furnish & Install Permanent Seeding in Disturbed Areas, complete and in place for the sum of dollars and _____ cents per Square Yard.	\$	\$
237	1 LS	Furnish, Install, & Maintain Temporary Irrigation, including removal after construction, work fully performed for the sum of dollars and _____ cents per Lump Sum.	\$	\$
238	2,650 CY	Excavate On-site Material, work fully performed for the sum of dollars and _____ cents per Cubic Yard.	\$	\$

Item No.	Quantity & Unit	Description & Price In Words	Prices in Figures	
			Unit Price	TOTAL
239	3,200 CY	Furnish & Install Fill Material, complete and in place for the sum of dollars and _____ cents per Cubic Yard.	\$	\$
240	50 TN	Furnish & Install Crushed Stone for bad weather access, complete and in place for the sum of dollars and _____ cents per Ton.	\$	\$
241	550 EA	Furnish & Install Live Stakes, complete and in place for the sum of dollars and _____ cents per Each.	\$	\$
242	800 EA	Furnish & Install Shrubs, complete and in place for the sum of dollars and _____ cents per Each.	\$	\$
243	230 EA	Furnish & Install Trees (minimum 4-foot height), complete and in place for the sum of dollars and _____ cents per Each.	\$	\$
244	340 CY	Furnish & Install Top Soils (minimum 6-inch thick), complete and in place for the sum of dollars and _____ cents per Cubic Yard.	\$	\$
245	1 LS	As-built Survey, work fully performed for the sum of dollars and _____ cents per Lump Sum.	\$	\$
246	1 LS	GPS Data on New Stormwater Attributes per Section 15-08, work fully performed for the sum of dollars and _____ cents per Lump Sum.	\$	\$

Item No.	Quantity & Unit	Description & Price In Words	Prices in Figures	
			Unit Price	TOTAL
247	1 LS	Construction Contingency, work fully performed for the sum of <div style="text-align: center;"> <u>One Hundred Twenty Thousand</u> dollars and <u>None</u> cents per Lump Sum. </div>	\$120,000.00	\$120,000.00

**SUB-TOTAL SANITARY SEWER IMPROVEMENTS
(Items 201 – 247)**

\$ _____

ALTERNATE A (ITEM 199A) TWDB FUNDING

Item No.	Quantity & Units	Description & Price In Words	Prices in Figures	
			Unit Price	TOTAL
199A	1 LS	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 sum of <div style="text-align: center;"> _____ dollars and _____ cents per Lump Sum. </div>	\$	\$

**SUB-TOTAL ALTERNATE A
(Item 199A)**

\$ _____

TOTAL SUMMARY

**MOBILIZATION & SWPPP
(Items 101 – 102)**

\$ 65,000.00

**SANITARY SEWER IMPROVEMENTS
(Items 201 - 247)**

\$ _____

TOTAL BASE BID \$ _____

TOTAL BASE BID + ALTERNATE A \$ _____

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 180 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 _____

Addendum No. 2 _____

Addendum No. 3 _____

BIDDER

Company

By _____

(Please Print)

Title

Address

(Seal if corporation)

City State Zip

SECTION NO. 7

STATE OF TEXAS §

Contract

COUNTY OF TARRANT §

This Contract, made and entered into this _____ day of _____, 20____, by and between the City of Arlington of Tarrant County, Texas, a municipal corporation, hereinafter called "Owner," and _____, hereinafter called "Contractor."

W I T N E S S E T H:

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:

**Woodside Drive Sanitary Sewer Main Replacement
City of Arlington Project No. WUWS18016**

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 180 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

Company Name

Tax Identification Number:

By _____
Signature

Printed or Typed Name

Printed or Typed Title

CITY OF ARLINGTON, TEXAS

ATTEST:

Craig M. Cummings
Director of Water Utilities

Alex Busken

APPROVED AS TO FORM:
TERIS SOLIS, City Attorney

BY _____

THE STATE OF TEXAS §
COUNTY OF _____ §

Contractor Acknowledgment

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, 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 _____, a corporation of _____ County, Texas, and as _____ 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 _____ day of _____, 20____.

Notary Public In and For The State of Texas

Notary's Printed Name

THE STATE OF TEXAS §
COUNTY OF TARRANT §

City Acknowledgement

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Craig M. Cummings, 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 Water Utilities thereof, and for the purposes and consideration therein expressed.

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

Notary Public In and For The State of Texas

Notary's Printed Name

END OF SECTION

SECTION NO. 8

THE STATE OF TEXAS §

Performance Bond

COUNTY OF TARRANT §

KNOW ALL BY THESE PRESENTS:

THAT _____

of the City of _____, County of _____

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

_____, a corporate surety/sureties organized under the laws of the State of _____ 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 _____ DOLLARS and _____ CENTS (\$ _____), 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 _____ day of _____, 20____, 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:

**Woodside Drive Sanitary Sewer Main Replacement
City of Arlington Project No. WUWS18016**

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. WUWS18016.**

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 _____ day of _____, 20__.

WITNESS

PRINCIPAL

Company

By _____
Signature

By _____
Signature

Typed/Printed Name

Typed/Printed Name

Title

Title

Address

Address

City State Zip

City State Zip

WITNESS

By _____
Signature

Typed/Printed Name

Title

Address

City State Zip

SURETY

Company

By _____
Signature

Typed/Printed Name

Title

Address

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 §

Payment Bond

COUNTY OF TARRANT §

KNOW ALL BY THESE PRESENTS:

THAT _____

of the City of _____, County of _____

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

_____, a corporate surety/sureties organized under the laws of the State of _____ 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 _____ **DOLLARS and** _____ **CENTS(\$** _____ **)**, 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 _____, _____, 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:

**Woodside Drive Sanitary Sewer Main Replacement
City of Arlington Project No. WUWS18016**

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. WUWS18016.**

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 _____ day of _____, 20____.

WITNESS

PRINCIPAL

By _____
Signature

By _____
Signature

Typed/Printed Name

Typed/Printed Name

Title

Title

Address

Address

City State Zip

City State Zip

WITNESS

SURETY

By _____
Signature

By _____
Signature

Typed/Printed Name

Typed/Printed Name

Title

Title

Address

Address

City State Zip

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 _____

ADDRESS _____

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 _____

of the City of _____, County of _____

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

_____, a corporate surety/sureties organized under the laws of the State of _____ 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 _____ DOLLARS and _____ CENTS (\$ _____), 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 _____ day of _____, 20____, 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:

**Woodside Drive Sanitary Sewer Main Replacement
City of Arlington Project No. WUWS18016**

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 _____ day of _____, 20____.

WITNESS

PRINCIPAL

By _____
Signature

Typed/Printed Name

Title

Address

City State Zip

Company

By _____
Signature

Typed/Printed Name

Title

Address

City State Zip

WITNESS

SURETY

By _____
Signature

By _____
Signature

Typed/Printed Name

Typed/Printed Name

Title

Title

Address

Address

City State Zip

City State Zip

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

END OF SECTION

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) CONTRACT SPECIFIC GOAL
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
11-28	PROJECT SIGNS
11-29	QUANTITIES
11-30	CONTRACTOR SELF-PERFORMANCE

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 **Woodside Drive Sanitary Sewer Main Replacement**, City of Arlington project No. **WUWS18016**, 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. Contractor is responsible to stay informed of all events involving the AT&T (Cowboys) Stadium, Globe Life Field (Texas Rangers) and any other major events at other venues in the Entertainment District. Contractor shall not work in the Entertainment District unless approved by the City's Traffic Engineering division. Upon approval to proceed with construction, the Contractor must complete work and remove all traffic control devices two (2) days prior to the next event, or as directed by the City. It will be the responsibility of the Prime Contractor to see that Subcontractor(s) is in compliance with requirement.

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

SPECIFIC GOAL: The City's Minority/Woman Business Enterprise (MWBE) utilization goal, for this project is **35.50** %.

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

Automobile Liability Insurance

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

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:

Arlington Water Utilities Department, MS01-0200
Attention: Ashley Brown, Capital Projects 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 or 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:
- Channel Improvements
 - Trees, Shrubs, and Sodding
 - Sanitary Sewer Products
 - Trench Safety
 - Traffic Control Plans (1 hard copy)
 - SWPPP (2 hard copies)
- 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.

11-15 TIME FOR COMPLETION AND LIQUIDATED DAMAGES: 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.

11-16 BONUS: N/A

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.

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
 - 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 1st 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
 - » Monthly Payment Breakdown (form provided by the City)
 - » 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



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!

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 vehículos 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 vehículos 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



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!

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 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

¡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 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
-------	-------------

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

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, 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 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!



ACCESO LIMITADO EN LA ENTRADA DE VEHÍCULO

¡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 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
-------	-------------

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

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, 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 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!

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.

When will my water be turned off?

From	To
On	
Comments	

How can I get updates?

Go to www.arlingtontx.gov/wateroutages or sign up for email notifications by registering your account at 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

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.

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.

When will my water be turned off?

From	To
On	
Comments	

How can I get updates?

Go to www.arlingtontx.gov/wateroutages or sign up for email notifications by registering your account at 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

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

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	

¿Como recibo actualizaciones?

Se puede recibir actualizaciones en www.arlingtonx.gov/wateroutages o se puede registrarse en www.arlingtonx.gov/wateronline para recibir notificaciones por correo electrónico.

¿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!



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.

¿Cuándo se apagará mi servicio de agua?

Desde	Hasta
En	
Comentarios	

¿Como recibo actualizaciones?

Se puede recibir actualizaciones en www.arlingtonx.gov/wateroutages o se puede registrarse en www.arlingtonx.gov/wateronline para recibir notificaciones por correo electrónico.

¿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!

11-27 SIGNS FOR BUSINESSES:

- A. Weatherproof signs directing motorists to adjacent business entrances shall be provided by the Contractor and used during construction at locations directed by the City. The signs shall be approved by the City prior to fabrication and installation.
- B. The sign shall include the business name, shall be at a minimum of 18-inches by 24-inches and have a minimum of 3-inches tall by 2-inches wide lettering. The sign shall be placed such that it is visible from the street to help direct patrons to adjacent businesses but shall not obstruct traffic visibility for vehicles exiting the driveway.
- C. It will be the Contractor's responsibility to maintain the signs until such time as the City agrees they can be removed. A bid item has been included which shall cover all costs related to fabricating, installing, and maintaining the signs.

11-28 PROJECT SIGNS:

- A. Contractor shall provide and install a minimum of two (2) 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: water main and serive replacement. Qualified subcontractors may be used to perform any other work types in this contract. (Rev. 8/2021)

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
12-04	TEMPORARY TRAFFIC SIGNALS
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
12-15	CONSECUTIVE STREET CONSTRUCTION
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
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.
- 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

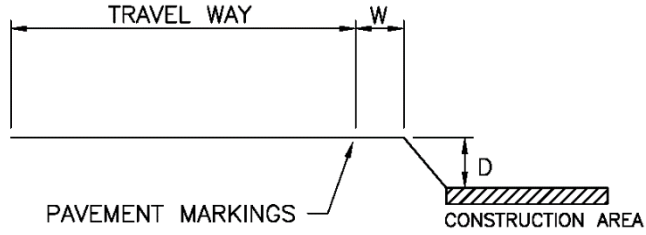
UV Resistance	ASTM D-4355	% (500 HRS)	80	70	70	70	70
Woven / Nonwoven			Woven	Nonwoven	Nonwoven	Nonwoven	Nonwoven

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,

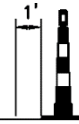
length of project, and to expect delays. The signs shall be operational twenty-four (24) hours a day. Portable message boards shall be erected at minimum three (3) calendar days prior to beginning work or as directed by the City, and all verbiage shall be approved by the City Traffic Engineer.

- 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.



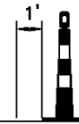
"W" GREATER THAN OR EQUAL TO 30' NO DEVICE NEEDED

"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:

Ⓐ "D" = 2" TO 6"

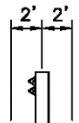


Ⓑ "D" GREATER THAN 6" TO 24"

4' MIN. (6' DESIRED)



Ⓒ "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:	SCALE: 1/8"	SHEET: OF
DRAWN BY:	DRAWN 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 3/4-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: N/A

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.
- 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. (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: N/A

12-37 VERTICAL ADJUSTMENT OF WATER VALVES, MANHOLES, ACCESS CHAMBERS AND CLEANOUTS: N/A

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: N/A

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 Section 12-46 below.
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/TURFGRASS PLANTING: This work includes labor, material, and equipment for soil preparation, fertilization, planting, and other requirements regarding turfgrass planting areas. Payment for sodding shall include the cost of all fertilizer and water. Grass sod variety shall match existing and adjacent property.

A. SUBMITTALS: 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.

B. TURFGRASS:

1. Buffalograss Sod, Bermuda Sod or Saint Augustine: Turfgrass sod shall be "Buchloe dactyloides" (Buffalograss) 'Prairie Grass' variety, "Cynodon dactylon" Common Bermuda Grass, or "Stenotaphrum secundatum" Saint Augustine 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 ¾-inches. 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 2-inches. 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.

2. Dimensions: All sod shall be machine cut to uniform soil thickness of 1-inch plus or minus ¼-inch. 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.
3. Solid Sodding: Prior to laying the sod, the planting beds shall be raked smooth to true grade and moistened to a depth of 4-inches, 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.
4. 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.

C. FERTILIZER:

1. General: Fertilizer shall be an organic commercial product uniform in composition, free flowing, and suitable for application with approved equipment. Fertilizer shall be delivered to the site in fully labeled original containers. Fertilizer which has been exposed to high humidity and moisture, has become caked or otherwise damaged making it unsuitable for use, will not be acceptable.
2. Planting Application: Fertilizer shall be an organically based product (nutrients contained in the project shall be derived solely from the remains, part of the remains, or a by-product of a once-living organism) supplying nitrogen, phosphorus and potassium in a 1-1-1 to 5-5-5 analysis, such as Green Sense (3-1-2) or Sustane (5-4-2), or approved alternate formulation. The fertilizer shall contain a variety of cultures of soil-borne bacteria and trace elements, and be high (min. 18% each) in humus and humic acid. The Contractor shall submit a sample label or specification of the fertilizer proposed to be used for the City's approval. The specified fertilizer shall be applied at the rate of twenty (20) pounds per one thousand (1,000) square feet

according to specific label. Fertilizer shall be applied over sodded areas after planting, but not more than two (2) days later.

D. HERBICIDES:

1. General: Herbicides will be applied as necessary for the eradication of weeds. The Contractor will choose an appropriate herbicide for application with respect to the kind of turfgrass being planted, climatic conditions, site conditions, and the state of work and the approved City chemical list available through the Parks Department. The applied herbicides shall not be detrimental to the establishment of turfgrass. Herbicides shall be approved for application by relevant U.S. Government agencies such as the U.S. Department of Agriculture and the Environmental Protection Agency. A pre-emergent that will not cause root pruning of new sod must be applied when sod is laid.
2. Application: The rates and methods of application shall be in strict conformance with local, state and federal laws and regulations. Applications shall follow the manufacturer's recommendations. All applications must be licensed by Texas Structural Pest Control Board or Texas Department of Agriculture.
3. Weed Control: The Contractor shall apply appropriate herbicides in the following situations:
 - a. Where weeds are present in the prepared soil, prior to the commencement of planting operations.
 - b. Where weeds are present in the planted turfgrass areas, prior to the establishment of the turfgrass to a uniform stand.
 - c. In the planted turfgrass areas, where the presence of weeds precludes the acceptability of the turfgrass as a uniform stand.
 - d. In other situations where the City judges that the presence of weeds is detrimental to the establishment or acceptability of the turfgrass.

E. PLACEMENT: All turfing operations shall be executed across the slope, parallel to finished grade contours.

F. SOIL PREPARATION:

1. Scarification: Scarification shall be accomplished to loosen the soil, destroy existing vegetation, and prepare an acceptable sod bed. Initial tillage shall be done in a crossing pattern for double coverage, then followed by a disc harrow. Depth of scarification shall be 1-inch to 1½-inches.
2. Cleaning: Soil shall be further prepared by the removal of debris, building materials, rubbish, weeds, and stones larger than 2-inches in diameter. During the soil preparation process, a "Rock Pick" or other approved piece of machinery shall be

used to gather surface stones as small as 1-inch in diameter. The Contractor shall be responsible for the disposal of collected materials.

3. Fine Grading: After scarifying and cleaning, all areas to be planted shall be leveled, fine graded, and dragged with a weighted spike harrow or float drag. The required result shall be the elimination of ruts, depressions, humps, and objectionable soil clods. Unless specified by the City medians shall be crowned in the center with cross slopes of approximately two percent (2%). This shall be the final soil preparation step to be completed before the commencement of fertilizing and planting.
 4. City shall approve bed preparation before grass planting begins.
- G. PROTECTION: No heavy equipment shall be moved over the planted lawn area unless the soil is again prepared, graded, leveled and replanted. It will be the responsibility of this Contractor to protect all paving surfaces, curbs, utilities, plant materials, and any other existing improvements from damage. Any damage shall be repaired or replaced as soon as possible at no cost to the City. The City may repair emergency conditions or noncompliance hazards at the cost of the Contractor.
- H. ESTABLISHMENT AND ACCEPTANCE: Regardless of unseasonable climatic conditions or other adverse conditions affecting planting operations and the growth of the turfgrass, it shall be the sole responsibility of the Contractor to ESTABLISH A UNIFORM STAND OF TURFGRASS 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 stop any phase of the work until conditions change to favor the establishment of turfgrass.
1. Uniform Stand of Turfgrass: 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. Growing plants shall be defined as healthy grass plants of two blades or more at least 1½-inches tall. A uniform stand of turfgrass shall be free of weeds. No payment will be made for turfgrass until a uniform stand of grass has been established. Partial projects will not be accepted. A uniform stand of grass over 4-inches in height will not be accepted.
 2. Thirty (30) days following planting, the City will inspect the medians to verify establishment as described above. Contractor will be required to replant and/or maintain any areas of grass that are unacceptable to the City until they meet the standards above.
- I. MAINTENANCE: Maintenance shall begin immediately after each portion of grass area is planted. All planted areas will be protected and maintained by watering, weed control, and replanting as necessary to establish a UNIFORM STAND WITH COMPLETE COVERAGE OF THE SPECIFIED GRASS. The entire project will continue to be replanted and maintained by the Contractor until complete coverage and acceptance are

achieved over one hundred percent (100%) of the area. Any water equipment deemed necessary by the Contractor will be provided by the Contractor.

1. **Watering:** Use a temporary irrigation system to irrigate the entire planted area daily for the first ten (10) days on which less than ½-inch of rain has fallen in the previous twenty-four hours and then two (2) times per week for the balance of the month following planting. Water trucks will be permitted as a means of irrigating the sodded areas.
 2. **Weed Control:** Appropriate herbicides shall be applied as necessary as previously specified.
 3. Grass shall be edged where it is adjacent to concrete areas.
 4. All concrete areas where weeds are growing in the joints must be trimmed or chemically sprayed. These areas must have all growth removed.
 5. Ant infestations must be treated with Award, Amdro or approved equivalent.
- J. **GRADING:** It is the Contractor's responsibility to maintain the existing grades and leave them in a true and even condition after planting turfgrass.
- K. **EROSION CONTROL:** Throughout the project and the maintenance period for turfgrass, it is the Contractor's responsibility to maintain the topsoil in place at specified grades. Topsoil and turfgrass losses due to erosion will be replaced by the Contractor until establishment and acceptance is achieved.
- L. **CLEAN-UP:** The Contractor shall remove any excess material or debris brought onto the site or unearthed as a result of his/her turfgrass operations.
- M. **GUARANTEE:** The Contractor shall guarantee all materials used for this work to be type, quality, and quantity specified.

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. 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
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, 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):
N/A.

14-02 EMBEDMENT REQUIREMENTS FOR WATER PIPE & FITTINGS (B 19 & C 3.14): N/A.

14-03 THRUST BLOCKINGS (C 4.11 and C 6.10): N/A.

14-04 VALVE OPERATIONS NOTIFICATION: N/A.

14-05 INTERRUPTION OF WATER SERVICE: N/A.

14-06 CLEANING OF NEW WATER MAIN (C 20.6): N/A.

14-07 FIRE HYDRANTS (B 9): N/A.

14-08 RELOCATION OF EXISTING FIRE HYDRANTS (C 12): N/A.

14-09 REMOVE/SALVAGE EXISTING FIRE HYDRANT: N/A.

14-10 GATE VALVES (B 10): N/A.

14-11 WATER SERVICES: N/A.

14-12 WATER METER REPLACEMENT: N/A.

14-13 WATER METER RELOCATION OR ADJUSTMENT: N/A.

14-14 WATER METER BOX REPLACEMENT: N/A.

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 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 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 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 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): N/A

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

Section No.	
15-01	REINFORCED CONCRETE PIPE
15-02	HIGH DENSITY POLYETHYLENE PIPE (HDPE)
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):

- A. HDPE in this section shall refer to High Density Corrugated Polyethylene Smooth Wall Pipe. This item shall govern the furnishing and installation of all HDPE and associated fittings necessary for constructing storm drain facilities, which shall conform to AASHTO M294 specification for High Density Corrugated Polyethylene Pipe and Fittings. The pipes shall be of the sizes, types, and dimensions shown on the plans and shall include all connections and joints to new or existing pipes, storm drain manholes, inlets, headwalls, and other appurtenances as may be required to complete the work.
- B. The pipe and fittings shall be manufactured by extrusion or molding methods as called for in AASHTO M294. High density polyethylene material shall meet the requirements of ASTM D 3350 Cell Classification 335420C.
- C. Trench width shall be the minimum for proper placement and compaction of embedment and backfill.
- D. Embedment material shall be in accordance with manufacturer's specifications.
- E. The thickness of bedding material below the pipe shall be 6-inches minimum for all pipe sizes, unless otherwise directed by the City or shown on the plans. For the remaining backfill operations, see the respective trench backfill specifications in these Special Provisions.
- F. Manufacturer's recommendations for connection methods and materials necessary to accomplish tight and secure joints shall be strictly followed. This includes HDPE connections or HDPE to reinforced concrete pipe.
- G. Minimum pipe stiffness at five percent (5%) deflection shall be as stated within AASHTO M294 when tested according to ASTM D 2412. The Contractor shall provide written

certification from the manufacturer that the pipe and related fittings meet the minimum requirements within AASHTO M294. The pipe and fittings may be rejected for failure to meet any of this specification and may be retested to establish conformity in accordance with the specification.

- H. Payment for HDPE 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 excavation, bedding, jointing, and backfilling. The cost of constructing concrete collars shall be considered subsidiary to the unit prices bid for HDPE.

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.

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.

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:	968500.00000000
False_Northing:	6561666.66666667
Central_Meridian:	-98.50000000

Standard_Parallel_1:	32.13333333
Standard_Parallel_2:	33.96666667
Latitude_Of_Origin:	31.66666667
Linear Unit:	Foot_US
Geographic Coordinate System:	GCS_North_American_1983
Datum:	D_North_American_1983
Prime Meridian:	Greenwich
Angular Unit:	Degree

- 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 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 of 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

§ 1926.650

29 CFR Ch. XVII (7–1–12 Edition)

(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.* (i) 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 no 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 or 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 shear vane.

(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.* (i) 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.

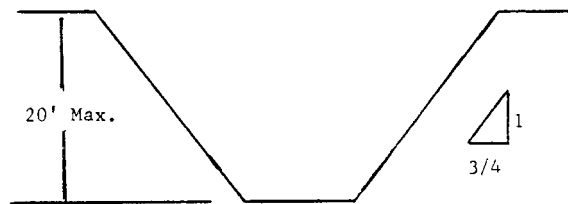
Figure B-1

Slope Configurations

(All slopes stated below are in the horizontal to vertical ratio)

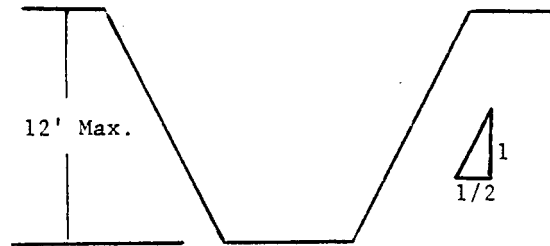
B-1.1 Excavations made in Type A soil.

1. All simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of ¾:1.



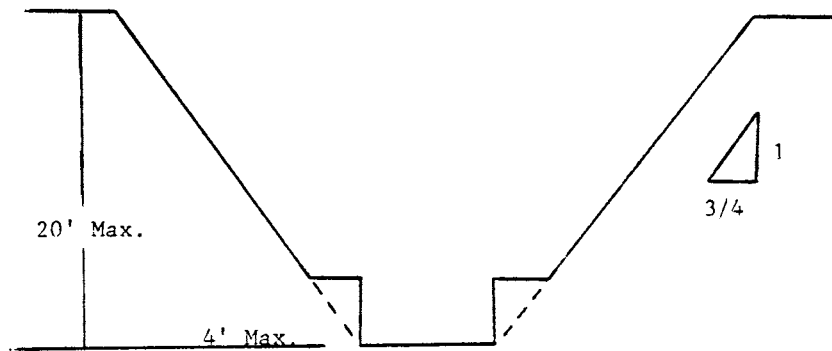
SIMPLE SLOPE—GENERAL

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.

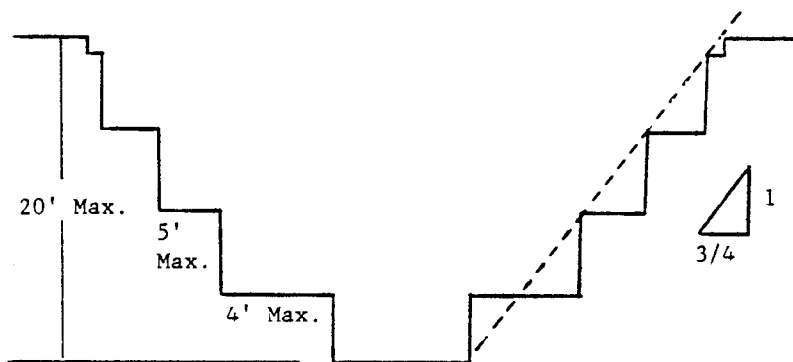


SIMPLE SLOPE—SHORT TERM

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:

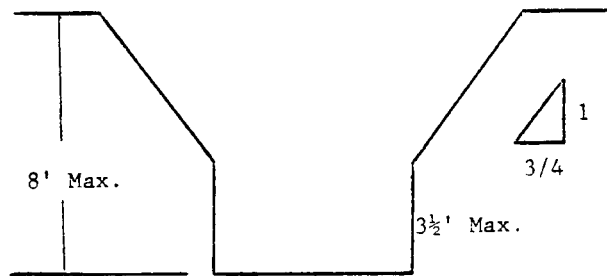


SIMPLE BENCH



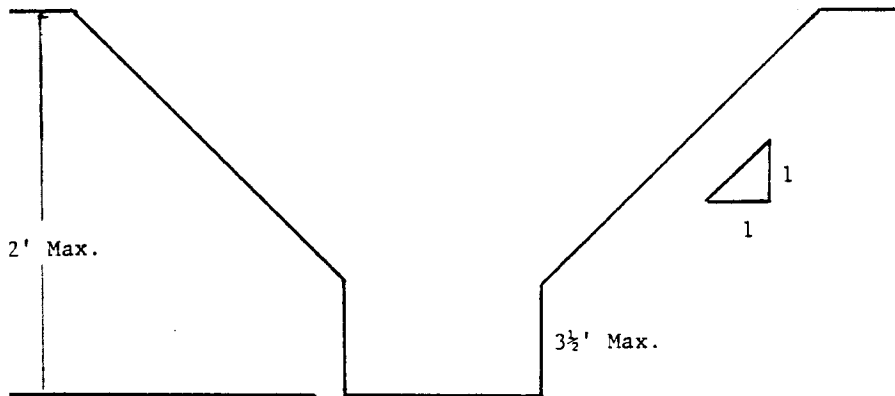
MULTIPLE BENCH

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.



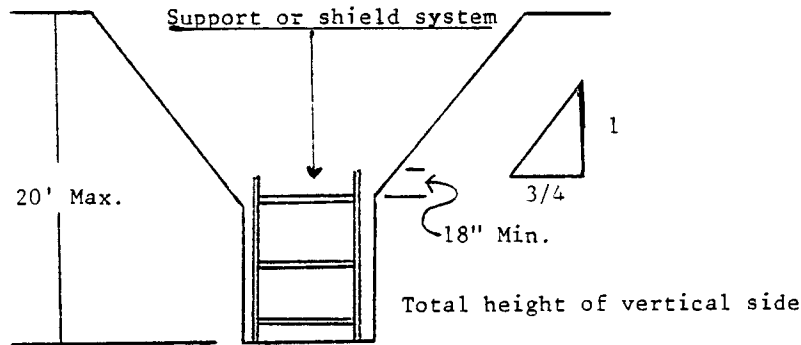
UNSUPPORTED VERTICALLY SIDED LOWER PORTION—MAXIMUM 8 FEET IN DEPTH

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.

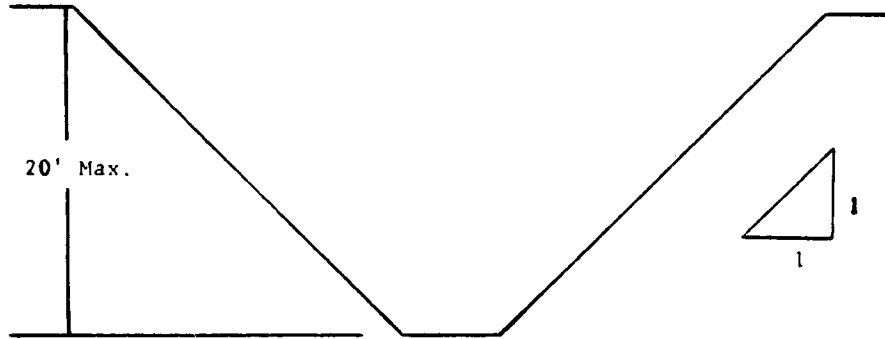


SUPPORTED OR SHIELDED VERTICALLY SIDED LOWER PORTION

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).

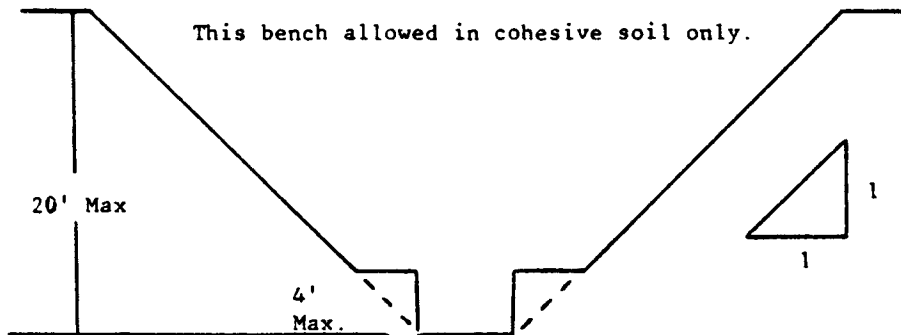
B-1.2 Excavations Made in Type B Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.

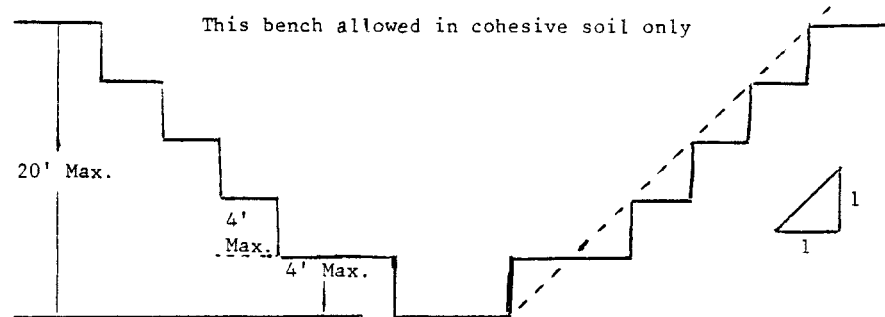


SIMPLE SLOPE

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:

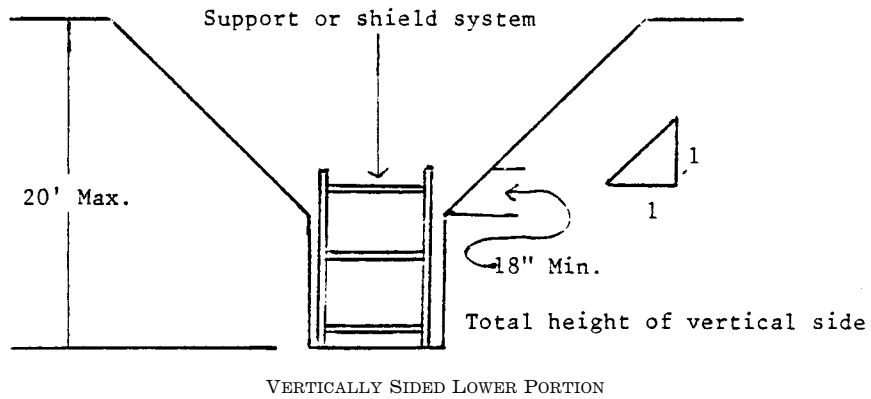


SINGLE BENCH



MULTIPLE BENCH

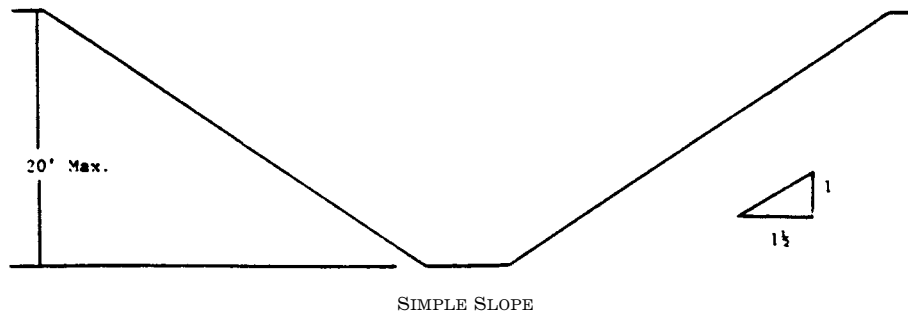
3. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.



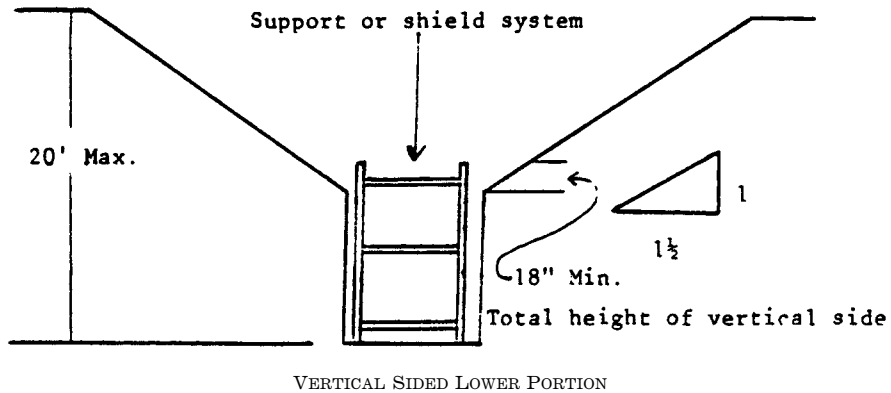
4. All other sloped excavations shall be in accordance with the other options permitted in §1926.652(b).

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.



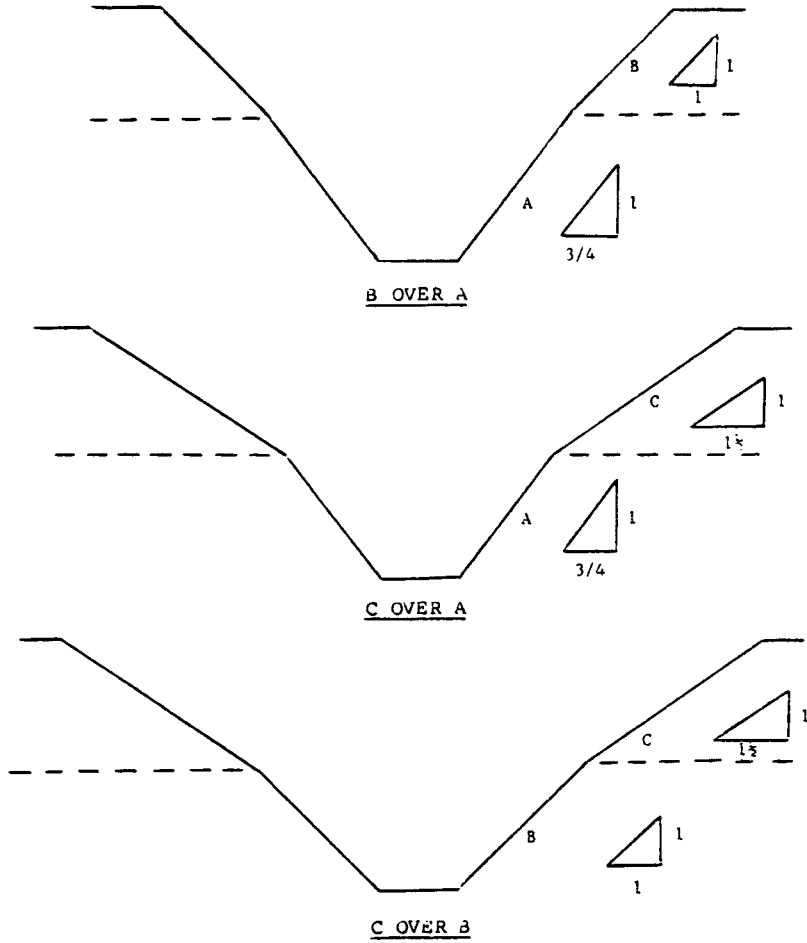
2. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.

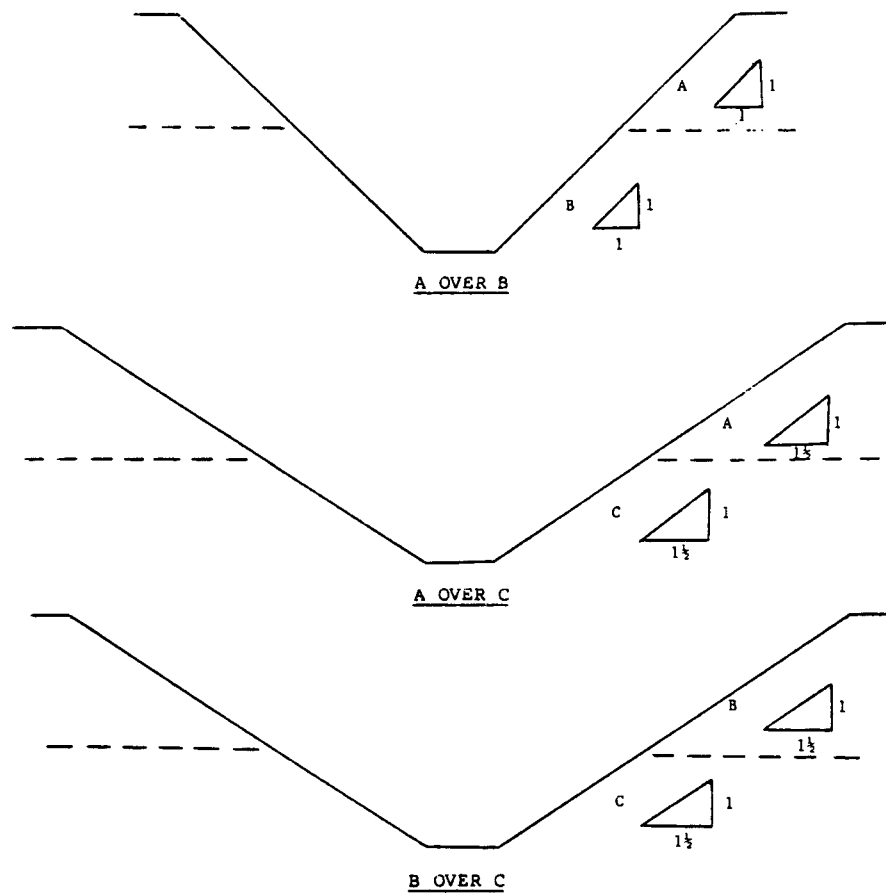


3. All other sloped excavations shall be in accordance with the other options permitted in §1926.652(b).

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 4×4 crossbraces at six feet horizontally and four feet vertically.

Wales are not required.

Space 3×8 uprights at six feet horizontally. This arrangement is commonly called "skip shoring."

Arrangement #B2

Space 4×6 crossbraces at eight feet horizontally and four feet vertically.

Space 8×8 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 $P_a = 25 \times H + 72 \text{ psf}$ (2 ft Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (ACTUAL) AND SPACING OF MEMBERS **												
	CROSS BRACES				WALES				UPRIGHTS				
	HORIZ. SPACING (FEET)		WIDTH OF TRENCH (FEET)		VERT. SPACING (FEET)		SIZE (IN)		VERT. SPACING (FEET)		MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)		
5	UP TO 6	4X4	UP TO 6	4X4	4	6X6	4	Not Req'd	---	CLOSE	4	6	8
	UP TO 8	4X4	UP TO 9	4X6	4	6X6	4	Not Req'd	---			2X6	2X8
10	UP TO 10	4X6	UP TO 9	4X6	4	6X6	4	8X8	4			2X6	
	UP TO 12	4X6	UP TO 6	4X6	4	6X6	4	8X8	4			2X6	
10	UP TO 6	4X4	UP TO 9	4X6	4	6X6	4	Not Req'd	---				
	UP TO 8	4X6	UP TO 6	4X6	4	6X6	4	8X8	4		2X6		3X8
15	UP TO 10	6X6	UP TO 9	6X6	4	6X8	4	8X10	4			2X6	
	UP TO 12	6X6	UP TO 6	6X6	4	6X8	4	10X10	4				3X8
15	UP TO 6	6X6	UP TO 9	6X6	4	6X8	4	6X8	4				
	UP TO 8	6X6	UP TO 6	6X6	4	6X8	4	6X8	4				
20	UP TO 10	8X8	UP TO 9	8X8	4	8X8	4	8X10	4				
	UP TO 12	8X8	UP TO 6	8X8	4	8X8	4	10X10	4				
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_a = 45 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (ACTUAL) AND SPACING OF MEMBERS**												
	CROSS BRACES				MALES				UPRIGHTS				
	HORIZ. SPACING (FEET)		WIDTH OF TRENCH (FEET)		VERT. SPACING (FEET)		SIZE (IN)		VERT. SPACING (FEET)		MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)		
UP	TO	UP	TO	UP	TO	UP	TO	UP	TO	CLOSE	2	3	
5	UP	TO	4X6	4X6	6X6	6X6	6X6	6X6	5	6X8	5		
	UP	TO	6X6	6X6	6X8	6X8	6X8	5	8X10	5		2X6	
	UP	TO	6X6	6X6	6X8	6X8	6X8	5	10X10	5		2X6	
10	UP	TO	6X6	6X6	6X8	6X8	6X8	5	8X8	5			
	UP	TO	6X8	6X8	8X8	8X8	8X8	5	10X10	5		2X6	
	UP	TO	8X8	8X8	8X8	8X8	8X10	5	10X12	5		2X6	
15	UP	TO	6X8	6X8	8X8	8X8	8X8	5	8X10	5			
	UP	TO	8X8	8X8	8X8	8X8	8X10	5	10X12	5			
	UP	TO	8X10	8X10	8X10	8X10	10X10	5	12X12	5			
20	UP	TO	6X8	6X8	8X8	8X8	8X8	5	8X10	5	3X6		
	UP	TO	8X8	8X8	8X8	8X8	8X10	5	10X12	5	3X6		
	UP	TO	8X10	8X10	8X10	8X10	10X10	5	12X12	5	3X6		
OVER	SEE NOTE 1												
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_a = 80 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (ACTUAL) AND SPACING OF MEMBERS**											
	GROSS BRACES			WIDTH OF TRENCH (FEET)			VERT. SPACING (FEET)		SIZE (IN)	VERT. SPACING (FEET)	UPRIGHTS	
	HORIZ. SPACING (FEET)	UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15	VERT. SPACING (FEET)	UP TO 15			MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET) (See Note 2)	CLOSE
5	UP TO 6	6X8	6X8	6X8	8X8	8X8	5	8X10	5	2X6		
TO 8		8X8	8X8	8X8	8X10	8X10	5	10X12	5	2X6		
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 8		8X10	8X10	8X10	8X10	10X10	5	12X12	5	2X6		
See Note 1												
See Note 1												
15	UP TO 6	8X10	8X10	8X10	8X10	10X10	5	12X12	5	3X6		
TO 8												
See Note 1												
See Note 1												
20	UP TO 6	8X10	8X10	8X10	8X10	10X10	5	12X12	5	3X6		
TO 8												
See Note 1												
See Note 1												
OVER 20												

* 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-2.1

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS *
 SOIL TYPE A P_a = 25 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (S4S) AND SPACING OF MEMBERS **																					
	CROSS BRACES						WALES			UPRIGHTS												
	WIDTH OF TRENCH (FEET)						VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)												
	HORIZ. SPACING (FEET)	UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15				CLOSE	4	5	6	8								
5	UP TO 6	4X4	4X4	4X4	4X4	4X6	4	Not Req'd	4	Not Req'd												
	TO 8	4X4	4X4	4X4	4X4	4X6	4	Not Req'd	4	Not Req'd												4X8
10	UP TO 10	4X6	4X6	4X6	4X6	6X6	4	8X8	4	4												
	UP TO 12	4X6	4X6	4X6	4X6	6X6	4	8X8	4	4												4X6
10	UP TO 6	4X4	4X4	4X4	4X4	6X6	4	Not Req'd	4	Not Req'd												
	UP TO 8	4X6	4X6	4X6	4X6	6X6	4	6X8	4	4												4X6
15	UP TO 10	6X6	6X6	6X6	6X6	6X6	4	8X8	4	4												
	UP TO 12	6X6	6X6	6X6	6X6	6X6	4	8X10	4	4												4X10
15	UP TO 6	6X6	6X6	6X6	6X6	6X6	4	6X8	4	4												
	UP TO 8	6X6	6X6	6X6	6X6	6X6	4	8X8	4	4												4X8
20	UP TO 10	6X6	6X6	6X6	6X6	6X8	4	8X10	4	4												
	UP TO 12	6X6	6X6	6X6	6X6	6X8	4	8X12	4	4												4X12
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-2.2

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS *
 SOIL TYPE B P_a = 45 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (S4S) AND SPACING OF MEMBERS **												
	CROSS BRACES						MALES			UPRIGHTS			
	HORIZ. SPACING (FEET)		WIDTH OF TRENCH (FEET)				VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)			
UP TO	TO	UP TO	UP TO	UP TO	UP TO	UP TO	UP TO	UP TO	CLOSE	2	3	4	6
5	UP TO	4X6	4X6	4X6	6X6	6X6	5	6X8	5				
TO	UP TO	4X6	4X6	6X6	6X6	6X6	5	8X8	5	3X8		4X8	4X12
10	UP TO	4X6	4X6	6X6	6X6	6X8	5	8X10	5		4X8		
	See Note 1												
10	UP TO	6X6	6X6	6X6	6X8	6X8	5	8X8	5	3X6	4X10		
TO	UP TO	6X8	6X8	6X8	8X8	8X8	5	10X10	5	3X6	4X10		
15	UP TO	6X8	6X8	8X8	8X8	8X8	5	10X12	5	3X6	4X10		
	See Note 1												
15	UP TO	6X8	6X8	6X8	8X8	8X8	5	8X10	5	4X6			
TO	UP TO	6X8	6X8	6X8	8X8	8X8	5	10X12	5	4X6			
20	UP TO	8X8	8X8	8X8	8X8	8X8	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_a = 80 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (S4S) AND SPACING OF MEMBERS **											UPRIGHTS	
	CROSS BRACES				MALES				VERT. SPACING (FEET)			MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)	
	HORIZ. SPACING (FEET)		WIDTH OF TRENCH (FEET)		VERT. SPACING (FEET)		SIZE (IN)		VERT. SPACING (FEET)		CLOSE		
	UP TO	TO	UP TO	TO	UP TO	TO	UP TO	TO	UP TO	TO	UP TO	TO	
5 TO 10	UP TO 6	TO 6X6	UP TO 6	TO 6X6	UP TO 12	TO 8X8	UP TO 15	TO 8X8	5	8X8	5	3X6	
	UP TO 8	TO 6X6	UP TO 6	TO 6X6	UP TO 12	TO 8X8	UP TO 15	TO 8X8	5	10X10	5	3X6	
	UP TO 10	TO 6X6	UP TO 6	TO 6X6	UP TO 12	TO 8X8	UP TO 15	TO 8X8	5	10X12	5	3X6	
10 TO 15	See Note 1												
	UP TO 6	TO 6X8	UP TO 6	TO 6X8	UP TO 12	TO 8X8	UP TO 15	TO 8X8	5	10X10	5	4X6	
	UP TO 8	TO 8X8	UP TO 6	TO 8X8	UP TO 12	TO 8X8	UP TO 15	TO 8X8	5	12X12	5	4X6	
15 TO 20	See Note 1												
	See Note 1												
	UP TO 6	TO 8X8	UP TO 6	TO 8X8	UP TO 12	TO 8X10	UP TO 15	TO 8X10	5	10X12	5	4X6	
OVER 20	See Note 1												
	See Note 1												
	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. (i) 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.

(i) 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. Type B soils that may 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. (i) 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

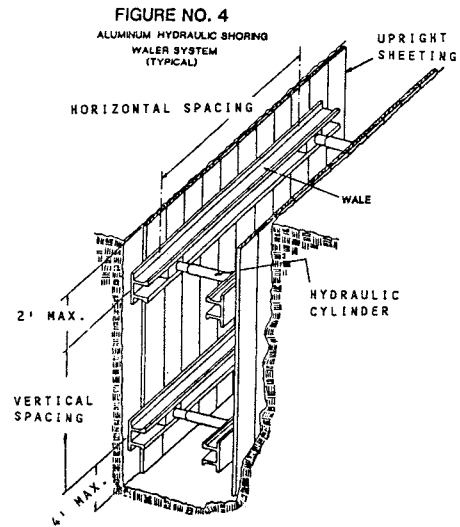
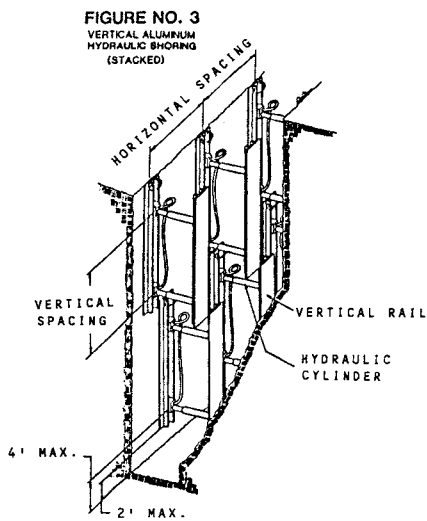
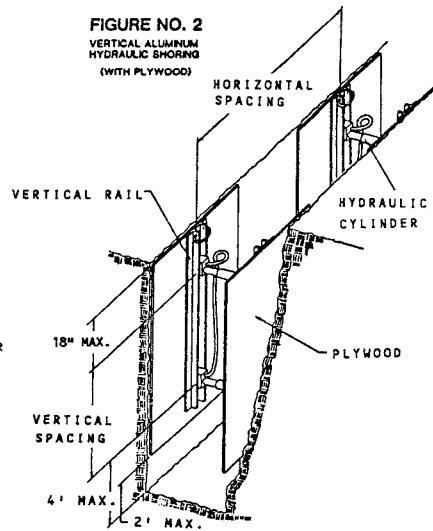
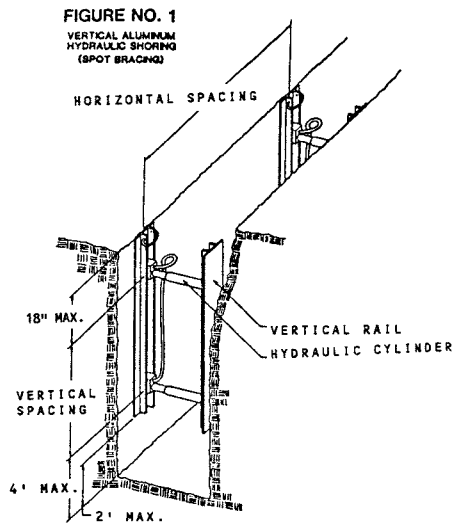


TABLE D - 1.1
ALUMINUM HYDRAULIC SHORING
VERTICAL SHORES
FOR SOIL TYPE A

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)		

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

DEPTH OF TRENCH (FEET)	HYDRAULIC CYLINDERS			WIDTH OF TRENCH (FEET)
	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)		
OVER 5 UP TO 10	8	4	UP TO 8	OVER 8 UP TO 12
OVER 10 UP TO 15	6.5		2 INCH DIAMETER	2 INCH DIAMETER NOTE (2)
OVER 15 UP TO 20	5.5		2 INCH DIAMETER	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 ³) *	WIDTH OF TRENCH (FEET)						MAX. HORIZ. SPACING (ON CENTER)	SOLID SHEET	2 FT.	3 FT.
			UP TO 8	OVER 8 UP TO 12	OVER 12 UP TO 15	CYLINDER DIAMETER		CYLINDER DIAMETER				
			HORIZ. SPACING	HORIZ. SPACING	CYLINDER DIAMETER	CYLINDER DIAMETER	HORIZ. SPACING	HORIZ. SPACING	CYLINDER DIAMETER	CYLINDER DIAMETER		
OVER 5 UP TO 10	4	3.5	8.0	8.0	2 IN	2 IN	2 IN	8.0	8.0	3 IN		
			9.0	9.0	2 IN	NOTE(2)	2 IN	9.0	9.0	3 IN		
			14.0	12.0	3 IN	3 IN	3 IN	12.0	12.0	3 IN		3x12
OVER 10 UP TO 15	4	3.5	6.0	6.0	2 IN	2 IN	2 IN	6.0	6.0	3 IN		
			8.0	8.0	3 IN	3 IN	3 IN	8.0	8.0	3 IN		
			14.0	10.0	3 IN	3 IN	3 IN	10.0	10.0	3 IN		3x12
OVER 15 UP TO 20	4	3.5	5.5	5.5	2 IN	2 IN	2 IN	5.5	5.5	3 IN		
			7.0	6.0	3 IN	3 IN	3 IN	6.0	6.0	3 IN		
			14.0	9.0	3 IN	3 IN	3 IN	9.0	9.0	3 IN		3x12
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 - 1.4
ALUMINUM HYDRAULIC SHORING
WALER SYSTEMS
FOR SOIL TYPE C

DEPTH OF TRENCH (FEET)	WALES		HYDRAULIC CYLINDERS						TIMBER UPRIGHTS		
	VERTICAL SPACING (FEET)	* SECTION MODULUS (IN ³)	WIDTH OF TRENCH (FEET)						MAX. HORIZ. SPACING (ON CENTER)	SOLID SHEET	
			UP TO 8	OVER 8 UP TO 12	OVER 12 UP TO 15	HORIZ. SPACING		CYLINDER DIAMETER			
OVER 5 UP TO 10	4	3.5	6.0	2 IN	6.0	2 IN	NOTE(2)	6.0	3 IN	2 FT.	3 FT.
			7.0	2 IN	6.5	NOTE(2)	6.5	3 IN	3x12		
			14.0	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	—	—
			7.0	3 IN	5.5	3 IN	5.5	3 IN			
			14.0	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	—	—
			7.0	3 IN	5.0	3 IN	5.0	3 IN			
			14.0	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

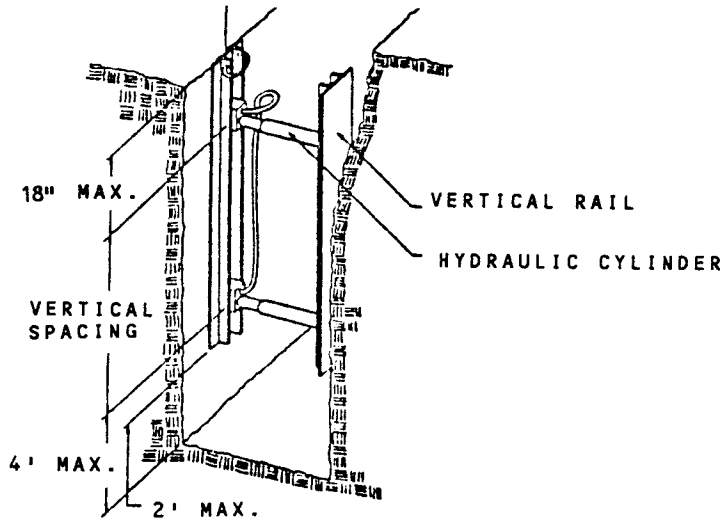


Figure 2. Pneumatic/hydraulic Shoring

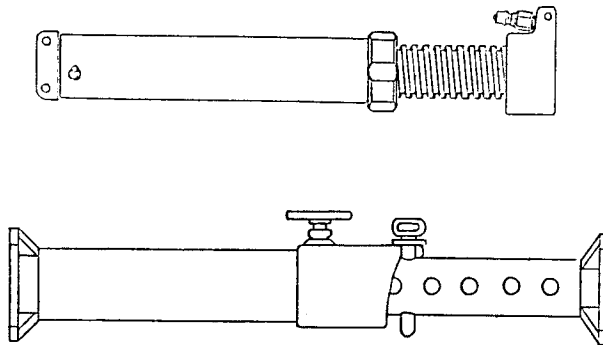


Figure 3. Trench Jacks (Screw Jacks)

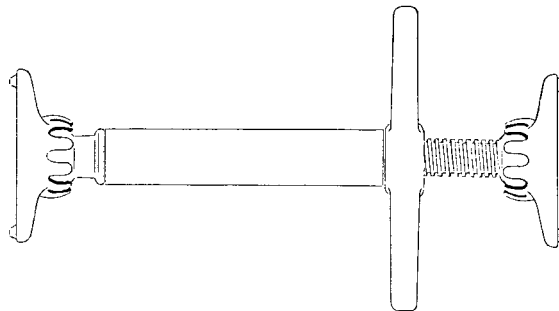
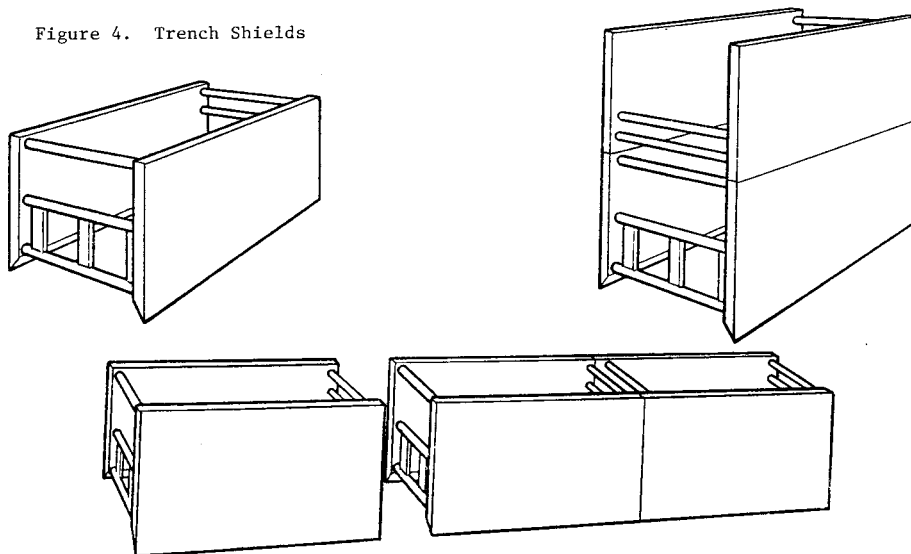


Figure 4. Trench Shields



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).

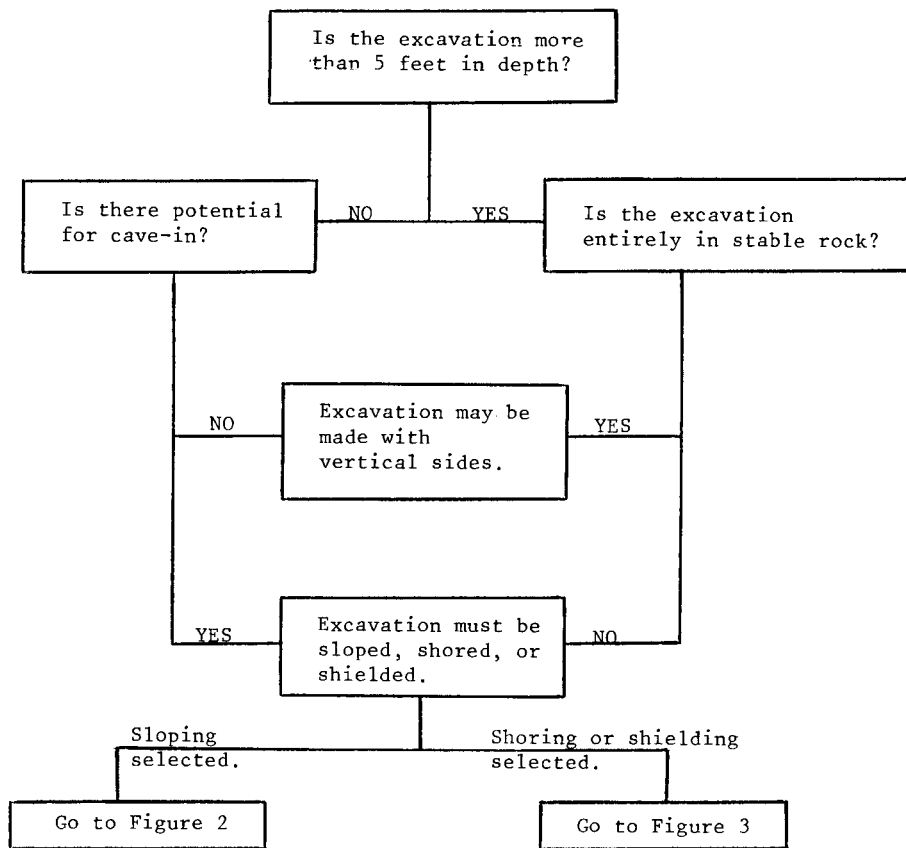


FIGURE 1 - PRELIMINARY DECISIONS

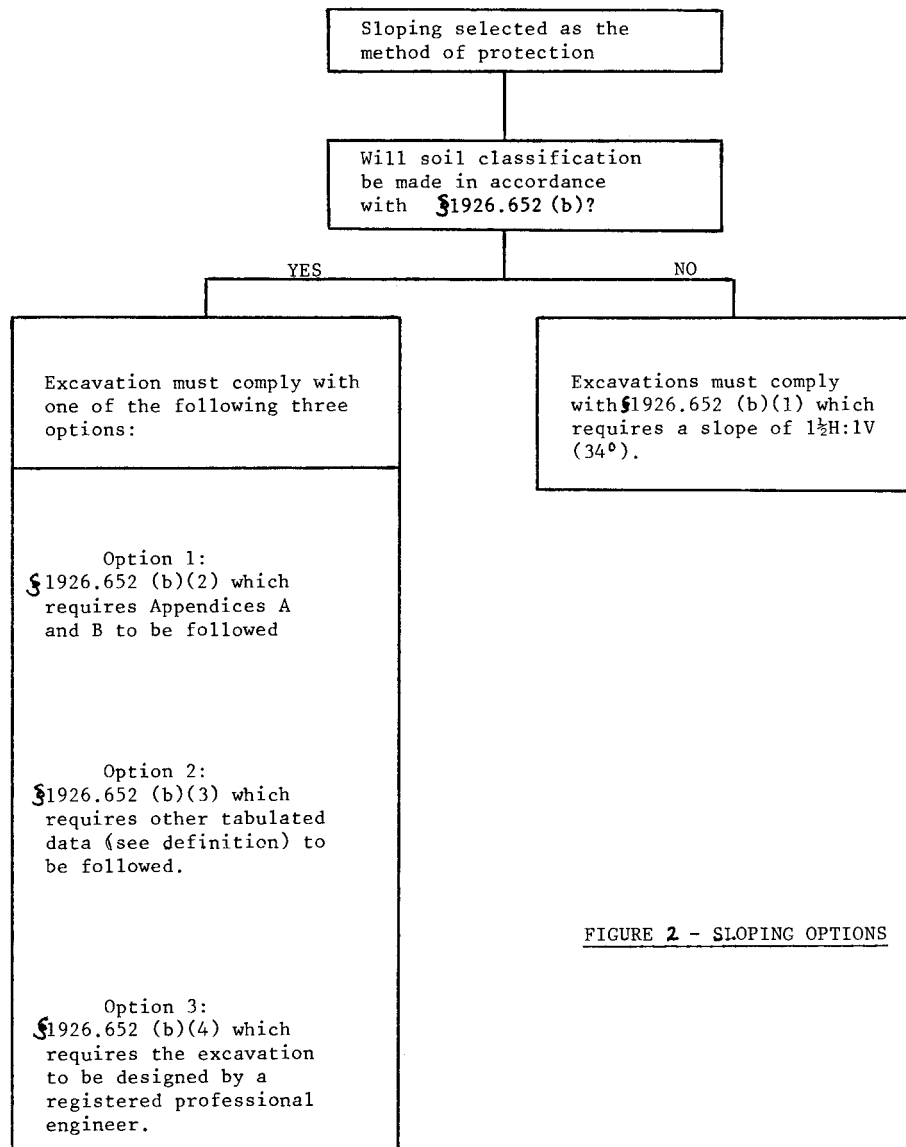


FIGURE 2 - SLOPING OPTIONS

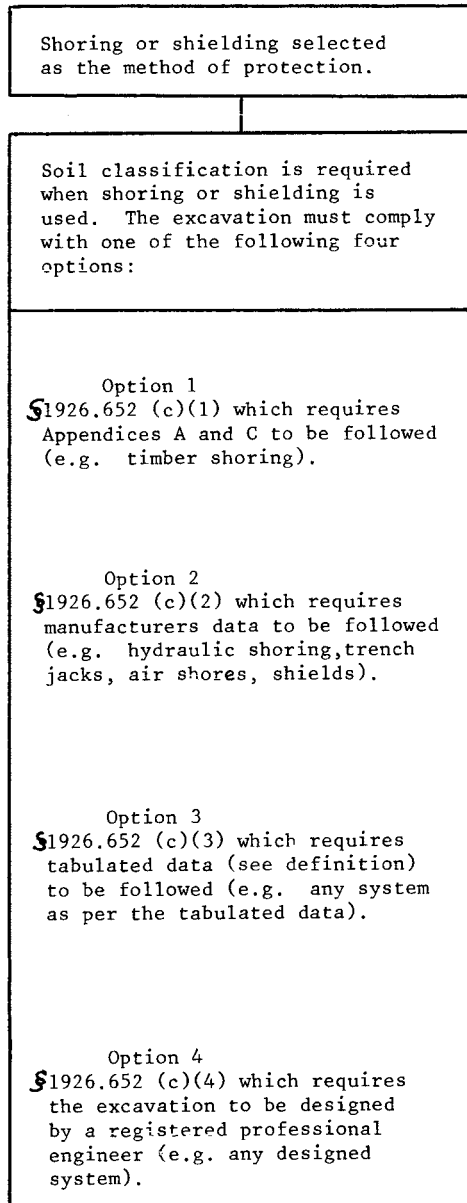


FIGURE 3 - SHORING AND SHIELDING OPTIONS

Special Specifications for Woodside Drive Sanitary Sewer Main Replacement

Table of Contents

Section	Title
17-01	General Stream Restoration
17-05	Temporary Erosion and Sediment Control
17-07	Erosion Control Matting
17-10	Comprehensive Floodplain and Upland Grading
17-13	Excavation and Fill Onsite
17-14	Comprehensive Channel Grading
17-15	Plantings
17-20	Boulder Jam Riffle / Rock Cascade
17-42	Dormant Woody Cuttings (Brush Layering Bundle or Live Bundle) / Live Stakes / Live Posts
17-44	Transplants
17-46	Topsoil, Cover Crop Seeding, and Mulching
17-50	Rock Materials
17-60	Furnished Topsoil
17-90	Temporary Irrigation
17-92	Stream Channel Pump Around
17-99	Miscellaneous



5/27/2020

SECTION 17-01

General Stream Restoration

Unless otherwise specified in these Technical Specifications, provide measurement and payment in accordance with the requirements of the City of Arlington Special Provisions and the fifth edition of the Public Works Construction Standards North Central Texas published by the North Central Texas Council of Governments (NCTCOG).

Item 1 Measurement and Payment

- A. Payment items for the work of this contract are listed in the Bid Proposal and described below. The contract price for each item shall constitute full compensation for furnishing all plant, labor, materials, maintenance, equipment, appurtenances, incidentals, surveying, quality control, environmental protection, meeting safety requirements, tests and reports, permit submittals, and performing all operations necessary to construct and complete the work in accordance with these specifications and the applicable drawings. All costs for items of work, which are not specifically mentioned to be included in a particular pay item, shall be included in the listed item most closely associated with the work involved. No separate payment will be made for the work, services, or operations required by the CONTRACTOR, as specified to complete the project in accordance with these specifications; all costs thereof shall be considered as incidental to the work unless specifically listed on the Bid Proposal.
- B. All work shall be for at the Contract Unit Price identified on the Bid Proposal.
- C. Partial payment for lump sum items will be made according to a schedule of values, submitted by the Contractor for approval by the Owner. The approved and finalized schedule of values shall subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. A retainage of 5% will be held until all the work has been completed in accordance with Texas State Statutes.
- D. Work for which there is not a Bid Item will be considered incidental to the Contract and no separate payment will be made unless approved by the Engineer.
- E. Contractor's general and administrative costs, including but not limited to project management, coordination, submittals, bonds and insurance, warranties and guaranties, shall be incidental to the Work and shall be distributed through all Bid Items. No separate payment will be made for these costs unless specifically listed on the Bid Proposal.

Item 2 Project Management and Coordination

- A. The CONTRACTOR and all SUBCONTRACTOR(S) will cooperate and coordinate their work to expedite the progress of the project. Each CONTRACTOR/SUBCONTRACTOR will review and refer to the drawings and Specifications of other trades involved with their particular work before proceeding. The OWNER/ENGINEER are not responsible for delays in the project schedule and/or additional costs associated with failed coordination by the CONTRACTOR and all SUBCONTRACTOR(S).

1.01 Utilities

- A. Contractor is responsible for identifying utilities and utility coordination.
- B. Utilities facilities / information shown on the plans and/or requirements in these specifications are provided for informational purposes only, compliance with these specifications and plans does not constitute responsibility by the CITY, Engineer, and/or

the utility facility owner.

C. Contractor will be responsible for all costs associated with utility location coordination

1.02 PERMITS

- A. Comply with the stipulations of the project permits, which have been applied for and will be furnished by the Owner.
- B. Apply for, obtain, and comply with other permits, licenses, and approvals which may be required for the Project.

1.03 PROJECT MEETINGS

A. Administrative Requirements

- (1) Project Superintendent or persons designated by the Contractor to attend and participate in the Project meetings shall have all required authority to commit the Contractor to solutions agreed upon in the Project meetings.
- (2) Engineer will set the time, sites, and prepare the agenda for the meetings.
- (3) Engineer will prepare meeting minutes and distribute 1 copy to Contractor. Notify Engineer of inaccuracies or discrepancies in the meeting minutes within 5 calendar days of receipt of the minutes.
- (4) The attendance and cooperation of subcontractors and suppliers may be required.

B. Progress Meeting Procedures

- (1) Weekly Progress Meetings will be held at a location designated by the OWNER, generally on site, and will be attended by the CONTRACTOR'S Superintendent and Foreman.

Item 3 Quality Requirements

- A. The CONTRACTOR will establish, provide and maintain an effective quality control program that details the methods and procedures to be taken to assure that all materials and completed construction work, required for the "Project", conform to the Construction Documents.
- B. Although guidelines are established, and certain minimum requirements are specified herein and elsewhere in the Construction Documents, the CONTRACTOR is fully responsible for developing and executing their own quality control program.
- C. The CONTRACTOR will perform inspection, testing, and measurement of all items of Work required by the plans and technical specifications, including those performed by SUBCONTRACTORS.
- D. The CONTRACTOR will provide the OWNER and/or the ENGINEER with written documentation of the quality control methods and procedures for review and acceptance prior to the start of work.
- E. Review of the materials and completed work by the OWNER and/or the ENGINEER and/or their representative(s) does not relieve the CONTRACTOR of performing quality control inspections/review of their own and/or any SUBCONTRACTOR'S work. The OWNER/ENGINEER may elect to require the CONTRACTOR to repair or replace sections of the project which have not been installed in accordance with the Quality Control program.
- F. In cases where the quality control activities do not comply with the CONTRACTOR'S Quality Control Program or the Construction Documents, the OWNER and/or the ENGINEER and/or their representative(s) may suspend any/or all work. The

suspension of work will not alter the Project Construction Schedule and/or associated Liquidated Damages.

1.01 TESTS AND INSPECTIONS

- A. The CONTRACTOR will notify the OWNER and/or the ENGINEER a minimum of 48 hours prior to expected time for operations requiring tests and/or inspections.
- B. The CONTRACTOR will facilitate all project related testing and provide all incidental labor, equipment, and facilities necessary to obtain, handle, and transport samples to testing facility (Laboratory).
- C. Submit 3 copies of all inspections, tests, and approvals required in the Standard Specification

1.02 LABORATORY REPORTS

- A. Include: Date issued, Project title and number, name of inspector, date and time of sampling or inspection, identification of product and Specifications Section, location in the Project, type of inspection or test, date of test, results of tests, and conformance with Contract Documents

1.03 MATERIAL AND DATA SAFETY SHEETS

1.04 OPERATIONS AND MAINTENANCE

- A. The Contractor shall submit a written plan for "Refueling Operations" including procedures for fuel handling, spill/leak containment, cleanup and disposal three (3) days prior to the start of any project work. The Contractor shall notify the Owner and/or designated representative within one (1) hour of a spill/leak.
- B. If the Contractor proposes to use a non-vehicle fuel storage tank, they will submit in writing three (3) days prior to the start of any project work the proposed method/type of secondary containment and a signed agreement from the property owner allowing fuel storage on the property.
- C. Provide the City's inspector with a copy of the maintenance ticket for all repaired equipment prior to resuming use of the equipment.

1.05 PROGRESS SURVEY

- A. The Contractor shall provide progress surveyed data to the Engineer to assist with determinations as necessary to classify the completed work and verify the quantities for pay purposes.
- B. A minimum of at least two (2) Progress Surveys shall be provided for review by the CONTRACTOR for the project.
- C. Progress surveys are not required to be signed and sealed by a Professional Land Surveyor.

1.06 AS-BUILT SURVEY

- A. The CONTRACTOR shall provide an As-Built survey of the project signed and sealed by a Professional Land Surveyor in Texas for review by the Engineer.
- B. Review of the As-Built Survey by the Engineer is not a Quality Control check of the project. The CONTRACTOR shall verify the constructed project meets the Construction Documents tolerances prior to submittal.
- C. Submission of the As-Built Survey does not relieve the CONTRACTOR of any materials or

construction work not in compliance with the Construction Documents.

Item 4 Mobilization and Demobilization

- A. Mobilization consists of the delivery to the site of all equipment, materials, and supplies to be furnished by the CONTRACTOR, the complete assembly in satisfactory working order of all such equipment at the jobsite, and the satisfactory storage at the site of all such materials and supplies.

- B. Demobilization will consist of the removal from the site of all equipment, materials, and supplies after completion of the work and also includes, the cleanup and removal of all CONTRACTOR/ SUBCONTRACTOR generated waste and debris. A final walkthrough of the site will be completed by the OWNER, ENGINEER, and CONTRACTOR after CONTRACTOR has demobilized from the site.

END OF SECTION

SECTION 17-05
TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this section consists of the installation and maintenance of erosion and sedimentation controls to minimize soil erosion and to control sedimentation from affecting water resources of the State of Texas.
1. All project areas (bank zones, access areas, stockpile areas, etc.) Disturbed during construction will be vegetated in accordance with the plans and specifications upon completion of the work.
 2. Excavated material may be temporarily stockpiled within the limits of the individual project areas. Silt fence will be used to prevent sediment migration from the temporary stockpiles toward any water body and/or undisturbed area on the site. Any stockpiled soil which is not used within 15 working days or 30 calendar days, whichever is sooner, will be covered with temporary seeding or with erosion control matting. All temporarily stockpiled soil will be removed and/or integrated into the final work.
 3. Project areas will be seeded and mulched with cover crop and permanent (perennial) seed, within 10 calendar days of completing the final grading work.
 4. Area specific erosion control measures are shown on the project plans and/or detail sheets.
 5. Erosion control measures will be maintained in accordance with all applicable permits.
 6. The contractor will maintain erosion and sediment control measures until the site is stabilized. All erosion control measures and materials will be removed by the contractor prior to final inspection.
 7. Additional SESC measures may be added based on site conditions during construction. The CONTRACTOR will submit in writing an SESC plan for review by the CITY.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Unless otherwise specified in these Technical Specifications, provide erosion control materials in accordance with the requirements of the City of Arlington Special Provisions Section 12-01 and the fifth edition of the Public Works Construction Standards North Central Texas published by the North Central Texas Council of Governments (NCTCOG).
- B. Cover crop seeding will be in accordance with the planting notes and planting tables shown on the plans.
- C. Mulch will have the following characteristics:
1. Clean agricultural grain straw (wheat, oats, rye, barley) or clean straw harvested from native grass production fields, with attached tag / certification identifying them as "weed free".

2. Bales will be bright, clean, and in air-dried condition at the time of delivery.
- D. The matting will meet the requirements shown on the plans and conform to the following properties:

Property	Straw Matting
Matrix	100% Coconut Fiber
Nettings	100% Biodegradable fiber (jute)
Threading	100% Biodegradable
Matting Description	100% Biodegradable
Weight (oz/SY)	8 – 13
Width (m)	2 – 3
Length (m)	25 – 50
Light Penetration	12% - 18%
Tensile Strength (Dry) (lbs/ft)	195 – 225
Elongation (Wet) (%)	12 – 18
Thickness (inch)	0.2 – 0.35
Maximum Flow Velocity (fps)	10 – 12
Typical Slope	3:1 or Steeper

- E. Do not use fertilizer or amendments in native planting area unless soil tests indicate soils are out of growing range for pH and major nutrients.

2.02 SUBMITTALS

- A. Prior to the start of construction the CONTRACTOR will document a fabric sample, minimum 18 inches long, taken across full width of roll of each type and weight of fabric furnished for the Project. Label each with brand name and furnish documentation of lot and roll number from which each Sample was obtained. City/Engineer can request fabric sample and information during construction for review.
- B. Certifications from each fabric manufacturer that furnished products have specified property values. Certified property values will be either minimum or maximum average roll values, as appropriate, for fabric furnished.
- C. The CONTRACTOR will submit original tags from all seed bags to Engineer. Seed bags without attached tags will be rejected. Engineer shall approve all seeds prior to installation.
- D. The CONTRACTOR will submit certification of “weed free” straw from supplier.
- E. The CONTRACTOR will submit written request for the use of amendments to the CITY for approval. The submission will include soil testing results.

2.03 HANDLING AND STORAGE

- A. Products should be handled in a manner that prevents damage prior to and during installation.
- B. Fabric, seed, and mulch should be stored with suitable wrapping for protection against moisture and ultraviolet exposure prior to installation.

2.04 EQUIPMENT

- A. The CONTRACTOR may install cover crop seed and /or mulch by hand or mechanical

equipment.

- B. The CONTRACTOR will use a mechanical rake, roto tiller, and/or disk to mechanically process the top soil.

PART 3 EXECUTION

3.01 GENERAL

- A. The CONTRACTOR will install temporary erosion and sediment control measures in accordance with plans, local ordinances, manufacturer's specifications, and permit requirements.
- B. The CONTRACTOR will maintain all temporary erosion and sediment control measures until permanent soil erosion and sediment control measures are installed.
- C. The CONTRACTOR will remove structural temporary erosion and sediment control measures (silt fence, BMP's, filter berms, etc.) prior to installation of permanent seeding and planting to prevent damage to revegetated areas and/or abandonment of temporary structures.
- D. Adjustments in Temporary Erosion and Sediment Control measures including dimensions and/or location is not a change order.

3.02 SILT FENCE

- A. The CONTRACTOR will install silt fence in floodplain and upland areas at locations shown on the plans in accordance with the manufacturer's specifications, details, and permit requirements
- B. The CONTRACTOR will inspect silt fence weekly and within 24 hours of a rainfall event greater than 0.5 inches. Required maintenance will be completed by the CONTRACTOR within 24 hours of identified maintenance needs or the next active construction day.

3.03 IN-STREAM FILTER BERMS

- A. In-stream Filter Berms will be constructed in accordance with NCTCOG Standard Specification 202.9 Check Dam (Rock) except that no Geotextile Fabric will be used within the channel Bankfull limits (OHWM).
- B. The CONTRACTOR will remove sediment upstream of in-stream filter berms prior to removal.

3.04 SOWING SEED

- A. Prior to seeding the area should be disked or harrowed to remove clods and lumps and create an even and loose seedbed.
- B. The Contractor will broadcast the specified seed and lightly rake or cultipack the seed into the soil.
- C. No cover crop in wetland / wet areas.

3.05 MULCHING

- A. Mulch, if required, shall be applied over the seeded areas by hand or mechanical methods. Mulch should be inner-locked and coverage should be greater than 70 percent with no bare spots greater than 3' x 3'.
- B. No mulching in wetland /wet areas.

3.06 EROSION CONTROL MATTING

- A. Cover crop and mulching are preferred to the installation of erosion control matting. Erosion control matting will not be installed on channel banks below bankfull (top of bank).
- B. Erosion control matting may only be installed on floodplain and upland slopes steeper than 3:1.
- C. The CONTRACTOR will install the erosion control matting lengthwise (horizontally) with the length of the roll running parallel to the floodplain.
- D. The fabric will be laid over the ground surface so as to not be in tension but be placed neatly and with no gaps or wrinkles.
- E. Any fabric overlaps necessary will be in accordance with the Manufacturer's specifications.
- F. The Contractor will install stakes of a size, type, in a pattern, and with spacing dimensions as specified by the Manufacturer or as otherwise specified in the construction documents. Metal stakes and/or staples are not allowed.

3.07 MAINTENANCE AND PROTECTION

- A. Erosion control areas that have been satisfactorily completed and are disturbed by additional construction activity required by the timing and sequencing of the Work shall be restored over to the same requirements of the original work.
- B. Any area that does not show definitive growth and establishment of cover crop within 30 days during the growing season after installation shall be replaced and established for the current seeding season by the Contractor at their expense.
- C. Topsoil shall be screened for invasive species prior to placement. The CONTRACTOR will eradicate invasive species from the applied topsoil and stockpiled material as soon as they become evident.
- D. Eradicate by hand pulling or after approval by the ENGINEER by applying a vegetation control herbicide to individual plants.

PART 4 MEASUREMENT

- A. The quantity of temporary silt fence to be paid for will be the actual number of linear feet of "Temporary Silt Fence", installed, maintained and removed. All measurement for temporary silt fence will be made horizontally along the surface of the ground.
- B. The quantity of temporary seeding to be paid for will be the actual number of square yards of "Temporary Seeding", installed and maintained until permanent seeding is completed. All measurement for temporary seeding will be made horizontally along the surface of the ground. There will be no separate measurement for mulching.
- C. The quantity of erosion control matting to be paid for will be the actual number of square yards of "Erosion Control Matting", installed and maintained. The quantity of erosion control matting will be calculated by multiplying the measured length of the matting and measured width of the matting along the surface of the ground.
- D. The quantity of in-stream filter berms to be paid for will be the actual number of each "In-Stream Filter Berm", installed and maintained.

PART 5 PAYMENT

- A. All work covered by this section will be paid at the contract linear foot price for

"Temporary Silt Fence". Such price will be full payment for the work covered by this specification including but not limited to all materials, labor, removal, maintenance, and any other items incidental to the work.

- B. All work covered by this section will be paid for at the contract square yard price for "Temporary Seeding". Such price will be full payment for the work covered by this specification including but not limited to all materials, labor, removal, maintenance, and any other items incidental to the work. Mulching is incidental to temporary seeding.
- C. All work covered by this section will be paid for at the contract square yard price for "Erosion Control Matting". Such price will be full payment for the work covered by this specification including all materials, labor, removal, maintenance, and any other items incidental to the work.
- D. All work covered by this section will be paid for at the contract per each price for "In-Stream Filter Berm". Such price will be full payment for the work covered by this specification including all materials, labor, removal, maintenance, and any other items incidental to the work.

END OF SECTION

SECTION 17-07

EROSION CONTROL MATTING

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this section consists of all items related to the placement of matting for erosion control over the graded, prepared, seeded, and mulched slopes. The use of matting will be limited to floodplain and upland locations where it is shown on the plans and/or for floodplain and upland slopes greater than 2:1.

The ENGINEER may require additional matting based on site conditions at the time of construction.

The CONTRACTOR will not install erosion control matting below the bankfull limits (OHWM).

- B. Unless otherwise specified in these Technical Specifications, provide erosion control matting in accordance with the requirements of the fifth edition of the Public Works Construction Standards North Central Texas published by the North Central Texas Council of Governments (NCTCOG).

1.02 REFERENCE STANDARDS

- A. 17-10 Comprehensive Floodplain and upland Grading
B. 17-14 Comprehensive Channel Grading

PART 2 PRODUCTS

2.01 MATERIALS

- A. Fasteners shall be a minimum of 1.5"x1.5"x24" wood stakes or approved equivalent.
- B. The matting will meet the requirements shown on the plans and conform to the following properties:

Property	Straw Matting
Matrix	100% Coconut Fiber
Nettings	100% Biodegradable fiber (jute)
Threading	100% Biodegradable
Matting Description	100% Biodegradable
Weight (oz/SY)	8 – 13
Width (m)	2 – 3
Length (m)	25 – 50
Light Penetration	12% - 18%
Tensile Strength (Dry) (lbs/ft)	195 – 225
Elongation (Wet) (%)	12 – 18
Thickness (inch)	0.2 – 0.35
Maximum Flow Velocity (fps)	10 – 12
Typical Slope	3:1 or Steeper

2.02 SUBMITTALS

- A. Prior to the start of construction the CONTRACTOR will document a fabric sample, minimum 18 inches long, taken across full width of roll of each type and weight of fabric furnished for the Project. Label each with brand name and furnish documentation of lot and roll number from which each Sample was obtained. City/Engineer can request fabric sample and information during construction for review.
- B. Certifications from each fabric manufacturer that furnished products have specified property values. Certified property values will be either minimum or maximum average roll values, as appropriate, for fabric furnished.

2.03 HANDLING AND STORAGE

- A. Products should be handled in a manner that prevents damage prior to and during installation. Fabric should be stored with suitable wrapping for protection against moisture and ultraviolet exposure prior to installation.

2.04 EQUIPMENT

- A. The CONTRACTOR will use standard "heavy" construction equipment to perform the work as shown on the plans.

PART 3 CONSTRUCTION

3.01 General

- A. The CONTRACTOR will install erosion control matting lengthwise (horizontally) along the slopes in accordance with the plans and as follows.
 - 1. The Contractor will excavate a trench along the toe of slope.
 - 2. The matting will be placed in the trench, secured with a stake (spacing per manufacturers specifications), backfilled with clean soil, and then the Contractor will wrap the matting over the top surface of the trench and be positioned for installation over the slope/bank surface.
 - 3. The Contractor will fill and rake the upper 3-4 inches of soil, seed, and straw mulch the surface in accordance with "Riparian Seeding" prior to the placement of the matting over the ground surface.
 - 4. The matting will be brought up and over the top of the ground surface and secured into a trench located at the tip of the slope. The trench width and depth will be 12" wide and 12" deep.
 - 5. The matting shall be laid parallel to flow. Overlap between adjacent runs of matting shall be a minimum of 6 inches. The matting shall overlap in the downstream direction parallel to flow and down-slope perpendicular to flow.
 - 6. The matting overlap shall be staked according to manufacturer specifications.
 - 7. The matting will be placed in the trench, secured with a stake (spacing per manufacturers specifications), backfilled with clean soil at the top of the bank
 - 8. Secure the matting to the ground by installing wooden stakes. Normal spacing is 36 inches perpendicular to flow and 36 inches parallel to flow and 24 inches along all seams or according to manufacturer specifications, whichever requires a higher density of staking shall govern. Matting shall be secured to the ground such that matting does

not separate from ground more than 1 inch with a reasonable tug. Additional fasteners will be required if matting fails this test.

9. Erosion control matting will be neatly secured around any project elements, undisturbed trees/shrubs, and existing structures to prevent any loose or frayed edges. There will be no loose ends or unsecured erosion control matting on the completed work.
 10. The Contractor will repeat steps 1) through 8) until the erosion control matting installation is complete.
- B. Site conditions may require slight deviation from the plan and will be approved by the ENGINEER.
- A. The lengths of the structure will be in accordance with the Plan sheets.
 - B. Structure installation and channel grading sequences may vary based on structure location and the CONTRACTORs means and methods.
 - C. Typical Coir Wrapped Soil Lift Construction Sequence for application over Toe Wood:

PART 4 TOLERANCES

- A. The finished erosion control matting will be within plus or minus 0.2 foot vertically and 0.5 feet horizontally of the established grade after it has been graded to a uniform surface per the plans, unless otherwise specified in the plans. The grade will transition evenly between control points, contours and existing grades. Correction of grade is required wherever settlement, erosion or other grade changes have occurred prior to acceptance.

PART 5 MEASUREMENT

- A. The quantity of erosion control matting to be paid for will be the actual number of square yards of "Erosion Control Matting", completed and maintained. The quantity of erosion control matting will be measured along the surface of the ground.

PART 6 PAYMENT

- A. All work covered by this section will be paid for at the contract square yard price bid for "Erosion Control Matting". Such price will be full payment for the work covered by this specification including all materials, labor and any other items incidental to the work.

END OF SECTION

SECTION 17-10
COMPREHENSIVE FLOODPLAIN AND UPLAND GRADING

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this section includes work related to rough grading, embankment construction, and fine grading in areas outside of the channel/stream bankfull limits and within the limits of construction.
- B. Unless otherwise specified in these Technical Specifications, provide comprehensive floodplain and upland grading in accordance with the requirements of The City of Arlington Special Provisions 15-05 and the fifth edition of the Public Works Construction Standards North Central Texas published by the North Central Texas Council of Governments (NCTCOG).

1.02 REFERENCE STANDARDS

- A. 17-13 Excavation and Fill Onsite
- B. 17-14 Comprehensive Channel Grading

PART 2 PRODUCTS

2.01 MATERIALS

- A. For embankments, earth berms and backfills use available "on-site" material including but not limited to rocks, cobble, gravel, sand, and silt. Material shall be free of refuse, stumps, roots, root mats and other unsatisfactory material. For berms avoid the use of rock larger than 6 inches in any single dimension. Top soil shall not be used as fill material but is suitable for top-dressing. Soils used for fill shall be consistent with soils found adjacent to fill sites. Organic material should be avoided as fill material adjacent to new channel, but may, in limited quantities, be used to fill old channel when done so away from new channel. Undesirable materials include, but are not limited to, debris or any excavated material that has not been approved for use as fill.

2.02 EQUIPMENT

- A. The CONTRACTOR will use standard "heavy" construction equipment to perform the work as described in the construction documents.

PART 3 EXECUTION

3.01 GRADING

- C. Grading shall include the preparing, grading, and shaping of the project area, as defined above, along with the cleaning, shaping and maintenance of existing small side channels and ditches. Excess material shall be stockpiled for the construction of embankments, berms, and backfills. Excess material meeting the "select backfill" criteria as described in 17-13 Excavation and Fill Onsite shall be stockpiled separately for use in project construction elements requiring the use of "select backfill". Topsoil, where present, shall be stockpiled separately.
- A. Shape the project area to conform to the lines, grades and typical sections shown on the plans.
- B. Shape all ground surfaces to properly drain at all times, except in the case of wetland

construction. Slope transitions/break points shall be “rounded” to facilitate vegetation establishment and reduce the potential for surface erosion. Finish grade all ground surfaces using tracked equipment, tractor with disk, or other approved method.

- C. Construction equipment should be “routed” to prevent impacts to completed work.
- D. Contractor shall maintain all disturbed surfaces completed under this specification until final acceptance, by the OWNER.

PART 4 TOLERANCES

- A. The finished ground surface shall be within plus or minus 0.5 foot of the established grade after it has been graded to a uniform surface per the plans, unless otherwise specified in the plans. The grade shall transition evenly between control points, contours and existing grades. Correction of grade is required wherever settlement, erosion or other grade changes have occurred prior to acceptance.
- B. In locations where bedrock, tree roots, culverts, and/or in-stream structures extend above the proposed finished grade, the finished grade shall tie into the limits of the feature at the elevation of the surrounding grades.

PART 5 MEASUREMENT

- A. There will be no separate measurement for this work. “Comprehensive Floodplain and Upland Grading” is incidental to the various components in which are to be installed.

PART 6 PAYMENT

- A. There will be no separate payment for this work.

END OF SECTION

SECTION 17-13
EXCAVATION AND FILL ONSITE

PART 1 GENERAL

1.01 SUMMARY

- A. Soil Structural Fill for this project consists of performing all operations necessary to excavate and transport all material, furnish, process material as required, stockpile, deposit, place, handle, and compact material in accordance with the grades as shown on the plans including abandonment of existing channels or as directed by the City. This work is inclusive of excavation, loosening, removing, loading, transporting, stockpiling, depositing, furnishing, disposing and compacting in its final location of all materials wet and dry, as required for the purposes of completing the work.
- B. Unless otherwise specified in these Technical Specifications, provide structural fill in accordance with the requirements of The City of Arlington Special Provisions 12-31 and the fifth edition of the Public Works Construction Standards North Central Texas published by the North Central Texas Council of Governments (NCTCOG).

1.02 REFERENCE STANDARDS

- A. 17-10 Comprehensive Floodplain and Upland Grading
- B. 17-14 Comprehensive Channel Grading
- C. NCTCOG – Item 200

PART 2 PRODUCTS

2.01 MATERIALS

- A. Satisfactory soil materials for use as structural “select backfill” include ASTM D 2487 Soil Classification Groups CL, GC, ML, CH and SC, a combination of these groups, or as approved by a licensed geotechnical engineer familiar with the project site. Structural fill must be free of rock greater than 3 inches, debris, waste, frozen materials, vegetation, invasive species, pathogens, and any other deleterious matter.

PART 3 EXECUTION

3.01 CLEARING AND GRUBBING

- A. Refer to NCTCOG – Item 204 for clearing and grubbing.
- B. Clearing and grubbing will include the removal and disposal of living or dead vegetation including stumps /root balls and the removal and disposal of surface debris such as fences, retaining walls, steps, footings, slabs, signs, junked vehicles, and other rubble and debris.
- C. Removal and disposal of all stumps and root balls within the grading limits and fill holes with clean “select backfill” material.
- D. Excess material shall be stockpiled for the construction of embankments, berms, and backfills. Excess material meeting the “select backfill” criteria shall be stockpiled separately for use in project construction elements requiring the use of “select backfill”.
- E. Topsoil, where present, shall be stockpiled separately.

- F. Shape the project area to conform to the lines, grades and typical sections shown on the plans.
- G. Shape all ground surfaces to properly drain at all times. Slope transitions/break points shall be "rounded" to facilitate vegetation establishment and reduce the potential for surface erosion. Compact all ground surfaces using tracked equipment or other approved method.
- H. Clean, shape, and maintenance of existing side channels, ditches, and drainage ways.
- I. Construction equipment should be "routed" to prevent impacts to completed work.

3.02 SOIL STRIPPING

- A. Prior to any topsoil stripping or excavation, the CONTRACTOR shall collect representative soil samples to document existing compaction, soil texture, and soil fertility within the areas proposed for disturbance. These samples will provide data regarding the existing soil conditions on site and assist with post-construction planting decisions. Any areas of disturbance shall have soil and topsoil returned to a condition that is as good or better than pre-construction conditions and is conducive to tree and herbaceous vegetation establishment. Soil samples and compaction tests should be to a minimum depth of 18 inches to document existing soil textures and topsoil depth. Soil samples and compaction tests should be taken at a minimum of one per 1,000 linear feet of channel with at least 2 soil samples and compaction tests per tributary or reach and should take into account the locations of the various proposed planting zones.
- B. At least 4 compaction tests should be performed in each proposed staging area and along areas planned for higher traffic on site during construction. Soil compaction shall be tested using a handheld penetrometer or approved equivalent as directed by the ENGINEER.

3.03 DISPOSAL

- 1. Unsuitable material, including debris or excavated material that cannot be used as fill, shall be properly disposed of off-site by the CONTRACTOR. If the project site is infested with invasive species, and the material cannot be disposed of onsite, the material to be disposed of off-site shall be secured by covering the material before transporting and disposing appropriately. The CONTRACTOR should anticipate encountering some rubble and other uncharacterized materials and debris during excavation.
- 2. Unless otherwise directed by the ENGINEER, all refuse material resulting from this work shall be disposed of off-site in accordance with local, state and federal laws and regulations. On-site burning of materials will not be permitted.

3.04 TREE PROTECTION

- A. Refer to NCTCOG – Item 204 for tree protection
- B. Removal of standing live or dead trees is prohibited unless authorized by the OWNER/ENGINEER. Prior to construction, the CONTRACTOR shall install safety fence and/or other barrier /flagging around existing standing trees to prevent disturbance of the tree and root systems. The CONTRACTOR shall replace any tree damaged during construction not identified for removal on the plans or by the ENGINEER to the satisfaction of the OWNER and at no additional cost to the OWNER or the ENGINEER.

3.05 INSTALLATION

- A. The existing elevations and contours shown on the plans, cross sections, and profiles were surveyed prior to plan development. Existing elevations and grades may have changed since the original survey was completed due to stream erosion, sediment accretion, or fill. It is the Contractor's responsibility to confirm existing grades and adjust earthwork as necessary at no additional cost to the CITY.
- B. All earthwork must be performed in accordance with permit requirements.
- C. All erosion and sediment control devices must be in place prior to onset of earthwork activities.
- D. Erosion and sediment control devices and measures must be maintained in a functional condition always. Temporary and permanent erosion and sedimentation control measures must be inspected after each rainfall and at least daily during periods of prolonged rainfall. Deficiencies must be immediately corrected.
- E. Grading operations must be conducted so that material outside construction limits will not be disturbed.
- F. Local borrow must be stockpiled in the stockpile/staging areas depicted in the Contract Documents. All stockpile areas will require appropriate sediment control (silt fence, super silt fence, or as is otherwise necessary) to prevent erosion and sediment transport throughout the duration of storage. the CITY reserves the right to require other temporary measures not specifically described herein to correct an erosion or siltation condition.
- G. Materials in areas shall be placed according to lifts and compaction outlined on the plan set using the equipment bucket, tracks, or other equipment necessary to compact soil. To ensure proper compaction efforts, field density determinations should be performed in accordance with specifications set forth in ASTM D6938 (nuclear method) or D1556 (sand method). Density tests should be performed on every lift of compacted fill, unless otherwise directed by the CITY. The material must be installed to a density of no less than 95% of the maximum dry density. Compaction testing shall occur at a minimum of 3 tests per lift.
- H. Moisture content of the fill being placed should be within two percentage points of the optimum moisture content of the material in accordance with ASTM D698, unless otherwise directed by the CITY.
- I. In areas where landscaping (ie tree or shrub plantings) is proposed, the final layer of fill (the top 12" of the new soil profile) should not be compacted. This is to allow for installation of plant materials and establishment of root systems during the landscaping phase.
- J. Onsite soils may be wet or dry of the optimum moisture required for compaction; therefore, scarifying and drying by spreading and aerating prior to their reuse as backfill should be expected. If, due to unsuitable or saturated soil conditions in areas of proposed fills, a bridging layer of coarse aggregate is recommended by the Contractor (and approved by the CITY), the bridging layer will be provided at no additional cost to the CITY.

- K. Topsoil/compost and reinforced stream bed material must be installed as described in the Construction Documents, or as directed by the CITY, to bring surface to final grades as shown in the Construction Documents. Final grade must be as specified within the Construction Tolerances section of these specifications.
- L. Material shown on the plans as suitable material but found at time of construction to be unsuitable must be disposed of as unsuitable material at no additional cost to the CITY.
- M. Loose rock 3 inches or larger must be removed from the surface of cut slopes.
- N. Contractor is responsible for stabilizing all stream banks with temporary seeding, permanent herbaceous seeding (riparian/wetland seed mix), straw mulch, and coir fiber matting immediately after the completion of grading. The Contractor must perform all care and remediation work required to maintain stable stream banks during construction, including erosion and sediment control.
- O. All unsuitable, unacceptable or excess material must be removed from the site at no additional cost to the CITY.

PART 4 TOLERANCES

- A. Refer to reference specifications for grading tolerances.

PART 5 MEASUREMENT – NOT USED

- A. The quantity of excavation and/or fill located onsite to be paid for shall be the actual number of cubic yards of “Excavation and Fill Onsite”, completed and maintained. All measurement for excavation and fill located shall be made by the volume of material moved.

PART 6 PAYMENT – NOT USED

- A. All work covered by this section will be paid for at the contract cubic yard price bid for “Excavation and Fill Onsite”. Such price shall be full payment for the work covered by this specification including all materials, labor and any other items incidental to the work.

END OF SECTION

SECTION 17-14
COMPREHENSIVE CHANNEL GRADING

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this section consists of all items related rough grading and fine grading, including excavation, within the channel bankfull limits (top of bank). All work will conform to the lines, grades, and typical cross sections shown on the plans.
- B. The removal and disposal of existing walls, fences, foundations, and/or miscellaneous debris is included in this work.
- C. Channel horizontal and vertical control is tied to the proposed channel thalweg. Directions "left" and "right" are determined relative to the channel as if facing downstream. Channel construction will proceed from upstream to downstream unless otherwise specified on the plans and/or submitted written request by the CONTRACTOR. CONTRACTOR will refer to the plans for a detailed Construction Sequence.
- D. Unless otherwise specified in these Technical Specifications, provide comprehensive channel grading in accordance with the requirements of The City of Arlington Special Provisions 15-05 and the fifth edition of the Public Works Construction Standards North Central Texas published by the North Central Texas Council of Governments (NCTCOG).

1.02 REFERENCE STANDARDS

- A. 17-10 Comprehensive Floodplain and Upland Grading
- B. 17-13 Excavation and Fill Onsite

PART 2 PRODUCTS

2.01 MATERIALS

- A. Channel banks will be constructed of "on-site" material including but not limited to rocks, cobble, gravel, sand, and silt. Material will be free of refuse, stumps, roots, root mats and other unsatisfactory material. Approved materials consist of native soils excavated on-site. Top soil will not be used as fill material but is suitable for top-dressing. Soils used for fill will be consistent with soils found adjacent to fill sites. Organic material should be avoided as fill material adjacent to new channel, but may, in limited quantities, be used to fill old channel when done so away from new channel. Undesirable materials include, but are not limited to, debris or any excavated material that has not been approved for use as fill.

2.02 EQUIPMENT

- A. The CONTRACTOR will use standard "heavy" construction equipment to perform the work as described in the construction documents.

PART 3 EXECUTION

3.01 EXCAVATION AND GRADING

- A. The Contractor will excavate and shape the channel to the dimensions, lines, grades and typical sections shown on the plans. Over excavation of the channel bottom

and/or banks will be limited to the location of proposed project structures.

- B. Suitable excess material will be sorted and stockpiled for the construction of various project elements. Excess material will be disposed of at the “on-site” locations identified on the plans.
- C. Construction equipment and personnel will be routed to prevent impacts to the completed work. The Contractor will maintain and repair all constructed channel slopes and grades throughout the duration of the project until permanent seeding and final acceptance.
- D. Proposed channel segment(s) constructed on a new alignment, outside the limits of the existing channel, may be constructed completely or partially “in the dry” prior to allowing flow to enter into the newly constructed stream channel. If the proposed channel excavation and grading work is within or partially within the banks of the existing channel segment the CONTRACTOR may work completely and/or partially “in the wet” and/or they may pump-around to facilitate construction of the channel “in the dry.” The use of temporary pump-around measures will be at the CONTRACTOR’S expense.
- E. When working within and/or partially within the existing channel the CONTRACTOR will grade the channel to maintain baseflow without temporary pumping overnight, over weekends, and holidays. Prior to predicted rain events of greater than 0.5” the Contractor will temporarily grade the bed and banks to allow in-stream flows to continue thru the stream segment under construction. If the CONTRACTOR is working in off alignment channel segments the area will be dewatered prior to tie-in with the active stream channel.

PART 4 TOLERANCES

- A. The finished ground surface will be within plus or minus 0.2 foot of the established grade after it has been graded to a uniform surface per the plans, unless otherwise specified in the plans. The grade will transition evenly between control points, contours and existing grades. Correction of grade is required wherever settlement, erosion or other grade changes have occurred prior to acceptance.
- B. In locations where bedrock, tree roots, culverts, and/or in-stream structures extend above the proposed finished grade, the finished grade will tie into the limits of the feature at the elevation of the surrounding grades.

PART 5 MEASUREMENT

- A. There will be no separate measurement for this work. “Comprehensive Channel Grading” is incidental to the various components in which are to be installed.

PART 6 PAYMENT

- A. There will be no separate payment for this work.

END OF SECTION

SECTION 17-15
PLANTINGS

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this special provision consists of all items related to the installation and establishment of a variety of vegetation types using various installation methods.
- B. Vegetation types include:
 - 1. Seeding – Native Plants;
 - 2. Containerized / Ball & Burlap – Shrubs, Trees;
 - 3. Transplanting; and
 - 4. Live Staking - Dormant Woody Cuttings/ Live Stakes / Live Posts
- C. Locations and Corresponding Methods are:
 - 1. Planting Zone A (Stream Bank) – Native Herbaceous Seeding and Live Stakes
 - 2. Planting Zone B (Floodplain Bench) – Native Herbaceous Seeding, Containerized / B&B – Shrubs, Trees
 - 3. Planting Zone C (Terrace Slopes) – Native Herbaceous Seeding, Containerized / B&B – Shrubs, Trees
 - 4. Toe Wood – Transplanting, Life Stakes
 - 5. Utility – Cover Crop and Native Grasses

1.02 RELATED SECTIONS

- A. 17-05 Temporary Erosion and Sediment Control
- B. 17-10 Comprehensive Floodplain and Upland Grading
- C. 17-42 Dormant Woody Cutting (Brush Layering Bundle or Live Bundle) / Live Stakes /Live Posts
- D. 17-44 Transplants
- E. 17-46 Top Soil, Cover Crop Seeding, and Mulching

PART 2 PRODUCTS

2.01 SUBMITTALS

- A. Provide submittals consistent with that City of Arlington Special Provisions.
- B. Provide sources and invoices for seed to be used for this Project.
- C. Producer's certificate of compliance – Submit to the Engineer at least 5 days prior to delivery written documentation verifying compliance of mixture of seed furnished. Include percentage of various seed species, year of production, germination rate, seed bag tags, and weed seed content.
- D. Provide a planting schedule (start and completion dates).
- E. Documentation of proposed soil amendment material(s) and source(s) to the Engineer for review and approval, a minimum of two (2) weeks prior to application.

2.02 EQUIPMENT

- A. The CONTRACTOR may use heavy equipment including excavators, loaders, and skid steers along with hand shovels and rakes.

2.03 SPECIES

- A. Contractor shall refer to planting tables shown on the plans.

2.04 MATERIAL SOURCES

- A. The CONTRACTOR shall supply a list of companies providing the types of seed, plants, dormant live cuttings, and other planting supplies and services proposed for this project.
- B. Material Source information shall include the following:
 - 1. Contractor shall provide a list of proposed species to be used, one (1) week prior to beginning installation and must be approved by the Owner.
 - 2. Contractor shall notify Owner a minimum of three (3) business days prior to planting to assist in the layout of the plant material.
 - 3. Contractor shall provide the name and location of and contact information for any plant supplier.
 - 4. Contractor shall provide planting schedule (start and completion dates).
 - 5. The Contractor shall furnish a copy of any tickets, tags, or manifests for purchased and/or harvested plant materials.

2.05 HANDLING

- A. All plant material shall be handled with care to limit stress and damage. Damaged seed, shrubs, trees, and/or live stakes shall not be used.
- B. Labels shall be attached securely to all planting materials (seed, dormant cuttings, fertilizer, etc.). Labels shall be durable, legible, use weather-resistant ink or other resilient lettering, so the owner may determine that all materials conform to the specifications (size, species, origin, etc.)
- C. Seed
 - 1. Seed shall be stored in a cool, shaded, and dry location; in the bag provided by the supplier.
 - 2. Seed tags should remain on bags.
- D. Containerized / B&B -Trees and Shrubs
 - 1. Tree and shrub delivery should be the same day as planting. No plants shall be stored at the site without permission of the OWNER for more than two (2) days. Plants shall be carefully loaded and unloaded so as not to damage branching or root mass. Dropping of material will not be allowed. Handling of trees and shrubs by their trunks will not be allowed. Plants in full leaf shall be thoroughly wetted down and completely covered with a wet tarp during transportation. All plant roots must be kept in a moist condition.
 - 2. Outside storage locations shall be continually shaded and protected from wind. Do not allow plants to dry out. Store plants in a cool wet place with roots under wet mulch, wet straw, or wet soil. Tops should remain dry, however DO NOT ALLOW WHOLE PLANT TO DRY OUT. Plants in full leaf shall be thoroughly wetted down and completely covered with a wet tarp during transportation. All plant roots must be kept in a moist condition.
 - 3. Protect from freezing. Temperature shall be maintained between 34-38 degrees F, relative humidity shall be kept above 85%, and there shall be good air circulation around the plants. If the plants have broken dormancy during transit they shall not be stored for more than 2 days.
- E. Transplanting
 - 1. Trees and shrubs that have been dug for transplanting should be planted as soon as possible. Cover a root ball with damp material which will retain moistures until planting. When a tree is stored, it should be protected from direct sunlight, winds

and temperature extremes. If any woody plants cannot be planted for more than a week, their roots should be covered with a mulch or moist soil (“heeled-in”) and the plants should be placed in a shaded area.

2. Trees and shrubs must be protected when transporting to a planting site. Covered trucks and vans are preferable. If a pickup truck or open trailer is used, a tarp must be in place to protect the plant foliage and roots from drying and damage during transit. Plants must be watered immediately after transporting if moved in an open air trailer.

F. Dormant Woody Cuttings

1. Materials shall be installed the same day as prepared or stored in a refrigerated area and kept moist for no longer than two (2) weeks. Bundles of harvested live material should be kept with cut ends submerged in water to keep cut ends moist at all times.
2. Protect cuttings at all times from sun, drying winds, and frost. Cuttings that cannot be planted immediately on delivery shall be kept well protected from winds and frost. Care shall be taken to keep bundles moist during transportation from the harvest site to the planting site. Live cuttings that appear to be dried out or damaged during transportation will not be accepted. Rejected live cuttings may be marked by the OWNER.

2.06 EROSION MAT

- A. A short term duration (6 months or greater), light duty, organic, “Erosion Control Revegetative Mat” (ECRM) meant for use in urban areas, or lawns, where mowing may be accomplished within two weeks with little or no snagging of the netting or mat.
- B. Erosion Mats shall conform to the following requirements:
 1. Mats netting must be 100% organic biodegradable. This shall include parent material, stitching, and netting.
 2. Erosion Mats may be single, double or no netted products.
 3. The minimum mat thickness shall be 3/8 inch (9 mm) as measured in place.
 4. Mats will be allowed on slopes up to 2.5:1.
 5. The netting shall be stitched to prevent separation of the net from the parent material.
 6. The netting shall be capable of withstanding moderate foot traffic without tearing or puncturing.
 7. Neither the netting, nor the installation, shall pose a safety risk to pedestrians walking on, or crossing it
- C. Minimum Product Permissible Shear Stress: 1.0 LBS/sq. ft.; product for use on 2.5:1 slopes and flatter with a C factor from the Revised Universal Soil Loss Equation of 0.20 or less. Recommended for use in environmentally sensitive areas that have a high probability of entrapping animals in plastic netting.
- D. Erosion Mat Anchoring Devices:
 1. All materials and additive components that are used to manufacture the anchoring devices shall be completely biodegradable as determined by ASTM D 5338-92.
 2. All materials shall be environmentally safe, and shall have no potential for soil and/or water contamination. Steel wire pins or staples will not be approved.
 3. Petroleum based plastics or composites containing petroleum based plastics will not be allowed.

4. Materials deemed to present a hazard from splintering or spearing will not be approved. This shall include solid wood devices. However, devices manufactured from wood byproducts may be approved.
5. The anchoring devices shall maintain their mechanical anchoring ability for at least 2 (two) months, and substantially degrade within 4 (four) months during the months of warm soil conditions (above 53 degrees Fahrenheit).
6. The anchoring devices shall be shaped, using barbs, twists, bends, or other methods, to provide additional mechanical pull resistance when installed in the soil.

E. Table below outlines approved Erosion Mats:

Table 1 – Erosion Mat

Product	Manufacturer
Curlex High Velocity	American Excelsior
AEC Premier Straw DN	American Excelsior
Curlex II	American Excelsior
Curlex II CL	American Excelsior
Curlex LT	American Excelsior
AEC Premier Straw/Coconut	American Excelsior
ECS-2	East Coast Erosion Blankets
*ECS-2D	East Coast Erosion Blankets
ECM S2000	Enviroscape
*ECM S2000D	Enviroscape
EG-2S	Ero-Guard
S32	Erosion Control Blanket.com
ProGuard DS	Erosion Control Systems
C125BN	North American Green
S150	North American Green
DS150	North American Green
SC 150	North American Green
Landlok CS2	Propex
Landlok S2	Propex
DNS	SoilTex
V 150 S	Verdyol
Excel SS-2	Winters Excelsior
*Excel SS-2 Rapid Go Western	Winters Excelsior
*Winters Straw HVW	Winters Excelsior

Winters Straw HVG	Winters Excelsior
Winters Choice HV	Winters Excelsior

*Products with UV degradable netting not to be installed after October 1st

- F. Contractor may provide an alternative Erosion Mat to Engineer for approval prior to installation.

PRODUCTS MANUFACTURER

2.07 TIMING

- A. Some trees and shrubs may survive planting any time during the year, but the preferred time is in the fall after leaf drop. Fall planting should take place soon after leaf drop, providing time for new water absorbing roots to develop before winter. Since evergreens are especially prone to winter browning if planting is delayed, they should be installed in early fall (late September through October). Fall planting success may be increased by planting hardy plants into sites with good soil moisture and wind protection.
- B. The CONTRACTOR will install plants when the soil is moist and when the plant is not under moisture stress. Water all woody plants two to three days before installing if the soil is dry.

2.08 SOIL SUITABILITY, TESTING, AND AMENDMENTS

- A. The Contractor shall bear the responsibility of determining the suitability of on-site soils for planting applications specified on the plans.
- B. The Contractor shall consult with the OWNER prior to the application of soil amendments.
- C. Fertilizer (including root dips) and other soil additives (e.g. - topsoil, compost, mycorrhizal, etc.) shall be applied by the Contractor, as necessary, to ensure the success of the plantings in certain soil types through the one-year monitoring period. The Contractor shall determine the type and application rate of fertilizer and/or other soil additives that are best suited for the plant species, planting applications, and existing soil conditions. Care shall be taken to minimize nutrient and pollutant loading to aquatic ecosystems through the addition of fertilizer or other additives.

PART 3 CONSTRUCTION

3.01 GENERAL

- A. Finish grades are to be inspected and approved by the Engineer prior to start of permanent seeding and/or planting. The Contractor shall verify subgrade elevations with the OWNER’s representative prior of placement.
- B. The Contractor shall test site soils to evaluate the nutrient status of the soil prior to planting. Soils shall be sampled and tested. The “Soil Test Report” shall be submitted to the OWNER within ten (10) business days of receipt by the Contractor.
- C. If soil amendments are required, the Contractor shall submit a list of proposed soil amendments to the City of approval fourteen (14) days prior to application.
- D. The Contractor shall be responsible for determining and ensuring proper application of soil amendments. The contractor shall comply with local, state, and federal laws related to the application of any proposed soil amendment(s) adjacent to water bodies.

3.02 NATIVE SEEDING

- A. The CONTRACTOR shall prepare the seedbed for the permanent establishment of native seed mix by ripping, tilling, disking, raking or otherwise scarifying the soil surface to a depth appropriate for the type(s) of seed being planted. The Contractor shall broadcast the specified seed mix in locations specified on the Planting Plan and lightly rake the seed into the top 0.25 inch-0.5 inch of topsoil.
- B. The specified seed mix shall be applied by hand or by using a hand-held broadcast spreader at a rate identified on the plans. Seed shall be applied over two passes in perpendicular directions.
- C. Following native seed installation, all seeded areas shall be over seeded in a separate application with a cover/nurse crop species and rate identified on the plans. Following seed installation, straw mulch shall be spread over all seeded areas.
- D. Mulching will be in accordance with Item 164 – Seeding for Erosion Control from the Texas Department of Transportation (TxDOT) Specifications the most current 2014 Edition and all subsequent revisions and supplements.

3.03 CONTAINERIZED / BALL & BURLAP TREE AND SHRUB PLANTING

- A. Dig a hole large enough that any roots can hang downward and not be curled and the top of the plant, including any horizontal growth, is above the ground. Heel in soil at base of plant to ensure root to soil contact. Leave the plant in a vertical position.
- B. If plants are installed in late fall and winter the plant shall be installed slightly deeper than they were planted at the nursery.
- C. Installation instructions shall be in accordance with the plans and specifications or as advised by a commercial plant supplier.
- D. Shrubs & trees should be thoroughly watered immediately after planting. Thereafter, the soil must be regularly monitored to prevent drying out. If rainfall is less than 0.25 inch a week, the soil around the roots should be deeply watered approximately every 10-14 days.

3.04 DORMANT WOODY CUTTINGS

- A. All lateral branches shall be carefully removed to avoid damage to the bark ridge and branch collar. All live stakes shall be scarred along the inserted end of the stake to promote root growth. A minimum of two buds shall be above grade.
- B. Cuttings shall be driven into the ground using a “dead blow” plastic hammer with BB’s or by creating a hole and slipping the stake into it. The stakes shall be tamped in at a right angle to the slope with at least six buds (18”) of the stake installed below the ground surface. Soil shall be firmly packed around the hole after installation. Split stakes shall not be installed. Stakes that split during installation shall be replaced.
- C. Cuttings may be installed by hydraulic injection methods developed by NRCS. (Stinger)
- D. Trim live stakes to no more than 6 inches above finished grade after insertion with a clean cut.

3.02 MAINTENANCE DURING CONSTRUCTION

- A. Maintenance shall begin immediately after each vegetation method is completed and continue throughout construction.
- B. Maintenance consists of spraying for insects and diseases, weeding, watering, and inspecting to see that the vegetation is healthy and performing adequately in protecting the project surfaces. The Contractor shall be responsible for any permits related to pesticides.
- C. Vegetation shall be protected at all times against motor vehicle trespassing and damage of any kind for the duration of construction and until acceptance of the work by the City.

D. Any vegetation repairs shall be performed to the same specifications as the original installation.

3.03 WATERING

A. If sufficient rain is not received to support survivability, the Contractor must water all plantings as often as necessary to keep the plants alive. Failure to adequately water the site shall be considered a failure to meet intermediate completion dates and result in liquidated damages at the rate specified in the contract.

3.04 FINAL ACCEPTANCE

A. Upon Completion of all planting operations, including cleanup, the Contractor shall notify the City and accompany their representative during inspection of the plantings. Any items found to be unsatisfactory shall be corrected prior to approval for final acceptance and payment.

B. The Contractor shall remove all nametags attached to installed plants after final acceptance.

3.05 MAINTENANCE DURING WARRANTY PERIOD

A. Upon completion of the construction work, the warranty period shall begin unless otherwise specified. Maintenance consists of diseases and nuisance animal control, weeding, and inspecting to see that the vegetation is healthy and performing adequately in protecting the project surfaces.

B. Any vegetation repairs and/or replacement required under maintenance shall be performed to the same specifications as the original installation.

C. The warranty period shall extend for a duration of not less than two years, and at least two COMPLETE growing seasons.

3.06 PERFORMANCE REQUIREMENTS

A. All vegetation shall be in a satisfactory and acceptable condition when the Contractor applies for payment.

B. The Contractor shall be responsible for the replacement of non-living vegetation if the survivability rates are not met at the end of the first year following planting, and again after the completed two-year warranty period. Vegetation replaced within construction warranty period shall be under warranty for an additional year.

C. Survivability Requirements:

1. Native Seeding
 - a. 85% ground cover
 - b. Assessed through square meter randomly selected
 - c. No bare areas greater than 3' x 3'
2. Live Staking
 - a. 85% survivability
 - b. Assessed along 100' plot along one stream bank
3. Containerized and B&B Plants
 - a. 100% survivability
 - b. Assessed in 40' diameter circle

D. The Contractor shall be responsible for maintaining a survival rate on all replacement plantings that will meet the survival requirements of the original planting plan. The two-year monitoring period begins upon initial acceptance by the City of the original landscape plantings.

E. The Contractor is not responsible for survival of plantings that were removed or damaged by yard maintenance activities, vandals and/or wildlife. In such cases, clear

evidence of tampering must be shown in order to waive the survivability requirements.

PART 4 TOLERANCES – Not Used

PART 5 MEASUREMENT –

- A. The quantity of “Plantings” to be paid for will be the actual number of Containerized/ Ball & Burlap/Transplanted Tree and shrub Plantings, or Dormant Woody Cuttings installed, and maintained.
- B. The quantity of seeding to be paid for will be the actual square yard surface area covered, installed and maintained.

PART 6 PAYMENT –

- A. All “Planting” work covered by this section will be paid for at the contract per each price bid for “Containerized/ Ball & Burlap/Transplanted Tree and shrub Plantings, or Dormant Woody Cuttings”. Such price will be full payment for the work covered by this specification including all materials, labor, warranty, and any other items incidental to the work.
- B. All “Seeding” work covered by this Item will be paid for at the contract per square acre bid for “Permanent Seeding” or “Temporary Seeding”. Such price will be full payment for the work covered by this specification including all materials, labor, warranty, and any other items incidental to the work.

END OF SECTION

SECTION 17-20
BOULDER JAM RIFFLE / ROCK CASCADE

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this special provision consists of all items related to the construction of Boulder Jam Riffles including but not limited to the excavation of channel material; placement of boulders, cobble, and gravel substrate; and finish grading of structure slopes and the stream channel at the locations specified on the plans.
- B. Boulder Jam Riffles are designed to provide grade control and habitat diversity for the newly constructed channel sections.

1.02 REFERENCE STANDARDS

- A. 17-14 Comprehensive Channel Grading
- B. 17-50 Rock Materials

PART 2 PRODUCTS

2.01 MATERIALS

- A. The type, size, and quantity of materials for Rock and Log Riffles are described in the notes and table on the Detail sheet. Material dimensions (diameter, length, etc.) may vary by specific reach.
- B. 17-50 Rock Material

2.02 EQUIPMENT

- A. The CONTRACTOR shall use standard heavy construction equipment to perform the work as shown on the plans. Rock and Log Riffle construction typically requires that a hydraulic thumb be fitted to the bucket of an excavator for easier placement of boulders.

PART 3 EXECUTION

3.01 General

- A. The grades, slopes, and lengths of the constructed bed features shall be in accordance with the Plan and Profile sheets.
- B. Structure installation and channel grading sequences may vary based on structure location and the CONTRACTORs means and methods.
- C. Typical Boulder Jam Riffle Construction Sequence:
 - 1. The CONTRACTOR shall stake the elevation control points shown on the plans, including the beginning and end of the proposed Boulder Jam Riffle. The CONTRACTOR may install additional survey control, as needed, to complete the work in accordance with the construction documents.
 - 2. The CONTRACTOR shall excavate the channel bed below finished grade to allow for the placement of materials at the elevation and/or depth (thickness) specified on the plans and in accordance with the detail.
 - 3. If the in-situ/subsoil is a combination of sand, gravel, cobble, boulder, and/or bedrock no additional bedding material is required. If the in-situ / subsoil is clay,

loam, and/or organic soil the CONTRACTOR shall place subpavement (sand and aggregate mix) as bedding material at the depth (thickness) of 10"-12" and compact using mechanical means. The use of subpavement material may require additional excavation prior to placement.

4. The CONTRACTOR shall place rock material, directly on top of the subsoil and/or subpavement material to an elevation and/or depth (thickness) specified on the plans.
5. The CONTRACTOR shall install footer boulders across the channel starting at the middle of the channel and working toward the banks. The CONTRACTOR shall place surface jam boulders upstream of the footer boulders in a staggered pattern.
6. The CONTRACTOR shall chink the voids in between the jam boulders with small boulder, rip rap, and/or cobble material. The voids should be tightly packed to minimize the migration of materials between the jam boulders.
7. The CONTRACTOR shall place and grade Boulder Jam Riffle material in a manner that creates a variability including, small pools, boulder diversions, turbulent areas, and/or "high spots" randomly across the entire channel bed area. Transitions shall have variability, as previously described, with no abrupt "Jump" (transition) between bed features.
8. The CONTRACTOR shall bucket, rake and/or otherwise adjust placed rock material, as needed, to create a thalweg within the Boulder Jam Riffle width in order that the finished cross section shall match the shape and dimensions shown on the typical section.
9. The CONTRACTOR shall finish grade the adjacent streambed and channel banks to provide a smooth even grade transition between the project structure bed components and the proposed ground surface. In locations where, exposed existing features extend to and/or within the limits of the proposed work, the Boulder Jam Riffle installation shall be field adjusted to incorporate the existing feature, into the finished work.
10. The CONTRACTOR shall confirm that Boulder Jam Riffles have positive slope from upstream to downstream.

PART 4 TOLERANCES

- A. The finished ground surface shall be within plus or minus 0.2' vertically and 0.5' horizontally of the established grade after it has been graded to a uniform surface per the plans, unless otherwise specified in the plans. The grade shall transition evenly between control points, contours and existing grades. Correction of grade is required wherever settlement, erosion or other grade changes have occurred prior to acceptance.

PART 5 MEASUREMENT

- A. The quantity of boulder jam riffle to be paid for shall be the actual number of square yards of "Boulder Jam Riffle", completed and maintained. All measurement for boulder jam riffle shall be made horizontally along the surface of the ground.

PART 6 PAYMENT

- A. All work covered by this section shall be paid for at the contract square yard price bid for "Boulder Jam Riffle". Such price shall be full payment for the work covered by this specification including all materials, labor and any other items incidental to the work.

END OF SECTION

SECTION 17-42

DORMANT WOODY CUTTINGS

(BRUSH LAYERING BUNDLE OR LIVE BUNDLE) / LIVE STAKES / LIVE POSTS

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this section consists of all items related to the furnishing and installing of live dormant wood materials used for various stream bank treatments. All work will conform to the locations and details shown on the plans.

1.02 REFERENCE STANDARDS

- A. 17-10 Comprehensive Channel Grading

PART 2 PRODUCTS

2.01 MATERIALS

- A. Dormant woody cuttings shall be 2- to 3- year old flexible branches, with basal ends $\frac{1}{2}$ inch to 2 inch in diameter, appropriately sized based on species, application, and the size of the channel banks, with buds oriented upwards. Dormant woody cuttings shall be living based on the presence of young buds and green cambium. All side branches shall remain intact for installation.
- B. Live stakes shall be $\frac{1}{2}$ inch to 2 inch in diameter, 2 to 3 feet in length, angled on the bottom and cut flush on the top, with buds oriented upwards. Live stakes shall be living based on the presence of young buds and green cambium. All side branches shall be cleanly trimmed so the cutting is a single stem.
- C. Live posts shall be 1- $\frac{1}{2}$ inch to 2 inch in diameter, 4 feet in length, angled on the bottom and cut flush on the top, with buds oriented upwards. Live posts shall be living based on the presence of young buds and green cambium. All side branches shall be cleanly trimmed so the cutting is a single stem.

2.02 SPECIES

- A. The CONTRACTOR will refer to the planting plan tables shown on the plans for species.

2.03 SUBMITTALS

- A. If the Contractor decides to purchase live cuttings and/or pre-made live stakes/posts the Contractor shall provide the name and location of and contact information for the supplier. Suppliers must provide all of the written information required of the Contractor. The Contractor shall furnish a copy of tags used to identify cuttings after harvest and during transport or any tickets, tags, or manifests for purchased materials to the Engineer.
- B. The Contractor may decide to harvest live cuttings or purchase live cuttings and/or pre-made live stakes. If the Contractor decides to harvest their own material:
 - 1. The Contractor shall provide written documentation (list, map, etc.) of live cutting harvest sites, ten (10) days prior to beginning the Work to the Engineer.
 - 2. A copy of the signed written agreement and applicable correspondence

between the harvest site property owner and Contractor shall be provided ten (10) days prior to beginning the Work. At minimum, the signed agreement shall:

- a) Grant permission to harvest.
- b) Specify the requirements of access/egress.
- c) Specify the use of and condition in which the harvesting site is to be left.
- d) Acknowledge that the Contractor shall be solely responsible for activities on the harvesting site and shall hold the Owner and any other parties harmless.
- e) Certify that the proposed cutting material is insect and disease free.
- f) The Contractor shall provide a copy of any applicable permits from regulatory agencies for the harvest site.

2.04 STORAGE AND HANDLING

- A. Materials shall be installed the same day as prepared or stored in a refrigerated area and kept moist for no longer than two (2) weeks on site. Bundles of harvested live material should be kept with cut ends submerged in water to keep cut ends moist at all times.
- B. Protect cuttings at all times from sun, drying winds, and frost. Cuttings that cannot be planted immediately on delivery shall be kept well protected from winds and frost. Care shall be taken to keep bundles moist during transportation from the harvest site to the planting site. Live cuttings that appear to be dried out or damaged during transportation will not be accepted. Rejected live cuttings may be marked by the CITY.

PART 3 EXECUTION

3.01 DORMANT WOODY CUTTING INSTALLATION

- A. The CONTRACTOR will place dormant woody cuttings along the surface of the bank as shown on the construction details. Cuttings will extend a minimum of 2' into the channel bank behind the proposed finished bank surface with 6 inches of the cutting exposed, extending beyond the face of the bank into the channel.

3.02 LIVE STAKE/LIVE JOINT INSTALLATION

- A. The CONTRACTOR will carefully remove all lateral branches to avoid damage to the bark ridge and branch collar. All live stakes/live joints shall be scarred along the inserted end of the stake to promote root growth and driven into the soil leaving 2"-4" above the surface. A minimum of two buds shall be above grade.
- B. The CONTRACTOR may install stakes/joints by hydraulic injection (creating a hole and slipping the stake into it), 3/8-Inch pilot hole, or driven directly into the ground using a "dead blow" plastic hammer with BB's. The stakes shall be tamped in at a right angle to the slope with at least 18 inches of the stake installed below the ground surface. Soil shall be firmly packed around the hole after installation so that there is continuous soil-cutting contact.
- C. Split stakes/joints shall not be installed. Stakes that split during installation shall be replaced.

PART 4 MEASUREMENT

- A. The quantity of dormant woody cuttings to be paid for will be the actual number of linear feet of "Dormant Woody Cuttings", installed and maintained. All measurement for dormant woody cuttings will be made horizontally along the surface of the ground.
- B. The quantity of live stakes/live joints to be paid for will be the actual number of "Live

Stakes” or “Live Joints”, installed and maintained.

PART 5 PAYMENT

- A. All work covered by this Item will be paid for at the contract linear foot price bid for “Dormant Woody Cuttings”. Such price will be full payment for the work covered by this specification including all materials, labor, warranty, and any other items incidental to the work.
- B. All work covered by this Item will be paid for at the contract per each price bid for “Live Stakes” or “Live Joints”. Such price will be full payment for the work covered by this specification including all materials, labor, warranty, and any other items incidental to the work.

END OF SECTION

SECTION 17-44 TRANSPLANTS

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this special provision consists of all items related to the digging and installing of transplants of on-site existing and established vegetation for various stream bank and stream buffer treatments. All work will conform to the locations and details shown on the plans and/or as directed by the CITY.

1.02 REFERENCE STANDARDS

- A. 17-10 Comprehensive Floodplain and Upland Grading
- B. 17-14 Comprehensive Channel Grading

C. PART 2 PRODUCTS

2.01 MATERIALS

- A. Shrub transplants are typically ½ inch to 3 inches in diameter and appropriately sized based on species, application, and the size of the channel banks.
- B. Tree transplants are typically ½ inch to 3 inches in diameter and appropriately sized based on species, application, and the size of the channel banks.

2.02 Equipment

- A. The CONTRACTOR may use heavy equipment including excavators, loaders, and skid steers along with hand shovels and rakes to dig and install transplants.

2.03 SPECIES

- A. The CONTRACTOR will review the site with the CITY / ENGINEER to determine available on-site species.

2.04 TIMMING

- A. Some trees and shrubs may survive transplanting any time during the year, but the preferred time is in the fall after leaf drop. Fall planting should take place soon after leaf drop, providing time for new water absorbing roots to develop before winter. Since evergreens are especially prone to winter browning if planting is delayed, they should be installed in early fall (late September through October). Fall transplant success may be increased by transplanting hardy plants into sites with good soil moisture and wind protection.
- B. The CONTRACTOR will dig transplants when the soil is moist and when the plant is not under moisture stress. Water all woody plants two to three days before digging if the soil is dry.

2.05 Attached Soil Root Ball

- A. The CONTRACTOR will dig all transplants with soil attached. Balling-and-burlapping is not required for on-site transplants.
- B. For small trees up to 5 feet, deciduous shrubs up to 9 feet, and columnar evergreens over 3 feet the CONTRACTOR will maintain an attached soil root ball diameter of about two-thirds of the branch spread. Attached soil root balls of conical evergreens

and broadleaf evergreens are at least one size larger.

- C. Most shrub species require an attached soil root ball diameter of about two-thirds of the branch spread.
- D. A general guide for determining the diameter of the attached soil root ball for different plant types and sizes is given in table below.

Caliper (inches)	Minimum Height (feet)	Attached Soil Root Ball Diameter (inches)
½	3	12
¾	4	14
1	5	16
1½	6	20
2	7	24
2½	9	28
3	10	32

- E. Root balls rapidly increase in weight as the diameter and depth increase. A 12-inch root ball may weigh between 30 and 60 pounds, a 24-inch ball may weigh between 250 and 400 pounds, and a 36-inch ball could weigh more than 1,000 pounds.

2.06 STORAGE AND TRANSPORTING

- A. Trees and shrubs that have been dug for transplanting should be planted as soon as possible. Cover a root ball with damp material which will retain moisture until planting. When a tree is stored, it should be protected from direct sunlight, winds and temperature extremes. If any woody plants cannot be planted for more than a week, their roots should be covered with a mulch or moist soil (“heeled-in”) and the plants should be placed in a shaded area.
- B. Trees and shrubs must be protected when transporting to a planting site. Covered trucks and vans are preferable. If a pickup truck or open trailer is used, a shade tarp must be in place to protect the plant foliage and roots from drying and damage during transit.

PART 3 EXECUTION

3.01 DIGGING

- A. Prior to digging, shrubs and trees with low branches the CONTRACTOR will have these branches tied up to prevent injury during the digging, transporting and planting operations.
- B. Remove sod or loose material from around the plant using care to avoid injuring or cutting surface roots.
- C. Mark a circle about six inches greater than the diameter of the desired finished ball to allow for final trimming and shaping. Cut straight down to a minimum depth of 12 inches around the marked circle. This way prevents prying up uncut roots and

loosening the root ball. Sever large roots with a sharp pair of loppers or other mechanical means; cutting such roots with a spade tends to jar the roots and loosen the root ball.

- D. After downcutting, undercut the ball at about a 45° angle to sever all remaining roots.
- E. Carefully lift the attached soil and root ball from the hole to minimize soil breakup

3.02 INSTALLATION

- A. The CONTRACTOR will excavate a hole to closely match the diameter and depth of the attached soil and root ball.
- B. The CONTRACTOR will place the transplant in the hole and rake / tamp the adjacent ground to provide uniform soil contact and eliminate air pockets.
- C. The CONTRACTOR will thoroughly water the transplant immediately after planting. Thereafter, the soil must be regularly monitored to prevent drying out. If rainfall is less than 0.25 inch a week, the soil around the transplant's roots should be deeply watered approximately every 7-10 days.

PART 4 MEASUREMENT

- A. The quantity of transplants to be paid for will be the actual number of "Transplants", installed and maintained.

PART 5 PAYMENT

- A. All work covered by this Item will be paid for at the contract per each price bid for "Transplants". Such price will be full payment for the work covered by this specification including all materials, labor and any other items incidental to the work.

END OF SECTION

SECTION 17-46
TOPSOIL, COVER CROP SEEDING, AND MULCHING

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this section consists of all items related to restoration of disturbed construction areas by installation of topsoil, cover crop seeding, and mulching. All work will conform to the locations and details shown on the plans and/or as directed by the CITY.

1.02 REFERENCE STANDARDS

- A. 17-60 Furnish Topsoil
- B. 17-07 Erosion Control Matting
- C. 17-40 Plantings

PART 2 PRODUCTS

2.01 SUBMITTALS

- A. Provide the following submittals consistent with the City of Arlington Special Provisions.
- B. Provide sources and invoices for seed to be used for this Project.
- C. Producer's certificate of compliance – Written documentation verifying compliance of mixture of seed furnished. Include percentage of various seed species, year of production, germination rate, seed bag tags, and weed seed content. Submit to the Engineer at least 5 days prior to delivery.

2.02 MATERIALS

- A. Topsoil shall be provided according to Section 17-60
- B. Contractor shall refer to seed tables shown on the plans. Contractor may select other species that must be approved by the owner
- C. Do not use fertilizer or amendments in native planting area unless soil tests indicate soils are out of growing range for pH and major nutrients.
- D. Contractor shall provide erosion control matting according to Section 17-07
- E. Mulching will be in accordance with Item 164 – Seeding for Erosion Control from the Texas Department of Transportation (TxDOT) Specifications the most current 2014 Edition and all subsequent revisions and supplements.
- F. Clean, fresh and free of substances or matter that could inhibit vigorous growth of the vegetation.

2.03 Equipment

- A. The CONTRACTOR may use heavy equipment including excavators, loaders, and skid steers along with hand shovels and rakes.

2.04 PLANT ESTABLISHMENT PERIOD

- D. At the conclusion of the establishment period, which will be not less than 9 months and at least one complete growing season following initial installation of seeding, a Year-one inspection of seeded areas will be made to determine the conditions of areas specified for seeding. All areas with insufficient herbaceous establishment as determined by the Engineer will be noted. This material shall be re-supplied and planted in the next appropriate planting window at no additional cost to the Owner.
- E. At the conclusion of the second complete growing season, a Year-two inspection of seeded areas will be made to determine the conditions of areas specified for seeding. All areas with insufficient herbaceous establishment as determined by the Engineer will be noted. This material shall be re-supplied and planted in the next appropriate planting window at no additional cost to the Owner.

- F. The expectations for the seeded areas are as follows:
 - 1. In order to qualify for acceptance all seeded areas shall have 80 percent cover of seeded species. Seeded areas must show indications of healthy establishment (90 percent of species occurring of those seeded) in the specified areas and weed species are less than 10 percent.

2.05 FIELD QUALITY CONTROL

- G. Provide the Engineer with bags and tags of seed used. Provide the Engineer with the opportunity to observe the loading of seed.
- H. Seed bags without attached tags will be rejected.

2.06 MAINTENANCE

- G. Keep all seeded areas that have germinated seeds thoroughly moist by watering when rainfall is deficient for a period of 7 days for the first two months following seeding, or 14 days during the remainder of the first growing season.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Finish grades are to be inspected and approved by the Engineer prior to start of permanent stabilization. The Contractor shall verify subgrade elevations with the owner's representative prior of placement.

3.02 DELIVERY AND STORAGE

- A. Delivery
 - 1. Notify the Engineer of the delivery schedule in advance so the seeds may be inspected upon arrival at the Site. Remove unacceptable plant material from the Site immediately.
- B. Storage
 - 1. Keep seed, lime, and fertilizer in dry storage away from contaminants.

3.03 SEEDING RATES

- A. Seeding rates shall conform with seeding table in plan set.

3.04 SOWING SEED

- A. Prior to seeding the area should be disked or harrowed to remove clods and lumps and create an even and loose seedbed.
- B. The Contractor will broadcast the specified seed and lightly rake the seed into the top 0.25'-0.5" of topsoil.
- C. A seasonally appropriate nurse crop as specified in the plans shall be seeded in conjunction with all permanent stabilization mixes.

3.05 MULCH

- A. Mulch, if required, shall be applied over the seeded areas by hand or mechanical methods. Mulch should be inner-locked and coverage should be greater than 70 percent with no bare spots greater than 3' x 3'.
- B. Mulching will be in accordance with Item 164 – Seeding for Erosion Control from the Texas Department of Transportation (TxDOT) Specifications the most current 2014 Edition and all subsequent revisions and supplements.

3.06 MAINTENANCE AND PROTECTION

- A. Restored areas that have been satisfactorily completed and are disturbed by additional construction activity required by the timing and sequencing of the Work shall be restored to the same requirements of the original work.
- B. Any area that does not show definite growth and establishment of cover crop 30 days within the growing season after installation shall be replaced and established at the proper season by the Contractor at their expense.
- C. Topsoil shall be screened for nonnative invasive species prior to placement.
- D. Eradicate by hand pulling or after approval by the Engineer by applying an aquatic approved vegetation control herbicide to individual plants.

3.07 INSPECTION AND ACCEPTANCE

- A. Seeding work will be inspected for acceptance in parts agreeable to the Engineer, provided Work offered for inspection is complete, including maintenance for the portion in question.
- B. At the conclusion of the second full growing season, a Year-two final inspection of planting(s) will be made to determine the conditions of areas specified for landscaping.
- C. When inspected landscape work does not comply with requirements, replace rejected Work and continue specified maintenance until re-inspected by Engineer and found to be acceptable. Remove rejected materials from the Site.
- D. Seed evaluation at the conclusion of the establishment period shall be based on criteria listed in Section 2.04.

PART 4 TOLERANCES – NOT USED

PART 5 MEASUREMENT

- A. The quantity of "Seeding" to be paid for will be the actual acre surface area covered, installed and maintained.

PART 6 PAYMENT

- A. All work covered by this Item will be paid for at the contract per acre price bid for "Permanente Seeding" or "Temporary Seeding". Such price will be full payment for the work covered by this specification including all materials, labor, warranty, and any other items incidental to the work.

END OF SECTION

SECTION 17-50
ROCK MATERIALS

PART 1 PRODUCTS

1.01 Summary

- A. The work covered by this section includes work related to the rock materials requirements during the course of construction.
- B. Unless otherwise specified in these Technical Specifications, provide rock materials in accordance with the requirements of the fifth edition of the Public Works Construction Standards North Central Texas published by the North Central Texas Council of Governments (NCTCOG).

1.02 Boulders

- A. Boulders will consist of durable field or quarry stone that is sound, hard, dense, angular, and resistant to the action of air and water, and free of seams, cracks, or other structural defects. The Contractor will use boulders with a general "shape factor" greater than 2 (width more than twice the thickness, length more twice the width). Boulders will be approved by the CITY/ ENGINEER. The size of the boulder material will be in accordance with the construction documents.
- B. Broken concrete, asphalt, slag will be rejected. The boulder will have the following performance characteristics:
 - 1. Soundness: Not more than 5% loss
 - 2. Accelerated Expansion: Not more than 15% breakdown
 - 3. Specific Gravity: Greater than 2.48
 - 4. Intact strength: 6,000 psi or greater
 - 5. Absorption: Not more than 2% for igneous and metamorphic rock types and not more than 3% for sedimentary rock types.
- C. The ENGINEER may change the detail requirements for boulder size based on available material. Changes in the approved boulder size is not a change order.
- D. The CONTRACTOR will remove rejected boulders from the site at no cost to the CITY.

1.03 Rip Rap/Cobble

- A. Rip Rap for structures will include small boulders and large cobbles in accordance with the size and gradation shown on the plans and details. The CONTRACTOR may request the use of alternative rip rap sizes and/or gradation in writing for review and approval by the ENGINEER.
- B. Rip Rap may be recycled from existing on-site structures to be removed, and/ or imported from off-site quarry sites.
- C. Rip rap will consist of durable granite or dolomite river rock or natural fieldstone and the approximate size and/or gradation as shown on the plans. Rip rap will be sound, hard, dense, slightly rounded (angular is acceptable for quarried and recycled stone), resistant to the action of air and water, and free of seams, cracks, or other structural defects. Rip Rap will be "clean" and free of contamination.
- E. Broken concrete, asphalt, slag, soft limestone will be rejected. The rip rap will have the following performance characteristics:
 - 1. Soundness: Not more than 5% loss

2. Accelerated Expansion: Not more than 15% breakdown
3. Specific Gravity: Greater than 2.48
4. Intact strength: 6,000 psi or greater
5. Absorption: Not more than 2% for igneous and metamorphic rock types and not more than 3% for sedimentary rock types.

D. The CONTRACTOR will remove rejected rip rap from the site at no cost to the CITY.

F. The ENGINEER may change the detail requirements for rip rap size and/or gradation based on available material. Changes in the approved rip rap size and/or gradation is not a change order.

1.04 Aggregates

A. Aggregates for structures will include cobbles, gravels, and sands in accordance with the size and gradation shown on the plans and details. The CONTRACTOR may request the use of alternative aggregate sizes and/or gradation in writing for review and approval by the ENGINEER.

B. Aggregates may be excavated from the existing channel, recycled from existing on-site structures to be removed, and/ or imported from off-site quarry sites.

C. Aggregates will be used as coarse backfill, riffle pavement, glide, run, and subpavement material. Aggregates will consist of durable granite or dolomite river rock or natural fieldstone and the approximate size and/or gradation as shown on the plans.

D. Aggregates will be sound, hard, dense, slightly rounded (angular is acceptable for quarried and recycled stone), resistant to the action of air and water, and free of seams, cracks, or other structural defects. Aggregates will be "clean" and free of contamination.

E. On-site sand/gravel excavated from the existing channel will typically be more suitable for backfilling toe wood, riffle subpavement, glide, or point bar material.

F. Broken concrete, asphalt, slag, and fractured aggregate will be rejected. The CONTRACTOR will remove rejected aggregates from the site at no cost to the CITY.

G. The ENGINEER may change the detail requirements for aggregate size and/or gradation based on available material. Changes in the approved aggregate size and/or gradation is not a change order.

PART 4 MEASUREMENT

A. There will be no separate measurement for this work. Rock material is incidental to the various structures in which it is installed.

PART 5 PAYMENT

A. There will be no separate payment for this work.

END OF SECTION

**SECTION 17-60
FURNISHED TOPSOIL**

PART 1 GENERAL

1.01 SUMMARY

- A. This work shall consist of performing all operations necessary to furnish and transport all material, process material as required, stockpile, deposit, place, handle, import, export, and stabilize material in accordance with the grades as shown on the plans or as directed by the Owner.
- B. Unless otherwise specified in these Technical Specifications, provide furnished topsoil in accordance with the requirements of The City of Arlington Special Provisions 12-44 and the fifth edition of the Public Works Construction Standards North Central Texas published by the North Central Texas Council of Governments (NCTCOG).

PART 2 PRODUCTS

2.01 MATERIALS

- A. Furnished topsoil shall be of a loamy texture and have components of sand, silt and clay in percentages that, by definitions from the U.S Department of Agriculture Handbook 18, characterizes a loamy soil. Unacceptable and/or excess furnished topsoil shall become the responsibility of the Contractor and shall be completely removed from the project site prior to final site inspection and approval of the project.
- B. Furnished topsoil shall meet acceptable soil test level as specified below. A certificate of soil test analysis (of a representative soil sample from each 5,000 square yards of Furnished Topsoil to be delivered to the site) shall be submitted to the City for review and approval prior to any furnished topsoil delivered to the site for use on the site. Soil tests shall be conducted in a state laboratory or state recognized commercial laboratory.
- C. All Furnished topsoil shall be free of stones, lumps, plants, roots and other debris over 1.5". All furnished topsoil shall be free of invasive and/or noxious plants, plant parts and seeds.
- D. Acceptable furnished topsoil analysis results:

CHARACTERISTIC:	CRITERIA:
pH	From 6.0 to 7.5
Cation-exchange capacity	From 5 to 25 cmol+ /kg (meq/100g)
Organic Matter (OM)	From 5% - 30% by wt. (ODS)
Nutrient content	Normal contents of nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, proper micronutrient levels

Soluble salts	Less than 200 ppm
Contaminants	Shall contain no toxic substances

Sieve Size	Minimum Percent Passing, by Weight
2 inches	100
No. 4	90
No. 10	80

Component	Range	Particle Size
Sand	23%-52%	0.05-2.0 MM
Silt	28%-50%	0.002-0.05 MM
Clay	7%-27%	<0.002 MM

PART 3 EXECUTION

3.01 INSTALLATION

- A. Place furnished topsoil all areas specified to be graded within the limits of disturbance, except where reinforced bed material and asphalt is installed.
- B. Verify that all utilities have been field located and/or installed and accepted.
- C. Verify that all required soil tests have been submitted and accepted by the Owner.
- D. Do not handle the Furnished Topsoil if it is wet or frozen.
- E. Completely prepare and finish the subsoil surface of all areas to be covered Furnished Topsoil as specified in the Plan sheets.
- F. Immediately prior to being covered with Furnished Topsoil the sub grade shall be mechanically loosened and scarified to a minimum 3-inch depth, and be free from rocks and all materials other than soil that are 3 inches or greater in diameter.
- G. Once subgrade is prepared by mechanically loosening and scarified, ensure that no equipment traffic occurs to detrimentally affect compaction of the subgrade.
- H. Prior to the start of placing Furnished Topsoil, all grass, weeds, brush, stumps, and other objectionable material shall be removed from the Furnished Topsoil.
- I. Furnished Topsoil shall be placed, spread, and maintained over the designated areas to a depth of at least 6 inches, so that after settlement the completed work shall be in conformance with the thickness, lines, grades, and elevations specified in the Contract Documents.
- J. Seeding of Furnished Topsoil with temporary and permanent seed mixes shall be carried out immediately following placement of Furnished Topsoil. Contractor shall be

responsible for stabilizing all stream banks with temporary seeding, permanent herbaceous seeding (riparian/wetland seed mix), straw mulch, and coir fiber matting immediately after the completion of grading.

- K. Contactor shall prevent equipment traffic over and compaction of the final grade of the Furnished Topsoil.

PART 4 TOLERANCES – NOT USED

PART 5 MEASUREMENT

- A. The quantity of “Topsoil” to be paid for will be the actual cubic yardage, installed and maintained.

PART 6 PAYMENT

- A. All work covered by this Item will be paid for at the contract per cubic yard price bid for “Topsoil”. Such price will be full payment for the work covered by this specification including all materials, labor and any other items incidental to the work.

END OF SECTION

SECTION 17-90
TEMPORARY IRRIGATION

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this section consists of all items related to installation, maintenance, and removal of temporary irrigation measures.
- B. Installed temporary irrigation shall be capable of full operation for a period of no less than 24 months after the CONTRACTOR has completed installation of all project permanent vegetation.
- C. Temporary irrigation may be used to support cover crop establishment and maintenance.

1.02 REFERENCE STANDARDS

- A. 17-05 Temporary Erosion and Sediment Control
- B. 17-40 Planting

PART 2 PRODUCTS

2.01 MATERIALS

- A. The CONTRACTOR shall determine the type, size, zoning, and quantity of pipe tubing, pipe fittings, support posts, sprinkler heads, fasteners, components, and/or items required to install and maintain temporary irrigation. Support posts shall be galvanized metal angle iron, tube, and/or pipe with a minimum length of 10 feet.
- B. The CONTRACTOR shall coordinate with the CITY on the type of connection, meter, backflow preventer, pressure reducer valve, and other incidental components and/or items required to connect the temporary irrigation to CITY water.
- C. The CONTRACTOR shall install a temporary locking vault, box, or other security measures to prevent accidental and/or intentional activation of the temporary irrigation system.

PART 3 EXECUTION

3.01 GENERAL

- A. The CONTRACTOR shall install support posts with a minimum height above the ground of 7 feet and a minimum buried depth of 3 feet. The support post shall be installed on the flood plain and/or upland areas with enough frequency to provide complete irrigation coverage.
- B. The CONTRACTOR shall install sprinkler head a minimum of 7' above the adjacent ground. The sprinklers shall be installed on the flood plain and/or upland areas with enough frequency to provide complete irrigation coverage.
- C. The temporary irrigation pipe is to run along the surface of the ground. The CONTRACTOR may submit in writing a request to bury the irrigation pipe for review and approval by the CITY.
- D. The CONTRACTOR is not required to create sprinkler zones.

3.02 OPERATION AND MAINTENANCE

- A. The CONTRACTOR shall operate and maintain the temporary irrigation system after installation through the 12-month vegetation warranty period. Operations and maintenance of the temporary irrigation by the CONTRACTOR may continue after the 12-month period based on the requirements of the warranty.
- B. The CITY may extend or modify the CONTRACTORS operation and maintenance period for the temporary irrigation.
- C. The CONTRACTOR shall coordinate with the CITY / ENGINEER to determine the quantity of water enough to establish and maintain installed vegetation at the site. Coordination with the CITY/ENGINEER does to relieve the CONTRACTOR of responsibility to provide enough watering.
- D. The CONTRACTOR may need to make adjustments to the water quantity based on weather conditions at the site during construction and the 12-month warranty period.

PART 4 MEASUREMENT

- A. The quantity of temporary irrigation to paid for shall be lump sum. There shall be no separate measurement for temporary irrigation.
- B. The quantity of temporary irrigation water to be paid for shall be the actual number of gallons of "Temporary Irrigation Water", metered. Water for temporary irrigation shall not be used for other construction activities.
- C. The quantity of "Temporary Irrigation Watering Labor" to be paid for shall be the actual number of labor hours, rounded to the nearest ½ hour, spent operating the temporary irrigation. Watering labor shall not exceed 8 hours per week, total, without approval in writing by the CITY.
- D. There shall be no separate measurement of materials and/or labor hours spent on maintenance of the temporary irrigation during construction and/or the 12-month vegetation warranty period.
- E. Measurement of materials and/or labor related to extension of the Temporary Irrigation Operations and/or Maintenance period is not covered by this specification.

PART 5 PAYMENT

- A. All work covered by this Item shall be paid for at the contract lump sum price bid for "Temporary Irrigation". Such price shall be full payment for the work covered by this specification including all materials, labor, maintenance, and any other items incidental to the work.
- B. All work covered by this Item shall be paid for at the contract gallon price bid for "Temporary Irrigation Water". Such price shall be full payment for the work covered by this specification including all materials and any other items incidental to the work.
- C. All work covered by this Item shall be paid for at the contract hourly price bid for "Temporary Irrigation Watering Labor". Such price shall be full payment for the work covered by this specification including all labor and any other items incidental to the work.
- D. Payment for materials and/or labor related to extension of the Temporary Irrigation Operations and/or Maintenance period is not covered by this specification.

END OF SECTION

SECTION 17-92
STREAM CHANNEL PUMP AROUND

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this section consists of furnishing, installing, maintaining and removing any and all pump around systems and required materials used for temporary diversion of stream flows on this project.
- B. Pump around is optional based on the CONTRACTOR's means and methods and site conditions at the time of construction. The CONTRACTOR shall suspend pump around operations over weekends, holidays, and when rainfall events of larger than 0.5" are predicted. Existing and proposed channels shall be open to flow when pump around operations are suspended.

PART 2 PRODUCTS

2.01 MATERIALS

- A. The CONTRACTOR is responsible for determining the size and quantity of pumping equipment required to perform the work.
- B. The CONTRACTOR is responsible for providing all necessary materials including but not limited to pipe/hose, pumps, and all materials and apparatus required to maintain pumping activities.

PART 3 EXECUTION

3.01 General

- A. The CONTRACTOR shall consult with the CITY/ENGINEER on the location of the pump around operations prior to installation the pump around system.
- B. The CONTRACTOR will install at no additional cost erosion control measures including but not limited to energy dissipation measures at the pump intake and discharge locations.

PART 4 MEASUREMENT

- A. Stream channel pump around is optional and there will be no separate measurement for this work.

PART 5 PAYMENT

- A. Stream channel pump around is optional and there will be no separate payment for this work. Such price will be full payment for the work covered by this specification including all materials, labor and any other items incidental to the work.

END OF SECTION

SECTION 17-99

Miscellaneous Specifications

Item 1 Bank Transition Grading

- A. The work covered by this special provision consists of all items related to construction of the Bank Transition Grading at the upstream and downstream ends of the improvement as shown on the plans outside of the bankfull limits but not limited to furnishing all labor, equipment, appurtenances, incidentals, surveying, quality control, meeting safety requirements, tests and reports, materials including rock rip rap, backfill, drainage, and performing all operations necessary to construct and complete the work in accordance with these specification and the applicable drawings.
- B. Additional or special design provisions based on change in location is considered incidental to the construction and will not be considered a sperate pay item or change order.
- C. All work shall be completed at the Contract Unit Price per each (EA) of Bank Transition Grading installed in the Bid Proposal.

Item 2 Channel Pool Grading

- A. The work covered by this special provision consists of all items related to construction of the Pool Grading as shown on the plans (Sta. 13+00 to Sta. 13+68.54) but not limited to furnishing all material, labor, equipment, appurtenances, incidentals, surveying, quality control, meeting safety requirements, tests and reports, materials including foundation, backfill, drainage, and performing all operations necessary to construct and complete the work in accordance with these specification and the applicable drawings.
- B. Additional or special design provisions based on change in location is considered incidental to the construction and will not be considered a sperate pay item or change order.
- C. All work shall be completed at the Contract Unit Price per linear foot (LF)of Channel Pool Grading installed in the Bid Proposal.

Item 3 Fill Material

- A. The work covered by this special provision consists of all items related to construction of Fill Material as shown on the plans but not limited to furnishing all labor, equipment, appurtenances, incidentals, surveying, quality control, meeting safety requirements, tests and reports, materials including foundation, backfill, drainage, and performing all operations necessary to construct and complete the work in accordance with these specification and the applicable drawings.
- B. Fill material shall be placed according to 17-13 Excavation and Fill Onsite.
- C. Additional or special design provisions based on change in location is considered incidental to the construction and will not be considered a sperate pay item or change order.
- D. All work shall be completed at the Contract Unit Price per cubic yard (CY)of Fill Material installed in the Bid Proposal.

Item 4 Construct Rock Swale

- A. The work covered by this special provision consists of all items related to construction of the Rock Swale but not limited to furnishing all labor, equipment, appurtenances, incidentals, surveying, quality control, meeting safety requirements, tests and reports, backfill, drainage, and performing all operations necessary to construct and complete the work in accordance with these specification and the applicable drawings.
- B. Additional or special design provisions based on change in location is considered incidental to the construction and will not be considered a sperate pay item or change order.
- C. All work shall be completed at the Contract Unit Price per linear foot (LF)of Construct Rock Swale installed in the Bid Proposal.

Item 5 Channel Transition Material

- A. The work covered by this special provision consists of all items related to construction of the Transition Material placement (Sta. 10+22.43 to Sta. 10+60.00) within the bankfull limits but not limited to furnishing all material, labor, equipment, appurtenances, incidentals, surveying, quality control, meeting safety requirements, tests and reports, backfill, drainage, and performing all operations necessary to construct and complete the work in accordance with these specification and the applicable drawings.
- B. Additional or special design provisions based on change in location is considered incidental to the construction and will not be considered a sperate pay item or change order.
- C. All work shall be completed at the Contract Unit Price per cubic yard (CY)of Channel Transition Material installed in the Bid Proposal.

Item 6 Excavated Material (On-Site)

- A. The work covered by this special provision consists of all items related for over-excavation of native material, mixing with Item 3 - Fill Material and replace as shown on the plans but not limited to furnishing all material, labor, equipment, appurtenances, incidentals, surveying, quality control, meeting safety requirements, tests and reports, backfill, drainage, and performing all operations necessary to construct and complete the work in accordance with these specification and the applicable drawings.
- B. Special provisions for the right bank excavation and protection will not be considered a sperate pay item or change order.
- C. Excavated soil shall be cleaned prior to mixing with fill material and placed. Soil shall be considered cleaned once all debris, organic material, perishable material, and rocks larger than 4 inches have been sorted and removed. Unsatisfactory material shall be removed from the site and is considered subsidiary to excavating and placing material.
- D. If present, rock and boulders may be saved and used in construction of the in-stream structures. Saved material shall conform to dimensions and gradations on the plans and meet specifications outlined in section 17-50 Rock Materials.
- E. Excavated Material (On-Site) shall be placed according to 17-13 Excavation and Fill Onsite.

- F. Additional or special design provisions based on change in location is considered incidental to the construction and will not be considered a sperate pay item or change order.
- G. All work shall be completed at the Contract Unit Price per cubic yard (CY)of Excavated Material (On-Site) installed in the Bid Proposal.

END OF SECTION

SECTION NO. 18

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

(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 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

Form	Prime Contractor	Submit Form To
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 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 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 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 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.

(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. 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 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 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 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.

(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.

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)

CONTRACTOR'S ACT OF ASSURANCE RESOLUTION

I hereby certify that it was RESOLVED by a quorum of the directors of the _____ (Name of Corporation), meeting on the _____ day of _____, 20____, that:

Authorized Representative(s):

be, and hereby is/are authorized to act on behalf of _____ (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 _____ day of _____, 20____.

_____(Secretary)

[SEAL]

BIDDER'S CERTIFICATIONS

Project Name: _____

Project Number: _____

Contract For: _____

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.

Typed Name and Title of Bidder's Authorized Representative

Signature of Bidder's Authorized Representative

Date

Name and Address of Bidder

Debarment / Suspension Certification

I, _____, hereby certify that I have checked on the federal
(Authorized Representative of Recipient)

System for Award Management (www.sam.gov) website and determined that

_____ 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

Date

Title

Name of Recipient

Verifying prime contractors and subcontractors for construction, equipment, supplies and services: Using the 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 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.

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: CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES <i>For detailed definitions, review guidance document, TWDB-0210.</i>
Instructions for Column 6	Enter the type of business: MBE - Minority Business Enterprise, WBE - Women-owned Business Enterprise, or OTHER - 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

IV. TWDB APPROVAL SIGNATURE

Signature indicates the form meets DBE requirements.

DBE Coordinator	Approval Date

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)	
			<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.
- 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

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

**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

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: CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES
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 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)

	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
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					

Use additional sheets if necessary

Signature – Authorized Representative	Title (print legibly)	Date

III. TWDB APPROVAL SIGNATURE

Signature indicates the form meets DBE requirements.

DBE Coordinator	Approval Date

**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

VENDOR COMPLIANCE WITH RECIPROCITY ON NON- RESIDENT BIDDERS

Texas Government Code Section 2252.002 provides that in order for nonresident bidders to be awarded a governmental contract, the bidder must bid projects for construction, improvements, supplies, or services in Texas at an amount lower than the lowest Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid the nonresident bidder in order to obtain a comparable contract in the nonresident bidder's state. A nonresident bidder is a person, including a contractor, whose principal place of business or corporate office is outside of the state of Texas. This requirement does not apply to a contract involving Federal funds. The appropriate blanks in Section A must be filled out by all nonresident bidders in order for your bid to meet specifications. The failure of a nonresident bidder to do so will automatically disqualify that bidder. Resident bidders must check the blank in Section B.

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

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

B. Our principal place of business or corporate office is in the state of Texas: _____.

BIDDER:

Company

City

State

Zip

By (print name)

Signature

Title (print)

THIS FORM MUST BE RETURNED WITH THE BID

SECTION NO. 19

Texas Water Development Board
Guidance on
Disadvantaged Business Enterprise for
State Revolving Fund Projects

(TWDB-0210)



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.¹*
- **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.¹*
- **TWDB-0216 (from Prime Consultants/Contractors)** indicates all businesses solicited for procurement, their contact information, and their MBE/WBE status.

¹ 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.*²

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.*²

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.

² 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.

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.

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.
- **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 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.

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.

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. *Note: Any businesses operating as brokers may not be listed on the TWDB-0373 as an MBE or WBE.*³

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.

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.

³A 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

DBE Rules (40 CFR Parts 33, 35, and 40): 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

How do I get DBE Certified & Finding Certified firms:

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.

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.

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 with the URL <http://www.cpa.state.tx.us/procurement/cmb/cmbhub.html>. The page title is "Window on State Government". The main heading is "Centralized Master Bidders List (CMBL) & Historically Underutilized Business (HUB) Search".

Search:
 CMBL only, HUBs on CMBL, HUBs not on CMBL
 HUB Mentor Protege, All Vendors

Vendor ID: ?
Vendor Number: ?
Vendor Name: begins with Name ?
Include Inactive Vendors: ? **Small Businesses Only:** Yes, No

Selection 1: Class Code: Item: District:
Selection 2: Class Code: Item: District:
Selection 3: Class Code: Item: District: ?
[Class Code](#) | [Item Code](#) | [District](#)

Texas County:
City: begins with
Zip: begins with
Sort by: Vendor Name
Output as: Detail List
Results: return all matches

Output may contain coded information in [Hub Status](#) and [Reason Off CMBL](#)

Related Links
[CMBL Registration](#)
[HUB Directory](#)
[HUB Mentor Protege Agreement Listing](#)
[System for Award Management \(EPLS\)](#)
[Debarred Vendors List](#)

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)

Class	Item(s)	Description
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: 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: 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: _____

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.

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

COLLEYVILLE TX 76034
OFFICIAL USE

Postage	\$ 0.45	0086
Certified Fee	\$2.95	15 Postmark Here
Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$ 3.40	12/12/2012

Sent to
 Street, Apt. No. or PO Box No.
 City, State, ZIP
 Thompson Terrace
 Colleyville, Texas 76034

PS Form 3800

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

AUSTIN TX 78757
OFFICIAL USE

Postage	\$ 0.45	0086
Certified Fee	\$2.95	15 Postmark Here
Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$ 3.40	12/12/2012

Sent to
 Street, Apt. No. or PO Box No.
 City, State, ZIP
 Northcross Drive, Suite 211
 Austin, Texas 78757

PS Form 3800

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

AUSTIN TX 78739
OFFICIAL USE

Postage	\$ 0.45	0086
Certified Fee	\$2.95	15 Postmark Here
Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$ 3.40	12/12/2012

Sent to
 Street, Apt. No. or PO Box No.
 City, State, ZIP
 Lost Oasis Hollow
 Austin, Texas 78739

PS Form 3800

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

DALLAS TX 75219
OFFICIAL USE

Postage	\$ 0.45	0086
Certified Fee	\$2.95	15 Postmark Here
Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$ 3.40	12/12/2012

Sent to
 Street, Apt. No. or PO Box No.
 City, State, ZIP
 Turtle Creek Boulevard,
 Suite 1151
 Dallas, Texas 75219

PS Form 3800

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

SUGAR LAND TX 77479
OFFICIAL USE

Postage	\$ 0.45	0086
Certified Fee	\$2.95	15 Postmark Here
Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$ 3.40	12/12/2012

Sent to
 Street, Apt. No. or PO Box No.
 City, State, ZIP
 Southwest Freeway, Suite 227
 Sugar Land, Texas 77479

PS Form 3800

ATTACHMENT 1 – AFFIRMATIVE STEPS CERTIFICATION AND GOALS (TWDB-0215)

To download this document, view [TWDB-0215 from the TWDB website](#).

FOR OFFICE USE ONLY: Commitment #	TWDB-0215 Revised 08/14/2018		
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 type="checkbox"/> Drinking Water SRF (DWSRF)
			<input 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:			
1.	Including qualified MBEs and WBEs on procurement solicitation lists		
2.	Soliciting potential MBE's and WBE's		
3.	Reducing contract size/quantities when economically feasible to permit maximum participation by MBE's and WBE's		
4.	Establishing delivery schedules to encourage participation by MBE's and WBE's		
5.	Using the services and assistance of the Small Business Administration, Minority Business Development Agency, U.S. Department of Commerce, and Texas Marketplace		
6.	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.			
	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%	
<i>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.</i>			
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: CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES <i>For detailed definitions, review guidance document, TWDB-0210.</i>
Instructions for Column 6	Enter the type of business: MBE - Minority Business Enterprise, WBE - Women-owned Business Enterprise, or OTHER - 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.

ATTACHMENT 3 – AFFIRMATIVE STEPS CERTIFICATION AND GOALS (TWDB-0217)

To download this document, view [TWDB-0217 from the TWDB website](#).

FOR OFFICE USE ONLY: Commitment #	TWDB-0217	TWDB-0217 Revised 08/14/2018						
TEXAS WATER DEVELOPMENT BOARD (TWDB) PRIME CONSULTANT/CONTRACTOR CERTIFICATION								
I. PROJECT INFORMATION								
TWDB Project Number	Applicant/Entity Name	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; padding: 5px;">Total of TWDB Funding</td> <td style="width: 80%; padding: 5px;">Program Type (insert "X" for all that apply)</td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;"><input type="checkbox"/> Drinking Water SRF (DWSRF)</td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;"><input type="checkbox"/> Clean Water SRF (CWSRF)</td> </tr> </table>	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)
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"/>	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							
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%						
<i>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.</i>								
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 type="checkbox"/> Drinking Water SRF (DWSRF) <input type="checkbox"/> Clean Water SRF (CWSRF)		
Project Name: _____					
Solicitation By: <input type="checkbox"/> Applicant/Entity OR <input type="checkbox"/> Prime Contracted Business: _____					
Project Phase: <input type="checkbox"/> Prior to Closing <input type="checkbox"/> Release of funding for PADs <input type="checkbox"/> 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: CONSTRUCTION – SUPPLIES – EQUIPMENT – SERVICES				
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.					
2.					
3.					
4.					
5.					
6.					
<i>(Table continues on the next page)</i>					

SECTION NO. 20

Texas Water Development Board

American Iron and Steel (AIS)
Guidance for
Clean Water & Drinking Water
State Revolving Fund Projects

(Only apply to the TWDB funded items in the Proposal)



**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.

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 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 works¹ 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.

¹. "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)



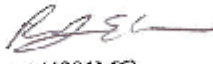
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

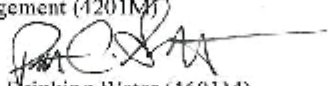
MAR 20 2014

OFFICE OF WATER

MEMORANDUM

SUBJECT: Implementation of American Iron and Steel provisions of P.L. 113-76, Consolidated Appropriations Act, 2014

FROM: Andrew D. Sawyers, Director 
Office of Wastewater Management (4201M)

Peter C. Grevatt, 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.

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

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.

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.

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, “[the 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.

b. Nationwide Plans and Specifications 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.

- 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)



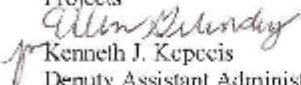
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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. Kepccis
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."¹ The waiver permits the use of non-domestically produced stainless steel nuts and bolts in bolting-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.

¹ 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)



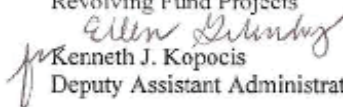
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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.¹ 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

¹Absent 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.

- 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. Kopocis *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," (hereinafter referred to as "the Acts") for minor components within a product under an established cost ceiling.¹ 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.

¹ 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.

- 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. 20460

JAN 18 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

- 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

A handwritten signature in blue ink that reads "D. Ross".

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-natl-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
<p>General</p> <ul style="list-style-type: none"> • Waiver request includes the following information: <ul style="list-style-type: none"> ○ Description of the foreign and domestic construction materials ○ Unit of measure ○ Quantity ○ Price ○ Time of delivery or availability ○ Location of the construction project ○ Name and address of the proposed supplier ○ A detailed justification for the use of foreign construction materials • Waiver request was submitted according to the instructions in the memorandum • 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 		
<p>Cost Waiver Requests</p> <ul style="list-style-type: none"> • Waiver request includes the following information: <ul style="list-style-type: none"> ○ Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products ○ Relevant excerpts from the bid documents used by the contractors to complete the comparison ○ 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 		
<p>Availability Waiver Requests</p> <ul style="list-style-type: none"> • 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"> ○ Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials ○ 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. ○ Project schedule ○ Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials • 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 <p>Has the State received other waiver requests for the materials described in this waiver request, for comparable projects?</p>		

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
Cost of Waiver Request <ul style="list-style-type: none"> • Does the waiver request include the following information? <ul style="list-style-type: none"> ○ Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products 				
<ul style="list-style-type: none"> ○ Relevant excerpts from the bid documents used by the contractors to complete the comparison 				
<ul style="list-style-type: none"> ○ A sufficient number of bid documents or pricing information from domestic sources to constitute a reasonable survey of the market 				
<ul style="list-style-type: none"> • Does the Total Domestic Project exceed the Total Foreign Project Cost by more than 25%? 				
Availability Waiver Requests <ul style="list-style-type: none"> • 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"> ○ Supplier information or other documentation indicating availability/delivery date for materials ○ Project schedule ○ Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of materials • Does supporting documentation provide sufficient evidence that the 				
<ul style="list-style-type: none"> • 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? 				
<ul style="list-style-type: none"> • 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) 				
<ul style="list-style-type: none"> • 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"> ○ Multiple waiver requests for the materials described in this waiver request, for comparable projects in the same State ○ Multiple waiver requests for the materials described in this waiver request, for comparable projects in other States ○ Correspondence with construction trade associations indicating the non-availability of the materials • Are the available domestic materials indicated in the bid documents of inadequate quality compared those required by the project plans, specifications, and/or permits? 				

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 (XXXXX)

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

|

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.

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 Form 1106-A

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 Form 1106-C

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. 21

Texas Water Development Board

Site Certificate

STATE OF TEXAS

§
§
§

COUNTY OF TARRANT

**SITE
CERTIFICATE**

Before me, the undersigned notary, on this day personally appeared Stuart Young, a person whose identity is known to me or who has presented to me a satisfactory proof of identity. After I administered an oath, this person swore to the following:

- (1) My name is Stuart Young. I am over 18 years of age and I am of sound mind, and capable of swearing to the facts contained in this Site Certificate. The facts stated in this certificate are within my personal knowledge and are true and correct.
- (2) I am an authorized representative of The City of Arlington, an entity that has filed an application for financial assistance with the Texas Water Development Board for a (water) (wastewater) project.

Please complete only those sections that apply to your project:

LEGAL CERTIFICATION – LEASE/CONTRACT

I certify that: _____
(Legal Name of Applicant, i.e., City, District, etc.)

has executed a written lease or other contractual agreement to use the property needed for this (water)(wastewater) project that extends through _____ (date), the life of the Texas Water Development Board loan or grant that will be used to finance this project, either in whole or in part. A copy of this lease or agreement is attached hereto.

LEGAL CERTIFICATION – PROPERTY EASEMENT

I certify that: _____
(Legal Name of Applicant, i.e., City, District, etc.)

has executed an express easement to use the property needed for this (water) (wastewater) project that extends through the life of the Texas Water Development Board loan or grant that will be used to finance this project, either in whole or in part. The express easement to use the property needed for this (water) (wastewater) project extends through _____ (date). A copy of the express easement agreement is attached hereto.

LEGAL CERTIFICATION – OWNERSHIP INTEREST

I certify that The City of Arlington
(Legal Name of Applicant, e.g. City, District, etc.)

Option A: has acquired the necessary real property interest, as evidenced by ~~fee-simple~~ ^{SS EASEMENT} purchase, deed, fully executed earnest money contracts, or completion of eminent domain proceedings; that such acquisition will guarantee access and egress; and such interest will contain the necessary easements, rights of way, or unrestricted use as is required for the project being financed by the Texas Water Development Board. The legal description is referenced below.

Option B: is in the process of acquiring the necessary real property interest, as evidenced by earnest money contracts, contracts for sale, firm option agreements to purchase the subject property, or the initiation of eminent domain procedures; that such acquisition will guarantee access and egress; and such interest will contain the necessary easements, rights of way, or unrestricted use as is required for the project being financed by the Texas Water Development Board. The legal description is referenced below. The anticipated date of acquisition is:
_____.

The property has been/will be acquired with the use of eminent domain: True False

Location and Description of Property Interests acquired for Project:

A 0.0950 acre tract of land located in the M.H. Anderson Survey, Abstract No. 40, City of Arlington, Tarrant County, Texas, SAID 0.0950 acre tract of land being a portion of a called 1.572 acre tract of land convey by deed D216233462 filed for record


Any deeds or other instruments required to be recorded to protect the title(s) held by The City of Arlington (Legal Name of Applicant) have been recorded or filed for the record in the County deed records or other required location. The following documents are attached hereto:

Permanent Sanitary Sewer Easement recorded with Tarrant County Courthouse, Instrument No. D220317656.

Description of documents that were used or will be used to acquire the property:

Permanent Sanitary Sewer Easement


EXECUTED this 9th day of April, 2021.

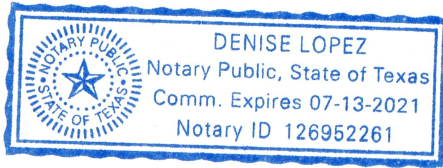
 (Signature)

Stuart Young (Print Name)

Real Estate Manager (Title)

Sworn to and subscribed before me by Denise Lopez on this 9th day of April, 2021.

 (Notary Public in and for the State of Texas)



[SEAL]

Mary Louise Nicholson
MARY LOUISE NICHOLSON
COUNTY CLERK

Woodside Drive Sanitary Sewer Main Relocation – WUWS18016

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

**CITY OF ARLINGTON
SANITARY SEWER EASEMENT**

THE STATE OF TEXAS
COUNTY OF TARRANT

§
§
§

KNOW ALL MEN BY THESE PRESENTS

THAT HSIEH CHEN CHUNG, hereinafter called Grantors, of the County of Tarrant, State of Texas, for and in consideration of ONE DOLLAR and other good and valuable consideration paid by the City of Arlington, a municipal corporation of Tarrant County, Texas, receipt of which is hereby acknowledged, does hereby grant, bargain and convey to said City the right to construct, reconstruct and perpetually maintain a sanitary sewer line together with all necessary appurtenances thereto, and with the right and privilege at any and all times to enter said premises, or any part thereof, as is necessary to the proper use of any other right granted herein and for the purposes of constructing, reconstructing and maintaining said sanitary sewer line and for making connections therewith, in, upon and across that certain tract or parcel of land in Tarrant County, Texas, being described as follows:

SEE ATTACHED EXHIBIT "A" INCORPORATED HEREIN BY REFERENCE FOR ALL INTENTS AND PURPOSES

1. The Easement is for the public use of constructing, reconstructing, maintaining and using a permanent sanitary sewer line and all necessary appurtenances thereto, and making connections therewith; including the right to make the improvements on such grade and according to such plans and specifications as will, in the City's opinion, best serve the public purpose.
2. It is understood and agreed by Grantor that the consideration herein represents full and adequate consideration for the right-of-way granted, together with any and all damages, costs and/or inconvenience that may be incident to the construction.
3. The City shall have the right to remove and keep removed from the Easement any and all structures, fences, trees, shrubs, and any other obstructions or encroachments which may endanger or interfere with the City's use and enjoyment of the Easement; together with the right and privilege at any and all times to enter said Easement tract or parcel of land, or any part thereof, for the purpose of exercising the said rights and with the right and privilege to perform all acts necessary to the use and enjoyment of said Easement.

TO HAVE AND TO HOLD said Easement unto the City of Arlington, its successors and assigns forever.

(signatures and acknowledgement on following page)

WITNESS my hand this the 19th day October, 2020.

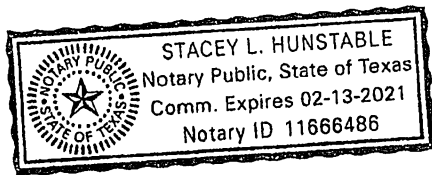
Hsieh Chen Chung
Hsieh Chen Chung

THE STATE OF TEXAS §
COUNTY OF TARRANT §

ACKNOWLEDGMENT

BEFORE ME, the undersigned authority, on this day personally appeared Hsieh Chen Chung, known to me (or proved to me on the oath of _____ or through TV DL description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed same for the purposes and consideration therein expressed.

GIVEN under my hand and seal of office this 19th day of October, 2020.



Stacey L. Hunstable
Notary Public in and for
the State of Texas

My commission expires on 2/13/21

EXHIBIT "A"

**PERMANENT SANITARY SEWER EASEMENT
WOODSIDE DRIVE SANITARY SEWER REPLACEMENT
CITY OF ARLINGTON, TARRANT COUNTY, TEXAS**

BEING a 0.0950 acre tract of land located in the M.H. Anderson Survey, Abstract No. 40, City of Arlington, Tarrant County, Texas, said 0.0950 acre tract of land being a portion of a called 1.572 acre tract of land conveyed to **CHEN CHUNG HSIEH**, by deed thereof filed for record in Tarrant County Clerk's Instrument No. D216233462, Official Public Records, Tarrant County, Texas, said 0.0950 acre tract of land being Permanent Sanitary Sewer Easement, and being more particularly described by metes and bounds as follows:

BEGINNING at a point on the northwest property line of the said 1.572 acre tract, same being the southeast right-of-way line of Woodside Drive (being a 70 feet wide public right-of-way), said beginning point being South 56°07'19" West, a distance of 34.05 feet from the north property corner of the said 1.572 acre tract, from said north property corner, a 1/2 inch iron rod with a cap stamped "BEASLEY" found at the north lot corner of Lot 16, Block 25, Huntwick, Section Seven, being an Addition to the City of Arlington, Tarrant County, Texas, according to the plat thereof filed for record in Volume 388-143, Page 87, Plat Records, Tarrant County, Texas (P.R.T.C.T.) bears North 55°43'59" East (Chord Bearing), a distance of 111.18 feet (Chord Length);

THENCE South 42°08'33" East, departing the property line and the said right-of-way line, over and across the said 1.572 acre tract, a distance of 124.99 feet;

THENCE South 27°42'34" East, continuing over and across the said 1.572 acre tract a distance of 89.38 feet to a point for corner on the south property line of the said 1.572 acre tract, same being the north block line of Block 2, Cross Bend, Section One, being an Addition to the City of Arlington, Tarrant County, Texas, according to the plat thereof filed for record in Volume 388-135, Page 88, P.R.T.C.T., said point being North 85°08'05" West, a distance of 32.98 feet from the most easterly southeast property corner of the said 1.572 acre tract;

THENCE North 85°08'05" West, along the said property line and along the said north block line, a distance of 23.73 feet;

THENCE departing the said property line and the said block line, over and across the said 1.572 acre tract the following courses and distances:

North 27°42'34" West, a distance of 74.07 feet;

North 42°08'33" West, a distance of 125.36 feet to the aforesaid northwest property line of the 1.572 acre tract, same being the said southeast right-of-way line of Woodside Drive;

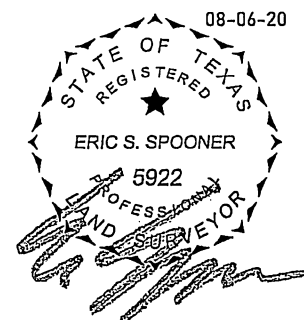
THENCE North 56°07'19" East, along the said property line and the said right-of-way line, a distance of 20.21 feet to the **POINT OF BEGINNING**.

The hereinabove described tract of land contains a computed area of **0.0950 acres (4,138 square feet)** of land, more or less.

The bearings recited hereinabove are referenced to the Texas Coordinate System of 1983, Texas North Central Zone (4202), and are based on the North American Datum of 1983, 2011 adjustment.

I, Eric S. Spooner, a Registered Professional Land Surveyor in the State of Texas, do hereby state that the foregoing description accurately sets out the metes and bounds description of the easement tract described herein.

Eric S. Spooner, RPLS
Texas Registration No. 5922
Spooner & Associates, Inc.
TBPLS Firm No. 10054900

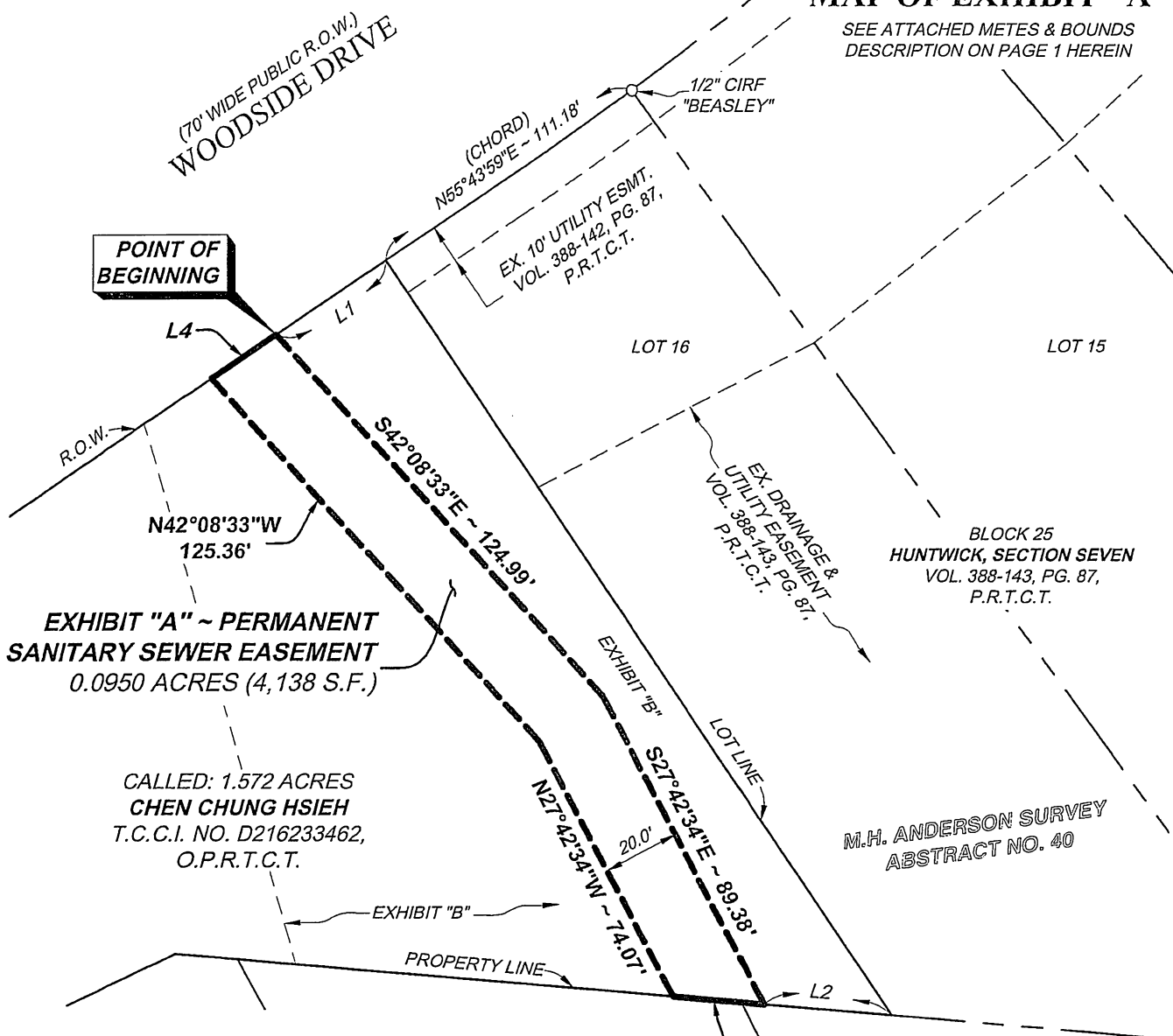


PARCEL 1 ~ EXHIBIT "A" ~ HSIEH ~ PAGE 1 of 2

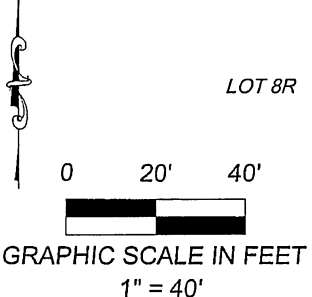
Spooner & Associates, Inc., 309 Byers Street, Suite 100, Euless, Texas 76039 - PH. 817-685-8448 - espooner@spoonersurveyors.com - S&A 19062.e

MAP OF EXHIBIT "A"

SEE ATTACHED METES & BOUNDS DESCRIPTION ON PAGE 1 HEREIN



LINE TABLE		
NO.	DIRECTION	DIST.
L1	S56°07'19"W	34.05'
L2	N85°08'05"W	32.98'
L3	N85°08'05"W	23.73'
L4	N56°07'19"E	20.21'



PERMANENT SANITARY SEWER EASEMENT
WOODSIDE DRIVE SANITARY SEWER MAIN REPLACEMENT
CITY OF ARLINGTON, TARRANT COUNTY, TEXAS

PROPERTY: CHEN CHUN HSIEH, T.C.C.I. NO. D216233462, O.P.R.T.C.T.
WHOLE PROPERTY ACREAGE: CALLED 1.572 ACRES (DEED)
19062.e P1 HSIEH SAN SEWER ESMT.dwg

S&A JOB NO.: 19062.e
DATE: 08/06/2020

DRAWN BY: C. REEDER
CHECKED BY: E. SPOONER

SPOONER & ASSOCIATES
REGISTERED PROFESSIONAL LAND SURVEYORS
OVER 25 YEARS OF SERVICE

309 BYERS STREET, SUITE 100, EULESS, TEXAS 76039
(817) 685-8448 WWW.SPOONERSURVEYORS.COM
TBPLS FIRM NO. 10054900

08-06-20

STATE OF TEXAS
REGISTERED
★
ERIC S. SPOONER
5922
PROFESSIONAL LAND SURVEYOR

SECTION NO. 22

Floodplain Development Permit



City of Arlington FLOODPLAIN DEVELOPMENT PERMIT

PERMIT # ARL091521-01

Applicant Name: Lori Du Date of Application: 8/24/2021
 Mailing Address: 101 W. Abram Street, Arlington, TX 76010 Phone Number: 817-459-6636
 Affected Property location/address: 3901 Woodside Drive
 Contact Person: Lori Du Phone Number: 817-459-6636

A. Description of Work (Complete for all work):

1. Proposed Development Description: Check all areas that describe the type of proposed activity

NEW BUILDING	EXISTING STRUCTURE	SITE WORK
Residential	Alteration	<input checked="" type="checkbox"/> Filling/Grading
Nonresidential	Vertical Addition	<input type="checkbox"/> Excavation
Manufactured Home	Horizontal Addition	<input checked="" type="checkbox"/> Utility Installation
Installation	Materials Storage	Other: _____
		Concrete/Asphalt Parking Lot

2. List the size and legal description of the proposed development (ensure site plan is attached): _____

3. List the Special Flood Hazard Area (Zones A, AE, A1-A30, AH or AO) and the FIRM panel number:
Zone: AE **Panel Number:** 48439C0345K

4. Are other Federal, State, or local permits required (Including Section 404 U.S. Army Corps of Engineers Permit?) **Yes** **No**
Type: _____

- 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** N/A

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): _____ feet NGVD.
- 2. List the lowest floor elevation (including basement & finished garage) of the proposed structure: _____ 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? \$ _____
- 2. What is the cost of the proposed construction? \$ 1,500,000
- 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: N/A

- 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: N/A

- 1. Type of floodproofing method: _____
- 2. The required floodproofing elevation is: _____ 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: N/A

- 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

1. 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: _____ feet NVGD

4. Comments/Conditions: Provide As-Built Plans and CAD files upon final project completion. All disturbed areas must be vegetated prior to project completion.

5. Floodplain Administrator's or Designee's Signature:  Date: 09/15/2021

(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: Lori Du Date: 8/24/21

(The Floodplain Development Permit shall expire 2 years after the approval date unless development has commenced)