

**AMENDMENT #2**  
**November 8, 2022**  
**Invitation for Bids (IFB) Number**  
**GC-21-WCW1Upgrade-01, 10/19/2021**  
**Issued by**  
**Gillespie County Water Control and**  
**Improvement District No. 1**  
**Fredericksburg, Texas**

***The above numbered IFB hereby is amended as set forth below.  
The hour and date specified for receipt of offers is not changed.  
Sealed bids are due by: 10:30 a.m., Tuesday, Nov. 15, 2022.***

**PURPOSE OF AMENDMENT**

1. To transmit a Revised Bid Schedule, some revised drawings and specifications, pen-and-ink changes to Parts 1-3, and to provide meeting minutes (including Questions and Answers) and attendance list for the 11/1/2022 Pre-bid Conference/Site Showing.
2. To remind bidders that oral explanations or instructions given before the award of the contract will not be binding. See PART I, Subpart B, Instructions to Bidders, Section 6.

Offerors ***must acknowledge receipt of this Amendment no later than*** the hour and date specified in the IFB for receipt of sealed bids by one of the following methods:

- (1) Make appropriate notations on Exhibit A, Offer form (PART I, Subpart C, page GP-8).
- (2) Complete and return form below. Form must be mailed or hand-carried to the address designated for receipt of bids, and be made to the attention of Steve Ging, Contracting Officer, clearly noting "Acknowledgment of Receipt of Amendment No. 2, IFB No. GC-21-WCW1Upgrade-01" on the envelope. Fax, electronic, or telegraphic acknowledgments of receipt are not allowed.

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**ACKNOWLEDGMENT OF RECEIPT**  
**Amendment No. 2 (11-8-2022)**  
**IFB GC-21-WCW1Upgrade-01 (Site 1 Upgrade)**

Bidder's Signature: \_\_\_\_\_

Bidder's Name: \_\_\_\_\_

Bidder's Title: \_\_\_\_\_

Date Signed: \_\_\_\_\_

Company Name: \_\_\_\_\_

## **REVISED BID SCHEDULE (3 PAGES)**

### **PART I – BID SCHEDULE (Exhibit B)**

The following pages have been revised and reprinted and are attached. Bidders are advised to DISCARD original pages listed below and REPLACE with the attached revised Bid Schedule pages.

- Page GP-9 of 18 (Bid Schedule cover page) *fixed typos*
- Page GP-10 of 18 (Bid Schedule Sheet 1 of 2) *new Item 14A&B; rename Item 15 and 19; revise quantities for Bid Items 14A, 14B, and 15*
- Page GP-11 of 18 (Bid Schedule Sheet 2 of 2) *carried forward two bid items from prior page*

**Failure to use these three revised Bid Schedule pages in a sealed bid is a basis to reject the bid.**

## **PEN-AND-INK CHANGES**

### **PART I – GENERAL PROVISIONS**

#### **Notice to Bidders (Page GP-1 of 18)**

NOTE: IFB Amd. #1 (10-5-22) made pen-and-ink changes on this page for bid opening and site showing dates and times.

**7<sup>th</sup> paragraph:** DELETE “Plum Creek Conservation District” and REPLACE with “Gillespie County Water Control and Improvement District #1”

#### **Instructions to Bidders (Page GP-3 of 18)**

Instruction #6. The DATE for receipt of written inquires is changed to read “November 8, 2022”.

### **PART II – GENERAL CONDITIONS**

#### **Table of Contents, Article 40 (page GC-ii)**

DELETE “[RESERVED]”

INSERT “DOCUMENT MANAGEMENT”

#### **Article 20 (Workweek – Construction Schedule)**

##### **Paragraph (e)**

DELETE all dates listed where work will be shut down.

INSERT the following revised periods/dates:

- Memorial Day: May 29, 2023
- Independence Day: July 4, 2023
- Labor Day: September 4, 2023
- 2023 Thanksgiving Break: November 23, 24, and 25
- 2023 Christmas Break: December 25 and 26 [*Dec. 24 is on Sunday, a nonworkday*]
- New Year’s Break: January 1 and 2, 2023 [*Dec. 31 is on Sunday, a nonworkday*]

##### **Paragraph (f)**

DELETE “2023” and REPLACE with “2024”.

**Article 40 (Reserved)**

DELETE “[RESERVED]” and REPLACE with “DOCUMENT MANAGEMENT”

INSERT the following new Article 40 wording:

A document management system will be utilized by the Engineer and Inspector during the course of the work. The Contractor shall submit documentation as required by the contract documents using the Project Management Information System (PMIS) provided by the Engineer. Software for the PMIS is FNiManager which has the following system requirements:

- a) Operating Systems: Windows 7 or later and OS X v10.8 or later.
- b) Supported Internet Browsers: Internet Explorer 11.0 or later, Google Chrome 70.0 or later, Firefox 63.0 or later, Safari 11.0 or later, and Microsoft Edge 17.0 or later.
- c) Screen Resolution: The recommended screen resolution is 1280 x 1024 or higher. The minimum screen resolution required to support all features is 1024 x 768.

Submit legible, accurate, complete documents presented in a clear, easily understood manner. Documents not meeting these criteria will be returned without review as “Not Approved.” The Contractor shall review documents prior to submission and make certifications as required by the contract documents. The Contractor shall provide a Schedule of Documents to list the documents that are to be submitted, and the dates on which documents are to be sent to the Engineer for review. The Contractor shall incorporate the dates for processing documents into the construction schedule and provide documents in accordance with the schedule, so construction of the project is not delayed. Allow a reasonable time for the review of documents when preparing the construction schedule. Assume a 14-day review cycle for each document unless a longer period of time is indicated in the contract documents or agreed to by Engineer and Contractor. Schedule delivery of review documents to provide all information for interrelated work at one time.

The PMIS will assign a document number to the Contractor-originated document to allow tracking of the document during the review process. The following submittal descriptions shall be utilized where applicable, and the PMIS will utilize the prefixes along with an assigned document number for tracking.

Prefix	Description
AP	Application for Payment
CP	Change Proposal
CTR	Certified Test Report
EIR	Equipment Installation Report
GD	Graphic Documentation
NBC	Notification by Contractor
O&M	Operation and Maintenance Manuals
PD	Product Data
RD	Record Data
RFI	Request for Information
SD	Shop Drawing
SCH	Schedule of Progress

### **PART III – SUPPLEMENTAL CONDITIONS**

#### **Article 1 (Types and Limits of Insurance**

##### **Paragraph (f):**

INSERT the following words after word “(CLO)”: “, Basse Wilson Albert Ranch, LLC, and Crow’s Sword Management Trust (landowners southwest of access road)”.

#### **Article 12 (Indemnification Clause), line 2**

INSERT the following after the word “employees”: “and Basse Wilson Albert Ranch, LLC (owner of part of access road off of Schumann Road)”.

### **PART IV – CONSTRUCTION SPECIFICATIONS**

#### **Revised Specification Pages**

All pages with pen-and-ink changes are attached. All changes are shown inside clouds, and each revised page is marked with a triangle with “2” inside which indicates IFB Amd. #2.

Revised pages are: 2-3, 3-3, 3-4, 5-4, 6-5, 6-6, 6-7, 7-4, 8-2, 11-4 and 11-5 (page numbers corrected), 21-6, 21-7, 23-6, 23-7, 23-8, 27-3, 31-20, 45-7 and 54-10 (page # corrections), 61-5, 85-7, 94-9, 95-4 (corrected page #).

INSERT attached revised pages and DISCARD the corresponding current page(s).

#### **PEN-AND-INK CHANGES to Specifications**

A few spec changes inadvertently were not included in the attached revised specification pages. They are as follows:

##### **CS-11, Removal of Water**

On attached revised page 11-4, the cloud was omitted from Section 8.(1)d. Please ADD a cloud around this paragraph.

Also note that prior Section 8.(1)(f)a. was renumbered to be 8.(1)g.

RENUMBER current page 11-5 (page left intentionally blank) to READ as 11-6.

##### **CS-23, Earthfill**

On attached revised page 23-8, please ADD the following paragraph after Section 10.c.(a):

(b) Geotextile as specified in Construction Specification 95, Geotextile, as it applies to this item.

##### **CS-95, Geotextile**

On attached revised page 95-4, CHANGE Section 7.a.(5)(c) to READ as: “Bid Item 15, Earthfill, Zone 3 and Zone 4”.

### **PART V – DRAWINGS**

All sheets with pen-and-ink changes are attached. All changes are shown inside clouds, and each revised Sheet shows a triangle with “2” inside which indicates IFB Amd. #2.

Revised Sheets are: G-2, C-30 (sheet # correction), and C-34.

INSERT attached revised Sheets and DISCARD the corresponding current Sheet.

## **PART VI – WAGE RATES**

**Table: Operator: Front End Loader:** CHANGE wage rate to READ as follows: \* ~~44.13~~

**Notes:, Line 1:**

- DELETE "\$10.95" and REPLACE with "\$11.25"
- DELETE "2021" and REPLACE with "2022"

## **DESIGNATIONS / ITEMS STAKED**

### **ITEMS DESIGNATED VERBALLY/MARKED AT SITE SHOWING**

#### **CSpec 2, Clearing and Grubbing**

Actual limits of required clearing and grubbing Section 7, (a)(1)

- This item shall consist of all clearing and grubbing as indicated herein, in the construction drawings, or stakes at time of site showing including, (1) to a minimum 10 feet outside of the areas to be occupied by earthfill or a structure, (2) areas of required excavation or borrow and (3) to any additional areas required to perform the work.

#### **Drawing Sheet G-3 - Final location will be designated at site showing:**

- Access Road(s) – same as shown on drawings
- Construction Campsite (Prop. Staging Area) – same as shown on drawings
- Soil Stockpile Area – same as shown on drawings
- Borrow Area – same as shown on drawings
- Prop. Spoil Area – same as shown on drawings

## **QUESTIONS AND ANSWERS**

### **11-1-22 Administrative Q&As**

**Q:** What are the anticipated Award and Notice to Proceed dates?

**A:** See Administrative Presentation in IFB Amd. #2. The main variable would be if/when the District obtains additional funding from the State if needed in order to award a contract. That could be 1 week up to 45 days. The Bid Bond form also allows a bidder to extend his/her bid an additional 60 days, but we expect to know within 45 days if additional funding is available. We estimate Notice to Proceed would occur 4-6 weeks after the Award date.

**Q:** Is there enough funding available now?

**A:** The District has funding available for the 2021 Engineer's Estimate. If the low responsive/responsible bid exceeds that amount, additional funding from the State would need to be requested. We can't guarantee that there will be sufficient additional funding available if more is needed.

### **11-1-22 Technical Q&As**

**Q:** Can we use excavated materials in Zones 1-4 if it meets spec and testing requirements? Can we use Borrow Area material for Zone 1, 3, or 4 if it meets spec and testing requirements?

**A:** **CORRECTION to statement made 11/1/22:** Material from required excavations may be used for Zone 1 material. *[In error the verbal answer given on 11/1 said no material from required excavations could be used and that it must all be wasted.]*

IFB Amd. #2 transmits revised specs/drawing that clarify earthfill requirements. Revised Zone 1 material source is Required Excavations and Onsite Borrow (material from either source must meet

spec and testing requirements). Zones 2, 3, and 4 material source is specified as Imported Fill; no material from required excavations or onsite borrow may be used for these zones.

- Q:** How do we differentiate between Zone 1 and Zone 2 fill quantities (see Sheet G-2, Material Placement Data table)?
- A:** The Zone 1 and Zone 2 fill extents are provided in Sheets C-6 and C-17. Separate bid items will be created and provided in IFB Amd. #2 (and on revised Bid Schedule).
- Q:** Does this project require fish relocation? If the reservoir water level gets so low due to nature (e.g., drought) that fish can't survive, is the Contractor responsible to replace the fish?
- A:** Permits required for this project do not require the District to relocate fish. If the operating pool elevation can be maintained, the fish should be able to survive. In the event a drought causes a drop in water level insufficient for some/all fish to survive, as long as the Contractor's activity did not cause this drawdown of the reservoir the Contractor is not responsible for any fish that may be lost and Contractor is not required to relocate any fish if this situation arises.
- Q:** How do we deem the existing rock riprap is salvageable? How are we to estimate how much rock we might be able to salvage and the cost associated with it?
- A:** It is the bidder's decision to choose to salvage any riprap. The bidder will need to estimate how much rock they might be able to salvage and implement those costs into Bid Item 2. See IFB Amd. #2 change to CS-3, Section 3.7.b.(2).
- Q:** Will existing boat docks in the reservoir have a problem when the reservoir is lowered?
- A:** Contractor is to maintain the "operating pool" elevation specified in CS-11 Removal of Water. The operating pool elevation should ensure existing property is not damaged by draw down.
- Q:** Where is the waste or spoil area located?
- A:** See Drawings Sheet G-3. Spoil Area is located between the upstream embankment and auxiliary spillway.
- Q:** How should the spoil area be prepared for final inspection (smooth, shape, vegetate)?
- A:** See CS-21, Excavation, Section 10(2) for details.
- Q:** What do we do if concrete trucks do not have revolution counters?
- A:** Revolution counters are required per CS-31, Concrete for Major Structures. Contractor is required to work with suppliers to ensure that trucks have a working counter and that drivers know how to read them.
- Q:** Are established grades prior to or after topsoiling?
- A:** Prior to.
- Q:** Can we make the access road wider? Will we have to replace any culverts or cattle guards along the access route at the end of the contract?
- A:** See CS-8, Mob and Demob, Section 4.a.(2)(a) for access road requirements.
- Q:** Do we abandon the existing principal spillway pipe?
- A:** See Drawings Sheet C-15 for principal spillway demolition plan and profile and CS-99, Conduit Abandonment.
- Q:** Are there any work restrictions during hunting season?
- A:** No.

**Q:** Are we allowed to remove trees.

**A:** See CS-2, Clearing and Grubbing, Section 3 (Marking) and Section (7)(2)(a). Trees in the proposed footprint of the project will be required to be removed.

**Q:** Are the landowners aware of the construction project that is about to occur in their or adjacent to their property?

**A:** Yes, all landowners who own property within the limits of construction for this project are aware of this project.

**Q:** The plans don't appear to show the locations of fence to be removed. How are we to quantify this item?

**A:** All fences will be required to be replaced at the same location for which they were removed. The quantities are shown Bid Item 32 and Bid Item 33.

**Q:** Are we required to supply continuous or available power to the field office?

**A:** See CS-8, Mob and Demob, Section 4(a)(2)(f) for requirements.

**Q:** What is the length of the proposed pipe for the principal spillway?

**A:** See Drawings Sheet C-17 for the approximate length of pipe for the principal spillway

**Q:** Is fishing allowed in the reservoir?

**A:** All fishing in the reservoir is prohibited.

**Q:** Is the reservoir currently low (at the time of site visit 11/1/22)?

**A:** See CS-11, Removal of Water, Section 8(1)© for normal pool elevation (as revised via IFB Amd. #2).

**Q:** Where is the borrow pit located?

**A:** See Drawings Sheet G-3 for location of the Borrow Area.

**Q:** Can we use water in the reservoir for construction purposes?

**A:** It is the contractor's responsibility to locate source(s) of water for the project, obtain a permit to use the water if required, and if a permit is acquired provide a copy to the Contracting Officer. See Part II, Article 19 (Water) and Article 11 (Permits and Responsibilities).

**Q:** In regards to Bid Item 27, the plans call for 66" steel casing on Sheet C-12. From a means and methods standpoint, does the contractor have the flexibility of upsizing the casing to a 72" diameter at their own expense?

**A:** No.

**Q:** Does the contractor pay for testing?

**A:** Yes, see CS-94, Contractor Quality Control. The contractor is responsible for all quality control, including testing. The spec requires a written QC Plan, qualifications of all QC personnel, etc. The Freese & Nichols' (FNI) personnel perform Quality Assurance for the District and do occasional additional testing at their expense as they deem necessary to perform their QA duties.

**Q:** What QC laboratories in Texas can do the testing?

**A:** The lab must meet qualifications as shown in CS-94. For your information, in the past Alpha Lab in Texas has not been approved for some other Rehab and Upgrade projects due to quality problems.

**NEW Questions/Answers After Pre-bid on 11/1/22**

**Administrative**

**Q:** Will the project require any type of M/DBE or Small Business goals?

**A:** No.

**Q:** Will there be any liquidated damages on this project? If so, what will be the \$ amount per day?

**A:** No liquidated damages. See Part II, Article 5 and Administrative Presentation in IFB Amd. #2, 11/4/22. Actual damages will be assessed if District deems it in their best interest to allow the contractor to finish the work vs. terminating the contractor's right to proceed.

**Q:** To ensure that all of the contractors have access to the same information, will the questions and responses from all contractors be recorded and distributed to each registered planholder via the addendum or some other form of communication?

**A:** Only answers to questions that provide information where the lack thereof would be prejudicial to uninformed bidders will be provided to all prospective bidders via an IFB Amendment. Many questions received don't require any type of interpretation, etc. and don't provide any new information, so those will not be made available via IFB Amendment. See IFB Part I, Subpart B, Instruction 6 – Explanation to Bidders / Inquiries.

**Technical**

Answers to two technical questions are found in 11-1-22 Technical Q&As section above (re: quantity of fence to be removed and request to make Zones 1-4 separate bid items).

**Q&A's To Date Posted at CivCast.com**

**Q:** When are you going to post bid docs?

**A:** Bid Notice- documents are at [www.gillespiecountyswcd.org](http://www.gillespiecountyswcd.org) website.

**Q:** Is there an addendum issued? What is the engineer's estimate?

**A:** We are not releasing the Engineer's estimate until after the bid opening. All bid documents, including all addendums, are available at [www.gillespiecountyswcd.org](http://www.gillespiecountyswcd.org)

**Q:** Please provide the CAD files associated with this project to aid in preparation of bids.

**A:** Gillespie County WCID No. 1 will not release CAD files for bidding. See IFB page GP-3 of 18 for the procedure to submit inquiries.

**Q:** Are you going to post a plan holders list

**A:** A request for the Planholders List should be sent via email to [jennifer.ellebracht@tx.nacdnet.net](mailto:jennifer.ellebracht@tx.nacdnet.net). A copy will not be posted.

**Q:** In regard to bid item 27 the plans call for 66" steel casing on sheet C-12. From a means methods standpoint does the contractor have the flexibility of upsizing the casing to a 72" diameter at their own expense?

**A:** This question will be discussed at the 11/1/22 Pre-bid Conference/Site Showing and will be incorporated into IFB Amendment #2 along with the minutes from 11/1/22.

**Q:** Could you please tell me what the warranty period is for this project?

**A:** There is no warranty period for this project.



## **11/1/2022 SITE SHOWING / PRE-BID CONFERENCE MINUTES**

Note: Some items contained in the IFB were pointed out and are not included in these meeting minutes for purpose of brevity. However, this Amendment No. 2 contains information necessary for bidders to submit bids and all information where the lack thereof would be prejudicial to uninformed bidders.

### **WELCOME / INTRODUCTIONS**

The Contracting Local Organization for this project is Gillespie County Water Control and Improvement District No. 1 (GCWCID), Fredericksburg, TX. The Contracting Officer (CO) for this project will be Steve Ging (Board Secretary-Treasurer) and the Alternate CO will be Bret Schuman (Board President). Freese and Nichols will provide a full time Inspector (Will Flanigin) and a Project Engineer (Naveen Chillara). Jean Ann Maynard will serve as contracting consultant to the District for the project. The project is receiving funds from the TX State Soil and Water Conservation Board and GCWCID. A listing of attendees is found at the end of this document.

The conference commenced at 10:00 a.m., and Jennifer Ellebracht (District Clerk and CO Assistant) welcomed attendees, made introductions, and provided a brief history of the project. Questions and Answers from the conference and site visit are listed in this Amendment #2.

### **ADMINISTRATIVE PRESENTATION**

This material was presented by Jean Ann Maynard. Administrative matters not contained in the IFB along with items in the IFB that were emphasized are as follows:

#### **General Information**

Sign-In Sheet. Be sure you listed complete information on how to contact you—be sure to include your EMAIL address.

The IFB was published on 10/19/2021. Printed copies of the bid documents are not being distributed. If you want a copy of the Invitation for Bids (IFB) package, any future amendments to it, and the Plan Holder Registration Form, you must download the files from the Gillespie Co. SWCD website as stated in the Bid Notice. Also, there is a supply of blank registration forms here today if you would like to register as a planholder and have not done so yet.

Amendment No. 1 (10/5/22) announced new dates/times for the Pre-bid/Site Showing and Bid Opening. The original dates were postponed due to an easement problem that has been resolved.

Amendment No. 2 will be issued after this Site Showing. It will include today's meeting minutes, all of the questions/answers, an attendance list, and all changes to the original bid package. All registered planholders will be advised by email when it is available online. In order to receive notification, you must submit a Planholder Registration Form. **Very important to register.** No hard copies of any Amendments will be mailed or emailed – you will need to download them from the SWCD website.

Reminder: You must submit your acknowledgment of receipt of EACH Amendment (either on the Amendment cover sheet form or on bid form, Offer, Exhibit A). Failure to acknowledge receipt of an amendment may result in rejection of a sealed bid.

Performance Time (PT). The PT of 380 calendar days was computed to include 20 calendar days move-in time. PT is based on working the maximum allowed workweek of 60 hours per week. It also includes non-workdays for Sundays and holidays listed in Part II, General Conditions, Article 20. Additional days will be added for eligible weather delays and any change orders that warrant more time, as needed. PT begins the day after receipt of Notice to Proceed.

**Sealed Bids are DUE** (and will be publicly opened).

- (a) **10:30 AM, Tuesday, November 15**
- (b) Must hand carry or mail. No Fax or Telegraphic bids are allowed.

- (c) NOTE: Deliver or mail bid **to the WCID** office (Attn: Steve Ging). There are no Covid-19 restrictions at that location at this time.
- (d) At 10:30 all sealed bids received will be transported to Texas A&M AgriLife Extension Meeting Room, 38 Business Court, Fredericksburg, and will be publicly opened and read aloud.

Engineer's Cost Estimate. This will NOT be disclosed until after bids have been opened.

Estimated Price Range: *between \$5 million and \$10 million*

IFB/Contract Terms & Conditions. As a local contract, various requirements from Texas codes and statutes govern the basic contract. However, due to State funding, there are also some State clauses and requirements that aren't normally found in a local contract. NOTE: This project does not have any Federal funding, so no typical Federal clauses are in this contract.

The **GCWCID #1** reserves the right to reject any and all bids. *[Notice to Bidders erroneously says Plum Creek Conservation District – will make pen&ink correction in Amd. #2.]* Bids providing less than 45 calendar days for acceptance will not be considered and will be rejected.

### **Instructions to Bidders (PART I – General Provisions, Subpart B)**

Encouraged to ***carefully read.***

Section 2 – Conditions Affecting the Work. To view site (other than today) you need to make an appointment with Jennifer Ellebracht at WCID office and she or an authorized person must escort you to the site. Note that no digging or taking of core samples will be allowed.

Section 3 – Bid Must Contain (Original + 1 copy) ***SEE Part I, Subpart C, Bid Forms***

Exhibit A - Offer. Sign in ink (must have legal Authority to contractually bind the company).

Exhibit B – Bid Schedule (2 pages) and cover sheet. Offer must be valid for minimum of **45** days. Cover Sheet has an error in Total Bid Price boxed area (says Plum Creek Conservation Creek). This will be an IFB Amd. #2 correction to change it to GCWCID. These 3 sheets were revised via IFB Amd. #2. **You must download/use these 3 revised Bid Schedule pages in your sealed bid.**

Exhibit C. References.

Exhibit D – Bid Bond

- Bid Guarantee: 5% of TOTAL bid price.
- Certified or cashier's check (from responsible TX bank). --- OR ---
- Bid bond. (1) Must use Exhibit D form (original + 1 copy). (2) Must meet all Bid Bond Requirements for surety as stated in Section 8. READ THIS CAREFULLY. NOTE surety must be U.S. Treasury listed.

Exhibit E – Bidder Certifications. There are three sections you need to "circle" appropriate answer and write in surety information on one.

Section 4 – Preparation of Bid

IFB documents and Planholder Registration Form must be obtained using the SWCD website as outlined in the Public Bid Notice. Printed copies of the IFB package are not available. The official printed hard copy shall take precedence over an electronic media copy. This official file hard copy may be viewed at the District office.

Submit offer in DUPLICATE (original + 1 copy of all documents).

Bidders are entitled to EXCLUDE exempted taxes in bid price. Contractor will be performing a contract for an exempt organization. The District will issue an Affidavit to the Contractor. Contractor must issue a Tax Exempt Certificate to each supplier. Contractor is responsible to know and follow all Texas Codes regarding this. *[Details in Part II, General Conditions, Article 29]*

Bid Schedule (Exhibit B). One award will be made for the Total Bid Items for this site. Failure to price each item in each Bid Schedule is basis to reject bid.

Section 6 – Explanation to Bidders / Inquiries. NO verbal explanations or instructions given before award of the contract will be binding. ALL questions regarding the meaning or interpretation of any bid document must be submitted IN WRITING to Jennifer Ellebracht (via Email or mail). The deadline to submit written questions is noon on Tuesday, November **8, 2022** (*will be pen&ink change in IFB Amd. 2*). If the answer requires interpretation of a bid document, it will be given in writing to all planholders via an Amendment to the IFB. Please send all inquiries to Jennifer and do not contact FNI Engineer directly.

Section 8 – Bid Bond Requirements. All bids require a bid guarantee in the amount of not less than 5% of Total Bid Price. Bonds must be on the form provided in the bid package.

Section 11 and 12 – Qualification/Disqualification of Bidders. Carefully note these requirements. In order to be awarded the contract, the low bid must meet two requirements. First, bid documents are reviewed to determine if the bid is “responsive”—meets essential elements of the IFB requirements. Then, the “responsibility” of the bidder is determined. Technical and financial references are carefully checked to ensure bidder is qualified, etc. These clauses list what will be considered in determining the “responsibility” of the bidder.

Section 20 – Records. This lists documents available at the District office for viewing by interested parties. There is a large set of drawings (sheets 52-65 are the As-Built Drawings for original construction) with a printed copy if the IFB package, along with 2021 geologic and soil mechanics reports. All of these documents also are available to view/download at the SWCD website.

### **Anticipated Schedule / Timeline**

Bid Opening (November 15): Publicly open sealed bids. Declare apparent low bidder and meet with their representative.

Issue Notice of Award. District has up to 45 days to award a contract. Hopefully it will be sooner, but if additional funding is needed, it could take up to 45 days. Upon award you will have 5 workdays to submit your 1<sup>st</sup> post-award documents [See Part III – Supplemental Conditions, Article 4 for a LIST]. You are encouraged to review these now and be prepared to submit on time (or your bid security could be forfeited and the GCWCID would move on to 2<sup>nd</sup> low bid).

2<sup>nd</sup> Post-award Documents. These will be requested at same time as Notice of Award and will be due in 3-4 weeks (such as construction schedule, safety plan, removal of water plan, etc.).

The Preconstruction Conference, will be held shortly after 2<sup>nd</sup> documents are due, and if everything is in order, the Notice to Proceed will be issued within a week or so later.

### **General Conditions (PART II)** *(A few highlights)*

Exceeding Time in Contract [Article 5]. If you do not complete work within performance time and it is deemed in best interest of the District to allow Contractor to complete work (vs. terminate for default), the District will assess actual damages. NO liquidated damages clause.

Actual damages will not be assessed for lost revenue and/or taxes. Actual damages will be based upon the additional costs incurred by the Contracting Local Organization (CLO), the Grantor Agency (Texas State Soil and Water Conservation Board), and Freese & Nichols, Inc. Engineer/Inspector resulting from the Contractor not completing the work within the allowable performance period. These costs include but are not limited to personnel costs (Inspector, Engineer, Contracting Officer and related personnel), travel costs (lodging, per diem, mileage, etc.), additional supplies, etc. Your bonding company can contact the District if it has additional questions about this clause.

The clause also allows for an extension of performance time (without terminating the Contractor’s right to proceed or charging Contractor with actual damages) if a delay in completion of the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Note that TIME only is allowed (no costs are allowed) for an excusable delay.

A segment entitled “Delays Due to COVID-19” is included in this clause. The District shall follow guidelines of OSHA, CDC, and TX Department of State Health Services in determining if/when work would need to be suspended and resumed. *[BASIC STATEMENT: Each incident will be decided on a*

*case-by-case basis in accordance with the MOST RECENT guidelines from OSHA, CDC, TX Health. As these guidelines change periodically, it is not possible for the District to state today how a future situation will be handled.]*

Payments / Invoicing Requirements [Article 7]. Progress payments will be made monthly. Per Texas Water Code, the District shall retain 10 percent of progress payments for the first 50% of the work until final completion and acceptance of the work without any interest due to the Contractor. Please note that the payment due date for the District is within **45** days of receipt of “proper” invoice. They will strive to pay sooner if possible.

Per paragraph (h), Contractor and Subcontractors must follow TX Government Code 2251 rules for paying others for goods, services, etc. related to performing the work.

Superintendence [Article 10]. Must have full-time superintendent acceptable to CO. You will be asked to propose an Alternate superintendent for approval so that you have a backup in place to serve in the absence of the regular superintendent.

Permits and Responsibilities [Article 11] and Other Contracts [Article 13]. The Contractor is responsible to determine all Federal, State, and municipal laws, codes and regulations that apply to this project and comply with them. Also, Contractor is required to obtain all necessary licenses and permits at own expense. The Contractor is responsible for all materials delivered and work performed until completion and acceptance of the entire construction work.

Real Property Rights [Article 16].

The District has acquired all landrights to perform the work and the Construction Work Limits are shown on the drawings.

Contractor shall obtain owner’s advance written approval if he/she plans to enter, remove, or otherwise make use of adjacent property, roads, utility lines, fences, and other improvements not included within the real property rights provided by the Contracting Local Organization. A copy of the written approval must be submitted to the Contracting Officer. Any associated costs are Contractor’s responsibility. Any changes to items already designated in the contract (e.g., site entrance, campsite, etc.) must be approved by the Contracting Officer at his sole discretion.

Water [Article 19]. Contractor is responsible to provide and maintain at own expense an adequate supply of water needed to perform the work. Contractor must locate and arrange for adequate water source(s) and obtain any required permits to take/use water and a copy of those permits will need to be submitted to the Contracting Local Organization.

Workweek - Construction Schedule [Article 20].

Requires written schedule prior to commencement of work (CO must approve).

Maximum Work Week: Monday – Saturday (up to 11 hours per day) not to exceed 60 hours per week.

Work may be performed during daylight hours only.

Holidays: Project will be shut down (and days are included in the performance time): SEE dates listed in the clause *[new dates will be in IFB Amd. #2]*. If performance time extends past early 2024, additional holidays where no work is allowed are listed (and will be added to performance time by contract modification).

Subcontractors [Article 21]. All require CO written approval (prior to signing a subcontract).

Surveys [Article 22], Shop Drawings [Article 30], and Layout of Work [Article 35]. Some general information. Project Engineer will discuss contract requirements more thoroughly in his technical presentation.

Suspension of Work [Article 23]. Contractor is eligible to recover damages for any unreasonable delays as specified in this clause. Includes additional performance time and damage costs (excluding profit).

Weather [Article 26]. PT in the IFB does not include any adverse weather delays. PT will be extended if warranted by weather or its effects. Allows TIME only (not costs or damages).

Quantity Variations [Article 28]. 25% clause for estimated quantities in bid schedule. Variations within 25% are paid at the bid price and there is no adjustment in performance time. If variation exceeds 25% (over or under), the contract price/time is equitably adjusted for the quantity that exceeds 25% (over or under). [This differs from Article 3 regarding "Changes". If any new work is added to the contract (or any work is deleted), this is not a Quantity Variation and Contractor is entitled to an equitable adjustment in the contract price and performance time.]

Article 40. There will be a new clause added here (*IFB Amd. #2*) entitled "Document Management." The Contractor will be required to use the FNI automated system for tracking submittals, etc. during the construction period. The new clause will provide the specifics.

Prevention and Safety [Article 41]. Includes Supplement to OSHA regulations with many requirements. Project Engineer will cover later. VERY important – will monitor and enforce safety.

### **Supplemental Conditions (PART III)**

Insurance Requirements [Articles 1-3]. Read carefully. Due 5 workdays after receipt of Notice of Award. If approved subcontractors are not covered on prime contractor's insurance policies, subcontractor must provide insurance certificates through prime contractor to CLO with same types/levels of coverage. NOTE that most policies require the District to be listed as additional named insured and all policies must include a waiver of subrogation.

An additional requirement will be added to Article (f) (*IFB Amd. #2*). Basse Wilson Albert Ranch, LLC (landowner of portion of access road) also must be included as an Additional Insured on the prime contractor's COI.

Post-Award Information [Article 4]. Lists items you must submit within 5 workdays after receipt of Notice of Award. Be prepared to do this!

Performance of Work [Article 5]. The prime contractor must perform at least 20% of work with own forces.

Commencement, Prosecution, and Completion of Work [Article 6]. Note that you must commence "work" within 20 calendar days of date you receive written Notice to Proceed. Move-in does not qualify as "work".

Wage Rates [Article 8]. Because construction, must pay prevailing wage rates for laborers and mechanics. Rates in PART VI. Weekly certified payrolls are not required.

Ethics / Conflicts of Interest [Article 9]. Per State requirements, Contractor will be required to complete online Form 1295, Certificate of Interested Parties.

Indemnification Clause [Article 12]. A pen-and-ink change will be made [*IFB Amd. #2*] to add one access road landowner (Basse Wilson Albert Ranch, LLC) as an additional party to this clause.

Performance/Payment Bonds [Article 13]. Gives specific requirements. (a) Bonds are due 5 workdays from date receive Notice of Award. (b) Penal sum: 100% of contract award price.

Special State Requirements [Articles 14 &15]. Covers EEO and debarment & suspension.

**PART IV: SPECIFICATIONS:** FNI will cover.

**PART V: DRAWINGS:** FNI will cover.

**PART VI: WAGE RATES:** There will be pen-and-ink changes to the wage rates [*IFB Amd. #2*]. The minimum hourly wage for calendar year 2022 now is \$11.25.

### **TECHNICAL PRESENTATION**

This material was presented by Benny Castro (Freese & Nichols Water Resources and Design Division). Technical matters not contained in the IFB and additional items emphasized are as follows:

**SPECIAL EMPHASIS ITEMS**

Special emphasis items that were discussed or otherwise provided at the site showing are discussed below.

**PART II – GENERAL CONDITIONS**

**Article 8 – Material and Workmanship**

Unless otherwise specifically provided in this contract, all equipment, material, and articles incorporated in the work covered by this contract are to be new and of the most suitable grade for the purpose intended. Unless otherwise specifically provided in this contract, reference to any equipment, material, article, or patented process, by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition, and the Contractor may, at his/her option, use any equipment, material, article, or process which in the judgment of the Contracting Officer, is equal to that named. The Contractor shall furnish to the Contracting Officer for his/her approval the name of the manufacturer, the model number, and other identifying data and information respecting the performance, capacity, nature, and rating of the machinery and mechanical and other equipment which the Contractor contemplates incorporating in the work.

**Article 18 – Materials to be Furnished by the Contractor**

Materials which require material certifications are:

- Aggregates for Drainfill and Filters
- Aggregates for Portland Cement Concrete
- Rock for Riprap
- Portland Cement
- Supplementary Cementitious Material
- Steel Reinforcement (For Concrete) Reinforced Concrete Pipe
- Plastic Pipe
- Metal
- Galvanizing
- Field Fencing materials
- Silt fence/Geotextile
- Vegetative establishment
- Materials
- Chain Link materials

**Article 41 – Accident Prevention and Safety & Supplement to OSHA Part 1926 and 1910 Construction Industry Standards and Interpretations**

The Contractor shall comply with all applicable OSHA safety standards. All or part of the work may be suspended for noncompliance. The PE and Inspector will have delegated authority to suspend work for any noncompliance posing a serious or imminent danger to the health or safety of the Contractor's employees or others such as employees of the CLO or FNI and the public.

The Supplement to OSHA 1910 and 1926 emphasizes specific safety items which must be understood by the Contractor prior to bidding this job. Among these items are the requirements for:

1. Written plan for accident prevention and safety (CO must approve prior to beginning work)
2. First Aid Training certificates
3. First aid facilities – on site
4. Safety Meetings
5. Dust control
6. Rollover protective structures
7. Scaffolding and Fall Protection

Hard hats must be worn on the job site at all times.

Equipment must be outfitted with working seat belts and approved roll-over protective structures (ROPS). All equipment will be inspected at the job site by the Construction Inspector prior to use on the project.

## **DRAWINGS**

Drawing, Cover + Sheets **1** thru **66** for Williams Creek No. 1 were reviewed.

## **SECTION IV – SPECIFICATIONS**

There are two types of specifications in this contract: (1) Construction Specifications and (2) Material Specifications. The construction specifications are composed of two parts. The first part is called the closed specification and is the standard NRCS construction specification that begins with the SCOPE and ends with MEASUREMENT AND PAYMENT or PAYMENT. The second part is called the open specification and consists of the ITEMS OF WORK AND CONSTRUCTION DETAILS that are written specifically for this job.

The following construction specifications are summarized, in part, to aid in preparing a competitive bid. However, all language of the specifications apply to the contract.

### **2 – CLEARING AND GRUBBING**

#### **Clearing and Grubbing**

This item shall consist of all clearing and grubbing and disposal within the work limits. The actual limits of required clearing and grubbing will be as designated or staked at the time of the showing the site to prospective bidders. The entire area shall be reasonably free of abrupt mounds, dips and windrows to provide a clear area for construction staking.

Disposal, all materials removed from the cleared and grubbed areas shall be chipped and used on-site for mulch, or disposed of at an offsite disposal area of the Contractor's own choosing in accordance with state and local regulations, or buried at areas designated or approved by the Engineer. Buried material shall have a minimum earthfill cover of not less than 3 feet. The top lift shall be mounded at least 6 inches higher than the surrounding undisturbed area to prevent unsightly depressions after settlement. The finished surface of the disposal area shall be uniformly graded to prevent ponding of water.

Compensation for this item is to be included **as a subsidiary to Bid Item 14, Excavation, Common.**

### **3 – STRUCTURE REMOVAL**

In Section 2, Marking, Method 1 shall apply. Disposal shall be at off-site locations in compliance with local codes.

In Section 3, Removal, Method 1 shall apply. Limits of removal shall be as indicated in the construction drawings.

In Section 6, Measurement and Payment, Method 2 shall apply.

#### **Bid Item 1 – Structure Removal, Principal Spillway**

This item shall consist of removing and disposing of the existing principal spillway as indicated in the construction drawings including the inlet riser, selected conduit sections, concrete cradle, cantilever supports, and all appurtenances unless otherwise indicated to remain. The existing principal spillway may be used for dewatering the reservoir. The existing conduit shall remain in service to pass stormwater flows until the new principal spillway system and outlet channel are substantially complete.

In Section 3, Removal, Method 1 shall apply. The limits of removal shall be as shown on the drawings.

#### **Bid Item 2 – Structure Removal, Rock Riprap**

This item shall consist of removing all rock riprap as indicated in the construction drawings including, rock riprap on the upstream slope of the embankment and at the downstream end of spillway structure(s). In Section 4, Salvage, with the approval of the Contracting Officer, the Contractor may choose to stockpile and salvage the removed rock riprap if demonstrated to meet the requirements of new rock riprap.

In Section 3, Removal, Method 1 shall apply. The limits of removal shall be as shown on the drawings.

#### **Bid Item 3 – Structure Removal, Fences**

This item shall consist of the removal and disposal of all designated fences in the construction area. The limits of fences to be removed shown on the drawings are approximate. Additionally, some fences may exist within the construction areas that are not delineated on the drawings. The actual limits of fences required to be removed will be marked on the site at the time of the showing of the site to prospective bidders.

In Section 3, Removal, Method 1 shall apply. The fences shall be removed to the bottom of the footing and/or post.

## **5 – POLLUTION CONTROL**

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 at the TCEQ website. In conformance with TPDES General Permit TXR150000, a Storm Water Pollution Prevention Plan (SWPPP) is required for the construction site. A SWP3 is provided. The Contractor shall review the SWPPP, 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 SWPPP, as amended, will be maintained at the construction site by the Contractor. A copy of the permit shall be attached to the SWPPP. All applicable TCEQ rules and regulations concerning the TPDES and the SWPPP must be followed.

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 Project Engineer a copy of the NOT that he/she will file with the TCEQ.

### **Bid Item 5 – Pollution Control**

This item shall consist of all works required to implement the Storm Water Pollution Prevention Plan, erosion and sediment controls works shall be limited to construction entrances, rock berms and sediment basins and sediment filters as shown on the drawings. If other erosion and sediment control works are required by the Contracting Officer, such measures will be considered added work.

Rock filter dam and silt fence and shall be removed when the site is completely stabilized. The stabilized construction entrance shall remain in place at end of construction except remove the rock riprap and smooth and level the disturbed area.

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

### **Bid Item 4 – Silt Fence**

This item shall consist of furnishing and installing silt fence to the lengths and locations designated on the drawings and otherwise needed to control sediment from leaving the construction site.

In Section 3, Erosion and sediment control measures and works, Sediment filters shall be limited to geotextile sediment filters.

Silt fence material shall meet the requirements of MS 592 and installed according to ASTM D6462.

In Section 7, Measurement and Payment, Method 1 shall apply and will be made to the nearest linear foot installed as specified.

Special Note: Payment includes providing and installing the sediment filters and not maintaining them. Maintenance falls under Bid Item 5 – Pollution Control.

## **6 – SEEDING, SPRIGGING, AND MULCHING**

### **Bid Item 6 – Vegetation, Sprigging**

This item shall consist of all seeding at the site as indicated in the construction drawings, as specified in the approved pollution prevention plan, as determined by the Contracting Officer or in other disturbed areas resulting from construction activities. This item shall include the site preparation; furnishing, fertilizing, and applying seed; and placing and anchoring hay mulch. Areas that do not require vegetation are those upstream of the dam which will routinely be submerged below the principal spillway crest elevation.

The quantity of Johnson grass seed per pound must be stated according to State Law, and if the amount is determined to be excessive for the site, the Contracting Officer has a right to reject the seed lot. In the last sentence of the second paragraph, the maximum time from testing before delivery shall be changed from 9 months to 6 months. The sentence shall thus read "No seed will be accepted with a test date more than 6 months before the delivery date to the site."



Seed drilled shall be on the approximate contour. A grass seed drill equipped with depth control bands, grain drill with a grass seed attachment, or Brillion (type) seeder shall be used. The seed shall not be planted or covered deeper than 1/4 inch below the soil surface. The distance between rows shall not exceed 6 inches. Seed shall be distributed over the entire area at uniform rates. Planting operations shall begin at the base of the slope on works of improvement. The areas shall be firmed before seeding and immediately following seeding with a cultipacker or corrugated packer roller weighing 180 to 190 pounds per foot of width. More weight shall be added as required. Only on areas not accessible to the drilling equipment may seed be broadcast by hand. The hand seeded areas shall be hand raked and then firmed with a hand-operated roller. The grass seed may be blended into the compost and applied per paragraph (6.c) of this section.

In Section 6, Measurement and Payment, Method 1 shall apply and will be made to nearest 0.1 acre at the bid unit price.

#### **Bid Item 7 – Irrigation System**

This consists of furnishing and installing a temporary solid set sprinkler irrigation system to irrigate the sprigged areas.

A written proposed plan for the system shall be furnished 30 days prior to installing the system.

All equipment, operators, maintenance, operating supplies, and materials needed to install the system shall be furnished. The meter(s) shall be installed so that all water applied for the irrigation of seeded grasses under the contract will be metered.

The system shall be removed upon completion of all irrigation applications.

In Section 6, Measurement and Payment, Method 2 shall apply and will be made at the contract lump sum price.

#### **Bid Item 8 – Irrigation Water**

This item shall consist of applying irrigation water to the areas designated in this spec Section 7.d. as needed to irrigate the areas sprigged. It includes the cost of water and labor.

The Contractor shall be responsible for the water source and obtain any use permits if required.

The watering efficiency shall not be less than 85% (uniform distribution).

In Section 6, Measurement and Payment, Method 1 shall apply and will be made at 1000-gallon units and measured to the nearest 1000 gallons based on the applied volume determined from the readings of an in-line water meter(s).

### **7 – CONSTRUCTION SURVEYS**

#### **Bid Item 9 – Construction Surveys**

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

The Contractor shall establish permanent reference markers (PRM). The brass cap for the PRM will be furnished by the CLO prior to casting/pouring the concrete.

Initial and final surveys for determinations of final quantities will be performed by the Contracting Local Organization (CLO). All surveys shall proceed from benchmarks; reference points and/or stakes set or established by the CLO. The benchmarks are shown on the drawings.

#### **Establishment of Permanent Reference Markers**

### **8 – MOBILIZATION AND DEMOBILIZATION**

#### **Bid Item 10 – Mobilization and Demobilization**

Primary access to the work area shall be at the location shown on the drawings. The access road 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 surface of the access road entrance shall be stabilized with suitable material as shown on the drawings to minimize tracking mud onto public roadways by vehicles leaving the construction area. Contractor shall contact contracting officer regarding any cattle guard crossing load limits. The road shall be maintained in a smooth rut-free condition throughout the contract period.

Culverts installed as part of this item of work shall have sufficient strength to support the anticipated loads imposed by construction traffic and shall be removed at the end of the contract period. If damage occurs

to the culverts due to construction activities, those culverts shall be replaced. Corrugated steel culverts shall be galvanized. Minimum culvert size shall be 18-inch I.D. and a minimum of 24 feet long with a 2-2/3" x 1/2" corrugations and a 16-gage minimum thickness. A minimum of 18 inches of compacted fill shall be placed over top of the pipe before construction equipment is allowed to pass.

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. The facility shall contain not less than 240 square feet (8-ft-wide by 30-ft-long) having a minimum 7-ft-high ceiling. The facility shall meet all additional requirements contained within this specification. The facility shall be securely anchored or tied-down to provide maximum possible stability against overturning by high winds.

The facility shall be enclosed by a 6-ft-high chain link fence placed to provide a minimum of 6 feet clearance between the fence and the outside walls of the facility. One gate 4 feet in width shall be installed in the fence.

The Contractor shall furnish and install electrical service to the facility. The electrical service shall be 110-120 volt, 60 amp, alternating current. The Contractor shall be responsible for supply of power to the facility 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 continuous operation 24 hours per day and shall be located a minimum of 100 feet from the facility and shielded to minimize the noise in the facility.

The facility and 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.

As part of demobilization, All debris, trash, tires, equipment, equipment parts, chains, cables, and other such items resulting from the construction operation shall, at the Contractor's expense, be removed from the work site and be salvaged by Contractor or disposed of in a manner which meets all Federal, State and Local Regulations. All disturbed areas, including the access road, 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. If road base/rock is used on the access road, it shall be removed after construction work is completed. All traffic control devices, warning signs, barricades and any other material used for traffic control shall be removed. All buildings, trailers, chain link fence, storage sheds, sanitary facilities and other such items shall be removed from the worksite when construction work is completed. After the blading and smoothing operation is complete, all disturbed areas shall be vegetated as described in Construction Specification 6, Seeding, Sprigging, and Mulching All utilities shall be removed from the site as required by the owner of the utility after construction work is completed.

## **11 - REMOVAL OF WATER**

### **Bid Item 11 – Removal of Water**

Written sealed plans and specs for diverting surface waters and for dewatering the site are required a minimum of 30 days prior to beginning any construction activities for which a diversion is required in accordance with the requirements of Section 2, Diverting Surface Water. The means of protection shall be designed, complete with drawings and shall be sealed by a Professional Engineer licensed in Texas. Refer to paragraph CS-11 Removal of Water (1)(f) for protection requirements.

The Contractor is responsible for obtaining hydrologic data to fully understand the hydrologic conditions at the site, and in development and implementation of the Contractor's diversion system plan.

The Contractor shall establish an "operating pool" elevation for the reservoir which must be maintained during normal inflows for the entire contract period. The operating pool elevation shall be less than or equal to the normal pool elevation (1527.6 feet) and be greater than or equal to the minimum reservoir elevation allowed by this specification.

The new principal spillway installation area shall be protected from the entry of water from the reservoir until the dam is reconstructed to the full design cross-section over the conduit.

At a minimum, the diversion system and cofferdams around the principal spillway shall be designed to protect the construction activities from being impacted by a 10-year (10% Annual Exceedance Probability) storm.

The contractor shall provide written plans for dewatering the site are required a minimum of 30 days prior to beginning any construction activities for which dewatering is required in accordance with the requirements of Section 3, Dewatering the Construction Site. The Contractor's proposed dewatering system shall be designed, complete with plans, specifications, analyses, and engineering evaluation criteria, and sealed by a Professional Engineer licensed in Texas.

The Contractor shall provide dewatering capacity sufficient to maintain a water level which allows excavation in the borrow area to the grades specified on the drawings. Additional dewatering capacity to draw the water level down to this level within 10 days shall be provided in the event of flooding which inundates the borrow area.

In Section 7, Measurement and payment, Method 1 shall apply. Payment will be made prorated into monthly amounts based on length of contract period.

## **12 – Relief Wells**

The contractor is responsible for developing and submitting a plan for approval by the Engineer for development of the Relief Wells. Installation and development of the relief well shall be monitored by the Engineer to ensure that the relief well is not damaged during development.

**Bid Item 12** – This item shall consist of furnishing and installing the Relief Well drain as indicated in the construction drawings including PVC temporary casing, well screen, riser pipe, fine filter material, concrete, and grout.

## **21 - EXCAVATION**

In Section 3, Blasting, no blasting will be permitted.

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 fill or waste areas. The designated fill areas and waste areas are shown or otherwise designated on the drawings. Prior to placing the waste material, the foundation shall be stripped, and the stripped material stockpiled for use as topsoil.

In Section 6, Excavation Limits, stability of the temporary excavation slopes is the responsibility of the Contractor. The Contractor shall submit an excavation plan a minimum of 30 days prior to performing any site excavations other than for foundation stripping and other topsoil removal operations. The excavation plan shall contain detailed methods proposed by the Contractor to excavate within the embankment and that slopes will meet OSHA safety requirements.

### **Bid Item 13 – Excavation, Common**

This item shall consist of all common excavation, as defined in Section 2, Classification required for construction of the intake riser, principle spillway conduit, auxiliary spillway, and discharge channel as shown on the drawings.

In Section 4, Use of Excavated Materials, 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 ensure 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 item(s) for excavation.

In Section 9, Measurement and payment, Method 2 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.

### **Subsidiary Item – Excavation, Common, Foundation Stripping**

This item 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. In areas characterized as clear pasture with occasional trees, the designated average depth of stripping shall be 6 inches. In heavily wooded areas, the designated average depth of stripping shall be 24 inches.

Compensation for this item is to be included in:

### **Bid Item 13 – Excavation, Common,**

**Bid Item 14 – Earthfill, Common,**  
**Bid Item 15 – Earthfill, Crushed Stone,**  
**Bid Item 18 – Topsoil.**

**Subsidiary Item – Excavation, Common, Borrow**

This item shall consist of all excavation from within the borrow areas required to complete the specified earthfills as designated on the drawings. All excavated slopes within the limits of borrow areas shall be maintained to be no steeper than five horizontal to one vertical.

All borrow areas shall be maintained to provide positive drainage to natural and constructed drainage ways. Borrow areas shall be maintained to be contiguous with no berms, ridges or mounds remaining that extend more than two feet above the lowest point in adjacent borrow areas. All berms, ridges, and mounds shall be removed to meet this height limitation.

Separate payment will not be made for this item. Compensation for this item is to be included with: **Bid Item 13 – Excavation, Common.**

**Subsidiary Item – Excavation, Common, Structural Removal**

This item includes all excavation, outside the limits of other designated excavation, required for the removal of the structures as indicated on the drawings, including, but not limited to; fencing, existing principal spillway riser, select existing principal spillway conduit sections, and existing impact basin rock riprap.

Compensation for this item is to be included in:

**Bid Item 1 – Structural Removal – Principal Spillway,**

**Bid Item 2 – Structural Removal – Rock Riprap,**

**Bid Item 3 – Structural Removal – Fences.**

**Subsidiary Item – Excavation, Common, Trenches**

This item includes all excavation, outside the limits of other designated excavation, required for the installation of the drainfill and associated plastic pipe as shown on the drawings.

Compensation for this item is to be included in:

**Bid Item 12 – Relief Well,**

**Bid Item 16 – Drainfill, Fine,**

**Bid Item 17 – Drainfill, Course,**

**Bid Item 26 – Plastic Pipe, PVC.**

**Subsidiary Item – Excavation, Common, Rock Riprap**

This item shall consist of all excavation, outside the limits of other designated excavation, required for the installation of the rock riprap as shown on the drawings .

Compensation for this item is to be included in:

**Bid Item 28 – Rock Riprap, Outlet Channel,**

**Bid Item 29 – Rock Riprap, Upstream Berm.**

**23 - EARTHFILL**

In Section 2, materials, materials from required excavations shall be reserved to backfill the areas from which they were taken. Excess material may be used for other earthfill zones as required in the construction drawings. Suitable materials shall be approved by the engineer.

In Section 3, Foundation Preparation, immediately prior to placement of the initial fill layer on earthen foundations, the stripped foundation shall be loosened to a depth of approximately 6 inches and, after any necessary moisture adjustments, shall be compacted with a minimum of six complete passes of the compacting equipment. Moisture adjustments shall bring the water content of the foundation soil within the required limits as shown on the drawings for that soil material if used as earthfill. Where the existing

embankment excavated or stripped for placement of new earthfill, the earthfill placed against the exposed face of the existing embankment shall follow these additional requirements. Each lift of fill material shall be disced or benched into the adjacent existing earthfill a minimum of 3 feet, measured horizontally along the lift line. Average moisture content of earthfill for this area shall average a minimum of 2 points above optimum at the time of compaction. Earthfill required to comply with this requirement below the stripping limits will be considered subsidiary to the respective earthfill bid item.

In Section 4, Placement, the maximum equipment compacted layer thickness shall be 9 inches. The maximum allowable particle size shall be 2 inches. Maximum layer thickness of fill compacted by manually directed power tamper shall be 4 inches. Backfill adjacent to concrete works shall not contain particles larger than 1-inch in diameter. After being deposited on the fill, each lift of fill material shall be spread, bladed, and smoothed to the extent necessary to insure that the surface is free of abrupt mounds, depressions, or windrows to provide a smooth uniform surface for operation of plowing and compaction equipment.

In Section 6, Compaction, Class A compaction shall apply.

**Bid Item 14 – Earthfill, Common**

This item shall consist of all earthfill and earth backfill as indicated in the construction drawings including, construction of the embankment raise, principal spillway backfill, auxiliary spillway dikes and berms.

In Section 9, Measurement and payment, Method 4 and 6 shall apply.

**Bid Item 15 – Earthfill, Crushed Stone**

This item shall consist of all crushed stone backfill as indicated in the construction drawings including underneath the intake riser and outlet structure .

In Section 9, Measurement and payment, Method 4 and 6 shall apply.

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.

The Item of work subsidiary to this bid item is Excavation, Common, Borrow, as specified in Construction Specification 21.

**Subsidiary Item – Earthfill, Structure Removal**

This item shall consist of all earthfill, outside the limits of designated earthfill as indicated in the construction drawings required to backfill the space created when removing structures including, but not limited to; fencing, existing principal spillway intake riser, select existing principal spillway conduit sections, and existing rock riprap.

Compensation for this item is to be included in:

**Bid Item 1 – Structure Removal, Principal Spillway,**

**Bid Item 2 – Structure Removal, Rock Riprap,**

**Bid Item 3 – Structure Removal, Fences.**

**Subsidiary Item – Earthfill, Trenches**

This item shall consist of all earthfill, outside the limits of designated earthfill as indicated in the construction drawings required to backfill trenches to existing ground when installing project components including, drainfill and associated plastic pipe as shown on the drawings.

Compensation for this item is to be included in:

**Bid Item 12 – Relief Well,**

**Bid Item 16 – Drainfill, Fine,**

**Bid Item 17 – Drainfill, Course,**

**Bid Item 26 – Plastic Pipe, PVP.**

**Subsidiary Item – Earthfill, Rock Riprap**

This item shall consist of all earthfill as indicated in the construction drawings required for installation of rock riprap.

Compensation for this item is to be included in:

**Bid Item 28 – Rock Riprap, Outlet Channel,**

**Bid Item 29 – Rock Riprap, Upstream Berm.**

## **24 - DRAINFILL**

The work consists of furnishing, placing, and compacting drainfill required in the construction of structure drainage systems.

In Section 2, Material, Method 1 shall apply. The drainfill gradations requirements are shown on the drawings.

In Section 4, Placement, drainfill shall be placed in such a manner as to prevent segregation of particle sizes. When trenches for construction of the filter/drainage system are excavated through earthfill (or backfills), the trench depth shall be limited to 5 feet maximum and shall include sufficient "overcut depth" to insure complete removal of earth contaminants of previously placed drainfill. Use of forms having projections that cause disturbance of adjacent drainfill materials or of in-place embankment materials when being withdrawn will not be permitted. .

### **Bid Item 16 – Drainfill, Fine**

This item shall consist of furnishing and installing all fine-grained (sand) filters as indicated in the construction drawings including, toe drains and filter diaphragm.

In Section 5, Control of Moisture, fine filter drainfill shall be in wet or near saturated condition when placed. Each layer of fine filter drainfill shall be saturated immediately prior to compaction.

In Section 6, Compaction, for fine graded drainfill, Class A compaction with the following exceptions shall apply: The compacted dry density shall be a minimum of 95 percent of the maximum dry density as determined by the method in ASTM D-698. The ASTM D-698 test procedure shall be modified to consist of a 1-point test performed on a representative sample of oven-dried drainfill.

In Section 8, Measurement and Payment, Method 1 shall apply.

### **Bid Item 17 – Drainfill, Coarse**

This item shall consist of furnishing and installing all coarse-grained (gravel) drains as indicated in the construction drawings including, toe drain and filter diaphragm .

In Section 5, Control of Moisture, no control of moisture is required for coarse filter drainfill.

In Section 6, Compaction, for coarse filter drainfill, Class III compaction shall apply.

In Section 8, Measurement and Payment, Method 1 shall apply.

## **26 - TOPSOILING**

### **Bid Item 18 – Topsoiling**

This item shall consist of all salvaging of approved topsoil and placing topsoil at the areas indicated in the construction drawings including, embankment, auxiliary spillway, staging and stockpile areas, borrow areas, spoil areas any other disturbed areas above the proposed normal pool elevations.

In Section 2, Quality of Topsoil, Topsoil composed of more than 30 percent clay shall be field tested for dispersive behavior at a rate of one crumb test (ASTM D 6572) every 30,000 square yards placed, and one double hydrometer test (ASTM D 4221) every 60,000 square yards placed. Acceptable material shall classify as Grade 1 using the crumb test, with no more than 10 percent of the test results classifying as Grade 2, and "Non-dispersive" using the double hydrometer test

In Section 3, Furnishing, Method 1 shall apply.

In Section 5, Spreading, Method 1 shall apply.

In Section 6 – Measurement and Payment, Method 1 shall apply.

## **27 – DIVERSIONS AND WATERWAYS**

### **Bid Item 19 – Diversions**

This item shall consist of all diversion berms as indicated in the construction drawings or as staked in the field. The location of diversions shown in the drawings are approximate. The final locations shall be designated by the Engineer.

In Section 6, Measure and Payment, Method 1 shall apply.

## **31 – CONCRETE FOR MAJOR STRUCTURES**

In Section 2, Materials, Class 2 coarse aggregate shall be Size No. 7,57,67, or 467.

In Section 3, Concrete mix design, Method 1 shall apply. All concrete shall equal or exceed Class 4500.

In Section 4, Inspection and Testing, the Owner's quality assurance testing in no way relieves the Contractor's responsibility to perform quality control testing as specified in Construction Specification 94, "Contractor's Quality Control".

In Section 13, Construction joints, Method 1 shall apply.

In Section 23, Acceptance of the Concrete Work, the Contractor shall follow the tolerances listed in this section, tolerances listed in Construction Specification 94, Contractor Quality Control, or tolerances as listed on the drawings, whichever is most stringent.

In Section 24, Measurement and payment, Method 1 shall apply.

**Bid Item 20 – Concrete, Structural, Riser**

This item shall consist of furnishing and placing all concrete required for the construction of the concrete principal spillway riser structure and associated appurtenances as indicated in the construction drawings.

**Bid Item 22 – Concrete, Pipe Cradle**

This item shall consist of furnishing and placing all concrete required for the construction of the concrete principal spillway pipe cradle and associated appurtenances as indicated in the construction drawings.

**Subsidiary Item – Concrete, Incidental – Class 4500**

This item shall consist of furnishing and placing all incidental concrete required to perform the items of work listed below:

**Bid Item 7 – Construction Survey,**

**Bid Item 26 – Plastic Pipe, PVC,**

**Bid Item 32 – Fence, Chain Link,**

**Bid Item 33 – Field Fence, Barbed Wire.**

**34 – STEEL REINFORCEMENT**

**Bid Item 23 – Reinforcing Steel**

This item shall consist of furnishing and placing all steel reinforcement required for the construction of all reinforced concrete works under this contract.

In Section 2, Materials, Reinforcement shall be Grade 60.

In Section 5, Splicing Bar Reinforcement, Method 1 shall apply.

In Section 7, Placing, if during the placement of the concrete any reinforcement is displaced more than ½ inch from its designated position, that reinforcement shall be entirely removed and placed in proper position. Inspection and approval of the reinforcement by the Contracting Officer will not relieve the Contractor of the responsibility of ensuring the reinforcement is held in place and is not displaced during the placement of the concrete.

In Section 9, Measurement and payment, Method 1 shall apply.

**41 – REINFORCED CONCRETE PRESSURE PIPE**

In Section 2, Materials, Joint sealing compound shall conform to ASTM C920, Elastomeric Joint Sealants for Cold Applied and Caulking of Joints.

In Section 5, Pressure Testing, Method 1 shall apply.

**Bid Item 24 – Open Trench, 48" I.D. Pipe Installation**

This item shall consist of furnishing and installing the 48" I.D. reinforced concrete pressure pipe (AWWA C-301) and appurtenances on a concrete cradle by the open trench method as indicated in the construction drawings including, the inlet riser wall thimble, and materials necessary for proper joint installation.

In Section 3, Laying the pipe, each section of pipe shall be supported at a minimum of two (2) locations along its length at all times. Methods of support that cause the weight of the pipe sections to bear on the pipe joints will not be permitted. Support blocks, located approximately two (2) feet from each end of each pipe section, shall be furnished for each section of pipe.

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

**Bid Item 25 – Slip Lining, 48” I.D. Pipe Installation**

This item shall consist of furnishing and installing the 48” I.D. reinforced concrete pressure pipe (AWWA C-301) and appurtenances inside the steel casing pipe by the slip lining method as indicated in the construction drawings.

In Section 3, Laying the pipe, each section of pipe shall be supported at a minimum of two (2) locations along its length at all times. Methods of support that cause the weight of the pipe sections to bear on the pipe joints will not be permitted. Support blocks, located approximately two (2) feet from each end of each pipe section, shall be furnished for each section of pipe. Special collars or exterior brush coat to hold the concrete pipe a minimum distance of 1-1/2 inches from the steel pipe inside surface shall be cast on the pipe by the manufacturer for those sections of pipe inserted into the steel casing pipe.

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

**45 – PLASTIC PIPE**

In Section 2, Material, the P.V.C. plastic pipe shall be ASTM D1785, Schedule 80. In Material Specification 547, Section 3, Perforations, item c. shall not apply. Perforation size, amount and location shall be as shown on the drawings.

In Section 6, Pipe embedment, earth Bedding shall be of the specified drainfill as indicated on the drawings. Compaction of the bedding shall be as specified in Construction Specification 24, Drainfill.

In Section 7, Backfill, pipe trenches shall be backfilled to the existing grade or two feet above the top of pipe whichever results in the greater depth of pipe. Earth backfill shall be as specified in Construction Specification 23, Earthfill.

In Section 10, Fittings, fittings shall be PVC and shall be Schedule 80 for use with PVC pressure pipe. PVC fittings shall be one-piece injection molded or fabricated from PVC pipe and one-piece injection molded PVC fittings. The fitting shall have a design pressure rating and external load-carrying capacity equal to or exceeding that specified for the pipe to which it is attached.

In Section 12, Pressure Testing, Method 1 shall apply.

**Bid Item 27 – Plastic Pipe, PVC**

This item shall consist of furnishing and installing PVC pipe as indicated in the construction drawings including, perforated pipe, solid wall pipe, fittings, wraps, and couplings.

In Section 13, Measurement and payment, Method 3 shall apply.

**54 – BORING AND JACKING**

A written plan is required for the boring and jacking operation and grouting operation. The must be signed and sealed by a PE in Texas. The Boring and jacked must be conducted by an experienced contractor having bored and jacked a minimum of 2,000 feet of 42-inch or larger diameter conduit.

**Bid Item 27 – Boring and Jacking**

This item shall consist of furnishing and installing the principal spillway steel casing pipe as indicated in the construction drawings including, the steel casing pipe, boring through the embankment and jacking the steel casing pipe in place, and grouting the annular space between the casing pipe and the in-situ soil.

In Section 6, Installing the Casing, Horizontal position of the steel casing pipe shall be within  $\pm 1.0$  feet of the proposed location shown in the drawings over the entire length of the bore with no abrupt changes. Alignment shall be monitored in accordance with Section 9, Monitoring and Testing. The maximum variation from planned grade of the steel casing pipe at any point in the drive shall be  $\pm 0.2$  foot over the entire length of the bore with no abrupt changes. Grade shall be monitored in accordance with Section 9, Monitoring and Testing.

In Section 10, Measurement and Payment, Method 1 shall apply.

**61 – ROCK RIPRAP**

In Section 2, Material, A specific gravity of 2.5 was used when preparing the gradation tables shown in the drawings. Rock for use as riprap shall comply with the requirement of Material Specification 523, Rock Type 1. Existing riprap may be salvaged and reused if it meets the requirements of this specification. Rock gradation requirements are shown on the drawings.



In Section 4, Equipment-placed Rock Riprap, Riprap may be equipment placed. Equipment shall not be allowed on the rock during or after placement.

**Bid Item 28 – Rock Riprap, Outlet Channel**

This item shall consist of furnishing and placing all rock riprap as indicated in the construction drawings on the downstream outlet channel.

In Section 7, Measurement and payment, Method 5 shall apply.

**Bid Item 29 – Rock Riprap, Upstream Berm**

This item shall consist of furnishing and placing all rock riprap as indicated in the construction drawings on the upstream berm of the embankment

In Section 7, Measurement and payment, Method 5 shall apply.

**71 – WATER CONTROL GATES**

**Bid Item 30 – Water Control Slide Gate, 12" x 12"**

This item shall consist of furnishing and installing the 12" x 12" slide gate on the principal spillway inlet including the wall thimble, gate, stem, stem guides, lift pedestal, hand wheel, wedges, and all associated appurtenances.

The gate shall conform to the requirements of Material Specification 571 for Type MHS-2, and shall be Class 55-20, Square Opening.

Anchor bolts shall be stainless steel.

The gate frame shall be of the flat back or flange back type.

The gate stem shall be the rising type and shall be stainless steel and be of sufficient diameter as recommended by the manufacturer to withstand the thrusts encountered in operation of the specified type and class gate.

Stem guides shall be adequately spaced and of sufficient number as recommended by the manufacturer to properly support the stem during operation of the gate.

The wall bracket shall be as recommended by the manufacturer.

Hoist or lift shall be of the handwheel type as recommended by the manufacturer.

The gate shall be designed to operate satisfactorily at any degree of opening.

The wall thimble shall be of cast iron and shall be Type F, 12 inches in length and shall have a square opening.

All bolts shall be furnished with flat washers and lock washers or with flat washers and double nuts for lock nuts. All washers and nuts shall be of the same materials and have the same coatings as the bolts on which applied.

Payment for furnishing and installing each type, size, and class of gate shall be made at the contract unit price for that type, size, and class of gate. Such payment constitutes full compensation for all labor, equipment, material, and all other items necessary and incidental to the completion of the work including furnishing and installing anchor bolts and all specified appurtenances and fittings.

**81 – METAL FABRICATION AND INSTALLATION**

**Bid Item 31 – Metal Fabrications**

This item shall consist of furnishing, fabricating, and installing metal works for the Trash rack for the new principal spillway inlet; Manhole frame and cover for the new principal spillway inlet; Metal frames and covers for the RCC drainage system cleanouts, including concrete completion; Rodent guards for drain outfalls through principal spillway impact basin and outfalls on RCC spillway.

All metal parts shall be galvanized after fabrication, with the exception of the manhole and cleanout frames and covers and any stainless steel hardware.

See Spec 81 for additional requirements for these items.

In Section 6, Measurement and payment, Method 1 shall apply. Payment for this bid item shall include full compensation for the concrete required for the foundation cleanout covers as shown in the construction drawings.

**Subsidiary Item, Fence Stiles**

This item shall consist of furnishing, fabricating, galvanizing, and installing the fence stile as shown on the drawings.

Compensation for this item is to be included in **Bid Item 33 – Fence, Barbed Wire**

**Subsidiary Item – Chain Link Fence Post Base Plates**

This item shall consist of furnishing, fabricating, galvanizing, and installing the chain link fence post base plates as shown on the drawings..

Compensation for this item is to be included in **Bid Item 32 – Fence, Chain Link**

**91 – CHAIN LINK FENCE**

**Bid Item 32– Fence, Chain Link**

This item shall consist of furnishing all materials required and all work necessary for installation of the chain link fence for the principal spillway impact basin and auxiliary spillway sidewalls as shown on the drawings.

In Section 2, Material, chain link fence fabric shall be Galvanized only and not PVC coated.

Contractor shall have been in fence installation business for at least 2 years and shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

In Section 5, Measurement and Payment, Method 1 shall apply. The length of fence is measured to the nearest 0.1 foot along the fence, including any gates.

**92 – FIELD FENCE**

**Bid Item 33 – Fence, Barbed Wire**

Field fence consists of furnishing all materials required and constructing fences of the type designated on the drawings. This item shall include (7) gates in locations shown on drawings. The approximate location of the fences to be constructed is shown on the construction drawings. The final location of the fences (including corners, gates, pull and brace panels, stiles and special anchorage) shall be as staked by the Engineer.

In Section 10, Measurement and Payment, Method 1 shall apply and measured to the nearest foot along the profile of the fence, including any gate openings.

**94 – CONTRACTOR QUALITY CONTROL**

**Bid Item 34 – Contractor Quality Control**

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.

Daily QC reports are required to be submitted to the Engineer.

It is the Contractor's responsibility to perform tests to prove and ensure that all work performed meets the contract requirements. Any testing done by the CLO is for the sole benefit of the CLO. All tests must be conducted in accordance with the appropriate ASTM method and with equipment that meets the requirements of the specified ASTM test method.

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. The Contractor shall not proceed with any construction activity that requires inspection until the written plan is approved by the Contracting Officer.

The contractor is responsible for developing, implementing, and maintaining a quality control system to ensure that the specified quality is achieved for all materials and work performed. The contractor's quality control system shall be approved by the CO and operational before the commencement of work.

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

Section 10.a.(8) lists items of work that require CQC and the degree of inspection each requires (periodic, full time, or continuous).

Section 10.a.(9) lists the skills, knowledge, and abilities that are required for CQC personnel.

Per Section 10.a.(10) Contractor is required to maintain a record of progress with photographs and to submit to Contracting Officer no later than date of final invoice.

In Section 9, Measurement and Payment, Method 2 shall apply and paid in equal amounts on each monthly estimate.

## **95 – GEOTEXTILE**

### **Bid Item 35 – Geotextile**

This item shall consist of furnishing and placing the geotextile for the rock riprap located along the upstream wave protection, rock lined principal spillway outlet channel, rock lined auxiliary spillway outlet channel, and the rock scour apron upstream of the auxiliary spillway as shown on the drawings.

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.

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

In Section 5, Placement, Method 2 shall apply. The geotextile shall be joined by overlapping a minimum of 18" and secured against the underlying foundation material.

In Section 6, Measurement and payment, Method 1 shall apply. The quantity is determined to the nearest SY of the covered surfaces only, disregarding that required for anchorage, seams, and overlaps.

## **99 – CONDUIT ABANDONMENT**

### **Bid Item 36 – Conduit Abandonment**

This item consists of filling the existing principal spillway conduit designated to be abandoned with the job mix as specified in Section 5.

At least 14 days before filling the conduit, furnish the Engineer a written plan for the operation. Include evidence satisfactory to the Engineer that the cellular concrete will be installed by a contractor having completed a minimum of 10 cellular concrete installations that are similar in nature to that specified.

In Section 8, Grouting, the maximum grout pressure shall not exceed 4 psi.

Payment will be made at the contract lump sum price and will constitute full compensation for all items necessary and incidental to the completion of the work.

## **SITE VISIT**

A field visit was made to William Creek No.1. All locations and works of improvement from the drawings were shown on the ground.

Stop #1: Proposed Impact Basin, Proposed outlet of the Principal Spillway, Relief Well locations. All proposed structure would be located downstream of the dam.

Stop #2: The Proposed Principal Spillway Baffled Inlet Riser. This proposed structure would be located upstream of the dam.

## **PRE-BID CONFERENCE ATTENDANCE (11/01/22)**

### **Gillespie County WCID Personnel**

Jean Ann Maynard, GCWCID Contracting Consultant  
Jennifer Ellebracht, District Clerk

### **Freese & Nichols, Inc. Personnel**

Benny Castro, Water Resources Design Division  
Will Flanigin, Project Inspector  
Patrick Garnett, Construction Services

### **Land Owner/Representative**

Landowner, Stonewall, TX (Carolyn Porterfield)  
Crow's Sword, Stonewall TX (Jim Spivey)

### **Others**

Southern Infrastructure Group. LLC, Dallas, TX (Tim Shover & Howard Birch)  
DJ Hansen Construction, Ephraim, UT (Dave Hansen)  
Feller Enterprise, Bunum, TX (David (Bo) Hensen)  
Saur Construction, Inc., Comfort, TX (Seth Saur)  
Harper Brothers Construction, San Antonio, TX (Carlos Benavides & David Pearl)  
Sequoia Services, LLC, Greensboro, NC (Liam Collins)  
Acme Bridge Company, Inc., New Braunfels, TX (Brent Clark, Clay Herod, Greg Hohmann)  
Keeley Construction, New Braunfels, TX (Ronnie Duenes)  
JM Pipeline, LLC, Horseshoe Bay TX (Gaspar Caracheo)  
Harris Road Company, Wimberly, TX (Kelly Martin)  
3B dozer Service, LLC, Bremond, TX (David Martin)

### **DISTRIBUTION:**

To be posted on Gillespie County SWCD website. All registered plan holders and 11/1/22 site showing attendees will be advised via email (or otherwise) when Amendment #2 is available for downloading from **[www.gillespiecountyswcd.org/](http://www.gillespiecountyswcd.org/)** Click on Job Bid tab

"Internal" personnel, via email 11/4/22

FILECODE: IFB Tab 4A (Site Showing)

**IFB Amd. #2 changes are in BLUE lettering.**

**EXHIBIT B**

**BID SCHEDULE (Cover Sheet)**

The undersigned, in compliance with Invitation for Bids No. GC-21-WCW1Upgrade-01 for Williams Creek Watershed, Floodwater Retarding Structure (FRS) Site 1 UPGRADE, Gillespie County, Texas, having examined the plans, specifications and bidding documents, the site of the proposed work, and being familiar with all the conditions surrounding performance of the proposed project; agrees to furnish all labor, material and equipment and perform all work required in accordance with the plans, specifications and contract documents for the prices below, if this offer is accepted by the Contracting Local Organization within \_\_\_\_\_ calendar days after the date bids are due. *[Note: Failure to insert a number means the bidder accepts the minimum forty-five (45) calendar days as required in Notice to Bidders.]*

**Award Restriction**

One award for the aggregate for all bid items will be made under this solicitation.

For other than bid items with a lump-sum "unit," the quantities listed in the bid schedule on which unit prices are requested are estimates only.

**-- Bidders are entitled to EXCLUDE exempt taxes in their bid prices --**

[See PART I, Subpart B, Instructions to Bidders #4]

**TOTAL BID PRICE Williams Creek Watershed Site 1 UPGRADE:**

In FIGURES: \$ \_\_\_\_\_

In WORDS: \_\_\_\_\_ Dollars

and \_\_\_\_\_ Cents

NOTE: AMOUNTS SHALL BE SHOWN IN BOTH WORDS AND FIGURES. IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN.

**Bidder's Name/Title (type or print):** \_\_\_\_\_

**Bidder's Signature:** \_\_\_\_\_

**Company Name:** \_\_\_\_\_

**Unique Entity ID by SAM.gov (if available):** \_\_\_\_\_

**Date:** \_\_\_\_\_

**EXHIBIT B (continued)**

**REVISED BID SCHEDULE (Sheet 1 of 2)**

**WILLIAMS CREEK WATERSHED SITE 1 UPGRADE  
 Gillespie County, Texas**

<b>Item No.</b>	<b>Work or Material</b>	<b>Const Spec. No.</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Amount</b>
1	Structure Removal, Principal Spillway	3	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
2	Structure Removal, Rock Riprap	3	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
3	Structure Removal, Fences	3	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
4	Silt Fence	5	6,212	Lin. Ft.	\$ _____	\$ _____
5	Pollution Control	5	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
6	Vegetation, Seeding	6	37.8	Acre	\$ _____	\$ _____
7	Irrigation System	6	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
8	Irrigation Water	6	7,699	1,000 Gal.	\$ _____	\$ _____
9	Construction Survey	7	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
10	Mobilization and Demobilization	8	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
11	Removal of Water	11	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
12	Relief Well	412	4	Each	\$ _____	\$ _____
13	Excavation, Common	21	34,604	Cu. Yd.	\$ _____	\$ _____
14A	Earthfill, Zone 1, Common	23	<b>143,458</b>	Cu. Yd.	\$ _____	\$ _____
14B	Earthfill, Zone 2, Common	23	<b>329</b>	Cu. Yd.	\$ _____	\$ _____
15	Earthfill, Zone 3 and Zone 4	23	<b>299</b>	Cu. Yd.	\$ _____	\$ _____
16	Drainfill, Fine	24	500	Cu. Yd.	\$ _____	\$ _____
17	Drainfill, Coarse	24	66	Cu. Yd.	\$ _____	\$ _____
18	Topsoil	26	194,173	Sq. Yd.	\$ _____	\$ _____
19	Stub Diversions	27	40	Lin. Ft.	\$ _____	\$ _____

*(Bid Schedule continued on next page)*

**EXHIBIT B (continued)**  
**REVISED BID SCHEDULE (Sheet 2 of 2)**

**WILLIAMS CREEK WATERSHED SITE 1 UPGRADE**  
**Gillespie County, Texas**

<b>Item No.</b>	<b>Work or Material</b>	<b>Const Spec. No.</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Amount</b>
20	Concrete, Structural, Riser	31	61.0	Cu. Yd.	\$ _____	\$ _____
21	Concrete, Pipe Cradle	31	22.3	Cu. Yd.	\$ _____	\$ _____
22	Concrete, Structural Impact Basin	31	77.0	Cu. Yd.	\$ _____	\$ _____
23	Reinforcing Steel	34	26,097	Pound	\$ _____	\$ _____
24	Open Trench, 48" I.D. Pipe Installation	41	46	Lin. Ft.	\$ _____	\$ _____
25	Slip Lining, 48" I.D. Pipe Installation	41	260	Lin. Ft.	\$ _____	\$ _____
26	Plastic Pipe, PVC	45	1,550	Lin. Ft.	\$ _____	\$ _____
27	Boring and Jacking	54	260	Lin. Ft.	\$ _____	\$ _____
28	Rock Riprap, Outlet Channel	61	1,521	Ton	\$ _____	\$ _____
29	Rock Riprap, Upstream Berm	61	2,619	Ton	\$ _____	\$ _____
30	Slide Gate, 12" x 12"	71	1	Each	\$ _____	\$ _____
31	Metal Fabrications	81	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
32	Fence, Chain Link	91	83.0	Lin. Ft.	\$ _____	\$ _____
33	Field Fence, Barbed Wire	92	8,180	Lin. Ft.	\$ _____	\$ _____
34	Contractor Quality Control	94	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
35	Conduit Abandonment	99	1 Job	Lump Sum	\$ xxxxxxxxxxxx	\$ _____
<b>Total Bid (Williams Creek Site 1 Upgrade).....</b>					<b>\$ _____</b>	

NOTE: Also enter amount of Total Bid in figures and words on Exhibit B, page GP-9 of 18.


---- END OF BID SCHEDULE ----


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

The following construction details are applicable to all items of work covered by this specification:

- (1) In Section 4, Clearing and Grubbing: Upon completion of the clearing and grubbing operation, all areas, which have been cleared and grubbed, 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.

- (2) In Section 5, Disposal:

 (a) All materials removed from the cleared and grubbed areas shall be disposed of by chipping for use onsite as mulch, ~~burying or burning in the designated areas onsite,~~ or at an offsite disposal area of the Contractor's own choosing. All disposal methods shall be in accordance with state and local regulations.

 (b) Locations for buried materials shall be designated at the time of the showing of the site to prospective bidders. Buried material shall have a minimum earthfill cover of not less than 3 feet. The cover shall be placed in two lifts with each lift compacted by traversing the entire surface with one tread track of the material placement equipment. The top lift shall be mounded at least 6 inches higher than the surrounding undisturbed area to prevent unsightly depressions after settlement. The finished surface of the disposal area shall be uniformly graded to prevent ~~ponding~~ of water.


(c) All trees, snags, logs, brush, shrubs, stumps, and rubbish that are felled, detached, or otherwise dislocated in or near stream channels shall be disposed of as specified or removed to higher ground prior to the end of each workday. 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 are:

**a. Subsidiary Item, Clearing and Grubbing**

- (1) This item shall consist of all clearing and grubbing as indicated herein, in the construction drawings, or staked at the time of the site showing including, (1) to a minimum 10 feet outside of the areas to be occupied by earthfill or a structure, (2) areas of required excavation or borrow and (3) to any additional areas required to perform the work.

- (2) Separate payment will not be made for this item. Compensation for this item will be included in the payment for the following item(s):

 (a) Bid Item 14A, Excavation, Zone 1, Common.



## 7. Items of work and construction details

The following construction details are applicable to all items of work covered by this specification:

- (1) In Section 2, Marking, Method 1 shall apply.
- (2) In Section 3, Removal, Method 1 shall apply. Limits of removal shall be as indicated in the construction drawings.
- (3) In Section 5, Disposal, all materials that are not salvaged shall be disposed of by the Contractor at sites of his own choosing at an off-site location. This disposal shall be in accordance with all applicable Federal, State, and local laws, rules, and regulations. Contractor shall provide a bill of lading or equivalent documentation to demonstrate that materials were disposed of appropriately.
- (4) In Section 6, Measurement and Payment, Method 2 shall apply.

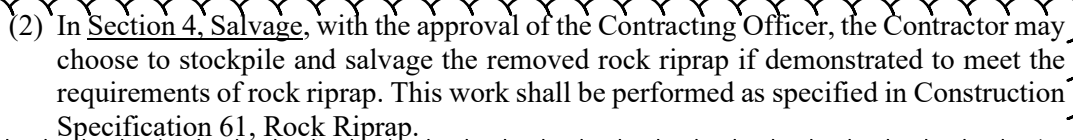
Items of work to be performed in conformance with this specification are:

### a. Bid Item 1, Structure Removal – Principal Spillway

- (1) This item shall consist of removing the existing principal spillway structures as indicated in the construction drawings including, the inlet riser, selected conduit sections, concrete cradle, cantilever supports, and all appurtenances unless otherwise indicated to remain.
- (2) The existing principal spillway may be used for dewatering the reservoir. The existing conduit shall remain in service to pass stormwater flows until the new principal spillway system and outlet channel are substantially complete.
- (3) Items of work subsidiary to this bid item are:
  - (a) Excavation, Common, Structure Removal as specified in Construction Specification 21, Excavation as required to perform this item of work.
  - (b) Earthfill, Structure Removal as specified in Construction Specification 23, Earthfill as required to backfill the void created by structure removal and any excavation required to perform this item of work.

### b. Bid Item 2, Structure Removal – Rock Riprap

- (1) This item shall consist of removing all rock riprap as indicated in the construction drawings including, rock riprap on the upstream slope of the embankment and at the downstream end of spillway structure(s).

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- (2) In Section 4, Salvage, with the approval of the Contracting Officer, the Contractor may choose to stockpile and salvage the removed rock riprap if demonstrated to meet the requirements of rock riprap. This work shall be performed as specified in Construction Specification 61, Rock Riprap.

- (3) Items of work subsidiary to this bid item are:

(a) Excavation, Common, Structure Removal as specified in Construction Specification 21, Excavation as required to perform this item of work.

(b) Earthfill, Structure Removal, as specified in Construction Specification 23, Earthfill as required to perform this item of work.

**c. Bid Item 3, Structure Removal – Fences**

(1) This item shall consist of removing all fences, regardless of type as indicated in the construction drawings including, wire, mesh, posts, corners, braces, gates, and/or cattle guards unless otherwise indicated to remain.

(2) Items of work subsidiary to this bid item are:

(a) Excavation, Common, Structure Removal as specified in Construction Specification 21, Excavation as required to perform this item of work.

(b) Earthfill, Structure Removal as specified in Construction Specification 23, Earthfill as required to backfill the void created by structure removal and any excavation required to perform this item of work.

Items of work to be performed in conformance with this specification are:

**a. Bid Item 4, Silt Fence**

- (1) This item shall consist of furnishing and installing silt fence as indicated in the construction drawings including, around disturbed areas with limited runoff, stockpile areas, construction campsite, and as otherwise needed to control sediment from leaving the construction site.
- (2) In Section 3, Erosion and Sediment Control Measures and Works, Sediment filters shall be limited to geotextile sediment filters.
- (3) In Section 7, Measurement and payment, Method 1 shall apply.

**b. Bid Item 5, Pollution Control**

2

- (1) This item shall consist of furnishing all materials, labor, and equipment necessary to implement the Storm Water Pollution Prevention Plan (SWPPP) and limit the amount of sediment and other pollution from construction activities. Pollution control shall be provided as required at ingress / egress roads, haul roads, parking areas, stockpiles, earthfill and excavation activities and any other areas producing sediment or other pollution. This item shall also consist of all work required to maintain and remove each pollution control measure (including silt fence) and restore the location following removal to its original or better condition.
- (2) In Section 3, Erosion and Sediment Control Measures and Works, erosion and sediment control works shall be limited to construction entrances, rock berms and sediment basins and sediment filters as shown on the drawings. If other erosion and sediment control works are required by the Contracting Officer, such measures will be considered added work.
- (3) In Section 4, Chemical Pollution
  - (a) Chemical toilets used during construction shall be removed from the site and disposed of in conformance with state and local regulations.
  - (b) Sump pits with liners or containers shall be used during construction to collect fuel spills and for storage of chemical pollutants, such as petroleum products. All containers, liners, and pollutants shall be removed from the site. The removal shall include materials used to line the pit and any soils contaminated. All pollutants, containers, and/or polluted soils shall be removed and disposed of in conformance with Federal, State, and local regulations. A written plan to satisfactorily collect and dispose of pollutants such as oil spills from equipment, fuel spills at refueling facilities, anti-freeze, and other chemical pollutants will be provided to the Contracting Officer prior to the issuance of a notice to proceed.
- (4) In Section 7, Measurement and Payment, Method 3 shall apply.

Items of work to be performed in conformance with this specification are:

**a. Bid Item 6, Vegetation, Seeding**

(1) This item shall consist of all seeding at the site as indicated in the construction drawings, as specified in the approved pollution prevention plan, as determined by the Contracting Officer or in other disturbed areas resulting from construction activities. This item shall include the site preparation; furnishing, fertilizing, and applying seed; and placing and anchoring hay mulch. Areas that do not require vegetation are those upstream of the dam which will routinely be submerged below the principal spillway crest elevation.

(2) In Section 2, Material, Seed:

- (a) Seed of high quality customarily sold in the trade is required.
- (b) The seed shall not contain any objectionable foreign material that will hinder proper distribution. Examples of objectionable foreign material include long sticks and stems, unthashed seed heads with stems attached or any other objects not normally found in reasonable quality lots of grass seeds.
- (c) The quantity of Johnson grass seed per pound must be stated according to State Law, and if the amount is determined to be excessive for the site, the Contracting Officer has a right to reject the seed lot.
- (d) In the last sentence of the second paragraph, the maximum time from testing before delivery shall be changed from 9 months to 6 months. The sentence shall thus read “No seed will be accepted with a test date more than 6 months before the delivery date to the site.”
- (e) The seed must be in sound, clean bags with each bag containing a tag showing, among other things with respect to the contents of the bag, name of the seed, locality and year of harvest, and the percentage of purity and germination.
- (f) Bag tag figures will be accepted for purity and germination, and the seed will either be accepted or rejected by the Contracting Officer based on the bag tag test.
- (g) Seeding rates are for “Pure Live Seed (PLS)”; therefore, the percentage of purity as shown on the seed tag will determine the number of pounds of bulk material needed to obtain the required amount of pure live seed per acre.

(3) In Section 3, Seeding Mixtures, Sod, Sprigs, and Dates of Planting:

(a) The seed mixture and application rate shall be:

<b>Seed Type</b>	<b>Application Rate</b>
Cowboy Bermudagrass	3.0 lb. PLS per Acre
Giant Bermudagrass	3.0 lb. PLS per Acre
Mohawk Bermudagrass	3.0 lb. PLS per Acre

(4) In Section 4, Seedbed preparation and treatment, the grass seed shall be drilled onto a firm, clean seedbed. Rills and gullies shall be filled or tilled if needed prior to seeding.

(5) In Section 5, Seeding, Sprigging, Fertilizing, Mulching, and Stabilizing:

- (a) Seed drilled shall be on the approximate contour. A grass seed drill equipped with depth control bands, grain drill with a grass seed attachment, or Brillion (type) seeder shall be used. The seed shall not be planted or covered deeper than 1/4 inch below the soil surface. The distance between rows shall not exceed 6 inches. Seed shall be distributed over the entire area at uniform rates. Planting operations shall begin at the base of the slope on works of improvement. The areas shall be firmed before seeding and immediately following seeding with a cultipacker or corrugated packer roller weighing 180 to 190 pounds per foot of width. More weight shall be added as required. Only on areas not accessible to the drilling equipment may seed be broadcast by hand. The hand seeded areas shall be hand raked and then firmed with a hand-operated roller. The grass seed may be blended into the compost and applied per paragraph (6.c) of this section.

(6) In Section 6, Measurement and Payment, Method 1 shall apply. Measurement shall be based upon horizontal plan area with no adjustment for slopes.

2

**b. Bid Item 7, Irrigation System**

- (1) This item shall consist of furnishing and installing a temporary solid set sprinkler irrigation system as needed to irrigate the areas indicated in this specification to be seeded including, areas indicated in the construction drawings, as specified in the approved pollution prevention plan, as determined by the Contracting Officer or in other disturbed areas resulting from construction activities.
- (2) The Contractor shall furnish the Contracting Officer, in writing, a proposed plan for the irrigation system and application 30 days before installing the irrigation system. The plan shall show the layout, size of all components, sprinkler head spacing, and methods to determine the application and distribution efficiencies. Acceptance of this plan or the waiving of the plan requirement will not relieve the Contractor of the responsibilities for completing the specified work.
- (3) The system shall be adequate to apply the volume of water and meet the application requirements specified in Sections 7.c of this specification. The application of irrigation shall not cause runoff. The application shall be uniform ensuring that at any point the irrigated area shall be within 20 percent of the required application.
- (4) The Contractor shall furnish all equipment, operators, maintenance, operating supplies, and materials needed to install the system. The Contractor shall furnish in-line, propeller type water meter (s) with volumetric calibration. The meter(s) shall be installed so that all water applied for the irrigation of seeded grasses under the contract will be metered.
- (5) Unless otherwise noted, the system shall be removed upon completion of all irrigation applications.
- (6) In Section 6, Measurement and Payment, Method 2 will apply.



**c. Bid Item 8, Irrigation Water**

- (1) This item shall consist of applying irrigation water to the areas indicated in this specification to be seeded including, areas indicated in the construction drawings, as specified in the approved pollution prevention plan, as determined by the Contracting Officer or in other disturbed areas resulting from construction activities. This item shall include the cost of water and labor. Contractor shall be responsible for the water source.
- (2) Irrigation for establishment of seeded grasses will be a requirement in the event rainfall is not adequate for germination and grass growth as determined by the Contracting Officer. The time span between irrigations will be determined based on soil moisture condition but shall not exceed the time that will cause damage to the vegetation.
- (3) All areas will be irrigated with a sprinkler irrigation system. The total irrigation at any one time will be based on need as determined by the Contracting Officer. The irrigation system shall produce a reasonable uniform distribution of the required application over the irrigated area without excessive runoff or erosion. The watering efficiency shall not be less than 85%. Adjustments in sprinkler spacing, nozzle sizes, pressures, or in the gross water applied shall be made when needed to accomplish the above objectives.
- (4) The estimated application rate and schedule of irrigations will be as follows: 1st irrigation 2 inches, 2nd, 3rd, and 4th irrigations ½ inch at 2 days intervals and then twice a week for the next 4 weeks at ½ inch applications. Additional irrigation or adjustment in the application rates may be required as determined and approved by the Contracting Officer and shall be executed with a modification to the contract to specify the change and to make an equitable adjustment in contract price and performance time as may be warranted by the change.
- (5) In Section 6, Measurement and Payment, Method 1 will apply. Measurement for payment will be 1000-gallon units and will be measured to the nearest 1000 gallons based on the applied volume determined from the readings of the in-line water meter(s). An adjustment in the volume of water shall be applied for application efficiency less than 85 percent.

## 9. Items of work and construction details

The following construction details are applicable to all items of work covered by this specification:

(1) In Section 3, Quality of Work, slopes of all excavation and constructed earthfill shall be checked for conformance to designated line and grade at vertical intervals not to exceed 5 feet.

(2) In Section 4, Primary Control,

(a) All surveys shall proceed from benchmarks, reference points, and/or stakes set or established by the Contracting Officer. The existing reference points are shown on the construction drawings.

(b) Contractor shall establish permanent reference markers (PRM). The brass cap for the PRM will be furnished by the CLO prior to casting/pouring the concrete.

- The required number and approximate locations of the markers are shown on the drawings. The actual location of the markers shall be as staked.
- Markers shall be cast in place, non-reinforced, concrete cylinders or precast, non-reinforced, concrete cylinders installed flush with the ground line and with a standard benchmark cap mounted on the top.
- The concrete cylinder shall have a minimum diameter of 10 inches and depth of 2 feet, except a lesser depth may be approved where rock is encountered. Earth forming will be permitted for cast-in-place markers,
- No surface finish will be required for that portion of the marker which will be below ground. If precast markers are used, backfill shall be thoroughly tamped in 4-inch layers.

(3) In Section 5, Construction Surveys, Method 2 shall apply. Initial and final surveys for determinations of final quantities will be performed by the Gillespie County Water Control and Improvement District.

Items of work to be performed in conformance with this specification are:

### a. Bid Item 9, Construction Survey

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

(2) In Section 8, Payment, Method 2 shall apply.

(3) Items of work subsidiary to this bid item are:

(a) Concrete, Incidental – Class 4500 for the Permanent Reference Markers (PRM) as specified in Construction Specification 31, Concrete for Major Structures as it applies to this item.

#### 4. Items of work and construction details

Items of work to be performed in conformance with this specification are:

##### a. Bid Item 10, 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) In Section 2, Equipment and Materials, the mobilization operation shall include but not be limited to the items enumerated in Section 2 of this specification and the following items of work:

△

- (a) Access to the work area shall be at the location shown on the drawings. An access road to the construction staging area shall be constructed and maintained by the Contractor. The access road shall be a minimum of 14 feet wide and be graded and smoothed to provide a surface which can easily be traversed by automobiles. The surface of the access road entrance shall be stabilized with suitable material as shown on the drawings to minimize tracking mud onto public roadways by vehicles leaving the construction area. Contractor is responsible for damage to cattle guard crossings. Culverts shall be installed at crossings of low areas where significant concentrations of runoff water accumulate and cause ponding of water. The road shall be maintained in a smooth rut-free condition throughout the contract period. Culverts installed as part of this item of work shall have sufficient strength to support the anticipated loads imposed by construction traffic and shall be removed at the end of the contract period. If damage occurs to the culverts due to construction activities, those culverts shall be replaced. Corrugated steel culverts shall be galvanized. Minimum culvert size shall be 18-inch I.D. and a minimum of 24 feet long with a 2-2/3" x 1/2" corrugations and a 16-gage minimum thickness. A minimum of 18 inches of compacted fill shall be placed over top of the pipe before construction equipment is allowed to pass.

- (b) As a part of this bid item the Contractor shall furnish a facility at the construction staging area suitable for use as a Field Office by the Contracting Officer. The facility shall contain no less than 240 square feet (8-ft-wide by 30-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 three windows and one door. It shall have a cabinet top range (either gas or electric) with a minimum of two burners or elements and may be either built in or portable. A microwave oven 0.80 cubic feet in size and having a minimum power rating of 650 watts output shall be provided. A substantial workbench and a table, each 3-ft-wide by 8-ft-long with the work surface 42" above floor level and covered with laminated plastic, shall be provided. Cabinet storage shelves shall be included with the workbench. Two standard 60" x 30" office desks with drawers and leg space shall be provided. Two office swivel chairs 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. A closet (30" wide x 42" long) having a 28" wide door shall be included. The facility shall be wired for electricity with a minimum of three ceiling fixtures and a minimum of three wall outlets on each



## 8. Items of work and construction details

The following construction details are applicable to all items of work covered by this specification:

- (1) In Section 2, Diverting Surface Water,
  - a. Written plans for protection of construction from reservoir water and surface runoff are required a minimum of 30 days prior to beginning any construction activities for which a diversion is required in accordance with the requirements of Section 2, Diverting Surface Water. The means of protection shall be designed, complete with drawings and shall be sealed by a Professional Engineer licensed in Texas. Refer to paragraph (1) (f) for protection requirements.
  - b. The Contractor is responsible for obtaining hydrologic data to fully understand the hydrologic conditions at the site, and in development and implementation of the Contractor's diversion system plan.
  - c. Contractor shall establish an "operating pool" elevation for the reservoir which must be maintained during normal inflows for the entire contract period. The operating pool elevation shall be less than or equal to the normal pool elevation (1527.6 feet) and be greater than or equal to the minimum reservoir elevation allowed by this specification.
  - d. There is no minimum reservoir elevation required to be maintained during the contract period. Drawdown of the reservoir shall be the responsibility of the Contractor and shall be coordinated and approved by the Contracting Officer.
  - e. Contractor shall implement the approved water control plan prior to beginning any construction activities. Removal of reservoir control facilities shall require written approval of the Contracting Officer.
  - f. The new principal spillway installation area shall be protected from the entry of water from the reservoir until the dam is reconstructed to the full design cross-section over the conduit. The construction area shall be protected from the entry of water from the reservoir by cofferdam, steel sheet piling, or other means. During the time of construction for the new principal spillway, the existing principal spillway may be used for diverting surface water. Water will not be permitted to enter the new principal spillway conduit until all components of the principal spillway structure are constructed and fully operational including the outlet into the spillway impact basin.
  - g. At a minimum, the diversion system and cofferdams around the principal spillway shall be designed to protect the construction activities from being impacted by a 10-year (10% Annual Exceedance Probability) storm. The starting reservoir elevation must be the operating pool elevation as established in this specification. The plan must include provisions to draw down the reservoir from the peak 10-year water surface elevation to the operating pool elevation within 10-days of the precipitation event.

(2) In Section 3, Dewatering the Construction Site,

- a. Excavation required for construction, including but not limited to, excavation for the principal spillway inlet, conduit, and outlet structures, shall be kept free of water during excavation, placement of concrete and other structures, and backfilling. The water table shall be maintained a minimum of 3 feet below the subgrade and cut slope face in the immediate vicinity of the work during required excavations. The water table for construction of concrete structures shall be kept a minimum of 2 feet below the subgrade of the concrete during and for a minimum of 48 hours after concrete placement. The water table at a backfill location shall be maintained a minimum of 2 feet below the backfill surface.
- b. Written plans for dewatering the site are required a minimum of 30 days prior to beginning any construction activities for which dewatering is required in accordance with the requirements of Section 3, Dewatering the Construction Site. The Contractor's proposed dewatering system shall be designed, complete with plans, specifications, analyses, and engineering evaluation criteria, and sealed by a Professional Engineer licensed in Texas. The dewatering system plan shall include the type of materials to be used and manufacturer's data for commercially available equipment to be included in the dewatering system and shall be submitted to the Contracting Officer for review and approval prior to the start of construction operations.
- c. The Contractor shall provide dewatering capacity sufficient to maintain a water level which allows excavation in the borrow area to the grades specified on the drawings. Additional dewatering capacity to draw the water level down to this level within 10 days shall be provided in the event of flooding which inundates the borrow area.

Items of work to be performed in conformance with this specification are:

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**a. Bid Item 11, Removal of Water**

- (1) This item shall consist of all operations necessary to accomplish the work defined in Section 1 of this specification, including work required to control water from entering the new principal spillway.

2

- (2) In Section 7, Measurement and Payment, Method 1 shall apply. Payment shall be prorated monthly over the period of construction, and the last prorated amount shall be paid on the final invoice.

- (2) In Section 4, Use of Excavated Materials, 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 ensure 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 item(s) for excavation.
- (3) In Section 9, Measurement and Payment, Method 2 shall apply. Prior to performing designated excavations, the ground surface shall be stripped of vegetation and topsoil as specified in Construction Specification 26. The depth of this stripping shall be sufficient to remove soil containing significant vegetative or organic matter. The upper limit for pay limit determination shall be the ground surface, as it exists following clearing and grubbing, but prior to stripping the surface vegetation and topsoil.
- (4) Items of work subsidiary to this bid item are:
  - (a) Clearing and Grubbing as specified in Construction Specification 2 as it applies to this bid item.
  - (b) Excavation, Common, Foundation Stripping as specified in Construction Specification 21 as it applies to stripping of the waste area(s), borrow area(s) or other areas not paid for under other bid items.

**b. Subsidiary Item, Excavation, Common, Foundation Stripping**

- (1) This item shall consist of excavation, down to a nominal depth as required to remove all topsoil, rubbish, vegetation not removed by clearing and grubbing operations, and other unsatisfactory material from the ground surface. This item shall be limited to the area indicated for the foundations of earthfill, borrow areas and waste areas.
- (2) In areas characterized as clear pasture with occasional trees, the designated average depth of stripping shall be 6 inches. In heavily wooded areas, the designated average depth of stripping shall be 24 inches. Contracting Officer may require excavation to a greater depth than the designated average depth. Compensation for stripping excavation greater than the designated average depth shall be made as common excavation if the total actual stripping quantity exceeds the product of the stripping area and the designated average depth.
- (3) Separate payment will not be made for this item. Compensation for this item will be included in the payment for the following item(s):

- (a) Bid Item 13, Excavation, Common,
- (b) Bid Item 14A, Earthfill, Zone 1, Common,
- (c) Bid Item 15, Earthfill, Crushed Stone,
- (d) Bid Item 18, Topsoil.



**c. Subsidiary Item, Excavation, Common, Borrow**

- 2
- (1) This item shall consist of all excavation from within the borrow areas required to complete the specified earthfill as designated on the drawings.
  - (2) All excavated slopes within the limits of borrow areas shall be maintained to be no steeper than five horizontal to one vertical (5H:1V). Borrow areas outside of the reservoir area shall be topsoiled and grassed upon completion.
  - (3) All borrow areas shall be maintained to provide positive drainage to natural or constructed drainage ways. Dressing and grading of borrow areas to accomplish this drainage shall be accomplished as borrow excavation progresses.
  - (4) All borrow areas shall be maintained to be contiguous with no berms, ridges or mounds remaining that extend more than two feet above the lowest point in adjacent borrow areas. All berms, ridges, and mounds shall be removed to meet this height limitation.

- 2
- (5) Separate payment will not be made for any of the work described under this item. Compensation for this item will be included in the payment for Bid Item 14A Earthfill, Zone 1, Common.

**d. Subsidiary Item, Excavation, Common, Structure Removal**

- (1) This item includes all excavation, outside the limits of other designated excavation, required for the removal of the structures as indicated on the drawings, including, but not limited to; fencing, existing principal spillway riser, select existing principal spillway conduit sections, and existing impact basin rock riprap.
- (2) Separate payment will not be made for this item. Compensation for this item will be included in the payment for the following item(s):
  - (a) Bid Item 1, Structure Removal – Principal Spillway,
  - (b) Bid Item 3, Structure Removal – Fences,
  - (c) Bid Item 2, Structure Removal – Rock Riprap.

**e. Subsidiary Item, Excavation, Common, Trenches**

- (1) This item includes all excavation, outside the limits of other designated excavation, required for the installation of the drainfill and associated plastic pipe as shown on the drawings.
- (2) Separate payment will not be made for this item. Compensation for this item will be included in the payment for the following items:
  - (a) Bid Item 12, Relief Well
  - (b) Bid Item 16, Drainfill, Fine,
  - (c) Bid Item 17, Drainfill, Coarse,

## 10. Items of work and construction details

The following construction details are applicable to all items of work covered by this specification:

(1) In Section 2, Material:

(a) Suitable materials from required excavations shall be reserved to backfill Zone 2 areas. Suitable materials shall be approved by the engineer.

(2) In Section 3, Foundation Preparation:

- (a) Immediately prior to placement of the initial fill layer on earthen foundations, the stripped foundation shall be loosened to a depth of approximately 6 inches and, after any necessary moisture adjustments, shall be compacted with a minimum of six complete passes of the compacting equipment. Moisture adjustments shall bring the water content of the foundation soil within the required limits as shown on the drawings for that soil material if used as earthfill.
- (b) Where the existing embankment excavated or stripped for placement of new earthfill, the earthfill placed against the exposed face of the existing embankment shall follow these additional requirements. Each lift of fill material shall be disced or benched into the adjacent existing earthfill a minimum of 3 feet, measured horizontally along the lift line. Average moisture content of earthfill for this area shall average a minimum of 2 points above optimum at the time of compaction. Earthfill required to comply with this requirement below the stripping limits will be considered subsidiary to the respective earthfill bid item.

(3) In Section 4, Placement:

- (a) The maximum equipment compacted layer thickness shall be 9 inches. The maximum allowable particle size shall be 2 inches. Maximum layer thickness of fill compacted by manually directed power tamper shall be 4 inches. Backfill adjacent to concrete works shall not contain particles larger than 1-inch in diameter.
- (b) Frozen materials shall not 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.
- (c) After being deposited on the fill, each lift of fill material shall be spread, bladed, and smoothed to the extent necessary to insure that the surface is free of abrupt mounds, depressions, or windrows to provide a smooth uniform surface for operation of plowing and compaction equipment.
- (d) Each lift of fill material shall then be disked, bladed, and plowed to an acceptable degree and depth to thoroughly loosen and blend 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 disk 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.

(4) In Section 6, Compaction:

(a) Class A compaction shall apply. The compaction density and moisture content requirements shall be as shown on the drawings.

(5) In Section 7, Reworking or Removal and Replacement of Defective Earthfill,

(a) All foundation and embankment surfaces shall be closely examined immediately prior to the placement of all earthfill and backfill. 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.

Items of work to be performed in conformance with this specification are:

**a. Bid Item 14A, Earthfill, Zone 1, Common**

(1) This item shall consist of all earthfill and earth backfill as indicated in the construction drawings including, construction of the embankment raise, principal spillway backfill, auxiliary spillway dikes, berms and the existing discharge channel.

(2) In Section 9, Measurement and Payment, Methods 4 and 6 shall apply. Items of work subsidiary to this bid item are:

(a) Excavation, Common, Foundation Stripping as specified in Construction Specification 21, Excavation as it applies to this item.

(b) Excavation, Common, Borrow as specified in Construction Specification 21, Excavation as it applies to this item.

**b. Bid Item 14B, Earthfill, Zone 2, Common**

(1) This item shall consist of all earthfill and earth backfill as indicated in the construction drawings including, construction of the principal spillway baffle inlet riser backfill and impact basin backfill.

(2) In Section 9, Measurement and Payment, Methods 4 and 6 shall apply. Items of work subsidiary to this bid item are:

(a) Excavation, Common, Foundation Stripping as specified in Construction Specification 21, Excavation as it applies to this item.

**c. Bid Item 15, Earthfill, Zone 3 and Zone 4**

(1) This item shall consist of all Zone 3 and Zone 4 backfill as indicated in the construction drawings including underneath the intake riser and outlet structure.

(2) In Section 9, Measurement and Payment, Methods 4 and 6 shall apply. Items of work

subsidiary to this bid item are:

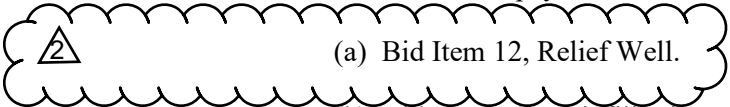
- (a) Excavation, Common, Foundation Stripping as specified in Construction Specification 21, Excavation as it applies to this item.

**d. Subsidiary Item, Earthfill, Structure Removal**

- (1) This item shall consist of all earthfill, outside the limits of designated earthfill as indicated in the construction drawings required to backfill the space created when removing structures including, but not limited to; fencing, existing principal spillway intake riser, select existing principal spillway conduit sections, and existing rock riprap.
- (2) Separate payment will not be made for this item. Compensation for this item will be included in the payment for the following item(s):
  - (a) Bid Item 1, Structure Removal – Principal Spillway,
  - (b) Bid Item 2, Structure Removal – Rock Riprap,
  - (c) Bid Item 3, Structure Removal – Fences,

**e. Subsidiary Item, Earthfill, Trenches**

- (1) This item shall consist of all earthfill, outside the limits of designated earthfill as indicated in the construction drawings required to backfill trenches to existing ground when installing project components including, drainfill and associated plastic pipe as shown on the drawings.
- (2) Separate payment will not be made for this item. Compensation for this item will be included in the payment for the following item(s):



- (a) Bid Item 12, Relief Well.
- (b) Bid Item 16, Drainfill, Fine,
- (c) Bid Item 17, Drainfill, Course,
- (d) Bid Item 26, Plastic Pipe, PVC.

**f. Subsidiary Item, Earthfill, Rock Riprap**

- (1) This item shall consist of all earthfill as indicated in the construction drawings required for installation of rock riprap.
- (2) Separate payment will not be made for this item. Compensation for this item will be included in the payment for the following item(s):
  - (a) Bid Item 28, Rock Riprap, Outlet Channel,
  - (b) Bid Item 29, Rock Riprap, Upstream berm.

## 7. Items of work and construction details

Items of work to be performed in conformance with this specification are:

### **a. Bid Item 19, Stub Diversions**

- (1) This item shall consist of all stub diversion berms as indicated in the construction drawings or as staked in the field.
- (2) The location of diversions shown in the drawings are approximate. The final locations shall be designated by the Engineer.
- (3) In Section 6, Measurement and Payment, Method 1 shall apply.



Items of work to be performed in conformance with this specification are:

**a. Bid Item 20, Concrete, Structural, Riser**

- (1) This item shall consist of furnishing and placing all concrete required for the construction of the concrete principal spillway riser structure and associated appurtenances as indicated in the construction drawings.
- (2) In Section 24, Measurement and Payment, Method 1 shall apply.

**b. Bid Item 21, Concrete, Pipe Cradle**

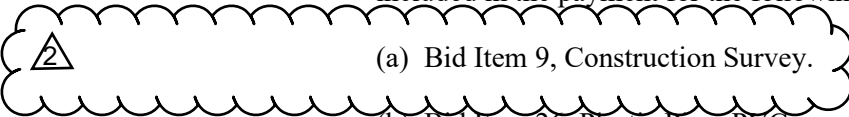
- (1) This item shall consist of furnishing and placing all concrete required for the construction of the concrete principal spillway pipe cradle and associated appurtenances as indicated in the construction drawings.
- (2) In Section 24, Measurement and Payment, Method 1 shall apply.

**c. Bid Item 22, Concrete, Structural, Impact Basin**

- (1) This item shall consist of furnishing and placing all concrete required for the construction of the concrete principal spillway impact basin structure and associated appurtenances as indicated in the construction drawings.
- (2) In Section 24, Measurement and Payment, Method 1 shall apply.

**d. Subsidiary Item, Concrete, Incidental – Class 4500**

- (1) This item shall consist of furnishing and placing all incidental concrete required to perform the items of work listed below.
- (2) Separate payment will not be made for this item. Compensation for this item will be included in the payment for the following item(s):

- 
- (a) Bid Item 9, Construction Survey.
  - (b) Bid Item 26, Plastic Pipe, PVC
  - (c) Bid Item 32, Fence, Chain Link
  - (d) Bid Item 33, Field Fence, Barbed Wire

#### 14. Items of work and construction details

The following construction details are applicable to all items of work covered by this specification:

- (1) In Section 2, Materials:
  - (a) The PVC plastic pipe shall be ASTM D 1785, Schedule 80
  - (b) In Material Specification 547, Section 3, Perforations, Item c. shall not apply. Perforation size, amount, and locations shall be as shown on the drawings.
- (2) In Section 6, Pipe Embedment, Bedding shall be of the specified drainfill as indicated on the drawings. Compaction of the bedding shall be as specified in Construction Specification 24, Drainfill.
- (3) In Section 7, Backfill, pipe trenches shall be backfilled to the existing grade or two feet above the top of pipe whichever results in the greater depth of pipe. Earth backfill shall be as specified in Construction Specification 23, Earthfill.
- (4) In Section 10, Fittings, fittings shall be PVC and shall be Schedule 80 for use with PVC pressure pipe. PVC fittings shall be one-piece injection molded or fabricated from PVC pipe and one-piece injection molded PVC fittings. The fitting shall have a design pressure rating and external load-carrying capacity equal to or exceeding that specified for the pipe to which it is attached.
- (5) In Section 12, Pressure Testing, Method 1 shall apply.

Items of work to be performed in conformance with this specification are:

##### a. Bid Item 26, Plastic Pipe, PVC

- (1) This item shall consist of furnishing and installing PVC pipe as indicated in the construction drawings including, perforated pipe, solid wall pipe, fittings, wraps, and couplings.
- (2) In Section 13, Measurement and Payment, Method 3 shall apply.
- (3) Items of work subsidiary to this bid item are:
  - (a) Excavation, Common, Trenches as specified in Construction Specification 21, Excavation as it applies to this item.
  - (b) Earthfill, Trenches as specified in Construction Specification 23, Earthfill as it applies to this item.
  - (c) Concrete, Incidental – Class 4500 as specified in Construction Specification 31, Concrete for Major Structures as it applies to this item.

## 11. Items of work and construction details

Items of work to be performed in conformance with this specification are:

### a. Bid Item 27, Boring and Jacking

(1) This item shall consist of furnishing and installing the principal spillway steel casing pipe as indicated in the construction drawings including, the steel casing pipe, boring through the embankment and jacking the steel casing pipe in place, and grouting the annular space between the casing pipe and the in-situ soil.

(2) In Section 6, Installing the Casing:

(a) Horizontal position of the steel casing pipe shall be within  $\pm 1.0$  feet of the proposed location shown in the drawings over the entire length of the bore with no abrupt changes. Alignment shall be monitored in accordance with Section 9, Monitoring and Testing.

(b) The maximum variation from planned grade of the steel casing pipe at any point in the drive shall be  $\pm 0.2$  foot over the entire length of the bore with no abrupt changes. Grade shall be monitored in accordance with Section 9, Monitoring and Testing

(3) In Section 10, Measurement and Payment, Method 1 shall apply

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

Items of work to be performed in conformance with this specification are:

**a. Bid Item 28, Rock Riprap, Outlet Channel**

- (1) This item shall consist of furnishing and placing all rock riprap as indicated in the construction drawings on the downstream outlet channel.
- (2) In Section 7, Measurement and Payment, Method 5 shall apply
- (3) Items of work subsidiary to this bid item are:
  - (a) Excavation, Common, Rock Riprap, outlet channel as specified in Construction Specification 21, Excavation as it applies to this item.

(b) Earthfill, Rock Riprap, as specified in Construction Specification 23, Earthfill as it applies to this item.

(c) Geotextile as specified in Construction Specification 95, Geotextile, as it applies to this bid item.

**b. Bid item 29, Rock Riprap, Upstream Berm**

- (1) This item shall consist of furnishing and placing all rock riprap as indicated in the construction drawings on the upstream berm of the embankment.
- (2) In Section 7, Measurement and Payment, Method 5 shall apply
- (3) Items of work subsidiary to this bid item are:
  - (a) Excavation, Common, Rock Riprap, upstream berm as specified in Construction Specification 21, Excavation as it applies to this item.

(b) Earthfill, Rock Riprap as specified in Construction Specification 23, Earthfill as it applies to this item.

(c) Geotextile as specified in Construction Specification 95, Geotextile, as it applies to this bid item.

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

Items of work to be performed in conformance with this specification are:

**a. Subsidiary Item, Slip Lining**

- (1) This item shall consist of grouting the annular space between the carrier pipe and casing pipe with cellular concrete as indicated in the drawings.
- (2) In Section 4, Submittals, Slip-lining operations shall not commence until the operations plan, job mix design, and proposed carrier pipe layout drawings have been reviewed and approved by the Contracting Officer.
- (3) In Section 7, Installing Carrier Pipe, the installation shall comply with Construction Specification 41, Reinforced Concrete Pressure Pipe Conduits.
- (4) Separate payment will not be made for this item. Compensation for this item will be included in the payment for the following item(s):
  - (a) Bid Item 25, Slip Lining, 48" I.D. Pipe Installation

- Must have knowledge of steel placement details and the ability to interpret steel requirements from construction drawings.
- Must have knowledge of form construction and bracing for construction of concrete structures.
- Have the ability to interpret survey notes and to prepare quantity computations.
- Have the ability to maintain adequate files and records of construction inspection work.
- Must have knowledge of the United Soil Classification System and the ability to interpret soil classification requirements from the construction drawings.

(d) Concrete Laboratory Testing Technicians – Must have certification from the American Concrete Institute (ACI) for Concrete Laboratory Testing Technician.

2 (e) Quality control personnel shall also be responsible for maintaining a record of progress with photographs. Construction activities shall be documented with 5 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 ensure full coverage of all work performed. The photographs shall be numbered, dated and time imprinted and indexed with documentation explaining construction activities shown, and must be submitted with request for final payment. Digital files of photographs shall be provided with Contractor's final pay request.

(5) In Section 9, Payment, Method 2 shall apply.

(d) Bid Item 24, Open Trench, 48" I.D. Pipe Installation



**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 OWNERS RESIDENT REPRESENTATIVE IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS BEFORE PROCEEDING WITH WORK.
- CONTOURS WERE OBTAINED FROM SURVEY PERFORMED IN FEBRUARY OF 2020. CONTRACTOR SHALL MAKE SITE SURVEYS AS NECESSARY FOR CONSTRUCTION AND IN ACCORDANCE WITH CONSTRUCTION SPECIFICATION 7, CONSTRUCTION SURVEYS, HORIZONTAL DATUM IS TEXAS STATE PLANE, NAD83, CENTRAL ZONE 4203, US SURVEY FEET WITH A LOCALIZED SCALE FACTOR OF 1.00012. VERTICAL DATUM IS NAV88
- THE CONTRACTOR SHALL BE LIABLE FOR DAMAGE TO IMPROVEMENTS AND UTILITIES ALONG THE ACCESS ROUTE AND AT OR NEAR THE WORKSITE. UTILITIES MAY EXIST AND NOT BE SHOWN ON THE CONSTRUCTION DRAWINGS. THE SITE SHALL BE CAREFULLY SCRUTINIZED FOR EVIDENCE OF UTILITIES. AT A MINIMUM, PRIOR TO ANY GROUND DISTURBANCE, THE TELEPHONE NUMBER 811 SHALL BE CALLED TO ASCERTAIN IF UNDERGROUND UTILITIES EXIST IN THE GENERAL WORK AREA. CALLING THIS TELEPHONE NUMBER WILL ONLY ASCERTAIN THE EXISTENCE OF UNDERGROUND UTILITIES OWNED BY COMPANIES THAT SUBSCRIBE TO THIS ORGANIZATION. THERE MAY BE OTHER UNDERGROUND UTILITIES IN THE WORK AREA.
- THE CONTRACTOR SHALL NOTIFY THE OWNERS OF ALL UTILITIES A MINIMUM OF TEN (10) DAYS IN ADVANCE OF INTENT TO PERFORM WORK IN THE VICINITY OF THE AFFECTED UTILITY. THE NOTICE SHALL BE IN WRITING AND A COPY SHALL BE FURNISHED TO THE CONTRACTING OFFICER.
- 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 CONSTRUCTION SPECIFICATION II, REMOVAL OF WATER.
- THE APPROXIMATE LOCATIONS OF THE ACCESS ROAD(S), CONSTRUCTION CAMPSITE, SOIL STOCKPILE, BORROW AND WASTE AREAS ARE SHOWN. THE FINAL LOCATIONS OF THESE AREAS SHALL BE DESIGNATED AT THE TIME OF SHOWING OF THE WORKSITE TO PROSPECTIVE BIDDERS.
- 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.
- CONSTRUCTION ACTIVITIES SHALL NOT OCCUR OUTSIDE THE DESIGNATED WORK LIMITS, UNLESS OTHERWISE AUTHORIZED.
- 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.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL CONSTRUCTION ACTIVITIES, INCLUDING MATERIAL STORAGE, STAGE AREAS, AND EQUIPMENT WITHIN LIMITS OF CONSTRUCTION FOLLOWING CONSTRUCTION.
- NO CONSTRUCTION FILL OR MATERIALS SHALL BE PLACED OR STORED IN AREAS NOT SPECIFICALLY DESIGNATED FOR THAT PURPOSE.
- 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 AT THE CONTRACTOR'S EXPENSE, UNLESS PROVIDED FOR IN THE CONSTRUCTION SPECIFICATIONS.
- THE CONTRACTOR SHALL COMPLY WITH THE SAFETY REQUIREMENTS OUTLINED IN THE NRCS SUPPLEMENT TO OSHA STANDARDS PART 1910 AND 1926, FOUND IN NEH PART 645 APPENDIX F.

**GEOTECHNICAL BORING NOTES:**

PARTIAL GEOTECHNICAL BORING LOGS AND EXISTING SOIL DESCRIPTIONS ARE INCLUDED IN THESE DRAWINGS FOR INFORMATION ONLY. ANY REPRESENTATION OF THE SOILS AND FOUNDATION CONDITIONS SHOWN IN THESE DRAWINGS SHOULD BE CONSIDERED PARTIAL, INCOMPLETE, AND NOT PART OF THE CONTRACT DOCUMENTS. ADDITIONAL GEOTECHNICAL DATA MAY BE FOUND IN A SEPARATE GEOTECHNICAL DATA REPORT. THIS SEPARATE DOCUMENT IS ALSO NO PART OF THE CONTRACT DOCUMENTS. THE GEOTECHNICAL DATA REPORT REPRESENTS DATA THAT WAS CONSIDERED SUFFICIENT FOR DESIGN, BUT MAY NOT BE SUFFICIENT FOR CONSTRUCTION. THE CONTRACTOR IS FULLY RESPONSIBLE FOR DETERMINING SUBSURFACE CONDITIONS TO A DEGREE NECESSARY TO SUBMIT THE ASSOCIATED BID ITEMS AND MAY USE THE PROVIDED INFORMATION AT THEIR OWN RISK. REFER TO THE GEOLOGIC INVESTIGATION REPORT FOR DETERMINATIONS OF SOIL AND ROCK PROFILE ELEVATIONS AND BORING LOGS. THE REPORT IS AND IT'S FINDING ARE A REPRESENTATION OF THE SUBSURFACE BASED ON CURRENT PRACTICE FOR GEOTECHNICAL INVESTIGATION AND TESTING. ACTUAL FIELD CONDITIONS MAY VARY.

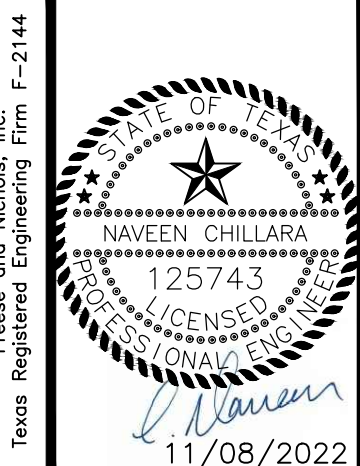
**DRAINFILL AND FILTER GRADATIONS**

THE DRAINFILL MATERIALS FOR THE FOUNDATION DRAIN SHALL MEET THE FOLLOWING CRITERIA UNLESS OTHERWISE SPECIFIED IN CONSTRUCTION SPECIFICATION 24:

COARSE - ASTM C33 #89 COARSE AGGREGATE

FINE - ASTM C33 FINE AGGREGATE WITH A MODIFIED GRADATION MEETING THE FOLLOWING:

MATERIAL:	FINE FILTER (FIRST STAGE)
SIEVE	PERCENT PASSING
3/8 IN.	100
NO. 4	90-100
NO. 8	75-100
NO. 16	55-85
NO. 30	35-65
NO. 50	15-45
NO. 100	0-25
NO. 200	0-3



DESIGNED BY: WBW  
 DRAWN BY: MAG  
 CHECKED BY: NC  
 FILE NAME: WC1-GN-NOTES.dwg  
 DATE CHECKED: 11/8/2022

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**MATERIAL PLACEMENT DATA**

ZONE	MATERIAL CLASSIFICATION	MATERIAL SOURCE	PLACEMENT LOCATION	LIQUID LIMIT	PLASTICITY INDEX	PERCENT PASSING NO 200	MAXIMUM PARTICLE SIZE	MAXIMUM LOOSE LIFT	MOISTURE DENSITY TEST	MINIMUM PERCENT COMPACTION	MOISTURE LIMITS	
1	CL/CH	REQUIRED EXCAVATIONS AND ONSITE BORROW	EMBANKMENT/EXISTING DISCHARGE CHANNEL	≤ 70	≤ 50	≥ 60	2"	8"	ASTM D698	A	95%	-1% +3%
2	CL	IMPORTED FILL	BACKFILL MATERIAL	<50	≤ 35	> 50	2"	8"	ASTM D698	A	95%	-1% +3%
3	CRUSHED STONE (FLEXIBLE BASE)	IMPORTED FILL	BELOW IMPACT BASIN	SEE NOTE 5					ASTM D1557	C	100%	-3% +1%
4	FREE-DRAINING FILL	IMPORTED FILL	BELOW INLET RISER STRUCTURE	N/A	N/A	> 5	2"	SEE NOTE 8				

**NOTES:**

- INCREASED COMPACTION EFFORTS FOR IMPORTED MATERIALS PLACED BELOW STRUCTURES TO MINIMIZE SETTLEMENTS.
- ONLY MATERIALS FOR ZONE 1 SHALL BE OBTAINED FROM REQUIRED SITE EXCAVATIONS. ADDITIONAL MATERIAL, IF REQUIRED, WILL COME FROM THE APPROVED BORROW AREAS DESIGNATED ON THE DRAWINGS.
- THE SOIL MATERIALS EXCAVATED FROM THE EMBANKMENT (FROM ANY GIVEN LOCATION) SHALL BE REPLACED WITH LIKE MATERIALS, UNLESS OTHERWISE INDICATED.
- CONDUCT SUCH FIELD TESTS DEEMED NECESSARY AS CONSTRUCTION PROGRESSES ON MATERIALS BEING EXCAVATED TO IDENTIFY DISPERSIVE SOILS. MATERIALS THAT TEST TO BE HIGHLY DISPERSIVE SHALL NOT BE USED TO CONSTRUCT ANY EMBANKMENT ZONE.
- ZONE 3 CRUSHED STONE SHALL COMPLY WITH TXDOT 2014 STD. SPEC. ITEM 247- FLEXIBLE BASE, TYPE A/D, GRADE 1/2. TXDOT TEX-113E MAY BE USED AS AN ALTERNATIVE METHOD TO ASTM D1557 FOR DETERMINING THE MOISTURE DENSITY CHARACTERISTICS OF CRUSHED STONE (FLEXIBLE BASE).
- COMPACTION REQUIREMENTS FOR ZONES 3 VARIES BASED ON PLACEMENT LOCATION.
- ZONE 4 FREE-DRAINING FILL SHALL BE ASTM C-33, NO. 4, NO. 467, NO. 5, NO. 56 MATERIALS OR APPROVED EQUIVALENT.
- FREE-DRAINING FILL (ZONE 4) SHALL BE COMPACTED USING ROLLING OR PLATE VIBRATORY COMPACTORS. COMPACTION EFFORTS SHALL BE BASED ON A TEST PASS THAT ESTABLISHES THE NUMBER OF PASSES REQUIRED TO ACHIEVE COMPACTION OF THE GRAVEL, AFTER REVIEWED AND APPROVED BY CONTRACTING OFFICER. MAXIMUM LIFT THICKNESS IS 12 INCHES, BUT SHALL BE REDUCED DEPENDING ON THE RESULTS OF THE TEST PASS. MAXIMUM LIFT THICKNESS WHEN USING WALK-BEHIND VIBRATORY COMPACTORS IS 4 INCHES.

**ROCK RIPRAP GRADATIONS**

ROCK RIPRAP FOR THE ROCK LINED OUTLET SHALL MEET THE GRADATION REQUIREMENTS OF ASTM D6092 FOR R-60 ROCK RIPRAP. IT IS ESTIMATED THAT 1,521 TONS OF R-60 ROCK RIPRAP WILL BE REQUIRED TO COMPLETE THE ROCK LINED OUTLET. ROCK RIPRAP FOR THE ROCK LINED WAVE BERM SHALL MEET THE GRADATION REQUIREMENTS OF ASTM D6092 FOR R-60 ROCK RIPRAP. IT IS ESTIMATED THAT 2,619 TONS OF R-60 ROCK RIPRAP WILL BE REQUIRED TO COMPLETE THE WAVE BERM.

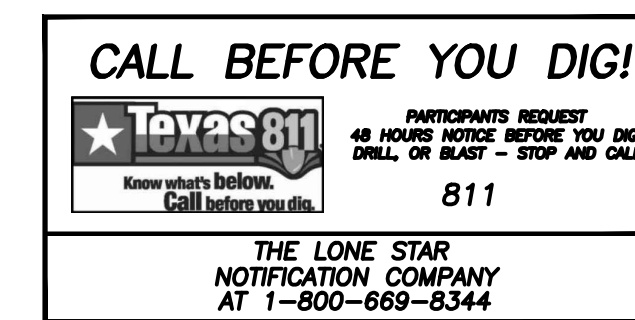
ALL ROCK RIPRAP SHALL COMPLY WITH CONSTRUCTION SPECIFICATION 61, AND MATERIAL SPECIFICATION 523.

SPALLS AND ROCK DUST THAT PASS A 3" SIEVE SHALL CONSIST OF LESS THAN 5 PERCENT BY WEIGHT.

ROCK PLACED AGAINST RCC AND CONCRETE WORKS SHALL BE PLACED CAREFULLY TO AVOID DAMAGE.

**ROCK RIPRAP (R-60):**

% PASSING	ROCK DIAMETER (IN.)		WEIGHT OF ROCK (LBS)	
	MIN.	MAX.	MIN.	MAX.
100	11.1	15.1	60	150
50	8.8	11.1	30	60
15	6.1	8.8	10	30
0	-	6.1	-	10



**GENERAL NOTES**  
 FLOODWATER RETARDING STRUCTURE SITE No. 1 UPGRADE OF THE WILLIAMS CREEK WATERSHED IN BLANCO, GILLESPIE, & KENDALL COUNTIES, TEXAS



DRAWING NO. TX-EN-0785  
 SHEET NO. G-2  
 SEQUENCE NO. 2 OF 65

REVISIONS			
ADDENDUM	DATE	APPROVED	TITLE
Δ	2022.11.08	NC	ADDENDUM NO.2

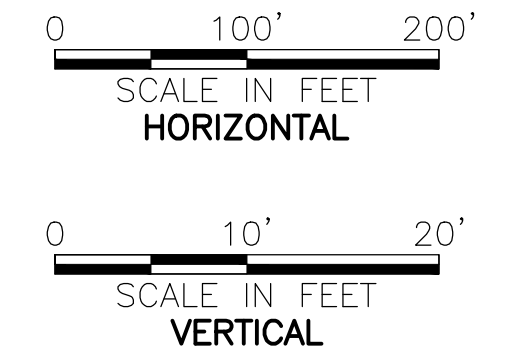


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**NOTE:**

ADDITIONAL LABORATORY TEST AND IN-SITU INFORMATION OVERLAIN WITH PROFILE INFORMATION WITHIN APPENDIX C OF THE GEOLOGIC INVESTIGATION REPORT

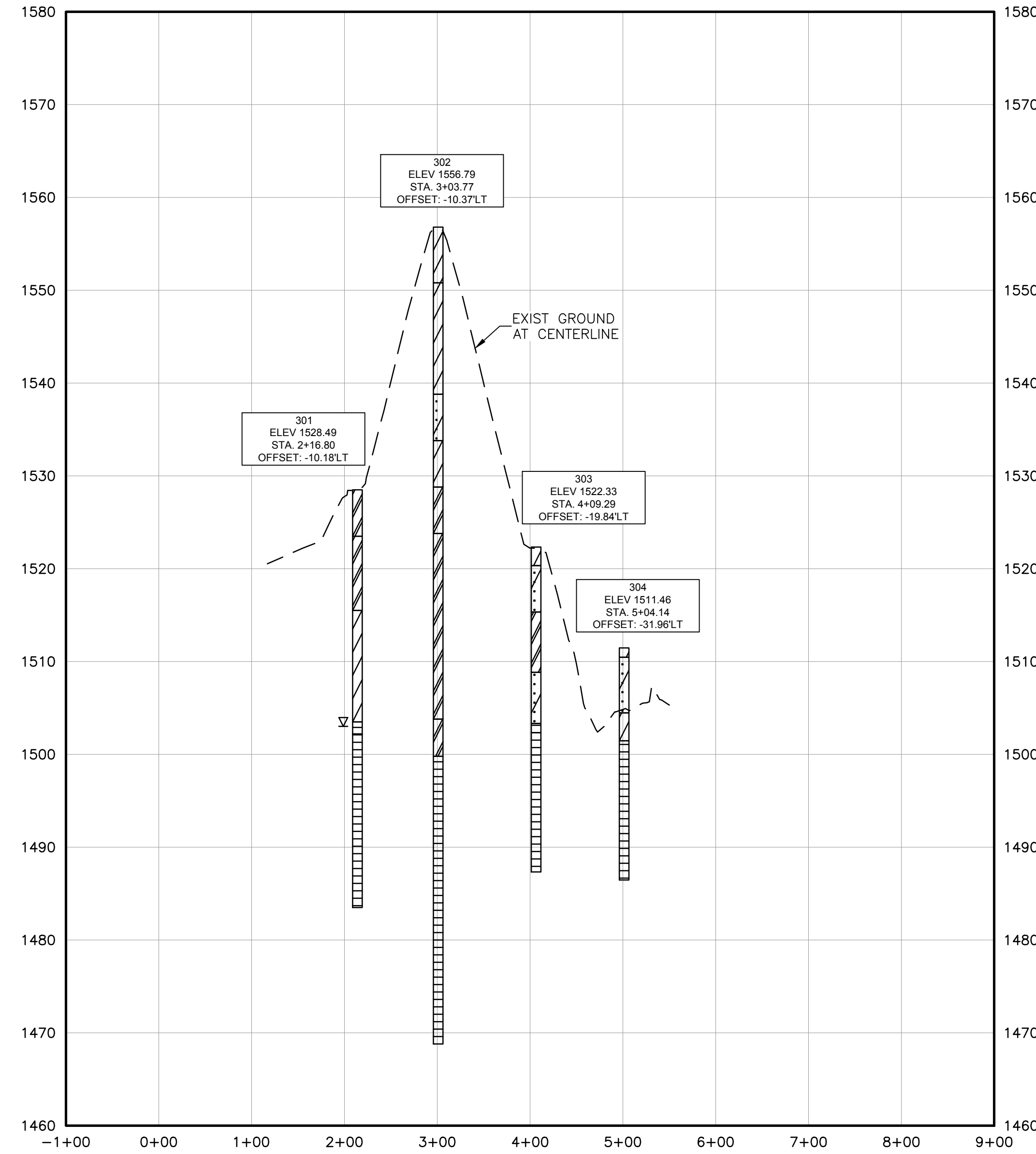
GROUNDWATER MARKS ARE ONLY REPRESENTATIVE OF THE WATER LEVEL OBSERVATIONS AT THE TIME OF DRILLING.



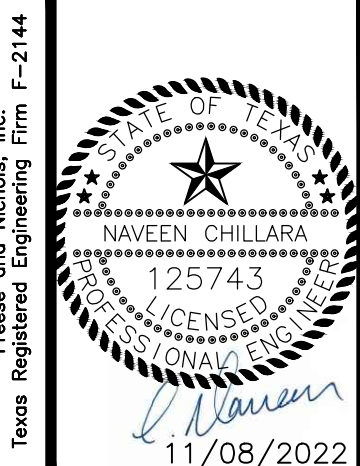
**LEGEND**

- CH
- CL
- GC
- SC
- LIMESTONE
- GROUND WATER AT TIME OF DRILLING

AT TIME OF DRILLING		
BORING	DEPTH, FT-BGS	ELEVATION, FT
301	25	1503.5



EXISTING PRINCIPAL SPILLWAY PROFILE



DESIGNED BY: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 FILE NAME: WC1-BP-GEO.dwg  
 DATE CHECKED: 11/8/2022

**GEOLOGICAL INVESTIGATIONS PROFILES**  
 FLOODWATER RETARDING STRUCTURE SITE No. 1 UPGRADE OF THE  
 WILLIAMS CREEK WATERSHED  
 IN  
 BLANCO, GILLESPIE, & KENDALL COUNTIES, TEXAS

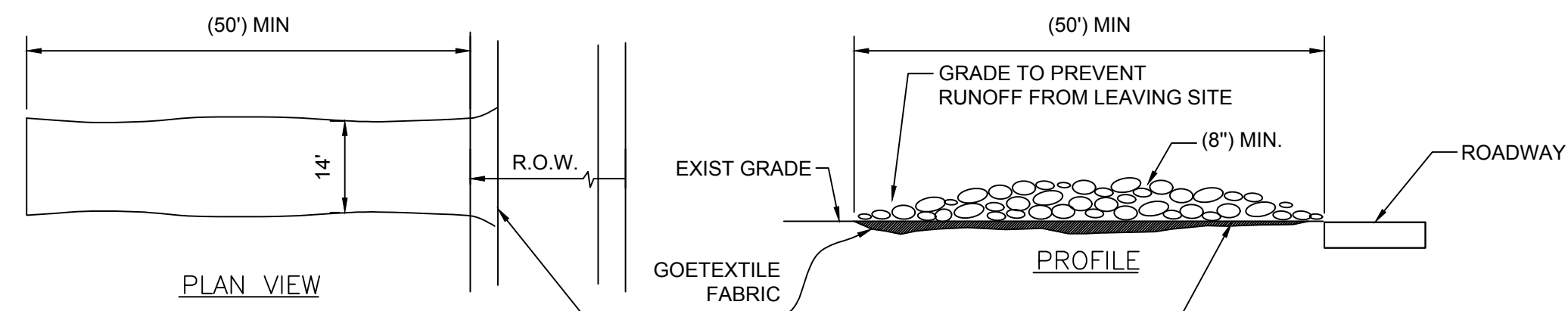


DRAWING NO.  
TX-EN-0785

SHEET NO.  
C-30

SEQUENCE NO.  
33 OF 65

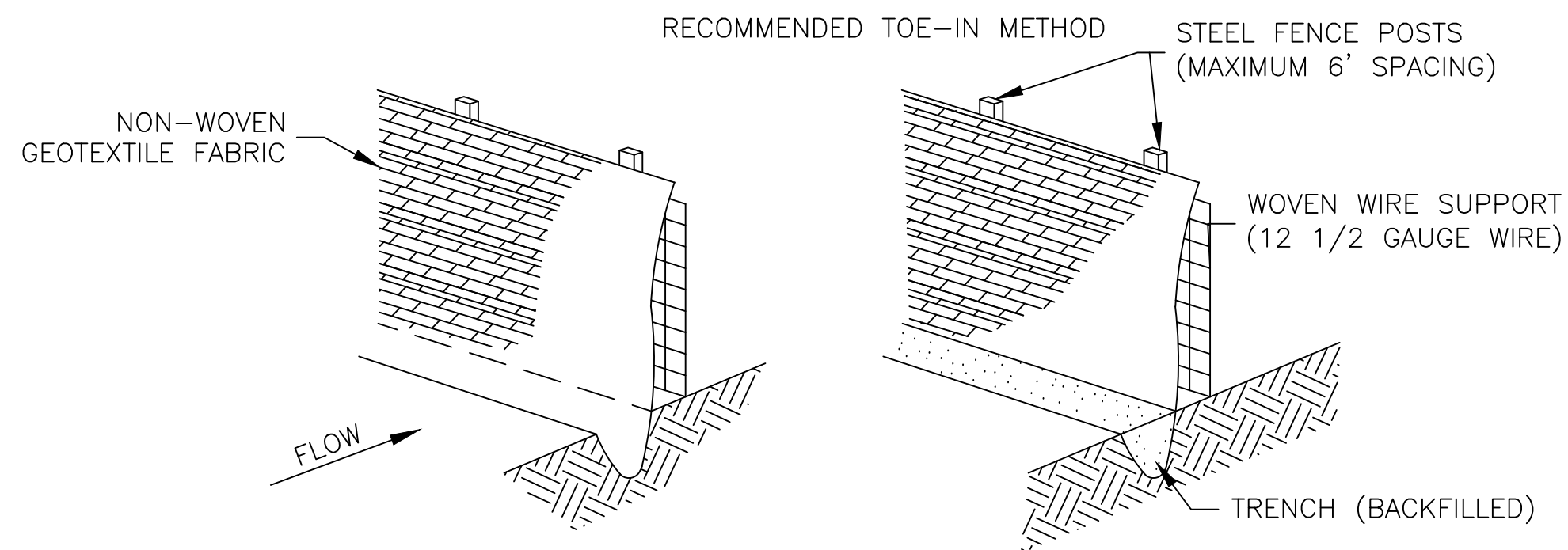
REVISIONS			
ADDENDUM	DATE	APPROVED	TITLE
A	2022.11.08	NC	ADDENDUM NO.2



**NOTES:**

1. STONE SIZE: 3"-5" OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 50'.
3. THICKNESS: NOT LESS THAN 8".
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE 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 CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENT THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
8. PROVIDE GEOTEXTILE FABRIC BETWEEN NATURAL GRADE AND 3"-5" ROCK.

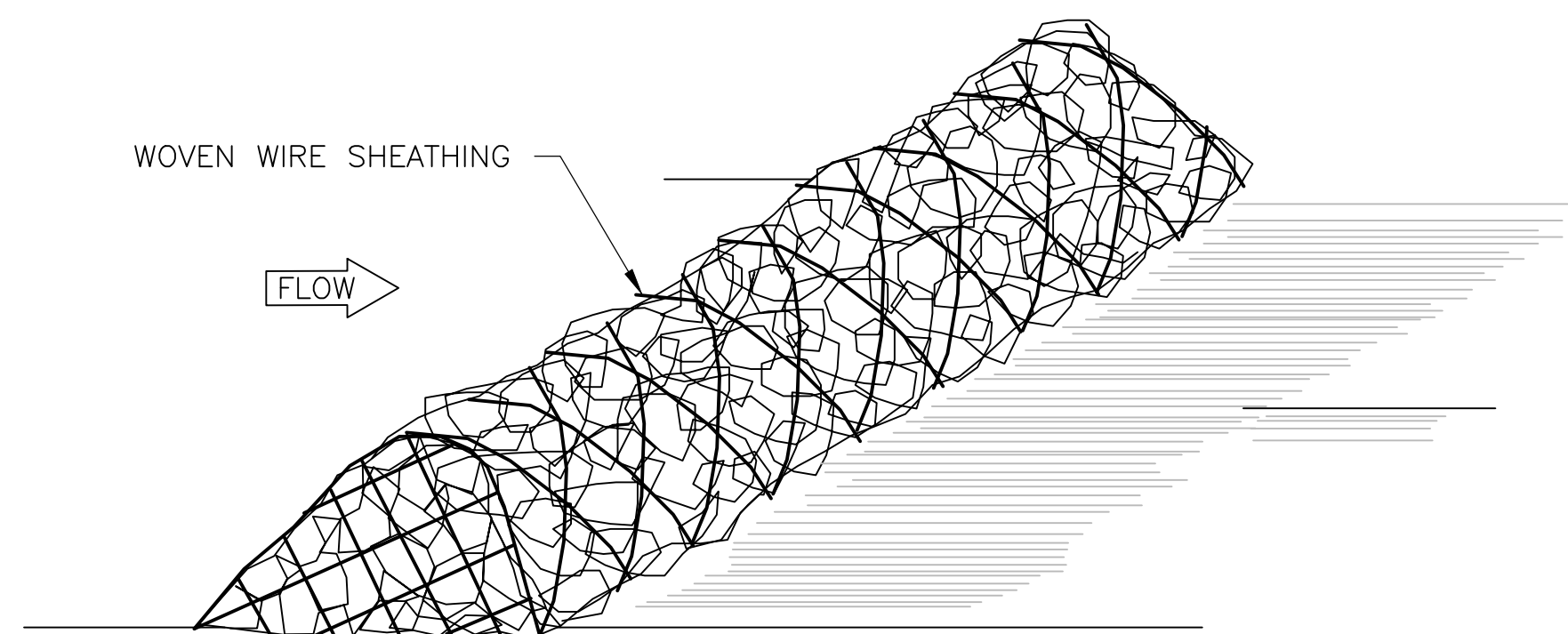
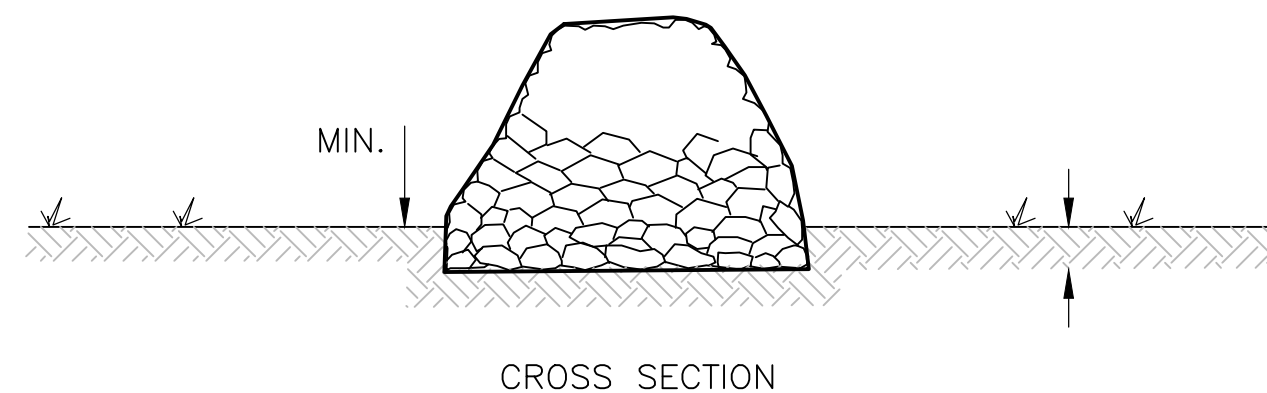
1 STABILIZED CONSTRUCTION ENTRANCE  
NOT TO SCALE



**NOTES:**

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MIN. OF ONE (1') FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

2 SILT FENCE DETAIL  
NOT TO SCALE



**NOTES:**

1. USE ONLY OPEN GRADE ROCK 4-8 INCH DIAMETER FOR STREAM FLOW CONDITION; USE OPEN GRADED ROCK 3-5 INCHES DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM ONE INCH OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
3. THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN WIRE SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AND IN A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS; SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE FOOT.

6. WHEN THE SITE IS COMPLETELY STABILIZED OR AT THE END OF CONSTRUCTION, WHICHEVER COMES FIRST, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

3 ROCK SEDIMENT FILTER  
NOT TO SCALE

Freese and Nichols, Inc.  
Texas Registered Engineering Firm F-2144

11/08/2022

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SWPPP DETAILS  
FLOODWATER RETARDING STRUCTURE SITE No. 1 UPGRADE OF THE  
WILLIAMS CREEK WATERSHED  
IN  
BLANCO, GILLESPIE, & KENDALL COUNTIES, TEXAS

United States Department of Agriculture  
Natural Resources Conservation Service

DRAWING NO.	TX-EN-0785
SHEET NO.	C-34
SEQUENCE NO.	37 OF 65

REVISIONS			
ADDENDUM	DATE	APPROVED	TITLE
△	2022.11.08	NC	ADDENDUM NO.2