



City of  
**Evans, Colorado**

**Contract Documents and Specifications for**

**EVANS C STREAMBANK REPAIR –  
FLOOD RESTORATION**

**May, 2014**

**Dig  Safely.**

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**ARTICLE 1.0**

**CONTRACTING PROCEDURES**

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**1.1 ADVERTISEMENT FOR BIDS**

The City of Evans, Colorado will receive sealed bids for the following project:

**Evans C Streambank Project - Flood Restoration**

Bids will be received by the City Clerk at 1100 37th Street, Evans, Colorado, until **10:00 a.m. on May 14, 2014** at which time said bids will be publicly opened in the City Clerk's Office.

Copies of the contract documents may be obtained at the Public Works Department.

The Evans City Manager reserves the right to reject any or all bids, to waive any informalities in bids, and to accept the bid that is in the best interests of the City of Evans, Colorado.

CITY OF EVANS, COLORADO

By:   
Fred Starr  
Director of Public Works

Published in the Greeley Tribune on **April 30 & May 7, 2014**.

**Dated: April 25, 2014**

## **1.2 INFORMATION FOR BIDDERS**

### **1.2.1 OWNER**

The OWNER of this project is the City of Evans, 1100 37th Street, Evans, Colorado 80620; phone number (970) 475-1113 and fax number (970) 330-3472.

### **1.2.2 ENGINEER**

The ENGINEER is City of Evans, 1100 37th Street, Evans, Colorado 80620. The City Engineer is Cameron Parrott P.E., phone number (970) 475-1113. The City of Evans Project Manager is **Dawn Anderson**, phone number **(970) 475-1160**. For this project, the ENGINEER has contracted with **Natural Resources Conservation Service (NRCS)**, to do the design of the improvements.

### **1.2.3 BID SUBMITTAL**

Bids will be received by the City Clerk of Evans, Colorado (herein called the "CITY"), at Evans Community Complex, 1100 37th Street, Evans, CO 80620 until **10:00 a.m. on May 14, 2014**, and then at said place publicly opened and read aloud.

Each Bid must be submitted in a sealed envelope, addressed to:

City Clerk  
City of Evans  
1100 37th Street  
Evans, CO 80620

Each sealed envelope containing a bid must be plainly marked on the outside as bid for

### **Evans C Streambank Project - Flood Restoration**

and the envelope should bear on the outside the name of the bidder, his address, and the name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to: City Clerk, City of Evans, 1100 37<sup>th</sup> Street, Evans, CO 80620.

All bids must be made on the required bid sheet. All blank spaces for bid prices must be filled in, in ink or typewritten, and the bid sheet must be fully completed and executed when submitted. Only one copy of the bid sheet is required.

### **1.2.4 INFORMALITIES**

The CITY may waive any informalities, minor defects, or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. In the event of strikes, wars, acts of God or other good cause as determined by the City Manager, bid openings may be extended for a reasonable time not to exceed thirty calendar days. No bidder may withdraw a bid within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the CITY and the bidder.

### **1.2.5 CONDITIONS OF WORK**

Bidders must satisfy themselves of the accuracy of the estimated quantities in the Bid Schedule(s) by examination of the site. After bids have been submitted, the bidder shall not assert that there was a misunderstanding concerning the quantities of work or of the nature of the work to be done.

The CITY shall provide to any and all bidders, prior to bidding, all information that is pertinent to and delineates and describes the land owned and rights-of-way acquired upon request.

The Contract Documents contain the provisions required for the construction of the project. Information otherwise obtained from an officer, agent or employee of the CITY or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

### **1.2.6 BID SECURITY**

Each bid must be accompanied by a Bid Bond payable to the City for five percent of the total amount of the bid. As soon as the bid prices have been compared, the CITY will return the bonds of all except the three lowest responsible bidders within three days after the date of the bid opening. When the Agreement is executed, the Bid Bonds of the two remaining unsuccessful bidders will be returned. The Bid Bond of the successful bidder will be retained until the Agreement, Payment Bond and Performance Bond have been executed and approved, after which it will be returned.

A Performance Bond and Payment Bond, each in the amount of 100 percent of the Contract Price, with a corporate surety approved by the CITY, will be required for the faithful performance of the contract.

### **1.2.7 POWER OF ATTORNEY**

Attorneys-in-fact who sign the Bid Bonds or Payment Bonds and Performance Bonds must file with each bond a certificate and effective dated copy of their Power of Attorney.

## **1.3 AWARD OF CONTRACT**

The party to whom the contract is awarded will be required to execute the Agreement and obtain the Performance Bond, Payment Bond, and Certificates of Insurance within ten (10) calendar days from the date when Notice of Award is delivered to the bidder. The Notice of Award shall be accompanied by the necessary Agreement. In case of failure of the bidder to execute the Agreement and to furnish said Bonds and Certificates, the CITY may at its option, consider the bidder in default, in which case the Bid Bond accompanying the proposal shall become the property of the CITY. The CITY will be entitled to such other rights as may be granted by law.

The CITY within ten (10) days of receipt of acceptable Performance Bond, Payment Bond Certificates of Insurance and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the CITY not execute the Agreement within such period, the bidder may, by written notice, withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the CITY.

The Notice to Proceed shall be issued within ten (10) days of the execution of the Agreement by the CITY or as otherwise stated in the Special Conditions. Should there be reasons why the Notice to Proceed cannot be issued within such period; the time may be extended by mutual agreement

between the CITY and the CONTRACTOR. If the Notice to Proceed has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The CITY may make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the CITY all such information and data for this purpose as the CITY may request. The CITY reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the CITY that such bidder is qualified to carry out the obligations of the Agreement and to complete the work contemplated therein. The CITY reserves the right to reject any conditional or qualified bid.

The CONTRACTOR shall commence work not later than fifteen (15) calendar days after date of the Notice to Proceed issued by the CITY to the CONTRACTOR and shall complete the work as specified, within the time specified in the contract. In the event no written Notice to Proceed is issued by the CITY, the contract time as specified in the contract shall be counted from the first day of actual work on the project. All work shall be prosecuted in an orderly and diligent manner. The CONTRACTOR shall cooperate with, and conform to, the request of the CITY to expedite particular portions of the work or to suspend or transfer his operations on any portion of the work where such alteration of the CONTRACTOR's operations is deemed advisable by the CITY.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout.

Each bidder is responsible for inspecting the site and informing himself of the conditions under which the work is to be performed and for reading and being thoroughly familiar with the contract documents. The bidder's inspection shall cover the ground structure, obstacles which may be encountered, location of water tables, and other matters relevant to the work both above and below ground. Where test boring logs, indicating underground conditions, are shown on the drawings, this data is for the bidder's information and to reflect the conditions observed at the time and place of drilling. Neither the CITY nor the ENGINEER shall be held responsible for any variance or deviation from the data shown on the drawings, as encountered during actual construction. The failure or omission of any bidder to do any of the foregoing shall in no way relieve any bidder from any obligation in respect to his bid. The successful bidder will not be allowed any extra compensation in the form of contract price or time by any matter or thing on which he could have fully informed the CITY of prior to the bidding.

The low bidder shall supply the names and addresses of major material suppliers and subcontractors when requested to do so by the CITY.

The successful bidder will provide the CITY of Evans with a current list of references of previous work performed in this field.

The OWNER reserves the right to reject any or all bids and to pass upon the regularity or waive any irregularities of the bidders and to determine the acceptability of the surety offered.

If Bid Schedules are set forth in the Proposals, the CONTRACTORS must bid on all the Schedules. The CONTRACTOR'S bid considered for award shall be for the combined low bid for the Base Bid and Force Account.

Portions of any project may have been termed "Alternates or Contingent" and the OWNER reserves the right to include or remove any or all of these Alternates from the Contract at his sole option or discretion.

**1.3.1 CONSIDERATION OF PROPOSALS:**

After the proposals are opened and read, they will be compared on the basis of the summation of the products of the approximate quantities shown in the bid schedule by the unit bid prices. The results of such comparisons will be immediately available to the public. In the event of a discrepancy between unit bid prices and extensions, the unit bid price shall govern.

The right is reserved to reject any or all proposals, to waive technicalities or to advertise for new proposals, if in the judgment of the awarding authority the best interests of the CITY will be promoted thereby.

**1.3.2 AWARD OF CONTRACT:**

The award of contract, if it is awarded, will be made within 60 calendar days after the opening of proposals to the lowest responsible and qualified bidder whose proposal complies with all the requirements prescribed. The successful bidder will be notified, by letter mailed to the address shown on his proposal, that his bid has been accepted and that he has been awarded the contract.

**1.3.3 CANCELLATION OF AWARD:**

The CITY reserves the right to cancel the award of any contract at any time before the execution of said contract by all parties without any liability against the CITY.

**1.3.4 EXECUTION AND APPROVAL OF CONTRACT:**

The Contract shall be signed by the successful bidder and returned, together with requisite attachments outlined in Section 1.5.7. All documents will be executed in triplicate and shall be submitted to the CITY within 10 calendar days after the date of award. If the signed Contract and Bond is returned by the successful bidder within 10 calendar days after award and if the Contract is not executed by the CITY within 60 days from date of award, the bidder shall have the right to withdraw his bid without penalty. No Contract shall be considered effective until it has been fully executed by all of the parties thereto.

**1.3.5 FAILURE TO EXECUTE CONTRACT:**

Failure to execute the Contract and file acceptable bonds within 10 calendar days after the date of award shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty which shall become the property of the CITY. The CITY may elect to waive forfeiture of the proposal guaranty only if it is determined that the bidder has made a good faith remedial error and that no damages were sustained by the CITY as a result of the failure by the successful bidder to execute the contract and file acceptable bonds within the time prescribed. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised and constructed under contract or otherwise, as the CITY may decide.

## **1.4 THE CONTRACT: FOLLOWING EXECUTION**

### **1.4.1 MATERIALS:**

Unless otherwise stipulated, the CONTRACTOR shall provide and pay for all materials, labor, water, tools, equipment, light power, transportation, and other facilities necessary for the execution and completion of the work. The CONTRACTOR shall furnish satisfactory evidence as to the kind and quality of materials.

### **1.4.2 PROGRESS SCHEDULE:**

The CONTRACTOR shall submit, at such times as may reasonably be requested by the ENGINEER, schedules which shall show the order in which he proposes to carry on the work, with dates at which the CONTRACTOR will start the several parts of the work, and estimated dates of completion of the several parts. The Special Conditions or Drawings may require that certain phases or parts of the work be completed first or in a certain order. If the CONTRACTOR elects to use PERT or CPM charts, he shall furnish copies of them and all revisions thereto or amendments thereto as the work progresses to the ENGINEER upon request.

### **1.4.3 ASSIGNMENT OF CONTRACT:**

No assignment by the CONTRACTOR of this contract or any part thereof or of the funds to be received thereunder by the CONTRACTOR will be recognized unless such assignment has had the written approval of the CITY and the surety has been given due notice of such assignment and has furnished written consent thereto. Such written approval by the CITY shall not relieve the CONTRACTOR of the obligations incurred by him under the terms of this contract. In addition to the usual recitals in assignment contracts, the following language must be set forth:

It is agreed that the funds to be paid to the assignee under this assignment are subject to a prior lien for services rendered or materials supplied for the performance of the work called for in said contract in favor of all persons, firms, or corporations rendering such services or supplying such materials."

### **1.4.4 SUBLETTING OF CONTRACT:**

The CONTRACTOR shall as soon as practical after signing the contract, notify the ENGINEER in writing, giving the names and qualifications of all subcontractors proposed for work and shall not employ any that the ENGINEER may within a reasonable time object to. The CONTRACTOR will not be allowed to subcontract more than fifty percent (50%) of the total monetary value of the contract without prior approval of the OWNER. The CONTRACTOR shall notify the ENGINEER of each subcontract he awards, giving:

- A. Name, address, and telephone number of the subcontractor
- B. Branch of work covered
- C. Total price of subcontract
- D. Date of subcontract

Subcontractors, before commencing work, must file with the ENGINEER satisfactory certificates in duplicate showing insurance coverage. Failure of the subcontractor to provide such certificates shall not relieve the CONTRACTOR of his obligation to insure and to hold the CITY harmless.

Subcontractors shall also file with the ENGINEER copies of applicable permits and licenses required to do the subcontracted work.

**1.4.5 OTHER CONTRACTS:**

The CITY may award other contracts for additional work, and the CONTRACTOR shall fully cooperate with such other contractors and carefully fit his own work to that provided under the other contracts as may be directed by the ENGINEER. The CONTRACTOR shall not commit or permit any act that will interfere with the performance of work by any other contractor.

**1.5 CONTRACT DOCUMENTS**

**1.5.1 NON-COLLUSION STATEMENT**

\_\_\_\_\_, being first duly sworn, deposes and says that:

- (1) He is the \_\_\_\_\_ of  
(owner, partner, officer, representative or agent)  
\_\_\_\_\_, the  
(Company's Name)  
bidder that has submitted the attached bid;
- (2) He is fully informed respecting the preparation and contents of the attached bid and of all pertinent circumstances respecting such bid;
- (3) Such bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other bidder, firm or person to submit a collusive or sham bid in connection with the contract for which the attached bid has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, firm or person to fix the price or prices in the attached bid or of any other bidder, or to fix any overhead, profit or cost element of the bid price or the bid price of any unlawful agreement any advantage against the City of Evans or any person interested in the proposed contract; and
- (5) The price or prices quoted in the attached bid are fair and proper and are not tainted by a collusion, conspiracy, connivance, or unlawful agreement on the part of the bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

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

Title: \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_ day of \_\_\_\_\_, A.D., **2014**.

Notary Public \_\_\_\_\_  
My Commission expires: \_\_\_\_\_

**1.5.2 BID PROPOSAL**

**Evans C Streambank Project - Flood Restoration**

Proposal of \_\_\_\_\_ (hereinafter called bidder, doing business as \* \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, to the City of Evans (hereinafter called CITY).

In compliance with your Advertisement for Bids, bidder hereby proposes to perform all work for the **Evans C Streambank Project - Flood Restoration** in strict accordance with contract documents, within the time set forth therein, and at prices stated below.

By submission of this bid, each bidder certifies, and in cases of a joint bid, each party hereto certifies as to his own organization, that this bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this bid with any other bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before a date specified in the Special Conditions. Bidder further agrees to pay liquidated damages as provided in the Special Conditions.

Bidder acknowledges receipt of the following Addendum:

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

Bid shall include all applicable taxes and fees.

Bidder agrees to perform all work described in the contract documents in accordance with the attached Bid Schedule.

**\* Insert "a Corporation", "a Partnership", or "an Individual" as applicable.**

**1.5.3 BID SCHEDULE**

**City of Evans C Streambank Repair - Flood Restoration**

Item	Description	Quantity	Units	Unit Cost	Total Cost
<b>Miscellaneous</b>					
1	MOBILIZATION & DEMOBILIZATION	1	LS		
2	GENERAL CONTRACT REQUIREMENTS, BONDS AND INSURANCE	1	LS		
<b>Subtotal - Miscellaneous</b>					

<b>Streambank Repair - Material &amp; Labor</b>					
3	DORMANT STOCK PLANTING	1	LS		
4	EARTHFILL	640	CY		
5	ROCK RIPRAP	317	Ton		
6	GEOTEXTILE	313	SY		
<b>Subtotal - Streambank Repair</b>					

**Evans C Streambank Repair Base Bid** \_\_\_\_\_

**NOTES:**

- X** Safety is of the utmost importance in construction work and it will be the responsibility of the contractor to insure safety at all times. The City will request a safety plan prior to commencement of work.
- X** All costs associated with safety will not be paid for separately and shall be subsidiary to other contract line items.
- X** Permits: The city has obtained the required permit from the corp as well as an agreement with the private land owner in which a portion of the berm is located. The Contractor will be required to have a current business license with the City of Evans.
- X** Line Item #4, Earthfill: A portion of the earthfill will be material already on site. Tickets will be required for all material brought to the site.
- X** Line Item #5, Rock Riprap: Concrete riprap is not allowed for this project.  
All costs associated with Pollution Control shall be subsidiary to this line item.
- \*** Please refer to Articles 4.0 of the Contract Documents for detailed technical specifications.

The undersigned, if awarded the Contract, at the prices shown in the bid, agrees to complete the work within Ten (10) calendar days of mobilizing equipment after the Notice to Proceed is issued.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Company

Official Address:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

**1.5.4 BID BOND**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, \_\_\_\_\_ as Principal, and \_\_\_\_\_ surety, are hereby held and firmly bound unto the City of Evans in the penal sum of (\$ \_\_\_\_\_) for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed this \_\_\_\_ day of \_\_\_\_\_, 2014.

The condition of the above obligations is such that whereas the Principal has submitted to the City of Evans a certain bid, attached hereto and hereby made a part hereof, to enter into a contract in writing, for the

**Evans C Streambank Project - Flood Restoration**

NOW THEREFORE,

- (A) If said bid shall be rejected, or in the alternate,
- (B) If said bid shall be accepted and the Principal shall execute and deliver a contract in the form of contract attached hereto (properly) completed in accordance with said bid and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid,

then this obligation shall be void, otherwise, the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations by any extension of the time within which the CITY may accept such bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunder set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Surety

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

**1.5.5 NOTICE OF AWARD**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**PROJECT DESCRIPTION: Evans C Streambank Project - Flood Restoration**

The CITY, represented by the undersigned, has considered the bid submitted by you for the above described work in response to its Advertisement for Bids dated **April 25, 2014**.

You are hereby notified that your bid has been accepted for **Evans C Streambank Project - Flood Restoration** in the amount of **{Bid Amount}**.

You are required by the Information for Bidders to execute the Agreement and furnish the required Contractor's Performance Bond, Payment Bond, and Certificates of Insurance within ten (10) calendar days from the date of this Notice to you. If you fail to execute said Agreement and to furnish said bonds and certificates within ten (10) days from the date of this Notice, said CITY will be entitled to consider all your rights arising out of the CITY's acceptance of your bid as abandoned and as a forfeiture of your Bid Bond. The CITY will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the CITY.

Dated this \_\_ day of \_\_\_\_ **2014**.

The City of Evans  
(CITY)

By: \_\_\_\_\_  
Title: City Engineer

**1.5.6 ACCEPTANCE OF NOTICE**

Receipt of the above Notice of Award is hereby acknowledged on this, the \_\_ day of \_\_\_\_\_  
\_\_\_\_\_ **2014**.

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

**IMPORTANT:** Surety companies executing bonds must appear on the Treasury Department's most current list (circular 570 as amended) and be authorized to transact business in the State of Colorado.

### 1.5.7 AGREEMENT

THIS AGREEMENT, made this \_\_\_\_\_ day of \_\_\_\_\_, 2014, by and between the City of Evans, hereinafter called "CITY", and \_\_\_\_\_ doing business as hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the phased construction of **Evans C Streambank Project - Flood Restoration**.
2. The CONTRACTOR shall furnish all material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the project described herein.
3. The CONTRACTOR shall commence the work required by the Contract Documents in accordance with the date stated in the Special Conditions and shall complete the work within the time stated in the Special Conditions unless the period for completion is extended otherwise by the Contract Documents.
4. The CONTRACTOR agrees to perform all the work described in the Contract Documents and comply with the terms therein for the sum of **{Project Amount}** for the **Evans C Streambank Project - Flood Restoration**.
5. The term "Contract Documents" means and includes the following:
  - (A) Advertisement for bids
  - (B) Information for Bidders
  - (C) Non-Collusion Statement
  - (D) Bid Proposal
  - (E) Bid Schedule
  - (F) Bid Bond
  - (G) Notice of Award
  - (H) Acceptance of Notice
  - (I) Agreement
  - (J) Payment Bond
  - (K) Performance Bond
  - (L) Certificate of Incorporation
  - (M) Certificates of Insurance
  - (N) Notice to Proceed
  - (O) Special Conditions
  - (P) General Conditions
  - (Q) Technical Provisions
  - (R) Change Order
  - (S) Addendum  
No. \_\_\_\_\_, dated \_\_\_\_\_, 2014  
No. \_\_\_\_\_, dated \_\_\_\_\_, 2014  
No. \_\_\_\_\_, dated \_\_\_\_\_, 2014
  - (T) Notice of Contractor's Settlement

- (U) Final Receipt and Guarantee
- (V) Other

6. The CITY will pay the CONTRACTOR in the manner and at such time as set forth in the General Conditions, such amounts required by the Contract Documents.
7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement, each of which shall be deemed an original on the date first written above.

THE CITY OF EVANS

CONTRACTOR

BY \_\_\_\_\_  
 NAME John Morris  
 TITLE Mayor

BY \_\_\_\_\_  
 NAME \_\_\_\_\_  
 TITLE \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

(SEAL)

ATTEST:

ATTEST:

NAME \_\_\_\_\_  
 TITLE \_\_\_\_\_

NAME \_\_\_\_\_  
 TITLE \_\_\_\_\_

APPROVED AS TO FORM:

\_\_\_\_\_  
 Evans City Attorney

APPROVED AS TO SUBSTANCE

\_\_\_\_\_  
 Evans City Manager

**1.5.8 PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_, hereinafter called Principal, Corporation, Partnership or Individual

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

\_\_\_\_\_  
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto the City of Evans, 1100 37th Street, Evans, Colorado 80620, hereinafter called CITY, in the penal sum of \$ \_\_\_\_\_ in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly, severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas the Principal entered into a certain Contract with the CITY, dated the \_\_\_\_\_ day of \_\_\_\_\_, 2014, a copy of which is hereto attached and made a part hereof for the construction of:

**Evans C Streambank Project - Flood Restoration**

NOW, THEREFORE, if the Principal shall well, truly, and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the CITY, with or without notice to the Surety and during the two-year guarantee period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the CITY from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the CITY all outlay and expense which the CITY may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any ways affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the CITY and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed this \_\_\_\_\_ day of \_\_\_\_\_, 2014.

ATTEST:

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Principal Secretary

By \_\_\_\_\_(S)

(SEAL)

\_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_  
Address

ATTEST:

\_\_\_\_\_  
Surety Secretary

(SEAL)

\_\_\_\_\_  
Witness as to Surety

By \_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address

NOTE: Date of bond must not be prior to date of contract. If CONTRACTOR is a partnership, all partners should execute bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (circular 570, as amended) and be authorized to transact business in the state where the project is located.

**1.5.9 PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
Name of Contractor

\_\_\_\_\_  
Address of Contractor

a \_\_\_\_\_ hereinafter called Principal, and Corporation,  
Partnership or Individual

\_\_\_\_\_  
Name of Surety

\_\_\_\_\_  
Address of Surety

hereinafter called Surety, are held and firmly bound unto the City of Evans, 1100 37th Street, Evans, Colorado 80620 hereinafter called "CITY", in the penal sum of \$ \_\_\_\_\_ in a lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the CITY, dated the \_\_\_\_\_ day of \_\_\_\_\_ 2014, a copy of which is hereto attached and made a part hereof for the construction of:

**Evans C Streambank Project - Flood Restoration**

NOW, THEREFORE, if the Principal shall, during the entire length of said contract and any extension thereof, promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work or to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the CITY and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ (number) counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_ 2014.

ATTEST:

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Principal Secretary

By \_\_\_\_\_ (S)

(SEAL)

\_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_  
Address

ATTEST:

\_\_\_\_\_  
Surety Secretary

(SEAL)

\_\_\_\_\_  
Witness as to Surety

By \_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address

NOTE: Date of bond must not be prior to date of contract. If CONTRACTOR is a partnership, all partners should execute bond.

IMPORTANT: Surety companies executing bonds for must appear on the Treasury Department's most current list (circular 570, as amended) and be authorized to transact business in the state where the project is located.

**1.5.10 NOTICE TO PROCEED**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

Project: **Evans C Streambank Project - Flood Restoration**

You are hereby notified to commence work in accordance with the Agreement dated **{Agreement Date}**, on or before **{Start Date}**, and you are to complete the work within **Ten (10)** consecutive calendar days thereafter. The date of completion of all work is therefore **{Finish Date}**.

THE CITY OF EVANS

By \_\_\_\_\_

Title Civil Engineer II

**1.5.11 ACCEPTANCE OF NOTICE**

Receipt of the above Notice to Proceed is hereby acknowledged by

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

this the \_\_ day of \_\_\_\_\_, 2014.

By \_\_\_\_\_

Title \_\_\_\_\_

**1.5.12 CHANGE ORDER**

CHANGE ORDER NO. \_\_\_\_\_  
 DATE: \_\_\_\_\_

PROJECT: **Evans C Streambank Project - Flood Restoration**

TO (CONTRACTOR): \_\_\_\_\_

JUSTIFICATION: \_\_\_\_\_

You are directed to make the following changes in the work. All other terms and conditions of the contract not expressly modified hereby shall remain in full force and effect.

ITEM NO.	DESCRIPTION	EST. QTY.	UNIT	UNIT COST	AMOUNT
----------	-------------	-----------	------	-----------	--------

	The original contract sum was			\$	_____
	Net change by previous change orders			\$	_____
	The contract sum prior to this Change Order was			\$	_____
	The contract sum will be (increased) (decreased) or (unchanged) by this Change Order			\$	_____
	The contract sum including this Change Order will be			\$	_____
	The new contract time will be (increased) (decreased) or (unchanged) by (___) days.				

The date of completion as of the date of this Change Order is therefore \_\_\_\_\_, **2014**.

ACCEPTED BY:

ORDERED BY:

\_\_\_\_\_  
 Contractor

The City of Evans  
 1100 37th Street  
 Evans, CO 80620

Address

By \_\_\_\_\_

By \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

**1.5.13 NOTICE OF CONTRACTOR'S SETTLEMENT**

This is to notify all persons interested that the City of Evans, Colorado will make final payment to **{Contractor's Name}** for work completed on **Evans C Streambank Project - Flood Restoration**.

Said final payment will be made on **{Final Payment Date}**.

Anyone having claims in conjunction with this project may file same with the undersigned no later than **{Wednesday Before Final Payment Date}**.

CITY OF EVANS

By \_\_\_\_\_  
Fred Starr, Director of Public Works

Dated: \_\_\_\_\_

The Greeley Tribune

**1.5.14 FINAL RECEIPT AND GUARANTEE**

CITY OF EVANS  
Date: \_\_\_\_\_

Received this date of **{Final Payment Date}**, as full and final payment of the cost of improvements provided for in the Contract executed by **{Contractor's Name}** and Payee on or about **{Agreement Date}**, together with all amendments, change orders, and additions thereto, the sum of Dollars (**{Final Payment Amount}**), by checking, being the remainder of the full amount accruing to the undersigned by virtue of said contract and extra work performed thereunder, said payment covering and including full payment for the cost of all extra work and material furnished by the undersigned in the construction of said improvements, and all incidentals thereto, for the additional consideration of One Dollar (\$1.00) for the execution hereto, and the undersigned hereof releases the City of Evans from any claims whatsoever resulting from said contract and all work performed thereunder.

The undersigned by these present certifies that all persons doing work upon or furnishing materials for said improvements under the foregoing contract and all additions thereto have been paid in full. The undersigned further certifies that all work has been completed in a workmanlike manner in conformity with the plans and specifications. That should any portion of said work or material prove defective within **two (2) years** from the date of initial acceptance of the entire project by the CITY, the undersigned shall replace any such defective material and remedy any such defective work to the satisfaction of the City of Evans and shall defend, indemnify, expenses, and charge of every kind which may arise as a result of any such defective material and workmanship during said period. **The Performance and Payment Bonds for this contract shall remain in effect for the period of the guarantee.**

**Evans C Streambank Project - Flood Restoration**

Signature: \_\_\_\_\_

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

Title: \_\_\_\_\_

## **1.6 INSURANCE REQUIREMENTS**

The CONTRACTOR shall secure and maintain such insurance policies as will protect himself, his subcontractors, and the City of Evans, from claims for bodily injuries, death or property damage, which may arise from operations under this contract whether such operations be by himself or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required:

- (a) Statutory Worker's Compensation
- (b) Commercial General Liability
  - General Aggregate \$1,200,000
  - Products/ (Completed Operations Aggregate) \$1,200,000
  - Each Occurrence \$ 600,000
  - Personal & Advertising Injury \$ 600,000
  - Fire Damage \$ 50,000
  - Medical Expense \$ 5,000
- (c) Automobile Liability
  - Bodily Injury and Property Damage/ (Combined Single Limit) \$ 600,000

*The Certificate of Insurance must show the City of Evans, its employees and agents, as Additional Insureds.*

All policies shall be for not less than the amounts set forth above or as stated in the Special Conditions. Other forms of insurance shall also be provided if called for by the Special Conditions.

Certificates or copies of policy of such insurance shall be filed with the CITY and shall be subject to its approval as to adequacy of protection, within the requirements of the specifications. Said Certificates of Insurance shall contain a 30-day written notice of cancellation in favor of the CITY.

## ARTICLE 2.0

### GENERAL CONDITIONS

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## **2.1 DEFINITIONS**

- (a) The Contract Documents shall consist of the Advertisement for Bids, Information for Bidders, Non-Collusion Statement, Bid Proposal, Bid Bond, Notice of Award, Agreement, Performance Bond, Payment Bond, Insurance Requirements, Notice to Proceed, Change Order, Notice of Contractor's Settlement, Final Receipt and Guarantee, Drawings, Specifications, and Special and General Conditions, including all modifications thereof incorporated in any of the documents before and after the execution of the Contract.
- (b) The CITY and the CONTRACTOR are those named as such in the Agreement. They are treated through the Contract Document as if each were of singular number and masculine gender.
- (c) Wherever in this Contract the word "ENGINEER" is used, it shall be understood as referring to the City Engineer, acting personally or through any assistants or assigns.
- (d) Any written notice served pursuant to the terms of the Agreement shall be deemed to have been duly served as if delivered in person or by registered mail to the individual, or to a partner, or to an officer of the corporation for whom it is intended, or any authorized representative thereof.
- (e) The term "subcontractor" shall mean anyone, other than the contractor, who furnished at the site, under an agreement with the CONTRACTOR, labor, or labor and materials, or labor and equipment, but shall not include any person who furnished services of a personal nature.
- (f) Work shall mean the furnishing of all labor, materials, equipment, and other incidentals necessary to the successful completion of the Contract and the carrying out of all duties and obligations imposed by the Contract.
- (g) Extra work shall mean such additional labor, materials, equipment, and other incidentals as are required to complete the Contract for the purpose for which it was intended, but was shown on the Drawings or called for in the Specifications, or is authorized by the CITY in addition to that work called for in the Drawings and Specifications.
- (h) Dispute shall mean lack of agreement between any parties that have any obligations, duties, or responsibilities under the terms of the Contract Drawings or Specifications.
- (i) Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all offices, buildings and other facilities necessary for work on the project; and for all other work land operations which must be performed in order to begin work on the various items on the project site.

## 2.1.1 ABBREVIATIONS

Wherever the following abbreviations are used in these general conditions, supplemental condition, specifications, standard details or on the drawings, they are to be construed the same as the respective expressions represented.

AASHTO	American Association of State Highway and Transportation Officials
AAN	American Association of Nurserymen
AB	Aggregate Base
Aban	Abandon
ABC	Aggregate base course
AC	Asphalt cement or concrete
ACB	Asphalt concrete base
ACI	American Concrete Institute
ACP	Asbestos cement pipe
ACPA	American Concrete Pipe Association
ACWS	Asphalt concrete wearing surface
AGC	Associated General Contractors of America, Inc.
Agg	Aggregate
Ahd	Ahead
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
APA	American Plywood Association
Approx	Approximate
APWA	American Public Works Association
AR	Aged residue
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
Asph	Asphalt
ASTM	American Society for Testing Materials
Ave	Avenue
AWPA	American Wood Preservers Association
AWSC	American Welding Society Code
AWWA	American Water Works Association
Bbl	Barrel
BC	Beginning of curve
BCR	Beginning of curb return
Beg	Beginning
Bk	Book or Back
Blvd	Boulevard
BM	Bench Mark or Board Measure
Brg	Bearing
BST	Bituminous Surface Treatment

BTB	Bituminous Treated Base
BTU	British Thermal Units
BVC	Beginning of vertical curve
BVCE	Beginning of vertical curve elevation
BVCS	Beginning of vertical curve station
C	Centigrade or Curb
CB	Catch Basin
CBF&C	Catch basin frame & cover
CC or C/C	Center to Center
CCA	Colorado Contractor's Association, Inc.
CDOT	Colorado Department of Transportation
CE	City or County Engineer
Cem	Cement
CF	Curb face
cfs	Cubic Feet per second
CIP	Cast Iron pipe
CIPP	Cast-in-place concrete pipe
CL or C	Centerline
Cm	Centimeter
CMP	Corrugated metal pipe
CO	Clean out
Col	Column
Conc	Concrete
Const	Construct
CP	Concrete pipe(non-reinforced)
CRS	Colorado Revised Statutes
CTB	Cement Treated Base
Cu	Cubic
CY	Cubic Yards
Deg	Degree
DF	Douglas Fir
DG	Decomposed granite
Dia	Diameter
Dim	Dimension
DIP	Ductile Iron Pipe
Div	Division
Dr	Drive
DRCOG	Denver Regional Council of Governments
Drwg	Drawing
Dwy	Driveway
Ea	Each
Ease	Easement
E	East
EC	End of curve

ECR	End of curb return
El or Elv	Elevation
Equa or Eq	Equation
EVC	End of vertical curve
EVCE	End of vertical curve elevation
EVCS	End of vertical curve station
Ex or Exist	Existing
F	Fahrenheit
FB	Field Book
F & C	Frame & cover
FH	Fire hydrant
FL or F	Floor line or flow line
FIEI	Floor Elevation
Fnd	Found
fps	Feet per second
FS	Finished surface
FSS	Federal Specifications and Standards
Ft	Foot or feet
G	Gutter
Ga	Gage
Galv	Galvanized
GL	Ground line
gpm	Gallons per minute
Gr	Grade
H	High or height
HC	House connection
Hdwl	Headwall
Horiz	Horizontal
Hwy	Highway
ID	Improvement District or inside diameter
IE	Invert Elevation
IEEE	Institute of Electrical and Electronic Engineers
In	Inch
Inv	Invert
IP	Iron Pipe
IPS	Iron Pipe Size
Irrig	Irrigation
Jt	Joint
JC	Junction Chamber
Jct	Junction
JS	Junction Structure

L	Length
Lb	Pound
L&T	Lead and tack
LD	Local depression
LF	Linear Feet
LH	Lamp hole
Lin	Linear
Long	Longitudinal
Lt	Left
M	Map or maps
Max	Maximum
Meas	Measured
MH	Manhole
MHF&C	Manhole frame and cover
Min	Minutes or minimum
Misc	Miscellaneous
MLorM	Monument line
Mm	Millimeter
Mon	Monolithic or monument
MTD	Multiple tile duct
MUTCD	Manual of Uniform Traffic Control Devices
N	North
NBS	National Bureau of Standards
NCPI	National Clay Pipe Institute
NE	Northeast
NEC	National Electric Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NP	Non-plastic
NPI	Non pay item
NSC	National Safety Council
NSF	National Sanitation Foundation
NW	Northwest
No	Number
OC	On center
OD	Outside diameter
Oz	Ounces
PC	Point of curvature
PCR	Point of curb return
PCC	Point of compound curve or Portland Cement Concrete
PI	Point of intersection or plastic index
PL	Property line
POC	Point of Curve

POS	Point of Spiral
PP	Power pole
ppm	Parts per million
PRC	Point of reverse curve
Prod	Proposed or property
psi	Pounds per square inch
psf	Pounds per square foot
PTorPOT	Point of Tangent
P&TP	Power and telephone pole
Pvmt	Pavement
Q	Rate of flow
R	Radius
RC	Reinforced concrete
RCP	Reinforced concrete pipe
Rd	Road
Rdwy	Roadway
Reinf	Reinforced, Reinforcing
Ret Wall	Retaining Wall
RGRCP	Rubber Gasket Reinforced Concrete Pipe
rpm	Revolutions Per Minute
Rt	Right
R/W or Row	Right-of-way
S	South or slope
SAE	Society of Automotive Engineers
San	Sanitary
SC	Spiral to Curve
SCCP	Steel cylinder concrete pipe
SD	Storm drain or Sewer District
SDDTC	Storm Drainage Design and Technical Criteria
Sdl	Saddle
Sec	Seconds
Sect	Section
SE	Southeast
SF	Square feet
Sht	Sheet
Spec	Specifications
SPR	Simplified Practice Recommendation
SpMH	Special manhole
Sq Ft Yd	Square Foot, Yard
SS	Sanitary sewer
St	Street
Sta	Station
Std	Standard
Str gr	Structural grade

Struct	Structure or structural
SW	Southwest
SY	Square Yard
T	Tangent Distance
Tel	Telephone
Temp	Temporary
TH	Test hole
TP	Telephone pole
Tr	Tract
Trans	Transition
TS	Traffic signal or Tangent to spiral
TSC	Traffic signal conduit
Typ	Typical
UD & FCD	Urban Drainage and Floor Control District
USDCM	Urban Storm Drainage Criteria Manual
UL	Underwriters Laboratories
USC&GS	United States Coast and Geodetic Survey
USGS	United States Geological Survey
V	Velocity of flow
VC	Vertical curve
VCP	Vitrified clay pipe
Vert	Vertical
W	West or width
WI	Wrought iron
WS	Wearing surface
Wt	Weight
Yd	Yard
'	feet or minutes
"	inches or seconds
o	degrees
%	percent
#	number or pound
@	at
/	per
=	equals

## 2.1.2 GENERAL DEFINITIONS AND TERMS:

Whenever in these specifications or in other contract documents the following terms or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

**Addendum:** A Supplement to any of the Contract Documents issued, in writing, after advertisement of but prior to the opening of bids for a contract.

**Advertisement:** The public announcement, as required by law, inviting bids for work to be performed or materials to be furnished.

**Agency:** The government agency for which the construction is being done, either by permit or contract.

**Agreement:** The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are made a part thereof as provided therein.

**Application for Payment:** The form accepted by the ENGINEER which is to be used by CONTRACTOR in requesting progress or final payment and which is to include such supporting documentation as required by the Contract Documents.

**Award:** The formal action of the governing body in accepting a proposal.

**Backfill:** Material placed in an excavated space to fill such space. For trenches this space will be the area from 1 foot above the top of the pipe or conduit to the existing or proposed finished grade of pavement.

**Base Course:** The upper course of the granular base of a pavement or the lower course of an asphalt concrete pavement structure.

**Bedding:** Is the material placed in the area from the bottom of the trench to 1 foot above the top of the pipe or conduit.

**Bid:** The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

**Bidder:** Any qualified individual, firm, partnership, corporation or combination thereof, acting directly or through a duly authorized representative who legally submits a proposal for the advertised work.

**Bond Issue Project:** A project financed from bonds issued by the CITY pledging credit or a revenue resource.

**Bridge:** A structure, including supports, erected over a depression or an

obstruction, as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads and having a length measured along the center of roadway of more than 20 feet between undercopings of abutments or extreme ends of openings for multiple boxes.

(Length) The length of a bridge structure is the over-all length measured along the line of survey stationing back to back of backwalls of abutments, if present, otherwise end to end of the bridge floor; but in no case less than the total clear opening of the structure.

(Roadway Width) The clear width measured at right angles to the longitudinal centerline of the bridge between the bottom of curbs or guard timbers or in the case of multiple height of curbs, between the bottom of the lower risers.

**Budget Project:** A project financed by funds from General Tax levies and shared revenue funds set aside in the annual budget adopted by the Evans City Council.

**Building:** Any structure built for the support, shelter, or enclosure of persons, animals, chattel or movable property.

**Building Code:** A regulation adopted by the governing body establishing minimum standards of construction for the protection of the public health, safety, and welfare in terms of measured performance rather than in terms of rigid specifications of materials and methods.

**Calendar Day:** Every day shown on the calendar.

**Change Order:** A written order issued by the ENGINEER to the CONTRACTOR to make changes in the work or to perform extra work, and setting forth conditions for payment and/or adjustment in time of completion.

**City:** A municipal corporation, organized and existing under and by virtue of the laws of the State of Colorado.

**City Clerk:** The duly authorized person who performs the duties of clerk for the Contracting Agency.

**Completion Time:** The number of calendar days for completion of an act, including authorized time extensions. In case a calendar date of completion is shown in the proposal in lieu of the number of calendar days, the contract shall be completed by that date. The time within which an act is to be done shall be computed by excluding the first and including the last day; and if the last day be Sunday or a legal holiday, that shall be excluded.

**Conflicting Utility Line:** An existing utility line, shown or not shown on the drawings, is a conflicting line when any part falls within the trench pay widths as listed or within the dimensions, as shown on the drawings, for appurtenant

structures.

**Construction Project:** The erection, installation, remodeling, alteration, of durable facilities upon, under, or over the ground. This shall include, but is not limited to buildings, roadways and utility pipes, lines, poles or other structures.

**Contingent Bid Item:** This is a minor bid item which is likely, but not certain, to occur during the course of work. If the ENGINEER determines that this work is required, the CONTRACTOR will accomplish the work and payment will be made based on the contingent unit bid price included in the proposal. Since the quantity listed in the proposal is primarily for bid comparison, the amount of work required by the ENGINEER may vary materially from this.

**Contract:** The written instrument executed by the CONTRACTOR and the Contracting Agency by which the CONTRACTOR is bound to furnish all labor, equipment, and materials and to perform the work specified, and by which the Contracting Agency is obligated to compensate the CONTRACTOR therefore at the prices set forth therein. The Contract Documents are herewith by reference made a part of the contract as if fully set forth therein.

**Contract Documents:** The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements issued on or after the Effective Date of the Agreement.

**Contracting Agency:** The legal entity that has contracted for the performance of the work or for whom the work is being performed.

**Contractor:** The individual, firm, partnership, corporation or combination thereof entering into a contract with the Contracting Agency to perform the advertised work.

**Council:** The City Council that by law constitutes the Legislative Department of the City organized and existing under and by virtue of the laws of the State of Colorado.

**Culvert:** Any structure not classified as a bridge, which provides an opening under or adjacent to the roadway.

**Days:** Unless otherwise designated, days will be understood to mean calendar days.

**Emergency:** Unforeseen occurrences and combinations of circumstances involving the public welfare or the protection of work already done under the Contract Documents, or which endanger life or property and call for immediate action or

remedy.

**Engineer:** The person, appointed as ENGINEER by the CITY acting directly or through his duly authorized representative.

**Equipment:** (Construction)-All machinery and equipment, together with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for the proper construction and acceptable completion of work.

(Installed)-All material or articles used in equipping a facility as furnishings or apparatus to fulfill a functional design.

**Extra Work:** An item of work not provided for in the contract as awarded but found essential to the satisfactory completion of the contract within its intended scope.

**Field Order:** A written set of emergency instructions to the CONTRACTOR issued only where the time required for preparation and execution of a formal Change Order would result in a delay or a stoppage of work, or would allow a hazardous condition to exist.

**Flooding:** Flooding will consist of the inundation of the entire lift with water, puddled with poles or bars to insure saturation of the entire lift.

**Foundation:** For buildings or structures, this will be the substructure. For pipe this will be the native material or prepared material on which the pipe rests; normally, this is the bottom grade line of the trench.

**Full Depth Pavement:** An asphalt concrete pavement structure in which the granular base and sub base are replaced by equivalent structural thickness of asphalt concrete.

**General Conditions:** Uniform general specifications adopted as standard specifications by the ENGINEER.

**Holiday:** Holidays recognized by collective bargaining agreements in the State of Colorado are:

- New Year's Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Day

Additional holidays recognizable by the State of Colorado Cities and Counties are:

- Martin Luther King's Birthday
- Presidents Day
- Columbus Day

Veteran's Day  
General Election Day in even-numbered years

When New Year's Day, Independence Day or Christmas Day fall on Sunday, the following Monday shall be considered a holiday.

Additional legal holidays, when designated by the State Governor or President of the United States, will also be recognized by the State, City and/or County.

**Improvement District Project:** A project financed by assessments against the property included in a special assessment district authorized under, or implemented by an act of the legislature of the State and/or a procedural ordinance of the City or County.

**Inspector:** The ENGINEER's authorized representative assigned to make detailed inspections of contract performance.

**Jetting:** Jetting is the densification of material, using a continuous supply of water, under pressure, transmitted to the material through a rigid pipe of sufficient length to reach the bottom of the lift being densified. In all cases, the entire lift will be completely saturated working from the top to the bottom.

**Laboratory:** The established materials testing laboratory of the Contracting Agency's Engineering Department, or other laboratories acceptable to and/or authorized by the ENGINEER to test materials and work involved in the Contract.

**Liquidated Damages:** A daily charge made against the CONTRACTOR for each working day, including free time, that any work shall remain uncompleted after elapse of Contract time.

**Major Item:** Any item of work and/or materials having an original contract value that exceeds ten percent of the amount of the original contract.

**Materials:** Any substance specified in the project, equipment and other material used or consumed in the performance of the work.

**Median:** The portion of a divided highway separating the roadways used by traffic going in opposite directions.

**Method of Measurement:** The manner in which a "Pay Item" is measured to conform to the "Pay Unit."

**Non Pay Item:** An item of work for which no separate payment will be made under the proposal, but which must be included as an incidental cost for payment on an associated pay item included in the proposal.

**Notice of Award:** A letter from the CITY advising the CONTRACTOR that he is the

successful Bidder and the Evans City Council has accepted his proposal.

**Notice to Bidders:** The standard forms inviting proposals or bids.

**Notice to Proceed:** A directive issued by the Engineer, authorizing the CONTRACTOR to start the work or improvements required in the Contract.

**Obligee:** One to whom another is obligated. For bonding purposes, the OWNER is the obligee.

**Open Trench:** The excavated area shall be considered as open trench until all the aggregate base course for pavement replacement has been placed and compacted or, if outside of a pavement area, until the excavated area is brought to finish grade or natural grade.

**Owner:** City of Evans, State of Colorado, acting through its legally constituted officials, officers or employees.

**Pavement:** Any surface of streets, alleys, sidewalks, courts, driveways, etc., consisting of mineral aggregate bound into a rigid or semi-rigid mass by a suitable binder such as, but not limited to, portland cement or asphalt cement.

**Pavement Structure:** The combination of sub-base, base course, and surface course placed on a sub-grade to support the traffic load and distribute it to the roadbed.

**Pay Item:** A detail of work for which individual payments are to be made under the Contract, as specified in the proposal.

**Payment Bond:** The security provided by the CONTRACTOR solely for the protection of claimants, supplying labor and materials to the CONTRACTOR or his Subcontractors.

**Performance Bond:** The security by the CONTRACTOR solely for the protection of the Contracting Agency and conditioned upon the faithful performance of the contract in accordance with the contract documents, drawings, specifications and conditions thereof.

**Permit:** The license to do construction in public rights-of-way and/or easements; issued by an Agency to a CONTRACTOR working for another party.

**Plans:** All approved drawings or reproductions thereof pertaining to the work and details therefor, which are made a part of the Project Manual and Contract Documents.

**Plant:** The Contractors' and/or subcontractors' facilities, including but not limited to small tools and mobile equipment, located on and/or offsite, necessary for

preparation of materials and prosecution of work for the project.

**Principal:** The individual, firm or corporation primarily liable on an obligation, as distinguished from a surety.

**Profile Grade:** The trace of a vertical plane intersecting the top surface of the proposed wearing surface, usually along the longitudinal centerline of the roadbed. Profile grade means either elevation or gradient of such trace according to the context.

**Project:** A specific coordinated construction or similar undertaking identified by a single project number and bid and awarded as one contract. On occasion two or more projects may be bid and awarded as a single contract.

**Project Manual:** All the integral documents of the contract including but not limited to, Contract Documents, General Conditions, Supplemental Conditions, Specifications and drawings.

**Project Supplemental Conditions:** See definition for Supplemental Conditions.

**Proposal:** The offer of a bidder on the prescribed form, to perform the work and to furnish the labor and materials at the prices quoted.

**Proposal Form:** The approved form on which the Contracting Agency requires bids to be prepared and submitted for the work.

**Proposal Guarantee:** The security furnished with a bid to guarantee that the bidder will enter into the contract if his bid is accepted.

**Proposal Pamphlet:** The book or pamphlet pertaining to a specific project, containing proposal forms, special provisions and other information necessary for and pertinent to the preparation of the proposal or bid.

**Referred Documents:** On all work authorized by the Contracting Agency, any referenced documents in the specification, i.e., Bulletins, Standards, Rules, Methods of Analysis or test. Codes and Specifications of other Agencies, Engineering Societies or Industrial Associations, refer to the Latest Edition thereof, including Amendments, which are in effect and published at the time of Advertising for Bids or the issuing of a permit for the work, unless otherwise stated.

**Resident Project Representative:** The authorized representative of ENGINEER who may be assigned to the site or any part thereof. Also called the Inspector.

**Reasonably Close Conformity:** Compliance with reasonable and customary manufacturing and construction tolerances where working tolerances are not specified. Where working tolerances are specified, reasonably close conformity means compliance with such working tolerances.

**Right-of-Way:** A general term denoting, land, property or interest therein, usually in a strip, acquired for or devoted to a street, highway, or other public improvement.

**Road:** A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

**Roadside:** A general term denoting the area adjoining the outer edge of the roadway. Extensive areas between the roadways of a divided highway may also be considered roadside.

**Roadside Development:** Those items necessary to the complete roadway that provide for the preservation of landscape materials and features; the rehabilitation and protection against erosion of all areas disturbed by construction through seeding, sodding, mulching and the placing of other ground covers; such suitable planting and other improvements as may increase the effectiveness and enhance the appearance of the roadway.

**Roadway:** The portion of the right-of-way intended primarily for vehicular traffic, and including all appurtenant structures and other features necessary for proper drainage and protection. Where curbs exist, it is that portion of roadway between the faces of the curbs.

**Salvageable Material:** Material that can be saved or salvaged. Unless designated or directed by the ENGINEER or shown on the drawings, all salvageable material shall remain the property of the CONTRACTOR.

**Sewers:** Conduits and related appurtenances employed to collect and carry off water and waste matter to a suitable point of final discharge.

**Shop Drawings:** Drawings or reproduction of drawings, detailing; fabrication and erection of structural elements, falsework and forming for structures, fabrication of reinforcing steel, installed equipment and installation of systems, or any other supplementary drawings or similar data, which the CONTRACTOR is required to submit for approval.

**Shoulder:** The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses.

**Sidewalk:** That portion of the roadway primarily constructed for the use of pedestrians.

**Supplemental Conditions:** The special conditions, requirements, additions, and/or revisions to the General Conditions and Standard Specifications, applicable to the work, to cover conditions or requirements peculiar to the project under consideration. Supplemental Conditions fall within one of the two following

categories and take precedence over the General Conditions.

(a) **Project Special Conditions.** Special Conditions peculiar to the project and not otherwise thoroughly nor appropriately set forth in the general conditions or standard specifications or drawings.

(b) **Standard Special Conditions.** Special directions or requirements not otherwise thoroughly or appropriately set forth in the standard specifications, and which are peculiar to a selected group of projects or which are intended for temporary use.

**Specifications:** The descriptions, directions, provisions, and requirement for performing the work as contained in the Contract Documents.

**State:** The State of Colorado.

**Standard Details:** Uniform detail drawings of structures or devices adopted as Standard Details by the ENGINEER.

**Standard:** Uniform general specifications adopted as Standard Specifications by the ENGINEER.

**Storm Drain:** Any conduit and appurtenance intended for the reception and transfer of stormwater.

**Street:** Streets, avenues, alleys, highways, crossings, lanes, intersections, courts, places, and grounds now open or dedicated or hereafter opened or dedicated to public use and public ways.

**Structures:** Bridges, culverts, catch basins, drop inlets, retaining walls, cribbing, manholes, endwalls, sewers, service pipes, underdrains, foundation drains, fences, swimming pools, and other features which may be encountered in the work and not otherwise classed herein.

**Sub-base:** The lower course of the base of a roadway, immediately above the sub-grade.

**Subcontractors:** Those having direct contracts with the CONTRACTOR and those who furnish material worked into a special design according to the Drawings and Specifications for the work, but not those who merely furnish material not so worked.

**Sub-grade:** The supporting structures on which the pavement and its special undercourses rest.

**Substantial Completion:** The work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER and OWNER as evidenced by a letter

of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it was intended. The terms "substantially complete" and "substantially completed" as applied to any work refer to Substantial Completion thereof. The work must meet the following criteria for Substantial Completion to apply:

- X At least 90% of all pay items have been completed and are eligible for payment.
- X The facilities constructed by CONTRACTOR are ready for use.
- X All traffic features have been completed.
- X A list of incomplete work items has been issued by the OWNER or ENGINEER to the CONTRACTOR and the CONTRACTOR has accepted and acknowledges the list.

**Substructure:** All of that part of the structure or building below the bearings of simple and continuous spans, skewbacks of arches and tops of footings of rigid frames, together with the backwalls, wingwalls, and wing protection railings.

**Superintendent:** The Contractor's authorized representative in responsible charge of the work.

**Superstructure:** The entire structure or building except the substructure.

**Supplemental Specifications:** Additions and revisions to the Standard Specifications that are adopted subsequent to issuance of the printed Project Manual.

**Surety:** The individual, firm or corporation, bound with and for the CONTRACTOR for the acceptable performance, execution, and completion of the work, and for the satisfaction of all obligations incurred.

**Surface Course:** The finish or wearing course of an asphalt concrete pavement structure.

**Title or Headings:** The titles or headings or the sections and subsections herein are intended for convenience of reference and shall not be considered as having any bearing on their interpretation.

**Township, City, Town or District:** A subdivision of the COUNTY used to designate or identify the location of the proposed work.

**Traveled Way:** The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

**Utility:** Pipe lines, conduits, ducts, transmission lines, overhead or underground wires, railroads, storm drains, sanitary sewers, irrigation facilities, street lighting

traffic signals, and fire alarm systems, and appurtenances of public utilities and those of private industry, businesses or individuals solely for their own use or use of their customers which are operated or maintained in, on, under, over or across public right-of-way or public or private easement.

**Waterworks (Water Supply System):** The reservoirs, pipe lines, wells, pumping equipment, purification works, mains, service pipes, and all related appliances and appurtenances utilized in the procurement, transportation and delivery of an adequate, safe, and palatable water supply for the Contracting Agency.

**Work:** Any of all of the improvements mentioned and authorized to be made, and the construction, demolition, reconstruction, and repair of all or any portion of such improvements, and all labor, services, incidental expenses, and material necessary or incidental thereto.

**Working Day:** A calendar day, exclusive of Saturdays, Sundays and Contracting Agency recognized legal holidays, on which weather and other conditions not under the control of the CONTRACTOR will permit construction operations to proceed for the major part of the day with the normal working force engaged in performing the controlling item or items of work which would be in progress at that time.

## **2.2 GENERAL CONTRACT REQUIREMENTS**

### **2.2.1 FAMILIARITY WITH WORK**

The CITY has endeavored to ascertain all pertinent information regarding site conditions, and subsurface conditions, and has, to the best of his ability, furnished all such information to the CONTRACTOR. Such information is given, however, as being the best factual information available to the CITY, but is advisory only. The CONTRACTOR, by careful examination, shall satisfy himself as to the nature and location of the work, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters that can in any way affect the work under this Contract.

Bidder shall examine the site of the proposed work and all documents pertaining to the work. It is mutually agreed that the submission of a proposal shall be considered prima facie evidence that the bidder has made such examination and is familiar with the character, quality and quantity of the work to be performed and material to be furnished.

Logs of test hole, ground water levels, and any accompanying soil reports as furnished by the Contracting Agency are furnished for general information only. The field condition so set forth shall not constitute a representation or warranty, expressed or implied, that such conditions are actually existent. Bidders shall make their own investigations and form their own estimates of the site conditions. After the submission of the proposal, no complaint or claim that there was any misunderstanding as to the quantities, conditions or nature of the work will be entertained.

### **2.2.2 CHANGED CONDITIONS**

The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of any emergency, notify the CITY in writing of: (1) Subsurface or latent physical conditions at the site differing materially from those indicated in this Contract; or (2), previously unknown physical or other conditions at the site, of an unusual nature, not generally recognized as inherent in work of the character provided for in this Contract. The ENGINEER shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or the time required for, performance of this Contract, an equitable adjustment shall be made and the Contract modified in writing accordingly. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given notice as above required, provided that the ENGINEER may, if he determines the facts so justify, consider and adjust any such claims assessed before the date of final settlement of the Contract. If the parties fail to agree upon the adjustment to be made, the dispute shall be determined as provided in Paragraph 2.2.33 hereof.

### **2.2.3 ORDER OF COMPLETION**

The CONTRACTOR shall submit, at such times as may reasonably be requested by the ENGINEER, schedules which shall show the order in which the CONTRACTOR proposes to carry on the work, with dates at which the CONTRACTOR will start the several parts. The special provisions or plans may require that certain phases or parts of the work be completed first or in a certain order. If the CONTRACTOR elects to use PERT or CPM charts, he shall furnish copies of them to the ENGINEER upon request.

### **2.2.4 DESIGN AND INSTRUCTIONS**

It is agreed that the CITY will be responsible for the adequacy of design and Specifications. The CITY, through the ENGINEER, shall furnish Specifications, which adequately represent the requirements of the work to be performed under the Contract. All such instructions shall be consistent with the Contract Documents and shall be true developments thereof. Specifications that adequately represent the work to be done shall be furnished prior to the time of entering into the Contract. The ENGINEER may, during the life of the Contract, and in accordance with Paragraph 2.2.15, issue additional instructions, by means of drawings or other media, necessary to illustrate changes in the work.

### **2.2.5 SURVEYS**

The CITY has provided a suitable number of bench marks adjacent to the work. From the information provided by the CITY, the CONTRACTOR shall develop and make all detail surveys needed for construction, such as slope stakes, batter boards, stakes for pile locations, and other working points, lines, and elevations. The CONTRACTOR shall be responsible for any mistakes made in his detail surveys.

The CONTRACTOR shall carefully preserve bench marks, reference points and stakes, and in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their necessary loss or disturbance.

### **2.2.6 CLAIMS**

If the CONTRACTOR claims that any instructions by drawings or otherwise, issued after the date of the Contract, involve extra cost under the Contract, he shall give the ENGINEER written notice thereof within ten (10) days, after the receipt of such instruction, and in any event before proceeding to execute the work, except emergency endangering life or property, and the procedure shall than be as provided for changes in the work. No such claim shall be valid unless so made.

### **2.2.7 EXECUTION AND CORRELATION OF DOCUMENTS**

The Agreement shall be signed in duplicate by the CITY and the CONTRACTOR.

The Contract Documents are complimentary and what is called for by anyone shall be as

binding as if called for by all. In case of conflict between Drawings and Specifications, the Specifications shall govern. Special Specifications shall govern over Standard Specifications. Materials or work described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards.

#### **2.2.8 MATERIALS AND APPLIANCES**

Unless otherwise stipulated, the CONTRACTOR shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation and other facilities necessary for the execution and completion of work. The CONTRACTOR shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

#### **2.2.9 EMPLOYEES**

The CONTRACTOR shall, at all times, enforce strict discipline and good order among his employees, and shall seek to avoid employing, for the Contract, any unfit person or anyone not skilled in the work assigned to him.

Adequate sanitary facilities shall be provided by the CONTRACTOR.

Employees of the CONTRACTOR and/or any subcontractor working on the project shall not be considered as employees of the City of Evans, nor shall they be entitled to any of the benefits provided to City of Evans employees.

#### **2.2.10 ROYALTIES AND PATENTS**

The CONTRACTOR shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement for any patent rights and save the CITY harmless from loss on accounts thereof, except that the CITY shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, unless the CITY has notified the CONTRACTOR prior to the signing of the Contract that the particular process, design, or product is patented or is believed to be patented.

#### **2.2.11 PERMITS, LICENSES AND REGULATIONS**

Permits and licenses of a temporary nature, necessary for the prosecution of the work, shall be secured and paid for by the CONTRACTOR. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the CITY, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the CONTRACTOR observes that the Specifications are at variance therewith, he shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted in the Contract for changes in the work.

### **2.2.12 INSPECTION OF WORK**

All materials and equipment used in the construction of the project shall be subject to adequate testing in accordance with generally accepted standards as required by the Contract Documents.

The CITY shall provide sufficient competent personnel, working under qualified supervision for the inspection of the work, while such work is in progress, to ascertain that the completed work will comply in all respects with the standards and requirements set forth in the Specifications. The inspection of the Contract will be as it relates to the compliance with the Specifications, quality of workmanship, and material. Notwithstanding such inspection, the CONTRACTOR will be held responsible for the acceptability of the work.

The ENGINEER and his representatives shall at all times have access to work whenever it is in preparation or progress, and the CONTRACTOR shall provide proper facilities for such access and for inspection.

If the Specifications, the ENGINEER's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the CONTRACTOR shall give the ENGINEER timely notice to its readiness for inspection, and if the inspection is by an authority other than the ENGINEER, a date shall be fixed for such an inspection. Inspections by the ENGINEER shall be promptly made, and where applicable, at the source of supply. Any work required by the ENGINEER to be uncovered for examination shall be properly restored at the CONTRACTOR's expense unless the ENGINEER has unreasonably delayed inspection.

Re-examination of any work may be ordered by the ENGINEER, and if so ordered, the work must be uncovered by the CONTRACTOR. If such work is found to be in accordance with the Contract Documents, the CITY shall pay the cost of re-examination. If such work is not in accordance with the Contract Document, the CONTRACTOR shall pay such cost.

### **2.2.13 SUPERINTENDENTS**

The CONTRACTOR shall keep on his work at all times during its progress, competent superintendents and/or responsible assistants. The superintendent shall represent the CONTRACTOR and all directions given to him shall immediately be confirmed in writing to the CONTRACTOR. Superintendent shall be named in writing by CONTRACTOR at the beginning of the work.

### **2.2.14 PRECONTRACT EXAMINATION AND DISCOVERY OF DISCREPANCIES DURING WORK**

Before submitting his proposal, the CONTRACTOR will examine all construction plans and the entire and complete specifications. The CONTRACTOR will become well and fully informed as to the materials and the character of the work required, the relationship of all of the particular parts of the work, and he will visit and inspect the site, observing and examining the conditions existing.

After the execution of the Contract, no consideration will be granted for any misunderstanding of the materials to be furnished or the work to be done, it being mutually understood that the tender of the proposal carried with it an agreement to this end and all other conditions mentioned in the Contract and the Specifications, and implied a full and complete understanding of them and all construction plans, drawings, notes, indications, and requirements.

Should anything be omitted from the construction plans or specifications necessary to the proper completion of the work herein described, it shall be the duty of the CONTRACTOR to so notify the CITY before signing the Contract, and in the event of failure of the CONTRACTOR to give such notice, he shall make good any damage or defect in his work caused thereby without extra charge. No allowance will be made for lack of full knowledge of all conditions, except such underground conditions as are determined after commencement of the work and were unknown to the CONTRACTOR.

If the CONTRACTOR, in the course of the work, finds any discrepancy between the Specifications and the physical conditions of the locality, or any errors or omissions in the layout as given by survey points and instruction, he shall immediately inform the ENGINEER, in writing, and the ENGINEER shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the CONTRACTOR's risk, except in the event of an emergency.

#### **2.2.15 CHANGES IN THE WORK**

At any time by written order, the CITY may make changes in the Specifications or scheduling of the Contract within the general scope. All such work shall be executed under the time constraints of the original contract except that any claim for extension of time caused thereby shall be allowed and adjusted at the time of ordering such change or at such time as it can be ascertained.

In giving instruction, the ENGINEER shall have authority to make minor changes in the work not involving extra cost, and not inconsistent with the purpose of the work. Except in an emergency endangering life and property, no claim for an addition to the contract sum shall be valid unless the additional work was so ordered by the ENGINEER.

The CONTRACTOR shall proceed with the work as changed and the value of any such work or change shall be determined as provided for in the Agreement herein.

The CITY may at any time, as the need arises, order changes within the scope of the work without invalidating the Agreement. If such changes increase or decrease the amount due under the Contract Documents, or in the time required for performance of the work, the CONTRACTOR shall perform the same at the unit prices or lump sum indicated in the bid. Changes may occur to a maximum of twenty-five percent (25%) of the contract price. After exceeding twenty-five percent (25%), the applicable unit price or lump sum may be negotiable and an equitable adjustment shall be authorized by change order.

### **2.2.16 EXTENSION OF TIME**

a. Extension of time stipulated in the Contract for completion of the work will be made when changes in the work occur, as provided in Paragraph 2.2.15; when the work is suspended as provided in Paragraph 2.2.17; and when the work of the CONTRACTOR is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the CONTRACTOR, his subcontractors or suppliers, and which were not the result of their fault or negligence.

Extension of time for completion shall also be allowed for any delays in the progress of the work that in the opinion of the ENGINEER entitles the CONTRACTOR to an extension of time.

b. The CONTRACTOR shall notify the ENGINEER promptly of any occurrence or condition which in the CONTRACTOR's opinion entitles him to an extension of time. Such notice shall be in writing and shall be submitted in ample time to permit full investigation and evaluation of the CONTRACTOR's claim. Failure to provide such notice shall constitute a waiver by the CONTRACTOR of any claim.

### **2.2.17 SUSPENSION OF WORK**

The CITY may at anytime suspend the work, or any part thereof, by giving three (3) days' notice to the CONTRACTOR in writing.

### **2.2.18 THE CITY'S RIGHT TO TERMINATE CONTRACT**

If the CONTRACTOR should be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed as a result of his insolvency, or if he should persistently or repeatedly refuse or should fail, except for cases in which extensions of time are provided, to supply enough properly-skilled workmen or materials, or if he should fail to make payments to subcontractors or for materials or labor so as to affect the progress of the work or persistently be guilty of a substantial violation of the Contract, then the CITY, upon written notice from the ENGINEER that sufficient cause exists to justify such action and without prejudice to any other right or remedy, and after giving the CONTRACTOR and his Surety seven (7) days' written notice, terminate the employment of the CONTRACTOR and take possession of the premises and of all materials, tools, equipment and other facilities installed on the work and paid for by the CITY, and finish the work by whatever method the ENGINEER may be deem expedient. In such case, the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the CONTRACTOR. If such expense shall exceed such unpaid balance, the CONTRACTOR shall pay the difference to the CITY. The expense incurred by the CITY as herein provided, and the damage incurred through the CONTRACTOR's default, shall be certified by the ENGINEER.

Where the Contract has been terminated by the CITY, said termination shall not affect or terminate any of the rights of the CITY then existing or which may thereafter accrue because of such default as against the CONTRACTOR or his Surety. Any retention or

payment of moneys by the CITY due to the CONTRACTOR under the terms of the Contract, shall not release the CONTRACTOR or his Surety from liability for the CONTRACTOR's default.

#### **2.2.19 CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT**

If the work should be stopped under an order of any court, or other public authority, for a period of more than three (3) months, through no act or fault of the CONTRACTOR of an undisputed sum with forty-five (45) days of its maturity and presentation, then the CONTRACTOR may, upon seven (7) days' written notice to the ENGINEER, stop work or terminate this Contract and recover from the CITY payment for all work executed, plus any loss sustained upon any plant or materials, plus reasonable profit and damages.

#### **2.2.20 CANCELLATION OF CONTRACT**

Failure of the CONTRACTOR to comply with any of the requirements of the Contract and the Specifications may be considered as evidence of the inability on the part of the CONTRACTOR to maintain the quality and service standards deemed necessary, and shall be sufficient cause for the cancellation of the Agreement and the initiating of legal action against the Performance Bond of the CONTRACTOR.

#### **2.2.21 CORRECTION OF WORK BEFORE FINAL PAYMENT**

The CONTRACTOR shall promptly remove from the premises all materials and work condemned by the ENGINEER as failing to meet contract requirements, whether incorporated in the work or not, and the CONTRACTOR shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the CITY and shall bear the expense of making good all work of other CONTRACTORS destroyed or damaged by such removal or replacement.

All removal and replacement work shall be done at the CONTRACTOR's expense. If the CONTRACTOR does not take action to remove such condemned work and materials within ten (10) days after written notice, the CITY may remove them and store the material at the expense of the CONTRACTOR. If the CONTRACTOR does not pay the expense of such removal and storage within ten (10) days' time thereafter, the CITY may, upon ten (10) days' written notice, sell such materials at auction or at private sale and shall pay the CONTRACTOR any net proceeds thereof, after deducting all costs and expenses that should have been borne by the CONTRACTOR.

#### **2.2.22 REMOVAL OF EQUIPMENT**

In the case of termination of this Contract before completion for whatever cause, the CONTRACTOR, if notified to do so by the CITY, shall promptly remove any part or all of his equipment and supplies from the property of the CITY, failing which, the CITY shall have the right to exercise control over and to remove such equipment and supplies at the expense of, and without recourse, by the CONTRACTOR.

### **2.2.23 RESPONSIBILITY FOR WORK**

The CONTRACTOR assumes full responsibility for the work. Until final acceptance, the CONTRACTOR shall be responsible for damage to or destruction of the work, except for any part covered by partial acceptance as set forth in Paragraph 2.2.24 and except such damage or destruction that is caused by the negligent or willful acts of the CITY.

### **2.2.24 PARTIAL COMPLETION AND ACCEPTANCE**

If at any time prior to the issuance of the final certificate, referred to in Paragraph 2.2.34 hereinafter, any portion of the permanent construction has been satisfactorily completed to the ENGINEER's satisfaction, and if the ENGINEER determines that such portion of the permanent construction is not required for the operations of the CONTRACTOR, but is needed by the CITY, the ENGINEER shall issue to the CONTRACTOR a Certificate of Partial Completion, and thereupon or at any time thereafter, the CITY may take over and use the portion of the permanent construction described in such certificate.

The issuance of a Certificate of Partial Completion shall not be construed to constitute an extension of the CONTRACTOR's time to complete the portion of the permanent construction to which it relates, if he fails to complete it in accordance with the terms of this Contract. The issuance of such a certificate shall not operate to release the CONTRACTOR or his Sureties from any obligations under this Contract or the Performance Bond.

If such prior use increases the cost of or delays the work, the CONTRACTOR shall be entitled to extra compensation, or extension of time, or both, as the ENGINEER may determine, unless otherwise provided.

### **2.2.25 PAYMENT WITHHELD PRIOR TO FINAL ACCEPTANCE OF WORK**

As a result of subsequently discovered evidence, the CITY may withhold or nullify the whole or part of any certificate of payment to such extent as may be necessary to protect himself from loss occasioned by:

- (a) Defective work not remedied by the CONTRACTOR
- (b) Claims filed or reasonable evidence indicating probable filing of claims by other parties against the CONTRACTOR for work done on the project
- (c) Failure of the CONTRACTOR to make payments properly to subcontractors or for material or labor
- (d) Damage by the CONTRACTOR to subcontractors or to another contractor

When the above grounds are removed, or the CONTRACTOR provides Surety Bond satisfactory to the CITY that will protect the CITY in the amount withheld, payment shall be made for amounts withheld because of them. No moneys may be withheld under (b) and

(c) if a Payment Bond is included in the Contract.

### **2.2.26 CONTRACTOR'S INSURANCE AND INDEMNIFICATION**

The CONTRACTOR shall secure and maintain such insurance policies as will protect himself, his subcontractors, and City of Evans, its employees and agents, from claims for bodily injuries, death, or property damage, which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required and must be evidenced by Certificates of Insurance:

(a) Statutory Workers' Compensation

(b) Commercial General Liability

General Aggregate	\$1,200,000
Products/ (Completed Operations Aggregate)	\$1,200,000
Each Occurrence	\$ 600,000
Personal & Advertising Injury	\$ 600,000
Fire Damage	\$ 50,000
Medical Expense	\$ 5,000

(c) Automobile Liability

Bodily Injury and Property Damage (Combined Single Limit)	\$ 600,000
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Certificates of Insurance must show "City of Evans, its employees and agents" as an Additional Insured.

All policies shall be for not less than the amount set forth above or as stated in the Special Conditions. Other forms of insurance shall also be provided if called for by the Special Conditions.

All Certificates of Insurance must be filed with the ENGINEER along with the Performance and Payment Bonds and shall be subject to his approval as to adequacy of protection, within the requirements as stated herein. Said Certificates of Insurance shall contain a thirty (30) days' written notice of cancellation in favor of the CITY.

The CONTRACTOR shall indemnify and hold harmless the City of Evans, its employees and agents, from and against any and all claims, damages, losses, injuries and expenses, including attorney's fees, arising out of or resulting from the performance of work.

All insurance and bonding companies providing coverage or surety under this contract shall have a Best Insurance Rating of "A" or better.

### **2.2.27 SURETY BONDS**

The CITY shall have the right, prior to the signing of the Contract, to require the CONTRACTOR to furnish Payment and Performance Bonds in such form as the CITY may prescribe in the bidding documents and executed by one or more financially responsible Sureties licensed to do business in the State of Colorado. The premiums for said Bonds shall be paid by the CONTRACTOR. Such Bonds shall cover the entire Contract amount, regardless of changes therein, shall remain in full effect for a period of one year from the date of issuance of a Certificate of Completion, and shall be filed with the ENGINEER prior to the commencement of any work on the project.

### **2.2.28 CONTRACTOR'S INSURANCE**

The CONTRACTOR shall secure and maintain insurance to one hundred percent (100%) of the insurable value of the entire work in the Contract and any structures attached or adjacent thereto against fire, earthquake, flood, and other perils as he may deem necessary and shall name the CITY and subcontractors as Additional Insured.

All insurance and bonding companies providing coverage or surety under this contract shall have a Best Insurance rating of "A" or better.

### **2.2.29 ASSIGNMENT**

Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other and its Surety, nor shall the CONTRACTOR assign any moneys due or to become due to him hereunder, except to a bank or financial institution acceptable to the CITY.

### **2.2.30 RIGHTS OF VARIOUS INTERESTS**

Wherever work being done by the CITY's forces, utility companies, or by other CONTRACTOR's forces is contiguous to work covered by this Contract, the respective rights of the various interest invoiced shall be established by the ENGINEER, to secure the completion of the various portions of the work in general harmony.

(a) Before issuance of final payment, the CONTRACTOR, if required in the Special Conditions, shall certify in writing to the ENGINEER that all payrolls, material bills, and other indebtedness connected with the work, have been paid or otherwise satisfied. If the Contract does not include a payment Bond the CONTRACTOR may submit, in lieu of certification of payment, a Surety Bond in the amount of the disputed indebtedness or liens, guaranteeing payment of all such disputed amounts, including all related costs and interest in connection with said disputed indebtedness or liens, which the CITY may be compelled to pay upon adjudication.

(b) The making and acceptance of the final payment shall constitute a waiver of all claims by the CITY, other than those arising from unsettled liens, from faulty work appearing within the guarantee period, provided in the Special Conditions, from the requirements of the Drawings and Specifications, or from manufacturer's guarantees. It shall also constitute a waiver of all claims by the CONTRACTOR, except those previously made and still

unsettled.

(c) If after the work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, and the ENGINEER so certifies, the CITY shall, upon certificate of the ENGINEER, and without terminating the Contract, make payment of the balance due for that portion of the work fully and completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

(d) If the CITY fails to make payment as herein provided, there shall be added to each payment daily interest at the rate of six percent (6%) per annum commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the CONTRACTOR.

### **2.2.31 ENGINEER'S STATUS**

The ENGINEER shall perform technical inspection of the work. He has authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract. He shall also have authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

### **2.2.32 ENGINEER'S DECISIONS**

The ENGINEER shall, within a reasonable time after their presentation to him, make decisions in writing on all claims of the CONTRACTOR and on all other matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

### **2.2.33 ARBITRATION**

Any controversy or claim arising out of or relating to this Contract, or the breach thereof, which cannot be resolved by mutual agreement, shall be settled by arbitration in accordance with the Rules of the American Arbitration Association, and judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

### **2.2.34 ACCEPTANCE AND FINAL PAYMENT**

Upon receipt of written notice that the work is substantially complete or ready for final inspection and acceptance, the ENGINEER will promptly make such inspection and when he finds the work acceptable under the Contract and the Contract fully performed or substantially completed, he shall promptly issue a certificate, over his own signature, stating that the work required by this Contract has been substantially completed and is accepted by him under the terms and conditions thereof, and the entire balance found to be due the CONTRACTOR, including the retained percentage, unless a retention based on the ENGINEER's estimate of the fair value of the claims against the CONTRACTOR and the cost of completing the uncompleted or unsatisfactory items of work with specified amounts for each incomplete or defective item of work, is due and payable. No final payment shall be made by the CITY unless and until the CONTRACTOR has certified in writing to the ENGINEER that all payroll, material bills, and other indebtedness connected with the work have been paid or otherwise satisfied.

The making and acceptance of the final payment shall constitute a waiver of all claims by the CITY, other than those arising from unsettled liens, from faulty work appearing within the guarantee period provided in the Special Conditions, from the requirements of the Drawings and Specifications, or from the manufacturer's guarantees. It shall also constitute a waiver of all claims by the CONTRACTOR, except those previously made and still unsettled.

If, after the work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR and the ENGINEER so certifies, the CITY shall, upon certificate of the ENGINEER, and without terminating the Contract, make payment of balance due for that portion of the work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the project to bind the subcontractors to the CONTRACTOR by the terms of the Contract Documents, and to give the CONTRACTOR the same power as regard to terminating any subcontract that the CITY may exercise over the CONTRACTOR under any provision of the Contract Documents.

Nothing contained in this Agreement shall create any contractual relationship between any subcontractor and the CITY.

Subcontracts, or transfer of Contract, shall not release the CONTRACTOR of his liability under the Contract and Bonds.

**2.2.35 LIQUIDATED DAMAGES**

The CONTRACTOR agrees that he can and will complete the project within the prescribed time limit as stated in Article 1.5.9 (Notice to Proceed) and within the time as may be extended. In the event the CONTRACTOR fails to complete the work within the allotted time limit, the following liquidated damages will be applied:

From More Than	Original Contract Amount To And Including	Daily Charge
\$ 0	\$ 25,000	\$ 85
25,000	50,000	140
50,000	100,000	205
100,000	500,000	280
500,000	1,000,000	420
1,000,000	2,000,000	560
2,000,000	4,000,000	840
4,000,000	8,000,000	1,120
8,000,000	10,000,000	1,400

These rates will be assessed per calendar day for each day which the CONTRACTOR fails to finish the work in excess of the time period allotted. The parties agree that the liquidated

damages, as stated herein, are not a penalty and are reasonable, given the expected harm from a delay in completion, the difficulty of proving actual loss, and the inadequacy of any other remedy.

### **2.2.36 ADVANCE NOTICE**

It shall be the responsibility of the CONTRACTOR to notify the ENGINEER or inspector sufficiently in advance of his operations to enable the ENGINEER or inspector to set the required control stakes and marks.

In order to assure proper availability of construction supervision or other personnel from the ENGINEER's staff, the following notices will be required as minimums:

- (a) One (1) week notice for major additions or modifications to construction staking.
- (b) Two (2) working days' notice for all staking except for emergencies.
- (c) Two (2) days' written notice shall be delivered to the ENGINEER or inspector prior to any work done on Saturday, Sunday, nights, and legal holidays.

The failure of the CONTRACTOR to provide minimum notices will not be considered for time extensions or extra compensations.

### **2.2.37 WORK DONE WITHOUT LINES OR GRADES**

Any work done without having been properly located and established as determined by the Engineer may be ordered removed and replaced at the CONTRACTOR's expense.

### **2.2.38 TAXES**

Except as may be otherwise provided in this Contract, the contract price is to include all applicable taxes, but does not include any tax from which the CITY and the Contractor are exempt. Upon request by the CONTRACTOR, the CITY shall furnish a tax exemption certificate or similar evidence of exemption with respect to any such tax not included in the contract price, pursuant to this provision.

## **2.3 LEGAL RELATIONS & RESPONSIBILITIES TO PUBLIC**

### **2.3.1 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

Laws and Regulations: The CONTRACTOR shall keep himself fully informed of all city and county ordinances and regulations, and state and federal laws which in any manner affect the work herein specified. He shall at all times observe and comply with said ordinances, regulations, or laws, caused by the negligent actions of the CONTRACTOR, his agent, or employees.

### **2.3.2 PROJECT SAFETY**

The CONTRACTOR is solely responsible for and shall take reasonable precautions in the performance of the work under this Contract to protect all persons from hazards to life and property. The CONTRACTOR shall comply with all health, safety and fire protection regulations and requirements.

### **2.3.3 PROTECTION OF THE PUBLIC AND OF WORK AND PROPERTY**

The CONTRACTOR shall provide and maintain all necessary watchmen, barricades, warning lights, and signs in accordance with the Manual of Uniform Traffic Control Devices, and take all reasonable precautions for the protection and safety of the public. He shall continuously maintain reasonable protection of all work from damage, and shall take all reasonable precautions to protect the CITY's property from injury or loss arising in connection with this Contract. Streets and highways shall be kept free of dirt and litter from CONTRACTOR's handling operations. The CONTRACTOR shall take reasonable precautions to protect private property adjacent to the project from such nuisances as dust and dirt, rock, and excessive noise. He shall make good any damage, injury or loss to his work and to the property owner resulting from lack of reasonable protective precautions, except such as may be due to errors in the Contract Documents, or caused by agents of adjacent private and public property, as provided by law and the Contract Documents.

### **2.3.4 NON-DISCRIMINATION**

In connection with the performance of work under this Contract, the CONTRACTOR agrees not to refuse to hire, discharge, promote, or demote, or discriminate in matters of compensation against any person otherwise qualified, solely because of race, creed, sex, color, national origin, handicap status or ancestry; and further agrees to inset the foregoing provision in all subcontracts hereunder.

## **2.4 MATERIALS & WORKMANSHIP**

### **2.4.1 GUARANTEES**

The CONTRACTOR shall guarantee his work against defective materials or workmanship for a period of two (2) years from the date of initial acceptance.

Contractor warrants and guarantees to the CITY that all equipment and materials furnished under this Contract are free from all defects in workmanship and materials.

Contractor shall remove from the project area all work or materials rejected by the CITY or its inspector for failure to comply with the Contract Documents, whether incorporated in the construction or not. The CONTRACTOR shall promptly replace the materials or re-execute the work in accordance the Contract Documents and without expense to the CITY which are or become defective due to such defects within two (2) years after the date of receipt by the CITY. The CONTRACTOR shall also bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

## **2.4.2 WARRANTIES**

The CONTRACTOR shall guarantee his work against defective materials and workmanship for a period of two (2) years from the date of initial acceptance.

## **2.5 MEASUREMENT & PAYMENT**

### **2.5.1 PAYMENT**

Partial payment under the Contract shall be made at the request of the CONTRACTOR once each month, based upon partial estimates to be furnished by the CONTRACTOR and approved by the CONTRACTOR once each month, based upon partial estimates to be furnished by the CONTRACTOR and approved by the ENGINEER or inspector. In making such partial payment, there shall be retained three percent (3%) of the estimated amounts until final completion and acceptance of all work covered by the Contract; provided, however, that the ENGINEER, at any time after fifty percent (50%) of the work has been completed, finds that satisfactory progress is being made, shall recommend that the remaining partial payment be paid in full.

In preparing estimates for partial payments, the material delivered on the site and preparatory work done may be taken into consideration.

Payments for work under subcontracts of the CONTRACTOR shall be subject to the above conditions applying to the contract after the work under a subcontract has been fifty percent (50%) completed. In preparing estimates for partial payments, the material delivered on the site and preparatory work done may be taken into consideration.

Should the CONTRACTOR fail to proceed properly and in accordance with the Guarantee, the CITY may have such work performed at the expense of the CONTRACTOR.

### **2.5.2 PAY QUANTITIES**

The CONTRACTOR shall be paid on a unit price basis as indicated by the proposal for the actual quantities installed.

## **2.6 SCOPE OF WORK**

### **2.6.1 CHANGES IN THE WORK**

At any time by written order, the CITY may make changes in the Drawings and Specifications or scheduling of the Contract within the general scope. All such work shall be executed under the time constraints of the original Contract, except that any claim for extension of time caused thereby shall be allowed and adjusted at the time of ordering such change or at such time as it can be ascertained.

- (a) Unit prices previously approved
- (b) An agreed lump sum
- (c) The actual cost of labor, direct overhead, materials, supplies, equipment and

other services necessary to complete the work. In addition, there shall be added on an amount to be agreed upon, but not to exceed fifteen percent (15%) of the actual cost of the work, to cover the cost of general overhead and profit.

### **2.6.2 SUBLETTING OF CONTRACT**

The CONTRACTOR shall not sublet, sell, transfer, assign, or otherwise dispose of the Contract, or of his rights, title, or interest therein, without written consent of the CITY. The CONTRACTOR may utilize the services of specialty subcontractors on those parts of the project which, under normal contraction practices, are performed by specialty subcontractors.

The CONTRACTOR shall not award work to subcontractors in excess of fifty percent (50%) of the contract price without prior written approval of the CITY.

The CONTRACTOR shall be as fully responsible to the CITY for the acts and omissions of his subcontractors and of persons directly or indirectly employed by him, as he is for the acts and omissions of persons directly employed by him.

### **2.6.3 SEPARATE CONTRACTS**

The CITY reserves the right to let other contracts in connection with this project. The CONTRACTOR shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs. If the proper execution or results of any part of the CONTRACTOR's work depends upon the work of any other contractor, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such work that render it unsuitable for such proper execution and results.

### **2.6.4 SUBCONTRACTS**

The CONTRACTOR shall, as soon as practicable after signing the Contract, but in any event prior to the performance of any work by any subcontractor, notify the CITY, in writing, of the names of the subcontractors proposed for the work, designating the portions of work to be performed by each.

The CONTRACTOR agrees that he is as fully responsible to the CITY for the acts and omissions of his subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the CITY.

### **2.6.5 UNDERGROUND OBSTRUCTIONS**

The CONTRACTOR shall anticipate all underground obstructions, such as water lines, gas lines, sewer lines, concrete, debris, and all other types of utility lines. No extra payment will be allowed for the removal, protection, replacement, repair or possible increased cost caused by underground obstruction. Any such lines or obstructions indicated on the Drawings show only the approximate location from the information available and must be verified in the field by the CONTRACTOR. The ENGINEER will endeavor to familiarize the CONTRACTOR with all underground utilities and obstructions, but this will not relieve the CONTRACTOR from full responsibility for anticipating all underground obstructions.

In accordance with C.R.S. Section 9-1.5-103 (1973), the CONTRACTOR shall not make or begin excavation without first notifying the owners, operators or association of owners and operators having underground facilities in the area of such excavation. Notice may be given in person, by telephone, or in writing and shall be given at least two business days prior to beginning work.

The CONTRACTOR shall protect the existing utilities in a manner as requested by the respective utility owners at no extra compensation. The CONTRACTOR, by his signature on this proposal and subsequently on the Agreement, agrees to hold City of Evans, the agencies thereof, and their officers and employees, harmless from any and all losses, damages or claims which may arise out of, or be connected with, construction performed where said utilities are located.

Should it be necessary to relocate utilities in the area of construction, the CITY, at its own expense, will coordinate these relocations with the utility owner and the CONTRACTOR.

### **2.6.6 EMERGENCY WORK**

In an emergency affecting the safety of life or of the work or of adjoining property, the CONTRACTOR is, without special instructions or authorization from the ENGINEER, hereby permitted to act at his discretion to prevent such threatening loss or injury. He shall also act, without appeal, if so authorized or instructed by the ENGINEER. Any compensation claimed by the CONTRACTOR as a result of emergency work, shall be determined by agreement or in accordance with Article 2.2.33.

### **2.6.7 CLEANING UP**

The CONTRACTOR shall remove, at his own expense, from the CITY's property and from all public and private property, all temporary structures, rubbish and waste materials resulting from his operations. This requirement shall not apply to property used for permanent disposal of rubbish or waste materials in accordance with permission of such disposal granted to the CONTRACTOR by the CITY thereof where such disposal is in accordance with local ordinances and is approved by the ENGINEER.

**ARTICLE 3.0**

**SPECIAL CONDITIONS**

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### **3.1 GOVERNING DOCUMENTS**

The governing documents for this Work are as follows:

- Contract Documents Articles 1.0 through 4.0
- The City of Evans, "Specifications for Street Design & Construction", dated April 2004.
- State Department of Highways, Division of Highways, State of Colorado, "Standard Specifications for Road and Bridge Construction", current edition.
- Construction Drawings, "Evans C Streambank Repair", dated March, 2014.

In the case of conflict, documents shall have the following priorities: (1) Contract Documents Article 4.0 – Technical Specifications, (2) Contract Documents Article 3.0 – Special Conditions, (3) Contract Documents Article 2.0 – General Conditions, (4) Construction Drawings, (5) City of Evans Street and Water & Sanitary Sewer Specifications, and (5) CDOT Standard Specifications for Road and Bridge Construction.

### **3.2 SCOPE**

#### **3.2.1 DESCRIPTION OF WORK**

The work covered under the Evans C Streambank Repair – Flood Restoration Project will consist of repairing 60 feet of channel bank of the South Platte River, at Evans, located in Weld County, Colorado.

Streambank Repair

- Installation of dormant stock planting,
- Earthfill work including compaction,
- Installation of rock riprap,
- and installation and placement of geotextile material.

#### **3.2.2 CONTRACT DRAWINGS**

The contract drawings include the following types of sheets: cover, survey, demolition plan, erosion control plan, site plans, irrigation plans, structural plans, and details.

### **3.3 GENERAL PROJECT SPECIFICATIONS**

It is the intent of these Special Conditions to require a functionally complete project (or part thereof) to be constructed in accordance, and in conjunction with, all Contract Documents as defined within Article 1.0 – Contracting Procedures and Article 2.0 – General Conditions. Any work, materials, or equipment that may be reasonable inferred, as being required to produce the intended result will be provided whether or not specifically called for. When words, which have a well-known technical or trade meaning, are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning.

Use of these Special Conditions in conjunction with related Contract Documents to establish the total requirements of the project. The CONTRACTOR shall obtain all required documents and have them available during the execution of work.

#### **3.3.1 EXISTING CONDITIONS**

Prior to starting work on the project, the CONTRACTOR shall walk the project site in the areas scheduled for work with the ENGINEER to discuss conditions that may affect the work being performed. These conditions may include: fencing, curbs, walls, berms, driveways, asphalt,

lawns, sprinklers and other existing improvements (collectively surface improvements) that are to remain on both public and private property. The ENGINEER may record the existing conditions and/or features using a video camera for future reference and/or comparisons prior to final project acceptance.

If in the opinion of the ENGINEER, there is sufficient operating space to perform the work in a reasonable manner without disturbing, destroying and/or removing existing improvements, the CONTRACTOR shall perform the work without disturbing, destroying and/or removing said improvements. In no event shall the CONTRACTOR remove trees, shrubs, vines, or other items without receiving prior approval (in writing) of the ENGINEER.

The CONTRACTOR shall make every effort to prevent or limit damage to surface improvements within or adjacent to the work area. The CONTRACTOR is responsible for protecting or restoring all such surface improvements to their original or improved condition. Any of these surface improvements damaged by the CONTRACTOR shall be replaced by the CONTRACTOR at his/her own expense.

### **3.3.2 SALES TAX**

Sales Tax shall not be paid for materials purchased for use on this project.

### **3.3.3 WORKING HOURS**

The CONTRACTOR shall restrict working hours to between 7:00 A.M. and 5:00 P.M. on normal City of Evans business days unless prior approval has been obtained from the City.

### **3.3.4 PROJECT WARRANTY**

The CONTRACTOR shall provide a two-year warranty for all construction beginning on the date of initial acceptance. All work that fails or deteriorates during the first or second year shall be replaced under this warranty. There will be no additional cost to the CITY for material, equipment, labor and/or traffic control for warranty work. Warranty work shall be completed in accordance with these contract specifications within 30 days of written notification by the CITY.

### **3.3.5 MATERIALS, MANUFACTURER'S CERTIFICATES & RECOMMENDATIONS**

Shop drawings or samples required by these specifications shall be submitted before confirmation of orders.

Certifications by the manufacturer that the material or equipment conforms to all applicable requirements shall be submitted. These certifications shall reference the standard specifications with which compliance is required.

Shop drawings shall be submitted in triplicate to the ENGINEER and shall bear the CONTRACTOR's certification that he has reviewed, checked, and approved the shop drawings and that they are in conformance with the requirements of the Contract Documents.

The ENGINEER shall return shop drawings to the CONTRACTOR within 14 days from the time of receipt. If they are returned noted "disapproved," they shall be re-submitted with necessary revisions and the 14-day review period again shall be required.

The CONTRACTOR shall maintain a set of reviewed shop drawings in good order at the site of work. Said drawings shall be available to the ENGINEER.

### **3.3.6 EROSION AND DUST CONTROL**

The CONTRACTOR is responsible for the control of erosion and dust within the project limits. The contractor will be solely responsible for executing the permit requirements and for all record

keeping and reporting requirements. Dust shall be controlled at all times in accordance with applicable regulations and as directed by the Engineer.

### **3.3.7 CONSTRUCTION WATER**

Construction water shall consist of providing a water supply sufficient for the needs of the project and the hauling and applying of all water required. The CONTRACTOR SHALL NOT use water from local residences for construction purposes or to provide water to laborers.

The CONTRACTOR is encouraged to use water obtained from the Evans Ditch whenever possible. Contact the City of Evans Public Works Department to arrange for use of Evan Ditch water. Evans Ditch water may not be available at the time of construction.

The CONTRACTOR shall make arrangements for and provide all necessary water for his construction operation and domestic use at his own expense. The CONTRACTOR shall secure permission from the water utility and notify the ENGINEER and Fire Department/District before obtaining water from the fire hydrants.

If the CONTRACTOR purchases water from a water utility at a fire hydrant on or near the project, he shall make all arrangements at his own expense and payment made direct to the water utility as agreed upon. The CONTRACTOR shall follow all rules and regulations of the respective district. Use only special hydrant-operating wrenches to open hydrants. Make certain that the hydrant valve is open "full" since cracking the valve causes damaged to the hydrant. If any hydrants are damaged, the CONTRACTOR will be held responsible and shall immediately notify the appropriate agencies so that all damages can be repaired as quickly as possible. Fire hydrants shall be completely accessible to the Fire Department/District at all times. Upon completion of the work, the CONTACTOR shall remove all temporary piping from the facilities.

The CONTRACOR shall meet all applicable requirements of OSHA, state, and other governing agencies pertaining to sanitary facilities for workers. No separate payment will be made for construction water. All of the CONTRACTOR's costs of whatsoever nature shall be included in all associated Bid Items on the bid schedule.

### **3.3.8 REMOVALS**

The CONTRACTOR shall be responsible for locating sites and making arrangements for disposal of all materials removed from the site. The CONTRACTOR's handling and disposition of excavation material shall be to a disposal site designated and/or approved by the ENGINEER. This includes concrete, asphalt, unsuitable or unstable sub-grade material, and any other trash, rubbish, or debris generated as a result of the construction. No trash, rubbish, or debris shall be allowed on the lawns of local residences by the CONTRACTOR's work force. No separate payment will be made for disposal of excavation material generated. This disposal shall be considered incidental to the construction and all costs thereof shall be included in various unit CONTRACT process.

### **3.3.9 SAMPLES AND TESTING**

All testing shall be completed by an independent testing laboratory hired by the CONTRACTOR.

### **3.3.10 SUBCONTRACTORS**

All subcontractors are subject to approval by the CITY.

### **3.3.11 MINOR ITEMS OF CONSTRUCTION**

Minor items of construction that do not have a bid item provided will not be paid for separately. The costs of these items shall be merged with unit prices shown on the bid form.

### **3.3.12 CLEANING DURING CONSTRUCTION**

During execution of work, the CONTRACTOR shall clean the sites, adjacent properties, and public access roadways on a daily basis at a minimum or as directed by the ENGINEER and shall dispose of waste materials, debris, and rubbish to assure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and rubbish. The CONTRACTOR shall wet down dry materials and rubbish to lay dust and prevent blowing dust.

The CONTRACTOR shall provide containers for collection and disposal of waste materials, debris, and rubbish.

The CONTRACTOR shall cover or wet loads of excavated material leaving the site or of material being imported to prevent blowing dust. The CONTRACTOR shall also clean the public access roadways to the site of any material falling from the trucks or equipment.

The CONTRACTOR shall clean debris from pipelines and manhole structures, as necessary and as directed by the ENGINEER.

### **3.3.13 FINAL CLEANUP**

At the completion of the work and immediately prior to final inspection, the CONTRACTOR shall remove from the Construction Site all temporary structures and all materials, equipment, and appurtenances not required a part of, or appurtenant to, the completed work. The CONTRACTOR shall notify the CITY when final cleanup is ready for inspection.

The CONTRACTOR shall repair, patch, and touch-up marred surfaces to specified finish to match adjacent surfaces.

The CONTRACTOR shall broom-clean paved surfaces and rake clean other surfaces of ground as necessary and as directed by the ENGINEER.

## **3.4 PROJECT SCHEDULE AND SEQUENCE**

It is the intent of the CITY to award this project as soon as possible after receiving bids. The CONTRACTOR will have ten (10) working days after the Notice to Proceed to complete the work prescribed herein.

At the Pre-Construction Conference, the CONTRACTOR shall submit their baseline construction schedule for review and discussion. This schedule shall clearly present the key milestones of the project and outlining the overall sequencing of work. After acceptance, the CONTRACTOR will maintain the schedule and update the CITY as required throughout the project.

## **3.5 PROJECT COORDINATION**

The CONTRACTOR is responsible for contracting and coordinating with all project affected stakeholders. These affected stakeholders may include:

- Property Owners
- Utility Companies (listing of possible companies can be obtained from the CITY)
- Evans Police Department
- Evans Fire Protection District
- Weld County Sheriffs Department
- Weld County Ambulance
- Greeley-Evans School District 6

The locations of utilities shown on the drawings are approximate. It is the responsibility of the CONTRACTOR to field verify locations of utilities prior to initiating construction. In addition, any street closures must be properly coordinated with any and/or all the affected stakeholders listed above. Proper traffic control measures per an approved Traffic Control Plan will be implemented – All anticipated closure times shall be approved by the CITY.

### **3.6 MEASUREMENT AND PAYMENT**

#### **3.6.1 GENERAL**

All materials will be measured and paid for in accordance with the Contract Documents. All material shall arrive at the job site with load or batch tickets indicating time loaded or batched, material type, material quantity, and date. A copy of the tickets shall be given to the ENGINEER on site the day the material arrives. Material delivered and placed without a load ticket will not be paid for. The CITY will not pay for any material if the load ticket indicates that the vehicle and its load exceeded the legal weight limit for the vehicle type.

All work performed and all materials furnished shall conform to the requirements, including tolerances, provided within the Contract Documents. Materials not in conformance with the Contract Documents, but allowed to remain in place by the ENGINEER may be subject to applicable price reductions as specified in Section 105.03 of the CDOT Specifications.

The CONTRACTOR is responsible for providing a product to be in conformance with the Governing Document. The suitability of the finished product will be determined by the ENGINEER. A finished product that is not found suitable by the ENGINEER may be subject to:

1. Disapproval and subsequent removal and replacement of the material/product at the CONTRACTOR'S expense.
2. A reduction in pay as discussed with the ENGINEER. Only the ENGINEER will determine suitability for material/products related to this project.
3. The ENGINEER allows questionable material/product to remain in place with the CONTRACTOR providing some type of remedial action to make the material/product suitable. The type of remedial action to be used will be determined by the ENGINEER and paid for by the CONTRACTOR.
4. The addition of an extended warranty for questionable material/product to allow further review to determine suitability and any further action by CONTRACTOR at end of warranty period.

The work performed under this Agreement shall be paid for on a unit price basis at the rate for the respective items provided on the Article 1.0 – Bid Proposal. The quantities provided on the Bid Schedule of the Article 1.0 – Bid Proposal are only estimates of the actual quantities of the work to be performed, and are only included for purposes of making the award. The CITY reserves the right to alter and/or eliminate any item of work. Modifications, if any, will be made by Change Order.

Unless otherwise provided for specifically in this section, all lump sum bid items will be paid for upon completion of all work associated with the lump sum bid item.

Payment shall be made only for those items included in the accepted proposal. All other costs incurred shall comply with the provisions of the Contract Documents and shall be included in the unit price bid for the associated items in the proposal. Except as may be otherwise stipulated,

no material, labor, or equipment will be furnished by the CITY. The quantity of work that will be considered for payment is the actual number of units completed in accordance with all relative Contract Documents. The basis of measurement and payment are as noted, herein.

### **3.6.2 MEASUREMENTS**

- A. No measurement for payment shall be made for any of the work, materials, and equipment required for mobilization. A lump sum payment will be made based on Section 3.4.3.
- B. The quantities of work to be paid will be measured as identified within Article 1.0 – Bid Proposal to perform work, including but not limited to, the furnishing and installation of all components and accessories, in accordance with the Contract Documents. No payment for items outside of the dimensions shown on the Drawings or field markings, unless directed and approved by the ENGINEER, will be included in the amount computed for payment.
- C. No separate measurement shall be made for fittings and accessories necessary to install bid item.
- D. No measurement for payment shall be made for removal or replacement of materials and/or existing features damaged by the CONTRACTOR in his operation.

### **3.6.3 PAYMENTS**

- A. Mobilization & demobilization lump sum bid prices shall include all CONTRACTOR costs, whatsoever the nature required for mobilization of personnel, equipment, construction trailers, or supplies at the project site in preparation for work on the project, and demobilization, location and protection of utilities. This item shall also include the establishment of all necessary facilities, on-site restrooms, and all other costs incurred or labor and operations that must be performed prior to beginning the other items under Contract. Also to be included shall be all costs whatsoever to obtain any and all required permits, taxes, licenses, fees and bonds necessary as required by the CITY, water and sanitary districts, and other municipal governments to perform the work. This item may also include the cost of required bonds, insurance, preparation of the project schedule, required shop drawings and clean-up of the site.
- B. Mobilization & demobilization payment will be made as the work progresses. Fifty percent (50%) of the lump sum bid price will be paid at the time of the first monthly progress payment. An additional thirty percent (30%) will be paid when one-half the original contract is earned separately on each of the bid schedules. The remaining twenty percent (20%) will be paid upon final acceptance of the Project. The total amount for mobilization shall not exceed five percent (5%) of the total bid.
- C. Payment for the Bid Item other than mobilization & demobilization shall include full compensation for, but is not limited to, all materials, labor, supplies, transportation, disposal, equipment required to complete the work in accordance with the Contract Documents.
- D. No separate payment shall be made for fittings and accessories necessary to install bid item.
- E. CONTRACTOR will not be reimbursed for the re-testing of any materials that fail, or due to inclement weather, or for any other reason. All samples required for testing will be provided by the CONTRACTOR and at no cost to the OWNER.

F. Excess excavation shall be disposed of off-site and shall not be paid for separately.

**ARTICLE 4.0**

**TECHNICAL SPECIFICATIONS**

**INDEX**

Colorado EWP – Weld County  
South Platte 2013 – Evans C Streambank Repair  
Applicable Construction Specifications

DORMANT STOCK PLANTING.....	Spec 217
POLLUTION CONTROL .....	Spec 405
MOBILIZATION & DEMOBILIZATION.....	Spec 408
EXCAVATION .....	Spec 421
EARTHFILL .....	Spec 423
ROCK RIPRAP .....	Spec 461
GEOTEXTILE.....	Spec 495

**Applicable Material Specifications**

ROCK RIPRAP .....	Spec 523
GEOTEXTILE.....	Spec 592

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CONSTRUCTION SPECIFICATION  
217-DORMANT STOCK PLANTINGS

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1. SCOPE

This construction specification governs the installation of dormant stock planting for erosion control and bank stabilization. Installation shall be to the lines and grades as shown on the drawing and to the requirements of this construction specification.

2. SITE PREPARATION

The bank shall be shaped to the lines and grades shown in the drawings. Excess material shall be disposed by spreading in the areas shown on the drawings or removed from the site prior to the installation of the dormant stock plantings.

3. MATERIALS

The dormant stock shall be native woody plant materials or woody plants that are adapted to the site. The plant species and dimensions are shown on the drawings. The plant material shall be free from disease and harmful insects. The side branches of the stock shall be removed without damaging the branch collar. The plant materials shall be installed within 48 hours after initial preparation, unless refrigerated.

Dormant stock plantings shall be harvested, prepared and planted during dormancy. The plantings shall remain at dormant temperatures between harvesting and planting.

All stored and/or shipped materials shall be refrigerated to maintain dormancy, unless installed within 48 hours of harvesting.

4. INSTALLATION

A stinger or auger of 1.25 times the diameter and extending to the depth to be planted shall be used to make a pilot hole for the planting.

The soil shall be tamped around the planting to ensure good soil-plant contact. Stinger or auger holes shall extend into the saturated zone of the soil normally found during the summer.

5. ITEMS OF WORK AND CONSTRUCTION DETAILS

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

**A. Dormant Stock Planting**

- 1) This item shall consist of furnishing and installing the dormant stock plantings as shown on the construction drawings.
- 2) The site shall be prepared by smoothing and graded the soil to the lines and grades as shown on the drawings. Areas with existing vegetation shall not be disturbed.

Debris, trash, rocks larger than 6 inches found on the ground surface shall be removed and disposed of. The site is a landfill/salvage yard. Vehicles and other debris may be encountered during construction. These items shall remain in place and the contractor shall work around them if possible. Removal shall be coordinated with the City of Evans.

- 3) Dormant plants shall consist of native, willow or cottonwood varieties.
- 4) Source of the plantings shall be from areas within the construction limits as approved by the engineer. If sources within the construction limits do not exist, the contractor may obtain the stock from offsite sources. The contractor shall be responsible for all permits as necessary and conform to local, state and federal laws.
- 5) Plantings shall be exposed for a minimum of 30% of their cut length and not to exceed 50%.
- 6) Large clumps of willows are located within the construction limits. These willows shall be transplanted as clumps at the toe of the riprap blanket and evenly distributed along the width of the riprap blanket as shown on the site plan. The roots of the willows shall extend into the saturated zone of the soil normally found during the summer.
- 7) Plant materials may include the following species:
  - a. Yellow Willow - *Salix lutea*
  - b. Pacific Willow - *Salix lucida* ssp. *Lasiandra*
  - c. Geyer Willow - *Salix geyeriana* Note: Closely related to Lemmon willow and may be synonymous
  - d. Coyote Willow - *Salix exigua* Note: Sometimes referred to as sandbar or dusky willow.
  - e. Drummond Willow - *Salix drummondiana*
  - f. Booth Willow - *Salix boothii*
  - g. Peachleaf Willow - *Salix amygdaloide*.
  - h. Black Cottonwood - *Populus trichocarpa*
  - i. Narrowleaf Cottonwood - *Populus angustifolia*
- 8) The willow plants shall be dormant prior to planting.
- 9) Payment for the dormant stock plantings shall be subsidiary to Earthfill placement.

## CONSTRUCTION SPECIFICATION

### 405. POLLUTION CONTROL

#### 1. SCOPE

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

#### 2. MATERIALS

All materials furnished shall meet the requirements of the Material Specifications listed in Section 8 of this specification.

#### 3. EROSION AND SEDIMENT CONTROL MEASURES AND WORKS

The measures and works shall include the following:

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

Other Additional protection measures required by Federal, State, or Local Government.

#### 4. CHEMICAL POLLUTION

The Contractor shall provide water-tight tanks or barrels, or construct a sump sealed with plastic sheets to be used to dispose of chemical pollutants, such as drained lubricating or transmission fluids, grease, soaps, concrete mixer wash water, asphalt, etc., produced as a by-product of the construction activities. At the completion of the construction work, sumps shall be removed and the area restored to its original condition as specified in Section 8 of this specification. Sump removal shall be conducted without causing pollution.

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

#### 5. AIR POLLUTION

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

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

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

product data sheet and manufacturer's recommended application procedures shall be provided to the Engineer five (5) working days prior to the first application.

6. MAINTENANCE, REMOVAL, AND RESTORATION

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

7. MEASUREMENT AND PAYMENT

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

8. ITEMS OF WORK AND CONSTRUCTION DETAILS

**A. Pollution Control**

1. This item consists of adhering to pollution controls items as stated in this specification.
2. Payment for Pollution Control shall be subsidiary to Riprap Placement.
3. Contractor shall obtain stormwater and/or dewatering permits from Colorado Department of Public Health if necessary.

## CONSTRUCTION SPECIFICATION

### 408. MOBILIZATION AND DEMOBILIZATION

#### 1. SCOPE

The work shall consist of the mobilization and demobilization of the Contractor's forces and equipment necessary for performing the work required under the contract.

This work shall not include mobilization and demobilization for specific items of work for which payment is provided elsewhere in the contract.

Mobilization will not be considered as work in fulfilling the contract requirements for commencement of work.

#### 2. EQUIPMENT AND MATERIALS

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

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

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

#### 3. PAYMENT

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

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

4. ITEMS OF WORK AND CONSTRUCTION DETAILS

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

**A. Mobilization and Demobilization**

- (1.) This item shall consist of all Mobilization and Demobilization work in accordance with Section 1.
- (2.) Measurement and payment for the installed item per the construction specifications will be based on the agreed upon time and materials contract between the project sponsor and contractor.

## CONSTRUCTION SPECIFICATION

### 421. EXCAVATION

#### 1. SCOPE

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

#### 2. CLASSIFICATION

Excavation will be classified as common excavation in accordance with the following definitions.

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

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

Heavy ripping equipment shall be defined as a rear-mounted, heavy duty, single-tooth, ripping attachment mounted on a track type tractor having a power rating of at least 250 flywheel horsepower unless otherwise specified in Section 11.

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

Pusher tractor shall be defined as a track type tractor having a power rating of at least 250 flywheel horsepower equipped with appropriate attachments.

#### 3. DISPOSAL OF WASTE MATERIALS

All excavated materials unsuitable for earthfill will be designated as waste and shall be disposed of by the Contractor at sites of his own choosing away from the site of work in an environmental acceptable manner and that does not violate local rules and regulations.

#### 4. EXCAVATION LIMITS

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

specified herein required to meet safety requirements shall be the responsibility of the Contractor in constructing and maintaining a safe and stable excavation.

5. OVER-EXCAVATION

Excavation in earth beyond the specified lines and grades shall be corrected by filling the resulting voids with approved compacted earthfill, except that, if the earth is to become the subgrade for riprap, rockfill, sand or gravel bedding, or drainfill, the voids may be filled with material conforming to the specifications for the riprap, rockfill, bedding or drainfill. Prior to correcting an over-excavation condition, the Contractor shall review the planned corrective action with the Engineer or Inspector and obtain approval of the corrective measures.

6. MEASUREMENT AND PAYMENT

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

Payment for backfilling over-excavation will be made only if the excavation outside specified lines and grades is directed by the Engineer or Inspector to remove unsuitable material and if the unsuitable condition is not a result of the Contractor's improper construction operations as determined by the Engineer or Inspector.

7. ITEMS OF WORK AND CONSTRUCTION DETAIL

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

A. **Common Excavation**

- 1) This item consists of furnishing all equipment and labor necessary for the common excavation needed to construct the riprap blanket and cutoff trench as shown on the drawings.
- 2) Excavation shall be done according to the grades and elevations as shown on the construction drawings for the placement of riprap.
- 3) Debris, trash, rocks larger than 6 inches on the ground surface shall be removed and disposed of. The site is a landfill/salvage yard. Vehicles and other debris may be encountered during construction. These items shall remain in place and the contractor shall work around them if possible. Removal shall be coordinated with the City of Evans.
- 4) All excavated material that is suitable for earthfill will be used. Unsuitable or surplus excavated material resulting from the repair works shall be removed from the site and disposed of at locations of the Contractor's selection. The Contractor is responsible for complying with all local, state, and federal regulations.
- 5) The finished surface of excavated areas shall be left smooth and graded as shown on the construction drawings and sloped to prevent ponding and provide drainage.
- 6) Payment for the excavation shall be subsidiary to the Earthfill placement.

## CONSTRUCTION SPECIFICATION

### 423. EARTHFILL

#### 1. SCOPE

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

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

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

#### 2. MATERIALS

All fill materials shall be obtained from required excavations or approved borrow areas. The selection, blending, routing and disposition of materials in the various fills shall be subject to approval by the Engineer or Inspector.

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

#### 3. FOUNDATION PREPARATION

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

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

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

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

Foundation and abutment surfaces shall be not steeper than one (1) horizontal to one (1) vertical unless otherwise specified. Test pits or other cavities shall be filled with compacted earthfill conforming to the specifications for the earthfill to be placed upon the foundation.

4. PLACEMENT

Earthfill shall not be placed until the required excavation and foundation preparation have been completed and the foundation has been inspected and approved by the Engineer or Inspector.

Earthfill shall be placed in approximately horizontal layers. The thickness of each layer before compaction shall not exceed the maximum thickness specified in Section 10 or shown on the drawings. Materials placed by dumping in piles or windrows shall be spread uniformly to not more than the specified thickness before being compacted.

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

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

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

- a. The distribution of materials throughout each zone shall be essentially uniform, and the earthfill shall be free from lenses, pockets, streaks or layers of material differing substantially in texture, moisture content, or gradation from the surrounding material. Zone earthfills shall be constructed concurrently unless otherwise specified.
- b. If the surface of any layer becomes too hard and smooth for proper bond with the succeeding layer, it shall be scarified parallel to the axis of the fill to a depth of not less than two (2) inches before the next layer is placed.
- c. The top surfaces of embankments shall be maintained approximately level during construction, except that a crown or cross-slope of approximately two (2) percent shall be maintained to ensure effective drainage, and except as otherwise specified for drainfill or sectional zones.
- d. Dam embankments shall be constructed in continuous layers from abutment to abutment except where openings to facilitate construction or to allow the passage of stream flow during construction are specifically authorized in the contract.

5. CONTROL OF MOISTURE CONTENT

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

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

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

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

6. COMPACTION

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

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

Earth backfill. Earth backfill adjacent to structures shall be compacted to a density equivalent to that of the surrounding in-place earth materials or adjacent required earthfill or earth backfill. Compaction shall be accomplished by means of hand tamping or manually directed power tampers, plate vibrators, walk-behind, miniature, or self-propelled rollers. Unless otherwise specified, heavy equipment including backhoe mounted power tampers, or vibrating compactors and manually directed vibrating rollers, shall not be operated within two (2) feet of any structure. Towed or self-propelled vibrating rollers shall not be operated within five (5) feet of any structure. Compaction by means of drop weights operating from a crane or hoist will not be permitted.

The passage of heavy equipment will not be allowed over any type of conduit until the backfill has been placed above the top surface of the structure to a height equal to one-half the clear span width of the structure or pipe or two (2) feet, whichever is greater, except as may be specified in Section 10.

7. REWORKING OR REMOVAL AND REPLACEMENT OF DEFECTIVE EARTHFILL

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

8. TESTING

During the course of the work, the Engineer or Inspector will perform such quality assurance tests as are required to identify materials; determine compaction characteristics; determine moisture content; and determine density of earthfill in-place. Tests performed by the Engineer or Inspector will be used to verify that the earthfills conform to contract requirements of the specifications and not as a replacement for the Contractor's quality control program.

9. MEASUREMENT AND PAYMENT

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

10. ITEMS OF WORK AND CONSTRUCTION DETAIL

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

**A. Earthfill**

1. This item consists of the earthfill needed to fill the gully as shown on the drawings.
2. Earthfill, class C compaction shall be utilized.
3. The maximum particle size to be used in the earthfill shall be 2 inches unless otherwise directed by the Engineer or Inspector.
4. Measurement and payment for the installed item per the construction specifications will be based on the agreed upon time and materials contract between the project sponsor and contractor.

# Construction Specification

## 461. Rock Riprap

### **1. Scope**

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

### **2. Material**

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

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

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

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

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

The results of the test shall be compared to the gradation required for the project. Test pile results that do not meet the construction specifications shall be cause for the rock to be rejected. The test pile that meets contract requirements shall be left on the job site as a sample for visual comparison. The test pile shall be used as part of the last rock riprap to be placed.

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

### **3. Subgrade preparation**

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

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

#### **4. Equipment-placed rock riprap**

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

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

#### **5. Hand placed rock riprap**

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

#### **6. Filter or bedding**

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

#### **7. Measurement and payment**

For items of work for which specific unit prices are established by the contract, the quantity of each type of rock riprap placed within the specified limits will be computed to the nearest ton by actual weight. For each load of rock for riprap placed as specified, the Contractor shall furnish to the Engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton.

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

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

Payment will be made at the contract unit price for each type of rock riprap. Such payment will be considered full compensation for completion of the work.

## **8. Specific Items of Work and Construction Details**

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

### **A. Riprap**

- 1) This item shall consist of furnishing all equipment, labor and materials for the installation of the rock rip rap as shown on the construction drawings.
- 2) The gradation of the riprap shall be as shown on the construction drawings.
- 3) The riprap shall be worked after initial placement with heavy equipment to insure all voids are filled and that the matrix is solid, with smaller material locked between pieces of larger material. Ripraps shall not be easily dislodged once placement and work is final.
- 4) The riprap shall be angular to sub angular shaped. The measurement of the longest dimension shall not be more than 3 times its smallest dimension (Length, Width, and Thickness).
- 5) The source of the riprap material is undesignated. The contractor shall submit to the Engineer or Inspector in writing the location of the riprap source and provide open access for observation of the material.
- 6) Non-woven geotextile meeting Material Specification 592, Geotextile, Table 2 - Class I shall be installed under the rock riprap and shall meet the requirements as specified in the Construction Specification 495, Geotextile.
- 7) Rock shall be Type 3 and meet the attached Material Specification 523-Rock for Riprap.
- 8) Measurement and payment for the installed item per the construction specifications will be based on the agreed upon time and materials contract between the project sponsor and contractor.

## CONSTRUCTION SPECIFICATION

### 495. GEOTEXTILE

#### **1. Scope**

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

#### **2. Quality**

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

#### **3. Storage**

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

#### **4. Surface preparation**

The surface on which the geotextile is to be placed shall be graded to the neat lines and grades as shown on the drawings. It shall be reasonably smooth and free of loose rock and clods, holes, depressions, projections, muddy conditions, and standing or flowing water (unless otherwise specified in section 6 of this specification).

#### **5. Placement**

Before the geotextile is placed, the soil surface will be reviewed for quality assurance of the design and construction. The geotextile shall be placed on the approved prepared surface at the locations and in accordance with the details shown on the drawings and specified in section 6 of this specification. It shall be unrolled along the placement area and loosely laid, without stretching, in such a manner that it conforms to the surface irregularities when material or gabions are placed on or against it. The geotextile may be folded and overlapped to permit proper placement in designated area(s).

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

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

Geotextile shall be placed in accordance with the following applicable specification according to the use indicated in section 6.

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

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

## **6. Items of Work and Construction Details**

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

### **A. Geotextile**

- 1) This item shall consist of furnishing and installing the geotextile material used for riprap.
- 2) Prior to the placement of the geotextile, the subgrade surface shall be compacted by several passes of tire or track equipment.
- 3) The geotextile shall be anchored at the top of the slope with the use of a 1 foot deep trench with compacted backfill.
- 4) The geotextile shall meet the requirements for nonwoven geotextiles, as shown in Table 592-2, **Class I**, in Material Specification 592.
- 5) Minimum lap of the fabric shall be 2 feet.
- 6) Measurement and payment for the installed item per the construction specifications will be based on the agreed upon time and materials contract between the sponsor and contractor.

## Material Specification

### 523. Rock for Riprap

#### 1. Scope

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

#### 2. Quality

Individual rock fragments shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. Except as otherwise specified, the rock fragments shall be angular to subrounded. The least dimension of an individual rock fragment shall be not less than one-third the greatest dimension of the fragment. ASTM D 4992 provides guidance on selecting rock from a source. Except as otherwise provided, the rock shall be tested and shall have the following properties:

##### Rock type 1

- **Bulk specific gravity (saturated surface-dry basis)**—Not less than 2.5 when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- **Absorption**—Not more than 2 percent when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- **Soundness**—The weight loss in 5 cycles shall not be more than 10 percent when sodium sulfate is used or more than 15 percent when magnesium sulfate is used.

##### Rock type 2

- **Bulk specific gravity (saturated surface-dry basis)**—Not less than 2.5 when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- **Absorption**—Not more than 2 percent when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- **Soundness**—The weight loss in 5 cycles shall be not more than 20 percent when sodium sulfate is used or more than 25 percent when magnesium sulfate is used.

##### Rock type 3

- **Bulk specific gravity (saturated surface-dry basis)**—Not less than 2.3 when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- **Absorption**—Not more than 4 percent when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- **Soundness**—The weight loss in 5 cycles shall be not more than 20 percent when sodium sulfate is used or more than 25 percent when magnesium sulfate is used.

#### 3. Methods of soundness testing

**Rock cube soundness**—The sodium or magnesium sulfate soundness test for all rock types (1, 2, or 3) shall be performed on a test sample of  $5,000 \pm 300$  grams of rock fragments, reasonably uniform in size and cubical in shape, and weighing, after sampling, about 100 grams each. They shall be obtained from rock samples that are representative of the total rock mass, as noted in ASTM D 4992, and that have been sawed into slabs as described in ASTM D 5121. The samples shall further be reduced in size by sawing the slabs into cubical blocks. The thickness of the slabs and the size of the sawed fragments shall be determined by the size of the available test apparatus and as necessary to provide, after sawing, the approximate 100-gram samples. The cubes shall undergo five cycles of soundness testing in accordance with ASTM C 88.

Internal defects may cause some of the cubes to break during the sawing process or during the initial soaking period. Do not test any of the cubes that break during this preparatory process. Such breakage, including an approximation of the percentage of cubes that break, shall be noted in the test report. After the sample has been dried following completion of the final test cycle and washed to remove the sodium sulfate or magnesium sulfate, the loss of weight shall be determined by subtracting from the original weight of the sample the final weight of all fragments that have not broken into three or more fragments.

The test report shall show the percentage loss of the weight and the results of the qualitative examination. **Rock slab soundness**—When specified, the rock shall also be tested in accordance with ASTM D 5240. Deterioration of more than 25 percent of the number of blocks shall be cause for rejection of rock from this source. Rock shall also meet the requirements for average percent weight loss stated below.

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

#### **4. Field durability inspection**

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

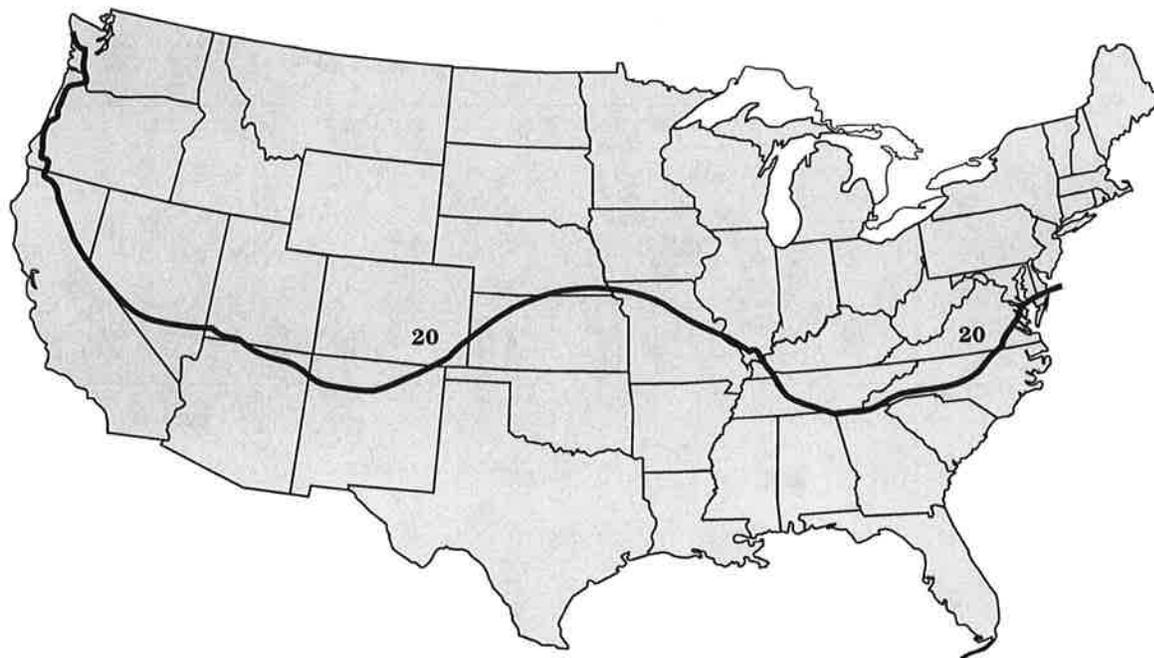
A rock source may be rejected if the rock from that source deteriorates in 3 to 5 years under similar use and exposure conditions expected for the rock to be installed under this specification, even though it meets the testing requirements stated above.

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

#### **5. Grading**

The rock shall conform to the specified grading limits after it has been placed within the matrix of the rock riprap. Grading tests shall be performed, as necessary, according to ASTM D 5519, Method A, B, or C, as applicable.

**Figure 523-1** Number 20 freeze-thaw severity index isoline (map approximates the map in ASTM D 5312)



NRCS-Colorado

523-3

# MATERIAL SPECIFICATION

## 592. GEOTEXTILE

### **1. Scope**

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

### **2. General Requirements**

Fibers (threads and yarns) used in the manufacture of geotextile must consist of synthetic polymers composed of a minimum of 85 percent by weight polypropylenes, polyesters, polyamides, polyethylene, polyolefins, or polyvinylidene-chlorides. They must be formed into a stable network of filaments or yarns retaining dimensional stability relative to each other. The geotextile must be free of defects, such as holes, tears, and abrasions. The geotextile must be free of any chemical treatment or coating that significantly reduces its porosity. Fibers must contain stabilizers, inhibitors, or both to enhance resistance to ultraviolet light. Geotextile other than for temporary silt fence must conform to the requirements in tables 592-1 or 592-2, as applicable. Geotextile for temporary silt fence

must conform to the requirements in table 592-3.

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

### **3. Classification**

Geotextiles are classified based on the method used to place the threads or yarns forming the fabric. The geotextiles will be grouped into woven and nonwoven types. Geotextile for temporary silt fence may be either woven or nonwoven. Slit film woven geotextile may not be used except for temporary silt fence.

*Woven.*—Fabrics formed by the uniform and regular interweaving of the threads or yarns in two directions. Woven fabrics must be manufactured from monofilament yarn formed into a uniform pattern with distinct and measurable openings, retaining their position relative to each other. The edges of fabric must be selvaged or otherwise finished to prevent the outer yarn from unraveling.

*Nonwoven.*—Fabrics formed by a random placement of threads in a mat and bonded by needle punching, heat bonding, or resin bonding. Nonwoven fabrics must be manufactured from individual fibers formed into a random pattern with distinct but variable small openings, retaining their position relative to each other when bonded by needle punching, heat bonding, or resin bonding. The use of heat- or resin-bonded nonwovens is restricted as specified in note 2 of table 592-2.

### **4. Sampling and Testing**

The geotextile must meet the specified requirements (tables 592-1, 592-2, or 592-3, as applicable) for the product type shown on the label. Product properties as listed in the latest edition of the "Specifiers Guide," Geosynthetics (Industrial Fabrics Association International, 1801 County Road B, West Roseville, MN 55113-4061 or at <http://www.geosindex.com>), and that represent minimum average roll values, are acceptable documentation that the product style meets the requirements of these specifications.

For products that do not appear in the above directory or do not have minimum average roll values listed, typical test data from the identified production run of the geotextile is required for each of the specified tests (see table 592-1, 592-2, or 592-3, as applicable) as covered under clause AGAR 452.236-76.

### **5. Shipping and Storage**

The geotextile must be shipped and transported in rolls wrapped with a cover for protection from moisture, dust, dirt, debris, and ultraviolet light. The cover must be maintained undisturbed to the maximum extent possible before placement.

Each roll of geotextile must be labeled or tagged to clearly identify the brand, class, and the individual production run in accordance with ASTM D 4873.

**Table 592-1** Requirements for Woven Geotextiles 1/

Property	Test Method	Units	Class I	Class II	Class III	Class IV
Grab Tensile Strength	ASTM D 4632	pounds	247 min.	180 min.	180 min.	315 min.
Elongation at Failure	ASTM D 4632	percent	< 50	<50	<50	<50
Trapezoidal Tear Strength	ASTM D 4533	pounds	90 min.	67 min.	67 min.	112 min.
Puncture Strength	ASTM D 6241	pounds	495 min.	371 min.	371 min.	618 min.
Ultraviolet Stability (Retained Strength)	ASTM D 4355	percent	50 min.	50 min.	50 min.	50 min.
Permittivity	ASTM D 4491	sec <sup>-1</sup>	0.7 min. or as specified			
Apparent Opening Size (AOS) 2/	ASTM D 4751	mm	0.22 max. or as specified			
Percent Open Area (POA)	USACE CWO-02215	percent	4 min.			

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

2/ Maximum average roll value.

Note: CWO is a USACE reference.

**Table 592-2** Requirements for Nonwoven Geotextiles 1/

Property	Test Method	Units	Class I 2/	Class II 2/	Class III 2/	Class IV 2/
Grab Tensile Strength	ASTM D 4632	pounds	202 min.	157 min.	112 min.	202 min.
Elongation at Failure	ASTM D 4632	percent	50 min.	50 min.	50 min.	50 min.
Trapezoidal Tear Strength	ASTM D 4533	pounds	79 min.	56 min.	40 min.	79 min.
Puncture Strength	ASTM D 6241	pounds	433 min.	309 min.	223 min.	433 min.
Ultraviolet Stability (Retained Strength)	ASTM D 4355	percent	50 min.	50 min.	50 min.	50 min.
Permittivity	ASTM D 4491	sec <sup>-1</sup>	0.7 min. or as specified			
Apparent Opening Size (AOS) 3/	ASTM D 4751	mm	0.22 max. or as specified			

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

2/ Needle punched geotextiles may be used for all classes. Heat-bonded or resin-bonded geotextiles may be used for classes III and IV only. They are particularly well suited to class IV.

3/ Maximum average roll value.

**Table 592-3** Requirements for Temporary Silt Fence 1/

Property	Test Method	Units	Requirements, Supported Silt Fence 2/	Requirements, Unsupported Silt Fence 2/	
				Woven Geotextile (Elongation < 50% 3/)	Nonwoven Geotextile (Elongation ≥ 50% 3/)
Maximum Post Spacing		ft	4	6.5	4
Grab Tensile Strength	ASTM D 4632	pounds			
Machine Direction			90		124
X-Machine Direction			90		101
Permittivity	ASTM D 4491	sec-1	0.05		0.05
Apparent Opening Size (AOS) 4/	ASTM D 4751	mm	0.60		0.60
Ultraviolet Stability (Retained Strength)	ASTM D 4335	%	70% after 500 hours of exposure		70% after 500 hours of exposure

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

2/ Silt fence support must consist of 14-gage steel wire with a mesh spacing of 6 inches each way or prefabricated polymeric mesh of equivalent strength.

3/ As measured in accordance with ASTM D 4632.

4/ Maximum average roll value.

**ARTICLE 5.0**

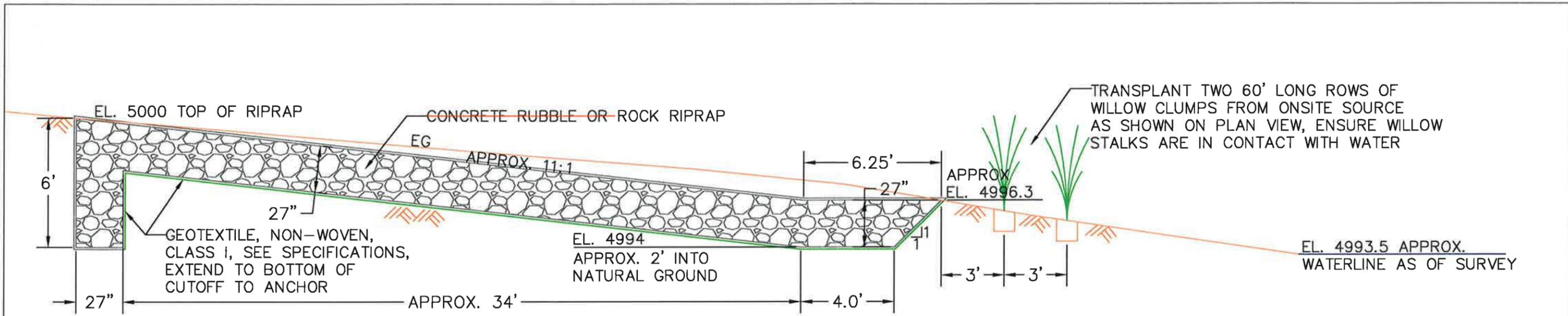
**CONSTRUCTION DRAWINGS**

**INDEX**

5.1 U.S. DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE  
EMERGENCY WATERSHED PROTECTION PROGRAM  
EVANS C STREAMBANK REPAIR .....3 Sheets

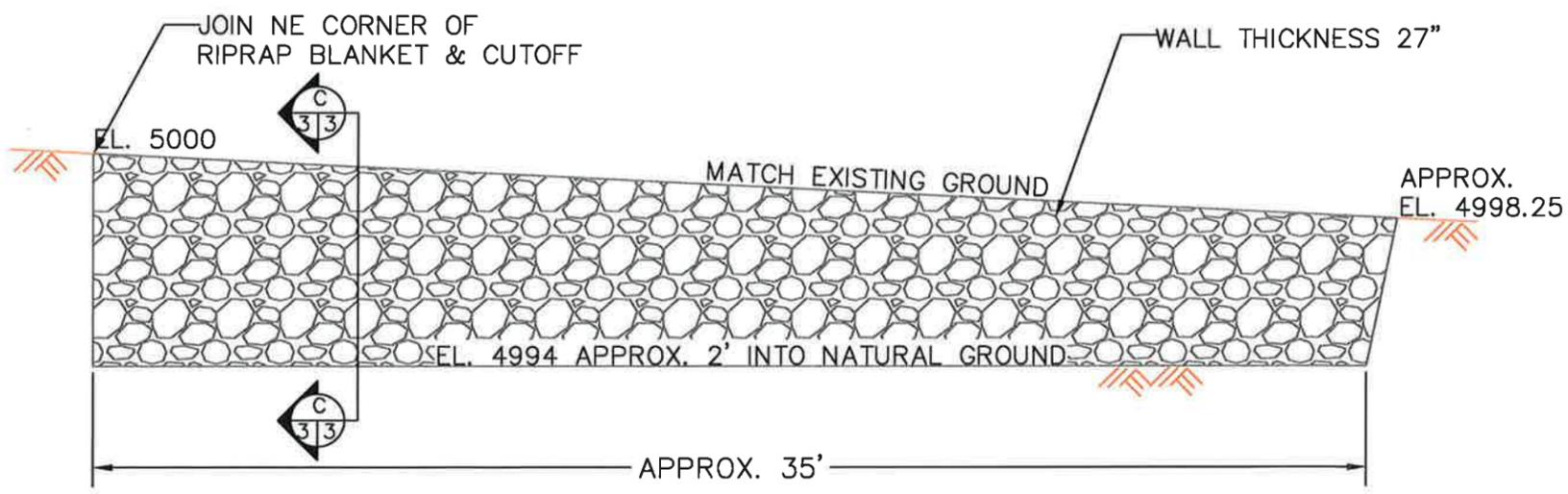




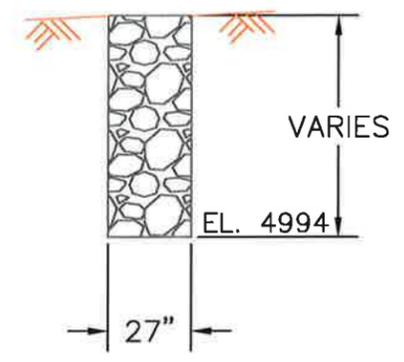


(A) TYPICAL SECTION - RIPRAP BLANKET  
NTS

Riprap Gradation	
Dmax = 36", D50 = 18"	
% Passing	Size Range-inches
Max.	36
90	25 - 34
50	18 - 25
20	7 - 16
<5	finer



(B) RIPRAP CUTOFF WALL  
NTS



(C) SECTION THROUGH CUTOFF WALL  
NTS

REV. 1 (4/22/2014) - DELETE CONCRETE RUBBLE RIPRAP, RIPRAP SHALL BE ROCK

Date \_\_\_\_\_

Designed: DWR \_\_\_\_\_

Drawn: DWR \_\_\_\_\_

Checked: \_\_\_\_\_

Approved: \_\_\_\_\_

Title: \_\_\_\_\_

EVANS C STREAMBANK REPAIR  
EMERGENCY WATERSHED PROTECTION PROGRAM  
DETAILS  
WELD COUNTY, COLORADO

USDA NRCS  
Natural Resources Conservation Service

File Name \_\_\_\_\_

Drawing No. \_\_\_\_\_

Sheet 3 of 3