

DSR/SOLICITATION NO. WY-23-001
EMERGENCY WATERSHED PROTECTION PROGRAM
BID INSTRUCTIONS
2023 FLOOD DISASTER

Bid Opening Date and Time: August 22, 2024 - 10:00 am

Bid Opening Location: Wyoming County Conservation District
6052 SR 6
Tunkhannock, PA 18657

I. Information provided to Bidders:

- A. General Instructions For Bidders
- B. Bid Schedule
- C. Location Map
- D. Work plan Drawing
- E. Construction Details
- F. Items of Work
- G. Erosion and Sedimentation Control Guidelines for Emergency Projects
- H. Specifications
 - 1. Erosion and Sedimentation Guidelines
 - 2. Mobilization and Demobilization
 - 3. Rock Construction Entrance
 - 4. Excavation
 - 5. Stacked Rock
 - 6. Geotextile
 - 7. R-6 Rip rap
 - 8. Unclassified Fill
 - 9. Seeding

II.

Bids shall be submitted on the form furnished in a sealed envelope clearly labeled with the DSR/Solicitation No. and the words "Sealed Bid".

III. Signature Requirements:

- A. For individual bidders, the owner must sign the Bid and the signature must be witnessed.
- B. For Partnerships, a partner must sign the Bid and the signature must be witnessed.
- C. For Corporations, the President or Vice President must sign the Bid, and the Corporate Seal must be affixed and attested to by the Corporate Secretary or Treasurer.

**EMERGENCY WATERSHED PROTECTION PROGRAM
GENERAL INSTRUCTIONS FOR BIDDERS
2023 FLOOD DISASTER**

- I. All work is bid as **LUMP SUM** items.
 - A. The contractor shall provide all equipment, labor, materials, and supplies necessary to complete the work.
 - B. The contractor shall provide all required borrow and disposal sites. All such sites are subject to approval by the inspector. Borrow and/or disposal sites shall not be located in a floodplain or wetland. Copies of releases signed by the landowner shall be provided to the inspector.
 - C. Materials shall be approved by the inspector prior to use. Rock used for riprap needs to be cubic in shape. The maximum dimension for riprap is intended to be representative of the 3 primary axis for the shape. Flat, slab rock is not acceptable.
 - D. A Soil Erosion and Sediment Pollution Control Plan is included in the workplan. The contractor shall be responsible for implementing the plan and maintaining the controls including any additional measures, which may be required to minimize sedimentation.
 - E. The contractor shall be responsible for locating and protecting all utilities.

- II. Award of a contract shall be made at the earliest possible date from the bid opening date. In the event no satisfactory bids are received, all bidders shall be so notified within a 24-hour period.

- III. The contractor to whom award is made shall provide the following information to the contracting representative prior to starting construction.
 - A. Standard Acord Certificate(s) of Insurance. (Contractual Liability Type)
 1. Worker's Compensation Insurance
 2. Public Liability and Property Damage Insurance
 3. Automobile Bodily Injury and Property Damage Insurance

The following apply to bids in excess of \$150,000
 - B. A bid guarantee in the amount of 5% of the bid price is required with the submittal bid.
 - C. Performance Bond (100% of the contract amount provided prior to award)
 - D. Material and Labor Bond (100% of the contract amount provided prior to award)

- IV. Pennsylvania prevailing wage rates apply to this project

- V. The work shall be completed within the time allotted for the project and shown on the bid schedule. The start of performance time will begin on the day identified as notice to proceed and determined after official contract award. A 5 day per week, 10 hours per day workweek will be observed. No work is allowed on federal holidays.

- VI. Upon acceptance of the work at the final inspection, the contractor shall submit an invoice for the entire amount due to the awarding municipality. The municipality will submit a request for payment to NRCS and DEP after the final inspection. It is anticipated the municipality will receive the funds from NRCS approximately thirty (30) days after application is made and from DEP approximately sixty (60) days after application is made. Payment(s) shall be made by the municipality no later than ten (10) days after it receives the funds from the NRCS and/or DEP.

BID SCHEDULE

EWP SITE: WY-23-001
WYOMING COUNTY, PA

Bid opening date: August 22, 2024 - 10:00 am

Location: Wyoming County Conservation District
6052 SR 6 Tunkhannock , PA 18657

Item No.	Description	QTY	Unit	Price	Total Price
1	Mobilization/Demobilization	1	Lump Sum	XXX	
2	Stacked Rock	1	Lump Sum	XXX	
3	Seeding	1	Lump Sum	XXX	
4	Debris / Gravel bar removal	1	Lump Sum	XXX	

Total: _____

Bids shall be submitted on this form in a sealed envelope. The envelope shall be labeled with the EWP DSR/Solicitation Number and the words "**Sealed Bid**".

The performance time specified for this job is **20** calendar days.

The undersigned agrees to meet all requirements stated in the bid instructions, drawings, and specifications

Contractor's Name: _____

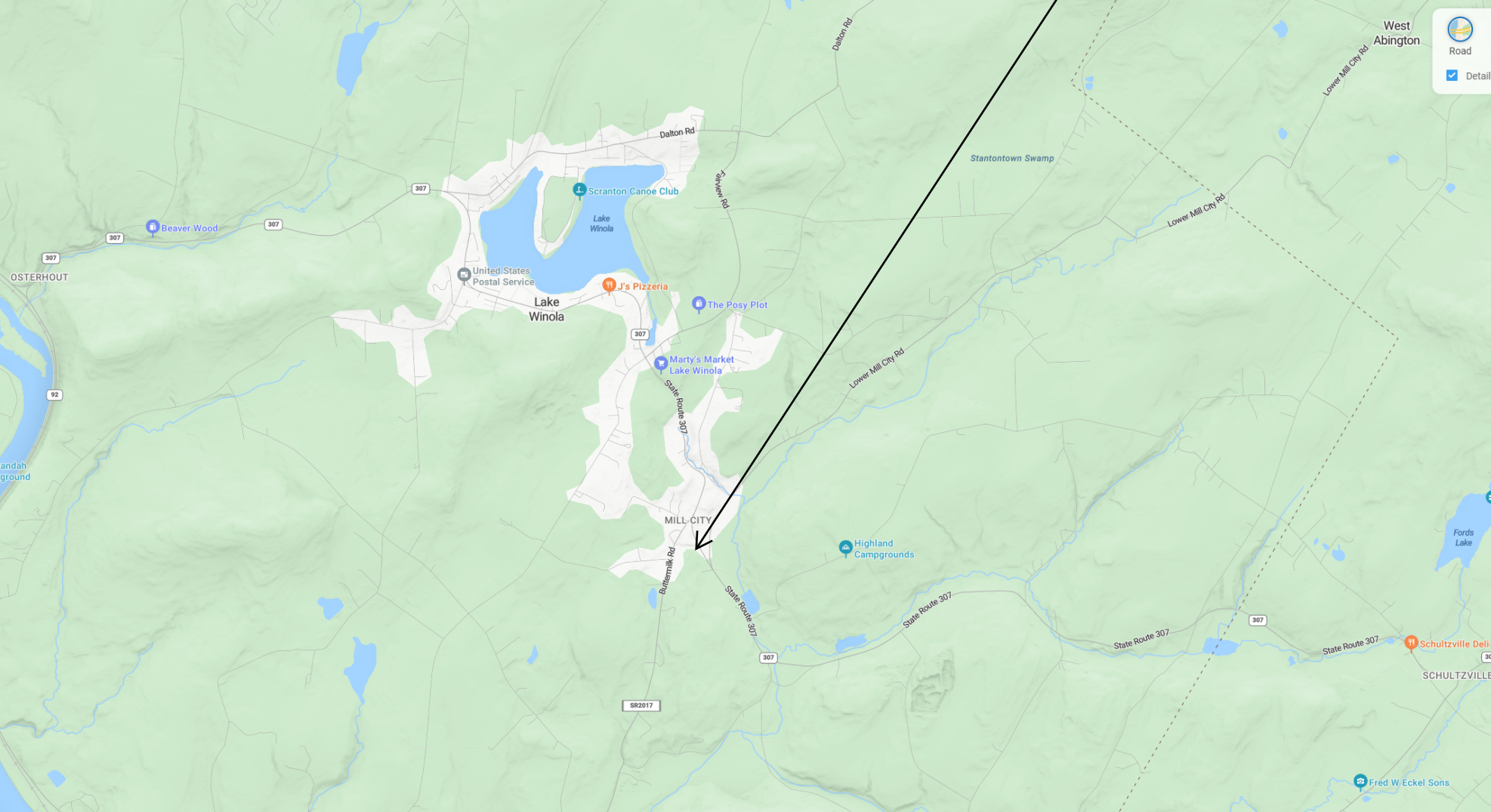
Address: _____

Phone Number: _____

Signature

Date

Site Location
1694 Route 301
Daulton Pa
41.491338, -75.837243

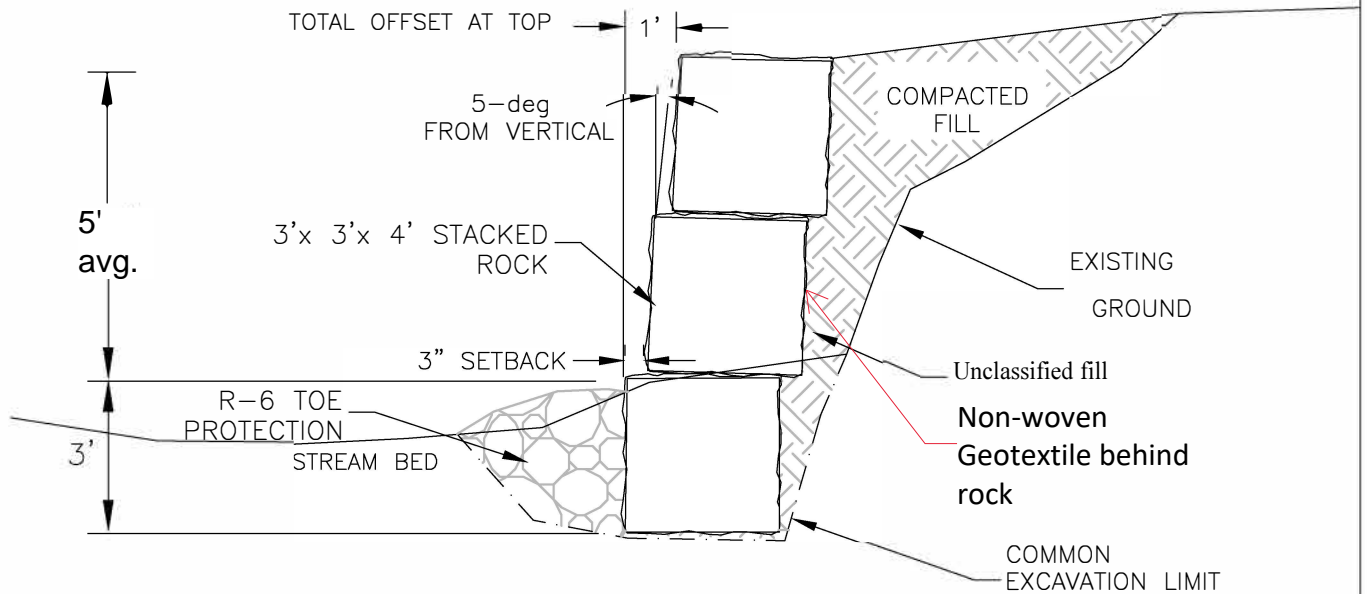




- Construction Notes:
- Need landowner approval to enter adjacent property
 - Remove existing plastics structures adjacent to the streambank. Plastic containers will be the property of landowner after removal.
 - Identify PADOT right of way. Avoid any work around state culvert.
 - Any excess excavation material, remove from the site at a location provided by the contractor

TYPICAL STACKED ROCK SECTION (NOT TO SCALE)

****Top block height should vary as needed to extend to top of eroded bank. Positive grade toward the stream shall be maintained.**



NOTES:

- STAGGER ALL VERTICAL JOINTS BETWEEN ROCKS IN ADJACENT ROWS.
- SETBACK SHALL BE UNIFORM ON EACH ROW OF ROCKS.
- INSTALL ROCK FACE TO MATCH UPSTREAM AND DOWNSTREAM CHANNEL WIDTHS.

CAD FILE NAME
Rock_Typical.dwg
DRAWING NO.
CO-06-022

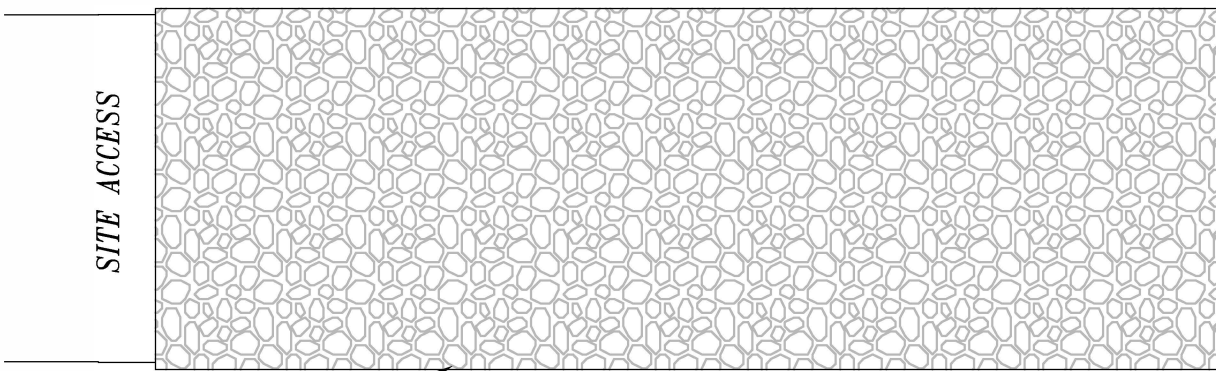


WY-23-001
FALLS TWP
WYOMING COUNTY, PENNSYLVANIA
STACK ROCK

DESIGNED	JMB	DATE	4-24
DRAWN	JMB	DATE	4-24
CHECKED			
APPROVED	MGB		
TITLE	7/29/24		
SHEET NO ____ OF ____			

ROCK CONSTRUCTION ENTRANCE

(NOT TO SCALE)

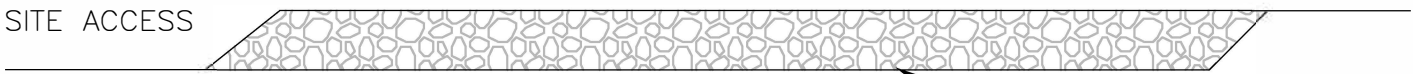


PLAN

STONE AASHTO
#1 OR #3

NOT LESS THAN FULL
WIDTH OF ALL POINTS OF
INGRESS OR EGRESS.
(APPROX. 12'-20')

PUBLIC
RIGHT OF WAY



CROSS-SECTION

8" MIN. STONE
AASHTO #1 OR #3

SHEET NO. ___ OF ___

DRAWING NO. _____

CAD FILE NAME
Rock Typicol.dwg

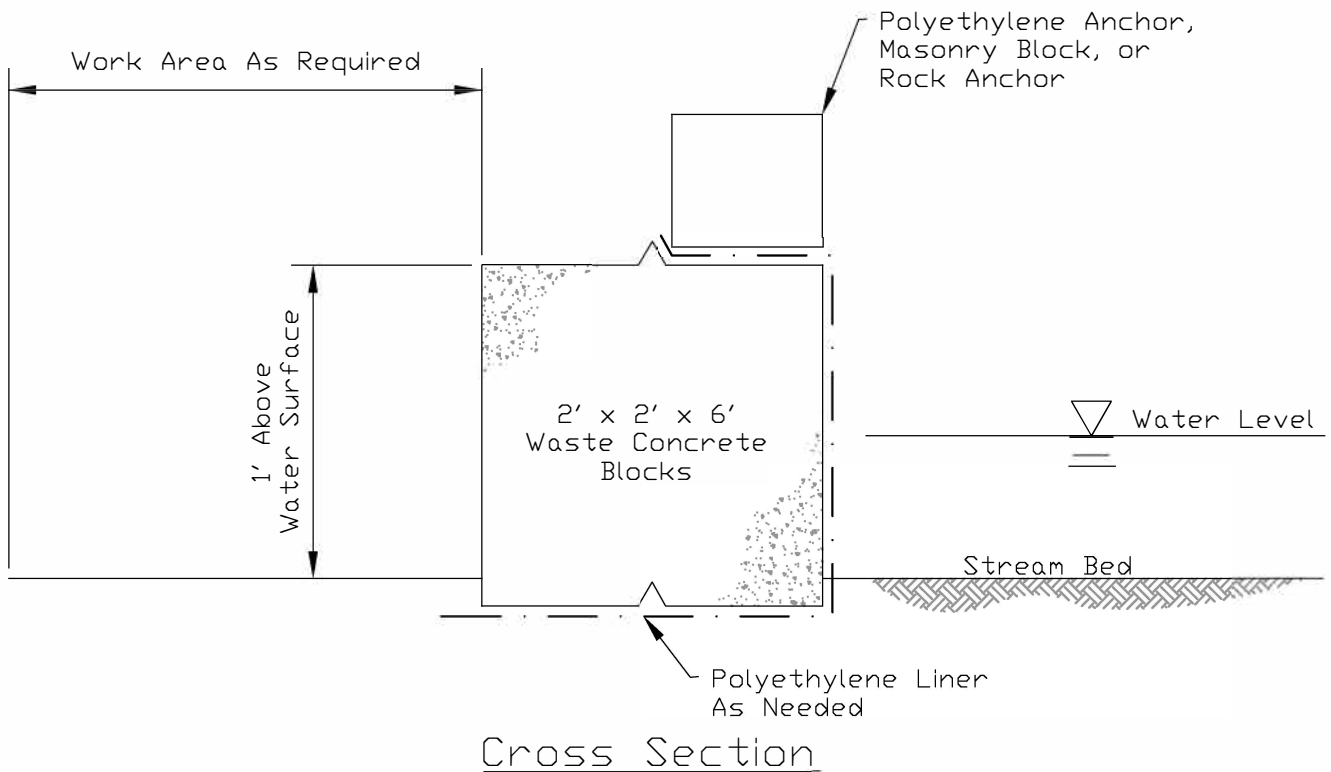


WY-23-001

Wyoming COUNTY, PENNSYLVANIA
TYPICAL ROCK ENTRANCE

DESIGNED	JMB	DATE	3-24
DRAWN	JMB	DATE	3-24
CHECKED			
APPROVED	MGB		
TITLE			
		SHEET NO. ___ OF ___	

TYPICAL STREAM DIVERSION




Notes:

- Waste Concrete Blocks Shall be embedded into the stream bed 4" to 6" of as directed by the inspector.
- A polyethylene liner will be required if water flow is present in the designated work area. Polyethylene liner shall be supported in place with a top weight such as masonry blocks or on site rocks.
- Pumping may be required to dewater the work area of standing water when directed by the project inspector.
- Maximum height of concrete waste blocks is 4 feet. Tongue and groove shall be totally seated between blocks.

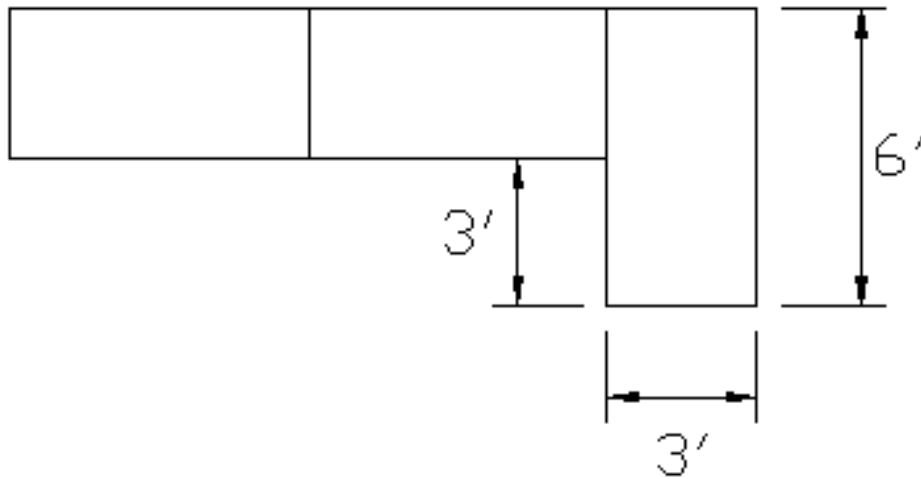
Alternate option: Temporary divert flow through a pipe using deposition material that is to be removed.

(NOT TO SCALE)

SHEET NO. _____ OF _____	DRAWING NO. _____	CAD FILE NAME _____	 <p style="text-align: center;"> NRCS <small>Natural Resources Conservation Service United States Department of Agriculture</small> </p>	WY-23-001 WYOMING COUNTY, PENNSYLVANIA Stream Diversion Detail	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">DESIGNED</td> <td style="border-bottom: 1px solid black;">JMB</td> <td style="font-size: small;">DATE</td> <td style="border-bottom: 1px solid black;">4-24</td> </tr> <tr> <td style="font-size: small;">DRAWN</td> <td style="border-bottom: 1px solid black;"></td> <td style="font-size: small;">CHECKED</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td style="font-size: small;">APPROVED</td> <td style="border: 2px solid red; text-align: center; padding: 2px;">MGB</td> <td style="font-size: small;">TITLE</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td></td> <td style="border: 2px solid red; text-align: center; padding: 2px;">7/29/24</td> <td></td> <td></td> </tr> </table>	DESIGNED	JMB	DATE	4-24	DRAWN		CHECKED		APPROVED	MGB	TITLE			7/29/24		
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	7/29/24																				

**TRIBUTARY TO BEAVER CREEK
EWP PROJECT
WYOMING, PA**

STACKED ROCK WALL TIE-BACK



Note: The rock wall ends shall be keyed into the streambank a distance of 6' (min).
Rocks in the tie-back shall be part of the from wall and joints staggered for stability

**ITEMS OF WORK RELATED TO
THE TECHNICAL SPECIFICATIONS AND DRAWINGS
FOR THE MYERS SITE IN FALLS TOWNSHIP, WYOMING COUNTY**

1. Data concerning the utilities at this site has been obtained from Pennsylvania One-Call System, Serial No. 20241033243. Accuracy of this data is not guaranteed. The Contractor must contact the PA One-Call System (1-800-242-1776) at least 3, but not more than 10, working days prior to the commencement of construction for utility information.
2. The primary scope of work for this project includes grading and stabilizing the right streambank, as viewed looking downstream. A 8' high stacked rock wall shall be installed (per stack rock detail) from a large tree on the stream bank to an existing concrete wall for 100 linear feet downstream. Top block height should vary as needed to extend to top of eroded bank. Positive grade toward the stream shall be maintained. Remove a 26' x 6' x 1.5' gravel bar. Deposition material may be used as backfill for the stack rock wall. Any excess deposition or excavation shall be disposed off site.
3. Access development shall be considered a component of Mobilization. Compensation for the development of the access road to the work site is to be included in the payment for Mobilization/Demobilization. Only trees and stumps interfering with access and the associated work will be removed. The Contractor is responsible for the protection of any private or public facilities in the work area for the duration of the contract. The Contractor will be responsible for repairing any of their damages to a condition equal to or better. No additional compensation will be made for damaged facility repair. The sponsor should be encourage to obtain any construction easement or land rights for the suggested construction entrance.
4. Implement the erosion control practices as described in the Erosion & Sedimentation Control Specification. Stream Diversion and Dewatering shall be included in the bid item "Mobilization/Demobilization".
5. Prepare the stacked rock and riprap subgrades in accordance with the detail drawings and the Excavation specification. A uniform bank alignment is expected with no abrupt bulges or indents. Excavated material, that cannot be used as bedding stone or unclassified fill, shall be removed from the site and disposed of at a location off site chosen by the contractor or at a location suitable to the landowner that is out of the floodway. Compensation for the streambank preparation, removal of excess material, if any tree removal shall be included in the applicable payment for riprap, stacked rock, or clearing and grubbing. Stacked Rock specification and compensation for that work shall be considered part of the R-6 Riprap and/or Stacked Rock bid item.. Minimum width of stream bottom shall be ~6'.
6. Compacted backfill behind the wall shall be a free draining material. Silt and clay are not acceptable as backfill material. Compacted backfill shall be included in the "Stacked Rock" bid item. Installation of drain material shall be included in the "Stacked Rock" bid item.
7. All disturbed areas shall be promptly seeded and mulched in accordance with the technical specification, Seeding.

Erosion and Sediment Control Guidelines

The guidelines presented below, which address erosion and sediment control, will be included as a condition of all emergency permits. These guidelines must also be followed when work is conducted under an existing permit or when work is undertaken that does not require a permit.

1. Maps and plans show the location of the project with respect to municipalities, access roads, existing structures or other landmarks. The maps and plans show details of the specific work site(s) including limits of disturbance, stream width, depth, extent of debris and deposition removal, and placement details for bank stabilization materials.
2. Staging areas and construction entrances, including those used for equipment maintenance and servicing should be located away from flowing streams, and shall be stabilized with AASHTO No. 1 rock.
3. All work should be done as quickly as possible, with bank stabilization to occur as segments of debris and deposition removal are completed.
4. Work should be performed from stream banks, as opposed to equipment operating in flowing streams, whenever possible.
5. Rock riprap used to stabilize stream banks or other areas shall be clean, dense, angular, blocky material. Minimum rock size shall be R-8, as rated by the National Stone Association.
6. All disturbed areas not stabilized with rock riprap, other materials, or seeded and mulched, shall be graded to avoid ponding water or concentrated flow. Standard seed mixtures and their specifications should be used. Hay and straw mulch shall be applied to such disturbed areas at a rate of approximately 3 tons to the acre (a loose layer 3/4 to 1 inch thick). Compost may be applied at a rate of 270-540 cubic yards per acre (2 to 4 inch thick uniform layer). Erosion control blankets should be installed/applied according to the manufacturer's specifications.
7. Only clean, non-polluting materials shall be used as fill. Exposed fill surfaces are to be stabilized.
8. Any sediment, trees, brush, or similar material excavated during debris removal shall be deposited in a suitable site away from the areas affected by flooding or wetlands, and stabilized with permanent vegetative cover. Other debris containing harmful or potentially hazardous materials should be disposed of in approved landfills.

These guidelines, and the maps and plans mentioned in item 1, along with any required contract specifications undertaken in cooperation with the Department of Environmental Protection (DEP) and the Natural Resources Conservation Service (NRCS), are considered to be the Erosion and Sedimentation Control Plan for Emergency Watershed Restoration projects.

TECHNICAL SPECIFICATIONS

MOBILIZATION AND DEMOBILIZATION

SCOPE

The work consists of the mobilization and demobilization of the contractor's forces and equipment necessary for performing the work required under the contract. Mobilization will not be considered as work in fulfilling the contract requirements for commencement of work.

PROCEDURE

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; permits, premiums paid for performance and payment bonds including coinsurance and reinsurance agreements as applicable; and other items specified in Items of Work.

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

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

TECHNICAL SPECIFICATIONS

ROCK CONSTRUCTION ENTRANCE

SCOPE

This work is providing a construction entrance into a work site by placing rock aggregate adjacent to the public access or other access where possible erosion or dust can be a problem. Placement procedure should follow the plan detail drawing entitled "Standard Construction Detail #16, Rock Construction Entrance".

APPLICABLE PUBLICATIONS

Pub. 408 - Specifications, Pennsylvania Department of Transportation.

Bulletin 14 - Aggregate Producers, Pennsylvania Department of Transportation.

Bulletin 15 - Approved Construction Materials, Pennsylvania Department of Transportation.

MATERIALS

- A. **Coarse Aggregate** - Coarse aggregate shall be AASHTO #1 coarse aggregate, as specified in Section 703.2 of Publication 408. Obtain coarse aggregate from a PennDOT approved source.
- B. **Geotextile** - Geotextiles shall meet the requirements of Section 735 of Publication 408 for Class 1 geotextiles. Use a geotextile listed in Bulletin 15.

PROCEDURE

Place aggregate in the dry, and not on frozen ground. Identify location of construction entrance and layout an area not less than 20 feet wide by 50 feet long. This area is the minimum roadway size, the on-site inspector or the detail drawing may require larger entrance areas. Once the area and location have been determined then strip vegetation from the site and place the geotextile material over the entire area. Pins should be used to hold the material in place. Place the aggregate to a depth of eight (8) inches and compact the aggregate with mechanical tampers or other approved means.

TECHNICAL SPECIFICATIONS

EXCAVATION

SCOPE

This work is the removal, hauling, and disposal of all materials encountered, as shown on the Drawings.

PROCEDURE

- A. **General** – Follow all guidelines set forth in the Construction Industry Standards, OSHA 2207, of the Occupational Safety and Health Administration, U.S. Department of Labor.

Maintain stable slopes. In case of a slide as a result of negligence or carelessness on the Contractor's part, it shall remove and replace material in the slide at no extra cost.

Protect the work, adjacent buildings, and property.

During excavation, keep the top surface graded for drainage. Replace overexcavated work with materials designated by the Inspector.

- B. **Excavation** – Remove all materials to the limits shown on the Drawings. During excavation of a channel, keep erosion and interference with the flow of the stream to a minimum.
- C. **Disposal** – Incorporate suitable materials from required excavation into the work, providing they meet the requirements of the appropriate sections of these Technical Specifications. If necessary, stockpile suitable materials for later use. Dispose of unsuitable, or excess, materials in spoil area. The Contractor is responsible for securing spoil areas.

TECHNICAL SPECIFICATIONS

STACKED ROCK

SCOPE

This work is stacked rock, as shown on the Drawings, or as directed by the Inspector.

MATERIALS AND STORAGE

A General - Obtain materials from sources approved by the Inspector, but the approval of any source shall not be construed as approval of all materials from that source. Materials from required excavation may be used, provided they meet the requirements of these Technical Specifications.

B Geotextile - Provide Class 4, Type A Geotextile, conforming with the requirements of Section 735 of Pub.408. Obtain geotextiles from a manufacturer listed in Bulletin 15.

During the periods of shipment and storage, protect geotextiles from direct sunlight, ultraviolet rays, temperatures greater than 140°F, mud, dirt, dust, and debris. To the extent possible, maintain geotextiles wrapped in a heavy-duty covering or shield from direct sunlight.

Geotextiles will be rejected at the time of installation if any defects, deterioration, or damage has occurred during manufacture, transportation, or storage.

C Securing Pins for Geotextiles - Provide steel securing pins, 18 inches long x 3/16 inches in diameter, pointed at one end; and with a 1½-inch washer head at the other end. Alternate securing devices, approved by the Inspector, may be used.

D Stacked Rock - Obtain Stacked Rock from a source approved by the Inspector. The stacked rocks shall be durable limestone or sandstone, approximately 3' X 3' X 4' and cubical.

PROCEDURE

A - General - Dimensions indicated on the Drawings are the placement dimensions of stacked rock.

B - Foundation Preparation - Prepare the areas on which the stacked rock is to be placed by excavating, trimming, and dressing to conform to cross sections and slopes shown on the Drawings. Bring up the low areas to grade by filling and compacting in accordance with the "Unclassified Fill" Specification, with materials comparable to adjacent foundation materials.

C - Geotextile - Use Class 4, Type A Geotextile.

Place the fabric on the prepared area in a loose, unstretched condition to minimize shifting, puncturing, or tearing the fabric. For stream slope protection, lay the fabric with the long dimension parallel to stream flow, and for protection of the entire stream, lay the fabric with the long dimension perpendicular to the centerline of the channel. Provide a minimum overlap of twelve (12) inches at the joints, with the upstream fabric over the downstream fabric and the upslope fabric over the downslope fabric. Anchor the fabrics in place by inserting securing pins through both fabrics at the overlaps at the spacing shown on the following table:

	STEEPER THAN		FLATTER THAN
SLOPE	3 : 1	4 : 1	4 : 1
SECURING PIN PACING ALONG OVERLAPS	2 FEET	3 FEET	5 FEET

Install additional pins as necessary to prevent any slippage of the fabrics.

Protect the fabrics at all times during construction from contamination by surface runoff. Place stacked rock or cover the fabric with approved covering material as soon as possible, so that Type A fabric is not exposed for more than two (2) weeks.

Do not drop rocks, two (2) feet or larger in any dimension directly on the fabric from a height greater than one (1) foot. Do not allow the stacked rock placement procedure to puncture or damage the fabric. Repair and/or replace all damaged fabric to the satisfaction of, and at no additional cost.

D – Stacked Rock – Place the stacked rocks neatly as shown on the Typical Stacked Rock Repair Section drawing. Smaller rock shall be used to fill voids so that each rock rests solidly on the lower layer without movement. Vertical joints between rocks in the top layer shall be offset from those in the bottom layer and laterally, each rock shall be shingled outward 3” from the next downstream rock. Place R-7 riprap at the toe of the stacked rock wall as shown on the Typical Stacked Rock Repair Section drawing.

TECHNICAL SPECIFICATIONS

GEOTEXTILE

SCOPE

This work is furnishing and placing geotextile and necessary fasteners.

MATERIALS

- A. Geotextile** – This material shall conform to the requirements of Class 4 in Section 735 of PennDOT Publication 408. Obtain geotextiles from a manufacturer listed in PennDOT Bulletin 15.

During the periods of shipment and storage, protect geotextiles from direct sunlight, ultraviolet rays, temperatures greater than 140°F, mud, dirt, dust, and debris. To the extent possible, maintain geotextiles wrapped in a heavy-duty covering or shield from direct sunlight.

Geotextiles will be rejected at the time of installation if any defects, deterioration, or damage has occurred during manufacture, transportation, or storage.

- B. Fasteners** - Provide steel securing pins, 18-inches long x 3/16-inches in diameter, pointed at one end; and with a 1½-inch washer head at the other end. Alternate securing devices, approved by the Inspector, may be used.

SUBMITTALS

The Contractor shall submit the following samples and product certifications to the Inspector for approval at least ten (10) days prior to installation:

1. Geotextile and fastener sample
2. Product specifications and certification from manufacturer
3. Manufacturer's recommended installation procedure for this type of site.

PROCEDURE

Install the geotextile at the locations shown on the drawings. Conduct operations in a manner as to prevent damages.

MAINTENANCE

Maintain the geotextile and all appurtenances, repairing all damaged areas for the duration of the contract.

TECHNICAL SPECIFICATIONS

R-6 RIPRAP

SCOPE

This work is riprap, as shown on the Drawings, or as directed by the Inspector.

APPLICABLE PUBLICATIONS

Pub.408 - Specifications; Pennsylvania Department of Transportation.

Bulletin 15 - Approved Construction Materials; Pennsylvania Department of Transportation

MATERIALS AND STORAGE

A - General - Obtain materials from sources approved by the Inspector, but the approval of any source shall not be construed as approval of all materials from that source. Materials from required excavation may be used, provided they meet the requirements of these Technical Specifications.

B - Geotextile - Provide Class 4, Type A Geotextile, conforming with the requirements of Section 735 of Pub.408. Obtain geotextiles from a manufacturer listed in Bulletin 15.

During the periods of shipment and storage, protect geotextiles from direct sunlight, ultraviolet rays, temperatures greater than 140°F, mud, dirt, dust, and debris. To the extent possible, maintain geotextiles wrapped in a heavy-duty covering or shield from direct sunlight.

Geotextiles will be rejected at the time of installation if any defects, deterioration, or damage has occurred during manufacture, transportation, or storage.

C - Securing Pins for Geotextiles - Provide steel securing pins, 18 inches long x 3/16 inches in diameter, pointed at one end; and with a 1½-inch washer head at the other end. Alternate securing devices, approved by the Inspector, may be used.

D - Riprap - Obtain riprap from a source approved by the Inspector. Riprap shall consist of sound durable rock, insoluble in water. Friable, stratified rocks such as shales, and rocks liable to decompose in water, such as claystones, will not be approved. The Inspector shall reject localized areas, strata, or channels within an approved area or zone when, in its opinion, the material has disintegrated, weathered badly, or is otherwise unsatisfactory for the intended use. The materials shall be free of objectionable amounts of earth, quarry dust, or other materials; however, washing will not be required.

Stone for riprap shall be block shaped with a specific gravity of at least 2.5. Smooth rounded stone or boulders; flat, thin, elongated, and slab-shaped stone shall not be acceptable. Not more than 25 percent of the stones reasonably well distributed throughout the gradation shall have a length more than two and one-half (2.5) times the breadth or thickness. No stone shall have a length exceeding three (3) times its breadth or thickness.

Riprap shall be R-6 gradation, conforming to Section 850 of Pub.408, except as noted above. The riprap shall be certified as to size and gradation and the Inspector shall accept the onsite riprap based on a visual inspection.

PROCEDURE

A - General - Thicknesses indicated on the Drawings are the placement thicknesses of riprap layers.

B - Foundation Preparation - Prepare the areas on which riprap is to be placed by excavating, trimming, and dressing to conform to cross sections and slopes shown on the Drawings. Bring up the low areas to grade by filling and compacting in accordance with the "Unclassified Fill" Specification, with materials comparable to adjacent foundation materials.

C - Geotextile - Use Class 4, Type A Geotextile.

Place the fabric on the prepared area in a loose, unstretched condition to minimize shifting, puncturing, or tearing the fabric. For stream slope protection, lay the fabric with the long dimension parallel to stream flow, and for protection of the entire stream, lay the fabric with the long dimension perpendicular to the centerline of the channel. Provide a minimum overlap of twelve (12) inches at the joints, with the upstream fabric over the downstream fabric and the upslope fabric over the downslope fabric. Anchor the fabrics in place by inserting securing pins through both fabrics at the overlaps at the spacing shown on the following table:

	STEEPER THAN		FLATTER THAN
SLOPE	3 : 1	4 : 1	4 : 1
SECURING PIN PACING ALONG OVERLAPS	2 FEET	3 FEET	5 FEET

Install additional pins as necessary to prevent any slippage of the fabrics.

Protect the fabrics at all times during construction from contamination by surface runoff. Place riprap or cover the fabric with approved covering material as soon as possible, so that Type A fabric is not exposed for more than two (2) weeks.

Do not drop rocks, two (2) feet or larger in any dimension directly on the fabric from a height greater than one (1) foot. Do not allow the riprap placement procedure to puncture or damage the fabric.

Repair and/or replace all damaged fabric to the satisfaction of, and at no additional cost.

D - Riprap - Place stones for riprap on the geotextiles, in the dry, and conforming to the lines and grades shown on the Drawings or as directed by the Inspector. Place the stones in such manner as to produce a reasonably well-graded and uniform surface providing the full thickness shown on the Drawings. A tolerance of plus or minus three inches will be allowed in the finished surface except that either extreme of such tolerance shall not be continuous over an area greater than 200 square feet. Place stones to the full course thickness in one operation and without displacing the underlying material. Do not place stones in layers. The finished work shall be free from objectionable pockets of small stones and clusters of larger stones, and the entire mass of stones shall be roughly graded to conform to the gradation specified. Smaller stones shall be well distributed in order to chink the voids between larger stones, insofar as practicable. Do not place riprap by dumping stones into chutes or by similar methods, likely to cause segregation of the various sizes. Do not use a tractor equipped with bulldozer blade, stone rake, or any similar equipment. The desired distribution of the various sizes of stones throughout the mass shall be obtained by selective loading of the material at the quarry, by controlled dumping of successive loads during final placing, or by other approved methods. Rearrange individual stones by hand or mechanical means only to the extent necessary to break down bridging and to obtain a reasonably well-graded mass.

Provide cutoff at the upstream and downstream ends of riprap as shown on the Drawings, and do not allow any equipment to pass over the finished riprap surface.

MAINTENANCE - Make all necessary repairs to riprap for the duration of the Contract.

TECHNICAL SPECIFICATIONS

UNCLASSIFIED FILL

SCOPE

This work is filling areas with suitable materials, to the limits and grades shown on the Drawings, or as directed by the Inspector

MATERIALS

Obtain material from required excavation to the extent of its availability. The material need not be well graded but shall be free of clusters of large materials, organic matter, trash, and frozen and other objectionable materials. Unless otherwise specified by the Inspector, the material shall be granular and pervious. If necessary, sort the material and/or stockpile for later use at no additional cost.

PROCEDURE

Do not place material on frozen ground. Deposit material and compact to the satisfaction of the Inspector.

After completion of spreading and compacting, grade the area to the lines and grades shown on the Drawings, or as directed by the Inspector, in such a way that the area blends in with the surrounding terrain with the top surface sloped for drainage.

TECHNICAL SPECIFICATIONS

SEEDING

SCOPE

This work is securing a satisfactory stand of grass on all disturbed areas or where directed by the Inspector. This work includes preparing the seedbed, furnishing and applying lime and fertilizer, furnishing and sowing seed, furnishing and placing mulch, and maintaining the seeded areas.

APPLICABLE ACTS AND PUBLICATIONS

Pennsylvania Seed Act of 1965 (Act No. 187), as amended

Rules For Testing Seed, Association of Official Seed Analysts

Regulations of the Pennsylvania Department of Agriculture, Bureau of Plant Industry

Pennsylvania Agricultural Liming Materials Act of 1978, P.L.15, No.9, as amended

Specification No. L-36 (current issue), Pennsylvania Department of General Services, Bureau of Purchases, Division of Standards and Specifications

Agricultural Liming Materials Rules & Regulations (7 Pa. Code, Part V, Chapter 108)

Pennsylvania Soil Conditioner and Plant Growth Substance Law, Act of December 1, 1977, P.L.258, No.86 (3P.S.68.2) as amended

Bulletin 15 - Approved Construction Materials,
Pennsylvania Department of Transportation

MATERIALS

A. Grass Seed - Grass seed shall conform to the applicable acts and regulations specified above in these Technical Specifications, and shall consist of the following seed types and mixtures:

PERMANENT SEEDING (for all areas – including levees, channels, lawns, and parks)

Formula & Species	% Of Total Weight	Minimum Purity %	Minimum Germination %	Maximum Weed Seed %	Seed Application Rate Lbs./1000 SF
<p>Kentucky Bluegrass Mix (<i>poa pratensis</i>) A blend of improved certified varieties, such as Victa, Baron, Fortuna, & Gnome, with no one variety exceeding 40% of total bluegrass component.</p>	40	98	80	0.20	2.8
<p>Strong Creeping Red Fescue or Chewings Fescue (<i>festuca rubra</i>). An improved certified variety, such as Pennlawn.</p>	30	98	85	0.15	2.1
<p>Fine Perennial Ryegrass Mix (<i>lolium perenne</i>) A blend of improved certified varieties, such as Pennefine, Regal, Manhattan, and Citation, with no one variety exceeding 50% of total ryegrass component.</p>	30	98	90	0.15	2.1
Total Lbs./1000 SF					7.0

TEMPORARY SEEDING (for borrow and spoil areas, and uncompleted areas where work will be delayed by 20 days or more)

Formula & Species	Minimum Purity %	Minimum Germination %	Maximum Weed Seed %	Seed Application Rate Lbs./1000 SF
Annual Ryegrass (<i>Lolium multiflorum</i>)	98	90	0.15	2.0

No seed shall contain Canada Thistle, Field Bindweed, Johnson Grass, Perennial Sowthistle, Quackgrass, Horse Nettle, Bedstraw, Corncockle, Brassica Kaber, Brassica Nigra, Wild Onion, or Wild Garlic.

Each variety of specified seed shall be separately packaged and fully tagged. Seed shall be mixed in the presence of a representative of the Department. Premixed seed is acceptable, provided an inspection tag stamped, dated, and signed by the Pennsylvania Department of Agriculture inspector is sewn or stapled to the outside of each bag.

Seed which has become wet, moldy, or otherwise damaged in transit or storage, or has a mix date older than 9 months prior to sowing, or has a test date older than 6 months prior to sowing shall not be used.

B. Fertilizer - Fertilizer shall conform to the applicable acts specified in the section of these Technical Specifications titled, "Applicable Acts and Publications". Use dry formulation of 10-20-20-analysis.

Fertilizers shall be delivered in bags or other suitable containers, each fully labeled and bearing the name, trademark, and warranty of the producer.

C. Lime - Lime shall be pulverized agricultural limestone conforming to the applicable acts specified in the section of these Technical Specifications titled, "Applicable Acts and Publications". Lime shall conform to the requirements of Specification No. L-36, Group 1, Class B, Type MO and have an effective neutralizing power of not less than 64 when calculated, using the guaranteed chemical analysis and fineness, in accordance with the Agricultural Liming Materials Rules and Regulations.

D. Mulches - Mulches shall be free of foreign materials, coarse or woody materials such as tobacco and soybean stems, substances toxic to plant growth, and mature seed bearing stalks or roots of prohibited and noxious weeds as defined by law. Mulches shall be cut into lengths of not less than 6 inches and cured to less than 20 percent moisture content by weight.

Mulches shall be hay, straw, or a combination both. Hay shall be timothy hay, mixed clover and timothy hay, or other approved native or forage grasses. Straw shall be either wheat or oat straw, reasonably free of viable seeds.

E. Mulch Binders - Mulch binders shall be nonasphaltic emulsions, of either a water soluble natural vegetable gum blended with gelling and hardening agents or a water soluble blend of hydrophylic polymers, viscosifiers, sticking aids, and gums. Obtain binders from a producer listed in Bulletin 15.

F. Water - Water shall be fresh and free from injurious amounts of oil, acid, alkali, salts, and any other materials that may be harmful to the growth of grass.

PROCEDURE

General - The application rates specified for seed, lime, fertilizer and mulch are minimum acceptable rates. The Department may, at its own expense, test the soils to determine if the specified lime and fertilizer application rates are appropriate. If the test results indicate a need for adjustment, do so at no additional cost to the Department and accept full responsibility for obtaining a satisfactory stand of grass.

A. Prepare Seed Bed by Shallow Tilling - After the Department has approved the final grading of areas to be seeded, thoroughly till the surface to a depth of 3 inches by discing, harrowing, or other approved means. Apply fertilizer at a rate of 750 pounds per acre. Apply lime at a rate of 5,000 pounds per acre. Work both thoroughly into the soil to a depth of 3 inches, to ensure satisfactory soil conditions conducive to sowing seed. Bring the surface to a smooth and even final grade. Immediately prior to sowing, rake the soil to a depth of 3/4 inch. Rake parallel to contour lines, not uphill or downhill. On lawn areas, remove all sticks, stones, weeds, roots, and other objectionable materials larger than 5/8 inches in any dimension. On all other areas to be seeded, remove sticks, stones, weeds, roots, and other objectionable materials larger than 2 inches in any dimension. Maintain the surface in a true and even condition while sowing the seed. If hydroseeding or grain drilling is employed, apply limestone and fertilizer as specified in the section of these Technical Specifications titled, "Materials". On areas that are steeper than 3:1, till the surface in the cross slope (horizontal) direction. Sufficiently scarify so as to break up surface crust and eliminate irregularities that may have been caused by soil erosion. Remove all objectionable materials from the surface.

B. Sow Seed - Sow the seed mixture on a still day at the minimum rate specified in the section of these Technical Specifications titled, "Materials". Do not sow seed on frozen or partially frozen ground. For best results, sow permanent seed from March 15 to June 15 for spring establishment or from August 15 to October 15 for fall establishment. Sow by hand or by approved sowing equipment in 2 applications. Sow one-half the seed while traveling in one direction and the other half while traveling at a right angle to the first direction. After seeding is complete, lightly rake, cultipack, or brush drag the surface, just deep enough to cover the seeds. Rake parallel to contour lines, not uphill or downhill.

Hydroseeding or grain drilling is acceptable, provided the Department approves all methods and equipment used. If hydroseeding is employed, fertilizer and limestone may be applied at the time of

sowing. If grain drilling is employed, only fertilizer may be applied at the time of sowing, provided it does not come in contact with the seed. Drill parallel to contour lines, not uphill or downhill.

C. Apply Mulch – Immediately after seeding, or within 6 hours after seeding is completed, spread mulch uniformly over the entire seeded area at a rate of 6,000 pounds (dry weight) per acre. The mulch shall be moist at the time of placement. To prevent the mulch from being blown away or bunched by the wind and to ensure the mulch cover holds the soil and seed in place, anchor the moist mulch to the soil by an approved means. On slopes where machinery cannot be used, hold the mulch in place by a means that will not be detrimental to subsequent operations. Nonasphaltic mulch binders may be applied uniformly over and through the mulch at the manufacturer's recommended rate.

MAINTENANCE

At no additional cost, maintain the seeded areas until all work under the Contract has been completed and accepted. Maintenance shall include refilling rain-washed gullies, reseeding, reapplying fertilizer, lime and mulch, and removal of large and noxious weeds, as directed by the Inspector.