

*Fort Bend County, Texas
Invitation for Bid*



*Flat Bank/Steep Bank Channel Bank Stabilization for Fort Bend County Drainage District
FEMA Project 11898
BID 22-083*

SUBMIT BIDS TO:

Fort Bend County
Purchasing Department
Travis Annex
301 Jackson, Suite 201
Richmond, TX 77469

Note: All correspondence must include the term
"Purchasing Department" in address to assist in
proper delivery

SUBMIT NO LATER THAN:

Tuesday, July 5, 2022
2:00 PM (Central)

LABEL ENVELOPE:

BID 22-083
Flat Bank/Steep Bank

***ALL BIDS MUST BE RECEIVED IN AND TIME/DATE STAMPED BY THE PURCHASING OFFICE
OF FORT BEND COUNTY ON OR BEFORE THE SPECIFIED TIME/DATE STATED ABOVE.***

BIDS RECEIVED AS REQUIRED WILL THEN BE OPENED AND PUBLICLY READ.

BIDS RECEIVED AFTER THE SPECIFIED TIME, WILL BE RETURNED UNOPENED.

Results will not be given by phone.
Results will be provided to bidder in writing
after Commissioners Court award.

Requests for information must be in
writing and directed to:

Jaime Kovar
Purchasing Agent
Jaime.Kovar@fortbendcountytexas.gov

Vendor Responsibilities:

- Download and complete any addendums. (Addendums will be posted on the Fort Bend County website no later than 48 hours prior to bid opening)
- Submit response in accordance with requirements stated on the cover of this document.
- DO NOT submit responses via email or fax.



COUNTY PURCHASING AGENT

Fort Bend County, Texas

Vendor Information

Jaime Kovar
Purchasing Agent

Office (281-341-8640)

Legal Company Name (top line of W9)														
Business Name (if different from legal name)														
Federal ID # or S.S. #			DUNS #											
Type of Business	<input type="checkbox"/> Corporation/LLC <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor/Individual <input type="checkbox"/> Tax Exempt Organization		Age in Business?											
Publicly Traded Business	<input type="checkbox"/> No <input type="checkbox"/> Yes Ticker Symbol _____													
Remittance Address														
City/State/Zip														
Physical Address														
City/State/Zip														
Phone/Fax Number	Phone: _____ Fax: _____													
Contact Person														
E-mail														
Check all that apply to the company listed above and provide certification number.	DBE-Disadvantaged Business Enterprise <input type="checkbox"/> SBE-Small Business Enterprise <input type="checkbox"/> HUB-Texas Historically Underutilized Business <input type="checkbox"/> WBE-Women's Business Enterprise <input type="checkbox"/>		Certification # _____ Certification # _____ Certification # _____ Certification # _____	<table border="1"><thead><tr><th>Cert Date</th><th>Exp Date</th></tr></thead><tbody><tr><td>_____</td><td>_____</td></tr><tr><td>_____</td><td>_____</td></tr><tr><td>_____</td><td>_____</td></tr><tr><td>_____</td><td>_____</td></tr></tbody></table>	Cert Date	Exp Date	_____	_____	_____	_____	_____	_____	_____	_____
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Company's gross annual receipts	<table border="1"><tr><td><\$500,000 _____</td><td>\$500,000-\$4,999,999 _____</td></tr><tr><td>\$5,000,000-\$16,999,999 _____</td><td>\$17,000,000-\$22,399,999 _____</td></tr><tr><td>>\$22,400,000 _____</td><td></td></tr></table>		<\$500,000 _____	\$500,000-\$4,999,999 _____	\$5,000,000-\$16,999,999 _____	\$17,000,000-\$22,399,999 _____	>\$22,400,000 _____							
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>\$22,400,000 _____														
NAICs codes (Please enter all that apply)														
Signature of Authorized Representative														
Printed Name														
Title														
Date														

THIS FORM MUST BE SUBMITTED WITH THE SOLICITATION RESPONSE

1.0 GENERAL REQUIREMENTS:

- 1.1 Read this entire document carefully. Follow all instructions. You are responsible for fulfilling all requirements and specifications. Be sure you understand them.
- 1.2 General Requirements apply to all advertised bids; however, these may be superseded, whole or in part, by the scope, special requirements, specifications, special specifications or other data contained herein.
- 1.3 Governing Law: Bidder is advised that these requirements shall be fully governed by the laws of the State of Texas and that Fort Bend County may request and rely on advice, decisions and opinions of the Attorney General of Texas and the County Attorney concerning any portion of these requirements.
- 1.4 Bid Form Completion: Fill out, sign, and return to the Fort Bend County Purchasing Department one (1) complete bid form. An authorized representative of the bidder must sign the Contract Sheet. The Contract will be binding only when signed by the County Judge, Fort Bend County and a purchase order authorizing the item(s) desired has been issued. The use of corrective fluid is not acceptable and may result in the disqualification of bid. If an error is made, the bidder must draw a line through error and initial each change.
- 1.5 Bid Returns: Bidders must return all completed bids to the Fort Bend County Purchasing Department at 301 Jackson, Suite 201 Richmond Texas no later than 2:00 P.M. on the date specified, unless stated otherwise on page one. Late bids will not be accepted. Bids must be submitted in a sealed envelope, addressed as follows: Fort Bend County Purchasing Agent, Travis Annex, 301 Jackson, Suite 201 Richmond, Texas 77469.
- 1.6 Addenda: No interpretation of the meaning of the drawings, specifications or other bid documents will be made to any bidder orally. All requests for such interpretations must be made in writing addressed to Jaime Kovar, Purchasing Agent, 301, Jackson, Suite 201, Richmond, Texas, 77469, E-mail: Jaime.Kovar@fortbendcountytexas.gov. Any and all interpretations and any supplemental instructions will be in the form of written addenda to the contract documents which will be posted on Fort Bend County's website. Addenda will **ONLY** be issued by the Fort Bend County Purchasing Agent. It is the sole responsibility of each bidder to insure receipt of any and all addenda. All addenda issued will become part of the contract documents. Bidders must sign and include it in the returned bid package. Deadline for submission of questions and/or clarification is no later than **Friday, June 24, 2022 at 10:00AM (central)** Requests received after the deadline will not be responded to due to the time constraints of this bid process.
- 1.7 Letters of Reference: All bidders must submit, **WITH BID**, at least three (3) letters of reference from clients for whom a project similar to that specified herein

has been successfully accomplished. Letters of reference must include brief description, project measurements, clients' name, contact person and telephone number.

- 1.8 Bid Bond: All bidders must submit, **WITH BID**, a cashier's check or certified check for at least five percent (5%) of the total bid price, payable to the order of Fort Bend County, or a Bid Bond in the same amount issued by a surety, acceptable to Fort Bend County, authorized to do business in the State of Texas, as a guarantee that the Bidder will do the work described herein at the rates stated herein. Unsuccessful bidder's Cashier's Check or Certified Check will be returned only after a written request to do so have been received in the Office of the Fort Bend County Purchasing Agent.
- 1.9 Material Safety Data Sheets: Under the "Hazardous Communication Act", commonly known as the "Texas Right to Know Act", a bidder must provide to Fort Bend County and using departments, with each delivery, material safety data sheets, which are, applicable to hazardous substances defined in the Act. Bidders are obligated to maintain a current, updated file in the Fort Bend County Purchasing Department. Failure of the bidder to maintain such a file will be cause to reject any bid applying thereto.
- 1.10 Pricing: Prices for all goods and/or services shall be firm for the duration of this Contract and shall be stated on the bid sheet. Prices shall be all inclusive. No price changes, additions, or subsequent qualifications will be honored during the course of the Contract. All prices must be written in ink or typewritten. If there are any additional charges of any kind, other than those mentioned above, specified or unspecified, bidder **MUST** indicate the items required and attendant costs or forfeit the right to payment for such items.
- 1.11 Term Contracts: If the Contract is intended to cover a specific time period, said time will be given in the specifications under scope.
- 1.12 Recycled Materials: Fort Bend County encourages the use of products made of recycled materials and shall give preference in purchasing to products made of recycled materials if the products meet applicable specifications as to quantity and quality. Fort Bend County will be the sole judge in determining product preference application.
- 1.13 Evaluation: Evaluation shall be used as a determinant as to which bid items or services are the most efficient and/or most economical for Fort Bend County. It shall be based on all factors which have a bearing on price and performance of the items in the user environment. All bids are subject to tabulation by the Fort Bend County Purchasing Department and recommendation to Fort Bend County Commissioners Court. Compliance with all bid requirements, delivery and needs of the using department are considerations in evaluating bids. Pricing is **NOT** the only criteria for making a recommendation. The Fort Bend County Purchasing

Initials of Bidder: _____

Department reserves the right to contact any bidder, at any time, to clarify, verify or request information with regard to any bid.

- 1.14 Disqualification of Bidder: Upon signing this bid document, a bidder offering to sell supplies, materials, services, or equipment to Fort Bend County certifies that the bidder has not violated the antitrust laws of this state codified in section 15.01, et seq., Business & Commerce Code, or the federal antitrust laws, and has not communicated directly or indirectly the bid made to any competitor or any other person engaged in such line of business. Any or all bids may be rejected if Fort Bend County believes that collusion exists among the bidders. Bids in which the prices are obviously unbalanced may be rejected. If multiple bids are submitted by a bidder and after the bids are opened, one of the bids is withdrawn, the result will be that all of the bids submitted by that bidder will be withdrawn; however, nothing herein prohibits a vendor from submitting multiple bids for different products or services.
- 1.15 Awards: Fort Bend County reserves the right to award this Contract on the basis of lowest and best bid in accordance with the laws of the State of Texas, to waive any formality or irregularity, to make awards to more than one bidder, to reject any or all bids. In the event the lowest dollar bidder meeting specifications is not awarded a contract, the bidder may appear before the Commissioners Court and present evidence concerning its responsibility.
- 1.16 Contract Obligation: Fort Bend County Commissioners Court must award the Contract and the County Judge or other person authorized by the Fort Bend County Commissioners Court must sign the Contract before it becomes binding on Fort Bend County or the bidders. Department heads are not authorized to sign agreements for Fort Bend County. Binding agreements shall remain in effect until all products and/or services covered by this purchase have been satisfactorily delivered and accepted.

2.0 SCOPE:

It is the intent of Fort Bend County (the "County") to contract with one (1) vendor for all materials, supplies, equipment, tools, services, labor and supervision necessary for Flat Bank/Steep Bank channel bank stabilization, hereinafter referred to as the "Project," as specified herein. It is the County's intent that the resulting unit-price contract will be funded in whole or in part with funding provided under Federal Emergency Management Administration ("FEMA"). As such, Respondent is responsible for complying with any and all applicable federal and state statutes, regulations, policies, guidelines, and requirements.

3.0 PRE-BID CONFERENCE:

A pre-bid conference will be conducted on **Tuesday, June 21, 2022 at 9:00 AM (CST)**. The pre-bid conference will be held at the Fort Bend County Purchasing Department located in the Travis Annex at 301 Jackson, Suite 201, Richmond, Texas 77469. All bidders are encouraged to attend.

Initials of Bidder: _____

4.0 LIQUIDATED DAMAGES:

If the Project is not substantially complete within the contract time as adjusted by extension of time approved by Commissioner Court, Fort Bend County will deduct (from the final payment, as liquidated damages), the sum of two-thousand (\$2000.00) per calendar day that the Project remains not substantially complete, such sum is agreed upon as a reasonable and proper measure of damages which Fort Bend County will sustain per day by failure of Contractor to substantially complete work within the contract time. It is understood that said sum shall be considered as liquidated damages and shall in no sense be considered as a penalty against the Contractor.

5.0 COMPLETION TIME AND PAYMENT:

- 5.1 Fort Bend County shall pay the Contractor in current funds for the Contractor's performance of the Contract the contract sum, as stated herein, after receipt of notice to proceed and a purchase order issued by the Fort Bend County Purchasing Agent.
- 5.2 Based upon Applications for payment submitted to the Drainage District, Fort Bend County shall make progress payments on account of the contract sum to the Contractor as provided below and elsewhere in the contract documents.
 - 5.2.1 The period covered by each application for payment shall be one calendar month ending on the last day of the month.
 - 5.2.2 Provided an application for payment is received by the Drainage District not later than the 15th day of a month, Fort Bend County shall make payment to the Contractor not later than the 15th day of the next month. If an application for payment is received by the Drainage District after the application deadline fixed above, payment shall be made by Fort Bend County not later than 30 days after the Drainage District receives the application for payment.
 - 5.2.3 Application for payment shall indicate the percentage of completion of each portion of the Project as of the end of the period covered by the application for payment.
 - 5.2.4 Subject to the provisions of the contract documents, the amount of each progress payment shall be computed as follows:
 - 5.2.4.1 Take that portion of the contract sum properly allocable to completed Project less retainage of ten percent (10%).
 - 5.2.4.2 Add that portion of the contract sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved by Fort Bend County, suitably stored off the site at a

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location agreed upon in writing), less retainage of ten percent (10%).

5.2.4.3 Subtract the aggregate of previous payments made by Fort Bend County.

5.2.4.4 The progress payment amount as determined in above shall be further modified under the following circumstances:

Add, upon substantial completion of the Project, a sum sufficient to increase the total payments to one hundred percent (100%) of the contract sum, less such amounts as Fort Bend County shall determine for incomplete work and unsettled claims.

5.2.4.5 Final payment, constituting the entire unpaid balance of the contract sum, shall be made by Fort Bend County to the Contractor when the Contract has been fully performed by the Contractor.

5.3 Before the first application for payment, the Contractor shall submit to the Drainage District a schedule of values allocated to various portions of the work, prepared in such form and supported by such data to substantiate its accuracy as the Drainage District may require. This schedule, unless objected to by the Drainage District shall be used as a basis for reviewing the Contractor's application for payment.

5.4 Contractor must provide with each application for payment a contractor's affidavit certifying bills against the Contractor for labor, material and expendable equipment employed in the performance of Contractor have been paid in full prior to acceptance of final payment from Fort Bend County.

5.5 The Contractor will permit Fort Bend County, or any duly authorized agent of Fort Bend County, to inspect and examine the books and records of the Contractor for the purpose of verifying the amount of work performed under the Contract. Fort Bend County's right to inspect survives the termination of the Contract for a period of five years.

6.0 LIMIT OF APPROPRIATION:

Prior to the execution of this Contract, Contractor has been advised by County, and Contractor clearly understands and agrees, such understanding and agreement being of the absolute essence to this Contract, that County shall have available only those funds specifically allocated in this Contract to fully discharge any and all liabilities which may be incurred by County in bringing this Project to an absolute conclusion, resulting in a complete, fully furnished, fully equipped and fully usable facility, and that the total of any and all basic construction costs, costs of providing the required services and materials, all fees and compensation of any sort to the Contractor, and

Initials of Bidder: _____

any and all costs for any and all things or purposes coming insuring under or out of this Contract, irrespective of the nature thereof, shall not exceed said specifically allocated sum, notwithstanding any word, statement or thing contained in or inferred from the preceding provision of this Contract which might in any light by any person be interpreted to the contrary.

7.0 RIGHT TO ASSURANCE:

Whenever Fort Bend County in good faith has reason to question the Contractor's intent to perform, Fort Bend County may demand that the Contractor give written assurance of its intent to perform. In the event that a demand is made and no assurance is given within five (5) days, Fort Bend County may treat this failure as an anticipatory repudiation of the Contract.

8.0 PERFORMANCE AND PAYMENT BONDS:

Performance and Payment Bonds: In the event the total accepted bid price exceeds \$25,000 the Contractor must provide to the Office of the County Purchasing Agent, a performance bond and a payment bond, each in the amount of 100% of the total contract sum within ten (10) calendar days after receipt of notification of bid award. Such bonds shall be executed by a corporate surety duly authorized and admitted to do business in the State of Texas and licensed in the State of Texas to issue surety bonds with a Best Rating of "A" or better. Fort Bend County reserves the right to accept or reject any surety company proposed by the Contractor. In the event Fort Bend County rejects, the proposed surety company, the Contractor will be afforded five (5) additional days to submit the required bonds issued by a surety company acceptable to Fort Bend County.

9.0 POWER OF ATTORNEY:

An attorney-in-fact who signs a bid bond, performance bond or payment bond must file with each bond a certified and effectively dated copy of his or her power of attorney.

10.0 INSURANCE:

- 10.1 All respondents shall submit, with response, a current certificate of insurance indicating coverage in the amounts stated below. In lieu of submitting a certificate of insurance, respondents may submit, with response, a notarized statement from an Insurance company, authorized to conduct business in the State of Texas, and acceptable to Fort Bend County, guaranteeing the issuance of an insurance policy, with the coverage stated below, to the firm named therein, if successful, upon award of this Contract.
- 10.2 At contract execution, contractor shall furnish County with properly executed certificates of insurance which shall evidence all insurance required and provide that such insurance shall not be canceled, except on 30 days prior written notice to County. Contractor shall provide certified copies of insurance endorsements and/or policies if requested by County. Contractor shall maintain such insurance coverage from the time Services commence until Services are completed and

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provide replacement certificates, policies and/or endorsements for any such insurance expiring prior to completion of Services. Contractor shall obtain such insurance written on an Occurrence form (or a Claims Made form for Professional Liability insurance) from such companies having Best's rating of A/VII or better, licensed or approved to transact business in the State of Texas, and shall obtain such insurance of the following types and minimum limits:

- 10.2.1 Workers' Compensation insurance. Substitutes to genuine Workers' Compensation Insurance will not be allowed.
- 10.2.2 Employers' Liability insurance with limits of not less than \$1,000,000 per injury by accident, \$1,000,000 per injury by disease, and \$1,000,000 per bodily injury by disease.
- 10.2.3 Commercial general liability insurance with a limit of not less than \$1,000,000 each occurrence and \$2,000,000 in the annual aggregate. Policy shall cover liability for bodily injury, personal injury, and property damage and products/completed operations arising out of the business operations of the policyholder.
- 10.2.4 Business Automobile Liability coverage with a combined Bodily Injury/Property Damage limit of not less than \$1,000,000 each accident. The policy shall cover liability arising from the operation of licensed vehicles by policyholder.
- 10.3 County and the members of Commissioners Court shall be named as additional insured to all required coverage except for Workers' Compensation and Professional Liability (if required). All Liability policies including Workers' Compensation written on behalf of contractor, excluding Professional Liability, shall contain a waiver of subrogation in favor of County and members of Commissioners Court.
- 10.4 If required coverage is written on a claims-made basis, contractor warrants that any retroactive date applicable to coverage under the policy precedes the effective date of the contract; and that continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years beginning from the time that work under the agreement is completed.
- 10.5 Contractor shall not commence any portion of the work under this Contract until it has obtained the insurance required herein and certificates of such insurance have been filed with and approved by Fort Bend County.
- 10.6 No cancellation of or changes to the certificates, or the policies, may be made without sixty (60) days prior, written notification to Fort Bend County.
- 10.7 Approval of the insurance by Fort Bend County shall not relieve or decrease the

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liability of the Contractor.

11.0 INDEMNIFICATION:

Respondent shall save harmless County from and against all claims, liability, and expenses, including reasonable attorney's fees, arising from activities of respondent, its agents, servants or employees, performed under this agreement that result from the negligent act, error, or omission of respondent or any of respondent's agents, servants or employees.

- 11.1 Respondent shall timely report all such matters to Fort Bend County and shall, upon the receipt of any such claim, demand, suit, action, proceeding, lien or judgment, not later than the fifteenth day of each month; provide Fort Bend County with a written report on each such matter, setting forth the status of each matter, the schedule or planned proceedings with respect to each matter and the cooperation or assistance, if any, of Fort Bend County required by Respondent in the defense of each matter.
- 11.2 Respondent's duty to defend, indemnify and hold Fort Bend County harmless shall be absolute. It shall not abate or end by reason of the expiration or termination of any contract unless otherwise agreed by Fort Bend County in writing. The provisions of this section shall survive the termination of the contract and shall remain in full force and effect with respect to all such matters no matter when they arise.
- 11.3 In the event of any dispute between the parties as to whether a claim, demand, suit, action, proceeding, lien or judgment appears to have been caused by or appears to have arisen out of or in connection with acts or omissions of Respondent, Respondent shall never-the-less fully defend such claim, demand, suit, action, proceeding, lien or judgment until and unless there is a determination by a court of competent jurisdiction that the acts and omissions of Respondent are not at issue in the matter.
- 11.4 Respondent's indemnification shall cover, and Respondent agrees to indemnify Fort Bend County, in the event Fort Bend County is found to have been negligent for having selected Respondent to perform the work described in this request.
- 11.5 The provision by Respondent of insurance shall not limit the liability of Respondent under an agreement.
- 11.6 Respondent shall cause all trade contractors and any other contractor who may have a contract to perform construction or installation work in the area where work will be performed under this request, to agree to indemnify Fort Bend County and to hold it harmless from all claims for bodily injury and property damage that may arise from said Respondent's operations. Such provisions shall be in form satisfactory to Fort Bend County.

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- 11.7 Loss Deduction Clause - Fort Bend County shall be exempt from, and in no way liable for, any sums of money which may represent a deductible in any insurance policy. The payment of deductibles shall be the sole responsibility of Respondent and/or trade contractor providing such insurance.

12.0 PREVAILING WAGES:

This project is subject to the prevailing wage rate requirements of Chapter 2258 of the Government Code. All persons employed by Contractor shall be compensated at not less than the rates shown below. Contractor shall keep detailed records of each of its workers and said records shall be made available to County for inspection at all reasonable times. The Contractor shall pay Fort Bend County sixty dollars (\$60.00) for each worker employed by the Contractor for the provision of services described herein for each calendar day or part of the day that the worker is paid less than the below stated rates. Contractors may also visit www.wdol.gov/dba.aspx.

General Decision Number: TX20220054 02/25/2022

Superseded General Decision Number: TX20210054

State: Texas

Construction Type: Heavy

County: Fort Bend County in Texas

HEAVY CONSTRUCTION PROJECTS Including Water and Sewer Lines
(Does Not Include Flood Control)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022: Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least \$15.00 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 2022. If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022: Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

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Additional information on contract requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Modification Number	Publication Date
0	1/07/2022
1	02/25/2022

SFTX0669-001 04/01/2021

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers)	\$31.68	\$22.20
*SUTX2005-020 06/14/2005		
CARPENTER	\$14.38**	
CEMENT MASON/CONCRETE FINISHER	\$11.37**	\$1.13
ELECTRICIAN	\$18.40	\$1.34
Formbuilder/Formsetter	\$13.35**	\$1.17
IRONWORKER, REINFORCING	\$11.29	
Laborers:		
Common	\$8.95**	
Landscape	\$7.35**	
Mason Tender Cement	\$9.96**	
Pipelayer	\$10.31**	\$0.91
PIPEFITTER	\$17.00	\$0.04
POWER EQUIPMENT OPERATOR:		
Backhoe	\$12.08**	
Bulldozer	\$10.44	
Crane	\$12.67**	\$0.45
Excavator	\$16.74	
Front End Loader	\$10.68**	\$1.42
Grader	\$12.20**	\$1.48
Tractor	\$12.38**	\$1.51
TRUCK DRIVER	\$12.28**	\$0.98

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

Initials of Bidder: _____

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$15.00) or 13658 (\$11.25). Please see the Note at the top of the wage determination for more information

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors 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, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/agencies/whd/government-contracts.

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

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

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

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

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates.

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Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

Initials of Bidder: _____

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

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

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

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

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

13.0 PERMITS:

It shall be the sole responsibility of the successful bidder to obtain all required permits in the name of Fort Bend County.

14.0 CONTRACTOR'S RESPONSIBILITY FOR WORK:

14.1 Preconstruction Work. Contractor shall do (or cause to be done) the following as preconstruction work:

14.1.1 On an as needed basis as determined by Fort Bend County, cause the Contractor's personnel to meet with Fort Bend County and the Engineer to discuss the status of the Project.

14.1.2 Review drawings and specifications with the Engineer to permit the Contractor and the Engineer to determine the compliance of the proposed facility with applicable building codes.

14.2 Construction Work. Contractor shall do (or cause to be done) the following as construction work:

14.2.1 Perform (or cause to be performed) all preparatory work at the construction site required herein, including (without limitation) soil and concrete testing and demolition of improvements existing at the construction site and all actions necessary for compliance with all laws and regulations as to actions to be taken by owners or contractors before

Initials of Bidder: _____

construction begins, including without limitation those in regard to archaeological and environmental requirements.

14.2.2 Construct and install (or cause to be constructed and installed) the Project on the construction site in accordance with this Contract and the drawings and specifications approved by Fort Bend County.

14.2.3 Furnish (or cause to be furnished) all materials, supplies, equipment, tools, labor, supervision, utilities, transportation, and other materials and services necessary to complete the Project described herein.

14.3 Standards for Review and Approval. Fort Bend County acknowledges that in order to meet the deadlines for the completion of the Project, and in order to accomplish the efficient completion of the Project, the Contractor may submit matters to Fort Bend County in stages for approval or consent. Upon receipt of any matter submitted by the Contractor for review and approval, Fort Bend County shall review the same and shall diligently and promptly (but in any event within 14 calendar days for any such matter, other than a proposed change order, and within 28 calendar days for a proposed change order) give the Contractor notice of Fort Bend County's approval or disapproval, setting forth in detail all reasons for any disapproval. Fort Bend County's right to disapprove any such matter submitted (other than a proposed change order) shall be limited to the elements thereof (a) which do not conform substantially to matters previously approved, (b) which are new elements not previously presented and approved and the Contractor is unable to demonstrate that such new element is reasonably necessary for completion of the Project, or (c) which depict matters that are violations of this Contract or applicable laws and regulations.

14.3.1 If Fort Bend County disapproves of a particular matter or Proposed Change Order, the Contractor shall have the right to resubmit such matter or Proposed Change Order to Fort Bend County, altered to satisfy Fort Bend County's basis for disapproval. Any resubmission shall be subject to review and approval by Fort Bend County.

14.3.2 Fort Bend County and the Contractor shall attempt in good faith to resolve any disputes concerning the approval of any aspect of the Project expeditiously, so as not to delay the completion of the Project in accordance with this Contract.

14.3.3 Expedited Approvals. Fort Bend County recognizes the importance of expeditious action upon all matters submitted to Fort Bend County for review and approval and of expeditious response to those aspects of the Project requiring approval by governmental authorities having jurisdiction there over. Fort Bend County agrees to exercise its rights of review and approval hereunder with due diligence, reasonableness, and good faith. Fort Bend County shall use its reasonable efforts to expedite any required review of the Project or other matters by any governmental authority.

Initials of Bidder: _____

14.4 Changes.

14.4.1 General. Fort Bend County may make changes to the Project by altering, adding to, or deducting from the Project. All changes in the Project which (a) require an adjustment in the contract sum or an adjustment in the final completion date or (b) involve a material change in the overall scope or function of the Project shall be requested and authorized before commencing such changes by use of written change order notices, Proposed Change Orders and Change Orders, which change order procedure shall be the exclusive means to effect such changes in the Project.

14.4.2 Change Order Procedure. If at any time Fort Bend County desires to make any change in the Project requiring the issuance of a Change Order, Fort Bend County shall so advise the Contractor in writing by delivery to the Contractor of a written notice describing the change. Upon receipt of such notice initiated by Fort Bend County, the Contractor shall within a reasonable period of time advise Fort Bend County of the Contractor's proposal for the adjustments, if any, in the contract sum, the schedule of values, and the final completion date attributable to such change by delivering a written notice thereof (the "Proposed Change Order") to Fort Bend County. Such Proposed Change Order shall contain a description of the proposed change and shall set forth the Contractor's estimate of the increase or decrease, if any, in the contract sum and the change, if any, in the schedule of values and the final completion date attributable to such change. If the Contractor desires to make a change in the Project requiring the issuance of a change order, the Contractor shall deliver to Fort Bend County a Proposed Change Order. Upon execution by Fort Bend County, a Proposed Change Order shall constitute (and be defined herein as) a "Change Order" for purposes of this Contract. The Contractor shall forthwith perform the work as changed in accordance with such Change Order. All work performed pursuant to a Change Order shall be performed in accordance with the terms of this Contract. All Proposed Change Orders shall be submitted for approval by Fort Bend County. No action, acquiescence or inaction by Fort Bend County or any representative of Fort Bend County shall be construed to be a waiver of requirements set forth in this Contract in regard to Change Orders or ratification of a violation of such requirements, and all acts in violation of this provision shall be considered void.

14.4.3 Change Order Authorization. Each Change Order shall be signed by Fort Bend County and an authorized representative of the Contractor.

14.4.4 Contract Sum Adjustments. The contract sum and the schedule of values shall be adjusted only as a result of a Change Order requiring such adjustment. Any extra work performed without a proper Change Order shall be considered voluntary and not subject to additional compensation.

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The Contractor shall not be entitled to an adjustment in the contract sum (or a Change Order permitting such adjustment) or to damages as a result of any delays in the Project caused by the acts or omissions of Fort Bend County, provided that this sentence is not applicable to delays that constitute more than 90 days in any 365-day period or cause the Project to be interrupted for a continuous period of 45 days through no fault of the Contractor.

14.4.5 When Fort Bend County and the Contractor agree upon the adjustments in the contract sum, the schedule of values, and the final completion date attributable to such adjustment, such agreement will be documented by preparation and if approved by the Fort Bend County Commissioners Court, execution of an appropriate Change Order.

14.5 Site Access. Prior to the transfer date, Fort Bend County and the Contractor shall have uninterrupted access to the construction site. Subsequent to the transfer date, Fort Bend County will permit the Contractor, the Engineer, and their representatives and subcontractors to enter upon the Project at times reasonably necessary to complete the punch list items.

14.6 Applicable Laws and Regulations. Contractor shall in its performance of the Project comply with all applicable laws and regulations. Any delays in the prosecution of the Project caused by any changes in the laws and regulations or the application or enforcement of the laws and regulations may entitle the Contractor to an extension of time.

14.7 Familiarity with Project. The Contractor represents and accepts that it has: (a) visited the property(ies), (b) taken such other steps as may be necessary to ascertain the nature and location of the Project and the general and local conditions which affect the Project or the cost thereof, (c) investigated the labor situation as regards to the Project, (d) examined the property(ies), the obstacles which may be encountered and all other observable conditions having a bearing upon the performance of the Project, the superintendence of the Project, the time of completion and all other relevant matters, and (e) reported to Fort Bend County the results of all of the foregoing. The Contractor represents that it is familiar with all phases of the Project and the matters that may affect the Project or its prosecution under this Contract.

14.8 Standard of Performance. The Contractor shall prosecute (or cause to be prosecuted) the Project in accordance with the best efforts for the construction and development of projects similar to the Project in the State of Texas, using qualified, careful, and efficient contractors and workers and in conformity with the provisions of this Contract. The Contractor shall perform the work in a good and workmanlike manner.

14.9 Warranty of Contractor. The Contractor warrants to Fort Bend County that: (i)

Initials of Bidder: _____

the Contractor possesses the skill and knowledge ordinarily possessed by well-informed members of its trade or profession and the Contractor will use its best efforts to ensure that the services provided under this Contract will be performed, delivered, and conducted in accordance with the best professional standards and in accordance with industry standards, and (ii) the Contractor is fully experienced and properly qualified to perform the class of work provided for herein, and that it is properly equipped, organized and financed to perform such work, and (iii) following the date of acceptance of this Contract, the services provided by the Contractor to Fort Bend County will conform to the representations contained in this Contract, including all attachments, schedules and exhibits. All warranties provided by the Contractor in this Contract shall be cumulative, shall be deemed consistent and not in conflict, are intended to be given full force and effect and to be interpreted expansively to give the broadest warranty protection to Fort Bend County.

- 14.10 Contractor's Personnel. Contractor shall employ only competent, skilled personnel for the Project. Prior to the final completion date, the Contractor shall maintain a superintendent who shall be authorized to act on behalf of the Contractor and with whom Fort Bend County may consult at all reasonable times. The superintendent shall not be transferred from the Project without Fort Bend County's consent (which shall not be unreasonably withheld or delayed); provided, however, the superintendent shall not be assigned solely to the Project and shall be entitled to spend reasonable time working on matters unrelated to the Project so long as such work on other matters does not render the superintendent unavailable to the Project or unavailable to Fort Bend County. However, such obligation to furnish the superintendent and such staff personnel shall not be construed (a) to preclude the promotion within the Contractor's organization of any person assigned to the Project or (b) to give rise to any liability of the Contractor if any person assigned to the Project (including, without limitation, the superintendent) leaves the Contractor's employment. If the superintendent is transferred from the Project, Fort Bend County shall have the right to approve the replacement superintendent (which approval will not be unreasonably withheld or delayed). The Contractor, the Architect, and the other subcontractors shall comply with all applicable health, safety, and loss prevention rules of applicable governmental authorities. The Contractor shall, at its own expense, remove from the Project any person who fails to comply with such rules and instructions. The Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the Project any unfit person or anyone not skilled in the work assigned to him. Fort Bend County may, upon written notice to the Contractor, require the Contractor to remove an individual immediately from providing services for the following reasons: violation of the terms and conditions of this Contract; violation of Fort Bend County's or the Contractor's work rules and regulations; criminal activity; or violation of state, federal, or municipal statutes. Fort Bend County may, upon thirty (30) days written notice to the Contractor, require the removal of any individual from providing services without cause.

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- 14.11 Inspection. The Project and all parts thereof shall be subject to inspection from time to time by inspectors designated by Fort Bend County. No such inspections shall relieve The Contractor of any of its obligations hereunder. Neither failure to inspect nor failure to discover or reject any of the work as not in accordance with the drawings and specifications or any provision of this Contract shall be construed to imply an acceptance of such work or to relieve the Contractor of any of its obligations hereunder. Fort Bend County agrees that its right of inspection shall be used reasonably and in a timely manner so as not to delay orderly completion of the Project.
- 14.12 Protection Against Risks. The Contractor shall take all precautions which are necessary and adequate, against conditions created during the progress of the Project which involve a risk of bodily harm to persons or a risk of damage or loss to any property. The Contractor shall regularly inspect all work, materials and equipment to discover and determine any such conditions and shall be responsible for discovery, determination, and correction of any such conditions. The Contractor shall comply with all federal, state, and local occupational hazard and safety standards, codes and regulations applicable in the jurisdiction where the Project is being performed. The Contractor shall include the substance of this clause in its entirety in all subcontracts for any work to be performed at the construction site.
- 14.13 Equipment. Except as expressly provided herein to the contrary, the Contractor shall furnish (or cause to be furnished) all construction, transportation, installation, tools, and other equipment and facilities required for the performance of the Project within the times specified herein. Such equipment and facilities shall be serviceable and kept fit for the uses intended. Defective items shall be removed from the construction site promptly and at the Contractor's cost. The Contractor shall schedule (or cause to be scheduled) its other operations so as to not interfere with its duty to timely furnish the necessary equipment and facilities and personnel to operate the same at the times necessary for the orderly completion of the Project.
- 14.14 Materials. Except as may be specifically provided otherwise in the Contract or approved in advance by Fort Bend County, the Contractor shall provide Fort Bend County with copies of material testing reports and to cause all materials, equipment, and fabricated items incorporated in the Project to be new and of a suitable grade of their respective kinds for their intended use.

15.0 TERMINATION:

15.1 Fort Bend County may terminate the Contract if the Contractor:

- 15.1.1 Persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials.

Initials of Bidder: _____

- 15.1.2 Fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractor.
- 15.1.3 Persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction.
- 15.1.4 Otherwise is guilty of substantial breach of a provision of the Contract Documents.
- 15.2 When any of the above reasons exists, Fort Bend County may, without prejudice to any other rights or remedies of Fort Bend County and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:
 - 15.2.1 Take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor.
 - 15.2.2 Finish the Project by whatever reasonable method Fort Bend County may deem expedient.
- 15.3 Either party may terminate this Contract at any time by providing thirty (30) days written notice.
- 15.4 When Fort Bend County terminates the Contract for one of the reasons stated in this section, the Contractor shall not be entitled to receive further payment until the Project is finished. Therefore, the Contractor shall be promptly paid for all work actually and satisfactorily completed.

16.0 COMPLETION, TRANSFER, AND ACCEPTANCE:

- 16.1 Final Completion. Upon the occurrence of the final completion date, the punch list items shall be promptly commenced and thereafter completed within thirty (30) days after final completion.
- 16.2 Transfer and Acceptance. Upon the occurrence of final completion, care, custody and control of the Project shall pass to Fort Bend County. As referenced herein, the "Transfer Date" shall mean the date on which the care, custody and control of the Project passes to Fort Bend County. Subsequent to the Transfer Date all risk of loss with respect to the Project shall be by Fort Bend County and the Contractor shall be thereafter obligated to cover the Project with their Insurance.

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17.0 SUSPENSION BY FORT BEND COUNTY FOR CONVENIENCE:

- 17.1 Fort Bend County may, without cause, order the Contractor in writing to suspend, delay or interrupt the Project in whole or in part for such period of time as Fort Bend County may determine.
- 17.2 An adjustment shall be made for increase in the cost of performance, caused by suspension, delay or interruption. No adjustment shall be made to the extent:
 - 17.2.1 That performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible.
 - 17.2.2 That an equitable adjustment is made or denied under another provision of this Contract.
- 17.3 Adjustments made in the cost of performance may have a mutually agreed fixed or percentage fee.

18.0 INDEPENDENT CONTRACTOR:

The Contractor shall be an independent contractor and any provisions of this Contract that may appear to give Fort Bend County the right to direct the Contractor as to the details of the manner of doing the Project shall be deemed to mean that the Contractor shall follow the desires of Fort Bend County in the results of the Project only and not in the means whereby the Project is to be accomplished. The Contractor shall be responsible as to the details of completing the Project. Neither the agents, representatives, nor employees of the Contractor, shall be deemed to be the agents, representatives, or employees of Fort Bend County. The Contractor further represents that it accepts a fiduciary role and responsibility with respect to Fort Bend County and will, to its best abilities, act in the best interests of Fort Bend County and the timely completion of the Project. The Contractor agrees and understands that neither it nor any of its agents or employees may act in the name of Fort Bend County except and unless specifically authorized in writing by Fort Bend County to do so. The Contractor shall furnish construction administration and management services and use the Contractor's best efforts to complete the Project in an expeditious and economical manner consistent with the interests of Fort Bend County.

19.0 NOTICE

- 19.1 All written notices, demands, and other papers or documents to be delivered to Fort Bend County under this Contract shall be delivered to the Drainage District, 301 Jackson, Richmond, Texas 77469, or at such other place or places as Fort Bend County may from time to time designate by written notice delivered to the Contractor. For purposes of notice under this Contract, a copy of any notice or communication hereunder shall also be forwarded to the following address: Fort Bend County, 301 Jackson Street, Suite 719, Richmond, Texas 77469, Attention: County Judge.

Initials of Bidder: _____

- 19.2 All written notices, demands, and other papers or documents to be delivered to the Contractor under this Contract shall be delivered to the Authorized Representative identified in the Contract documents or such other place or places as the Contractor may designate by written notice delivered to Fort Bend County.

20.0 RECORDS:

- 20.1 Fort Bend County shall be the absolute and unqualified owner of all drawings, preliminary layouts, record drawings, sketches and other documents prepared pursuant to the Contract by Contractor.
- 20.2 The Contractor agrees to maintain and preserve for a period of at least five years after the earlier of the expiration of the defects period or termination of this Contract, accurate and complete records relating to the performance of the Project. The Contractor agrees to, upon request, provide Fort Bend County with such records.

21.0 SUCCESSORS AND ASSIGNS:

- 21.1 Fort Bend County and the Contractor bind themselves and their successors, executors, administrators and assigns to the other party of this Contract and to the successors, executors, administrators and assigns of such other party, in respect to all covenants of this Contract.
- 21.2 Neither Fort Bend County nor the Contractor shall assign, sublet or transfer its interest in this Contract without the prior written consent of the other.
- 21.3 Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of any public and/or governmental body that may be a party hereto.

22.0 PUBLIC CONTACT:

Contact with the news media, citizens of Fort Bend County or governmental agencies shall be the sole responsibility of Fort Bend County. Under no circumstances, whatsoever, shall Contractor release any material or information developed in the performance of its services hereunder without the express written permission of Fort Bend County, except where required to do so by law.

23.0 MODIFICATIONS:

This instrument contains the entire Contract between the parties relating to the rights herein granted and obligations herein assumed. Any oral or written representations or modifications concerning this instrument shall be of no force and effect excepting a subsequent written modification signed by both parties hereto.

Initials of Bidder: _____

24.0 SILENCE OF SPECIFICATIONS:

The apparent silence of specifications as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and that only material and workmanship of the finest quality are to be used. All interpretations of specifications shall be made on the basis of this statement. The items furnished under this contract shall be new, unused of the latest product in production to commercial trade and shall be of the highest quality as to materials used and workmanship. Manufacturer furnishing these items shall be experienced in design and construction of such items and shall be an established supplier of the item bid.

25.0 SEVERABILITY:

In the event one or more of the provisions contained in these requirements or the specifications shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision hereof and these requirements or the specifications shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

26.0 GOVERNING FORMS:

In the event of any conflict between the terms and provisions of these requirements and the specifications, the specifications shall govern. In the event of any conflict of interpretation of any part of this overall document, Fort Bend County's interpretation shall govern.

27.0 TAX EXEMPT:

Fort Bend County is exempt from state and local sales and use taxes under Section 151.309 of the Texas Tax Code. This Contract is deemed to be a separate contract for Texas tax purposes, and as such, Fort Bend County hereby issues its Texas Exemption for the purchase of any items qualifying for exemption under this Contract. Contractor is to issue its Texas Resale Certificate to vendors and subcontractors for such items qualifying for this exemption, and further, contractor should state these items at cost.

28.0 ENTIRE AGREEMENT:

The Parties agree that this Contract contains all of the terms and conditions of the understanding of the parties relating to the subject matter hereof. All prior negotiations, discussions, correspondence and preliminary understandings between the parties and others relating hereto are superseded by this Contract. By entering into this Contract, the parties do not intend to create any obligations, express or implied, other than those specifically set out in this Contract.

29.0 APPLICABLE LAW AND VENUE

This Contract shall be construed under and in accord with the laws of the State of Texas, and all obligations of the parties created hereunder are performable in Fort Bend County, Texas, and that

Initials of Bidder: _____

venue for any litigation arising out of or related to this Contract shall lie solely in the court of appropriate jurisdiction located in Fort Bend County, Texas.

30.0 TEXAS ETHICS COMMISSION FORM 1295:

- 30.1 Effective January 1, 2016 all contracts executed by Commissioners Court, regardless of the dollar amount, will require completion of Form 1295 "Certificate of Interested Parties", per the new Government Code Statute §2252.908. All vendors submitting a response to a formal Bid, RFP, SOQ or any contracts, contract amendments, renewals or change orders are required to complete the Form 1295 online through the State of Texas Ethics Commission website. Please visit: https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm.
- 30.2 On-line instructions:
- 30.2.1 Name of governmental entity is to read: Fort Bend County.
- 30.2.2 Identification number used by the governmental entity is: B22-083.
- 30.2.3 Description is the title of the solicitation: Flat Bank/Steep Bank Channel Bank Stabilization for Fort Bend County Drainage District FEMA Project 1189.
- 30.3 Apparent low bidder(s) will be required to provide the Form 1295 within three (3) calendar days from notification; however, if your company is publicly traded you are not required to complete this form.

31.0 STATE LAW REQUIREMENTS FOR CONTRACTS:

The contents of this section are required by Texas Law and are included by County regardless of content.

- 31.1 Agreement to Not Boycott Israel Chapter 2271 Texas Government Code: Contractor verifies that if Contractor employs ten (10) or more full-time employees and this Agreement has a value of \$100,000 or more, Contractor does not boycott Israel and will not boycott Israel during the term of this Agreement.
- 31.2 Texas Government Code Section 2251.152 Acknowledgment: By signature on vendor form, Contractor represents pursuant to Section 2252.152 of the Texas Government Code, that Contractor is not listed on the website of the Comptroller of the State of Texas concerning the listing of companies that are identified under Section 806.051, Section 807.051 or Section 2253.153.

32.0 HUMAN TRAFFICKING:

By acceptance of this contract, Contractor acknowledges that Fort Bend County is opposed to

Initials of Bidder: _____

human trafficking and that no County funds will be used in support of services or activities that violate human trafficking laws.

33.0 AWARD:

This contract will be awarded to the overall lowest and best bid.

35.0 PROJECT DURATION:

Bidder agrees, if awarded the contract, to complete all work required by the contract documents **within _____ calendar days (maximum 182 calendar days)** after issuance of a purchase order by the County Purchasing Agent and notice to proceed by the Drainage District.

36.0 EXHIBITS:

The following being incorporated herein by reference for all purposes as though fully set forth herein word for word.

- 36.1 Exhibit 1 – Federal Clauses
- 36.2 Exhibit 2 - Project specifications
- 36.3 Exhibit 3 – Storm water pollution prevention plan
- 36.4 Exhibit 4 – Project drawings
- 36.5 Exhibit 5 – Pricing sheet

37.0 ADDITIONAL FORMS:

All vendors submitting are to complete and return with submission:

- 37.1 Proof of Insurance, as stated in Section 10.0
- 37.2 Vendor Form
- 37.3 W9 Form
- 37.4 Tax Form/Debt/Residence Certification
- 37.5 Contractor Acknowledgement of Stormwater Management Program

Initials of Bidder: _____

**Contract Sheet
Bid 22-083**

**THE STATE OF TEXAS
COUNTY OF FORT BEND**

This memorandum of agreement made and entered into on the _____ day of _____, 20_____,
by and between Fort Bend County in the State of Texas (hereinafter designated County), acting herein by
County Judge KP George, by virtue of an order of Fort Bend County Commissioners Court, and
_____ (hereinafter designated Contractor).

(company name)

WITNESSETH:

The Contractor and the County agree that the bid and specifications for the **Flat Bank/Steep Bank Channel Bank Stabilization for Fort Bend County Drainage District FEMA Project 11898** which are hereto attached and made a part hereof, together with this instrument and the bond (when required) shall constitute the full agreement and contract between parties and for furnishing the items set out and described; the County agrees to pay the prices stipulated in the accepted bid.

It is further agreed that this contract shall not become binding or effective until signed by the parties hereto and a purchase order authorizing the items desired has been issued.

Executed at Richmond, Texas this _____ day of _____, 20_____.

Fort Bend County, Texas

By: _____
County Judge, KP George

By: _____
Signature of Contractor

By: _____
Printed Name and Title

EXHIBIT 1 – FEDERAL CLAUSES

Contractor understands and acknowledges that this Agreement may be totally or partially funded with federal and or state funds from the Federal Emergency Management Agency (FEMA). As a condition of receiving these funds, Contractor represents that it is and will remain in compliance with all federal and or state terms as stated below. These terms flow down to all third party contractors and their subcontracts at every tier that exceed the simplified acquisition threshold, currently set at \$50,000, unless a particular award term or condition specifically indicates otherwise. The Contractor shall require that these clauses shall be included in each covered transaction at any tier.

The terms of the FEMA-State Agreement are incorporated by reference into this project award under the Public Assistance grant and the Contractor must comply with all applicable laws, regulations, policy, and guidance. This includes among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Policy and Program Guide; and other FEMA Policy and Guidance.

The DHS Standard Terms and Conditions in effect as of the date of the declaration of the major disaster listed in the project award used to fund this agreement are incorporated by reference into this Agreement and flows down to all third party contractors and their subcontractors at every tier unless a particular award term or condition specifically indicates otherwise.

1. Equal Employment Opportunity.

This requirement applies to all contracts involving a “federally assisted construction contract”. A “federally assisted construction contract” is defined as any agreement or modification thereof between any applicant and a person for construction work which is paid for in whole or in part with funds obtained from the Government or borrowed on the credit of the Government pursuant to any Federal program involving a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, or any application or modification thereof approved by the Government for a grant, contract, loan, insurance, or guarantee under which the applicant itself participates in the construction work. (41 C.F.R. § 60-1.3)

“Construction work” is defined as the construction, rehabilitation, alteration, conversion, extension, demolition or repair of buildings, highways, or other changes or improvements to real property, including facilities providing utility services. The term also includes the supervision, inspection, and other onsite functions incidental to the actual construction. (41 C.F.R. § 60-1.3)

During the performance of this contract, the Contractor agrees as follows:

- (1) Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. 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 setting forth the provisions of this nondiscrimination clause.

- (2) Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations 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) Contractor will send to each labor union or representative of workers with which he or she has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of Contractor's noncompliance with the nondiscrimination clauses of this Agreement or with any of the said rules, regulations, or orders, this Agreement may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 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 portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) 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 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 the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a Contractor becomes involved in, or is threatened with,

litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work. *Provided*, that if the applicant so participating is a state or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

2. Copeland "Anti-Kickback" Act.

All contracts made with respect to the construction, prosecution, completion, or repair of work financed in whole or in part by loans or grants from the United States shall expressly bind the contractor or subcontractor to comply with such of the regulations in this part as may be applicable:

- (1) Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
- (2) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as the FEMA may by appropriate instructions require, 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 of these contract clauses.

- (3) Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.”

3. Compliance with the Contract Work Hours and Safety Standards Act.

This requirement applies to all contracts in excess of \$100,000 that involve the employment of mechanics or laborers. These requirements do not apply to the purchase of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

- (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 (1) of this section the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, 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 (1) of this section, in the sum of \$26 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 (1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. FEMA or County shall upon its own action or upon written request of 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 Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- (4) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (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 (1) through (4) of this section.

4. Clean Air Act and the Federal Water Pollution Control Act.

a. Clean Air Act

The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. The Contractor agrees to report each violation to the County and understands and agrees that the County, will in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office. The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

b. Federal Water Pollution Control Act.

The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office. The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

5. Debarment and Suspension.

This requirement applies to all contracts of \$25,000 or more.

This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935). The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

"The Certification in this clause is a material representation of fact relied upon by the County. If it is later determined by the County that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to County, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 2 C.F.R. part 180, subpart C, as supplemented by 2 C.F.R. part 1200, while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions."

6. Byrd Anti-Lobbying Amendment.

This requirement applies to all contracts of \$100,000 or more.

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay

any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

7. Political Activities.

This requirement applies to all contracts regardless of amount.

Contractors are prohibited from using federal funds directly or indirectly for political purposes, including polling, lobbying or advocating for legislative programs or changes; campaigning for, endorsing, contributing to, or otherwise supporting political candidates or parties; and voter registration or get-out-the-vote campaigns. Generally, organizations or entities which receive federal funds by way of grants, contracts, or cooperative agreements do not lose their rights as organizations to use their own, private, non-federal resources for “political” activities because of or as a consequence of receiving such federal funds. These recipient organizations must thus use private or other non-federal money, receipts, contributions, or dues for their political activities, and may not charge off to or be reimbursed from federal contracts or grants for the costs of such activities.

8. Procurement of Recovered Materials.

This requirement applies to all contracts for goods or services for \$10,000 or more.

In the performance of this Agreement, the Contractor shall make maximum use of products containing recovered materials that are EPA designated items unless the product cannot be acquired: (i) Competitively within a timeframe providing for compliance with the contract performance schedule; (ii) Meeting contract performance requirements; or (iii) At a reasonable price. (2) Information about this requirement, along with the list of EPA designated items, is available at EPA’s Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensiveprocurement-guide-line-cpg-program>. The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act

9. Access to Records.

This requirement applies to all contracts regardless of amount.

- (1) The Contractor agrees to provide County, the FEMA Administrator, the Comptroller General of the United States, TDEM, the State Auditor’s Office or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this Agreement for the purposes of making audits, examinations, excerpts, and transcriptions.
- (2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- (3) The Contractor agrees to provide DHS/FEMA and or TDEM, through its authorized representatives access at all reasonable times to construction or other work sites pertaining to the

work being completed under the contract. If any site visit is made by DHS/FEMA or TDEM Contractor shall provide all reasonable facilities and assistance for the safety and convenience of the government representatives in the performance of their duties. (4) In compliance with the Disaster Recovery Act of 2018, the County and the Contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

10. Notice of Reporting Requirements.

This requirement applies to all contracts regardless of amount.

Money used to fund this Agreement may originate from a state funding agreement between FEMA and the State of Texas. FEMA requires the State to provide various financial and performance reporting. It is important that the contractor is aware of these reporting requirements, as the relevant state agency and or the County may require the contractor to provide certain information, documentation, and other reporting in order to satisfy reporting requirements to FEMA.

Failure of State to satisfy reporting requirements to FEMA is a material breach of the FEMA-State Agreement and could result in loss of Federal financial assistance awarded to fund this contract.

Reporting requirements include both financial and performance reporting. The applicable regulations, FEMA policy, and other sources setting forth these reporting requirements are as follows:

- a) 44 C.F.R. § 13.40 (Monitoring and Reporting Program Performance)
- b) 44 C.F.R. § 13.41 (Financial Reporting)
- c) 44 C.F.R. § 13.50(b) (Reports)
- d) 44 C.F.R. § 206.204(f) (Progress Reports)
- e) FEMA Standard Operating Procedure No. 9570.14, *Public Assistance Program Management and Grant Closeout Standard Operating Procedure* (Dec. 2013)
- f) FEMA-State (or Tribal) Agreement

11. DHS Seal, Logo, and Flags.

This requirement applies to all contracts regardless of amount.

The Contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA preapproval.

12. Compliance with Federal Law, Regulations, and Executive Orders.

This requirement applies to all contracts regardless of amount.

The Contractor will comply with all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.

13. No Obligation by Federal Government.

This requirement applies to all contracts regardless of amount.

The Federal Government is not a party to this Agreement and is not subject to any obligations or liabilities to the County, Contractor, or any other party pertaining to any matter resulting from the contract.

14. Civil Rights and Non-Discrimination.

This requirement applies to all contracts regardless of amount.

During the performance of this contract, the Contractor agrees as follows:

a) Nondiscrimination on the Basis of Race, Color, and National Origin.

Contractor will comply with state and federal anti-discrimination laws including Title VI of The Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*), FEMA's implementing regulations at 44 C.F.R. Part 7 (*Nondiscrimination in Federally Assisted Programs*), and the Department's implementing regulations at 6 C.F.R. Part 21 (*Nondiscrimination on the Basis of Race, Color, or National Origin in Programs or Activities Receiving Federal Financial Assistance*) which provides that no person in the United States will, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

b) Nondiscrimination on the Basis of Sex.

Contractor will comply with Title IX of the Education Amendments of 1972 (codified as amended at 20 U.S.C. § 1681 *et seq.*), FEMA's implementing regulations at 44 C.F.R. Part 19 (*Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance*), and the Department's implementing regulations at 6 C.F.R. Part 15 (*Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance*) prohibit discrimination on the basis of sex in any education program or activity receiving Federal financial assistance.

c) Nondiscrimination on the Basis of Disability.

Contractor will comply with The Americans with Disability Act of 1990 (codified as amended at 42 U.S.C. §§ 12101-12213) prohibits discrimination against qualified individuals with disabilities in programs, activities, and services, and imposes specific requirements on public and private public and private entities. Contractors must comply with the responsibilities under Titles I, II, III, IV, and V of the Americans with Disability Act of 1990 in employment, public services, public accommodations, telecommunications, and other provisions, many of which are subject to regulations issued by other Federal agencies.

d) Nondiscrimination on the Basis of Handicap.

Contractor will comply with Section 504 of the Rehabilitation Act of 1973 (codified as amended at 29 U.S.C. § 794) and FEMA's implementing regulations at 44 C.F.R. Part 16 (*Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities Conducted by the Federal Emergency Management Agency*) provide that no otherwise qualified handicapped individual in the United States will, solely by reason of handicap, be excluded from participation in, be denied the benefits of, or be subjected to, discrimination under any program or activity receiving Federal financial assistance.

e) Nondiscrimination on the Basis of Age.

Contractor will comply with the Age Discrimination Act of 1975 (codified as amended at 42 U.S.C. § 6101 *et seq.*), and Department of Health and Human Services implementing regulations at 45 C.F.R. Part 90 (*Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance*) prohibit discrimination against individuals on the basis of age in any program or activity receiving Federal financial assistance.

f) Nondiscrimination on the Basis of Limited English Proficiency.

Contractor will comply with Title VI of the Civil Rights Act of 1964 prohibition against discrimination on the basis of national origin which requires that recipients and subrecipients of FEMA assistance take reasonable steps to provide meaningful access to persons with limited English proficiency.

Contractor shall not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, English proficiency, or disability. Contractor shall not, on the grounds of race, color, creed, national origin, sex, age, English proficiency, or disability, exclude a person from participation in, deny him/her benefits, or subject him/her to discrimination. Contractor shall adhere to any Federal implementing regulations and other requirements that the Department and the FEMA have with respect to nondiscrimination.

g) Nondiscrimination on the Basis of Drug Abuse

Contractor shall comply with the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to the nondiscrimination on the basis of alcohol abuse or alcoholism; §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290dd-3 and 290ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records;

h) Nondiscrimination Related to Housing

Contractor shall comply with Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 *et seq.*), as amended, relating to nondiscrimination in the sale, rental, or financing of housing; and any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made

15. Contracting with Small, Minority Firms, Women's Business Enterprises and Labor Surplus Area Firms:

This requirement applies to all contracts regardless of amount.

Contractor will take all necessary, affirmative steps to assure that qualified small and minority businesses, women's business enterprises, and labor area surplus firms are used when possible by:

- a) Placing small and minority businesses and women's business enterprises on solicitation lists;
- b) Assuring that it solicits small and minority businesses and women's business enterprises whenever they are potential sources;
- c) Dividing total requirements, *when economically feasible*, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;
- d) Establishing delivery schedules, *where the requirement permits*, which encourage participation by small and minority businesses and women's business enterprises;
- e) Utilizing the assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce;
- f) Contractor must require subcontractors to take the five affirmative steps described in a-e above.

16. Environmental and Historic Preservation Protections.

This requirement applies to all contracts regardless of amount.

Contractor shall abide by all environmental and historic preservation mitigation measures identified by FEMA when performing the scope of work including: a. National Environmental Policy Act of 1969, Pub. L. No. 91-190 (1969) (codified as amended at 42 U.S.C. §§ 4321-4347); the National Historic Preservation Act, Endangered Species Act Endangered Species Act of 1973, Pub. L. No. 93-205 (1973) (codified as amended at 16 U.S.C. §§ 1531-1544);, Clean Water Act, other laws, and various executive orders.

17. Disaster Reservists.

This requirement applies to all contracts regardless of amount.

Contractor may not in the performance of this Agreement utilize employees who are also Disaster Reservists. Disaster Reservists are personnel authorized by the special hiring authority in the Stafford Act that are not full-time employees, but rather work on an on-call, intermittent basis to perform disaster response and recovery activities.

18. False Statements Act.

This requirement applies to all contracts regardless of amount.

The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor's actions pertaining to this contract.

Contractor understands that in the event County becomes aware of any allegation or a finding of fraud, waste, or misuse of funds received from FEMA or the Office of the Governor, the County is required to immediately notify OOG of said allegation or finding and to continue to inform OOG of the status of any such on-going investigations. The County must also promptly refer to OOG any credible evidence that a principal, employee, agent, Contractor, subcontractor, or other person has -- (1) submitted a claim for award funds that violates the False Claims Act; or (2) committed a criminal or civil violation of laws pertaining to fraud, conflict of interest, bribery, gratuity, or similar misconduct involving award funds. County must also immediately notify OOG in writing of any misappropriation of funds, fraud, theft, embezzlement, forgery, or any other serious irregularities indicating noncompliance with grant requirements. County must notify the local prosecutor's office of any possible criminal violations.

19. Prompt Payment

This requirement applies to all contracts regardless of amount.

The Contractor is required to pay its subcontractors performing work related to the Underlying Agreement for satisfactory performance of that work no later than 30 days after the Contractor's receipt of payment for that work from County. In addition, the Contractor is required to return any retainage payments to those subcontractors within 30 days after the subcontractor's work is satisfactorily completed.

20. Retention of Records.

This requirement applies to all contracts regardless of amount.

The Contractor agrees to maintain fiscal records and supporting documentation for all expenditures related to this Agreement pursuant to 2 CFR 200.333, UGMS, and state law. Contractor must retain, and will require its subcontractors of all tiers to retain, these records and any supporting documentation for a minimum period of not less than three (3) years after the date of termination or expiration of the Agreement or any litigation, dispute, or audit arising from the performance of the Agreement. Records related to real property and equipment acquired with grant funds shall be retained for three (3) years after final disposition.

21. Dispute Resolution.

Contractor understands that for all subcontracts of \$50,000 or more, the Contractor must include terms to address judicial remedies for breach of contract, including damages, specific performance, and rescission or restitution and procedures for dispute resolution between the parties who shall attempt in good faith to resolve promptly any dispute arising out of or relating to the Agreement by negotiation between the parties.

22. Termination for Cause and Termination for Convenience.

Contractor understands that all contracts in excess of \$10,000, including subcontracts, must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.

23. Contract Changes or Modifications.

Contractor understands that for all subcontracts of \$50,000 or more, the Contractor must include terms to address contract changes or modifications. All contract changes or modifications must be mutually agreed to in writing.

24. Whistleblower Protections

Contractor must comply with the statutory requirements for whistleblower protections (if applicable) at 10 U.S.C Section 2409, 41 U.S.C. 4712, and 10 U.S.C. Section 2324, 41 U.S.C. Sections 4304 and 4310.

25. Domestic Preferences for Procurements.

As appropriate and to the extent consistent with law, Contractor shall to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products procured with federal funds. For purposes of this clause, (1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. (2) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

26. Assignment and Subcontracts

Contractor shall not assign, transfer, or delegate any rights, obligations, or duties under this Contract without the prior written consent of the County. Consent may be required from both the County and any federal or state agency associated with the funding for this agreement. Contractor shall legally bind subcontractor to perform and make subcontractor subject to all the duties, requirements, and obligations of Contractor as specified in this Contract. Nothing in this Contract shall be construed to relieve Contractor of the responsibility for ensuring that the goods delivered and/or the services rendered by Contractor and/or any of its subcontractors comply with all the terms and provisions of this Contract.



M&E Consultants
Soil & Water Engineering Solutions

FORT BEND COUNTY DRAINAGE DISTRICT

FLAT BANK/STEEP BANK

SITES NO. 14, 15, 16, 17, 18 AND 19

CHANNEL BANK STABILIZATION

FORT BEND COUNTY, TEXAS

SPECIFICATIONS

SPONSORED BY:

FORT BEND COUNTY

COOPERATING WITH:

FEDERAL EMERGENCY MANAGEMENT ADMINISTRATION
OF THE
DEPARTMENT OF HOMELAND SECURITY



B. Trent Street
4/29/2022

M&E Consultants LLC
Texas Registered
Engineering Firm
F-004324

1. Specifications:

Construction Specification No.	Title	Date
1	Clearing	5/01
5	Pollution Control	1/14
7	Construction Surveys	1/09
8	Mobilization and Demobilization	5/01
9	Traffic Control	5/01
11	Removal of Water	5/01
21	Excavation	5/01
23	Earthfill	1/09
26	Topsoiling	5/01
61	Rock Riprap	9/18
94	Contractor Quality Control	1/09
95	Geotextile	1/14
406	Hydro Mulch Seeding	4/22
420	Site Preparation	4/22
Material Specification No.	Title	Date
523	Rock for Riprap	9/18
592	Geotextile	9/18

2. Definitions:
Contracting Local Organization (CLO) – Fort Bend County
Owners – Fort Bend County Drainage District
Contracting Officer – Fort Bend County
Engineer – M&E Consultants Construction Engineer (Any reference in the construction specifications to contracting officer's technical representative (COTR) shall mean
Inspector – M&E Consultants Construction Inspector (on-site)
Quality Assurance (QA) - M&E Consultants Construction Inspector (on-site)
Quality Control (QC) - Contractor's Construction Inspector (on-site)
3. Drawings:
Flat Bank/Steep Bank Creek, Sites 14, 15, 16, 17, 18 and 19 Drawing No. TX-EN-0791, Cover plus Sheets 1 thru 11.
4. Location:
The project is in Missouri City, Fort Bend County, Texas.
5. Time to be allowed for completion of contract is 182 calendar days. (holidays and weather days not included)

Construction Specification 1—Clearing

1. Scope

The work shall consist of the clearing and disposal of trees, snags, logs, brush, shrubs, stumps, and rubbish from the designated areas.

2. Classification

Unless otherwise specified in section 8, clearing will be classified according to the following definitions:

Class A—Requires that trees and other woody vegetation be removed so that the remaining stumps extend no higher than 4 inches above the ground surface.

Class B—Requires that trees and other woody vegetation be removed so that the remaining stumps extend no higher than 12 inches above the ground surface.

Class C—Requires that trees and other woody vegetation be removed as near the ground surface as conventional tools or field conditions will permit or as specified in section 8.

3. Protection of existing vegetation

Trees and other woody vegetation designated to remain undisturbed shall be protected from damage throughout the entire construction period. Any damage resulting from the contractor's operations or neglect shall be repaired by the contractor.

Earthfill, stockpiling of materials, vehicular parking, and excessive foot or vehicular traffic shall not be allowed within the dripline of vegetation designated to remain in place. Vegetation damaged by any of these or similar actions shall be replaced with viable vegetation of the same species or as specified in section 8 and approved by the contracting officer.

Any cuts, skins, scrapes, or bruises to the bark of the vegetation shall be carefully trimmed and local nursery accepted procedures used to seal damaged bark.

Any limbs or branches 0.5-inch or larger in diameter that are broken, severed, or otherwise seriously damaged during construction shall be cut off at the base of the damaged limb or branch flush with the adjacent limb or tree trunk.

All roots 1 inch or larger in diameter that are cut, broken, or otherwise severed during construction operations shall have the end smoothly cut perpendicular to the root. Roots exposed during excavation or other operations shall be covered with moist earth and/or backfilled as soon as possible to prevent them from drying.

4. Marking

The limits of the areas to be cleared will be marked by stakes, flags, tree markings, or other suitable methods. Trees to be left standing and uninjured will be designated by special markings placed on the trunks at a height of about 6 feet above the ground surface.

5. Clearing

All trees not marked for preservation and all snags, logs, brush, shrubs, stumps, rubbish, and similar materials shall be cleared from within the limits of the marked areas.

6. Disposal

All materials cleared from the designated areas shall be disposed of at locations shown on the drawings or in a manner specified in section 8. The contractor is responsible for complying with all local rules and regulations and the payment of any and all fees that may result from the disposal at locations away from the construction location.

7. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the cleared area is measured to the nearest 0.1 acre. Payment for clearing is made for the total area within the designated limits at the contract unit price for the specified class of clearing. Such payment will constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

Method 2—For items of work for which specific unit prices are established in the contract, the length of the cleared area is measured to the nearest full station (100 feet) along the line designated on the drawings or in the specifications. Payment for clearing is made for the total length within the designated limits at the contract unit price for the specified class of clearing. Such payment will constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

Method 3—For items of work for which specific unit prices are established in the contract, the cleared areas is measured within the specified limits to the nearest 0.1 acre. The cleared areas are determined by measuring the width cleared, within the specified limits, at representative sections and multiplying the average width between sections by the linear distance between sections. Payment for clearing is made at the contract unit price for the item and shall constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

Method 4—For items of work for which specific lump sum prices are established in the contract, payment for clearing is made at the contract lump sum prices. Such payment shall constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

All Methods—These provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 8.

8. Items of work and construction details

8. **Items of work and construction details**

In Section 6, Disposal, all woody materials removed from the cleared areas shall be disposed offsite at a location of the contractor's own choosing as approved by the Engineer or chipped, stockpiled, and land applied as directed by the Engineer. Rubbish, fences, non-woody material shall be disposed of offsite at a location of the contractor's own choosing as approved by the Engineer. All disposal methods shall be in accordance with state and local regulations.

The Contractor is to take precaution, when temporarily stockpiling cleared and grubbed materials, to guard against such cleared and grubbed materials being floated or transported off the worksite by rainstorm runoff.

Items of work to be performed in conformance with this specification and the construction details therefore are:

a. **Subsidiary Item, Clearing, Class C**

- (1) This item shall consist of all clearing within the work limits required for construction of the works of improvement as shown on the drawings.
- (2) The actual limits of required clearing will be as designated or staked at the time of the showing the site to prospective bidders.
- (3) Upon completion of the clearing operation, all areas which have been cleared shall be dressed to be reasonably smooth by blading, dragging or floating. The entire area shall be reasonably free of abrupt mounds, dips and windrows to provide a clear area for construction staking.
- (4) Separate payment will not be made for this item of work. Compensation for this item will be included in the payment for Excavation, Common.

Construction Specification 5—Pollution Control

1. Scope

The work consists of installing measures or performing work to control erosion and minimize the production of sediment and other pollutants to water and air from construction activities.

The following BioPreferred® product categories are applicable to this specification:

- mulch and compost materials
- erosion control materials
- fertilizers
- dust suppressants
- agricultural spray adjuvants

2. Material

Silt fence shall conform to the requirement of Materials Specification 592, Geotextile. All other material furnished shall meet the requirements of the material specifications listed in section 8 of this specification.

3. Erosion and sediment control measures and works

The measures and works shall include, but are not limited to, the following:

Staging of earthwork activities—The excavation and moving of soil materials shall be scheduled to minimize the size of areas disturbed and unprotected from erosion for the shortest reasonable time.

Seeding—Seeding to protect disturbed areas shall occur as soon as reasonably possible following completion of that earthwork activity.

Mulching—Mulching to provide temporary protection of the soil surface from erosion.

Diversions—Diversions to divert water from work areas and to collect water from work areas for treatment and safe disposition. They are temporary and shall be removed and the area restored to its near original condition when the diversions are no longer required or when permanent measures are installed.

Stream crossings—Culverts or bridges where equipment must cross streams. They are temporary and shall be removed and the area restored to its near original condition when the crossings are no longer required or when permanent measures are installed.

Sediment basins—Sediment basins collect, settle, and eliminate sediment from eroding areas from impacting properties and streams below the construction site(s). These basins are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed.

Sediment filters—Straw bale filters or geotextile silt fences trap sediment from areas of limited runoff. Sediment filters shall be properly anchored to prevent erosion under or around them. Silt fences shall be installed and maintained in accordance with ASTM D6462. These filters are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed.

Waterways—Waterways for the safe disposal of runoff from fields, diversions, and other structures or measures. These works are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed.

Other—Additional protection measures as specified in section 8 of this specification or required by Federal, State, or local government.

4. Chemical pollution

The contractor shall provide watertight tanks or barrels or construct a sump sealed with plastic sheets to collect and temporarily contain chemical pollutants, such as drained lubricating or transmission fluids, grease, soaps, concrete mixer washwater, or asphalt, produced as a by-product of the construction activities. Pollutants shall be disposed of in accordance with appropriate state and Federal regulations. At the completion of the construction work, tanks, barrels, and sumps shall be removed and the area restored to its original condition as specified in section 8 of this specification. Sump removal shall be conducted without causing pollution.

Sanitary facilities, such as chemical toilets, or septic tanks shall not be located next to live streams, wells, or springs. They shall be located at a distance sufficient to prevent contamination of any water source. At the completion of construction activities, facilities shall be disposed of without causing pollution as specified in section 8 of this specification.

5. Air pollution

The burning of brush or slash and the disposal of other materials shall adhere to state and local regulations.

Fire prevention measures shall be taken to prevent the start or spreading of wildfires that may result from project activities. Firebreaks or guards shall be constructed and maintained at locations shown on the drawings.

All public access or haul roads used by the contractor during construction of the project shall be sprinkled or otherwise treated to fully suppress dust. All dust control methods shall ensure safe construction operations at all times. If chemical dust suppressants are applied, the material shall be a commercially available product specifically designed for dust suppression and the application shall follow manufacturer's requirements and recommendations. A copy of the product data sheet and manufacturer's recommended application procedures shall be provided to the engineer 5 working days before the first application.

6. Maintenance, removal, and restoration

All pollution control measures and temporary works shall be adequately maintained in a functional condition for the duration of the construction period. All temporary measures shall be removed and the site restored to near original condition.

7. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, each item is measured to the nearest unit applicable. Payment for each item is made at the contract unit price for that item. For water or chemical suppressant items used for dust control for which items of work are established in section 8 of this specification, measurement for payment will not include water or chemical suppressants that are used inappropriately or excessive to need. Such payment will constitute full compensation for the completion of the work.

Method 2—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds and supported by invoices presented by the contractor that reflect actual costs. If the total of all progress payments is less than the lump sum contract price for this item, the balance remaining for this item will be included in the final contract payment. Payment of the lump sum contract price will constitute full compensation for completion of the work.

Method 3—For items of work for which lump sum prices are established in the contract, payment will be prorated and provided in equal amounts on each monthly progress payment estimate. The number of months used for prorating shall be the number estimated to complete the work as outlined in the

contractor's approved construction schedule. The final month's prorate amount will be provided with the final contract payment. Payment as described will constitute full compensation for completion of the work.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items, and the items to which they are made subsidiary, are identified in section 8 of this specification.

8. Items of work and construction details

8. **Items of work and construction details**

This construction site is greater than five (5) acres in area and is subject to the Texas Pollutant Discharge Elimination System (TPDES) requirements administered by the Texas Commission on Environmental Quality (TCEQ). Rules for the TPDES process relative to construction sites are contained in the TPDES General Permit NO. TXR150000. A copy of General Permit No. TXR150000 may be found on the TCEQ website.

In conformance with TPDES General Permit TXR150000, a Storm Water Pollution Prevention Plan (SWP3) is required for the construction site. A SWP3 prepared by M&E Consultants is provided. The Contractor shall review the SWP3 and shall amend the plan with a detailed work sequence outline which defines and delineates the proposed construction operation. The amended SWP3 shall be signed by the Contractor and submitted to the Contracting Officer prior to issuance of the Notice to Proceed. A copy of the approved SWP3, as amended, will be maintained at the construction site by the Contractor. A copy of the permit shall be attached to the SWP3.

A copy of the Notice of Intent (NOI) shall be posted at the site until the TPDES permit number is issued for the site. An 8 ½" x 11" notice shall be posted at the site giving the following information about the permit: permit number, contact name, contact phone and project description. If a permit number has not been issued, a copy of the NOI shall be posted with the notice.

If the Contractor identifies sediment control items, which are considered essential to the anticipated construction operation, but which are not reflected by the contract bid schedule, a written request for a contract modification will be provided to the Contracting Officer. The request will identify the items, operation, and provide an assessment of changes to the contract cost and performance time.

TPDES also requires an NOI and Notice of Termination (NOT) to be filed with TCEQ. The Contractor will be responsible for submitting the Contractor's copy of the NOI to the Engineer at least five business days before work begins. When the contract is completed, the Contractor shall provide the NRCS Project Engineer a copy of the NOT that he/she will file with the TCEQ.

In conformance with TPDES requirements, the Inspector and the Contractor (or the Contractor's Quality Control person) shall perform periodic inspections of the sediment control practices. At a minimum, inspections shall be conducted every 14 days, on the first workday of the week, and within 24 hours of any rainfall event of more than 0.5 inches at the construction site. After each inspection, a written report will be prepared which summarizes the status of inspected items. The reports will (a) evaluate effectiveness, (b) identify maintenance needs and/or (c) recommend remedial corrective action and will be prepared and signed by the Owner and the Contractor. The report shall be filed on site in the same location as the SWP3. The Contractor shall be responsible for identified corrective maintenance needs.

In Section 3, Erosion and sediment control measures and works, Sediment filters shall be limited to geotextile sediment filters. The sediment filter material shall meet the requirements of ASTM D6461 and Material Specification 592. The silt fence shall be installed according to the requirements in ASTM D6462.

a. **Bid Item 1, Pollution Control**

- (1) This item shall consist of performing all work and furnishing all materials necessary to accomplish the work defined in Section 1 of this specification, including all works required to implement the Storm Water Pollution Prevention

Plan, construct the stabilized construction entrance, and maintenance of sediment filters, but not the installation of the fabric sediment filters.

(2) The stabilized construction entrance shall be installed as shown on the drawings. This item shall be removed at the completion of construction.

(3) In Section 7, Measurement and payment, Method 3 shall apply.

b. Bid Item 2, Sediment Filters

(1) This item shall consist of furnishing and installing sediment filter fences to the lengths and locations designated on the drawings and otherwise needed to control sediment from leaving the construction site. Maintenance of installed sediment filter fences shall be paid for under the bid item for Pollution Control.

(2) In Section 7, Measurement and payment, Method 1 shall apply.

Construction Specification 7—Construction Surveys

1. Scope

The work consists of performing all surveys, measurements, and computations required by this specification.

2. Equipment and material

Equipment for construction surveys shall be of a quality and condition to provide the required accuracy. The equipment shall be maintained in good working order and in proper adjustment at all times. Records of repairs, calibration tests, accuracy checks, and adjustments shall be maintained and be available for inspection by the engineer. Equipment shall be checked, tested, and adjusted as necessary in conformance with manufacturer's recommendations.

Material is field notebooks, stakes, templates, platforms, equipment, spikes, steel pins, tools, and all other items necessary to perform the work specified.

3. Quality of work

All work shall follow recognized professional practice and the standards of the industry unless otherwise specified in section 9 of this specification. The work shall be performed to the accuracy and detail appropriate for the type of job. Notes, sketches, and other data shall be complete, recorded neatly, legible, reproducible and organized to facilitate ease in review and allow reproduction of copies for job documentation. Survey equipment that requires little or no manual recording of field data shall have survey information documented as outlined in section 9 of this specification.

All computations shall be mathematically correct and shall include information to identify the bid item, date, and who performed, checked, and approved the computations. Computations shall be legible, complete, and clearly document the source of all information used including assumptions and measurements collected.

If a computer program is used to perform the computations, the contractor shall provide the engineer with the software identification, vendor's name, version number, and other pertinent data before beginning survey activities. Computer generated computations shall show all input data including values assigned and assumptions made.

The elevations of permanent and temporary bench marks shall be determined and recorded to the nearest 0.01 foot. Differential leveling and transit traverses shall be of such precision that the error of vertical closure in feet shall not exceed plus or minus 0.1 times the square root of the traverse distance in miles. Linear measurements shall be accurate to within 1 foot in 5,000 feet, unless otherwise specified in section 9 of this specification. The angular error of closure for transit traverses shall not exceed 1 minute times the square root of the number of angles turned.

The minimum requirements for placing slope stakes shall be at 100-foot stations for tangents, as little as 25 feet for sharp curves, breaks in the original ground surface and at any other intermediate stations necessary to ensure accurate location for construction layout and measurement. Slope stakes and cross sections shall be perpendicular to the centerline. Significant breaks in grade shall be determined for cross sections. Distances shall be measured horizontally and recorded to the nearest 0.1 foot. Side shots for interim construction stakes may be taken with a hand level.

Unless otherwise specified in section 9 of this specification, measurements for stationing and establishing the location of structures shall be made to the nearest 0.1 foot.

Elevations for concrete work, pipes, and mechanical equipment shall be determined and recorded to the nearest 0.01 foot. Elevations for earth work shall be determined and recorded to the nearest 0.1 foot.

4. Primary control

The baselines and bench marks for primary control, necessary to establish lines and grades needed for construction, are shown on the drawings and have been located on the job site.

These baselines and bench marks shall be used as the origin of all surveys, layouts, and measurements to establish construction lines and grades. The contractor shall take all necessary precautions to prevent the loss or damage of primary control points. Any stakes or control points lost or damaged by construction activity will be reestablished by the contractor or at contractor expense.

5. Construction surveys

Before work starts that requires contractor performed surveys, the contractor shall submit in writing for the engineer's review: the name, qualifications, and experience of the individuals to be assigned to the survey tasks.

Method 1—Contractor performed surveys shall include:

- checking and any supplemental or interim staking
- performing quantity surveys, measurements, and computations for progress payment
- other surveys as described in section 9 of this specification

Method 2—Contractor performed surveys shall consist of all work necessary for:

- establishing line and grade for all work
- setting slope stakes for all work
- checking and any supplemental or interim staking
- establishing final grade stakes
- performing quantity surveys, measurements, and computations for progress payment
- other surveys as described in section 9 of this specification

Method 3—Contractor performed surveys shall consist of all work necessary for:

- establishing line and grade for all work
- setting slope stakes for all work
- checking and any supplemental or interim staking
- establishing final grade stakes
- performing quantity surveys, measurements, and computations for progress payments
- performing original (initial) and final surveys for determinations of final quantities
- other surveys as described in section 9 of this specification.

6. Staking

The construction staking required for the item shall be completed before work on any item starts. Construction staking shall be completed as follows or as otherwise specified in section 9 of this specification:

Clearing and grubbing—The boundary of the area(s) to be cleared and grubbed shall be staked or flagged at a maximum interval of 200 feet, closer if needed, to clearly mark the limits of work. When contractor staking is the basis for determining the area for final payment, all boundary stakes will be reviewed by the engineer before start of this work item.

Excavation and fill—Slope stakes shall be placed at the intersection of the specified slopes and ground

line. Slope stakes and the reference stakes for slopes shall be marked with the stationing, required cut or fill, slope ratio, and horizontal distance from the centerline or other control line. The minimum requirements for placing slope stakes is outlined in section 3, Quality of work.

Structures—Centerline and offset reference line stakes for location, alignment, and elevation shall be placed for all structures.

7. Records

All survey data shall be recorded in fully identified standard hard-bound engineering survey field notebooks with consecutively numbered pages. All field notes and printed data shall include the purpose or description of the work, the date the work was performed, weather data, sketches, and the personnel who performed and checked the work. Electronically generated survey data and computations shall be bound, page numbered, and cross referenced in a bound field notebook containing the index for all survey activities. All work shall follow recognized professional practice.

The construction survey records shall be available at all times during the progress of the work for examination and use by the engineer and when requested, copies shall be made available. The original field notebooks and other records shall be provided to and become the property of the owner before final payment and acceptance of all work.

Complete documentation of computations and supporting data for progress payments shall be submitted to the engineer with each invoice for payment as specified in section 9 of the specification. When the contractor is required to conduct initial and final surveys as outlined in section 5, Construction Surveys, notes shall be provided as soon as possible after completion to the engineer for the purpose of determining final payment quantities.

8. Payment

Method 1—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds, after presentation of correct and accurate invoices by the contractor showing related costs and evidence of the charges of suppliers, subcontractors, and others for supplies furnished and work performed. Invoices for the total amount of the contract price will not be accepted until all surveys are complete and required documentation has been determined complete. If the total of such payments is less than the lump sum contract price for this item, the unpaid balance will be included in the final contract payment. Payment of the lump sum contract price will constitute full compensation for completion of all work under the bid item.

Method 2—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds with progress payment amounts determined as a percentage of the total work planned as projected from the contractor's approved construction schedule. Payment of the lump sum contract price will constitute full compensation for completion of all work under this bid item.

All Methods—Payment will not be provided under this item for the purchase price of materials or equipment having a residual value.

Compensation for any item of work described in the contract, but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and the item to which they are made subsidiary are identified in section 9 of this specification.

9. Items of work and construction details

9. Items of work and construction details

In Section 5, Construction surveys, Method 2 shall apply.

In Section 8, Payment, Method 2 shall apply.

Items of work to be performed in conformance with this specification and the construction details therefore are:

a. Bid Item 3, Construction Surveys

- (1) This item shall consist of performing all work required by Section 1 of this specification.
- (2) All surveys shall proceed from benchmarks; reference points and/or stakes set or established by the Engineer. The benchmarks are shown on the drawings.
- (3) Initial and final surveys for determinations of final quantities will be performed by the Engineer.
- (4) In Section 5, Construction Surveys, the surveys conducted by the Contractor shall include but not be limited to:
 - (a) Those required to check all excavation and earthfill slopes as work progresses to insure such slopes are maintained at those specified.
 - (b) Earthfill slopes shall be checked at least each five feet of vertical interval and corrected to planned slope.
 - (c) Those required to set "bluetops" for subgrades and finished grades of all excavations, earthfills and appurtenances to the works.

Construction Specification 8—Mobilization and Demobilization

1. Scope

The work consists of the mobilization and demobilization of the contractor's forces and equipment necessary for performing the work required under the contract. It does not include mobilization and demobilization for specific items of work for which payment is provided elsewhere in the contract. Mobilization will not be considered as work in fulfilling the contract requirements for commencement of work.

2. Equipment and material

Mobilization shall include all activities and associated costs for transportation of contractor's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the contractor's operations at the site; premiums paid for performance and payment bonds including coinsurance and reinsurance agreements as applicable; and other items specified in section 4 of this specification.

Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not required or included in the contract from the site; including the disassembly, removal, and site cleanup of offices, buildings, and other facilities assembled on the site specifically for this contract.

This work includes mobilization and demobilization required by the contract at the time of award. If additional mobilization and demobilization activities and costs are required during the performance of the contract as a result of changed, deleted, or added items of work for which the contractor is entitled to an adjustment in contract price, compensation for such costs will be included in the price adjustment for the item or items of work changed or added.

3. Payment

Payment will be made as the work proceeds, after presentation of paid invoices or documentation of direct costs by the contractor showing specific mobilization and demobilization costs and supporting evidence of the charges of suppliers, subcontractors, and others. When the total of such payments is less than the lump sum contract price, the balance remaining will be included in the final contract payment. Payment of the lump sum contract price for mobilization and demobilization will constitute full compensation for completion of the work.

Payment will not be made under this item for the purchase costs of materials having a residual value, the purchase costs of materials to be incorporated in the project, or the purchase costs of operating supplies.

4. Items of work and construction details

4. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

a. Bid Item 4, Mobilization and Demobilization

- (1) This item shall consist of performing all items of work for mobilization and demobilization as required by Sections 1 and 2 of this specification.
- (2) The mobilization operation shall include but not be limited to the items in Section 2 of this specification and the following items of work:
 - (a) Access to the work area will require multiple access points and shall be designated at the showing of the site to prospective bidders. Access roads shall be constructed and maintained by the Contractor. The access roads shall be a minimum of 14 feet wide and be graded and smoothed to provide a surface which can be easily traversed by automobiles. The roads shall be maintained in a smooth rut-free condition throughout the contract period.
 - (b) As a part of this bid item the Contractor shall furnish a facility at the construction campsite suitable for use as a Field Office for the Contracting Local Organization (CLO). The facility shall contain not less than 128 square feet (8-ft-wide by 16-ft-long) having a minimum 7-ft-high ceiling. The facility shall be constructed in a workmanlike manner and shall be weather-tight. It shall have not less than two windows and one door. A microwave oven 0.80 cubic foot in size and having a minimum power rating of 650 watts output shall be provided. A substantial workbench or table, 3-ft-wide by 8-ft-long with the work surface 42" above floor level shall be provided. Cabinet storage shelves shall be included with the workbench. One office swivel chair and 4 straight chairs shall be provided. The floor shall have a heavy-duty vinyl or similar covering. Walls, ceilings and floors shall be constructed in such a manner as to provide a minimum of 1.5 inches of space between inside and outside surfaces. The 1.5-inch space shall be filled with a high-density insulation material. The facility shall be wired for electricity with a minimum of two ceiling fixtures and a minimum of two wall outlets on each long wall. A thermostatically controlled means that can maintain the temperature inside the facility at 75 degrees in the summer with refrigerated air and 80 degrees in the winter, for heating and air conditioning the facility shall be provided. The facility shall be built in such a manner that it is substantial and can be easily moved. A prefabricated building or trailer will be an acceptable facility if approved by the Contracting Officer. The Contractor shall furnish and install all utilities to the facility. The facility shall be maintained in good condition throughout the contract period by the Contractor, except for damages caused by negligence of the CLO. The facility shall be separate and apart from any building or facilities of the Contractor and shall be for sole use of the CLO and meet all City of Katy permitting requirements.

- (c) The facility shall be securely anchored or tied down to provide maximum possible stability against overturning by high winds. Flashing or skirting shall be installed around the facility from floor level to ground level.
 - (d) Access to the door to the facility from the ground shall be provided by substantial steps leading to a landing having a minimum size of 5 feet wide by 6 feet long. Substantial handrails shall be provided for the steps and the landing.
 - (e) The Contractor shall furnish and install electrical service to CLO field trailer. The electrical service shall be 110-120-volt, 60 amp, alternating current. The Contractor shall be responsible for supply of power to the field office throughout the contract period. If a portable generator is used to supply electrical power, the Contractor shall be responsible for the complete operation and maintenance of the generator. The generator shall remain in an operating condition 24 hour per day and shall be located a minimum of 100 feet from the field office and shielded to minimize the noise in the CLO occupied building/facility and adjacent residences.
 - (f) The facility shall be enclosed by a six (6) foot high chain link fence placed to provide a minimum of six (6) feet clearance between the fence and the outside walls of the facility. One (1) gate four (4) feet in width shall be installed in the fence.
 - (g) All utilities shall be in place at the worksite prior to the start of work requiring continuous inspection and no later than 15 days after receipt of the Notice to Proceed.
- (3) The demobilization operation shall include but not be limited to the following items of work:
- (a) All debris, trash, tires, equipment, equipment parts, chains, cables, and other such items resulting from the construction operation shall be removed from the worksite and disposed of in an approved sanitary land fill of the Contractor's own choosing.
 - (b) All disturbed areas shall be bladed or smoothed to blend the area with the surrounding land surface. The bladed or smoothed surface shall be free of abrupt mounds, windrows, depressions or other irregularities that would prevent the safe operation of ordinary farm equipment thereon. The finished surface shall prevent diversion of surface runoff and shall prevent standing or ponding water.
 - (c) All buildings, trailers, chain link fence, storage sheds, sanitary facilities, cattle guard and other such items shall be removed from the worksite when construction work is completed.
 - (d) All utilities shall be removed from the site as required by the owner of the utility after construction work is completed.
 - (e) All traffic control devices, warning signs, barricades and any other material used for traffic control shall be removed.
 - (f) The access road shall be replaced to the pre-construction condition.

- (4) The item of work subsidiary to this bid item is Traffic Control as specified in Construction Specification 9.

Construction Specification 9—Traffic Control

1. Scope

The work shall consist of establishing traffic control and maintaining safe, convenient use of public roads and rights-of-way.

2. Traffic and access

The contractor's operations shall cause no unnecessary inconvenience to the public. The public rights-of-way shall be maintained at all times unless interruption is authorized by proper local authority.

Contractor's authorized closing or detour plans shall be provided to the engineer for approval.

Safe and adequate access shall be provided and maintained to all public protection devices and to all critical utility control locations. Facility access shall be continuous and unobstructed unless otherwise approved.

3. Storage of equipment and material in public streets

Construction materials and equipment shall not be stored or parked on public streets, roads, or highways. During any material or equipment loading or unloading activities that may temporarily interfere with traffic, an acceptable detour shall be provided for the duration of the activity. Any associated expense for this activity is the responsibility of the contractor.

Excavated material, including suitable material that is intended for adjacent trench backfill or other earth backfill as specified in section 5 of this specification, shall not be stored on public streets, roads, or highways that remain in service for the public. Any waiver of this requirement must be obtained from the proper local authority and approved by the engineer. All excess and unsuitable material shall be removed from the site as soon as possible. Any spillage shall be removed from roadways before they are used by the public.

4. Street closures, detours, and barricades

The contractor shall comply with the requirements of all applicable responsible units of government for closure of any street, road, or highway. The contractor shall provide the required barriers, guards, lights, signs, temporary bridges, and flaggers together with informing the public of any detours and construction hazards by the most suitable means available, such as local newspapers or radio stations. The contractor is also responsible for compliance with additional public safety requirements that may arise during construction. The contractor shall furnish, install, and, upon completion of the work, promptly remove all signs, warning devices, and other materials used in the performance of this work.

Unless otherwise specified, the contractor shall notify, in writing, the fire chief, police chief, county sheriff, state patrol, schools that operate school buses, or any other government official as may be appropriate no less than 7 days before closing, partly closing, or reopening any street, road, or highway.

Unless otherwise specified, the contractor shall furnish to the engineer a written plan showing the proposed method of signing, barricading for traffic control, and safety for street detours and closures.

All temporary detours will be maintained to ensure use of public rights-of-way is provided in a safe manner. This may include dust control, grading, and graveling as required in section 7 of this specification.

5. General and specific references

All signs, signals, barricades, use of flaggers, and other traffic control and public safety devices shall conform to the general requirements set forth in the Manual of Uniform Traffic Control Devices (MUTCD) and the latest edition of *Standard Highway Signs and Standard Alphabets for Highway Signs* and/or OSHA *Construction Industry Standards (29 CFR Part 1926), Subpart G, Signs, Signals, and*

Barricades unless otherwise specified in section 7 of this specification.

6. Measurement and payment

For items of work for which specific lump sum prices are established in the contract, payment for the work is made at the contract lump sum price. Progress payments will be made based upon the percentage of estimated total time that traffic control will be required unless otherwise specified in section 7 of this specification. Payment will constitute full compensation for all flaggers, labor, materials, equipment, and all other items necessary and incidental to completion of the work.

Compensation for any item of work described in the contract, but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and items to which they are made subsidiary are identified in section 7 of this specification.

7. Items of work and construction details

7. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

a. Subsidiary Item, Traffic Control

- (1) This item shall consist of performing all items of work for traffic control as required by Sections 1 and 2 of this specification.
- (2) In Section 4, the Contractor shall furnish a written plan showing the proposed method of signing, barricading for traffic control, use of flaggers, etc. to be approved by Fort Bend County Drainage District and Missouri City.
- (3) Separate payment will not be made for this item of work. Compensation for this item will be included in the payment for the bid item Mobilization and Demobilization.

Construction Specification 11—Removal of Water

1. Scope

The work consists of the removal of surface water and ground water as necessary to perform the construction required by the contract in accordance with the specifications. It shall include: (1) constructing, installing, building, and maintaining all necessary temporary water containment facilities, channels, and diversions; (2) furnishing, installing, and operating all necessary pumps, piping, and other facilities and equipment; and (3) removing all such temporary works and equipment after their intended function is no longer required.

2. Diverting surface water

The contractor shall install, maintain, and operate all cofferdams, channels, flumes, sumps, and all other temporary diversion and protective works needed to divert streamflow and other surface water through or around the construction site. Control of surface water shall be continuous during the period that damage to construction work could occur. Unless otherwise specified and/or approved, the diversion outlet shall be into the same drainageway that the water would have reached before being diverted.

The contractor shall furnish the contracting officer, in writing, a proposed plan for diverting surface water before beginning any construction activities for which a diversion is required, unless waived in section 8 of this specification. Acceptance of this plan or the waiving of the plan requirement will not relieve the contractor of the responsibilities related to this activity during the process of completing the work as specified.

3. Dewatering the construction site

Foundations, cutoff trenches, and all other parts of the construction site shall be dewatered and kept free of standing water and muddy conditions as necessary for the proper execution of the work. The contractor shall furnish, install, operate, and maintain all drains, sumps, pumps, casings, well points, and all other equipment required to properly dewater the site as specified. Dewatering systems that cause a loss of soil fines from the foundation areas will not be permitted.

The contractor shall furnish the contracting officer, in writing, a proposed plan for dewatering before commencing with any construction activity for which dewatering may be required, unless waived in section 8 of this specification. Acceptance of this plan or the waiving of the plan requirement will not relieve the contractor of the responsibilities for completing the specified work.

4. Dewatering borrow areas

The contractor shall maintain all borrow areas free of surface water or otherwise provide for timely and effective removal of surface and subsurface water that accumulates within the borrow area, unless waived in section 8 of this specification. Borrow material shall be processed as necessary to achieve proper and uniform moisture content at the time of placement.

If pumping to dewater borrow areas is included as a bid item of work in the bid schedule, each pump discharge pipe shall be equipped with a water meter. The meter shall be such that the measured quantity of water is accurate within 3 percent of the true quantity. The contractor shall provide necessary support to perform accuracy tests of the water meter when requested by the contracting officer.

5. Erosion and pollution control

Removal of water from the construction site, including the borrow areas, shall be accomplished so that erosion and the transporting of sediment and other pollutants are minimized. Dewatering activities shall be accomplished in a manner that the water table water quality is not altered. Pollution control activities shall not conflict with the requirements of Construction Specification 5, Pollution Control, if it is a part of this contract.

6. Removal of temporary works

When temporary works are no longer needed, the contractor shall remove and return the area to a condition similar to that which existed before construction. Areas where temporary works were located shall be graded for sightly appearance with no obstruction to natural surface waterflows or the proper functioning and access to the works of improvement installed. The contractor shall exercise extreme care during the removal stages to minimize the loss of soil sediment and debris that was trapped during construction.

Pipes, casings, and any other material used to dewater the site shall be removed from temporary wells. The wells shall be filled to ground level with clean gravel or other suitable material approved by the contracting officer. The contractor shall exercise extreme care to prevent pollution of the ground water by these actions.

7. Measurement and payment

Method 1—Items of work listed in the bid schedule for removal of water, diverting surface water, and dewatering construction sites and borrow areas are paid for at the contract lump sum prices. Such payment will constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

Method 2—Items of work listed in the bid schedule for removal of water, diverting surface water, dewatering construction sites, and dewatering borrow areas are paid for at the contract lump sum prices. Such payment will constitute full compensation for furnishing, installing, operating, and maintaining the necessary trenches, drains, sumps, pumps, and piping and for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work. The exception is that additional payment for pumping to dewater borrow areas and the removal of water will be made as described in the following paragraph.

If pumping to dewater borrow areas is a contract bid item, payment is made at the contract unit price, which shall be the price per 1,000 gallons shown in the bid schedule. Such payment will constitute full compensation for pumping only. Compensation for equipment and preparation and for other costs associated with pumping is included in the lump sum payment for removal of water or the lump sum payment for dewatering the borrow areas. Payment is made only for pumping that is necessary to dewater borrow areas that cannot be effectively drained by gravity or that must have the water table lowered to be usable as a suitable borrow source. Pumping for other purposes will not be included for payment under this item.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the contract line item to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 8 of this specification.

8. Items of work and construction details

8. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

a. Bid Item 5, Removal of Water

- (1) This item shall consist of all operations necessary to accomplish the work defined in Section 1 of this specification.
- (2) Written plans for diverting surface waters and for dewatering the site are required. The Contractor's plans for diverting surface waters and dewatering the site shall be submitted to the Engineer prior to the start of construction operations.
- (3) In Section 7, Measurement and payment, Method 1 shall apply. Payment shall be prorated and paid in equal amounts on each monthly estimate. The number of months used for prorating shall be the number estimated to complete the work. The final month's prorate amount is made with the final payment.

Construction Specification 21—Excavation

1. Scope

The work shall consist of the excavation required by the drawings and specifications and disposal of the excavated materials.

2. Classification

Excavation is classified as common excavation, rock excavation, or unclassified excavation in accordance with the following definitions.

Common excavation is defined as the excavation of all materials that can be excavated, transported, and unloaded using heavy ripping equipment and wheel tractor-scrapers with pusher tractors or that can be excavated and dumped into place or loaded onto hauling equipment by excavators having a rated capacity of one cubic yard or larger and equipped with attachments (shovel, bucket, backhoe, dragline, or clam shell) appropriate to the material type, character, and nature of the materials.

Rock excavation is defined as the excavation of all hard, compacted, or cemented materials that require blasting or the use of ripping and excavating equipment larger than defined for common excavation. The excavation and removal of isolated boulders or rock fragments larger than 1 cubic yard encountered in materials otherwise conforming to the definition of common excavation shall be classified as rock excavation. The presence of isolated boulders or rock fragments larger than 1 cubic yard is not in itself sufficient cause to change the classification of the surrounding material.

For the purpose of these classifications, the following definitions shall apply:

Heavy ripping equipment is a rear-mounted, heavy duty, single-tooth, ripping attachment mounted on a track type tractor having a power rating of at least 250 flywheel horsepower unless otherwise specified in section 10.

Wheel tractor-scraper is a self-loading (not elevating) and unloading scraper having a struck bowl capacity of at least 12 cubic yards.

Pusher tractor is a track type tractor having a power rating of at least 250 flywheel horsepower equipped with appropriate attachments.

Unclassified excavation is defined as the excavation of all materials encountered, including rock materials, regardless of their nature or the manner in which they are removed.

3. Blasting

The transportation, handling, storage, and use of dynamite and other explosives shall be directed and supervised by a person(s) of proven experience and ability who is authorized and qualified to conduct blasting operations.

Blasting shall be done in a manner as to prevent damage to the work or unnecessary fracturing of the underlying rock materials and shall conform to any special requirements in section 10 of this specification. When specified in section 10, the contractor shall furnish the engineer, in writing, a blasting plan before blasting operations begin.

4. Use of excavated material

Method 1—To the extent they are needed, all suitable material from the specified excavations shall be used in the construction of required permanent earthfill or rockfill. The suitability of material for specific purposes is determined by the engineer. The contractor shall not waste or otherwise dispose of suitable excavated material.

Method 2—Suitable material from the specified excavations may be used in the construction of required

earthfill or rockfill. The suitability of material for specific purposes is determined by the engineer.

5. Disposal of waste materials

Method 1—All surplus or unsuitable excavated materials are designated as waste and shall be disposed of at the locations shown on the drawings.

Method 2—All surplus or unsuitable excavated materials are designated as waste and shall be disposed of by the contractor at sites of his own choosing away from the site of the work. The disposal shall be in an environmentally acceptable manner that does not violate local rules and regulations.

6. Excavation limits

Excavations shall comply with OSHA Construction Industry Standards (29CFR Part 1926) Subpart P, Excavations, Trenching, and Shoring. All excavations shall be completed and maintained in a safe and stable condition throughout the total construction phase. Structure and trench excavations shall be completed to the specified elevations and to the length and width required to safely install, adjust, and remove any forms, bracing, or supports necessary for the installation of the work. Excavations outside the lines and limits shown on the drawings or specified herein required to meet safety requirements shall be the responsibility of the contractor in constructing and maintaining a safe and stable excavation.

7. Borrow excavation

When the quantities of suitable material obtained from specified excavations are insufficient to construct the specified earthfills and earth backfills, additional material shall be obtained from the designated borrow areas. The extent and depth of borrow pits within the limits of the designated borrow areas shall be as specified in section 10 or as approved by the engineer.

Borrow pits shall be excavated and finally dressed to blend with the existing topography and sloped to prevent ponding and to provide drainage.

8. Overexcavation

Excavation in rock beyond the specified lines and grades shall be corrected by filling the resulting voids with portland cement concrete made of materials and mix proportions approved by the engineer. Concrete that will be exposed to the atmosphere when construction is completed shall meet the requirements of concrete selected for use under Construction Specification 31, Concrete for Major Structures, or 32, Structure Concrete, as appropriate.

Concrete that will be permanently covered shall contain not less than five bags of cement per cubic yard. The concrete shall be placed and cured as specified by the engineer.

Excavation in earth beyond the specified lines and grades shall be corrected by filling the resulting voids with approved, compacted earthfill. The exception to this is that if the earth is to become the subgrade for riprap, rockfill, sand or gravel bedding, or drainfill, the voids may be filled with material conforming to the specifications for the riprap, rockfill, bedding, or drainfill. Before correcting an overexcavation condition, the contractor shall review the planned corrective action with the engineer and obtain approval of the corrective measures.

9. Measurement and payment

For items of work for which specific unit prices are established in the contract, the volume of each type and class of excavation within the specified pay limits is measured and computed to the nearest cubic yard by the method of average cross-sectional end areas or by methods outlined in section 10 of this specification. Regardless of quantities excavated, the measurement for payment is made to the specified pay limits except that excavation outside the specified lines and grades directed by the engineer to remove unsuitable material is included. Excavation required because unsuitable conditions result from the contractor's improper construction operations, as determined by the engineer, is not included for measurement and payment.

Method 1—The pay limits shall be as designated on the drawings.

Method 2—The pay limits shall be defined as follows:

- a. The upper limit shall be the original ground surface as it existed before the start of construction operations except that where excavation is performed within areas designated for previous excavation or earthfill, the upper limit shall be the modified ground surface resulting from the specified previous excavation or earthfill.
- b. The lower and lateral limits shall be the neat lines and grades shown on the drawings.

Method 3—The pay limits shall be defined as follows:

- a. The upper limit shall be the original ground surface as it existed before the start of construction operations except that where excavation is performed within areas designated for previous excavation or earthfill, the upper limit shall be the modified ground surface resulting from the specified previous excavation or earthfill.
- b. The lower and lateral limits shall be the true surface of the completed excavation as directed by the engineer.

Method 4—The pay limits shall be defined as follows:

- a. The upper limit shall be the original ground surface as it existed before the start of construction operations except that where excavation is performed within areas designated for previous excavation or earthfill, the upper limit shall be the modified ground surface resulting from the specified previous excavation or earthfill.
- b. The lower limit shall be at the bottom surface of the proposed structure.
- c. The lateral limits shall be 18 inches outside of the outside surface of the proposed structure or shall be vertical planes 18 inches outside of and parallel to the footings, whichever gives the larger pay quantity, except as provided in d below.
- d. For trapezoidal channel linings or similar structures that are to be supported upon the sides of the excavation without intervening forms, the lateral limits shall be at the underside of the proposed lining or structure.
- e. For the purposes of the definitions in b, c, and d, above, any specified bedding or drainfill directly beneath or beside the structure will be considered to be a part of the structure.

All methods—The following provisions apply to all methods of measurement and payment.

Payment for each type and class of excavation is made at the contract unit price for that type and class of excavation. Such payment will constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the performance of the work except that extra payment for backfilling overexcavation will be made in accordance with the following provisions.

Payment for backfilling overexcavation, as specified in section 8 of this specification, is made only if the excavation outside specified lines and grades is directed by the engineer to remove unsuitable material and if the unsuitable condition is not a result of the contractor's improper construction operations as determined by the engineer.

Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 10 of this specification.

10. Items of work and construction details

10. **Item of work and construction details**

In Section 4, Use of excavated material, Method 1 shall apply. There is no guarantee that materials obtained from the specified excavations may be used directly in specified fill areas. Separate stockpiling of selected materials, based on their engineering properties, to insure their availability for use in specific zones of fill areas may be required. Stockpiling shall be conducted on areas shown on the construction drawings or as approved by the Engineer. Additional compensation will not be made for stockpiling of excavated materials. Cost for stockpiling of excavated materials shall be included in the compensation for the bid item(s) for excavation.

In Section 5, Disposal of waste materials, Method 1 shall apply. The disposal of the excavated materials shall include transporting, depositing, and spreading the materials to and on the designated waste areas. The waste areas shall be at the locations designated on the drawings. The finished surface of the waste area(s) shall be uniform and conform to the topography. Additional compensation for disposal of excavated materials and dressing of the surface of waste areas will not be made. Costs will be included in the compensation for the bid item for excavation.

The upper limit for the excavations shall be the measured surface of the ground before construction.

The lower limits of excavations shown on the drawings shall be considered the true surface of completed excavation unless unsuitable materials still exist. The actual depths and extent of these excavations will be determined by the Engineer after examination of materials encountered. After the limits of excavation shown on the drawings are complete, the Engineer will examine the completed surface and mark areas that need additional excavation to remove unsuitable materials.

Prior to performing the designated excavations, the embankment shall be stripped of vegetal, organic and any other unsuitable materials. The depth of this stripping shall be sufficient to remove soil containing significant vegetative or organic matter. The depth of stripping is estimated to be 6 inches, on average.

Suitable materials resulting from the required excavations shall be used to construct the specified fills except materials suitable for topsoil shall be stockpiled at the location designated by the Engineer. Unsuitable materials shall be placed in the waste area shown on the drawings.

In Section 8, reference to Construction Specification 32 shall not apply.

In Section 9, Measurement and payment, Method 3 shall apply. The neat lines and grades shown on the drawings shall be considered the true surface of the completed excavation unless otherwise approved by the Engineer.

Items of work to be performed in conformance with this specification and the construction details therefore are:

- a. Bid Item 6, Excavation, Common
 - (1) This item shall consist of all excavation required for the reconstruction of the channel and channel slopes as shown on the drawings.
 - (2) Items of work subsidiary to this bid item are:
 - (a) Clearing, Class C, as specified in Construction Specification 1 as it applies to this bid item.
 - (b) Excavation, Common, Foundation Stripping as specified in Section 10.c. of this specification as it applies to this bid item.

- b. Subsidiary Item, Excavation, Common, Foundation Stripping
- (1) This item shall apply to the areas receiving earthfill that do not require other excavations before earthfill placement. This excavation shall consist of removing weeds, grass, roots and soils containing significant vegetative or organic material from the ground surface (including any waste areas) prior to placing earthfill in required areas. The depth of stripping shall be sufficient to remove the vegetative material and soil containing significant organic matter and is estimated to be 3 to 12 inches. The total required volume of stripping shall not exceed that obtained by assuming a depth of 6 inches.
 - (2) Separate payment will not be made for this item. Compensation for this item will be included in the payment for the bid item for Excavation, Common.

Construction Specification 23—Earthfill

1. Scope

The work consists of the construction of earth embankments, other earthfills, and earth backfills required by the drawings and specifications.

Earthfill is composed of natural earth materials that can be placed and compacted by construction equipment operated in a conventional manner.

Earth backfill is composed of natural earth material placed and compacted in confined spaces or adjacent to structures (including pipes) by hand tamping, manually directed power tampers or vibrating plates, or their equivalent.

2. Material

All fill material shall be obtained from required excavations and designated borrow areas. The selection, blending, routing, and disposition of material in the various fills shall be subject to approval by the engineer.

Fill materials shall contain no frozen soil, sod, brush, roots, or other perishable material. Rock particles larger than the maximum size specified for each type of fill shall be removed prior to compaction of the fill.

The types of material used in the various fills shall be as listed and described in the specifications and drawings.

3. Foundation preparation

Foundations for earthfill shall be stripped to remove vegetation and other unsuitable material or shall be excavated as specified.

Except as otherwise specified, earth foundation surfaces shall be graded to remove surface irregularities and shall be scarified parallel to the axis of the fill or otherwise acceptably scored and loosened to a minimum depth of 2 inches. The moisture content of the loosened material shall be controlled as specified for the earthfill, and the surface material of the foundation shall be compacted and bonded with the first layer of earthfill as specified for subsequent layers of earthfill.

Earth abutment surfaces shall be free of loose, uncompacted earth in excess of 2 inches in depth normal to the slope and shall be at such a moisture content that the earthfill can be compacted against them to produce a good bond between the fill and the abutments.

Rock foundation and abutment surfaces shall be cleared of all loose material by hand or other effective means and shall be free of standing water when fill is placed upon them. Occasional rock outcrops in earth foundations for earthfill, except in dams and other structures designed to restrain the movement of water, shall not require special treatment if they do not interfere with compaction of the foundation and initial layers of the fill or the bond between the foundation and the fill.

Foundation and abutment surfaces shall be no steeper than one horizontal to one vertical unless otherwise specified. Test pits or other cavities shall be filled with compacted earthfill conforming to the specifications for the earthfill to be placed upon the foundation.

4. Placement

Earthfill shall not be placed until the required excavation and foundation preparation have been completed and the foundation has been inspected and approved by the engineer. Earthfill shall not be placed upon a frozen surface nor shall snow, ice, or frozen material be incorporated in the earthfill matrix.

Earthfill shall be placed in approximately horizontal layers. The thickness of each layer before compaction shall not exceed the maximum thickness specified in section 10 or shown on the drawings.

Materials placed by dumping in piles or windrows shall be spread uniformly to not more than the specified thickness before being compacted.

Hand compacted earth backfill shall be placed in layers whose thickness before compaction does not exceed the maximum thickness specified for layers of earth backfill compacted by manually directed power tampers.

Earth backfill shall be placed in a manner that prevents damage to the structures and allows the structures to assume the loads from the earth backfill gradually and uniformly. The height of the earth backfill adjacent to a structure shall be increased at approximately the same rate on all sides of the structure.

Earthfill and earth backfill in dams, levees, and other structures designed to restrain the movement of water shall be placed to meet the following additional requirements:

- (a) The distribution of materials throughout each zone shall be essentially uniform, and the earthfill shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture, moisture content, or gradation from the surrounding material. Zone earthfills shall be constructed concurrently unless otherwise specified.
- (b) The surface of each layer shall be scarified parallel to the axis of the fill to a depth of not less than 2 inches before the next layer is placed.
- (c) The top surface of embankments shall be maintained approximately level during construction with two exceptions: A crown or cross-slope of about 2 percent shall be maintained to ensure effective drainage, or as otherwise specified for drainfill or sectional zones.
- (d) Dam embankments shall be constructed in continuous layers from abutment to abutment except where openings to facilitate construction or to allow the passage of streamflow during construction are specifically authorized in the contract.
- (e) Embankments built at different levels as described under (c) or (d) above shall be constructed so that the slope of the bonding surfaces between embankment in place and embankment to be placed is not steeper than 3 feet horizontal to 1 foot vertical. The bonding surface of the embankment in place shall be stripped of all material not meeting the requirements of this specification and shall be scarified, moistened, and recompacted when the new earthfill is placed against it. This ensures a good bond with the new earthfill and obtains the specified moisture content and density at the contact of the in place and new earthfills.

5. Control of moisture content

During placement and compaction of earthfill and earth backfill, the moisture content of the material being placed shall be maintained within the specified range.

The application of water to the earthfill material shall be accomplished at the borrow areas insofar as practicable. Water may be applied by sprinkling the material after placement on the earthfill, if necessary. Uniform moisture distribution shall be obtained by disking.

Material that is too wet when deposited on the earthfill shall either be removed or be dried to the specified moisture content prior to compaction.

If the top surface of the preceding layer of compacted earthfill or a foundation or abutment surface in the zone of contact with the earthfill becomes too dry to permit suitable bond, it shall either be removed or scarified and moistened by sprinkling to an acceptable moisture content before placement of the next layer of earthfill.

6. Compaction

Earthfill—Earthfill shall be compacted according to the following requirements for the class of compaction specified:

Class A compaction—Each layer of earthfill shall be compacted as necessary to provide the density of the earthfill matrix not less than the minimum density specified in Section 10 or identified on the drawings. The earthfill matrix is defined as the portion of the earthfill material finer than the maximum particle size allowed in the reference compaction test method specified (ASTM D698 or ASTM D1557).

Class B compaction—Each layer of earthfill shall be compacted to a mass density not less than the minimum density specified.

Class C compaction—Each layer of earthfill shall be compacted by the specified number of passes of the type and weight of roller or other equipment specified or by an approved equivalent method. Each pass shall consist of at least one passage of the roller wheel or drum over the entire surface of the layer.

Earth backfill—Earth backfill adjacent to structures shall be compacted to a density equivalent to that of the surrounding in-place earth material or adjacent required earthfill or earth backfill. Compaction shall be accomplished by hand tamping or manually directed power tampers, plate vibrators, walk-behind, miniature, or self-propelled rollers. Unless otherwise specified heavy equipment including backhoe mounted power tampers or vibrating compactors and manually directed vibrating rollers shall not be operated within 3 feet of any structure. Towed or self-propelled vibrating rollers shall not be operated within 5 feet of any structure. Compaction by means of drop weights operating from a crane or hoist is not permitted.

The passage of heavy equipment will not be allowed:

- Over cast-in-place conduits within 14-days after placement of the concrete
- Over cradled or bedded precast conduits within 7 days after placement of the concrete cradle or bedding
- Over any type of conduit until the backfill has been placed above the top surface of the structure to a height equal to one-half the clear span width of the structure or pipe or 3 feet, whichever is greater, except as may be specified in section 10.

Compacting of earth backfill adjacent to structures shall not be started until the concrete has attained the strength specified in section 10 for this purpose. The strength is determined by compression testing of test cylinders cast by the contractor's quality control personnel for this purpose and cured at the work site in the manner specified in ASTM C 31 for determining when a structure may be put into service.

When the required strength of the concrete is not specified as described above, compaction of earth backfill adjacent to structures shall not be started until the following time intervals have elapsed after placement of the concrete.

Structure	Time interval (days)
Vertical or near-vertical walls with earth loading on one side only	14
Walls backfilled on both sides simultaneously	7
Conduits and spillway risers, cast-in-place (with inside forms in place)	7
Conduits and spillway risers, cast-in-place (inside forms removed)	14
Conduits, pre-cast, cradled	2

Conduits, pre-cast, bedded	1
Cantilever outlet bents (backfilled both sides simultaneously)	3

7. Reworking or removal and replacement of defective earthfill

Earthfill placed at densities lower than the specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable earthfill. The replacement earthfill and the foundation, abutment, and earthfill surfaces upon which it is placed shall conform to all requirements of this specification for foundation preparation, approval, placement, moisture control, and compaction.

8. Testing

During the course of the work, the contractor shall perform quality control tests, as applicable, to identify earthfill and earth backfill materials; determine the reference maximum density and optimum moisture content; and document that the moisture content of material at the time of compaction and the density of earthfill and earth backfill in place conform to the requirements of this specification.

Determining Reference Maximum Density and Optimum Moisture Content—For Class A compaction, the reference maximum density and optimum moisture content shall be determined in accordance with the compaction test and method specified on the drawings or in section 10.

Documenting Specification Conformance—In-place densities of earthfill and earth backfill requiring Class A compaction shall be measured in accordance with ASTM D1556, D2167, D2937, or D6938. Moisture contents of earthfill and earth backfill at the time of compaction shall be measured in accordance with ASTM D2216, D4643, or D6938. Values of moisture content determined by ASTM D2216 are considered the true value of the soil moisture. Values of moisture content determined by ASTM D4643 or D6938 shall be verified by comparison to values obtained by ASTM D2216. Values of in-place density and moisture content determined by these tests shall be compared to the minimum density and moisture content range specified on the drawings or in section 10.

Correction for Oversize Particles—If the materials to be used for earthfill or earth backfill contain more than 5 percent by dry weight of oversize rock particles (particles larger than those allowed in the specified compaction test and method), corrections for oversize particles shall be made using the appropriate procedures explained in ASTM D4718.

9. Measurement and payment

For items of work for which specific unit prices are established in the contract, the volume of each type and compaction class of earthfill and earth backfill within the specified zone boundaries and pay limits is measured and computed to the nearest cubic yard by the method of average cross-sectional end areas. Unless otherwise specified in section 10, no deduction in volume is made for embedded items, such as, but not limited to, conduits, inlet structures, outlet structures, embankment drains, sand diaphragm and outlet, and their appurtenances.

The pay limits shall be as defined below, with the further provision that earthfill required to fill voids resulting from overexcavation of the foundation, outside the specified lines and grades, will be included in the measurement for payment only under the following conditions:

- Where such overexcavation is directed by the engineer to remove unsuitable material, and
- Where the unsuitable condition is not a result of the contractor's improper construction operations as determined by the engineer.

Earthfill beyond the specified lines and grades to backfill excavation required for compliance with OSHA requirements will be considered subsidiary to the earthfill bid item(s).

Method 1—The pay limits shall be as designated on the drawings.

Method 2—The pay limits shall be the measured surface of the foundation when approved for placement of the earthfill and the specified neat lines of the earthfill surface.

Method 3—The pay limits shall be the measured surface of the foundation when approved for placement of the earthfill and the measured surface of the completed earthfill.

Method 4—The pay limits shall be the specified pay limits for excavation and the specified neat lines of the earthfill surface.

Method 5—The pay limits shall be the specified pay limits for excavation and the measured surface of the completed earthfill.

Method 6—Payment for each type and compaction class of earthfill and earth backfill is made at the contract unit price for that type and compaction class of earthfill. Such payment will constitute full compensation for all labor, material, equipment, and all other items necessary and incidental to the performance of the work.

Method 7—Payment for each type and compaction class of earthfill and earth backfill is made at the contract unit price for that type and compaction class of earthfill. Such payment will constitute full compensation for all labor, material, equipment, and all other items necessary and incidental to the performance of the work except furnishing, transporting, and applying water to the foundation and earthfill material. Water applied to the foundation and earthfill material is measured and payment made as specified in Construction Specification 10.

All methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 10 of this specification.

10. Items of work and construction details

10. **Items of work and construction details**

In Section 2, Materials, the maximum particle size shall be 4 inches.

In Section 3, Foundation preparation the foundation on which earthfill is to be placed that has not had previous excavation performed shall be properly prepared as outlined in Section 3 of this specification.

In Section 4, Placement, the Engineer will not permit frozen materials to be incorporated in the specified fills. Removal of all frozen materials from the fill on which materials are to be deposited will be required. Additional compensation for removal of frozen materials from the fill will not be made. Cost of removing frozen materials from the fill will be included in the compensation for the bid item(s) for the designated earthfills.

The earthfill beneath the earthfill shall be completed to the line and grades shown on the drawings before placement of the earthfill.

All surfaces shall be closely examined immediately prior to the placement of all earthfills and backfills. All materials that exhibit drying cracks, slaking, or other evidence of being unstable or unsuitable, shall be removed or reworked by scarification, wetting, and compaction to the affected depths prior to the placement of fill. Additional compensation will not be made for removing or reworking the foundation or fill materials to meet the requirements herein specified.

After being deposited on the fill, each lift of fill material shall be spread, bladed and smoothed to the extent necessary to ensure that the surface is free of abrupt mounds, depressions or windrows to provide a smooth uniform surface for operation of plowing and compaction equipment.

Each lift of fill material shall then be disked, bladed, and plowed to an acceptable degree and depth to thoroughly loosen, blend, and bond the material with the preceding lift before compaction is started.

The minimum disk blade size shall be 34" in diameter. An increase in the weight of the plow, an increase in disc size, a decrease in thickness of lifts being placed, or any combination of these may be required to accomplish the blending and bonding herein specified.

In Section 6, Compaction, Class A compaction shall apply. In-place dry density of materials being placed shall not be less than 95 percent of the maximum dry density obtained during tests performed in accordance with the procedures contained in ASTM D698 (Laboratory Compaction Characteristics of Soil Using Standard Effort) using Method A or B, as appropriate. Placement moisture shall be from optimum to optimum plus 3 percent as determined from the above test. The moisture content of the materials being placed shall be adjusted as necessary to meet these requirements.

Maximum layer thickness shall be 8 inches before compaction and the maximum particle size shall be 4 inches.

In Section 9, Measurement and payment, Methods 2 and 6 shall apply. In Method 2 the measured surface shall be the surface before the placement of topsoil.

Items of work to be performed in conformance with this specification and the construction details therefore are:

a. **Bid Item 7, Earthfill**

- (1) This item shall consist of all earthfill designated for reconstruction of the channel and channel slopes as shown on the drawings.

- (2) The item of work subsidiary to this bid item is Topsoil as specified in Construction Specification 26.

Construction Specification 26—Topsoiling

1. Scope

The work consists of furnishing and spreading topsoil to specified depths at locations shown on the drawings.

2. Quality of topsoil

Topsoil shall consist of friable surface soil reasonably free of grass, roots, weeds, sticks, rocks, or other unsuitable material. Additional quality requirements, if any, are in section 7 of this specification.

3. Furnishing

Method 1—Topsoil shall be salvaged from designated earth surfaces that will be disturbed by construction activities. After designated sites have been cleared and grubbed, the topsoil shall be removed from the designated areas and stockpiled at locations shown on the drawings or acceptable to the engineer. Unsuitable material encountered during removal of topsoil shall be disposed of at locations shown on the drawings or approved by the engineer, or it will be otherwise hauled and disposed of at locations removed from the construction site. The contractor is responsible for complying with all local rules and regulations and the payment of any and all fees that may result from the disposal at locations outside the construction work limits.

Method 2—Topsoil shall be furnished from an offsite source designated by the contractor. The engineer shall be granted access to the source for inspection and acceptance before delivery to the site. Test results and samples shall be provided when specified in section 7 of this specification.

4. Stockpiling

Stockpiles of topsoil shall not conflict with the requirements of Construction Specification 5, Pollution Control, when made a part of this contract.

5. Spreading

Method 1—Spreading shall not be conducted when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to uniform spreading operations. Surfaces designated to receive a topsoil application shall be lightly scarified just before the spreading operation.

Following the spreading operation, the topsoil surface shall be left reasonably smooth and without ruts or surface irregularities that could contribute to concentrated water flow downslope.

Method 2—Spreading shall not be performed when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to uniform spreading operations. Surfaces designated to receive a topsoil application shall be lightly scarified just before the spreading operation. Where compacted earthfills are designated to be topsoiled, the topsoil shall be placed concurrently with the earthfill and shall be bonded to the compacted fill with the compacting equipment.

Following the spreading operation, the topsoil surface shall be left reasonably smooth and without ruts or surface irregularities that could contribute to concentrated water flow downslope.

6. Measurement and payment

Method 1—The total surface covered by topsoil is measured and the area(s) computed to the nearest square yard. Payment for furnishing and placing topsoil is made at the contract unit price.

Method 2—The total surface covered by topsoil, except the surface area of embankments, levees, dikes, and other earthfills not included for payment, is measured and the area(s) computed to the nearest square yard.

Payment for topsoil spread on the surface of embankments, levees, dikes, and other earthfills is included

in the measurement and payment for that item of earthfill where topsoil application occurred.

Method 3—For items of work for which specific unit prices are established in the contract, the volume of topsoil furnished and spread is computed to the nearest cubic yard by the method of average cross-sectional end areas from surveys of the excavated topsoil stockpile or, if not stockpiled, cross-sectional surveys of the borrow area(s). Payment for furnishing and spreading topsoil is made at the contract unit price.

All methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 7 of this specification.

All payment methods—Payment will constitute full compensation for all labor, equipment, material, and all other items necessary and incidental to the completion of the work. This includes excavating, stockpiling, hauling, spreading, and the wasting of unsuitable excavated material.

7. Items of work and construction details

7. Items of work and construction details

In Section 3, Furnishing, Method 1 shall apply.

In Section 5, Spreading, Method 1 shall apply. After spreading the topsoil on the required areas, a minimal amount of compacted effort shall be applied by passing over the entire surface with at least one pass of a dozer track. Care shall be taken to avoid over compaction that will hinder the establishment of grass.

Topsoil should be at or near optimum moisture as determined by the feel method during spreading. The topsoil shall be spread uniformly to the specified thickness. Finished grades shall be maintained at that specified, and the final surfaces of topsoiled areas shall be dressed by blading, dragging, or floating operations.

Items of work to be performed in conformance with this specification and the construction details therefore are:

a. Subsidiary Item, Topsoil

- (1) This item shall consist of salvaging of approved topsoil from required excavations and from the foundation stripping operations and placing and spreading it on all fill areas as shown on the drawings.
- (2) The depth of topsoil placement shall be 6 inches, except in areas where the fill depth is less than 6" the topsoil depth shall equal the fill depth.
- (3) Separate payment will not be made for this item of work. Compensation for this item will be included in the payment for the bid item Earthfill.

Construction Specification 61 —Rock Riprap

1. Scope

The work consists of the construction of rock riprap revetments and blankets, including filter or bedding where specified.

2. Material

Rock riprap must conform to the requirements of Material Specification 523, Rock for Riprap, or if so specified, must be obtained from designated sources. It must be free from dirt, clay, sand, rock fines, and other material not meeting the required gradation limits.

At least 30 days before rock is delivered from other than designated sources, the contractor must designate in writing the source from which rock material will be obtained and provide information satisfactory to the contracting officer that the material meets contract requirements. The contractor must provide the responsible engineer free access to the source for the purpose of obtaining samples for testing. The size and grading of the rock must be as specified in section 8.

Rock from approved sources must be excavated, selected, and processed to meet the specified quality and grading requirements at the time the rock is installed.

Based on a specific gravity of 2.65 (typical of limestone and dolomite) and assuming the individual rock is shaped midway between a sphere and a cube, typical size/weight relationships are:

Sieve size of rock	Approx. weight of rock	Weight of test pile
16 inches	300 pounds	6,000 pounds
11 inches	100 pounds	2,000 pounds
6 inches	15 pounds	300 pounds

When specified in section 8 or when it is necessary to verify the gradation of the rock riprap, a particle size analysis must be performed in accordance with ASTM D5519, Test Method A or B. The analysis must be performed at the work site on a test pile of representative rock. The mass of the test pile must be at least 20 times the mass of the largest rock in the pile. The results of the test are compared to the gradation required for the project. Test pile results that do not meet the construction specifications must be cause for the rock to be rejected. The test pile that meets contract requirements must be left on the job site as a sample for visual comparison. The test pile must be used as part of the last rock riprap to be placed.

Filter or bedding aggregates when required must conform to Material Specification 521, Aggregates for Drainfill and Filters, unless otherwise specified. Geotextiles must conform to Material Specification 592, Geotextile.

3. Subgrade preparation

The subgrade surface on which the rock riprap, filter, bedding, or geotextile is to be placed must be cut or filled and graded to the lines and grades shown on the drawings. When fill to subgrade lines is required, it must consist of approved material and must conform to the requirements of the specified class of earthfill.

Rock riprap, filter, bedding, or geotextile must not be placed until the foundation preparation is completed and the subgrade surface has been inspected and approved.

4. Equipment-placed rock riprap

The rock riprap must be placed by equipment on the surface and to the depth specified. It must be installed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the underlying material. The rock for riprap must be delivered and placed in a manner that ensures the riprap in place is reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks and spalls filling the voids between the larger rocks. Some hand placing may be required to provide a neat and uniform surface.

Rock riprap must be placed in a manner to prevent damage to structures. Hand placing is required as necessary to prevent damage to any new and existing structures.

5. Hand placed rock riprap

The rock riprap must be placed by hand on the surface and to the depth specified. It must be securely bedded with the larger rocks firmly in contact one to another without bridging. Spaces between the larger rocks must be filled with smaller rocks and spalls. Smaller rocks must not be grouped as a substitute for larger rock. Flat slab rock must be laid on its vertical edge except where it is laid like paving stone and the thickness of the rock equals the specified depth of the riprap course.

6. Filter or bedding

When the contract specifies filter, bedding, or geotextile beneath the rock riprap, the designated material must be placed on the prepared subgrade surface as specified. Compaction of filter or bedding aggregate is not required, but the surface of such material must be finished reasonably smooth and free of mounds, dips, or windrows.

7. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the quantity of each type of rock riprap placed within the specified limits is computed to the nearest ton by actual weight. The volume of each type of filter or bedding aggregate is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas. For each load of rock riprap placed as specified, the contractor must furnish to the responsible engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton.

Payment is made at the contract unit price for each type of rock riprap, filter, or bedding. Such payment is considered full compensation for completion of the work.

Method 2—For items of work for which specific unit prices are established in the contract, the quantity of each type of rock riprap placed within the specified limits is computed to the nearest 0.1 ton by actual weight. The quantity of each type of filter or bedding aggregate delivered and placed within the specified limits is computed to the nearest 0.1 ton. For each load of rock riprap placed as specified, the contractor must furnish to the engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton. For each load of filter or bedding aggregate, the contractor must furnish to the responsible engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton.

Payment is made at the contract unit price for each type of rock riprap, filter, or bedding. Such payment is considered full compensation for completion of the work.

Method 3—For items of work for which specific unit prices are established by the contract, the volume of each type of rock riprap and filter or bedding aggregate is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas.

Payment is made at the contract unit price for each type of rock riprap, filter, or bedding. Such payment is considered full compensation for completion of the work.

Method 4—For items of work for which specific unit prices are established by the contract, the volume of each type of rock riprap, including filter and bedding aggregate, is measured within the specified limits

and computed to the nearest cubic yard by the method of average cross-sectional end areas.

Payment is made at the contract unit price for each type of rock riprap, including filter and bedding. Such payment is considered full compensation for completion of the work.

Method 5—For items of work for which specific unit prices are established by the contract, the quantity of each type of rock riprap placed within the specified limits is computed to the nearest ton by actual weight. For each load of rock for riprap placed as specified, the contractor must furnish to the responsible engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton.

Payment is made at the contract unit price for each type of rock riprap, and includes compensation for any aggregate or geotextile installed as specified for filter or bedding. Such payment is considered full compensation for completion of the work.

Method 6—For items of work for which specific unit prices are established by the contract, the volume of each type of rock riprap is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas.

Payment is made at the contract unit price for each type of rock riprap and includes compensation for any aggregate or geotextile installed as specified for filter or bedding. Such payment is considered full compensation for completion of the work.

All methods—The following provision applies to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 8.

No separate payment is made for testing the gradation of the test pile. Compensation for testing is included in the appropriate bid item for riprap.

8. Items of work and construction details

8. Items of work and construction details

In Section 7, Measurement and payment, Method 1 shall apply.

Rock for use as riprap shall comply with the requirement of Material Specification 523, Rock Type 1.

Rock gradation requirements are shown on the drawings. Prior to delivery of rock to the construction site, the Contractor shall provide a certified gradation analysis from the rock quarry and other evidence satisfactory to the Engineer showing the rock to be supplied complies with the specified gradation(s). Any difference of opinion between the Engineer, Contracting Officer and the Contractor concerning gradation of the riprap being delivered to the site shall be resolved by dumping and checking the gradation of one random truck load of rock

In the event such additional checking procedure becomes necessary, the mechanical equipment, scales, preparation of a sorting site, and labor needed to prove the gradation by weighing shall be provided by the Contractor at no additional cost.

Rock will be subject to additional testing beyond ASTM's listed in Material Specification 523 when in judgement of the Engineer, delivered rock has defects that may not have been detected by the specified laboratory tests. These defects may result in accelerated weathering. Any rock delivered that experiences degradation when selected samples are placed in water for a time of 7 days will be in non-compliance of the specification.

If, at any time, the rock is delivered to the construction site, separation or segregation of the smaller rock fraction from the larger rock fraction has occurred, the rock shall be reworked as necessary to insure a reasonably uniform distribution of the various rock sizes prior to placement of the rock. Due care shall be exercised during this rework operation (if required) to prevent inclusion of earth or other undesirable materials in the riprap.

The contractor shall have various layers in the source rock quarry tested in accordance with ASTM D5240 if the rock quality is in question as determined by the Engineer.

Riprap delivery shall be made only during scheduled working hours, and delivery tickets shall be furnished to the Engineer.

Riprap shall be equipment placed. Equipment shall not be allowed on the rock during or after placement.

Items of work to be performed in conformance with this specification and the construction details therefore are:

- a. Bid Item 8, Rock Riprap
 - (1) This item shall include furnishing and placing the rock riprap as shown on the drawings.

Construction Specification 94—Contractor Quality Control

1. Scope

The work consists of developing, implementing, and maintaining a quality control system to ensure that the specified quality is achieved for all materials and work performed.

2. Equipment and materials

Equipment and material used for quality control shall be of the quality and condition required to meet the test specifications cited in the contract. Testing equipment shall be properly adjusted and calibrated at the start of operations and the calibration maintained at the frequency specified. Records of equipment calibration tests shall be available to the engineer at all times. Equipment shall be operated and maintained by qualified operators as prescribed in the manufacturer's operating instructions, the references specified, and as specified in section 10 of this specification. All equipment and materials used in performing quality control testing shall be as prescribed by the test standards referenced in the contract or in section 10.

All equipment and materials shall be handled and operated in a safe and proper manner and shall comply with all applicable regulations pertaining to their use, operation, handling, storage, and transportation.

3. Quality control system

Method 1—The contractor shall develop, implement, and maintain a system of quality control to provide the specified material testing and verification of material quality before use. The system activities shall include procedures to verify adequacy of completed work, initiate corrective action to be taken, and document the final results. The identification of the quality control personnel and their duties and authorities shall be submitted to the contracting officer in writing within 15 calendar days after notice of award.

Method 2—The contractor shall develop, implement, and maintain a system adequate to achieve the specified quality of all work performed, material incorporated, and equipment furnished before use. The system established shall be documented in a written plan developed by the contractor and approved by the contracting officer. The system activities shall include the material testing and inspection needed to verify the adequacy of completed work and procedures to be followed when corrective action is required. Daily records to substantiate the conduct of the system shall be maintained by the contractor. The quality control plan shall cover all aspects of quality control and shall address, as a minimum, all specified testing and inspection requirements. The plan provided shall be consistent with the planned performance in the contractor's approved construction schedule. The plan shall identify the contractor's onsite quality control manager and provide an organizational listing of all quality control personnel and their specific duties. The written plan shall be submitted to the contracting officer within 15 calendar days after notice of award. The contractor shall not proceed with any construction activity that requires inspection until the written plan is approved by the contracting officer.

All methods—The quality control system shall include, but not be limited to, a rigorous examination of construction material, processes, and operation, including testing of material and examination of manufacturer's certifications as required, to verify that work meets contract requirements and is performed in a competent manner.

4. Quality control personnel

Method 1—Quality control activities shall be accomplished by competent personnel. A competent person is: One who is experienced and capable of identifying, evaluating, and documenting that materials and processes being used will result in work that complies with the contract; and, who has authority to take prompt action to remove, replace, or correct such work or products not in compliance. Off-site testing

laboratories shall be certified or inspected by a nationally recognized entity. The Contractor shall submit to the Contracting Officer, for approval, laboratory certification or inspection information. The Contractor shall submit to the Contracting Officer, for approval, the names, qualifications, authorities, certifications, and availability of the competent personnel who will perform the quality control activities.

Method 2—Quality control activities shall be accomplished by competent personnel who are separate and apart from line supervision and who report directly to management. A competent person is one who is experienced and capable of identifying, evaluating, and documenting that material and processes being used will result in work that complies with the contract, and who has authorization to take prompt action to remove, replace, or correct such work or products not in compliance. Offsite testing laboratories shall be certified or inspected by a nationally recognized entity. The Contractor shall submit to the Contracting Officer, for approval, laboratory certification or inspection information. The contractor shall submit to the contracting officer, for approval, the names, qualifications, authorities, certifications, and availability of the competent personnel who will perform the quality control activities.

5. Post-award conference

The contractor shall meet with the contracting officer before any work begins and discuss the contractor's quality control system. The contracting officer and the contractor shall develop a mutual understanding regarding the quality control system, including procedures for correcting quality control issues.

6. Records

The contractor's quality control records shall document both acceptable and deficient features of the work and corrective actions taken. All records shall be on forms approved by the contracting officer, be legible, and be dated and signed by the competent person creating the record.

Unless otherwise specified in section 10 of this specification, records shall include:

- a. Documentation of shop drawings including date submitted to and date approved by the contracting officer, results of examinations, any need for changes or modifications, manufacturer's recommendations and certifications, if any, and signature of the authorized examiner.
- b. Documentation of material delivered including quantity, storage location, and results of quality control examinations and tests.
- c. Type, number, date, time, and name of individual performing quality control activities.
- d. The material or item inspected and tested, the location and extent of such material or item, and a description of conditions observed and test results obtained during the quality control activity.
- e. The determination that the material or item met the contract provisions and documentation that the engineer was notified.
- f. For deficient work, the nature of the defects, specifications not met, corrective action taken, and results of quality control activities on the corrected material or item.

7. Reporting results

The results of contractor quality control inspections and tests shall be communicated to the engineer immediately upon completion of the inspection or test. Unless otherwise specified in section 10, the original plus one copy of all records, inspections, tests performed, and material testing reports shall be submitted to the engineer within one working day of completion. The original plus one copy of documentation of material delivered shall be submitted to the engineer before the material is used.

8. Access

The contracting officer and the engineer shall be given free access to all testing equipment, facilities, sites, and related records for the duration of the contract.

9. Payment

Method 1—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds, after presentation by the contractor of invoices showing related costs and evidence of charges by suppliers, subcontractors, and others for furnishing supplies and work performed. If the total of such payments is less than the lump sum contract price for this item, the remaining balance is included in the final contract payment. Payment of the lump sum contract price constitutes full compensation for completion of the work.

Payment is not made under this item for the purchase cost of material and equipment having a residual value.

Method 2—For items of work for which lump sum prices are established in the contract, payment is prorated and paid in equal amounts on each monthly estimate. The number of months used for prorating shall be the number estimated to complete the work. The final month's prorate amount is made with the final payment. Payment as described above constitutes full compensation for completion of the work.

Payment is not made under this item for the purchase cost of material and equipment having a residual value.

All methods—Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 10.

10. Items of work and construction details

10. Items of work and construction details

In Section 3, Quality control system, Method 2 shall apply, except that the written plan shall be submitted to the Contracting Officer within 10 calendar days after notice of award.

In Section 4, Quality control personnel, Method 2 shall apply.

In Section 9, Payment, Method 2 shall apply.

Items of work to be performed in conformance with this specification and the construction details therefore are:

a. Bid Item 9, Contractor Quality Control

- (1) This item shall consist of furnishing all equipment, tools, materials, and labor and performing all work to accomplish the work defined in Section 1 of this specification.
- (2) The burden of proof that work performed meets contract requirements rests upon the Contractor. Quality assurance inspections and tests by the CLO are for the sole benefit of the CLO. The use of such words as "as approved by the Engineer or Contracting Officer" and words of like import in the specifications or drawings which refer to approval by the Contracting Officer are a part of the CLO's Quality Assurance program and do not relieve the Contractor in any part for the Contractor's Quality Control Responsibilities as specified.
- (3) Quality Control is defined as a rigorous examination and inspection of construction materials, processes and operations to verify that the work being performed meets contract requirements and shall be performed by a qualified Inspector employed by or under contract to the Contractor.
- (4) The Contractor's quality control system shall be approved and operational before commencement of work. The Contractor's Quality Control Personnel shall submit to the on-site NRCS Inspector Daily Quality Control Reports, for each day the Contractor is on site performing work.
- (5) Quality control tests shall be conducted in accordance with the standard test methods identified in the specifications. The Contractor shall provide all equipment required to perform all quality control tests. Testing equipment shall meet the requirements as specified by ASTM test methods and be properly calibrated and serviced.
- (6) All mention of inspection or Inspector in (7) and (8) below is referring to work performed by the Contractor's Quality Control Personnel unless otherwise noted.
- (7) The degree of quality control specified shall be defined as:
 - (a) Periodic review or inspection is defined as the intermittent presence of the Inspector to observe construction operations and/or perform tests and take measurements as needed to determine and document that the work being performed complies with the specifications.
 - (b) Full time inspection is defined as the full-time presence of the Inspector to observe one or more construction operations and/or perform tests and take measurements at critical points in various operations to determine and document that the work being performed complies with the

specifications and to be available for consultation in case of emergency or changes in work conditions.

- (c) Continuous inspection is defined as the continuous presence of the Inspector to observe one construction operation and/or perform tests and take measurements at critical points in the operation to determine and document that the work being performed complies with the specifications and to be immediately available for consultation in case of emergency or changes in work conditions.
- (8) The Contractor's inspection system shall include the following items of work that will require the Contractor's quality control. Any item of work not listed below shall be performed or constructed as shown on the drawings and as specified in the construction and material specifications.
 - (a) The Contractor's inspection on all items not listed in (b) through (f) below shall consist of periodic review of those items to assure that all contract specifications are being met and that the items are being properly installed or carried out.
 - (b) Seeding, Sprigging, and Mulching - Quality control shall consist of determining that the vegetative materials supplied comply with the specifications; that the areas to be vegetated are properly prepared, smoothed and graded; and that sprigging is performed as specified. Full time inspection shall be required.
 - (c) Excavation - Quality control shall consist of full-time inspection to determine that all excavation is being accomplished as specified and that the specified excavation has removed all required or unsuitable materials and that grades are properly documented. The Inspector shall determine that all materials selected for use in backfill of the specified works are free of undesirable materials and that all materials are placed in the designated waste, stockpile or fill areas.
 - (d) Earthfill – The Inspector shall select materials from the required excavations, stockpiles, and/or borrow area(s) to ensure the completed fills are constructed in accordance with the drawings and specifications. The Inspector shall ensure that the foundation conditions are satisfactory prior to placement of fill materials, free of undesirable materials, at the specified moisture content, and properly compacted.

Degree of inspection

Continuous inspection is required at the following times:

- Fills being placed adjacent to conduits and concrete structures
- Moisture and density are not being achieved,
- Fill materials are being compacted with hand-operated compactors.

Full-time inspection shall be required at all other times.

Class A Compaction – The Inspector shall select and obtain representative samples of the materials and have moisture-density curves made (according to ASTM D698 test procedures) of each Unified Soil Classification material to be placed in the specified fills using Class A

compaction. Moisture-density curves shall be completed as necessary to provide data needed when fill operations begin and may be needed as fill progresses to insure correct selection and specified compaction of fill materials. A "One-Point Family of Curves Method" (hereafter referred to as the one-point method) shall be employed to determine the optimum moisture and maximum density values for all fill materials. The procedure for performing the one-point method is as follows:

- construct a family of curves using compaction test data compiled on soil samples tested in accordance with the procedure set forth in ASTM D698,
- make a one-point compaction test specimen from soil material representing the fill material that is being placed (moisture content shall be on the dry side of optimum),
- plot the one-point moisture-density values, obtained from the test, on the family of curves,
- using the curves above and below the plotted point as a guide, draw a new compaction curve through the plotted point,
- use this curve as the control for the moisture and density of the material being placed. Unless otherwise directed by the Engineer, at least one one-point test shall be conducted for every three in-place moisture density tests that are taken.

Unless otherwise directed by the Engineer, at least one one-point test shall be conducted for every three in-place moisture density tests made. More frequent tests shall be required if compaction requirements are not being met and when fills are being placed in critical locations, such as, conduit and concrete backfills. In these instances, continuous inspection shall be required.

- (e) Rock Riprap - Quality control shall consist of full-time inspection during the placement of the rock riprap. The Inspector shall also determine that the rock riprap complies with the specified quality and gradation limits; that proper certifications are provided; that the rock is placed in a manner to prevent damage to the geotextile; that the rock is placed as shown on the drawings and as specified and that segregation of particle sizes has not occurred during delivery or placement. At least one onsite gradation test will be made by the Contractor.
 - (f) Site Preparation Conduit Installation - Quality control shall consist of continuous inspection during the placement of new conduit. In addition, the Inspector shall assure that the conduit is placed to the lines and grade designated, that conduit's joint is properly prepared, and couplers placed correctly.
- (9) The skills, knowledge, abilities and experience needed by the Contractor's quality control personnel to perform the quality control shall be as follows:
- (a) Ability to maintain communications with the landowners, the Contracting Officer and the Contractor.
 - (b) Knowledge of cut and grade staking and earthwork installations.

- (c) Knowledge of soils, including foundation conditions, density and classifications.
 - (d) Knowledge of sampling of soils and determination of density of in-place soils.
 - (e) When applicable, knowledge of acceptable moisture-density test methods and the ability to satisfactorily perform the tests.
 - (f) Ability to interpret survey notes and to prepare quantity computations.
 - (g) Ability to maintain adequate files and records of construction inspection work.
 - (h) Ability to interpret construction drawings and specifications.
 - (i) Knowledge of the United Soil Classification System and the ability to interpret soil classification requirements from the construction drawings.
- (10) Quality control personnel shall also be responsible for maintaining a record of progress with photographs. Construction activities shall be documented with 3 megapixels or greater digital photography in a JPEG file format. Photographs of daily construction work, problems encountered, and unique construction practices shall be taken to insure full coverage of all work performed. The photographs shall be numbered, date and time imprinted and indexed with documentation explaining construction activities shown and must be submitted with the request for final payment.

Construction Specification 95—Geotextile

1. Scope

This work consists of furnishing all material, equipment, and labor necessary for the installation of geotextiles.

2. Quality

Geotextiles shall conform to the requirements of Material Specification 592 and this specification.

3. Storage

Before use, the geotextile shall be stored in a clean, dry location out of direct sunlight, not subject to extremes of either hot or cold temperatures, and with the manufacturer's protective cover undisturbed. Receiving, storage, and handling at the job site shall be in accordance with the requirements listed in ASTM D 4873.

4. Surface preparation

The surface on which the geotextile is to be placed shall be graded to the neat lines and grades as shown on the drawings. It shall be reasonably smooth and free of loose rock and clods, holes, depressions, projections, muddy conditions, and standing or flowing water (unless otherwise specified in section 7 of this specification).

5. Placement

Before the geotextile is placed, the soil surface will be reviewed for quality assurance of the design and construction. The geotextile shall be placed on the approved prepared surface at the locations and in accordance with the details shown on the drawings and specified in section 7 of this specification. It shall be unrolled along the placement area and loosely laid, without stretching, in such a manner that it conforms to the surface irregularities when material or gabions are placed on or against it. The geotextile may be folded and overlapped to permit proper placement in designated area(s).

Method 1—The geotextile shall be joined by machine sewing using thread material meeting the chemical requirements for the geotextile fibers or yarn. Thread shall be polypropylene, polyester, or KevlarTM aramid thread, unless a specific thread type is specified. The thread shall be consist of two parallel stitched rows at a spacing of about 1 inch and shall not cross (except for any required re-stitching). The stitching shall be a lock-type stitch. Each row of stitching shall be located a minimum of 2 inches from the geotextile edge. Unless otherwise specified, the seam tensile strength as measured according to ASTM D4884 shall be a minimum of 90 percent of the geotextile tensile strength in the weakest principal direction as measured according to ASTM D4632.

The geotextile shall be temporarily secured during placement of overlying material to prevent slippage, folding, wrinkling, or other displacement of the geotextile. Unless otherwise specified, methods of securing shall not cause punctures, tears, or other openings to be formed in the geotextile.

Method 2—The geotextile shall be joined by overlapping a minimum of 18 inches (unless otherwise specified) and secured against the underlying foundation material. Securing pins, approved and provided by the geotextile manufacturer, shall be placed along the edge of the panel or roll material to adequately hold it in place during installation. Pins shall be steel or fiberglass formed as a U, L, or T shape or contain "ears" to prevent total penetration through the geotextile. Steel washers shall be provided on all but the U-shaped pins. The upstream or upslope geotextile shall overlap the abutting downslope geotextile. At vertical laps, securing pins shall be inserted through the bottom layers along a line through approximately the mid-point of the overlap. At horizontal laps and across slope labs, securing shall be inserted through the bottom layer only. Securing pins shall be placed along a line about 2 inches in from the edge of the placed geotextile at intervals not to exceed 12 feet unless otherwise specified. Additional pins shall be installed as necessary and where appropriate to prevent any undue slippage or movement of the

geotextile. The use of securing pins will be held to the minimum necessary. Pins are to remain in place unless otherwise specified.

Should the geotextile be torn or punctured, or the overlaps or sewn joint disturbed, as evidenced by visible geotextile damage, subgrade pumping, intrusion, or grade distortion, the backfill around the damaged or displaced area shall be removed and restored to the original approved condition. The repair shall consist of a patch of the same type of geotextile being used and overlaying the existing geotextile. When the geotextile seams are required to be sewn, the overlay patch shall extend a minimum of 1 foot beyond the edge of any damaged area and joined by sewing as required for the original geotextile except that the sewing shall be a minimum of 6 inches from the edge of the damaged geotextile. Geotextile panels joined by overlap shall have the patch extend a minimum of 2 feet from the edge of any damaged area.

Geotextile shall be placed in accordance with the following applicable specification according to the use indicated in section 7:

Slope protection—The geotextile shall not be placed until it can be anchored and protected with the specified covering within 48 hours or protected from exposure to ultraviolet light. In no case shall material be dropped on uncovered geotextile from a height of more than 3 feet.

Subsurface drains—The geotextile shall not be placed until drainfill or other material can be used to provide cover within the same working day. Drainfill material shall be placed in a manner that prevents damage to the geotextile. In no case shall material be dropped on uncovered geotextile from a height of more than 5 feet.

Road stabilization—The geotextile shall be unrolled in a direction parallel to the roadway centerline in a loose manner permitting conformation to the surface irregularities when the roadway fill material is placed on its surface. In no case shall material be dropped on uncovered geotextile from a height of more than 5 feet. Unless otherwise specified, the minimum overlap of geotextile panels joined without sewing shall be 24 inches. The geotextile may be temporarily secured with pins recommended or provided by the manufacturer, but they shall be removed before the permanent covering material is placed.

6. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the quantity of geotextile for each type placed within the specified limits is determined to the nearest specified unit by measurements of the covered surfaces only, disregarding that required for anchorage, seams, and overlaps. Payment is made at the contract unit price. Such payment constitutes full compensation for the completion of the work.

Method 2—For items of work for which specific unit prices are established in the contract, the quantity of geotextile for each type placed with the specified limits is determined to the nearest specified unit by computing the area of the actual roll size or partial roll size installed. The computed area will include the amount required for overlap, seams, and anchorage as specified. Payment is made at the contract unit price. Such payment constitutes full compensation for the completion of the work.

Method 3—For items of work for which specific lump sum prices are established in the contract, the quantity of geotextile is not measured for payment. Payment for geotextiles is made at the contract lump sum price and constitutes full compensation for the completion of the work.

All methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 7 of this specification.

7. Items of work and construction details

7. Items of work and construction details

In Section 5, Placement, Method 2 shall apply.

In Section 6, Measurement and payment, Method 1 shall apply.

Geotextiles shall be non-woven Class I and meet Material Specification 592.

Items of work to be performed in conformance with this specification and the construction details therefore are:

a. Bid Item 10, Geotextile

- (1) This item shall consist of furnishing and placing the geotextile beneath the rock riprap as shown on the drawings.
- (2) Placing the geotextile for the rock riprap includes all excavation, fill and backfill required for keying geotextile into the slope, as shown on the drawings.
- (3) The geotextile shall be placed immediately prior to the placement of rock riprap. Geotextile placement must be approved by the Engineer before rock placement.

Construction Specification 406—Hydro Mulch Seeding

1. Scope

This work consists of preparing the area for treatment, furnishing all labor, materials, equipment, supplies, supervision and tools and performing all work necessary to seed, fertilize, water, maintain, and cleanup of side slopes and finished grades, in accordance with this specifications, for the purpose of temporary erosion control or final stabilization.

The hydro-mulch seeding operations, together with all necessary related work, shall conform to the requirements specified in this section. The area(s) to be hydro-mulch seeded shall be as shown on the construction drawings.

2. Materials

Seed shall comply with the U. S. Department of Agriculture Rules and Regulations – Federal Seed Act. Seed bags shall have tags affixed for inspection in the field. Bags without tags will be rejected. Seed shall be tested and certified by a commercial or state laboratory not more than nine (9) months prior to the date of planting. Tags on seed bags shall show the name of the seed, locality and year of harvest, percentage purity, germination and dormant seed, Johnson grass content and noxious weed content. Seed shall be provided in clean, unopened and undamaged bags. Seed(s) shall be provided with no objectionable material, such as sticks, stems and unthreshed seed heads, which will hinder proper distribution. Seed that is wet, moldy, starting to germinate or otherwise damaged, will not be accepted by Fort Bend County.

Standard seed plan, planting Dates, plant species and seeding rate are as follows:

Species	Application Rate Pounds/Ac	Planting Date
Hulled Common Bermuda Grass 98/88	40	Jan 1 to Mar 31
Unhulled Common Bermuda Grass 98/88	40	
Hulled Common Bermuda Grass 98/88	40	Apr 1 to Sep 30
Hulled Common Bermuda Grass 98/88	40	Oct 1 to Dec 31
Unhulled Common Bermuda Grass 98/88	40	
Annual Rye Grass (Gulf)	30	

Seeding shall be applied in accordance with the following:

- Planting dates are approximate, the Engineer will determine which seed to use prior to start of seeding.
- Seeding rate for “Pure Live Seed” is used to determine the actual application rate of bulk material to obtain.
- $PLS = (\% \text{ germination} \times \% \text{ purity})$ 98x88 = 86.2%PLS.
- $\text{Rate}/PLS = \text{LBS of seed needed for application}$ 1/. 807= 1. 24 lbs. of seed needed/1000 SF.
- Certified Bermuda must have a Blue Tag and tested by an accredited seed testing lab.

Commercial fertilizer shall be applied to the entire seeded area at the prescribed rates. All fertilizer used shall be delivered in bags or containers clearly labeled showing analysis. A pelleted or granulated fertilizer shall be used with an analysis of 10-10-5 (nitrogen – phosphoric acid – potash), unless otherwise approved by the Engineer. The figures in the analysis represent the nitrogen, phosphoric acid and potash nutrients respectively as determined by the methods of the Association of Official Agricultural Chemists.

The sources of nitrogen in the fertilizer shall be roughly balanced between ammoniacal (quick release) and nitrate nitrogen (slow release). Fertilizer shall be readily water-soluble.

Fertilizer of a different analysis may be substituted as approved by the Engineer. It shall be pelleted or granulated fertilizer with a lower concentration. The total amounts of nutrients furnished and applied per acre shall equal or exceed that specified for each nutrient.

Mulch shall be virgin wood cellulose fiber made from whole wood chips. Rate of application shall be 2000 pounds per acre. Soil stabilizers shall be applied at a rate of 40 pounds per acre. On side slopes Terra Type III (or approved equal) shall be used. On all other areas Terra Tack I (or approved equal) shall be used. Alternatively, Ultra Bond 2002 (or approved equal) shall be applied at a rate of one gallon per square yard in three applications. First application shall be at a rate of 1/2 gallon per square yard followed by another application in about two weeks at a rate of 1/4 gallon per square yard. The third application shall follow in about two months at a rate of 1/4 gallon per square yard. The concentrate shall be diluted in 1:5 ratio with water or as recommended by the manufacturer.

Wood cellulose fiber mulch, for use in the grass seed and fertilizer, shall be processed in such a manner that it will not contain any germination or growth inhibiting factors. It shall be dyed an appropriate color to allow visual metering of its application. The wood cellulose fibers shall have the property of becoming evenly dispersed and suspended when agitated in water. When sprayed uniformly on the surface of the soil, the fibers shall form a blotter-like ground cover which readily absorbs water and allows infiltration to the underlying soil. Weight specifications from suppliers, shall refer only to the air-dry weight of the fiber. The mulch material shall be supplied in packages having a gross weight not greater than 100 pounds and must be marked by the manufacturer to show the dry weight content. Suppliers shall be prepared to certify that laboratory and field testing of their product has been accomplished and that it meets all the preceding requirements.

Water shall be free from oil, acid, alkali, salt and other substances harmful to the growth of grass. The water source shall be subject to approval, prior to use.

3. Hydro mulch seeding operation

Immediately after the finished grade has been approved, begin hydro-mulching operations to reduce erosion and excessive weed growth.

Hydraulic equipment used for the application of fertilizer, seed and slurry of prepared wood fiber mulch shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend and homogeneously mix a slurry containing up to 40 pounds of fiber plus a combined total of 70 pounds of fertilizer solids for each 100 gallons of water. The slurry distribution lines shall be large enough to prevent stoppage. The discharge line shall be equipped with a set of hydraulic spray nozzles which provide even distribution of the slurry on the area to be seeded. The slurry tank shall have a minimum capacity of 800 gallons and shall be mounted on a traveling unit, which may either be self-propelled or drawn with a separate unit which will place the slurry tank and spray nozzles within sufficient proximity to the areas to be seeded, so as to provide uniform distribution without waste. The Engineer may authorize equipment with a smaller tank capacity, provided the equipment has the necessary agitation system and sufficient pump capacity to spray the slurry in a uniform coat.

Slurry preparation shall take place on the worksite. The slurry preparation should begin by adding water to the tank when the engine is at half throttle. When the water level has reached the height of the agitator shaft, good re-circulation shall be established, and seed shall be added. Fertilizer shall then be added, followed by wood pulp mulch. The wood pulp mulch shall only be added to the mixture after the seed and when the tank is at least one-third filled with water. The engine throttle shall be opened to full speed when the tank is half filled with water. All the wood pulp mulch shall be added by the time the tank is two-thirds to three-fourths full. Spraying shall commence immediately when the tank is full. The

operator shall spray the area with a uniform visible coat, by using the green color of the wood pulp as a guide.

4. Application

The Contractor shall obtain approval of hydro-mulch area preparation from the Engineer prior to application. If rain is imminent, then the application of hydro mulch seeding operation and fertilizer shall be postponed until weather conditions exist such that the potential for the runoff of the slurry and fertilizer from the site is minimized.

Operators of hydro-mulching equipment shall be thoroughly experienced in this type of application. Apply the specified slurry mix to form a uniform mat at the specified rate. The Contractor shall avoid getting the hydro mulch on paved areas. Keep paved and planting areas clean during maintenance operations. Contractor shall confine hydro-mulching within the areas designated on the plans and keep it from contact with other plant material. Immediately after application, thoroughly wash off any plants, planting areas or paved areas not intended to receive slurry mix.

If the Engineer notes any unmulched areas after hydro-mulching, the Contractor shall be required to seed the unmulched areas with the grasses that were to have been planted at no additional cost to Harris County.

5. Contractor's Maintenance & Guarantee Period

It shall be the responsibility of the Contractor to maintain all hydro mulch seeded areas until satisfactory growth has occurred as determined by the Engineer and for 60 days after the successful completion of all punch list items. Maintenance shall consist of watering, weeding, repairing of all erosion, and reseeding, as necessary to establish a uniform stand of the specified grasses. A minimum of 95 percent of the area seeded shall be covered with the specified grass with no bare or dead spots greater than 10 square feet. The Contractor shall make as many repeat seedings as necessary to achieve the required level of coverage. Such reseeding is to be performed within 14 calendar days of notification by the Engineer.

The Contractor shall be responsible for 1 mowing per month in the months of April through October. The Contractor shall also be responsible for 1 mowing every 6 weeks in the months of November through March. In addition, the Contractor shall water all grassed areas as often as necessary to establish satisfactory growth and to maintain its growth throughout the duration of the project; including the 60-day period after the punch list is completed as described above.

6. Submittal Required

The Contractor shall submit copy of seed tag(s) and letter from the supplier attesting that the seed meets the requirements as stated herein. Certification shall include common name; botanical name, percent by weight of each plant species; year of harvest; percent purity, germination and dormant seed; percent noxious weed content; and date of certification. The Contractor shall certify on the application of the project.

7. Measurement and payment

The unit of measurement for all work performed and materials furnished, as described herein, shall be by the acre or per station as indicated in the bid documents. Measurement shall be done upon completion of the work performed within the limits shown on the drawings and as described herein. The area measured for payment will be computed to the nearest 1/10 acre or station.

Payment for hydro-mulch seeding will be made at the contract unit price per acre or per station and includes final grading, mulch, seed, fertilizer, watering, maintenance and clean-up. Additional payment shall not be made for those areas that are reseeded as provided in Section 4 above.

8. Items of work and construction details

8. Items of work and construction details

When working on slopes which are steeper than 3:1 horizontal to vertical, all rubber tire equipment on the slope will be held with truck or tractor and winch line with the truck or tractor operating along the crown of the channel or other suitable flat surface. As an alternative, track (crawler) equipment with a low center of gravity may work up and down the slopes to perform the work without a winch line requirement when operated in accordance with applicable OSHA requirements.

Items of work to be performed in conformance with this specification and the construction details therefore are:

- b. Bid Item 11, Vegetation, Hydro Mulch Seeding
 - (1) This item shall consist of preparing the seedbed and furnishing and applying the hydro mulch mixture the designated areas as shown on the drawings.
 - (2) The rate of application of the fertilizer shall be forty-eight (48) pounds of nitrogen (N), forty-eight (48) pounds of phosphorous (P) and twenty-four (24) pounds of potassium (K) per acre).

Construction Specification 420 – Site Preparation

1. Scope

The work shall consist of the excavation and/or earthfill placement required by the drawings and specifications.

2. Classification

Site preparation will be classified in accordance with the following definitions.

Class A Site Preparation. Site preparation requiring a combined volume not more than 200 cubic yards of required excavations and/or earthfill placement.

Class B Site Preparation. Site preparation requiring a combined volume of 201 to ,400 cubic yards of required excavations and/or earthfill placement.

Class C Site Preparation. Site preparation requiring a combined volume of 401 to 600 cubic yards of required excavations and/or earthfill placement.

Class D Site Preparation. Site preparation requiring a combined volume of 601 to 800 cubic yards of required excavations and/or earthfill placement.

Class E Site Preparation. Site preparation requiring a combined volume of 801 to 1,000 cubic yards of required excavations and/or earthfill placement.

Class F Site Preparation. Site preparation requiring a combined volume of 1,001 to 1,200 cubic yards of required excavations and/or earthfill placement.

Class G Site Preparation. Site preparation requiring a combined volume of 1,201 to 1,500 cubic yards of required excavations and/or earthfill placement.

Class H Site Preparation. Site preparation requiring a combined volume of 1,501 to 2,000 cubic yards of required excavations and/or earthfill placement.

Class I Site Preparation. Site preparation requiring a combined volume of 2,001 to 2,500 cubic yards of required excavations and/or earthfill placement.

Class J Site Preparation. Site preparation requiring a combined volume of 2,501 to 3,000 cubic yards of required excavations and/or earthfill placement.

3. Excavation

Excavations required to prepare the site shall be done in accordance with the requirements of Construction Specification 21. All excavations shall be unclassified excavations. The depths of excavations as shown on the construction drawings are approximate. The actual depth and extent of excavations will be determined after examination of materials encountered.

Suitable materials resulting from required excavations shall be used for the required earthfills and backfills. Any materials not utilized in the required fills shall be disposed of in the waste area. These materials shall be approved on site prior to placement.

In Construction Specification 21 the following shall apply:

Section 4, Use of excavated materials – Method 1 – There is no guarantee that materials obtained from the specified excavations may be used directly in specified fill areas. Stockpiling of selected materials to insure their availability for use in specific zones of the fill areas may be required. Additional compensation will not be made for stockpiling of excavated materials. Cost for stockpiling of excavated materials shall be included in the compensation for the bid items for Site Preparation.

Section 5, Disposal of waste materials – Method 1 – The disposal of the excavated materials shall include transporting, depositing, and spreading the materials to and on the designated fill or waste areas. The area on which each load of material shall be deposited shall be approved on-site beforehand. The surfaces of waste areas shall be dressed to be reasonably smooth and to be free of mounds, dips, windrows, or depressions which would prevent the safe operation of ordinary farm equipment thereon and the finished surface of waste areas will not be made. Cost for disposal of excavated materials and dressing of the surfaces of waste areas will be included in the compensation for the bid items for Site Preparation.

4. Earthfill

Earthfills required to prepare the site shall be placed in accordance with the requirements of Construction Specification 23. All compaction shall be Class C in accordance with Section 6 of Construction Specification 23. Compaction shall be accomplished by five (5) passes of a pad roller, vibratory roller, hand operated pneumatic tamper or an approved equivalent method. The hand operated tamper shall only be used adjacent to pipes or walls. A roller weighing at least 100 pounds per square inch of bearing area shall be used. The in-place moisture content of the earthfill material shall be range from 12% to 18% by weight as tested using a speedy moisture tester, or other appropriate methods. The moisture content of the backfill materials when placed shall be adjusted as necessary to meet the requirements. Fill lifts shall not be more than 6" thick prior to compaction and the maximum allowable particle size shall be 6". Earth backfill lifts adjacent to pipes or walls shall not be more than 4" thick prior to compaction, and the maximum particle size shall be 3".

One pass of the roller shall be defined as the required number of successive trips, which will ensure complete coverage of the entire surface area of each lift being processed. Each pass of the compacting equipment shall be offset so that the total compactive effort shall be distributed evenly over the entire area.

5. Measurement and payment

The number of each class of site preparation will be counted. Payment for each class of site preparation shall be made at the contract lump sum price for that class of site preparation. Such payment will constitute full compensation for all labor, equipment, materials and all other items necessary and incidental to the completion of the work.

Compensation for any item of work described in the contract but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and items to which they are made subsidiary are identified in Section 6 of this specification.

6. Items of Work and Construction Details

Waste areas and borrow areas will be designated at the time of site showing.

The class of site preparation is based on quantities derived from preliminary survey data. Variations in these quantities may be possible when the work is performed. However, modification to the contract will not be made for work performed more than these estimated quantities except under the following conditions:

1. The variation must exceed 10% more than the maximum quantity established for the class of site preparation and have a minimum contract value for the additional work more than \$1,000.00. (The contract value is to be determined by dividing the lump sum amount in the bid schedule by the applicable maximum yardage for the class of site preparation shown for the contract item in the table of quantities.) If the variation exceeds 10% and \$1,000.00, the class of site preparation will be adjusted and paid for at the rate for the adjusted class.
2. It is the Contractor's responsibility to submit proof that the estimated site preparation class in question exceeds the percentage and cost parameters in item (a) above. Proof will consist of applicable survey data or other measurements made by a qualified surveyor in accordance with recognized professional practice and the contract specifications.
3. The survey data or other measurements as applicable shall be presented to the NRCS prior to any work on the contract item for which the quantity is questioned. Three working days shall be provided to the NRCS to verify data prior to the beginning of work for this contract item.
4. A final survey or other measurements as applicable shall be made and presented to the NRCS after the work is completed which will allow measurement for the quantity in question. If this survey data indicates justification for a contract modification within the parameters of item (a) above, it will be made in accordance with the change clause contained in the contract.

Site Preparation shall include the removal of existing pipes, concrete rubble or other structures required for installation of the sheet pile walls.

Site Preparation shall include the installation of culverts provided by the county as shown on the drawings. Installation shall include foundation preparation, placement, backfill, and all other work necessary to install the culverts.

Road surfacing material (gravel, asphalt, and oil sand) shall be stockpiled separate from other excavated materials. Stockpiled road surfacing material shall be placed after all other earthfill has been placed, including any additional fill materials provided by the county. The stockpiled road surface materials shall be placed as a final surface.

The items of work subsidiary to Site Preparation are Clearing, Class C as specified in Construction Specification 1 and Topsoil as specified in Construction Specification 26.

Items of work to be performed in conformance with this specification and the construction details therefore are:

- a. Bid Item 12, Earthwork – Pipe Replacement, Site 14, Class A
 - (1) The item shall include the earthwork required to remove existing drainage pipes and installation of new drainage pipes as shown on the drawings.
 - (2) The removed drainage pipe shall be disposed of offsite at an approved location of the contractors own choosing.
- b. Bid Item 13, Earthwork– Pipe Replacement, Site 15, Class A

- (1) The item shall include the earthwork required to remove existing drainage pipes and installation of new drainage pipes as shown on the drawings.
 - (a) The removed drainage pipe shall be disposed of offsite at an approved location of the contractors own choosing.
- c. Bid Item 14, Earthwork– Pipe Replacement, Site 16, Class A
 - (1) The item shall include the earthwork required to remove existing drainage pipes and installation of new drainage pipes as shown on the drawings.
 - (2) The removed drainage pipe shall be disposed of offsite at an approved location of the contractors own choosing.

Material Specification 523—Rock for Riprap

1. Scope

This specification covers the quality of rock to be used in the construction of rock riprap.

2. Quality

Individual rock fragments shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. Except as otherwise specified, the rock fragments shall be angular to subrounded. The least dimension of an individual rock fragment must be not less than one-third the greatest dimension of the fragment. ASTM D4992 provides guidance on selecting rock.

Except as otherwise provided, the rock must be tested and must have the following properties:

Rock type 1

- **Bulk specific gravity (saturated surface-dry basis)**—Not less than 2.5 when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Absorption**—Not more than 2 percent when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Soundness**—The weight loss in five cycles must not be more than 10 percent when sodium sulfate is used or more than 15 percent when magnesium sulfate is used.

Rock type 2

- **Bulk specific gravity (saturated surface-dry basis)**—Not less than 2.5 when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Absorption**—Not more than 2 percent when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Soundness**—The weight loss in five cycles must be not more than 20 percent when sodium sulfate is used or more than 25 percent when magnesium sulfate is used.

Rock type 3

- **Bulk specific gravity (saturated surface-dry basis)**—Not less than 2.3 when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Absorption**—Not more than 4 percent when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Soundness**—The weight loss in five cycles must be not more than 20 percent when sodium sulfate is used or more than 25 percent when magnesium sulfate is used.

3. Methods of soundness testing

Rock cube soundness—The sodium or magnesium sulfate soundness test for all rock types (1, 2, or 3) must be performed on a test sample of $5,000 \pm 300$ grams of rock fragments, reasonably uniform in size and cubical in shape, and weighing, after sampling, about 100 grams each. They must be obtained from rock samples that are representative of the total rock mass, as noted in ASTM D4992, and that have been sawed into slabs as described in ASTM D5121. The samples shall further be reduced in size by sawing the slabs into cubical blocks. The thickness of the slabs and the size of the sawed fragments must be determined by the size of the available test apparatus and as necessary to provide, after sawing, the approximate 100-gram samples. The cubes shall undergo five cycles of soundness testing in accordance with ASTM C88.

Internal defects may cause some of the cubes to break during the sawing process or during the initial soaking period. Do not test any of the cubes that break during this preparatory process. Such breakage, including an approximation of the percentage of cubes that break, must be noted in the test report.

After the sample has been dried following completion of the final test cycle and washed to remove the sodium sulfate or magnesium sulfate, the loss of weight shall be determined by subtracting from the original weight of the sample the final weight of all fragments that have not broken into three or more fragments.

The test report shall show the percentage loss of the weight and the results of the qualitative examination.

Rock slab soundness—When specified, the rock shall also be tested in accordance with ASTM D5240. Deterioration of more than 25 percent of the number of blocks is cause for rejection of rock from this source. Rock must also meet the requirements for average percent weight loss stated below.

- For projects located north of the Number 20 Freeze-Thaw Severity Index Isoline (fig. 523-1), unless otherwise specified, the average percent weight loss for Rock Type 1 must not exceed 20 percent when sodium sulfate is used or 25 percent when magnesium sulfate is used. For Rock Types 2 and 3, the average percent weight loss must not exceed 25 percent for sodium sulfate soundness or 30 percent for magnesium sulfate soundness.
- For projects located south of the Number 20 Freeze-Thaw Severity Index Isoline, unless otherwise specified, the average percent weight loss for Rock Type 1 must not exceed 30 percent when sodium sulfate is used or 38 percent when magnesium sulfate is used. For Rock Types 2 and 3, the average percent weight loss must not exceed 38 percent for sodium sulfate soundness or 45 percent for magnesium sulfate soundness.

Figure 523-1 Number 20 freeze-thaw severity index isoline (map approximates the map in ASTM D5312)



4. Field durability inspection

Rock that fails to meet the material requirements stated above (if specified), may be accepted only if similar rock from the same source has been demonstrated to be sound after 5 years or more of service under conditions of weather, wetting and drying, and erosive forces similar to those anticipated for the rock to be installed under this specification.

A rock source may be rejected if the rock from that source deteriorates in less than 5 years under similar use and exposure conditions expected for the rock to be installed under this specification, even though it meets the testing requirements stated above.

Deterioration is defined as the loss of more than one-quarter of the original rock volume, or severe cracking that would cause a block to split. Measurements of deterioration are taken from linear or surface area particle counts to determine the percentage of deteriorated blocks. Deterioration of more than 25 percent of the pieces is cause for rejection of rock from the source.

5. Grading

The rock must conform to the specified grading limits after it has been placed within the matrix of the rock riprap. Grading tests must be performed, as necessary, according to ASTM D5519, Method A, B, or C, as applicable.

Material Specification 592—Geotextile

1. Scope

This specification covers the quality of geotextile, including geotextile for temporary silt fence.

2. General Requirements

Fiber (thread and yarn) used in the manufacture of geotextile must consist of synthetic polymer composed of a minimum of 85 percent by weight polypropylene, polyester, polyamide, polyethylene, polyolefin, or polyvinylchloride. The fiber must be formed into a stable network of filaments retaining dimensional stability relative to each other. The geotextile must be free of defects such as holes, tears, and abrasions. The geotextile must be free of any chemical treatment or coating that significantly reduces its porosity. Fibers must contain stabilizers, inhibitors, or both to enhance resistance to ultraviolet light. Geotextile, other than that used for temporary silt fence, must conform to the requirements in tables 592–1 or 592–2, as applicable. Geotextile used for temporary silt fence must conform to ASTM D6461.

Thread used for factory or field sewing must be of a color contrasting to the color of the fabric and made of high-strength polypropylene, polyester, or polyamide material. It must be as resistant to ultraviolet light as the geotextile being sewn.

3. Classification

There are two geotextile classifications, woven and nonwoven. Geotextile for temporary silt fence may be either woven or nonwoven. Slit film woven geotextile may not be used except for temporary silt fence.

Woven geotextiles are made from fabric that is formed by the uniform and regular interweaving of the threads or yarns in two directions. Woven fabrics must be manufactured from monofilament yarn formed into a uniform pattern with distinct and measurable openings, retaining their position relative to each other. The fabric must have a selvedge edge or otherwise be finished to prevent unraveling.

Nonwoven geotextiles are made from fabric that is formed by a random placement of threads in a mat and bonded by needle punching, heat bonding, or resin bonding. Nonwoven geotextile must have distinct but variable small openings, retaining their position relative to each other when bonded. The use of heat- or resin-bonded nonwovens is restricted as specified in note 2 of table 592-2.

4. Sampling and Testing

The geotextile must conform to tables 592–1, 592–2, or ASTM D6461 as applicable for the product type shown on the label. Documentation described in either a. or b. below is required to verify the product meets the specified requirements:

Product properties as listed in the latest edition of the "Specifiers Guide," Geosynthetics (Industrial Fabrics Association International, 1801 County Road B, West Roseville, MN 55113-4061 or at <http://www.geosindex.com>), and that represent average roll values, are acceptable.

Test data from the geotextile production run for each of the specified tests listed in tables 592–1, 592–2, or ASTM D6461, as applicable.

5. Shipping and Storage

Each roll of geotextile must be labeled or tagged to clearly identify the brand, class, and the individual production run in accordance with ASTM D4873. The geotextile must be shipped and transported in rolls wrapped with a cover for protection from moisture, dust, dirt, debris, and ultraviolet light. The cover must be maintained undisturbed to the maximum extent possible before placement.

Material Specification 592 Geotextile (continued)

Table 592–1 Requirements for woven geotextiles ^{1/}

Property	Test method	Class I	Class II	Class III	Class IV
Grab tensile strength (lb)	ASTM D4632	247 minimum	180 minimum	180 minimum	315
Elongation at failure (%)	ASTM D4632	<50	<50	<50	<50
Trapezoidal tear strength (lb)	ASTM D4533	90 minimum	67 minimum	67 minimum	112 minimum
Puncture strength (lb)	ASTM D6241	495 minimum	371 minimum	371 minimum	618 minimum
Ultraviolet stability (% retained strength)	ASTM D4355	50 minimum	50 minimum	50 minimum	70 minimum
Permittivity sec ⁻¹	ASTM D4491		as specified		
Apparent opening Size (AOS) ^{2/}	ASTM D4751		as specified		
Percent open area (POA) (%)	USACE ^{3/} CWO-02215-86		as specified		

^{1/} All values are minimum average roll values (MARV) in the weakest principal direction, unless otherwise noted.

^{2/} Maximum average roll value.

^{3/} Note: CWO is a USACE reference.

Material Specification 592 Geotextile (continued)

Table 592–2 Requirements for nonwoven geotextiles ^{1/}

Property	Test method	Class I ^{2/}	Class II ^{2/}	Class III ^{2/}	Class IV ^{2/}
Grab tensile strength (lb)	ASTM D4632 grab test	202 minimum	157 minimum	112 minimum	202 minimum
Elongation at failure (%)	ASTM D4632	50 minimum	50 minimum	50 minimum	50 minimum
Trapezoidal tear strength (lb)	ASTM D4533	79 minimum	56 minimum	40 minimum	79 minimum
Puncture strength (lb)	ASTM D6241	433 minimum	309 minimum	223 minimum	433 minimum
Ultraviolet light (retained strength) (%)	ASTM D4355	50 minimum	50 minimum	50 minimum	50 minimum
Permittivity sec ^{–1}	ASTM D4491	0.70 minimum or as specified			
Apparent opening size (AOS) (mm) ^{3/}	ASTM D4751	0.22 maximum or as specified			

- ^{1/} All values are minimum average roll values (MARV) in the weakest principal direction, unless otherwise noted.
- ^{2/} Needle punched geotextiles may be used for all classes. Heat-bonded or resin-bonded geotextiles may be used for class IV only.
- ^{3/} Maximum average roll value.

STORM WATER POLLUTION PREVENTION PLAN

**FUNDED BY:
FEDERAL EMERGENCY MANAGEMENT AGENCY**

FORT BEND COUNTY DRAINAGE DISTRICT

FLAT BANK/STEEP BANK

CHANNEL BANK STABILIZATION

FLAT BANK/STEEP BANK CREEK CHANNEL BANK STABILIZATION

STORM WATER POLLUTION PREVENTION PLAN

SITE DESCRIPTION

Project Name and Location:

Flat/Steep Bank Creeks channel bank stabilization site is in the Missouri City, Fort Bend County, Texas. The work starts and ends at:

Start	Latitude: 29° 32' 21.73" N	Longitude: 95° 33' 10.59" W
End	Latitude: 29° 31' 23.58" N	Longitude: 95° 33' 42.95" W

Primary Operators - Name and Address:

Construction Contractor (To be determined)

Secondary Operator - Name and Address:

Fort Bend County Drainage District
1124 Blume Rd
Richmond, Texas 77471

DESCRIPTION

This project will consist of stabilizing the channel banks along Flat Bank and Steep Bank Creeks. The channel has multiple slope failures along the length. The banks became saturated as result of high water from Hurricane Harvey and failed when the water receded.

The channel banks will be reconstructed by removing low density materials and reconstructing the slope with compacted earthfill on a flatter slope than the existing. The toe of the slope will be protected with rock riprap. The completed slopes will be vegetated above the rock.

Soil disturbing activities will include constructing the access road; excavation of the channel banks; reconstructing the slopes with compacted earthfill; and vegetating the disturbed areas.

SITE AREA

The work limits are approximately 27 acres of which 24 acres will be disturbed by construction activities and will require re-vegetating.

SEQUENCE OF MAJOR ACTIVITIES

The order of activities will be as follows:

1. Construct access and construction campsite.
2. Construct surface water control measures
3. Excavation of channel banks
4. Placing rock riprap
5. Build slope above rock with compacted earthfill
6. Vegetate disturbed areas

NAME OF RECEIVING WATERS

Flat Bank and Steep Bank are tributaries of Brazos River and flows into the Gulf of Mexico.

Data provided by the U.S. Fish and Wildlife Service indicates that Fort Bend County is listed to provide habitat for several endangered species. However, the general area of the channel and its construction does not pose a danger to these species.

There are no properties listed or eligible for listing on the National Register of Historic Places in the vicinity of the work area.

CONTROLS

EROSION AND SEDIMENT CONTROL STABILIZATION PRACTICES

Temporary Stabilization - The average annual rainfall in the area is approximately 47 inches. Sediment filters (filter fabric sediment fences) will be used as needed during construction to help stabilize disturbed areas. Sediment filters are to be provided along the downstream boundary of any area which is stripped of vegetation during any phase of construction. Sediment filters are also to be provided on the downstream side of any soil material which is stockpiled for more than 14 days. All disturbed areas shall be hydro mulch seeded after construction.

The construction ingress and egress will be stabilized with gravel or other stabilization materials to prevent the tracking of mud onto public streets by vehicles leaving the construction site.

All pollution control measures will be maintained in a functional condition as long as needed during the construction operation.

Permanent Stabilization - All slopes cut in soil, earthfill slopes and disturbed areas will be protected against riling and erosion by vegetation.

Structural Practices – No structural measures are anticipated for erosion and sediment control.

STORM WATER MANAGEMENT

Storm water runoff from the construction area will be filtered with sediment fences or other measures as needed around the stockpile areas, campsite and other disturbed areas as described above for EROSION AND SEDIMENT CONTROL. Where construction roads cross low areas subject to concentrated storm water flow, culverts will be installed.

OTHER CONTROLS

WASTE DISPOSAL

Waste Materials:

All organic materials from the site preparation and clearing and grubbing operations will be either chipped and used on site for mulch or disposed of offsite in accordance with all state and local regulations. All inorganic materials from the site preparation will be disposed of offsite in accordance with all state and local regulations. All trash and construction debris will be collected and disposed of offsite.

Hazardous Waste:

All chemical and hazardous waste materials will be disposed of offsite in accordance with local or state regulations or as recommended by the manufacturer.

Sanitary Waste:

All sanitary waste will be collected from portable units and disposed of in accordance with applicable regulations.

Dust Control:

Dust will be controlled on all haul roads and access roads by sprinkling with water.

CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

All local and State regulations will be adhered to concerning the burning of organic materials or disposal of organic, chemical, and sanitary waste. The Texas Commission of Environmental Quality (TCEQ) has issued Texas Pollutant Discharge Elimination System (TPDES) permits for storm water discharges for construction activities under Section 402(p) of the CWA. There is no other applicable State or Federal requirements for sediment and erosion site plans or storm water site management site plans.

MAINTENANCE AND INSPECTION PROCEDURES

The Contractor, _____, will be responsible for intermittent review and inspection of the operation and maintenance of all pollution control measures throughout the life of the contract. Inspection of the conditions and the need for repair shall be made after each storm rainfall exceeding 0.5 inch. Daily inspections of the need for cleanup of chemical spills and sanitary facilities will be performed.

Routine inspection of disturbed areas, storage areas, stockpiled materials, traffic areas, and the silt fences shall be made every fourteen (14) days.

A maintenance inspection report will be made after each inspection. The report will be documented in the contractor's and the project engineer's daily job diary maintained on the job. The report will be prepared in accordance with Part III of the general permit.

The job diary will document the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated. Each report will be attached to the Storm Water Pollution Prevention Plan (SWP3) and remain with the SWP3 on site. Each report will be retained as part of the SWP3 for at least three (3) years from the date the site is finally stabilized.

The SWP3, a copy of the permit or permit language, and all inspection reports shall be available at a central location on site for the use of all those who have responsibilities under the SWP3.

NON-STORM WATER DISCHARGES

It is expected that the following non-storm water discharges may occur from the site during the construction period:

Water for dust control

INVENTORY FOR POLLUTION PREVENTION PLAN

The following list of materials or substances are expected to be present during construction:

Petroleum Based Products
Paint
Plastics
Wood and Lumber
Rock riprap
Chemical Fertilizers
Antifreeze

SPILL PREVENTION

MATERIAL MANAGEMENT PRACTICES

The following are the Material Management Practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff:

GOOD HOUSEKEEPING

The following good housekeeping practices will be followed onsite during construction project.

An effort will be made to store only enough product required to do the job.

All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.

Products will be kept in their original containers with the original manufacturer's label.

Whenever possible, all products will be used up before disposing of the container.

Manufacturers' recommendations for proper use and disposal will be followed.

The Contractor's job superintendent will be responsible for the proper use, storage, and disposal of materials onsite.

HAZARDOUS PRODUCTS

These practices will be used to reduce the risks associated with hazardous materials.

Products will be kept in original containers unless they are not resealable.

Original labels and materials safety data will be retained.

If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.

PRODUCT SPECIFIC PRACTICES

PETROLEUM PRODUCTS:

All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled. The storage and dispensing of all petroleum products will be in accordance with part 1926.152 of the OSHA Construction Industry Safety and Health Standards. All spills of petroleum products will be cleaned up within 7 days. All contaminated soils will be removed from the site and disposed of in accordance with State and local regulations.

PAINTS:

All containers will be tightly sealed and stored when not required for use. Excess paint will not be disposed of onsite but will be disposed of in accordance with manufacturers' instructions or State and local regulations.

SPILL CONTROL PRACTICES

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

Manufacturers' recommended methods for spill cleanup will be followed.

All spills of hazardous materials will be cleaned up immediately after discovery.

Spills of toxic or hazardous materials will be reported to the appropriate State or local government agency.

Contractor, _____, will be responsible for spill prevention and cleanup.

STORM WATER POLLUTION PREVENTION PLAN CERTIFICATION

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

Adam Wright
Project Manager
Fort Bend County Drainage District
Rosenburg, Texas

Date

CONTRACTOR CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the general Texas Pollutant Discharge Elimination System (TPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification. I also understand that I am responsible for all on site requirements of the Storm Water Pollution Discharge Plan.

Name: _____

Date: _____

Title: _____

Firm: _____

Address: _____

Phone: _____

SUBCONTRACTOR CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the general Texas Pollutant Discharge Elimination System (TPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Name: _____ Date: _____

Title: _____

Firm: _____

Address: _____

Phone: _____

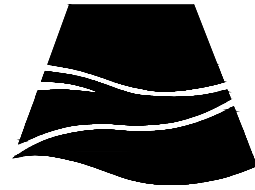
Name: _____ Date: _____

Title: _____

Firm: _____

Address: _____

Phone: _____



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F-4324

FORT BEND COUNTY DRAINAGE DISTRICT

FLAT BANK/STEEP BANK – CHANNEL REPAIR
FORT BEND COUNTY, TEXAS

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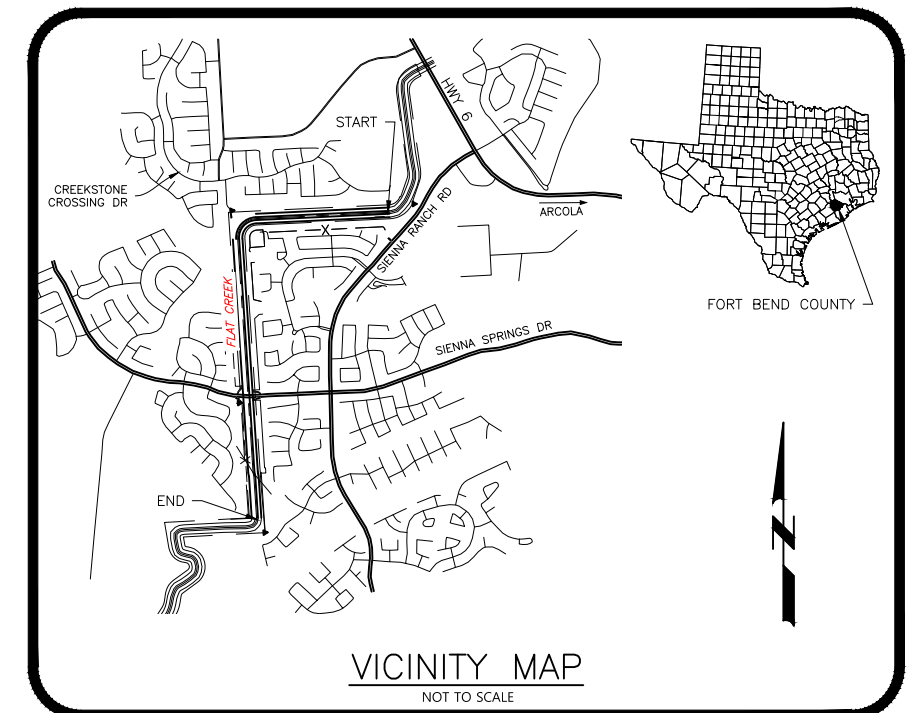
COOPERATING WITH
FEMA PROJECT 11898

2022
ENGINEERING JOB CLASS VI
CONSTRUCTION DRAWINGS APPROVED



4/29/2022
DATE

INDEX OF DRAWINGS	
SHEET NO.	TITLE
—	COVER
1	LEGEND AND CONSTRUCTION NOTES
2	GENERAL PLAN
3	SITE 14 PLAN AND SECTION
4	SITES 15 AND 16 PLANS AND SECTIONS
5	SITES 17 AND 18 PLANS AND SECTIONS
6	SITE 19 PLAN AND SECTION
7-9	GEOLOGIC INVESTIGATION BORE HOLES
10	STORMWATER POLLUTION PREVENTION PLAN
11	STORMWATER POLLUTION PREVENTION PLAN DETAILS



SYMBOLS LEGEND

	EXISTING PROPERTY LINE
	EXISTING CONTOUR
	STREAM
	EXISTING FENCE
	EXISTING OVERHEAD ELECTRIC LINES
	EXISTING UNDERGROUND ELECTRIC LINES
	EXISTING WASTEWATER LINES
	CITY LIMITS
	TEMPORARY EASEMENT
	PERMANENT EASEMENT
	LIMITS OF CONSTRUCTION
	SILT FENCE
	100-YR FLOOD INUNDATION LEVEL
	PROPOSED FENCE
	PROPOSED HANDRAIL
	EXISTING BOREHOLES
	EXISTING POWER POLE
	EXISTING BENCHMARK
	EXISTING PIEZOMETER
	DIRECTION OF STORMWATER RUNOFF
	WATER LEVELS
	FLEX ROAD
	CONCRETE
	STABILIZED CONSTRUCTION ENTRANCE
	HIGH-SERVICE ROCK BERM
	EXISTING WETLAND
	CUT SLOPE
	FILL SLOPE
	ORIENTATION WHEN LOOKING DOWNSTREAM
	DIRECTION IN WHICH SECTION IS TAKEN
	SECTION NUMBER
	SHEET ON WHICH SECTION IS SHOWN
	DETAIL NUMBER
	SHEET ON WHICH DETAIL IS TAKEN

ABBREVIATIONS

'	FT	FEET
APPROX.		APPROXIMATELY
B, BL		BASELINE
BMP		BEST MANAGEMENT PRACTICE
BM		BENCH MARK
C/C		CENTER TO CENTER
CFS		CUBIC FEET PER SECOND
CL		CENTERLINE
C.J.		CONSTRUCTION JOINT
CT. J.		CONTRACTION JOINT
DEG.		DEGREES
Ø		DIAMETER
D/S		DOWNSTREAM
EA		EACH
E/F		EACH FACE
E/W		EACH WAY
E		EAST, EASTING
ELEV., EL.		ELEVATION
EXIST.		EXISTING
IN.		INCHES
LOC		LIMITS OF CONSTRUCTION
MAX.		MAXIMUM
MIN.		MINIMUM
MSL		MEAN SEA LEVEL
NOI		NOTICE OF INTENT
N		NORTH, NORTHING
N.T.S.		NOT TO SCALE
O.C.		ON CENTER
PSI		POUNDS PER SQUARE INCH
R		RADIUS
REINF.		REINFORCED, REINFORCING
SCH.		SCHEDULE
SHT.		SHEET
SF		SILT FENCE
STA.		STATION
S.S.		STAINLESS STEEL
SWPPP		STORM WATER POLLUTION PREVENTION PLAN
S.D.		STUB DIVERSION
TYP.		TYPICAL
U/S		UPSTREAM
WPAP		WATER POLLUTION ABATEMENT PLAN
YR		YEAR

GENERAL NOTES

- THE GENERAL NOTES AND TYPICAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS, INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING UTILITIES. CONTRACTOR SHALL NOTIFY OWNER'S RESIDENT REPRESENTATIVE IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS BEFORE PROCEEDING WITH WORK.
- CONTOURS WERE OBTAINED FROM SURVEYS PERFORMED IN 2010 AND 2014. CONTRACTOR SHALL MAKE SITE SURVEYS AS NECESSARY FOR CONSTRUCTION AND IN ACCORDANCE WITH TECHNICAL SPECIFICATION 7, CONSTRUCTION SURVEYS.
- THE LIMITS OF CONSTRUCTION ARE SET 2 FEET INSIDE PERMANENT AND TEMPORARY EASEMENTS UNLESS OTHERWISE SHOWN. CONTRACTOR SHALL STAY WITHIN THE LIMITS OF CONSTRUCTION AND NOT VENTURE OFF THE ACCESS ROADS EXCEPT FOR DIRECT ACCESS TO THE WORK AREAS. CONTRACTOR SHALL CLEARLY MARK THE LIMITS OF CONSTRUCTION WITH SILT FENCE.
- COMPLY AND CONDUCT WORK IN ACCORDANCE WITH OWNER'S SECURITY REGULATIONS AND REQUIREMENTS. PROVIDE SITE SECURITY AS NECESSARY TO PROTECT AGAINST VANDALISM AND LOSS BY THEFT.
- CONTRACTOR SHALL MANAGE AND PROTECT THE WORK FROM FLOOD FLOWS, STREAM FLOWS, SURFACE WATER RUNOFF, GROUNDWATER OR ANY OTHER WATER ENCOUNTERED DURING THE PROGRESS OF THE WORK IN ACCORDANCE WITH TECHNICAL SPECIFICATION II, REMOVAL OF WATER.
- NOTIFY OWNER OF ANY SIGNS TO BE TEMPORARILY REMOVED. ALL EXISTING SIGNS TEMPORARILY REMOVED, IF ANY, SHALL BE STORED ON SITE BY THE CONTRACTOR AND SHALL BE REINSTALLED BY THE CONTRACTOR AT THE END OF CONSTRUCTION IN THEIR ORIGINAL CONDITION.
- THE AREA AROUND OVERHEAD ELECTRICAL TOWERS SHALL BE PROTECTED. PROTECTION SHALL BE PROVIDED TO ANY TOWER, POLE OR GUY STRUCTURE WHEN TRAFFIC OR CONSTRUCTION ACTIVITY IS WITHIN 50 FEET OF THE STRUCTURE.
- WORK UNDER THIS CONTRACT IS AUTHORIZED UNDER THE TERMS AND CONDITIONS OF THE U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT 3, MAINTENANCE. SEE THE SWPPP FOR DETAILS.
- CONTRACTOR SHALL FOLLOW REQUIREMENTS OF SWPPP.
- CONSTRUCT THE STAGING AREAS AND VEHICLE MAINTENANCE AREAS IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS.
- NO ON-SITE CONCRETE BATCH PLANT WILL BE PERMITTED.
- NO CONSTRUCTION FILL OR MATERIALS SHALL BE PLACED OR STORED IN AREAS NOT SPECIFICALLY DESIGNATED FOR THAT PURPOSE.
- PROVIDE PROTECTED STORAGE FOR PAINTS, CHEMICALS, SOLVENTS, AND OTHER POTENTIALLY HAZARDOUS MATERIALS.
- HANDLING, STORAGE, AND DISPOSAL OF ALL WASTE MATERIAL SHALL CONFORM TO THE SWPPP.
- PREVENT POLLUTION OF SURFACE WATER AND GROUNDWATER WITH PETROLEUM PRODUCTS OR OTHER HAZARDOUS OR REGULATED SUBSTANCES. TAKE SPECIAL MEASURES TO PREVENT CHEMICALS, FUELS, OILS, GREASES, HERBICIDES, AND INSECTICIDES FROM ENTERING DRAINAGE WAYS. DO NOT ALLOW WATER USED IN ON-SITE MATERIAL PROCESSING AND CLEANUP, AND OTHER WASTEWATERS TO ENTER A DRAINAGE WAY, STREAM, OR RIVER.
- PROMPTLY REPAIR EQUIPMENT LEAKING OIL/HYDRAULIC FLUID/ETC. IMMEDIATELY REMOVE AND REPLACE, AS NECESSARY, ALL SOILS ON WHICH SUCH LEAKAGE OCCURRED. PREVENT THE SPREAD OF LEAKED FLUIDS OR FLUID CONTAMINATED MATERIALS FROM THE ORIGINAL LEAK AREA. BE RESPONSIBLE FOR THE PROPER HANDLING AND DISPOSAL OF ALL SUCH CONTAMINATED MATERIALS.
- PROVIDE SECONDARY CONTAINMENT AROUND ANY FUEL AND CHEMICAL STORAGE AREAS TO ENSURE THAT SPILLS FROM ANY SUCH AREAS DO NOT DISCHARGE FROM THE SECONDARY CONTAINMENT AREA. THE SECONDARY CONTAINMENT CAPACITY SHALL BE ADEQUATE TO CONTAIN THE CAPACITY OF THE LARGEST TANK/CONTAINER PLUS SUFFICIENT FREEBOARD TO CONTAIN PRECIPITATION.
- PRECAUTIONS SHALL BE TAKEN DURING EQUIPMENT FUELING AND CHEMICAL TRANSFER OPERATIONS IN ORDER TO PREVENT SPILLS FROM OCCURRING AND TO MINIMIZE THE IMPACT OF ANY SPILL THAT DOES OCCUR. ALL FUEL AND CHEMICAL TRANSFERS SHALL BE CONTINUOUSLY MONITORED. MAINTAIN APPROPRIATE EQUIPMENT ON-SITE FOR RESPONDING TO ANY OIL OR HAZARDOUS SUBSTANCE SPILL. ADDITIONALLY, THERE SHALL BE AN ON-SITE PROHIBITION AGAINST THE TOPPING OFF OF TANKS AND EQUIPMENT.
- REMOVE ALL FORM WORK FOLLOWING CONSTRUCTION.
- EXISTING ROADS, ACCESS DRIVES, UTILITIES AND PROPERTY WITHIN THE LIMITS OF CONSTRUCTION DAMAGED BY CONTRACTOR AND ALL DISTURBED AREAS SHALL BE REPAIRED BY CONTRACTOR TO SAME OR BETTER CONDITION PRIOR TO END OF CONSTRUCTION.
- DATUM INFORMATION:
HORIZONTAL DATUM IS TEXAS STATE PLANE, NAD83, SOUTH CENTRAL ZONE, 4204, US SURVEY
FEETVERTICAL DATUM IS NAVD 88. ALL ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL (MSL).

CALL BEFORE YOU DIG!

811

PARTICIPANTS REQUEST
48 HOURS NOTICE BEFORE YOU DIG,
DRILL, OR BLAST - STOP AND CALL

THE LONE STAR
NOTIFICATION COMPANY
AT 1-800-669-8344

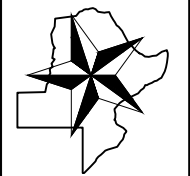
4/29/2022

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DATE PLOTTED: 4/29/22

LEGEND

FLAT BANK/STEEP BANK REPAIR PROJECT

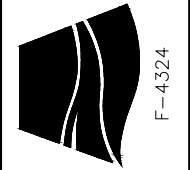
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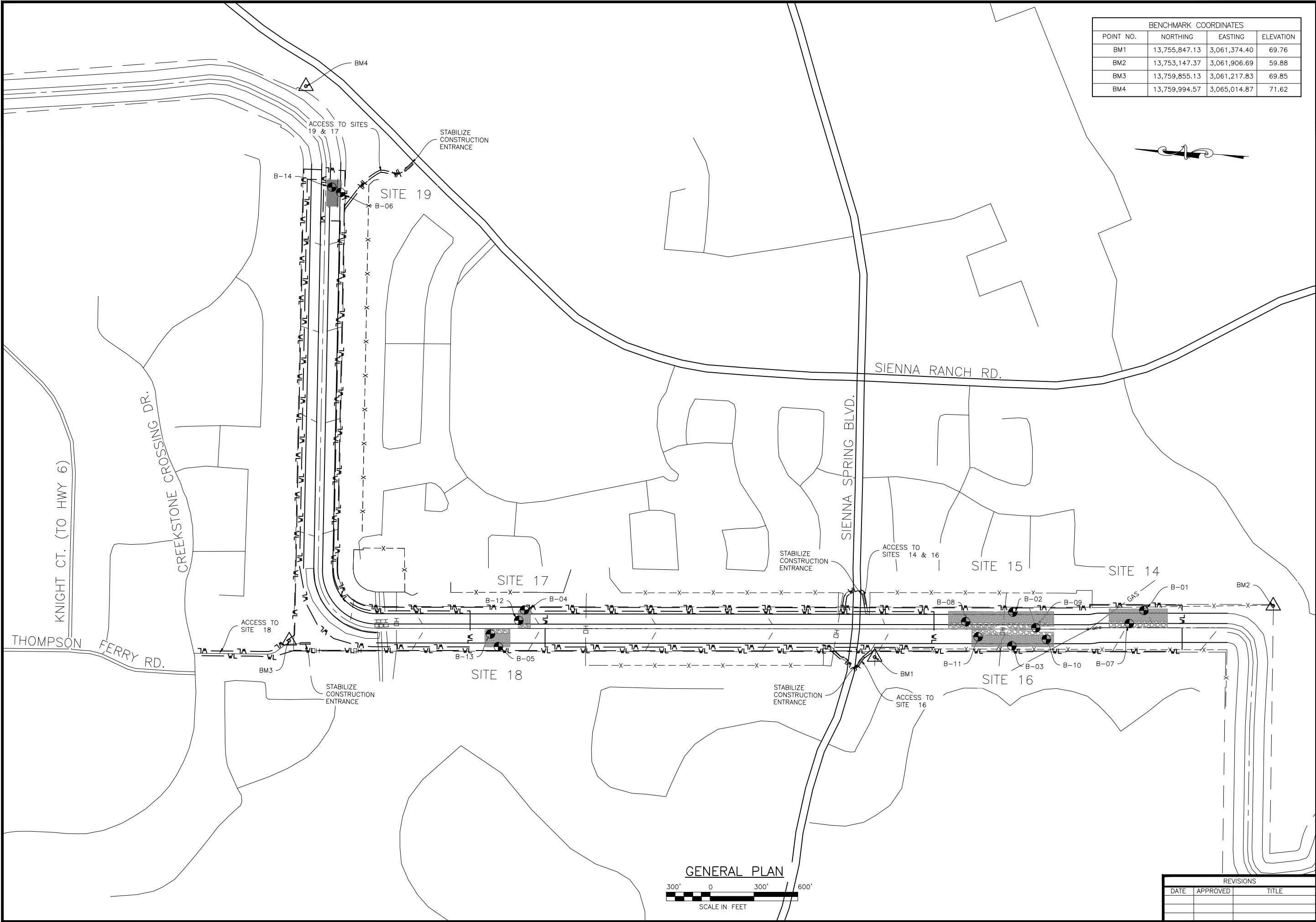
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P.O. BOX 9
HEIDENHEIMER, TX 76533
(254) 983-9103, 9104 (FAX)



REVISIONS		
DATE	APPROVED	TITLE



BENCHMARK COORDINATES			
POINT NO.	NORTHING	EASTING	ELEVATION
BM1	13,755,847.13	3,061,374.40	69.76
BM2	13,753,147.37	3,061,906.69	59.88
BM3	13,759,855.13	3,061,217.83	69.85
BM4	13,759,994.57	3,065,014.87	71.62

4/29/2022

DESIGNED BY: BTS

DRAWN BY: JPK

CHECKED BY: BTS

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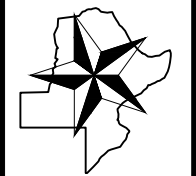
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GENERAL PLAN

FLAT BANK/STEEP BANK REPAIR PROJECT

IN

FORT BEND COUNTY, TEXAS



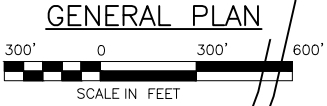
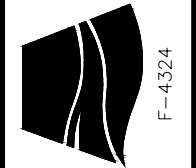
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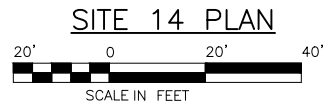
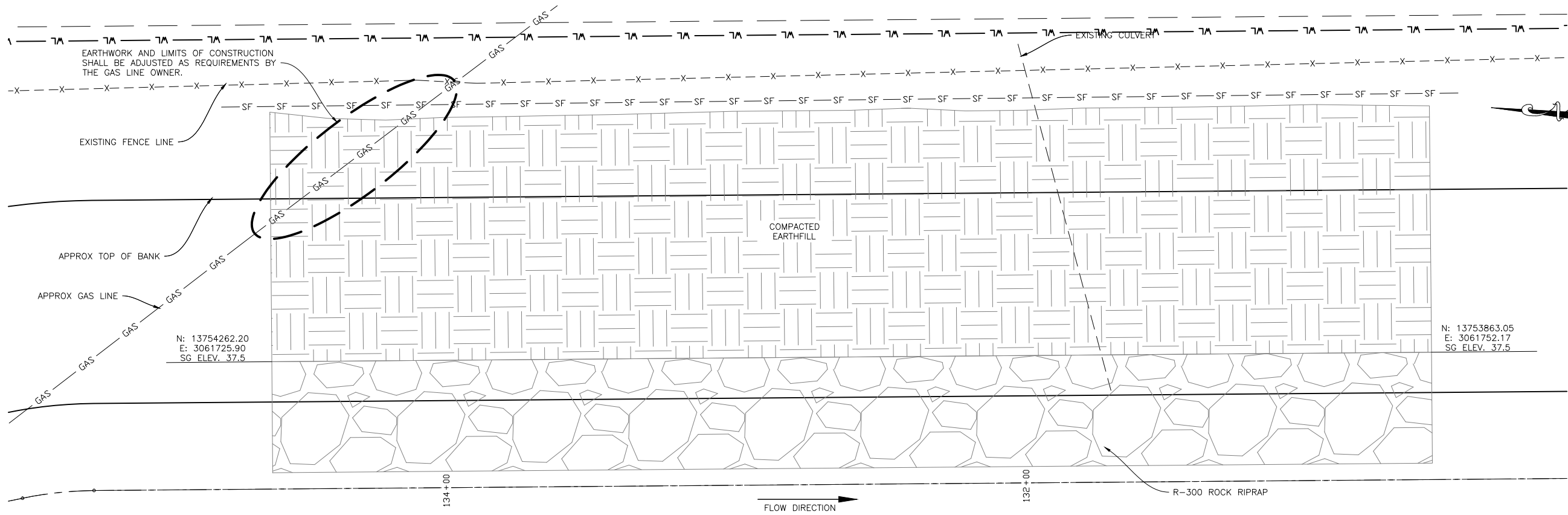
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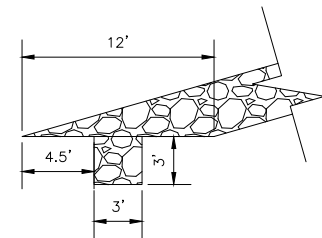
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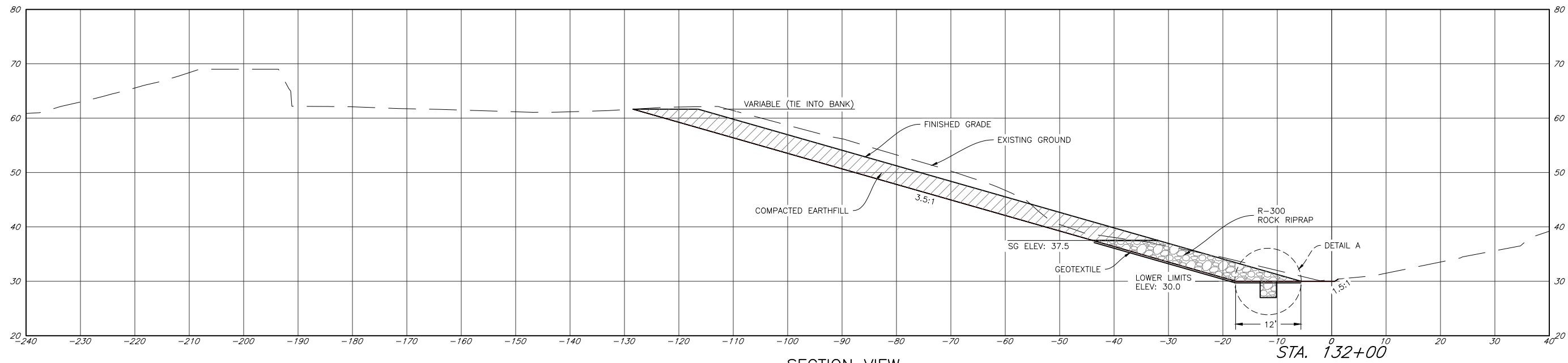
REVISIONS		
DATE	APPROVED	TITLE



A 25 FEET TRANSITION AREA FOR THE EXCAVATION AND FINISHED GRADE SHALL BE ADDED AT EACH END OF THE REPAIR AREA SHOWN TO TRANSITION TO THE EXISTING CHANNEL CONFIGURATION.



DETAIL "A"
N.T.S.



SECTION VIEW

REVISIONS		
DATE	APPROVED	TITLE

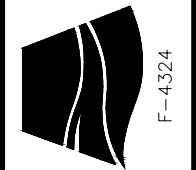


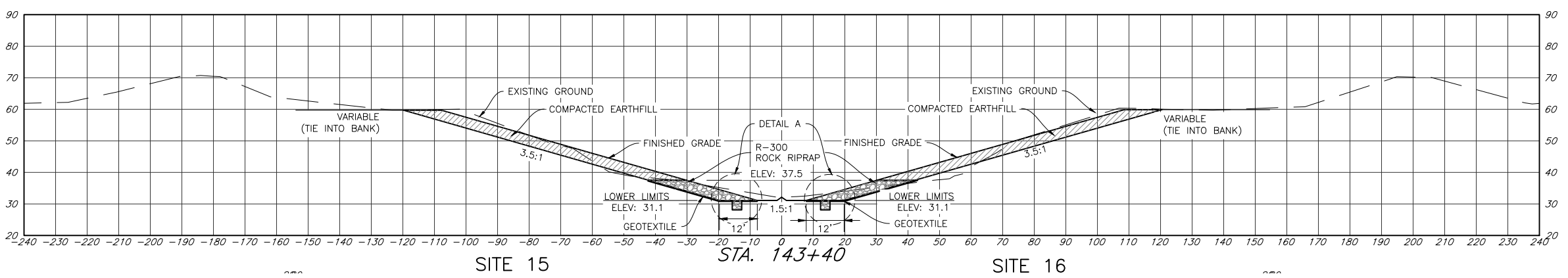
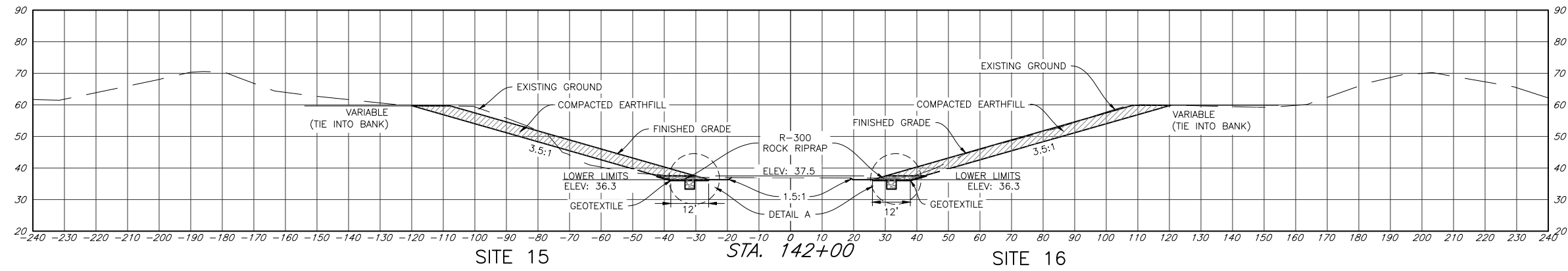
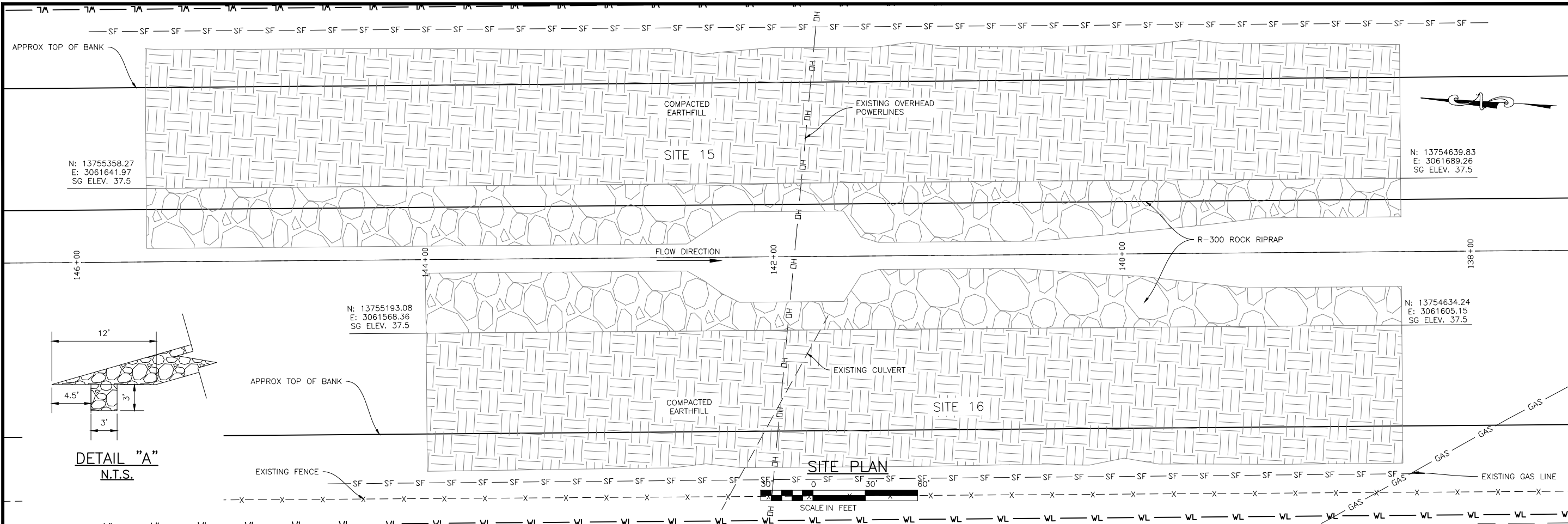
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SITE 14 PLAN & SECTION
FLAT BANK/STEEP BANK REPAIR PROJECT
IN
FORT BEND COUNTY, TEXAS



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SITES 15 AND 16 PLANS AND SECTIONS

FLAT BANK/STEEP BANK REPAIR PROJECT

IN

FORT BEND COUNTY, TEXAS

M&E CONSULTANTS

Soil & Water Engineering Solutions

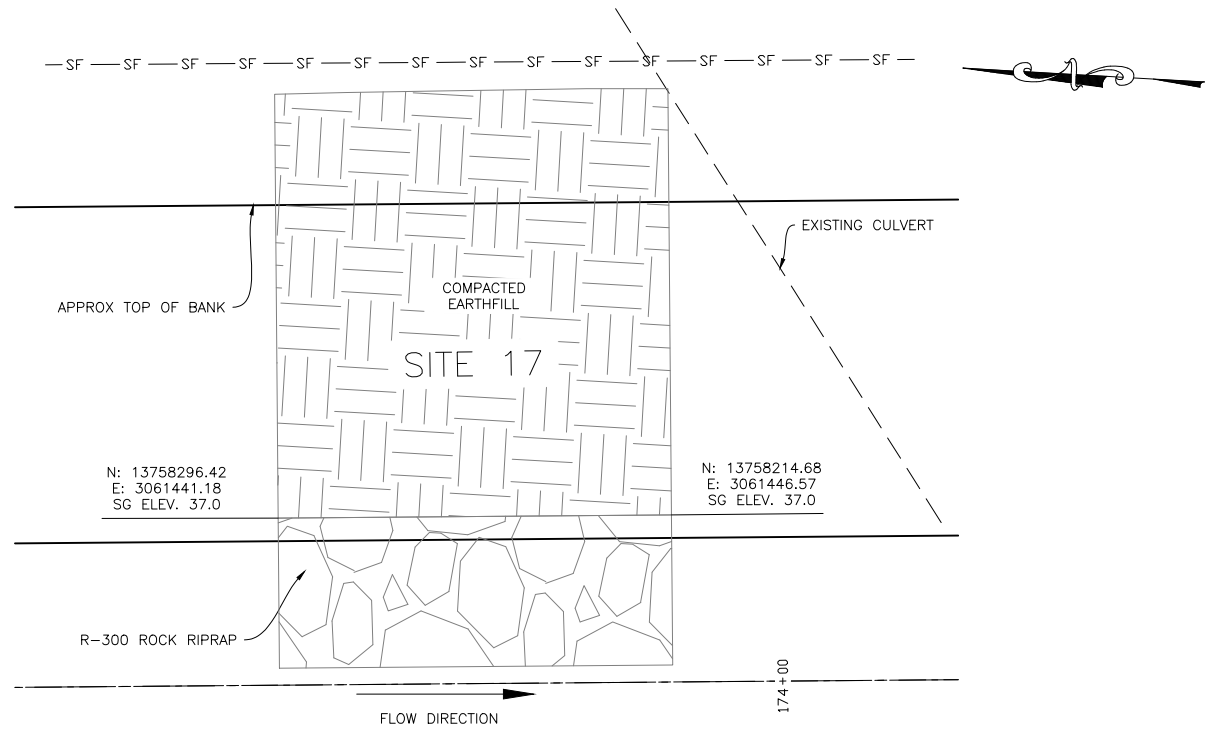
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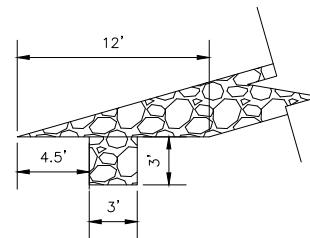
SHEET

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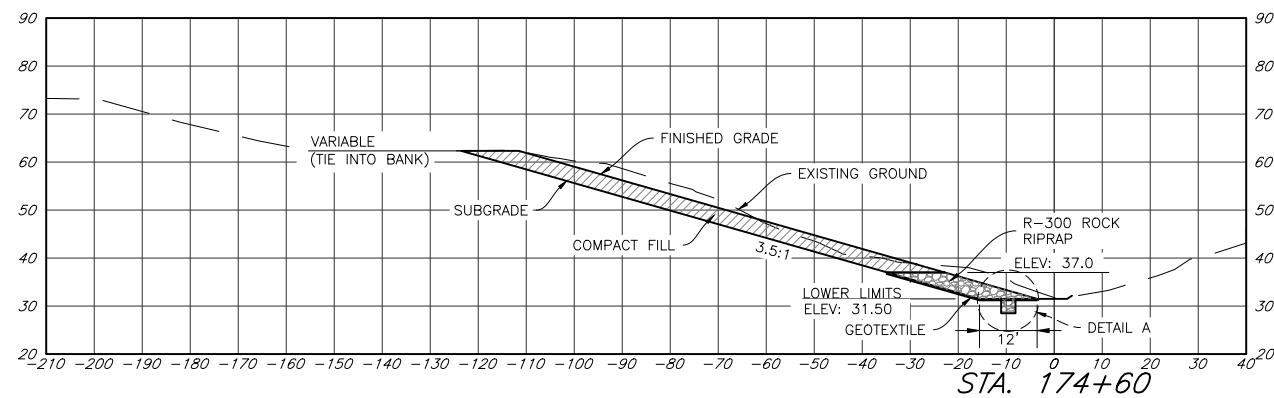
REVISIONS		
DATE	APPROVED	TITLE



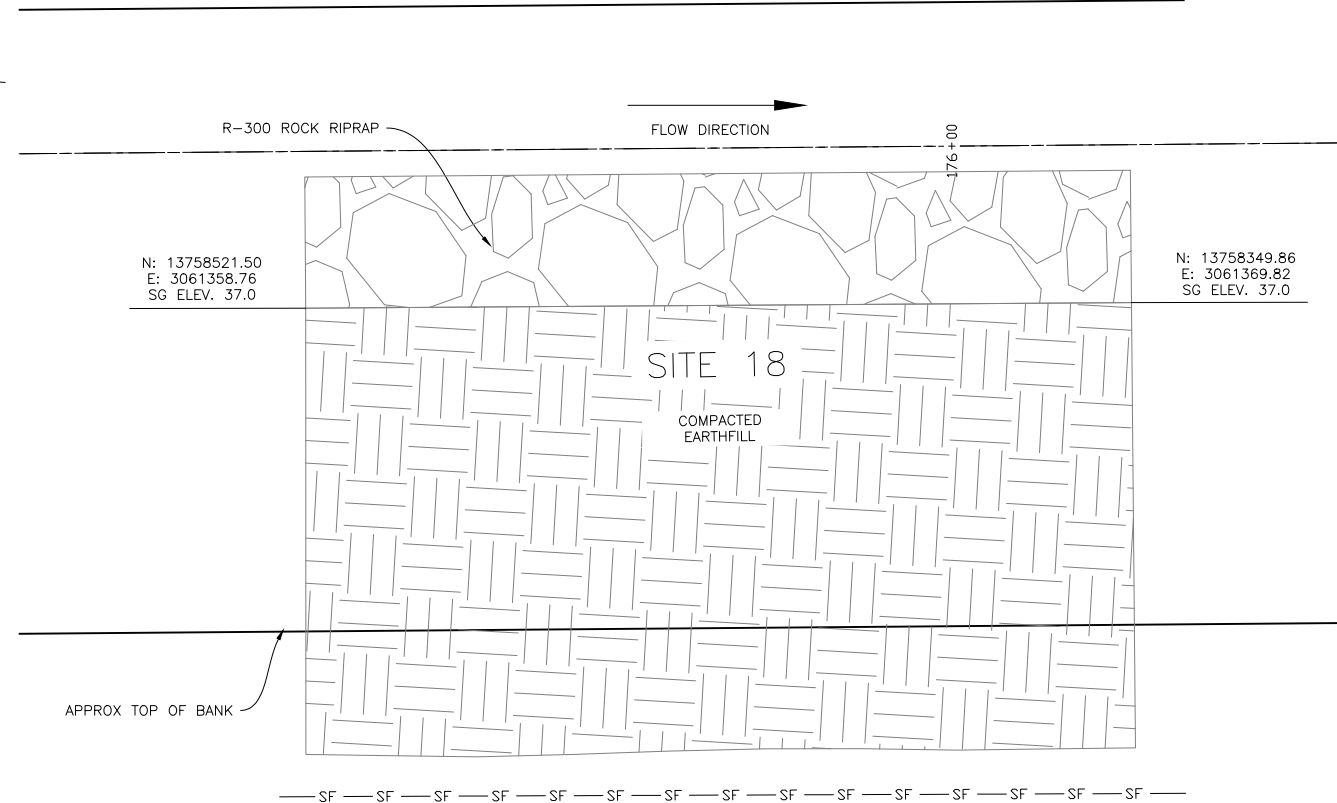
PLAN VIEW SITE 17



DETAIL "A"
N.T.S.



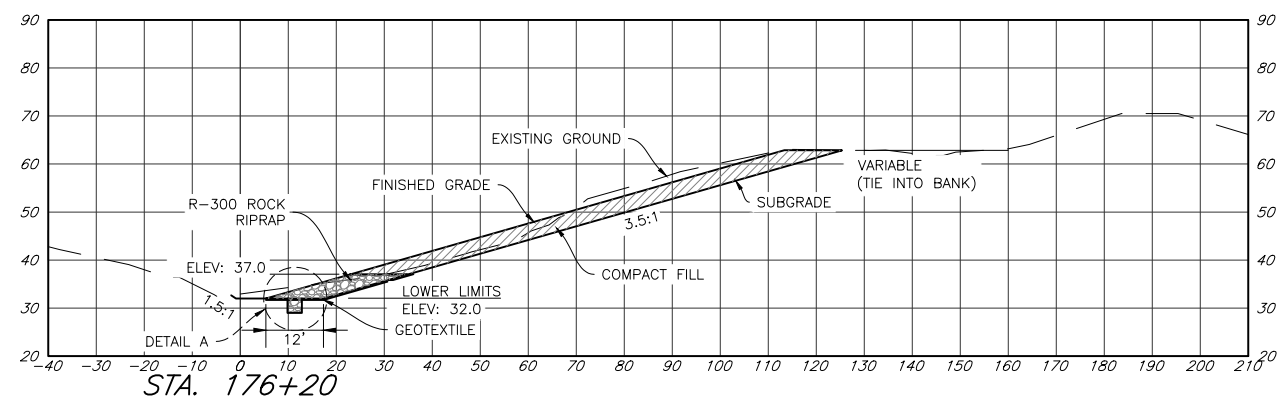
SECTION VIEW SITE 17



PLAN VIEW SITE 18



A 25 FEET TRANSITION AREA FOR THE EXCAVATION AND FINISHED GRADE SHALL BE ADDED AT EACH END OF THE REPAIR AREA SHOWN TO TRANSITION TO THE EXISTING CHANNEL CONFIGURATION.



SECTION VIEW SITE 18

REVISIONS		
DATE	APPROVED	TITLE



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DRAWN BY: JPK
CHECKED BY: BTS
FILE NAME: FB-Flat_Steep-JK-2.dwg
DATE PLOTTED: 4/29/22

SITES 17 AND 18 PLANS AND SECTIONS
FLAT BANK/STEEP BANK REPAIR PROJECT
IN
FORT BEND COUNTY, TEXAS

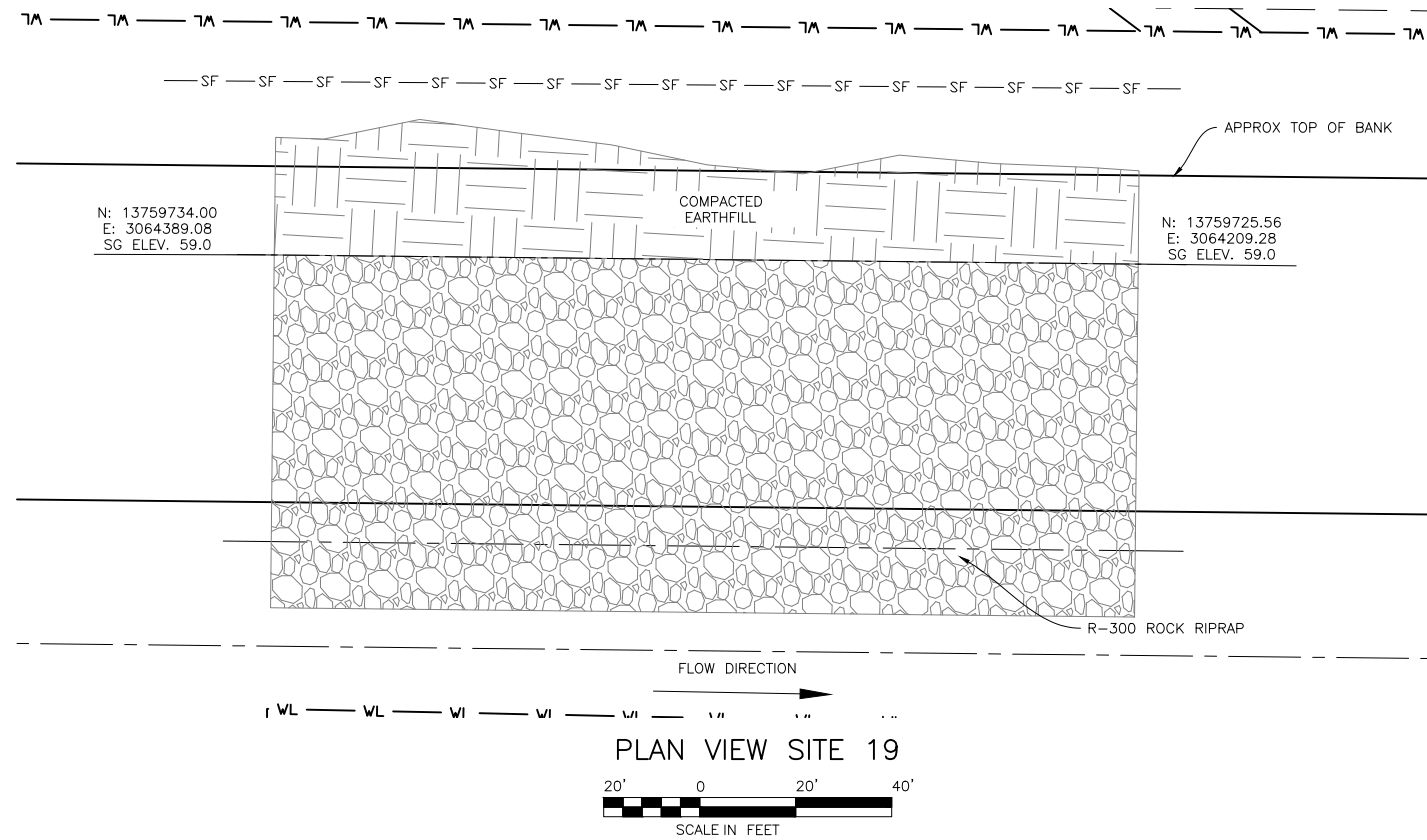


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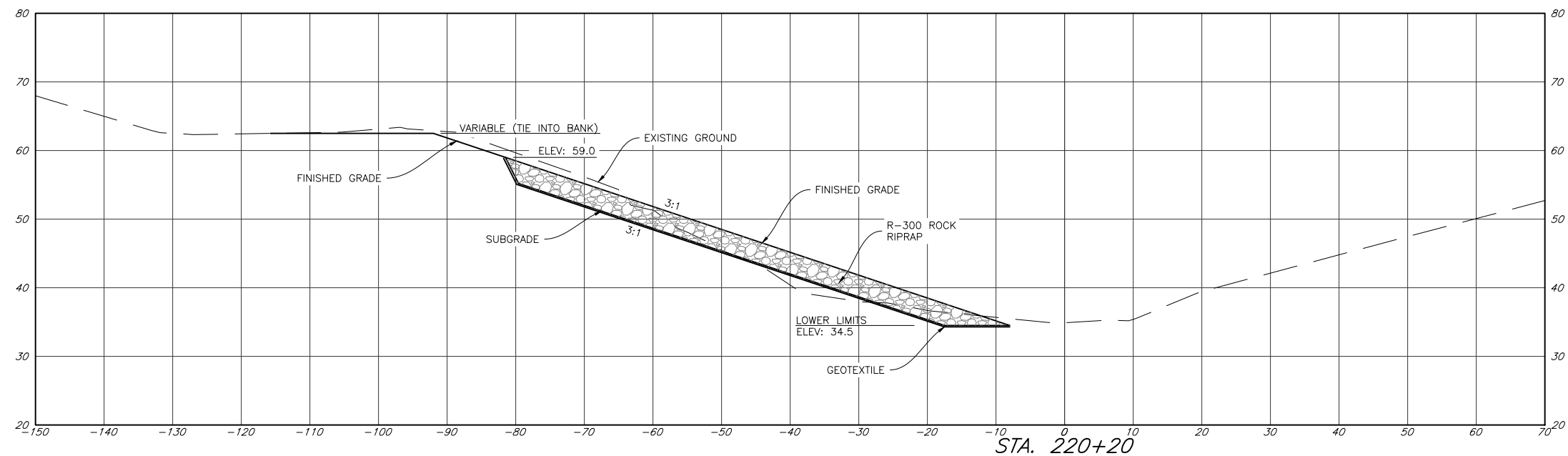


SHEET

5



THE REPAIR AREA SHALL BE BLENDED ON THE ENDS OF THE WORK TO THE EXISTING CHANNEL CONFIGURATION.



SECTION VIEW SITE 19

REVISIONS		
DATE	APPROVED	TITLE



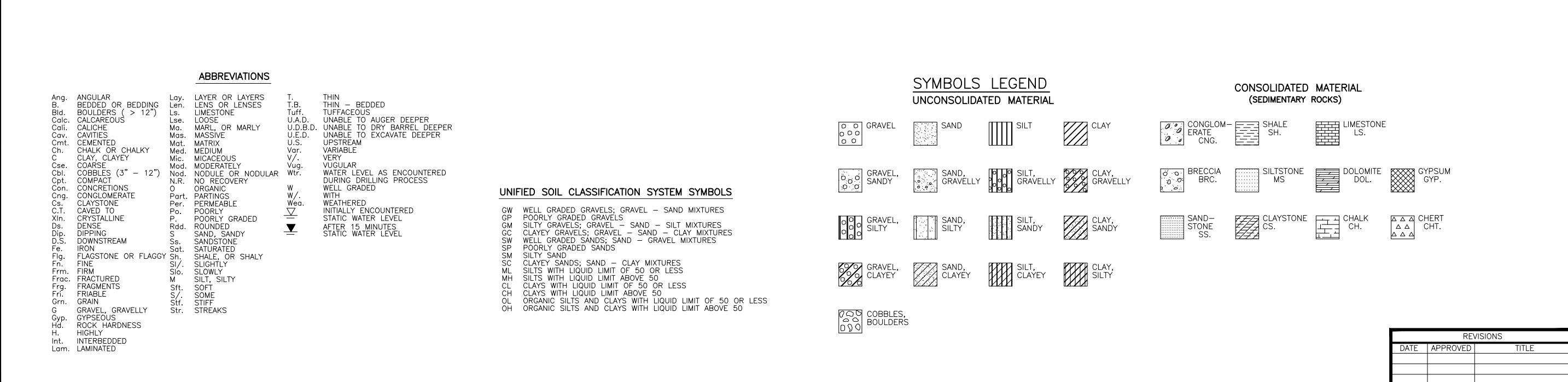
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DRAWN BY: JPK
CHECKED BY: BTS
FILE NAME: FB-Flat_Steep-JK-2.dwg
DATE PLOTTED: 4/29/22

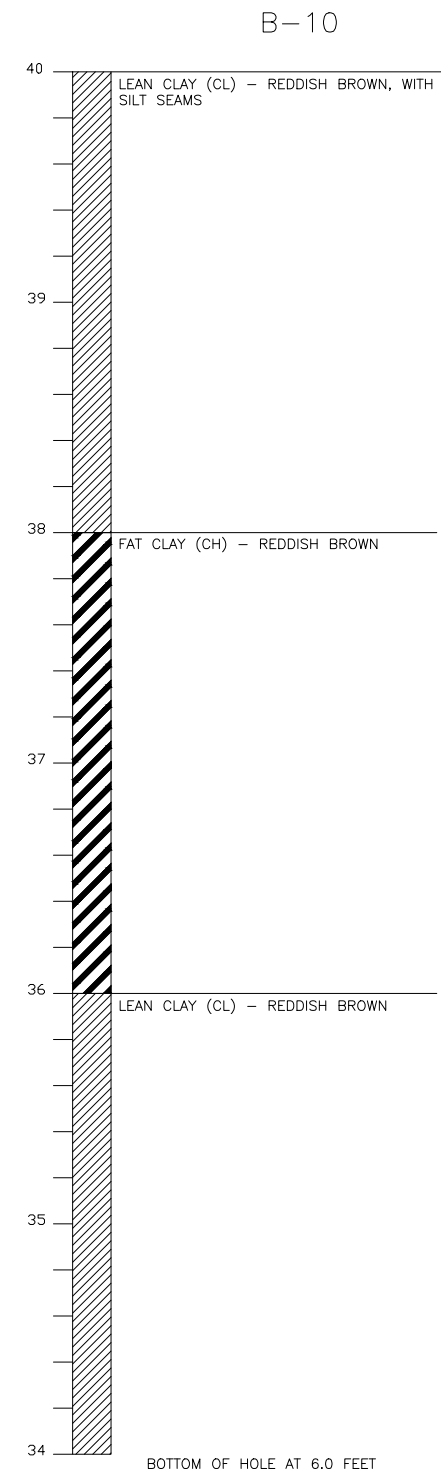
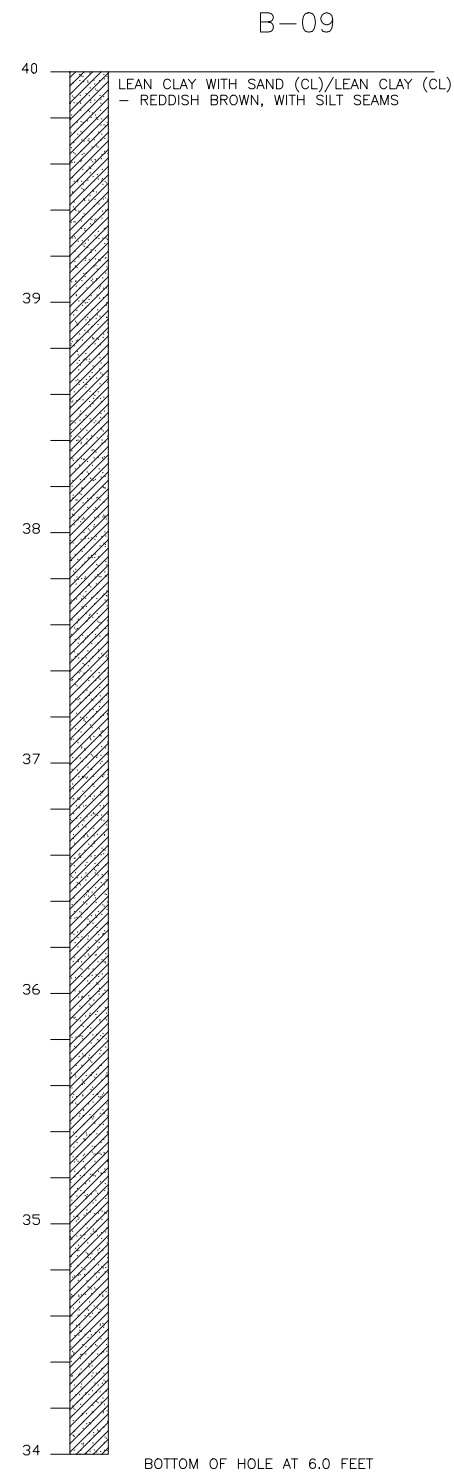
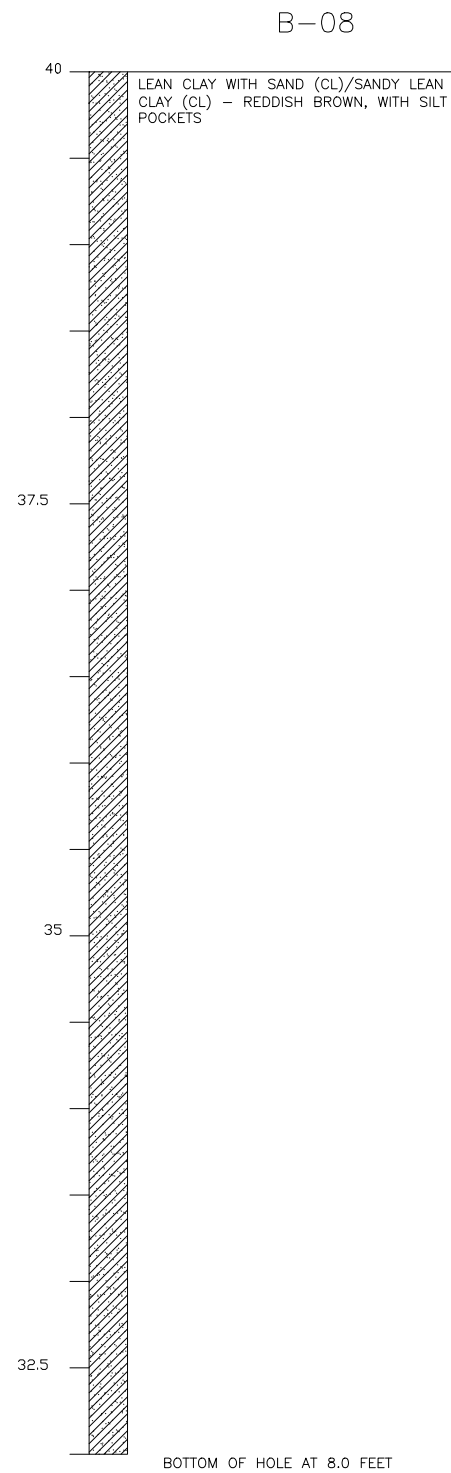
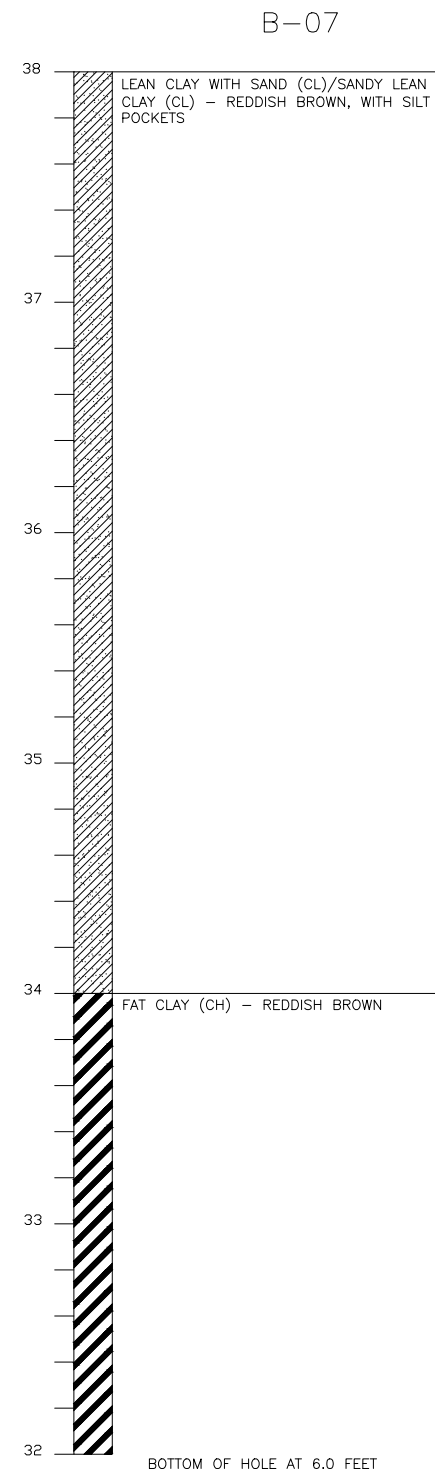
SITE 19 PLAN AND SECTION
FLAT BANK/STEEP BANK REPAIR PROJECT
IN
FORT BEND COUNTY, TEXAS



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4/29/2022

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DATE PLOTTED: 4/29/22

GEOLOGIC INVESTIGATION PROFILES

FLAT BANK/STEEP BANK REPAIR PROJECT

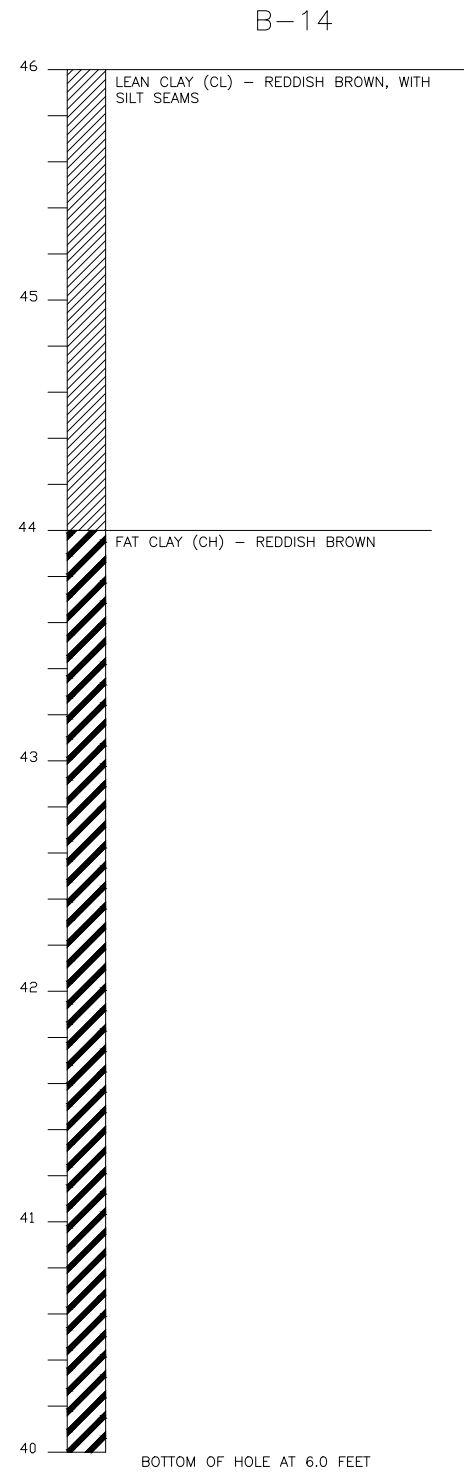
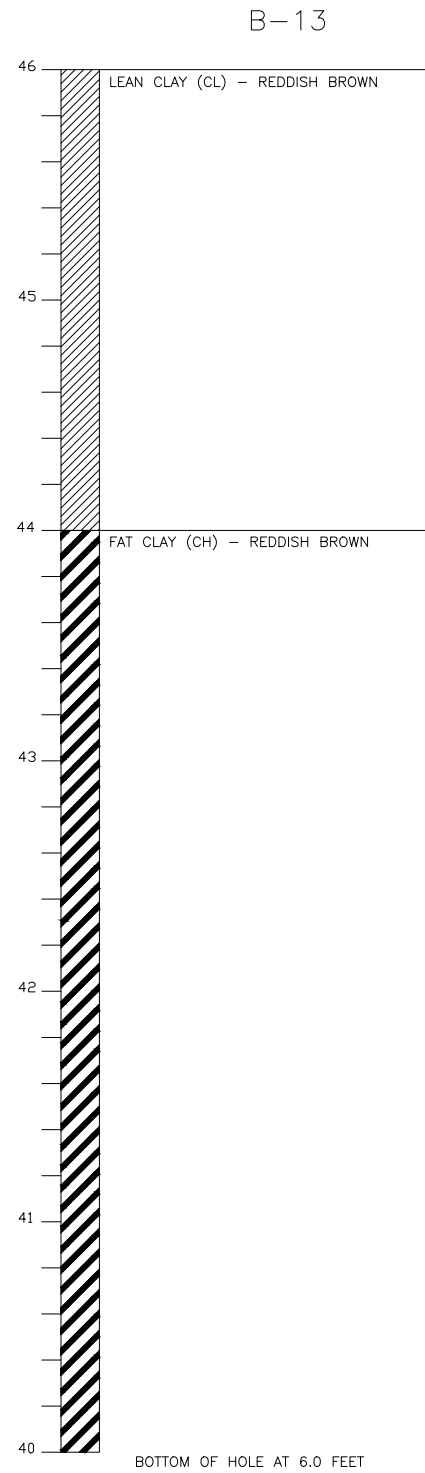
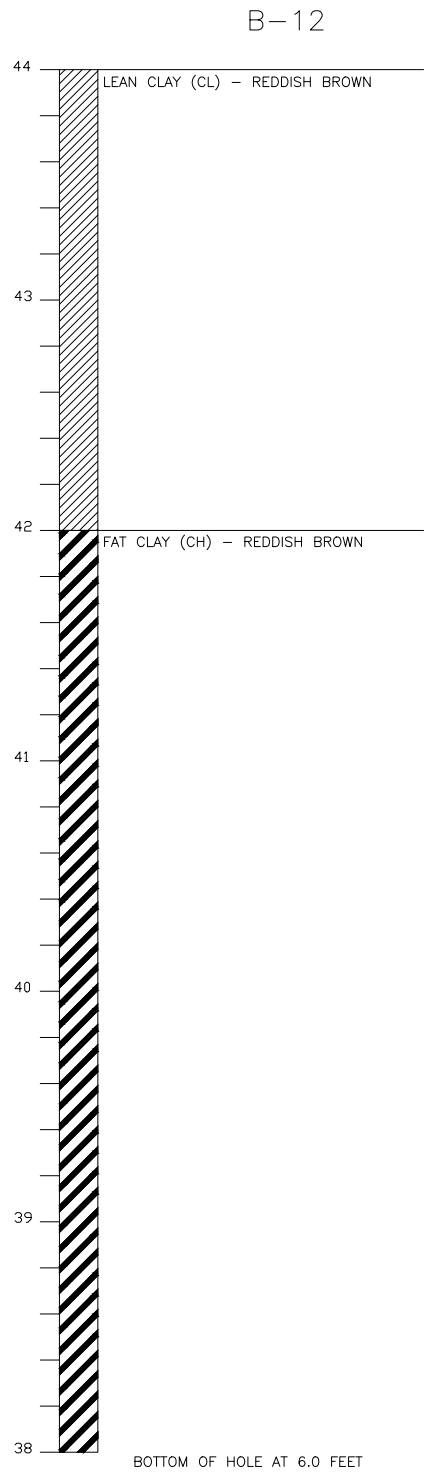
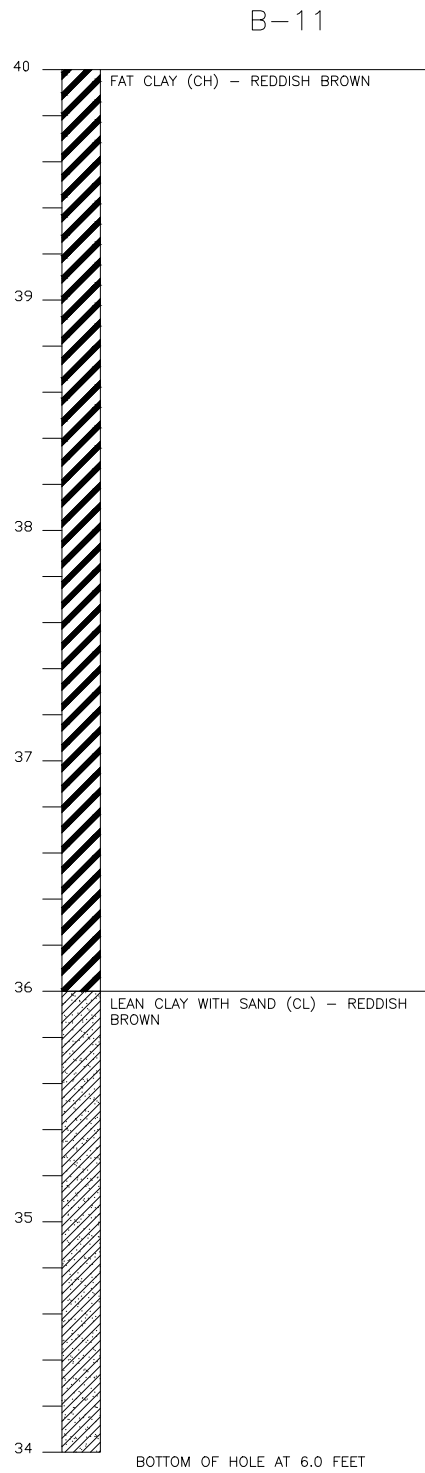
IN
FORT BEND COUNTY, TEXAS

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8

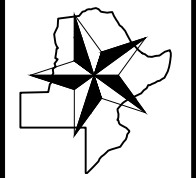


REVISIONS		
DATE	APPROVED	TITLE

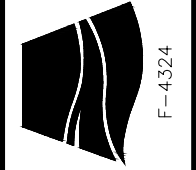


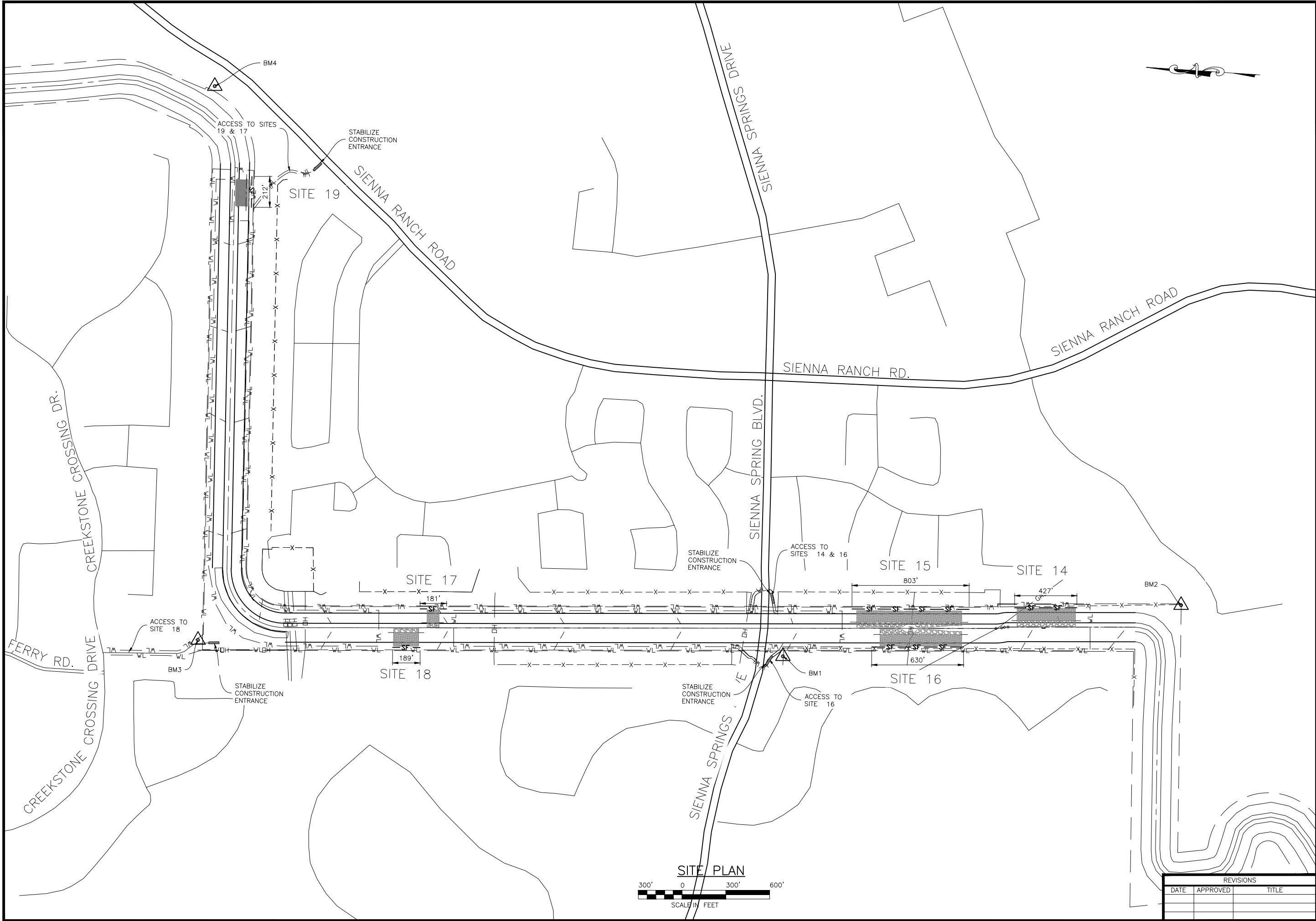
DESIGNED BY: BTS
DRAWN BY: JPK
CHECKED BY: BTS
FILE NAME: FB-Flat_Steep-JK-2.dwg
DATE PLOTTED: 4/29/22

GEOLOGIC INVESTIGATION PROFILES
FLAT BANK/STEEP BANK REPAIR PROJECT
IN
FORT BEND COUNTY, TEXAS



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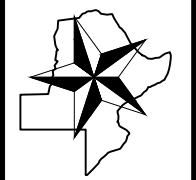


REVISIONS		
DATE	APPROVED	TITLE

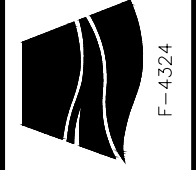


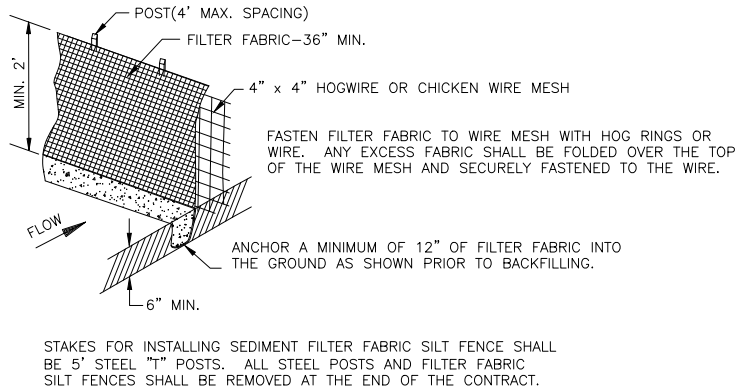
DESIGNED BY: BTS
DRAWN BY: JPK
CHECKED BY: BTS
FILE NAME: FB-Flat_Steep-JK-2.dwg
DATE PLOTTED: 4/29/22

SWPPP
FLAT BANK/STEEP BANK REPAIR PROJECT
IN
FORT BEND COUNTY, TEXAS



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NOTES:

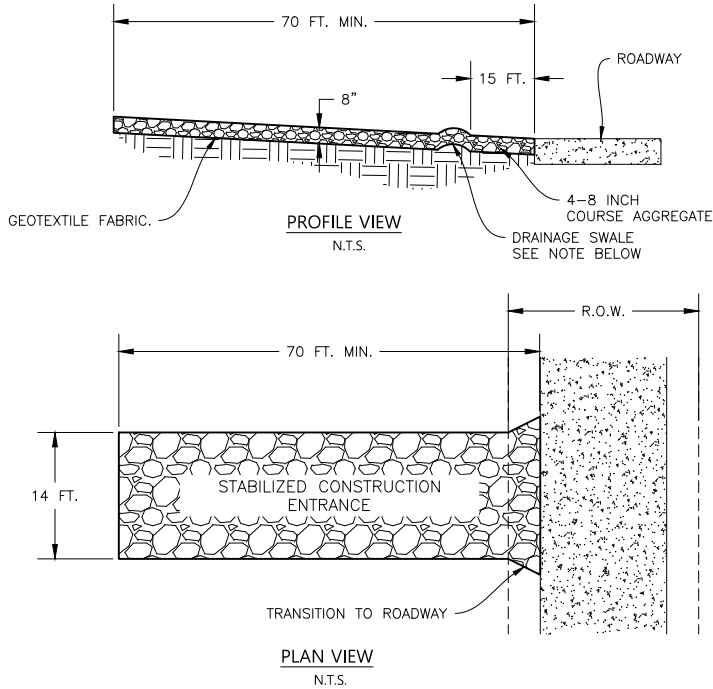
- SEDIMENT FILTERS SHALL BE FABRIC (GEOTEXTILE) SILT FENCES AND INSTALLED ACCORDING TO ASTM D6462. THE MATERIALS SHALL BE IN ACCORDANCE WITH ASTM D6461 AND MATERIAL SPECIFICATION 592.
- STAKES FOR INSTALLING SEDIMENT FILTER FABRIC SILT FENCE SHALL BE 5 FT. STEEL "T" POSTS. ALL STEEL POSTS AND FILTER FABRIC SILT FENCES SHALL BE REMOVED AT THE END OF THE CONTRACT.
- FASTEN FILTER FABRIC TO WIRE MESH WITH HOG RINGS OR WIRE. ANY EXCESS FABRIC SHALL BE FOLDED OVER THE TOP OF THE WIRE MESH AND SECURELY FASTENED TO THE WIRE.
- SILT FILTERS SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS:
 - ALONG THE DOWNSTREAM BOUNDARY OF ANY AREA WHICH IS STRIPPED OF EXISTING VEGETATION AND/OR SURFACE MATERIAL DURING ANY PHASE OF CONSTRUCTION ACTIVITY.
 - ALONG THE DOWNSTREAM BOUNDARY OF ANY SOIL MATERIAL WHICH IS STOCKPILED DURING ANY PHASE OF CONSTRUCTION ACTIVITY FOR MORE THAN 14 DAYS.
 - OTHER AREAS WHICH ARE DETERMINED BY THE CONTRACTING OFFICER TO BE POTENTIAL SILT SOURCES.
- SILT FILTERS SHALL NOT BE USED WHERE CONCENTRATED FLOWS WHICH EXCEED ONE CFS ARE EXPECTED, OR WHERE DRAINAGE AREA EXCEEDS TWO ACRES.
- THE HEIGHT OF SILT FENCES SHALL NOT EXCEED 48 INCHES (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE).
- SPLICES IN THE FILTER FABRIC ARE NOT RECOMMENDED. WHEN JOINTS ARE UNAVOIDABLE, FABRIC SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH LAP.

MAINTENANCE

- SILT FILTERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- SILT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE SEDIMENT FILTER.
- SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE, THE FABRIC SHALL BE REPLACED PROMPTLY UNLESS INSPECTION REPORTS INDICATE THAT THE REPLACEMENT IS UNNECESSARY.

FILTER FABRIC SILT FENCE DETAILS

NOTE:
APPROXIMATELY 2,442 FEET OF SEDIMENT FENCE IS CURRENTLY SHOWN.



NOTES:

- THE STABILIZED CONSTRUCTION ENTRANCE SHALL CONSIST OF A MINIMUM OF 8 INCH THICKNESS OF CRUSHED ROCK PREDOMINANTLY 4 INCH TO 8 INCH IN SIZE PLACED OVER GEOTEXTILE. THE AGGREGATES SHALL BE CLEAN, HARD, DURABLE, AND FREE FROM ADHERENT COATINGS SUCH AS SALT, ALKALI, DIRT, CLAY, LOAM, SHALE, SOFT OR FLAKY MATERIALS, AND ORGANIC OR INJURIOUS MATTER.
- IF THE SLOPE TOWARDS THE ROAD EXCEEDS 2%, CONSTRUCT A DRAINAGE SWALE 8 INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
- THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR THE USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OX/YD2, A MULLEN BURST RATING OF 140 LB/IN2, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
- THE MINIMUM WITH OF THE ENTRANCE SHALL BE 14 FEET.
- INSTALL A DRAINAGE PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.
- WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH 4 INCH MINIMUM CRUSHED STONE OR COMMERCIAL RACK THAT DRAINS TO A SEDIMENT TRAP OR BASIN.

MAINTENANCE AND REMOVAL:

- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
- ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.
- ONCE CONSTRUCTION IS COMPLETE, THE ENTRANCE AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

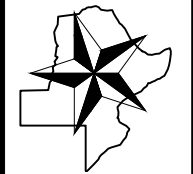
STABILIZED CONSTRUCTION ENTRANCE

REVISIONS		
DATE	APPROVED	TITLE



DESIGNED BY: BTS
DRAWN BY: JPK
CHECKED BY: BTS
FILE NAME: FB-Flat_Slope-JK-2.dwg
DATE PLOTTED: 4/29/22

SWPPP DETAILS
FLAT BANK/STEEP BANK REPAIR PROJECT
IN
FORT BEND COUNTY, TEXAS



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SHEET
11

BID SCHEDULE
FLAT BANK/STEEP BANK
CHANNEL BANK REPAIR

Bid Item No.	Work or Material	Spec. No.	Quantity	Unit	Unit Price	Amount
1	Pollution Control	5	1-Job	Lump Sum	\$	\$
2	Sediment Filters	5	3,000	Lin. Ft.	\$	\$
3	Construction Surveys	7	1-Job	Lump Sum	\$	\$
4	Mobilization & Demobilization	8	1-Job	Lump Sum	\$	\$
5	Removal of Water	11	1-Job	Lump Sum	\$	\$
6	Excavation, Common	21	25,618	Cu. Yd.	\$	\$
7	Earthfill	23	20,499	Cu. Yd.	\$	\$
8	Rock Riprap	61	12,349	Tons.	\$	\$
9	Contractor Quality Control	94	1-Job	Lump Sum	\$	\$
10	Geotextile	95	3,220	Sq. Yd.	\$	\$
11	Vegetation, Hydro Mulch Seeding	6	25.0	Ac.	\$	\$
12	Site Preparation - Pipe Replacement	420	1-Job	Lump Sum	\$	\$
13	Site Preparation - Pipe Replacement	420	1-Job	Lump Sum	\$	\$
14	Site Preparation - Pipe Replacement	420	1-Job	Lump Sum	\$	\$
Total Bid Items						\$

Request for Taxpayer Identification Number and Certification

Give Form to the
requester. Do not
send to the IRS.

Print or type
See Specific Instructions on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.	
2 Business name/disregarded entity name, if different from above	
3 Check appropriate box for federal tax classification; check only one of the following seven boxes: <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____ Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner. <input type="checkbox"/> Other (see instructions) ▶ _____	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <i>(Applies to accounts maintained outside the U.S.)</i>
5 Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
6 City, state, and ZIP code	
7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number									
				-				-	
or									
Employer identification number									
					-				

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	Signature of U.S. person ▶	Date ▶
------------------	-------------------------------	--------

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.

By signing the filled-out form, you:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
- Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.ssa.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor ²
4. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee ¹ The actual owner ¹
5. Sole proprietorship or disregarded entity owned by an individual	The owner ³
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor ⁴
For this type of account:	Give name and EIN of:
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity ⁴
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 2.

***Note.** Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: spam@uce.gov or contact them at www.ftc.gov/idtheft or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

Job No.: _____

TAX FORM/DEBT/ RESIDENCE CERTIFICATION
(for Advertised Projects)

Taxpayer Identification Number (T.I.N.): _____

Company Name submitting Bid/Proposal: _____

Mailing Address: _____

Are you registered to do business in the State of Texas? ☐ Yes ☐ No

If you are an individual, list the names and addresses of any partnership of which you are a general partner or any assumed name(s) under which you operate your business

I. **Property:** List all taxable property in Fort Bend County owned by you or above partnerships as well as any d/b/a names. Include real and personal property as well as mineral interest accounts. (Use a second sheet of paper if necessary.)

Fort Bend County Tax Acct. No.*

Property address or location**

* This is the property account identification number assigned by the Fort Bend County Appraisal District.

** For real property, specify the property address or legal description. For business personal property, specify the address where the property is located. For example, office equipment will normally be at your office, but inventory may be stored at a warehouse or other location.

II. **Fort Bend County Debt** - Do you owe any debts to Fort Bend County (taxes on properties listed in I above, tickets, fines, tolls, court judgments, etc.)?

☐ Yes ☐ No If yes, attach a separate page explaining the debt.

III. **Residence Certification** - Pursuant to Texas Government Code §2252.001 *et seq.*, as amended, Fort Bend County requests Residence Certification. §2252.001 *et seq.* of the Government Code provides some restrictions on the awarding of governmental contracts; pertinent provisions of §2252.001 are stated below:

(3) "Nonresident bidder" refers to a person who is not a resident.

(4) "Resident bidder" refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

☐ I certify that _____ is a Resident Bidder of Texas as defined in Government Code §2252.001.
[Company Name]

☐ I certify that _____ is a Nonresident Bidder as defined in Government Code §2252.001 and our principal place of business is _____.

[City and State]

Mandatory Form



Contractor Acknowledgement of Storm Water Management Program

I hereby acknowledge that I am aware of the stormwater management program and standard operating procedures developed by Fort Bend County in compliance with the TPDES General Permit No. TXR040000. I agree to comply with all applicable best management practices and standard operating procedures while conducting my services for Fort Bend County. I agree to conduct all services in a manner that does not introduce illicit discharges of pollutants to streets, stormwater inlets, drainage ditches or any portion of the drainage system. The following materials and/or pollutant sources must not be discharged to the drainage system as a result of any services provided:

1. Grass clippings, leaves, mulch, rocks, sand, dirt or other waste materials resulting from landscaping activities, (except those materials resulting from ditch mowing or maintenance activities)
2. Herbicides, pesticides and/or fertilizers, (except those intended for aquatic use)
3. Detergents, fuels, solvents, oils and/or lubricants, other equipment and/or vehicle fluids,
4. Other hazardous materials including paints, thinners, chemicals or related waste materials,
5. Uncontrolled dewatering discharges, equipment and/or vehicle wash waters,
6. Sanitary waste, trash, debris, or other waste products
7. Wastewater from wet saw machinery,
8. Other pollutants that degrade water quality or pose a threat to human health or the environment.

Furthermore, I agree to notify Fort Bend County immediately of any issue caused by or identified by:

(Company/Contractor)

that is believed to be an immediate threat to human health or the environment.

Contractor Signature

Date

Printed Name

Title