

## **Request for Bid (RFB)**

Boone County Purchasing  
601 E. Walnut, Room 209  
Columbia, MO 65201

**Marlene Ridgway, Buyer**  
Phone: (573) 886-4392 – Fax: (573) 886-4390  
Email: [midgway@boonecountymo.org](mailto:midgway@boonecountymo.org)

---

### ***Bid Data***

Bid Number: **60-27AUG03**

Commodity Title: **Restoration – Erosion Control Term and Supply**

### **DIRECT BID FORMAT OR SUBMISSION QUESTIONS TO THE PURCHASING DEPARTMENT**

---

### ***Bid Submission Address and Deadline***

Day / Date: WEDNESDAY, AUGUST 27, 2003  
Time: 9:25 A.M. (Bids received after this time will be returned unopened)  
Location / Mail Address: **Boone County Purchasing Department  
Boone County Johnson Building  
601 E. Walnut, Room 209  
Columbia, MO 65201**  
Directions: The Johnson Building is located on the Northeast corner at 6<sup>th</sup> Street and Walnut Street. Enter the building from the East Side. Wheel chair accessible entrance is available on the West side of the building.

---

### ***Bid Opening***

Day / Date: WEDNESDAY, AUGUST 27, 2003  
Time: 9:30 A.M. C.S.T.  
Location / Address: **Boone County Johnson Building Conference Room  
601 E. Walnut, Room 213  
Columbia, MO 65201**

---

### ***Bid Contents***

- 1.0: **Introduction and General Conditions of Bidding**
- 2.0: **Primary Specifications**
- 3.0: **Response Presentation and Review**
- 4.0: **Response Form  
Standard Terms and Conditions  
“No Bid” Response Form  
Attachment – Project Plans**

**See Section 2.10. for information on the Pre-Bid Conference scheduled for  
Wednesday, August 20, 2003 at 1000 a.m.**

1. **Introduction and General Conditions of Bidding**
- 1.1. **INVITATION** - The County of Boone, through its Purchasing Department, invites responses, which offer to provide the goods and/or services identified on the title page, and described in greater detail in Section 2.
- 1.2. **DEFINITIONS**
- 1.2.1. **County** - This term refers to the County of Boone, a duly organized public entity. It may also be used as a pronoun for various subsets of the County organization, including, as the context will indicate:  
*Purchasing* - The Purchasing Department, including its Purchasing Director and staff.  
*Department(s) or Office(s)* - The County Department(s) or Office(s) for which this Bid is prepared, and which will be the end user(s) of the goods and/or services sought.  
*Designee* - The County employee(s) assigned as your primary contact(s) for interaction regarding Contract performance.
- 1.2.2. **Bidder / Contractor / Supplier** - These terms refer generally to businesses having some sort of relationship to or with Boone County. The term may apply differently to different classes of entities, as the context will indicate.  
*Bidder* - Any business entity submitting a response to this Bid. Suppliers, which may be invited to respond, or which express interest in this bid, but which do not submit a response, have no obligations with respect to the bid requirements.  
*Contractor* - The Bidder whose response to this bid is found by Purchasing to meet the best interests of the County. The Contractor will be selected for award, and will enter into a Contract for provision of the goods and/or services described in the Bid.  
*Supplier* - All business(s) entities which may provide the subject goods and/or services.
- 1.2.3. **Bid** - This entire document, including attachments. A Bid may be used to solicit various kinds of information. The kind of information this Bid seeks is indicated by the title appearing at the top of the first page. A "Request for Bid" is used when the need is well defined. A "Request for Proposal" is used when the County will consider solutions, which may vary significantly from each other or from the County's initial expectations.
- 1.2.4. **Response** - The written, sealed document submitted according to the Bid instructions.
- 1.3. **BID CLARIFICATION** - Questions regarding this Bid should be directed in writing, preferably by fax or e-mail, to the Purchasing Department. Answers, citing the question asked but not identifying the questioner, will be distributed simultaneously to all known prospective Bidders. Note: Written requirements in the Bid or its Amendments are binding, but any oral communications between County and Bidder are not.
- 1.3.1. **Bidder Responsibility** - The Bidder is expected to be thoroughly familiar with all specifications and requirements of this Bid. Bidders' failure or omission to examine any relevant form, article, site or document will not relieve them from any obligation regarding this Bid. By submitting a Response, Bidder is presumed to concur with all terms, conditions and specifications of this Bid.
- 1.3.2. **Bid Amendment** - If it becomes evident that this Bid must be amended, the Purchasing Department will issue a formal written Amendment to all known prospective Bidders. If necessary, a new due date will be established.
- 1.4. **AWARD** - Award will be made to the Bidder(s) whose offer(s) provide the greatest value to the County from the standpoint of suitability to purpose, quality, service, previous experience, price, lifecycle cost, ability to deliver, or for any other reason deemed by Purchasing to be in the best interest of the County. Thus, the result will not be determined by price alone. The County will be seeking the least costly outcome that meets the County needs as interpreted by the County.
- 1.5. **CONTRACT EXECUTION** - This Bid and the Contractor's Response will be made part of any resultant Contract and will be incorporated in the Contract as set forth, verbatim.
- 1.5.1. **Precedence** - In the event of contradictions or conflicts between the provisions of the documents comprising this Contract, they will be resolved by giving precedence in the following order:
  - 1) the provisions of the Contract (as it may be amended);
  - 2) the provisions of the Bid;
  - 3) the provisions of the Bidder's Response.
- 1.6. **CONTRACT PERIOD** - Any Term and Supply Contract resulting from this Bid will have an initial term from date of award through one year with an additional two (2) one-year renewals unless canceled by either party commencing with execution of Contract (or on another mutually agreeable start date.)
- 1.7. **COMPLIANCE WITH STANDARD TERMS AND CONDITIONS** - Bidder agrees to be bound by the County's standard "boilerplate" terms and conditions for Contracts, a sample of which is attached to this Bid.

**2. Primary Specifications**

- 2.1. **ITEMS TO BE PROVIDED** – Application of Lime, Fertilizer, Seed, Mulch, Erosion Control Blankets, Ditch Checks and Silt Fencing for this Term and Supply Contract.
  - 2.1.1. **Quantity** – The Bid Form depicts our estimated / potential totals planned for the remainder of 2003 and planned / potential totals for 2004. Actual totals may vary.
  - 2.1.2. **Contract Duration** - The contract shall be effective from the date of issuance through June 30, 2004. This contract is subject to renewal annual for two (2) additional one (1) year periods following expiration of the first contract period.
    - 2.1.2.1. **Contract Extension** - The County Purchasing Director may exercise the option to extend the contract on a month to month basis for a maximum of 6 months from the date of termination if it is deemed to be in the best interest of Boone County.
    - 2.1.2.2. **Contract Documents** – The successful bidder(s) shall be obligated to enter into a written contract with the County within 30 days of award on contract forms provided by the County. If bidders desire to contract under their own written agreement, any such proposed agreement shall be submitted in blank with their bid. County reserves the right to modify any proposed form agreement or withdraw its award to a successful bidder if any proposed agreement contains terms and conditions inconsistent with its bid or are unacceptable to county legal counsel.
- 2.2. **MINIMUM MATERIAL SPECIFICATIONS AND TECHNICAL REQUIREMENTS**
  - 2.2.1. **Scope of Work and General Materials**
    - 2.2.1.1. Application of Silt Fence.
    - 2.2.1.2. Application of Lime, Fertilizer, Seed and Mulch.
    - 2.2.1.3. Application of Erosion Control Blankets.
    - 2.2.1.4. Application of Ditch Checks.
  - 2.2.2. **PRODUCT SPECIFICATIONS & INSTALLATION**
    - 2.2.2.1. Silt Fence – See Sections 283 & 285 attached.
    - 2.2.2.2. Seeding – See Section 275 attached.
    - 2.2.2.3. Fertilizing – See Section 270 attached.
    - 2.2.2.4. Mulching – See Section 272 attached.
    - 2.2.2.5. Erosion Control Blankets – See Section 287 attached.
    - 2.2.2.6. Ditch Check – See Section 279 attached.
  - 2.2.3. **Product Substitution(s)/Deviations** – It is the bidder's responsibility to submit a bid that meets all mandatory specifications stated within. The bidder must compare their product bid with the required listed minimum specifications and identify any deviations. Failure to properly identify deviations may render the bidder's proposal non-responsive and not capable of consideration for award.
- 2.3. **METHOD OF MEASUREMENT, PROCEDURES AND BASIS OF PAYMENT**
  - 2.3.1. All items paid under this contract shall be measured and paid for by the unit shown, as per the bid form.
  - 2.3.2. All appurtenances under this contract shall be incidental and included with the bid as specified in the bid form.
  - 2.3.3. Contractor will be provided project plans or the project will be field staked for clarification on each job.
  - 2.3.4. **Method of Ordering** - Orders will be requested via a faxed request or plan submittal. The successful vendor will be required to confirm receipt of each request.
- 2.4. **INSURANCE REQUIREMENTS -**
  - 2.4.1. **Contractor's Insurance** - The Contractor shall not commence work under this contract until they have obtained all insurance required under this section and such insurance has been approved by the County. All policies shall be in amounts, form, and companies satisfactory to the County which must carry an A-6 or better rating as listed in the A.M. Best or Equivalent Rating Code.
  - 2.4.2. **Compensation Insurance** - Contractor shall take out and maintain during the life of this contract, Employee's Liability and Worker's Compensation Insurance for all of their employees employed at the site of work. In case any class of employee engaged in hazardous work under this contract at the site of work is not protected under the Worker's Compensation Statute, the Contractor shall provide Employee's Liability Insurance for the protections of their employees not otherwise protected.

---

**2. Primary Specifications (cont.)**

---

- 2.4.3. **Comprehensive General Liability Insurance** - Contractor shall take out and maintain during the life of this contract such comprehensive general liability insurance as shall protect them from claims for damages for personal injury including accidental death, as well as from claims for property damages, which may arise from operations under this contract, whether such operations be by themselves or by anyone directly or indirectly employed by them. The amounts of insurance shall be not less than \$2,000,000.00 combined single limit for any one occurrence covering both bodily injury and property damage, including accidental death.
- 2.4.4. **Insurance Certification** - Contractor shall furnish the County with Certificate(s) of Insurance which name the County as additional insured and requiring a thirty (30) day mandatory cancellation notice. In addition, such insurance shall be on an occurrence basis and shall remain in effect until such time as the County has made final acceptance of the work required in the contract.
- 2.5. **DESIGNEE** - Boone County Public Works Department, 5551 Highway 63 South, Columbia, Missouri 65201.
- 2.6. **BID CLARIFICATION** - Any questions or clarifications concerning bid documents should be addressed to Marlene Ridgway, Buyer, 601 E. Walnut, Room 209, Columbia, Missouri 65201. Phone: 573-886-4392 Fax: (573) 886-4390 or email: [mridgway@boonecountymo.org](mailto:mridgway@boonecountymo.org)
- 2.7. **Delivery Terms** - FOB Destination. The seller pays and bears all freight charges.
- 2.8. **Evaluation and Award** – Award will be made in the best interest of Boone County. However, the intention is to make this a multi-vendor award. In the event the primary contractor cannot meet the expected obligation in a determined time frame, the secondary contractor will be issued the project.
- 2.9. **PAYMENT** - Contractor will bill the County upon acceptance by Boone County for each project listed in Section Four of this request. Contractor must submit an invoice and charges must only include prices listed in the Contractor's bid response. No additional fees or taxes shall be included as additional charges. The County agrees to pay the invoice within thirty (30) days from receipt of a correct invoice and all other required documents.
- 2.10. **PRE-BID CONFERENCE** – A pre-bid conference will be held on Wednesday, August 20, 2003 at 10:00 a.m. in the Boone County Johnson Building 601 E. Walnut Room 215 Columbia, MO 65201.
- 2.10.1. All potential bidders are encouraged to attend this conference in order to ask questions and provide comments on the Request for Bid. Attendance is not mandatory to submit a response; however, bidders are encouraged to attend since information relating to this RFB will be discussed in detail. Bidders should bring a copy of the RFB since it will be used as the agenda for the pre-bid conference.
- 2.10.2. Bidders are strongly encouraged to advise the Boone County Purchasing Department within five (5) days of the scheduled pre-bid conference of any special accommodations needed for disabled personnel who will be attending the conference so that these accommodations can be made.

- 3. Response Presentation and Review**
- 3.1 **RESPONSE CONTENT** - In order to enable direct comparison of competing Responses, Bidder must submit Response in strict conformity to the requirements stated here. Failure to adhere to all requirements may result in Response being disqualified as non-responsive. All Responses must be submitted using the provided Response Sheet. Every question must be answered and if not applicable, the section must contain "NA"
- 3.2 **SUBMITTAL OF RESPONSES** - Responses MUST be received by the date and time noted on the title page under "Bid Submission Information and Deadline". NO EXCEPTIONS. The County is not responsible for late or incorrect deliveries from the US Postal Service or any other mail carrier.
- 3.2.1 **Submittal Package** - Submit, to the location specified on the title page, **three (3) complete copies** of your Response in a single sealed envelope, clearly marked on the outside with your company name and return address, the bid number and the due date and time.
- 3.2.2 **Advice of Award** - If you wish to be advised of the outcome of this Bid, enclose with your Response a self-addressed stamped return envelope (size 10, first-class one-ounce postage) for our use in mailing a copy of the summary recap of the award. Notification will be by mail only, except to awarded Bidder.
- 3.2.3 The County's Bids, Bid Tabulations, and Bid Awards may be viewed on our web page at [www.showmeboone.com](http://www.showmeboone.com). View information under *Purchasing Department*.
- 3.2.4 If you have obtained this bid document from our Web Page or from a source other than the Boone County Purchasing Department, please check with our office or web page prior to submitting your bid to ensure that you have a complete package. The Purchasing Department cannot be responsible for providing addenda if we do not have you on our vendor list for this bid.
- 3.3 **BID OPENING** - On the date and time and at the location specified on the title page under "Bid Opening", all Responses will be opened in public. Brief summary information from each will be read aloud.
- 3.3.1 **Removal from Vendor Database** - If any prospective Bidder currently in our Vendor Database to whom the Bid was sent elects not to submit a Response and fails to reply in writing stating reasons for not bidding, that Bidder's name may be removed from our database. Other reasons for removal include unwillingness or inability to show financial responsibility, reported poor performance, unsatisfactory service, or repeated inability to meet delivery requirements.
- 3.4 **RESPONSE CLARIFICATION** – The County reserves the right to request additional written or oral information from Bidders in order to obtain clarification of their Responses.
- 3.4.1 **Rejection or Correction of Responses** – The County reserves the right to reject any or all Responses. Minor irregularities or informalities in any Response which are immaterial or inconsequential in nature, and are neither affected by law nor at substantial variance with Bid conditions, may be waived at our discretion whenever it is determined to be in the County's best interest.
- 3.5 **EVALUATION PROCESS** – The County's sole purpose in the evaluation process is to determine from among the Responses received which one is best suited to meet the County's needs at the lowest possible cost. Any final analysis or weighted point score does not imply that one Bidder is superior to another, but simply that in our judgment the Contractor selected appears to offer the best overall solution for our current and anticipated needs at the lowest possible cost.
- 3.5.1 **Method of Evaluation** – The County will evaluate submitted Responses in relation to all aspects of this Bid.
- 3.5.2 **Acceptability** – The County reserves the sole right to determine whether goods and/or services offered are acceptable for our use.
- 3.5.3 **Endurance of Pricing** - Bidder's pricing must be held until award or 60 days, whichever comes first.
- 3.5.4 **Award**: Award will be made to the lowest, responsible bidder meeting specifications, who presents the product or service that is in the best interest of Boone County. Boone County reserves the right to award this bid on an item by item basis, or an "all or none" basis, whichever is in the best interest of the County.
- 3.5.5 Boone County reserves the right to reject all bids. Boone County reserves the right to waive informalities in bids.

4. **Response Form** - Submit **three (3) complete copies** of your Response in a single sealed envelope, **clearly marked on the outside, left corner** with your company name and return address, the proposal number and the due date and time.

---

4.1. Company Name: \_\_\_\_\_

4.2. Address: \_\_\_\_\_

4.3. City/Zip: \_\_\_\_\_

4.4. Phone Number: \_\_\_\_\_

4.5. Fax Number: \_\_\_\_\_

4.6. Federal Tax ID: \_\_\_\_\_

4.7. **Pricing** (see next page)

4.8. Maximum Percentage Increase for renewal periods: \_\_\_\_\_% 2nd Year; \_\_\_\_\_ 3rd Year.

4.9. Will you honor the submitted prices for purchase by other entities in Boone County who participate in cooperative purchasing with Boone County, Missouri?

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

4.10. The undersigned offers to furnish and deliver the articles or services as specified at the prices and terms stated and in strict accordance with all requirements contained in the Request for Bid, which has been read and understood, and all of which are made part of this order. By submission of this bid, the vendor certifies that they are in compliance with Section 34.353 and, if applicable, Section 34.359 ("Missouri Domestic Products Procurement Act") of the Revised Statutes of Missouri.

4.10.1. Authorized Representative (Sign By Hand):

\_\_\_\_\_

4.10.2. Type or Print Signed Name:

\_\_\_\_\_

4.10.3. Today's Date: \_\_\_\_\_

4. Response Form (cont.)

Description	Unit	Estimated Units	Unit Price	Total
Silt Fence	LF			\$
Lime, Fertilizer, Seed and Type 1 Mulch (Vegatative)	AC			\$
Lime, Fertilizer, Seed and Type 2 Mulch (Vegatative with Asphalt Emulsion)	AC			\$
Lime, Fertilizer, Seed and Type 2 Mulch (Vegatative with an Overspray)	AC			\$
Biodegradable Blanket – North American Green S75 BN	SY			\$
Biodegradable Blanket – North American Green S150 BN	SY			\$
Biodegradable Blanket – North American Green SC50 BN	SY			\$
Biodegradable Blanket – North American Green C125 BN	SY			\$
Long Term Degradable Blanket – North American Green SC150	SY			\$
Long Term Degradable Blanket – North American Green C125	SY			\$
Turf Reinforcement Mat – North American Green P300 TRM	SY			\$
Turf Reinforcement Mat – North American Green C350 TRM	SY			\$
Composite Reinforcement Mat – North American Green SC250	SY			\$
Composite Reinforcement Mat – North American Green C350	SY			\$
Erosion Control Blanket – North American Green S75 BN	SY			\$
Ditch Checks (2 straw bales per ditch check)	EA			\$
<b>GRAND TOTAL</b>				\$
4.11.	Please provide the number of days notice must be provided prior to expected installation. _____ <b>In the event the primary contractor cannot meet the expected obligation, the secondary contractor will be issued the project.</b>			
4.12.	It is anticipated that the county will have several projects going on simultaneously during the construction season, how many crews do you have to cover multiple projects _____ ?			



## ***Standard Terms and Conditions***

**Marlene Ridgway, Buyer**

Phone: (573) 886-4392- Fax (573) 886-4390

- 
1. Responses shall include all charges for packing, delivery, installation, etc., (unless otherwise specified) to the Boone County Department identified in the Request for Quotation and/or Proposal.
  2. The Boone County Commission has the right to accept or reject any part or parts of all bids, to waive technicalities, and to accept the offer the County Commission considers the most advantageous to the County. Boone County reserves the right to award this bid on an item-by-item basis, or an "all or none" basis, whichever is in the best interest of the County.
  3. Bidders must use the bid forms provided for the purpose of submitting bids, must return the quotation and bid sheets comprised in this bid, give the unit price, extended totals, and sign the bid.
  4. When products or materials of any particular producer or manufacturer are mentioned in our specifications, such products or materials are intended to be descriptive of type or quality and not restricted to those mentioned.
  5. Do not include Federal Excise Tax or Sales and Use Taxes in bid process, as law exempts the County from them.
  6. The delivery date shall be stated in definite terms, as it will be taken into consideration in awarding the bid.
  7. The County Commission reserves the right to cancel all or any part of orders if delivery is not made or work is not started as guaranteed. In case of delay, the Contractor must notify the Purchasing Department.
  8. In case of default by the Contractor, the County of Boone will procure the articles or services from other sources and hold the Bidder responsible for any excess cost occasioned thereby.
  9. Failure to deliver as guaranteed shall disqualify Bidder from future bidding.
  10. Prices must be as stated in units of quantity specified, and must be firm. Bids qualified by escalator clauses may not be considered unless specified in the bid specifications.
  11. No bid transmitted by fax machine will be accepted.
  12. The County of Boone, Missouri expressly denies responsibility for, or ownership of any item purchased until same is delivered to the County and is accepted by the County.
  13. The County reserves the right to award to one or multiple respondents. The County also reserves the right to not award any item or group of items if the services can be obtained from a state or other governmental entities contract under more favorable terms.





***"No Bid" Response Form***

**Boone County Purchasing**  
601 E. Walnut, Room 209  
Columbia, MO 65201

Marlene Ridgway, Buyer  
(573) 886-4392– Fax: (573) 886-4390

**"NO BID RESPONSE FORM"**

**NOTE: COMPLETE AND RETURN THIS FORM ONLY IF YOU DO NOT WANT TO  
SUBMIT A BID**

If you do not wish to respond to this bid request, but would like to remain on the Boone County vendor list **for this service/commodity**, please remove form and return to the Purchasing Department by mail or fax.

If you would like to FAX this "No Bid" Response Form to our office, the FAX number is (573) 886-4390.

**Bid: 60-27AUG03 – Restoration – Erosion Control Term and Supply**

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

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

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Contact: \_\_\_\_\_

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

## SECTION 270

## FERTILIZING

- 270.1 **Description** - This work shall consist of the application of lime and commercial fertilizer and soil preparation for seeding on areas shown on the plans or designated by the engineer.
- 270.2 **Material.**
- 270.2.1 Material used for soil neutralization, unless otherwise specified, shall be a pelletized bagged lime, or an agricultural lime with not less than 90 percent passing the No. 8 sieve and containing not less than 65 percent calcium carbonate equivalent.
- 270.2.2 The rate of application of lime shall be a minimum of 1,300 lbs/acre for agricultural lime or 650 lbs/acre for pelletized lime. Except as otherwise provided in this specification, the quantity of material required to provide the specified pounds of effective neutralizing material per acre shall be determined from the producer or distributor's certification of analysis furnished by the Director of the Missouri Agriculture Experiment Station, Columbia, Missouri in accordance with the Missouri Agricultural Liming Materials Act.
- 270.2.3 Fertilizer shall be a standard commercial product that will supply a minimum of 90 pounds of total nitrogen (N), 90 pounds of available phosphoric acid (P 2 O 5) and 90 pounds of soluble potash (K 2 O) per acre. Material may be accepted on the basis of bag label analysis or supplier's certification and shall comply with all applicable Missouri fertilizer laws.
- 270.3 **Equipment** - Lime and commercial fertilizer shall be applied by mechanical equipment designed for this purpose.
- 270.4 **Construction Requirements**
- 270.4.1 The area to be limed and fertilized will be the area specified within the limits of construction; shall have a uniform surface free from rills, washes and depressions; and shall conform to the finished grade and cross section as shown on the plans. The soil shall be thoroughly broken up, worked, tilled and loosened to a minimum depth of 2 inches. The seedbed or sodbed shall be prepared by loosening the existing soil on the slope, rather than by the addition of loose soil.
- 270.4.2 Lime and fertilizer shall be applied evenly at the rates specified in this section and only when the soil is in a tillable condition. After application, the lime and fertilizer shall be mixed into the soil by disking, harrowing or raking to a minimum depth of 2 inches, unless applied hydraulically on slopes steeper than 2:1 (1:2) in accordance with **Section 275.3.2.1**.
- 270.4.3 Lime and fertilizer shall be applied separately, but may be incorporated into the soil in one operation.
- 270.4.4 Lime and fertilizer shall be applied not more than 48 hours before the seed is sown unless otherwise authorized by the engineer.

- 272.1 **Description** - This work shall consist of the application of one of the three (3) following mulches as shown on the plans or directed. All seeded areas shall be mulched.
- 272.2 **Material**
- 272.2.1 **Type 1 Mulch (Vegetative)** - The vegetative mulch shall be clean wheat straw.
- 272.2.2 **Type 2 Mulch (Vegetative with Asphalt Emulsion)** - The asphalt emulsion shall be SS-1, SS-1h, CSS-1 or CSS-1h conforming to the requirements of AASHTO M 140 or AASHTO M 208. The vegetative mulch shall be as specified in **Section 272.2.1**.
- 272.2.3 **Type 3 Mulch (Vegetative with an Overspray)** - The vegetative mulch shall be as specified in **Section 272.2.1**. The overspray material may be virgin wood cellulose fibers or recycled slick paper as herein specified. It shall not contain any germination or growth inhibiting substances. The overspray shall be green in color after application and shall have the property to be evenly dispersed and suspended when agitated in water. When sprayed uniformly over vegetative mulch, the mulch fibers shall form an absorbent cover, allowing percolation of water to the underlying soil. The mulch shall be packaged in moisture resistant bags with the net weight (mass) of the packaged material plainly shown on each bag. The mulch fibers shall not be water soluble.
- 272.2.3.1 **Virgin Wood Cellulose** - Virgin wood cellulose fibers shall be produced by either the ground or cooked fiber process and shall have the following properties: Moisture Content, percent by weight (mass), max 15 Organic Matter-Wood Fiber, percent by weight (mass), min 80 pH 4.3-8.5
- 272.2.3.2 **Recycled Slick Paper Mulch** - Recycled slick paper mulch shall be produced from printers slick paper containing wood cellulose and kaolin clay. Recycled newsprint or cardboard will not be allowed. The material shall be free of other material or fillers and shall have the following properties: Moisture Content, percent by weight (mass), max 8 pH 4.5-6.5
- 272.2.3.3 The contractor shall furnish a manufacturer's certification in triplicate certifying that the overspray mulch materials complies with these specifications. The engineer may sample and test these materials prior to approval and use. Acceptance will be based upon a satisfactory certification and results of any test deemed necessary by the engineer.
- 272.3 **Construction Requirements**
- 272.3.1 **Type 1 Mulch (Vegetative)** – Type 1 Mulch shall be applied at the rate of 2 1/2 tons per acre.
- 272.3.2 **Type 2 Mulch (Vegetative with Asphalt Emulsion)** – Type 2 Mulch shall be applied by mechanical mulch spreaders equipped to eject, by means of a constant air stream, controlled quantities of the vegetative mulch and emulsified asphalt in a uniform pattern over the specified area. The mulching machine shall be so designed that the asphalt will be injected at the proper rate directly into the air stream carrying the straw, resulting in a uniform spotty tacking of the vegetative mulch with asphalt. The vegetative mulch shall be applied at the rate of 2 1/2 tons per acre. The application rate for the asphalt emulsion shall be 100 gallons per ton of straw.
- 272.3.3 **Type 3 Mulch (Vegetative with an Overspray)** – Type 3 Mulch shall be hydraulically applied over the vegetative mulch as a separate operation. Recycled slick paper shall be applied at the rate of 750 pounds per acre. Virgin wood cellulose fibers with 90 percent or more organic matter shall be applied at the rate of 750 pounds per acre and that with 80 to 89 percent inclusive shall be applied at a rate calculated as follows:  

$$\text{Rate lb/acre} = 100 \times \frac{750 \text{ lb/acre}}{\text{Actual Percent Organic Matter}}$$
 The overspray material shall be mixed with water in a manner to provide a homogeneous slurry. Equipment for mixing and applying the slurry shall be capable of applying it uniformly over the entire vegetative mulched area. The slurry mixture shall be agitated during application to keep the ingredients thoroughly mixed.
- 272.3.5 All mulch shall be distributed evenly over the area to be mulched within 24 hours following the seeding operation. Following the mulching operation, precautions shall be taken to prohibit foot or vehicular traffic over the mulched area. Any mulch which is displaced shall be replaced at once, but only after the work preceding the mulching which may have been damaged as a result of the displacement has been acceptably repaired.

**SECTION 275**

**SEEDING**

275.1 **Description** - This work shall consist of preparing, liming and fertilizing a seedbed, and the furnishing and sowing of seed. All disturbed areas shall be seeded as shown on the plans or directed.

275.2 **Material**

275.2.1 Seed mix shall comply with standards of the Official Seed Analysis of North America and be recommended for full sun exposure in Columbia, Missouri. Seed shall be free from Johnson Grass, Canadian Thistle, or field bind weed seed and be approved by the inspector.

**Residential / Commercial Yards**

**Mixture %**

Kentucky Bluegrass	20% @ 260 lbs/per acre
Creeping Red Fescue	30% @ 260 lbs/per acre
Perennial Rye Grass	30% @ 260 lbs/per acre
Annual Rye	20% @ 260 lbs/per acre
Purity	85%
Germination	80%
Maximum Weed Seed	1%

**Non – Residential / Commercial Yards**

**Mixture %**

Tall Fescue	100 lbs/per acre
Seed Wheat	60 lbs/per acre

275.3 **Application**

**Approved Seeding Time**

**Dates**

Spring	March 15 to May 15
Fall	August 15 to October 15

## SECTION 279

## STRAW BALE DITCH CHECKS

279.1 **Description** - This work shall consist of constructing straw bale ditch checks at locations shown on the plans.

279.2 **Construction Requirements** - See Attachment A for detailed drawing

279.2.1 Bale shall be 14-inch x 18-inch x 36-inch.

279.2.2 Anchors shall be 2-inch x 2-inch hardwood stakes, minimum of 3 feet in length. Two (2) stakes per bale.

279.3 **Payment**

279.3.1 One (1) Ditch Check shall be considered as two (2) straw bales installed as per details shown on Attachment A.

## SECTION 283

## TEMPORARY SILT FENCE

283.1 **Description** - This work shall consist of furnishing and installing a wire-supported or self-supported geotextile silt fence designed to remove suspended particles from sheet flow passing through the fence and prevent sediment from polluting nearby streams or other bodies of water.

283.2 **Material** - Geotextile Type 2 material shall conform to **Section 285**.

283.2.1 **Posts** - Wood, steel or synthetic posts may be used. Posts shall be of sufficient length, not less than 4 feet, to ensure adequate embedment while fully supporting the silt fence and shall have sufficient strength to resist damage during installation and support applied loads while in service.

283.2.2 **Support Fence** - All geotextile silt fence shall be supported either externally by wire or other approved mesh to a height of at least 24 inches or by a suitable designed-in support system capable of keeping the material erect. Either method shall be strong enough to withstand applied loads.

283.2.3 **Prefabricated Fence** - Prefabricated fence systems may be used provided they meet all of the above material requirements.

283.3 **Construction Requirements** - See Attachment A for detailed drawing

283.3.1 The contractor shall install temporary silt fence as shown on the plans and at other locations directed by the engineer. Fence construction shall be adequate to handle the stress from hydraulic and sediment loading. Fabric at the bottom of the fence shall be buried a minimum of 6 inches to prevent flow under the barrier. The trench shall be backfilled and the soil compacted over the fabric. Fabric splices with a minimum 6-inch overlay shall be located only at a support post. Any installation method acceptable to the engineer will be allowed as long as the effectiveness and intent of the silt fence is achieved.

283.3.2 Post spacing shall not exceed 5 feet. Posts shall be driven a sufficient depth into the ground or placed on closer spacing as necessary to ensure adequate resistance to applied loads.

283.3.3 The silt fence shall be fastened securely to the upslope side of the post. When wire support fence is used, the wire shall extend into the trench a minimum of 2 inches.

## SECTION 285

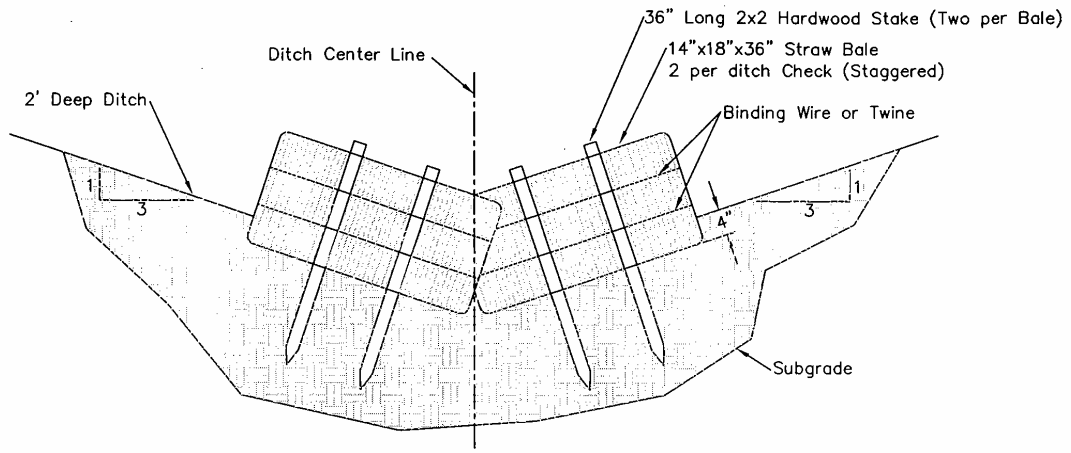
## GEOTEXTILE FABRIC

- 285.1 **Scope** - This specification covers geotextile for use in subsurface drainage, sediment control, erosion control or as a permeable separator.
- 285.2 **Material** - Geotextiles shall meet the physical and chemical requirements of AASHTO M 288 for the specified application except as modified herein.
- 285.2.1 **General**
- 285.2.1.1 No specific permeability values are required.
  - 285.2.1.2 The U. S. Standard sieve number corresponding to the apparent opening size (AOS) shall not exceed 100 for geotextile used in contact with any soil with more than 50 percent passing the No. 200 sieve nor shall the AOS exceed 70 when used between any two dissimilar granular material, less than 50 percent passing the No. 200 sieve, or when used to control movement of fines from a granular backfill through structural joints or into a drain pipe.
  - 285.2.1.3 During shipment and storage, geotextiles shall be protected from direct sunlight, ultra-violet rays, temperatures greater than 140 F, mud, dust and debris.
- 285.2.3 **Type 2, Sediment Control** - Type 2 geotextile is intended for use in supported or non-supported sediment control fencing.
- 285.3 **Certification and Acceptance**
- 285.3.1 The contractor shall furnish a manufacturer's certification to the engineer, for each lot of material furnished stating the name of the manufacturer, the chemical composition of the filaments or yarns and certifying that the material supplied conform to all requirements specified. The certification shall include or have attached typical results of tests from specific lots for all specified requirements.
- 285.3.2 Acceptance of the material will be based on the manufacturer's certification and upon the results of such tests as may be performed by the engineer.

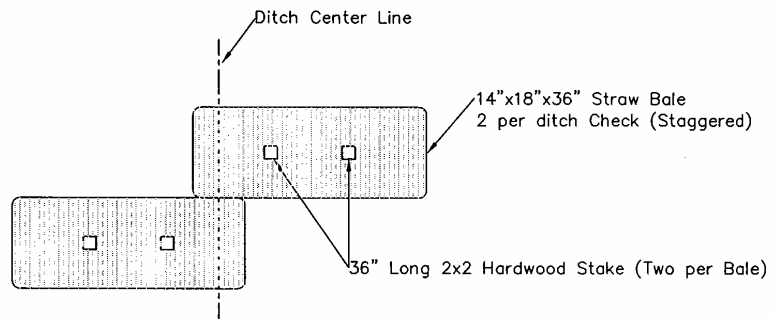
## SECTION 287

## EROSION CONTROL BLANKETS

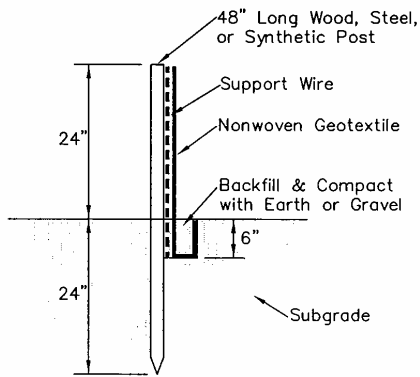
- 287.1 **Description** - This work shall consist of furnishing and placing erosion control blankets at locations shown on the plans or as designated by the engineer.
- 287.2 **Materials**
- 287.2.1 **Blankets** - Blankets shall consist of the following North American Green Products or equal approved by the Engineer.
- 287.3 **Biodegradable Blankets** – S75 BN, S150 BN, SC50 BN and C125 BN
- 287.4 **Long Tem Degradable Blankets** – SC150 Extended-term and C125 Long-term
- 287.5 **Turf Reinforcement Mats** – P300 TRM and C350 TRM
- 287.6 **Composite Reinforcement Mats** – SC250 and C350
- 287.7 **Construction Requirements** - Blankets shall be installed as per the manufacturer's instructions and shall use materials specified by the manufacturer and approved by the Engineer.



Straw Bale Ditch Check—Cross Section  
Not to Scale



Straw Bale Ditch Check—Plan View  
Not to Scale



Silt Fence—Cross Section  
Not to Scale

BOONE COUNTY PUBLIC WORKS  
DESIGN AND CONSTRUCTION  
5551 HIGHWAY 63 SOUTH  
COLUMBIA, MISSOURI 65201-9711  
PHONE (573) 449-8515  
FAX (573) 875-1602



# Attachment A

## Straw Bale Ditch Check & Silt Fence Details