



State of West Virginia  
Department of Administration  
Purchasing Division  
2019 Washington Street East  
Post Office Box 50130  
Charleston, WV 25305-0130

## Request for Quotation

RFQ NUMBER
DEP15740

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
GUY NISBET 304-558-8802

RFQ COPY

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ENVIRONMENTAL PROTECTION  
DEPARTMENT OF  
OFFICE OF AML&R  
601 57TH STREET SE  
CHARLESTON, WV  
25304 304-926-0499

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
03/02/2012				

BID OPENING DATE: 03/13/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO.2						
ADDENDUM ISSUED TO DISTRIBUTE: 1. Q & A'S FROM PRE-BID MEETING ON: 02/21/2012, 2. TECHNICAL SPECIFICATIONS FROM: POTESA & ASSOCIATES, AND 3. PRE-BID SIGN-IN SHEET FROM MEETING ON: 02/21/2012.						
BID OPENING REMAINS UNCHANGED: 03/13/2012 AT 1:30PM						
NO OTHER CHANGES						
END OF ADDENDUM NO.2						
001	1	JB		962-73		
RECLAMATION: RESTORATION OF LAND & OTHER PROPERTIES						
***** THIS IS THE END OF RFQ DEP15740 ***** TOTAL:						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

## GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
  2. The State may accept or reject in part, or in whole, any bid.
  3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
  4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
  5. Payment may only be made after the delivery and acceptance of goods or services.
  6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
  7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
  8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
  9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
  10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
  11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
  12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
  13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at [www.state.wv.us/admin/purchase/vrc/hipaa.html](http://www.state.wv.us/admin/purchase/vrc/hipaa.html) and is hereby made part of the agreement provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
  14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
  15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
  16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.
- I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or Fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

### INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).

## **Sundial (Hatfield) Refuse Piles**

Pre-bid for construction (PBC) meeting: February 21, 2012

Consultant: Potesta & Associates (Mark Kiser, Jason Gandee)

### **Addendum #1**

### **Questions & Responses, and Additional notes**

Q1 Is the highwall above Pile A to be eliminated?

R1 Our desire is to eliminate highwalls when practical and possible. The highwall above Pile A was created when this area was used as a rock borrow area. It is not practical to eliminate this highwall. It is expected that, at the end of the project, this area will be graded to drain, soil covered (where possible) and revegetated. It should be noted that this area may be used to supply additional rock for this project. However, if used the highwall shall be reclaimed. Regarding Pile A: note that the majority of Pile A has been rough regraded. It needs to have final regrading, including smoothing the existing surface to eliminate erosion gullies and to establish benches, access roads, channels, etc. Large boulders are to be removed. Pile A is to be graded to drain, soil covered and revegetated. There is a note on the plans (Drawing No. 7) "Grade hillside to original soil". This statement is no longer valid. Also, note 3. on the plans (Drawing No. 7) "...removal to native soil..." is no longer valid.

Q2 There is a an access road shown on plans. Is this to be retained?

R2 Yes. There is an access road (for the gas company) that must be retained. It is located above Pile A and below the rock borrow area. This is noted on drawing number 7 of the plans, and it is to be vegetated.

Q3 Are all highwalls to be eliminated?

R3 See R1 for the highwall above Pile A. On Piles C & D, the areas at the top of the piles are very steep and may not be able to be regraded to a reasonable slope. All loose material from these areas should be removed, and these areas are to be direct seeded and covered with erosion control matting (ECM). This seeding/ECM installation work will not be required if slope is cut to rock. It should be noted that no additional highwalls will be permitted to be created on this project. Please refer to Q23 & R23 for placement of erosion control matting (ECM) on rock/highwall areas.

Q4 Has the site been remapped to reflect differences from last bid?

R4 Yes, the site has been remapped, and the quantities, cross sections and plans have been adjusted to reflect this. Channel quantities and profiles remain as per the previous mapping.

Q5 How is excavation paid?

R5 There is a line item (8.1) for Unclassified Excavation and it is paid for per CY (cubic yard).

Q6 How much topsoil (soil cover)?

R6 A minimum of 6" of top soil (soil cover) shall be used to cover exposed coal refuse. It is estimated there is sufficient soil available on site.

Q7 What is the grouting quality?

R7 Full penetration grout with grout as per specifications in section 7.2.3. Riprap must meet specifications for durability, soundness, etc. (specification 7.2.2.). The grouted channel must have the ability to transmit/convey water in the channel (not under). Additional comments regarding grouted channel riprap are listed on Drawing Number 10 (Note 6). Please note that a revised set of specifications is available which addresses grout.

Q8 What size is the riprap in Channel 10? (Editor's note: this is the channel at the toe of Pile C)

R8  $D_{50} = 12"$ . Please note that on Drawing No. 26 of the plans, there is a chart that provides dimensions, lining, etc. for all channels.

Q9 May existing riprap be re-used?

R9 Yes, if it meets specifications (item 7.2.2.).

Q10 How is putting out fire paid for? (Editor's note: this is a reference to a small area on Pile D that was on fire last fall)

R10 By excavation per cubic yard (item 8.1, unclassified excavation). Note that there was a small area of refuse that was on fire last fall (Pile D). It is not known if this area is still on fire. Specific instructions for dealing with burning refuse are given in the specifications under item 8.3.1.

Q11 Where are soil borrow areas?

R11 Rock and soil borrow areas are identified on the plans. It is estimated there is sufficient soil available on site.

Q12 What is to be done with old matting?

R12 The existing erosion control matting is to be removed and disposed of offsite at an approved landfill site. Existing matting may not be re-used. The estimated quantity is approximately two (2) acres.

Q13 Can erosion control matting with implanted grass be used as a substitute?

R13 WVDEP will evaluate submitted specifications for materials to determine if it is equal.

Q14 Have SHPO requirements been fulfilled?

R14 Yes, SHPO (State Historical Preservation Office) requirements have been met. Please note that there is existing scrap metal and debris is to be transported to an approved facility off site. There have been several stockpiled metal/debris areas observed and scattered metal/debris still exists.

Q15 Is the highwall adjacent to the auger holes to be reclaimed?



R15 Auger holes are located on an access road between Piles A & D (shown on Drawing Number 7). These auger holes are to be backfilled and reclaimed as per specifications and drawings. This is not what we consider to be a "highwall" area, and the "highwall" is not to be reclaimed.

Q16 What about gas lines relocation?

R16 Gas lines relocation are to be handled as per our standard (i.e. contractor to be reimbursed based on submitted invoices). It should be noted that there is one shut in gas well on this site and \$400,000 has already been submitted to the gas company. When the value exceeds \$400,000, there will be a change order. Yes, we do expect gas line relocation to be an item on this project. The gas line sizes (diameters) are not known.

Q17 What is the bat gate size?

R17 The bat gate diameter should be approximately the height of the coal seam. If a 4 foot coal seam is encountered, the diameter of the bat gate should be 4 ft.

Q18 What about stockpiled timber?

R18 There is at least two (2) areas of stockpiled timber which must be removed to provide access to the area to be reclaimed. Timber may be burned (on an approved area, not on refuse; burning permit required) or moved to an approved offsite location. Please note there is a designated timber disposal area shown on Drawing No. 15.

Q19 Can borrow areas be extended?

R19 Yes, if approved by inspector (WVDEP) and located within construction limits.

Q20 Can you provide estimated excavation quantities?

R20 We estimate the quantities of material excavated as follows:

Pile A: N/A

Pile B: 49,500 Cubic Yards

Pile C: N/A

Pile D: 35,500 Cubic Yards

Q21 Is the warranty still In effect with erosion control matting?

R21 Yes, guarantee & maintenance language (as indicated under 5.0 of the specifications) remains in place.

Q22 Error on page 33 of specifications, item 8.3.1, "The cut slope shall not be flatter than 2H:1V....."

R22 This is a clerical error. The wording should be "The cut slope shall not be steeper than 2H:1V unless so noted on the plans or agreed to by the Engineer."

Q23 Placement of erosion control matting (ECM) on rock/highwall areas.

R23 Areas that have been specified to receive ECM that are excavated down to bedrock shall not receive ECM but should be direct seeded. Obviously it may not be practical to use erosion control matting (ECM) or direct seeding on certain areas of solid bedrock. This may only be determined after excavation and preparation of the site, and therefore would be a field judgment by the WVDEP inspector. Only with the approval of the WVDEP Inspector shall areas not be subject to erosion control matting (ECM) and/or direct seeding. Seeding should be done prior to placement of matting. Erosion Control Matting (ECM) is to be installed as per manufacturer's instructions. Most matting is stapled or pinned in place.

Q24 Is the rock already placed in the stream channel to be removed? (Editor's note: this is the stream lining and stream bank protection along Hazy Creek in front of piles A, B, & D).

R24 Much of the rock already placed in, and adjacent to, the stream channel along Hazy Creek is unacceptable and highly friable and degradable. This rock does not have to be removed. Durable rock, as per specifications and plans, is to be utilized. The stream must be cleaned of all refuse, debris, etc. At one time, this stream had been blocked in multiple locations by sloughing and discarded material.

Q25 What is to be done about refuse above the tree line on Pile C?

R25 It is expected that an attempt will be made to follow the plans. No substantive amount of refuse is expected to be left exposed. If this becomes problematic, the WVDEP inspector will review and make the determination.

Q26 Will any work be required on mine seals already installed?

R26 Some of the mine seals have been installed incorrectly and some have been partially installed. Notations have been made on the plans and the bid sheet has been adjusted to cater for partial (incomplete) work. Missing animal guards, partially filled openings, sloughing material, etc. are just a few examples of the incomplete (partial) work. The WVDEP inspector should be consulted for all work required to make the mine seals complete and functional.

Q27 Can the access road at Pile B be used to access other sites?

R27. At the time of our last visit, the access road at Pile B was open and could be used to provide access to other sites.

Q28 What do we do with material removed (grouted riprap) from the existing channels?

R28 Removed material may be buried on site (approved by WVDEP inspector). Existing riprap may be re-used if it meets specifications (see R9).

Q29 Is there 30" of rock in the existing grouted channel on Pile C?

R29 It is not known as to the size or thickness of rock used.

Q30 Is it required to use commercial rock?

R30 Commercial rock or on site rock may be used as long as it meets specifications for soundness, durability, etc. On site rock has been previously tested and found to be acceptable. Shale and easily degradable materials are not acceptable.

#### **Additional notes**

1. The contractor's work hours for this project shall be from 7:00 a.m. to 7:00 p.m. Monday through Saturday. Work on Sunday and major holidays, as defined by the Engineer, will not be allowed on this project. (Editor's note: this is a standard condition on all AML projects)
2. The project sign is to be included in the mobilization cost. Note: the requirements for the sign have been specifically addressed under Item 13.0 Construction Sign, page 9 of the General Requirements.
3. Section 6.0 Revegetation. It was stated during the pre-bid that revegetation would be placed before matting is placed. This is the confirmation in writing.
4. Section 7.2.2 Stone. Stone must satisfy the specifications for soundness, durability, etc. Shale and degradable materials are not acceptable.
5. Section 7.2.4 Filter Fabric. This fabric is used for underdrains, seeps, etc. as shown on plans including details.
6. Section 7.3.2 states that riprap for channels is to have "interstices of which are filled with suitably sized spalls". Clearly, this is for channels with riprap (not grouted). With grouting, full penetration is required (refer to R7 above). Please note that a revised set of specifications is available and eliminates this language (i.e. "interstices ...").
7. Section 7.4 Method of Measurement. The method of measurement will be per linear foot, field measured. The statement "per linear foot, per the plan view, neglecting slope" is incorrect and void.
8. Section 8.0 Earthwork. All loose rocks, boulders, etc. are to be removed and placed as per instructions of the WVDEP inspector. Rock borrow will not be paid under unclassified excavation.
9. Section 9.0 Mine Seals. It should be noted that the installation of bat gates are seasonal, i.e. May 1 through August 31. This does not apply to existing bat gate repair. Please note that a revised set of specifications is available and addresses this requirement.
10. Section 9.3 Construction Methods. There is a statement already included regarding discharges from the mine/mine seals. The pH range is now quantified to 6-9. Please note that a revised set of specifications is available and address this requirement.

11. Section 9.5 Pay Item. Please note that a revised set of specifications is available and addresses any inconsistencies with regard to pay items.

12. Section 11.3.1 Structure Demolition, Removal and Disposal. Just a clarification, it is anticipated that all metal/debris will be removed to an off site disposal area. The only materials that may require burial on site would be concrete, concrete structures and appurtenances, etc. The on site burial area must be approved by the WVDEP inspector.

13. Bid Sheet, item 13. 8" Underdrain. There were no specifications for this. The Bid Sheet is correct, a revised set of specifications is available to address this. It is for underdrains for Pile A, Pile B, and Pile D.

Addendum information supersedes all specifications and plans (drawings).

Please note that a revised set of specifications is available (copy attached) and addresses many of these questions.

# TECHNICAL (CONSTRUCTION) SPECIFICATIONS

## *Sundial (Hatfield) Refuse Pile Raleigh County, West Virginia*

*Prepared for:*

**West Virginia Department of Environmental Protection  
Office of Abandoned Mine Lands and Reclamation**

601 57<sup>th</sup> Street, SE  
Charleston, West Virginia 25304

*Prepared by:*

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Project No. 0101-10-0423

December 28, 2011

*(This document contains 51 pages, plus attachments.)*



**POTESTA**



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## **APPENDIX**

Contractor's Bid Sheet.....APPENDIX A

## **SUNDIAL (HATFIELD) REFUSE PILE RALEIGH COUNTY, WEST VIRGINIA**

### **I. SPECIAL PROVISIONS**

#### **1.0 LOCATION, SITE DESCRIPTION AND BACKGROUND INFORMATION**

##### **1.1 Location/Site Description**

The Sundial (Hatfield) refuse pile project includes several coal refuse areas and associated portals, and abandoned coal structures located off of Route 3, between the communities of Sundial and Edwight in Raleigh County, near the mouth of Hazy Creek on Marsh Fork.

Included are four distinct refuse pile areas located along Marsh Fork and Hazy Creek. The refuse areas range in height (elevation) from 200 to over 600 feet. The refuse areas are steeply sloping sidehill fills with slopes as steep as 1 ½ horizontal to 1 vertical. A significant portion of refuse areas have steep, heavily eroded slopes resulting in increased sediment being discharged into Hazy Creek and Marsh Fork. Mine portals are discharging water into undefined channels across the site. Some portals are open, while others are blocked by sloughing of the soil and rock over the entries. Portals are located across the general site area at three different levels corresponding to (at least) three coal seams that were mined. Access to the different areas is difficult due to the steep topography and remote nature of the project site.

Several abandoned mine structures exist at the site, including miscellaneous foundations, rotary dump, button conveyor (chute), aerial tram and related structures, fan house, rails, mine cars and other miscellaneous equipment and structures.

The scope of work includes relocating a stream, re-lining a stream bank, regrading the refuse areas to provide more stable slopes, smooth grading areas to provide more stable slopes, installing underdrains, installing drainage control on and around the regraded refuse areas and directing drainage to the receiving streams, relocating access roads, dismantling and removing structures from the site, razing and burying foundations or covering them with soil, covering and revegetating the coal refuse areas, and installing mine seals in mine portals and directing the drainage to the receiving streams via channels.

##### **Directions to Site**

Take Route 3 south from Racine in Boone County, or Route 3 north from Beckley. Upon reaching Edwight, cross Marsh Fork, and turn north onto County Route 3/3. Project commences on left just after crossing Hazy Creek. Location map and vicinity map follows:

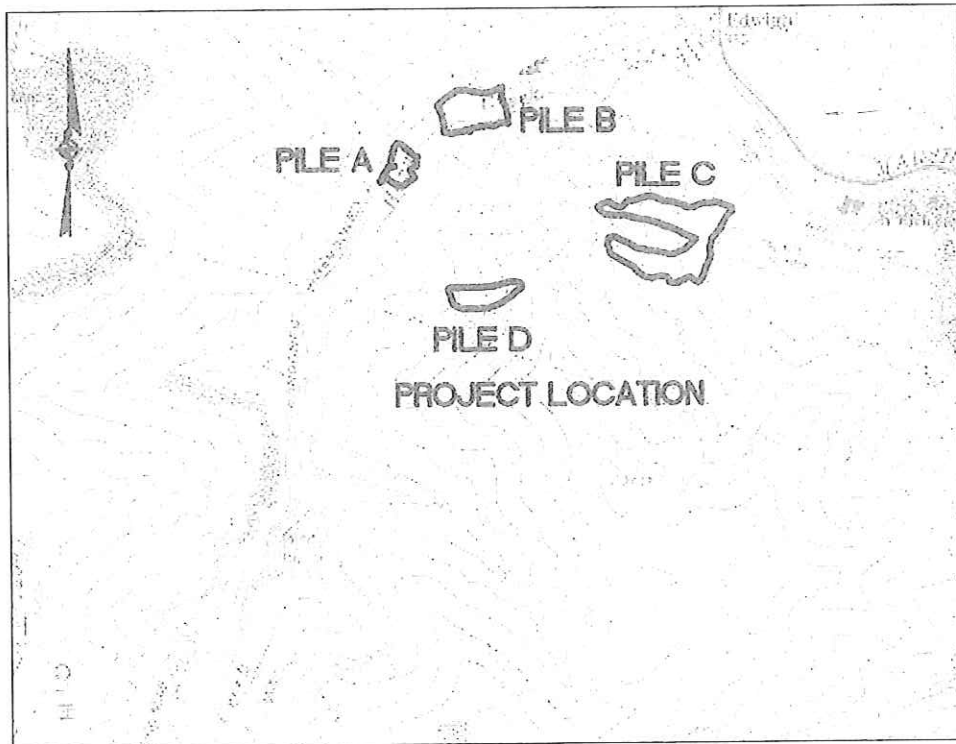


Figure 1: Location Map

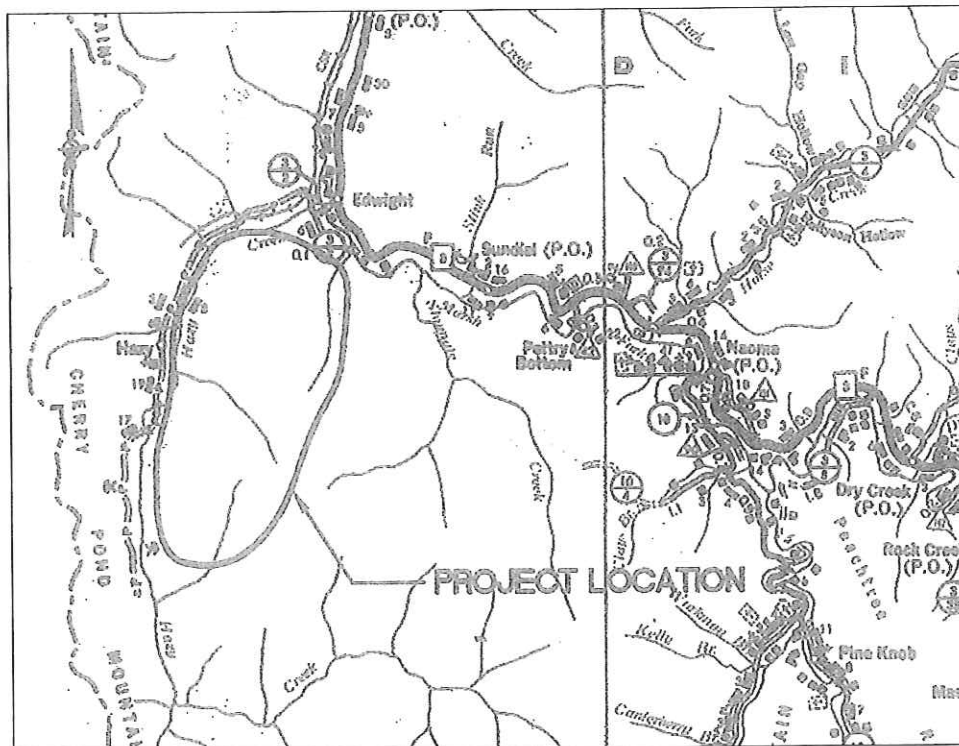


Figure 2: Vicinity Map



## 1.2 Background Information

Potesta & Associates, Inc. (POTESTA) was retained by the West Virginia Department of Environmental Protection (WVDEP), Office of Abandoned Mine Lands and Reclamation (AMLR) during 2003 to prepare a reclamation plan and construction/bid documents for the project. POTESTA completed the requisite field work, (subsurface exploration and surveying), developed a reclamation approach and plan, and prepared bidding and construction documents during 2003 and 2004. POTESTA submitted preliminary plans, specifications, bid form, engineer's construction cost estimate, and calculations brief to WVDEP during January 2004. WVDEP reviewed the documents, provided review comments, and POTESTA completed revisions and submitted the final documents during September 2004.

WVDEP later requested that POTESTA prepare an application to the United States Army Corps of Engineers for approval to relocate portions of Hazy Creek and to place fill material into intermittent and ephemeral streams.

POTESTA completed permitting and other related services during 2008. The project was bid during 2009 and the State of West Virginia awarded a purchase order to a Contractor for the reclamation construction work for the Sundial (Hatfield) Refuse Piles and Structures Project.

The Contractor experienced difficulty in completing the project. WVDEP informed the Contractor that their contract had been terminated and that they were to cease operations at the site during August 2010. A site visit to the project made by WVDEP and POTESTA during September 2010 and subsequent visits conducted in July, August, and October 2011, revealed the following:

- ◆ Pile A is regraded and soil covered; however, the surface water drainage ditches are not complete and extensive disturbance exists on the hillside above the reclaimed refuse pile. The Contractor developed a rock borrow area above Pile A which includes significant highwalls.
- ◆ Pile B has not been reclaimed. In fact, numerous access roads have been graded across the surface. Landslides were apparent within this refuse pile. The stream relocation at the toe of Pile B is not complete. No ditch work has been completed at Pile B.
- ◆ Numerous auger holes have been uncovered along the elevation of the former access road between Pile A and Pile D. These auger holes were not accessible or visible prior to the start of construction.
- ◆ A significant portion of Pile C has been regraded. The lower portion of Pile C has been regraded and soil covered. Some drainage ditches have been constructed; however, their integrity is suspect. Some of the grouted riprap channels will require repair, while others will require removal and replacement. Other ditches have yet to be constructed and/or completed. WVDEP believes that the upper

benches are not graded to the correct elevations per POTESTA's grading plan. Much ditch construction remains to be completed. The upper portion of the refuse pile is not soil covered.

- ◆ Pile D has not been reclaimed. It appears that exposed coal refuse remains and is burning. The Contractor reportedly caught the refuse on fire while burning clearing debris. No drainage structures have been constructed at Pile D. Pile D is very steep.
- ◆ The valley fill below Pile D is partially constructed. Ditches have been constructed along the bottom bench and toe area. These ditches are not acceptable and must be removed and replaced. The upper portion of the fill is not complete. The majority of drainage structures have not been constructed.
- ◆ Extensive erosion from the work areas adjacent to Hazy Creek (Piles A, B, and D) has resulted in undesirable material in and around Hazy Creek. In some cases, this undesirable material has constricted and restricted the flow of Hazy Creek. This material must be removed prior to reclamation construction.
- ◆ Various structures have been removed and dismantled.
- ◆ Some mine seals are complete. However, some of the portals have not been worked on and others only require a few additional items to complete them (i.e., bat gate, animal guards, additional backfill, etc.).

## 2.0 REFERENCE SPECIFICATIONS/DEFINITIONS

All references to "Owner" in these Specifications shall mean West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation (WVDEP).

All reference to "Engineer" in these Specifications shall mean the Owner's Engineer or authorized representative.

All reference to "ASTM" shall mean the American Society of Testing and Material Specifications, Latest Edition unless otherwise noted.

All reference to "AASHTO Specifications" shall mean the Standard Specifications for Transportation Materials and Methods of Sampling and Testing by the American Association of State Highway and Transportation Officials, latest edition, and all subsequent addenda thereto.

All reference to "WVDOH Standard Specifications" shall mean State of West Virginia Department of Transportation, Division of Highways Standard Specifications for Roads and Bridges, adopted 2010, and all subsequent addenda thereto.

All references to the "Contractor" shall be understood to mean the successful bidder and or firm or corporation undertaking the execution of the work under the terms of these Specifications.

All reference to "OSHA" shall be understood to mean The Occupational Safety and Health Administration and the standards set in the Occupational Safety and Health Act of 1970.

All reference to "refuse" and/or "mine spoil" shall be understood to mean all coal refuse, shale, sandstone and other rock fragments that were generated and disposed of as such within the project area during mining and processing of coal.

All reference to "AMD" shall be understood to mean all acid mine drainage discharges from the project site.

### **3.0 SCOPE OF WORK**

The work covered by the Special Provisions and Technical Specifications consists of furnishing all labor, plant, power, equipment and supplies, and performing all operations necessary for the completion of the project. The Contractor shall perform all operations necessary for:

- ◆ Clearing and grubbing at each site, and removal of debris, trash, and garbage.
- ◆ Relocating a stream.
- ◆ Regrading of coal refuse areas to flatter slopes.
- ◆ Installing drainage control on and around regraded coal refuse areas and other features.
- ◆ Dismantling and removing structures from the site, razing and/or burying foundations and other features, and removal of cables, coal cars, etc. from the site for proper disposal.
- ◆ Constructing support areas and access roads to the sites, and relocating other access roads.
- ◆ Installing mine seals, ditches (channels), underdrains, and pipe.
- ◆ Installing sediment control.
- ◆ Placing soil cover on the regraded areas.

- ◆ Placing of lime, fertilizer, seed and mulch and establishing vegetation on all areas regraded and disturbed during construction.
- ◆ Completing final site clean-up.

The Contractor also shall be responsible for surveying, including establishing construction baseline, measuring and developing all completed quantities on the job, and for ordering, purchase and delivery of any and all materials required for construction or required for development of support areas. The Contractor shall perform all other operations as incidental to the project as specified herein.

#### **4.0 BIDDERS TO EXAMINE LOCATION**

Prospective bidders are required to examine the locations of the proposed work and to determine, each in their own way, the difficulties which may be encountered in the prosecution of the same. The submission of a bid shall be prima facie evidence that such examination and determination have been made by the Bidder. No claims for additional compensation will be considered by the Owner based on obstruction or conditions at the location of the work, which may add to the difficulties or costs of construction, even though such obstructions or conditions are not shown on the contract plans or indicated in the other construction documents. Prospective bidders are advised that should they deem it necessary to obtain any subsurface samples of test borings etc., at the site, they should obtain their own permission from the landowners.

#### **5.0 SCHEDULE OF WORK**

Before commencing work on this project, the Contractor shall prepare and submit a schedule of construction activities for approval by the Owner.

The Contractor shall provide adequate supervision, labor, tools, equipment, and materials to prosecute the work energetically and complete the work within the time specified.

It is the intention not to delay the work for the checking of lines or grades, but if necessary, working operations shall be suspended for such reasonable time as the Engineer may require for the purpose. No special compensation shall be paid for the cost to the Contractor for any of the work or delay occasioned by checking lines and grades, by making other necessary measurements, or by inspection.

Work hours shall be between 7 AM and 7 PM, Monday through Saturday. Sundays and major holidays are excluded from work.

## 6.0 MEASUREMENT OF QUANTITIES

The Contractor shall be responsible for providing all necessary volumetric, dimension, and weight measurement equipment necessary to prosecute the work as shown on the Construction Drawings and to accurately determine quantities for payment of Contract Bid Items as approved by the Engineer. Such measurements and equipment shall be subject to the approval of the Engineer for use in this project.

## 7.0 BORROW (DISPOSAL) AREAS

All borrow (disposal) areas must be approved by WVDEP.

Should the Contractor decide to obtain and utilize any borrow areas outside of construction limits, the Contractor shall be responsible to obtain from the property owner(s) of the borrow areas, all necessary rights of entry, including rights of entry for WVDEP and OSMRE for inspection purposes. The said rights of entry agreement must state that the property owner(s) indemnify and hold harmless the WVDEP for Contractor's action for any injury or damages whatsoever resulting from the use of the property. The Contractor shall also be responsible for obtaining similar rights of entry agreements and the property owner(s) indemnification of the WVDEP for inside the construction limits if using borrow areas either designated or undesignated in the plans and material is moved from one property owner to another.

The Contractor also shall submit a borrow area reclamation plan for prior approval by WVDEP. The Contractor shall observe the following NEPA compliance schedule relative to selecting and utilizing any off site borrow areas and or any waste disposal areas.

1. No borrow (disposal) site operations will affect a site listed in, eligible or proposed to be listed in the National Register of Historic Places.
2. No borrow (disposal) operations will be located within one-quarter mile of any federally listed established or prospective component of the National Wild and Scenic River System under 16 USC 1274 and 1276.
3. Borrow (disposal) site operations will not cause a significant encroachment within the base floodplain (CE.O. 11988: Floodplain Management).
4. Borrow (disposal) site operations will not be located in or affect a critical habitat of a federally listed endangered or threatened species under 16 USC 1531, et. seq.
5. No borrow (disposal) operations will occur in wetland areas which are designated by appropriate agencies.
6. Borrow (disposal) site operations will be consistent with any approved plans governing ambient air quality.



7. Adherence to these mitigation measures does not relieve the Contractor of the obligation or responsibility to obtain any other federal, state, or local approvals required to use borrow (disposal) areas and conduct such activities.
8. Documentation: Copies of borrow (disposal) site approvals and concurrences will be submitted to the WVDEP prior to the commencement of reclamation activities.
9. Site Monitoring: Borrow (disposal) activities will be monitored by the state to ensure compliance with contractual requirements, applicable federal, state, and local laws, and any permit conditions.

## **8.0 DISPOSAL OF UNSUITABLE MATERIAL**

All waste areas shall be obtained in accordance with Special Provisions Section 7.0 of these Specifications.

All unsuitable materials (wood, trash, debris, and garbage) as determined by the Engineer shall be wasted by the Contractor, at his/her expense, outside the limits of work conforming to the requirements of Technical Specifications Section 4.2.9 of these Specifications. Wood may be burned in conformity with Technical Specifications Section 4.2.8 of these Specifications.

The Contractor shall observe the NEPA compliance schedule relative to selecting and utilizing any off-site disposal areas in accordance with Special Provisions Section 7.0 of these Specifications.

## **9.0 INTERPRETATION OF APPROXIMATE ESTIMATE OF QUANTITIES**

The estimate of quantities of work to be done and/or materials to be furnished under the Special Provisions and Technical Specifications, as shown on the Contract Bid Schedule, is approximate and is given only as a basis of calculation upon which the award of the Contract is to be made. WVDEP reserves the right to increase or decrease any or all of the quantities of work or to omit any of them, as it may deem necessary.

## **10.0 SAFETY**

All regulations of the Occupational Safety and Health Act of 1970 (OSHA) are in effect for this Contract. WVDEP shall not be liable for any citations received by the Contractor as a result of failure to comply with applicable OSHA standards. Compensation is to be included in the various items of the Contract for the expense involved in complying with these standards. In addition, the Contractor shall comply with Section 107.7 of the WVDOH Standard Specifications regarding public convenience and safety.

## **11.0 REGULATIONS**

All appropriate Township, County, State, and Federal Regulations shall apply to this Contract. It shall be the Contractor's sole responsibility to be aware of these regulations and to comply with them. WVDEP shall not be liable for any citations received by the Contractor. The Contractor shall keep the existing roads open and safe to public vehicular traffic at all times and shall provide appropriate barriers and warning devices as directed by the Engineer.

## **12.0 LAWS TO BE OBSERVED**

The Contractor shall at all times, observe, comply with, and post as required all federal, state, and local laws, ordinances, and regulations in any manner affecting the conduct of the work or applying to employees on the project as well as all orders or decrees which have been or may be promulgated or enacted by any legal bodies or tribunals having authority or jurisdiction over the work, materials, employees, or Contract. The Contractor shall protect and indemnify WVDEP and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree whether by the Contractor or by the Contractor's employees.

## **13.0 PERMITS, LICENSES AND FEES**

The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. Permits required for this project may include, but not be limited to, Section 404 permit from United States Army Corps of Engineers, Water Quality Certification and construction NPDES permit (if required) from the West Virginia Department of Environmental Protection, PLC permit from the West Virginia Public Lands Corporation, and burning permit from WVDNR. A copy of the permits as procured shall be furnished to the Owner prior to initiation of the work under this Contract.

PLEASE NOTE: As of this writing, a Regional Army Corps permit and a NPDES permit are in effect. If the permits were to expire, the Contractor shall be responsible to procure the needed permits.

## **14.0 UTILITIES AND OTHER OBSTRUCTIONS**

The Contractor shall be solely responsible to correctly locate all existing active underground and overhead utilities at the project sites and take precautions to avoid damage to them. Any existing utility lines damaged by the Contractor shall be replaced by the Contractor or repaired at no cost to the Owner. The Contractor shall notify the utility companies likely to be affected and Miss Utility of West Virginia (Miss Utility) well in advance and before beginning any work within the

project sites. In the event of damage to the existing utilities or other facilities, the Contractor shall notify the affected utility Owner(s) and the Engineer immediately and make, or have made, all necessary repairs and bear the expense thereof and resulting damaged caused thereby. It shall be the responsibility of the Contractor to arrange for relocating the utility lines, where required and as directed by the Engineer, in accordance with the guidelines set forth by the utility company, prior to beginning construction. The Contractor will be reimbursed for actual charges invoiced by the Utility Company. The utility companies (and Miss Utility) must be contacted by the Contractor at least one week prior to commencement of construction activities for the purpose of field locating and marking utility owned facilities within the project area. The name, address, and telephone number of Miss Utility and of the known utility companies providing service in the area are as follows:

**Miss Utility:** Miss Utility of West Virginia  
Phone: (800) 245-4848

## **15.0 SITE CLEANUP**

Before the project shall be considered as having been satisfactorily completed, the Contractor shall clean and remove, from the project site, all surplus and discarded materials, and equipment and shall further remove all debris and objectionable materials of any kind from areas used or disturbed by the construction operations within or within sight of the project area.

## **16.0 TRAFFIC CONTROL**

The Contractor shall maintain and protect traffic, protect the work in progress, protect adjacent property from excess dust resulting from the construction and maintain traffic through, around, or adjacent to the construction area. All materials used for traffic control shall be in accordance with the current WVDOH manual: "Traffic Control for Streets and Highway Construction and Maintenance Operations." A copy of the operational plan accepted by the WVDOT shall be submitted to the WVDEP for approval prior to its implementation. All traffic control required during the work shall be considered incidental to the project.

## **II. TECHNICAL SPECIFICATIONS**

### **1.0 MOBILIZATION AND DEMOBILIZATION**

#### **1.1 Description**

This work shall consist of the performance of construction preparatory operations, including the movement of personnel and equipment to the project sites and for the establishment of the Contractor's offices, buildings and other facilities including the construction of all temporary access roads as necessary to begin work on a substantial phase of the contract. The location of Contractor's office to be established shall be approved by WVDEP. It also shall include all demobilization activities involving the removal from the sites of all plant, equipment, supplies and personnel after completion of the work including cleanup of all rubbish and waste materials generated during the construction of this project; restoration of any damage to existing site improvements resulting from the Contractor's activities at the site; and installation of the project sign.

There are no equipment and material storage areas identified on the plans. It shall be the Contractor's responsibility to obtain approval for equipment and material storage areas located within the Construction Limits from the WVDEP and from the landowner for storage areas located outside of the Construction Limits.

#### **1.2 Method of Measurement**

The bid for mobilization and demobilization shall be a lump sum and cannot be more than 10 percent of the "TOTAL AMOUNT BID" for the project. Partial payments will be as follows:

1. One-half of the amount bid will be released to the Contractor with the first estimate payable, not less than 15 days after the start of work at the project site.
2. The final one-half of the amount bid shall be released with the estimate payable after the work is accepted by the WVDEP (final inspection) and receipt of the "as-built" plans by WVDEP.

Nothing herein shall be construed to limit or preclude partial payments otherwise provided for by the Contract. No deduction will be made nor will any increase be made, in the lump sum mobilization and demobilization item amount regardless of decreases or increases in the final total contract amount or for any other cause.

#### **1.3 Pay Item**

Item 1.0, "Mobilization and Demobilization" per lump sum. Cannot be more than 10 percent of the TOTAL AMOUNT BID for the project.

## **2.0 CONSTRUCTION LAYOUT STAKES**

### **2.1 Description**

This item consists of furnishing, placing, and maintaining construction layout stakes necessary for the proper performance of the work under this contract including borrow areas. It shall further consist of determining the exact units of measure for payment. It also consists of checking and making any field adjustment to the plan alignment, grades and elevations as considered necessary by the Engineer. Additionally, this item shall also include the preparation of "As-Built" Plans including the Reclamation Plan and any others specifically requested by the WVDEP. All of these "As-Built" Plans shall be provided prior to the Final Inspection Meeting. Upon receipt and approval of the "As-Built" Plans by WVDEP, the final one-half of the amount bid for "Mobilization and Demobilization" under Section 1 shall be released with the estimate payable.

### **2.2 Materials**

Conventional survey stakes, hubs, batter boards, flagging, templates, straight edges and other devices necessary for laying out all parts of the work.

### **2.3 Construction Methods**

**2.3.1** The Contractor shall be responsible for the proper layout of the work. The Owner will provide the Contractor with survey information regarding the baselines and the existing surface features shown on the Construction Drawings. The Contractor shall make all calculations involved and shall furnish and place all layout stakes.

**2.3.2** The Contractor shall provide field forces and shall set all additional stakes as needed, such as offset stakes, reference point stakes, slope stakes, grade stakes, stakes for drainage, or other structures, supplementary bench marks, and any other horizontal or vertical controls necessary to secure a correct layout of the work including the re-establishment of the survey and construction baselines (as necessary), as shown on the Construction Drawings. The Contractor shall also perform any necessary cross-section surveying of the existing ground surface at the intervals shown on the Construction Drawings (i.e., on 50-foot intervals), provide an overlay of the surveyed cross sections on the cross sections shown on the Construction Drawings, and submit the same to the Engineer for comparison prior to initiating earthwork. Incomplete cross sections will be returned to the Contractor for necessary additions. Cross sections, which do not encompass all areas of both earthwork excavation (including borrow excavation) and fill placement shall be considered incomplete without exception. The Contractor shall also include the locations of baselines used showing cross-section locations on a copy of the reclamation plan when submitting cross sections.

**2.3.3** The Contractor shall be responsible for assuring the layout staking work is in conformance to the lines, grades, elevations, dimensions, and locations shown on the



Construction Drawings or as required by the Engineer. The Contractor shall furnish a copy of his/her survey records for checking by the Engineer and for the Owner's permanent file. These records shall be furnished as they are completed during the progress of the work.

Any inspection or checking of the Contractor's layout by the Engineer and the acceptance of all or any part of it shall not relieve the Contractor of his/her responsibility to secure the proper dimensions, grades, and elevations of the several parts of the work.

- 2.3.4** The Contractor shall exercise care in the preservation of stakes and benchmarks, including existing property line markers, and shall have them reset at his/her expense when any are damaged, lost, displaced or removed. The Contractor shall use competent personnel and suitable equipment for the layout work required and shall provide that it be done under the supervision of, or directed by, a Registered Professional Civil Engineer or Licensed Land Surveyor registered in the State of West Virginia.

## **2.4 Method of Measurement**

Measurement and payment for furnishing, setting, maintaining, and resetting the stakes when necessary, and for furnishing all engineering personnel, equipment, materials, and all incidentals thereto, shall be by the lump sum bid for "Construction Layout Stakes". The lump sum payment also shall include the cost for providing the Engineer pre-and post-construction ground line cross sections for all disturbed or regraded areas including borrow areas and "As-Built" Plans as described herein. Said lump sum bid cannot be more than 5 percent of the "TOTAL AMOUNT BID" for the project. No deduction will be made, nor will any increase be made, in the lump sum "Construction Layout Stakes" item amount regardless of decreases or increases in the final total contract amount or for any other cause.

## **2.5 Pay Item**

Item 2.0, "Construction Layout Stakes," per lump sum. Cannot be more than 5 percent of the "TOTAL AMOUNT BID" for the project.

## **3.0 QUALITY CONTROL**

### **3.1 Description**

This work shall consist of testing for verification that the materials supplied and the work performed are in accordance with these plans and specifications.

### **3.2 Materials**

- 3.2.1** The Contractor shall submit a minimum of two copies of shop drawings, catalog cuts and material certifications (as applicable) to the Engineer of all off-site materials to be

incorporated into the work. Written approval from the Engineer will be required prior to incorporation of these items into the work.

- 3.2.2** The Contractor shall submit at least two copies of the results of all tests conducted on in-situ material, concrete and grout to be used in this project. As a minimum, these tests will include moisture content and density tests of the soil in accordance with the provisions of ASTM D698 (Standard Proctor), field density tests following compaction, soil tests to determine the lime and nutrient requirements of the areas to be revegetated, compressive strength test for grout in accordance with ASTM C109, and for concrete in accordance with ASTM C31 & C39.

### **3.3 Construction Methods**

- 3.3.1** The Contractor shall furnish the services of his own testing laboratory or select an independent testing laboratory, as long as the laboratory is under the direct supervision of a Registered Professional Civil Engineer. The laboratory must be approved by the Owner.
- 3.3.2** Testing for compaction, soil nutrient and lime requirements for soil; compressive strength tests for concrete and grout; shall be performed as required by these specifications and/or ordered by the Engineer in writing. The Engineer will determine the locations and time of any testing herein specified and the need and extent of any testing in addition to that which is herein specified.
- 3.3.3** The Contractor shall be responsible for performing laboratory tests of the coal refuse, mine spoil, and any natural soil to identify the compaction requirements for their use as fill and cover material, respectively. In addition, field density tests shall be performed in accordance with the Construction Specifications. All test results shall be submitted to the Engineer for approval of compaction criteria prior to compacting the fill and after fill compaction to verify that the required compaction is obtained.
- 3.3.4** Only new and first class materials, which conform to the requirements of these Specifications, shall be used unless specified otherwise. When requested by the Owner, the Contractor shall furnish a written statement of the origin, composition, and manufacturer of any or all materials (manufactured or produced) that are to be used in the work. The sources of supply of each material used shall be approved by the Engineer before delivery is started. If, at any time, sources previously approved fail to produce materials acceptable to the Owner, the Contractor shall furnish materials from other approved sources.
- 3.3.5** Failure to perform and submit required tests to the WVDEP will result in non-payment of those items requiring tests.

### **3.4 Method of Measurement**

The method of measurement for determining the quantity of quality control work done as described above will be on a lump sum basis.

### **3.5 Basis of Payment**

The quantity of quality control work done will be paid at the contract lump sum price bid for this item. Said lump sum bid cannot be more than 3 percent of the TOTAL AMOUNT BID for the project. No deduction will be made nor will any increase be made in the lump sum "Quality Control" item amount regardless of decreases or increases in the final total contract amount or for any other cause.

### **3.6 Pay Item**

Item 3.0, "Quality Control," per lump sum cannot be more than 3 percent of the TOTAL AMOUNT BID for the project.

## **4.0 SITE PREPARATION**

### **4.1 Description**

Work performed under this section shall include the removal and disposal of all trees, stumps, shrubs and any other vegetation, wood, debris, garbage of any nature from those areas specified below and/or shown on the Drawings and/or any other areas as approved by WVDEP.

This work shall also include the preservation from injury to all vegetation, utilities or other objects to remain.

### **4.2 Construction Methods**

- 4.2.1** The specific areas to be cleared and grubbed are as shown on the Contract Drawings and are generally described as, but not limited to, those specific areas of excavation, backfill, soil borrow or drainage structure installation.
- 4.2.2** The Contractor shall clear the site within the limits of the areas to be regraded. The WVDEP shall exercise control over clearing and shall designate all trees, plants and other objects to be removed or to remain.
- 4.2.3** Clearing and grubbing shall be completed prior to initiation of earthwork operations only to the extent necessary to complete the work. The Contractor shall confine his operations strictly to required areas. If Contractor clears and grubs beyond the required areas, whether knowingly or accidentally, Contractor shall, at Contractor's expense, replant and

otherwise restore all areas outside the limit lines to a condition equal to that existing prior to start of work.

- 4.2.4** Existing site access roads shall provide safe, all-weather access to the site. These existing roads, including stoned and paved roads, shall be maintained during construction and left in a better than or equal to condition.

The Contractor is responsible for locating and avoiding all underground and overhead utilities and constructions during access road grading and maintenance.

- 4.2.5** All timber 8 inches in diameter and larger at stump height shall be saw cut prior to grubbing operations. Timber shall be topped with the branches removed and stacked and stockpiled in an appropriate manner in an accessible location approved by the WVDEP on the property from which it was cut. Timber to be stockpiled shall not be pushed down by equipment prior to being cut nor can it be indiscriminately shoved into a stockpile.
- 4.2.6** All stumps, roots, buried logs and brush shall be removed. Grass, however, may be incorporated into the resoiling material. Taproots and other projections over 1½ inches in diameter shall be grubbed out to a depth of at least 10 inches below the planned subgrade or slope elevation. All holes remaining after the grubbing operation shall have the sides broken down to flatten out the slopes, and shall be filled with suitable materials, moistened and properly compacted.
- 4.2.7** Cleared and grubbed areas shall be worked such that positive drainage is provided to prevent ponding of water except for the purpose of sediment control sumps as approved by the WVDEP.
- 4.2.8** All organic material shall be burned completely to ash on site or otherwise removed from the site and disposed of in a manner approved by the WVDEP. Burning of the combustible material will not be permitted on or near coal refuse, mine portals or within close proximity to coal seams or utilities. The Contractor shall obtain all permits and licenses required prior to burning the material. A plan showing the location of material to be burned and all fire control measures to be implemented, including copies of permits and licenses, shall be submitted to the WVDEP's representative at the site for approval.
- 4.2.9** All other materials generated from required clearing and grubbing operations shall be removed and disposed of by the Contractor. All garbage, construction debris, mining debris, etc., shall be disposed of in approved waste areas or landfills. It shall be the responsibility of the Contractor to obtain, at no expense to the WVDEP, all necessary waste and borrow areas or landfills for the disposal of waste materials in accordance with any applicable local, state, and/or federal regulations including compliance with NEPA requirements (See Special Provisions Section 7.0 for NEPA compliance schedule). All waste and borrow areas must be approved by the WVDEP, and the Contractor must provide a reclamation plan for approval. In addition, for all waste and borrow areas outside the construction limits, the Contractor must obtain from the property owner a

right-of-entry agreement in which the property owner indemnifies and holds the WVDEP harmless from any injury or damages whatsoever resulting from the use of property.

**4.2.10** It shall be the sole responsibility of the Contractor to correctly locate and avoid all underground, on-ground, and overhead utilities, facilities and other structures and constructions, and for that purpose, shall employ all necessary precautions and methods to insure avoidance of and damage to such constructions. In the event damage does occur, the Contractor shall notify the affected Owner and the WVDEP immediately and make or have made all necessary repairs and bear the expense thereof and resulting damage caused thereby. See Special Provisions Section 14.0, "Utilities and Other Obstructions," of these specifications for more information on utilities.

**4.2.11** Any existing fence lines encountered during "Site Preparation" or "Construction" shall be removed, repaired or replaced to an "as good as" or "better than" condition and shall be the sole responsibility of the Contractor. In situations where fencing is used to control or contain cattle and livestock, the Contractor shall also be responsible for any temporary fencing required to assure the safety and containment of the livestock.

#### **4.3 Method of Measurement**

This item shall be paid at the bid lump sum price. The amount shall not exceed 10 percent of the "TOTAL AMOUNT BID" for each bid. Payment shall be full compensation for doing all the work herein prescribed in a workmanlike and acceptable manner, including the furnishing of all labor, materials, tools, equipment, supplies, and incidental necessary to complete the work.

No deduction will be made, nor will any increase be made, in the lump sum clearing and grubbing amount regardless of decreases or increases in the final total contract amount or for any other cause.

#### **4.4 Pay Item**

Item 4.0, "Site Preparation," per lump sum. Cannot be more than 10 percent of the "TOTAL AMOUNT BID" for the project.

### **5.0 SEDIMENT CONTROL**

#### **5.1 Description**

This item shall consist of furnishing all materials, equipment, labor and incidentals necessary for the installation of straw bale sediment control structures as designated in the Drawings. Sediment control shall be placed on regraded outslope areas concurrent with construction and prior to revegetation. Additional quantities may be added at the discretion of the WVDEP.

The Contractor shall submit an erosion and sediment control plan to the WVDEP at the pre-construction meeting. This plan shall include measures to be utilized for temporary and permanent erosion and sediment control. This plan shall also include the measures as outlined herein. Submitting this plan does not relieve the Contractor of his responsibility to be in compliance with any and all permits.

## **5.2 Materials**

### **5.2.1 Straw Bales**

The bales shall be standard size square bales consisting of hay or straw bound with a natural fiber or nylon twine. The bales shall meet all applicable requirements of Section 715.27.1 of the West Virginia Division of Highways Standard Specifications for Roads and Bridges, adopted 2010 pertaining to ingredients. Each bale shall weigh minimum of 50 pounds.

### **5.2.2 Stakes**

The stakes shall consist of 2-inch by 2-inch wooden stakes, 36 inches in length (or longer if noted on the Drawings) made from suitable hardwoods. Other methods of anchoring may be used if specifically approved by the WVDEP.

### **5.2.3 Silt Fence**

Silt fencing may be substituted for straw bale sediment control only with the specific approval of the WVDEP. In general, even with the specific prior approval of the WVDEP, the use of silt fence shall be limited to relatively flat areas and the toe of selected slopes. (Straw bales shall be used on slopes.) Materials and installation shall meet all applicable requirements of Section 642.6 of the West Virginia Division of Highways Standard Specifications for Road and Bridges, adopted 2010.

### **5.2.4 Stone Check Dam**

Stone for stone check dams shall meet the requirements of Technical Specifications Section 7.2.2 "Stone."

## **5.3 Maintenance**

During the course of the project, sediment control (i.e., silt barriers) structures shall be maintained in sound condition and accumulations of silt which may threaten their effectiveness shall be removed. Silt removed from the sediment control structures shall be taken to an approved disposal area.



## 5.4 Installation

Silt barriers shall be installed where shown on the Drawings and where directed by the Engineer. The straw bales utilized shall be installed end to end along the contour at the locations shown on the Drawings or as approved by WVDEP. Bales shall be anchored utilizing two stakes per bale. The first stake in each bale shall be angled toward the previously anchored bale and the second stake shall be driven vertically. The stakes shall penetrate a minimum of 18 inches into the ground. Silt fence shall be installed per the detail on the Drawings. Rock check dams shall be installed in accordance with the detail on the Drawings, at locations directed by the Engineer.

## 5.5 Method of Measurement

- 5.5.1 The method of measurement for silt barrier installation and maintenance in conformance with the specifications and accepted by the WVDEP shall be on a per linear foot basis to include bales, stakes, silt fence (if used), all necessary materials, supplies, labor and equipment for installation and maintenance including sediment removal and disposal.
- 5.5.2 The method of measurement for stone check dam installation and maintenance shall be on a per each basis, and shall include all necessary materials, supplies, labor and equipment for installation and maintenance, including sediment removal and disposal.
- 5.5.3 Any additional sediment control (i.e., sumps, etc.) installed by the Contractor to meet any applicable state or federal law or regulation shall be the Contractor's sole responsibility and all costs pursuant thereto shall be born fully by the Contractor. However, any additional sediment control approved by the WVDEP prior to placement shall be included for measurement.

## 5.6 Pay Item

Item 5.1, "Silt Barriers," per linear foot.

Item 5.2, "Stone Check Dam," per each.

## 6.0 REVEGETATION

### 6.1 Description

This work shall cover all operations incidental to the establishment of vegetation within the limits of construction as shown on the Drawings and any other areas as approved by the WVDEP. This work also includes the furnishing and the application of fertilizer, agricultural limestone and mulch and the furnishing and sowing of seed, all in accordance with these Specifications and as designated herein.

No areas outside the limits of construction shall be disturbed without prior approval from the WVDEP in order to ensure that right-of-entry has been obtained.

Any areas outside the limits of construction, disturbed by the Contractor shall be revegetated by the Contractor at no expense to the WYDEP.

## **6.2 Materials**

### **6.2.1 Fertilizer**

The commercial fertilizer to be used shall consist of 10-20-10 grade of uniform composition and furnished in standard containers. These containers, in accordance with applicable state and federal laws, must be clearly marked with the following information:

1. Weight
2. Name of Plant Nutrients
3. Guaranteed Nutrients Percentages

Fertilizer shall be applied at a minimum rate of 1,000 lbs/acre. Fertilizer shall be applied immediately to all areas reaching final grade beyond of the two following methods:

1. Apply and incorporate fertilizer during seedbed preparation.
2. Apply fertilizer in hydro seeding mixture following seedbed preparation.

### **6.2.2 Limestone**

The lime to be used will be an agricultural grade pulverized limestone containing a minimum of 10 percent  $MgCO_3$  and not less than 75 percent total carbonates. Fineness will be such that no less than 75 percent will pass through a #100 sieve and 100 percent will pass through a #10 sieve.

Lime rate shall be formulated from soil test results. In the absence of soil testing, a rate of 3 tons per acre will serve as a preferred minimum.

Lime shall be applied immediately to all areas requiring seeding reaching final grade by one of the two methods listed in Technical Specifications Section 6.2.1, "Fertilizer."

### **6.2.3 Seed Mixtures**

The variety of grass and legume seed furnished for the project shall bear a tag, in accordance with applicable state and federal laws, with the following information listed:

1. Lot Number
2. Seed Producers Name
3. Percent Purity
4. Percent Germination

5. Date of Germination Testing
6. Weed Seed Content (should be <0.25% by weight)

All leguminous seed shall be inoculated with the specified strain of rhizobia which shall be a pure culture of bacteria selected for maximum vitality. No rhizobia shall be used which has passed the expiration date on each package. The inoculant shall be applied at five times the recommended rate except when used in a hydroseeding mixture when the rate will be ten times the recommended rate.

### 6.2.3.1 Temporary Seed Mixtures

All stockpiles and other disturbed areas which will require further disturbance in which the additional disturbance will be delayed for a period of three weeks or longer shall be vegetated according to the following guidelines:

Variety of Seed	Spring (3/15 – 5/31)	Summer (5/31 – 8/15)	Fall (8/15 – 10/15)	Winter (10/15 – 11/15)
Annual Ryegrass (Lolium Multiflorum)	20 lbs/ac		20 lbs/ac	
German Millet* (Setaria Italica)		50 lbs/ac		
Cereal Rye (Secale Cereale)				90 lbs/ac

\* *Do Not Use Japanese Millet.*

All areas to be temporarily seeded which are to be redisturbed shall be fertilized with 500 lbs/acre of 10-20-20. All areas reaching final grade to be temporarily seeded shall be fertilized according to Technical Specifications Section 6.2.1. Lime shall be applied according to Technical Specifications Section 6.2.2 and mulch according to Technical Specifications Section 6.2.4.

### 6.2.3.2 Permanent Seed Mixtures

Permanent vegetation shall be established on all areas reaching final grade or other areas not likely to be disturbed by further construction activities. Any areas which reach final grade between May 31 and August 15 or October 15 and November 15 shall be seeded with the appropriate temporary seed mixture according to Technical Specifications Section 6.2.3.1. The areas shall then be reseeded with a permanent seed mixture, without Annual Ryegrass, during the next defined seeding period according to this section. The actual date of permanent seeding will require the WVDEP's approval.

### Lawn Mixture

Rate (lb/1000 sq ft)	Seed Variety	Minimum Specification	
		% Purity	% Total Germination
0.45	Red Fescue (Pennlawn)	98	85
0.90	Kentucky Bluegrass	85	75
0.70	Alpha Bluegrass	90	75
0.20	Annual Ryegrass*	95	85

\* Use Annual Ryegrass only in mixture seeded after August 1 and before May 15.

### General Mixture

Variety of Seed	Spring (3/15 – 5/15)	Fall (8/15 – 10/15)
Orchard Grass (Dactylis Glomerata)	15 lbs/ac	15 lbs/ac
Birdsfoot Trefoil (2) (Lotus Corniculatus)	15 lbs/ac	15 lbs/ac
Red Clover (Trifolium Pretense)	10 lbs/ac	10 lbs/ac
Annual Ryegrass (Lolium Multiflorum)	15 lbs/ac	15 lbs/ac
Black Locust (Robina Pseudoacacia)	5 lbs/ac	5 lbs/ac
Foxtail Millet or Hairy Vetch (3) (Vicia Villosa) or Winter Wheat	12 lbs/ac  5 lbs/ac  20 lbs/ac	12 lbs/ac  5 lbs/ac  20 lbs/ac

1. Seed-rate suggested is for Pure Live Seed (PLS) in lbs/ac.
2. Herbaceous Legumes must be treated with the appropriate bacterium before seeding. On areas which are steeply sloping (steeper than 1.7:1) or slide prone, substitute Crownvetch (Coronilla Variea) at 20 lbs/ac for Birdsfoot Trefoil.
3. Used only if the area is shaded.

#### **6.2.4 Mulch Material**

Mulching procedures shall take place immediately following seeding. Mulch material shall consist of erosion control matting, straw, or wood cellulose fiber.

#### **6.2.4.1 Straw**

Straw mulch shall include baled wheat or oats straw or baled grass hay. Straw mulch shall be dry and reasonably free of weed, seeds, sticks or other foreign material. Straw mulch shall be applied at a rate of 2 tons/acre. The straw mulch shall be anchored with 100 gallons/acre asphalt emulsion or 750 lbs/acre wood cellulose fiber.

#### **6.2.4.2 Wood Cellulose Fiber**

Wood cellulose fiber shall be used only on slopes steeper than 2H:1V at a rate of 1,500 lbs/acre. A mulch for use with the hydraulic application of seed, fertilizer and lime shall consist of wood cellulose fiber. It shall be processed in such a manner that it will contain no growth or germination inhibiting factors and shall be dyed green. It shall be manufactured in such a manner the (1) after addition and agitation in slurry tanks with fertilizers, lime seeds, and water, the fibers in the material will become uniformly suspended to form a homogeneous slurry and (2) the material, when hydraulically sprayed on the ground, will form a blotter-like ground cover impregnated uniformly with seed, will allow rainfall to percolate to the underlying soil.

The wood cellulose fiber shall be supplied in packages having a gross weight not to exceed 100 pounds. Weight specifications of this material from suppliers, and for all applications, shall refer only to air dry weight of the fiber material. Air dry weight is based on the normal weight standard of the Technical Association of the Pulp and Paper Industry for Wood Cellulose and is considered equivalent to 10 percent moisture. Each package of the cellulose fiber shall be marked by the manufacturer to show the air dry weight content.

#### **6.2.4.3 Water**

Water shall be reasonably free of injurious and other toxic substances harmful to plant life. The source of water is subject to the approval of the WVDEP.

### **6.2.5 Erosion Control Matting**

#### **6.2.5.1 Channel Lining/Diversion Berm**

Erosion control matting for channel lining and the diversion berm shall be a machine-produced mat of 100 percent coconut fiber with a typical functional longevity of approximately 36 months. The erosion control matting shall be of consistent thickness with the coconut fiber evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom with heavyweight polypropylene netting having ultraviolet additives to delay breakdown and approximate 0.625 x 0.625 inch (1.59 x 1.59 cm) mesh size. The erosion control matting shall be sewn together on 1.50 inch (3.81 cm) centers (50 stitches per roll width) with UV stable polypropylene thread. The

erosion control blanket/channel lining shall be the C125 as manufactured by North American Green, or Engineer approved equal.

#### **6.2.5.2 Regraded Slopes**

Erosion control matting to be installed on regraded slopes shall be a machine-produced mat of 100 percent coconut fiber matrix incorporated into a permanent three-dimensional netting structure. The matrix shall be stitch bonded between a heavy duty UV stabilized bottom net with 0.50 x 0.50 inch (1.27 x 1.27 cm) openings, a heavy duty UV stabilized, dramatically corrugated (crimped) intermediate netting with 0.50 x 0.50 inch (1.27 x 1.27 cm) openings, and a super heavy duty UV stabilized top net with 0.50 x 0.50 inch (1.27 x 1.27 cm) openings. The corrugated netting shall form prominent closely spaced ridges across the entire width of the mat. The three nettings shall be stitched together on 1.50 inch (3.81 cm) centers with UV stabilized polypropylene thread to form a permanent three-dimensional structure. The erosion control matting shall be C350 as manufactured by the North American Green, or Engineer approved equal.

### **6.3 Construction Methods**

- 6.3.1** Erosion control matting shall be installed at the locations noted on the Drawings, or where directed by the Engineer. Erosion control matting installation shall be in accordance with manufacturer's instructions, including overlaps, staking patterns, staple patterns, check slots, and roll terminations.

There shall be no payment for erosion control matting installed outside the limits of the Drawings, unless otherwise directed or approved by the Engineer. In addition, erosion control matting associated with channel construction is included in the unit price bid for the channel.

- 6.3.2** All revegetation activities shall be conducted immediately following completion of final grading so as to utilize the fine soil material as a seedbed before this material is lost via subsequent rainfall.
- 6.3.3** On sites where appropriate equipment can operate the seedbed shall be prepared by breaking up surface crusts and loosening the soil material to a minimum of 3 inches. Disking, harrowing, cultipacking or other acceptable tillage operations may be used to prepare the seedbed. On sites where appropriate equipment cannot operate, the seedbed shall be prepared by "tracking in" with a dozer or scarifying by other approved methods. Lawn areas are to be hand raked. Rocks larger than 6 inches in diameter or 2 inches diameter in lawn areas, trash, weeds and other debris that will interfere with seeding or maintenance shall be removed or disposed of as approved by the WVDEP. Seedbed preparation shall be suspended when soil moisture conditions are not suitable for the preparation of a satisfactory seedbed as determined by WVDEP.



- 6.3.4 Seedbed preparation and seeding shall take place progressively as various regraded areas are brought to final grade.
- 6.3.5 All seeding operations shall be performed immediately following seedbed preparation in such a manner that the seed is applied in the specified quantities uniformly on the designated areas.
- 6.3.6 Seed application shall consist of approved hydroseeding methods where feasible. Any seed left in hydroseeder overnight shall be reinnoculated before that seed shall be applied. Other methods of seed application may be utilized for site-specific reasons when approved by the WVDEP.
- 6.3.7 Any area failing to establish a vegetative stand due to weather or adverse soil conditions shall be reseeded, relimed, refertilized and remulched as approved by the WVDEP.
- 6.3.8 The Contractor shall maintain all seeded areas until final acceptance of the project. All areas shall be protected from any further equipment traffic and any damaged areas shall be repaired and reseeded. Maintaining seeded areas shall consist of watering, refilling, refertilizing, reliming, reseeding, and remulching erosion gullies and all bare areas.
- 6.3.9 A second and third seeding will be applied as needed, or as approved by the WVDEP.

#### **6.3.9.1 Second Step Seeding**

The second step seeding will take place during the first defined seeding period following the initial seeding. No payment shall be made for second step seeding, this work is part of the contract if completed before the final inspection or shall be considered warranty if completed after the final inspection. The following shall be used as a guide for second step application.

1. For areas with less than a 50 percent stand or subject to severe erosion, apply the complete amount of seed, fertilizer, lime much as specified.
2. For areas with over 50 percent stand apply one half the original fertilizer, lime and seed. If erosion is a problem, apply one-half of the original mulch specified in Technical Specifications Section 6.2.4.

#### **6.3.9.2 Third Step Seeding**

The third step seeding shall consist of spot applications on areas not showing a satisfactory stand. The seeding shall take place at the next defined seeding period following the second step application. The quantity of material to be used shall be determined on the same basis as the second step application in Technical Specifications Section 6.3.8.1.

## **6.4 Method of Measurement**

- 6.4.1** The method of measurement for erosion control matting shall be by the square yard in the plan view, neglecting slope. Erosion control matting associated with channel linings or the diversion berm shall not be measured, as it is considered incidental to the unit price for the associated channel or diversion berm. The method of measurement for revegetation shall be by the acre, in the plan view neglecting slope. Payment will be made at the Contract price bid for these items, which price and payment shall be full compensation for doing all the work herein described in a workmanlike and acceptable manner, including the furnishing of all labor, materials, tools, equipment, supplies and incidentals as necessary to complete the work. Payment for seeding includes all seeding (i.e., temporary, first and second and third seeding). No additional payment will be made for second or third seeding.
- 6.4.2** Temporary seeding will be incidental to the seeding item and no separate measurement or payment will be made for temporary seeding. There will be no separate payment for maintaining seeded areas. No payment will be made for seeding after the final inspection. All work performed after the final inspection will be done under warranty.

## **6.5 Pay Items**

Item 6.1, "Erosion Control Matting," per square yard (plan view).

Item 6.2, "Revegetation," per plan view acre.

## **7.0 DRAINAGE STRUCTURES**

### **7.1 Description**

This work shall consist of furnishing all labor, equipment and materials necessary to construct the drainage structures shown on the drawings. Drainage structures shown include, but are not limited to, channels, seep drains, and riprap bank protection.

### **7.2 Materials**

#### **7.2.1 Erosion Control Matting**

Erosion control matting shall be as described in Technical Specifications Section 6.2.5, "Erosion Control Matting."

#### **7.2.2 Stone**

Stone for this project shall consist of commercially supplied stone, field stone, or rough shot rock. The stone shall have a maximum weighted loss of 30 percent when subjected to five cycles of Sodium Sulfate Soundness Test, ASTM C 88 as modified by AASHTO

T-104. Soundness test results shall be submitted to the Engineer for approval of the proposed stone sources prior to use. Soundness criteria shall apply to all stone used for this project.

Any stone considered for use must first be visually approved by the Engineer. The stone shall be as nearly rectangle in section as is practicable. All stone shall be well-graded and obtained from and Engineer approved borrow source or commercial quarry.

Riprap stone shall have dimensions shown on the Drawings. Pieces smaller than the minimum size shall not exceed 15 percent by weight.

Stone for seep drains and other underdrains on the Drawings shall be 6-inch by 9-inch sandstone.

On-site and off-site rock (stone) borrow areas must be approved by the Engineer. Potential on-site borrow areas (inclusive of both rock and soil) are shown on the Drawings. It is anticipated that adequate rock material exists within the limits of construction. The Contractor is responsible to verify that adequate rock exists within the limits of construction for his use in covering the site. If sufficient rock is not available within the limits of construction, the Contractor shall be responsible to locate off-site borrow areas and if not inside the construction limits, obtain right-of-entry agreements to include the WVDEP with the right of inspection and holding the WVDEP harmless from any injury or damage whatsoever resulting from the Contractor's use of the property. The Contractor is also responsible for obtaining NEPA compliance and a NPDES stormwater permit (if required) for all off-site borrow areas. See other requirements in Special Provisions Section 7.0, "Borrow (Disposal) Areas."

There will be no additional compensation for accessing, furnishing, clearing, grubbing, grading, restoring, fertilizing, seeding, and mulching of off-site borrow areas. Off-site borrow areas are those areas located outside of the limits of construction. The Contractor shall submit a site grading and operations plan to the Engineer for review and approval which is compatible to the reclamation project for borrow areas and related disturbance. Due to the previous Contractor's work, a highwall has been created at the rock borrow area above Pile A that is not feasible to eliminate. After construction activities have been completed on all of the coal refuse piles, the highwall area shall be cleaned/cleared of debris and boulders, regraded (if necessary) and direct seeded (including the highwall). Additional highwalls shall not be allowed within borrow areas whether created by the Contractor during borrow operations or pre-existing. Reclamation and revegetation of off-site borrow areas associated with rock shall be considered incidental to the borrow operations and shall be included in the unit price bid for the appropriate riprap associated pay item. Revegetation of on-site borrow areas located within the limits of construction as shown on the Drawings will be eligible for payment for seeding.

When the use of explosives is necessary for rock borrow, the Contractor shall exercise the utmost care not to endanger life or property. The Contractor shall be responsible for

any and all damage resulting from the use of explosives. All blasting operations shall be conducted in strict accordance with applicable state and federal laws and in particular West Virginia Department of Environmental Protection Regulations relating to rock blasting and the storage and use of explosives. The Contractor shall maintain and keep in full force and effect blasting insurance to protect and indemnify the Owner and/or his agents or representatives from claims for damages and shall defend all suits at law.

### **7.2.3 Grout**

Grout, where specified for grouting riprap, shall be a mixture of Portland cement, fine aggregate, and water so proportioned and mixed as to provide a readily pumpable slurry. Admixtures and/or a pozzolan may be used with the approval of the Engineer. The hardened grout shall exhibit a compressive strength of 2,000 pounds per square inch at 28 days with specimens made and tested according to the provisions of ASTM C 31 and C 39.

### **7.2.4 Geotextile (Filter Fabric)**

The geotextile (filter fabric) to be utilized in conjunction with the project shall be laid smooth and free of tension, stress, folds, wrinkles and creases. The geotextile shall be free of any chemical treatment or coating which reduced permeability and shall be inert to chemicals found in the soil and water at the site.

Geotextile (filter fabric) shall be a multipurpose nonwoven geotextile of 100 percent polypropylene staple fibers that have been needlepunched and heatset, or Engineer approved equal.

Filter fabric shall be FX<sup>TM</sup>-80HS as manufactured by Carthage Mills, or an Engineer approved equal.

The geotextile shall be furnished in a protective wrapping which shall protect the fabric from ultraviolet radiation and from abrasion due to shipping and handling. The geotextile shall not be exposed to sunlight for a period greater than two weeks.

## **7.3 Construction Methods**

Drainage systems shall be constructed as discussed in the following sections. All excavation shall be in accordance with Technical Specification Section 8.0, "Earthwork."

### **7.3.1 Erosion Control Matting**

Erosion control matting shall be installed as described in Technical Specification Section 6.3, "Construction Methods."

### 7.3.2 Riprap and Stone Placement

Riprap shall be placed in accordance with Section 218.3.2 of the WVDOH Standard Specifications for Roads and Bridges, Adopted 2010. Riprap and stone shall be constructed at locations shown on the Drawings. Riprap and stone placement shall include preparing the subgrade to receive riprap. Riprap and stone shall be placed to the dimensions as shown on the Drawings. Riprap and stone that is to be grouted shall be free of dirt, sticks, leaves and any other organic material or trash. Sections of ditches that are cut to rock shall not require rock riprap but shall be paid the appropriate size riprap ditch.

Grout, where required to be placed on riprap, shall be applied as soon as possible after placement of riprap. The stone shall be thoroughly wet immediately before grout is applied. As soon as grout is deposited on the surface it shall be thoroughly worked into the joints to achieve 100 percent penetration. The stones shall then be brushed so that their top surfaces are exposed. The grout shall be protected from running water to prevent damage until sufficiently cured.

Curing of the grout shall be by spraying with a fine mist of water every 2 hours during daylight hours for a period of 3 days, or grout may be cured as specified in Section 218.3.3 of the WVDOH Standard Specifications for Roads and Bridges, Adopted 2010.

A set of four (4) compressive strength test cylinders shall be taken per truckload of grout. One seven-day, two twenty-eight day and one reserve cylinder are required. The sampling for strength tests shall be in accordance with ASTM C 172.

Cylinders for acceptance tests shall be molded and cured in accordance with ASTM C 31. Cylinders shall be tested in accordance with ASTM C 39.

The acceptability of the grout will be determined by laboratory tests and/ or visual inspection as required by the Department. Grout specified on the basis of compressive strength will be considered satisfactory if the average of all strength test results equal or exceed the specified strength and no individual strength test falls below the required strength by more than 2000 psi.

A grout key shall be installed at the upstream end of each of the grouted riprap channels to direct the flow of water into the channel and prevent undercutting of the grouted riprap. The grout key shall be installed to the dimensions depicted by the typical detail in the plans.

Stone for the seep drains shall be installed using minimal drop heights and other techniques to prevent damage to underlying and surrounding filter fabric.

Riprap for the stream bank re-lining shall be placed in a manner to provide protection to the underlying riprap from erosion. Riprap shall be placed to the dimensions as shown on the Drawings.

### **7.3.3 Filter Fabric Placement**

Filter fabric shall be installed where shown on the Drawings.

Fabric junctions shall overlap a minimum of 12 inches or shall be sewn in accordance with manufacturer's recommendations. The Contractor shall install filter fabric in accordance with manufacturer's recommendations. The surface to receive the filter fabric shall be prepared to a relatively smooth condition free of large rocks and obstructions, depressions, debris and soft or low density pockets of material. If the filter fabric is damaged during construction, the torn or punctured section shall be repaired by over-placing a piece of filter fabric that is large enough to cover the damaged area and meet the overlap requirements.

Filter fabric damaged or displaced before or during installation, or during placement of aggregate or rock shall be replaced or repaired at the Contractor's expense.

### **7.3.4 Miscellaneous Riprap**

Miscellaneous riprap shall be installed at the locations noted on the Drawings or as directed by the Engineer. Riprap installation shall be in accordance with Technical Specifications Section 7.3.2, "Riprap and Stone Placement," and in accordance with the appropriate detail on the Drawings.

## **7.4 Method of Measurement**

The method of measurement for determining the quantity of work done as described above will be on a per linear foot basis (per field measured) for the drainage channels (Types A, B, C, D, E, and F). The per linear foot basis for the channels shall include the necessary excavation, subgrade preparation, channel lining material, grouted riprap bench apron, and all other items incidental to a proper installation. Drive-through channel crossings shall be considered incidental to channel construction and no separate payment will be made for such.

The method of measurement for seep drains will be on a linear foot basis (per field measured), and shall include the necessary excavation, filter fabric, stone, trench backfill, and all other items incidental to proper construction.

The method of measurement for riprap protection (riprap bank protection, riprap for left descending bank of stream relocation and stream bank re-lining) as described in this section will be on a square yard basis (plan view, neglecting slope), including excavation, subgrade preparation, riprap/stone, and all other items incidental to proper construction.



The method of measurement for determining the quantity of work for diversion berms will be on a linear foot basis, and shall include necessary excavation, erosion control matting, material placement and compaction, and all other items incidental to proper installation.

The method of measurement for miscellaneous riprap will be by the plan view, neglecting slope, and shall include all earthwork, riprap, and all other items necessary for satisfactory construction.

The method of measurement for drive-through section for Pile A shall be on a per each basis, and shall include riprap, grout, and transitions to existing drainage structures.

## **7.5 Pay Items**

Item 7.1, "Type A, Grouted Riprap Lined Channel," per linear foot field measured.

Item 7.2, "Type B, Grass Lined Channel," per linear foot field measured.

Item 7.3, "Type C, Fabric Lined Drainage Channel," per linear foot field measured.

Item 7.4, "Type D, Grouted Riprap Lined Channel," per linear foot field measured.

Item 7.5, "Type E, Grouted Riprap Lined Channel," per linear foot field measured.

Item 7.6, "Type F, Grouted Riprap Lined Channel," per linear foot field measured.

Item 7.7, "Seep Drain," per linear foot field measured.

Item 7.8, "Riprap Bank Protection," per square yard (plan view).

Item 7.9, "Riprap for Left Descending Bank of Stream Relocation," per square yard (plan view).

Item 7.10, "Diversion Berm," per linear foot.

Item 7.11, "Miscellaneous Riprap," per square yard (plan view).

Item 7.12, "Stream Bank Re-lining," per square yard (plan view).

Item 7.13, "Drive-Through Channel Section for Pile A," per each.

## **8.0 EARTHWORK**

### **8.1 Description**

This work shall consist of excavating, transporting, stockpiling, placing and compacting refuse, soil, rock or other materials encountered in the grading of the site and any other indicated incidental work, and installation of access roads (including those noted as relocated) and miscellaneous riprap. From work completed by the previous contractor, coal refuse piles A and C are currently near the proposed grades for the project. Therefore, earthwork required in these areas will be to smooth out any existing erosion gullies, slope benches to promote positive drainage and install access roads as noted on the Drawings. It is not anticipated that additional material will be needed to complete the tasks at coal refuse piles A and C. The terms for earthwork used in the remainder of this section imply unclassified excavation in native materials such as for the drainage channels and soil cover, and excavation and regrading of refuse material except for the grading work required for the coal refuse pile A and C. The intent of the project is to completely balance the earthwork associated with the required channel excavations and regrading the refuse material (i.e., no refuse material will be hauled off-site). The Contractor, with approval of the Engineer, shall adjust the final grades for the coal refuse piles as necessary

to create a balanced project. The work under this section shall include, but no necessarily be limited to, the following:

1. Excavation for drainage channels – Payment for drainage channel excavation is included in the linear foot prices for each drainage channel (see Technical Specifications Section 7.0, “Drainage Structures”).
2. Excavation for erosion and sedimentation control – Payment for excavation associated with erosion and sedimentation control is included in the appropriate unit price for sediment control (see Technical Specifications Section 5.0, “Sediment Control”).
3. Excavation for soil cover and payment of soil cover over coal refuse. Payment for excavation associated with soil cover is included in the unit price for soil cover (see Technical Specification Section 12.0, “Soil Cover.”)
4. Regrading of coal refuse piles (or other miscellaneous areas) and extinguishing any burning coal refuse encountered.
5. Smoothing the existing surface of coal refuse piles A and C to eliminate erosion gullies and to establish benches and access roads.
6. Excavation for relocation of the stream. Payment for excavation associated with stream channel relocation is included in the measurement of excavation associated with regrading of coal refuse piles.
7. Excavation for mine seals. Payment for excavation associated with installation of mine seals is included in the unit price for mine seals (see Technical Specifications Section 9.0, “Mine Seals”).
8. Excavation for riprap bank protection. Payment for excavation associated with installation of riprap stream bank protection is included in the appropriate unit prices bid for riprap bank protection, riprap for left descending bank of stream relocation (see Technical Specifications Section 7.0, “Drainage Structures”), and miscellaneous riprap.
9. Excavation associated with demolition and removal of structures and razing of foundations. Payment for excavation associated with demolition and removal of structures and razing of foundations is included in the lump sum price for demolition and removal of structures (see Technical Specifications Section 11.0, “Demolition and Removal of Abandoned Mine Structures”).
10. Excavation for installation of access roads. Payment for access roads is included in the linear foot price bid for access roads.

11. Final grading, shaping, and contouring of the excavation areas, the fill areas, and any temporary construction roads. Payment for this excavation is considered incidental to other pay items on the project.

## **8.2 Materials**

### **8.2.1 Stone**

Stone (durable rock) associated with the ditch alongside the proposed access roads shall be the size on the Drawings, and meet the requirements of Technical Specifications Section 7.2.2, "Stone."

### **8.2.2 Other**

As required.

## **8.3 Construction Methods**

### **8.3.1 Excavation**

Material excavation shall consist of the required removal of materials from the areas shown and the sloping and finishing of the areas to the required lines and grades as shown on the drawings. The slopes may be varied only by permission of the WVDEP. Slopes shall be trimmed neatly to present a uniform surface, free from hollows and protrusions and loose or overhanging rocks. The tops of all slopes shall be rounded to form a smooth, uniform transition to the existing ground.

The reclamation approach described in these Construction Specifications is intended to provide a lasting, stable configuration. The Contractor is required to exercise care to avoid conditions which may result in unstable conditions during the construction process. The Contractor shall be responsible for protecting residences from damage.

The Contractor must utilize material removal techniques, which are generally considered to be conducive to retaining slope stability. Additionally, disturbed slopes shall be brought to the design template as soon as practical and shall be protected in accordance with Technical Specifications Section 6.0, "Revegetation."

Any burning refuse encountered during regrading of the refuse pile shall be extinguished by the Contractor as directed by the Engineer. The Contractor's method shall be subject to the approval of the Engineer. Burning refuse shall be defined as all material hotter than 150 degrees F and/or as determined by the Engineer. The temperature of the burning refuse is to be lowered below the combustion temperature, preferably to the ambient temperature. The method employed to extinguish the burning refuse is left to the Contractor's discretion subject to approval of the Engineer; however, the following methods are suggested:

1. Spread the burning refuse in a thin layer and mix with reddog.
2. If mixing does not extinguish the burning, apply water over the thin layer of mixed refuse, scarify, and water again until burning is extinguished.

Excavation of burning refuse shall be done with excavations at a safe slope. The cut slope shall not be steeper than 2H:1V unless so noted on the plans or agreed to by the Engineer. Approval of the Contractor's work plan by the Engineer does not relieve the Contractor of the sole responsibility for site safety.

There shall be no extra pay for additional excavation and other construction methods associated with extinguishing burning coal refuse.

### **8.3.2 Excavated Materials**

All suitable material which is excavated during construction shall be retained for later use as backfill and recontouring of the site. Unsuitable material shall be disposed with the limits of construction as directed by the Engineer. Topsoil shall be temporarily stockpiled separately from the unclassified material. The stockpile(s) shall have side slopes not steeper than 2 horizontal to 1 vertical and shall be placed in areas approved by the Engineer. Temporarily stockpiled material shall not be compacted. The stockpile(s) shall be shaped and maintained in such a manner that the top surface shall remain free of puddles and the side slopes shall not be unduly rutted. Temporary stockpiles shall be seeded in accordance with Technical Specifications Section 6.0, "Revegetation," of this Specification.

Material shall not be placed in areas where water is ponded. Stockpiled topsoil shall be used in the final soil cover layer over the regraded coal refuse in accordance with the Drawings.

After completion of construction, all suitable excess excavated material shall be used in regrading and recontouring the construction areas such that it will not interfere with the drainage of the areas, as directed by the Engineer.

### **8.3.3 Material Placement**

Unless otherwise specified, excavated refuse material and soil to be used on this project as fill shall be placed in maximum 12-inch thick lifts and compacted to achieve a minimum of 90 percent of the laboratory maximum dry density as determined by ASTM D 698. Normally, material shall be placed at between plus 3 percent and minus 2 percent of optimum moisture content. Alternate lift thicknesses shall be approved by the Engineer. The Engineer reserves the right to reduce lift thicknesses as conditions dictate in order to achieve satisfactory compaction of material placement. Frequency of density tests shall be one test per 1,000 cubic yards of material placed, or one test per day

(minimum), or as directed by the Engineer. Tests at the Contractor's cost will be conducted by a testing firm approved by the Engineer. Large rock and fused coal refuse shall be disposed of on-site as directed by the Engineer.

Channel subgrades in cut areas shall be well-compacted before the channels are installed.

No frozen material shall be placed as fill nor shall fill be placed over frozen material. No fill shall be placed in standing water. Excessively wet material shall be allowed to dry prior to incorporating it as fill. Excessively wet material on the subgrade shall be bladed off and allowed to dry prior to using as fill or disposed of as unsuitable material as directed by the Engineer.

#### **8.3.4 Water Handling**

The Contractor must provide a system for diverting water around the work area(s) to the proper down-gradient drainage systems. This will improve working conditions, and decrease the potential sediment load carried by the water as a result of excavation in the area. The Contractor can install any water handling systems which will maintain relatively dry excavation areas.

The Contractor shall handle all surface and/or ground water so as not to damage adjacent property, or pollute streams and/or waterways. The Contractor's plan for diversion of ground water and/or surface water during construction shall be subject to approval by the Engineer. The plan may be placed in operation upon approval. Nothing in this section shall relieve the Contractor from full responsibility for the adequacy of the diversion and protective works.

Excavation areas shall be maintained so that they will drain properly at all times. The Contractor shall construct and maintain any and all necessary channels, flumes, pipes, sumps and/or other temporary diversion and protective works; shall furnish all materials required, therefore, shall furnish, install, maintain, and operate all necessary pumps and other equipment for removal of ground water and/or surface water from the work area. After having served their purpose, all of the above shall be removed from the work area. Temporary water handling/diversions shall be considered incidental to the project.

#### **8.3.5 Stone for Unpaved Access Roads**

The portions of the unpaved access roads and/or driveways impacted by the construction shall be resurfaced with Class 2 crushed stone as described in WVDOT Section 704. Resurfacing shall be performed at the completion of construction unless otherwise directed by the Engineer. Impacted portions of roads and/or driveways to be resurfaced by the Contractor will be at the discretion of the Engineer. The existing access roads shall be maintained at their present condition and repaired at the Contractor's expense if damaged by the Contractor. Resurfacing of access roads and/or driveways shall be considered incidental to construction.

### **8.3.6 Access Road**

The access road and associated berm and ditch shall be installed as noted on the Drawings. The Contractor shall insure positive drainage from the roadside ditch to receiving drainage channels.

### **8.3.7 Miscellaneous Regrading**

Miscellaneous regrading shall be completed at locations noted on the Drawings, or as directed by the Engineer. Work shall be performed in accordance with Technical Specifications Sections 8.3.1, "Excavation," 8.3.2, "Excavated Materials," 8.3.3, "Material Placement," 8.3.4, "Water Handling," and the appropriate detail on the Drawings.

### **8.3.8 Entrance Road Reclamation Site**

The Contractor shall reclaim the entrance road reclamation site as noted on the Drawings. This shall include relocating an access road, regrading, installation of riprap protection along the stream, and removing rails. Riprap installation shall be in accordance with Technical Specifications Section 7.3.2, "Riprap and Stone Placement," access road construction shall be in accordance with the detail on the Drawings, regrading shall be in accordance with this Section (8.0), while removal of rails shall be in accordance with Technical Specifications Section 11.0, "Demolition and Removal of Abandoned Mine Structures."

### **8.3.9 Final Shaping and Contouring**

Except at locations where excavation of unsuitable material is required, care shall be taken not to excavate below the depths specified. Any over-excavation shall not be approved for payment unless authorized by the Engineer prior to excavation. Over-excavation will be backfilled and compacted in accordance with this Specification to the proper grade with suitable material at the expense of the Contractor, unless approved by the Engineer prior to commencing such work. Final shaping and contouring of the areas shall be performed to the satisfaction of the Engineer.

### **8.3.10 Coal Refuse Piles A and C Grading**

The Contractor shall smooth grade the face of coal refuse piles A and C to eliminate erosion gullies and to establish benches that promote positive drainage. Access roads shall be constructed as indicated on the Drawings. Final shaping and contouring of the areas shall be performed to the satisfaction of the Engineer.



## 8.4 Method of Measurement

The method of measurement for the excavation of soil cover, drainage channels, demolition and removal of abandoned mine structures, mine seals, riprap bank protection, and for erosion and sedimentation control is covered under other sections. The method of measurement for determining the quantity of excavation required for regrading coal refuse as described above will be on a cubic yard basis for excavated material which includes excavating, hauling, placing and recompacting material to the surfaces as shown on the Drawings. Method of measurement will be by before and after surveyed cross sections of the excavation area(s) and the average-end-area method for computing volume. The method of measurement for the access roads shall be on a linear foot basis measured along the road centerline within the boundaries shown on the Drawings. The access road measurement shall include all earthwork, berm (if required), stone roadside ditch (if required), and all other necessary items for satisfactory construction. The method of measurement for miscellaneous regrading will be by the square yard (by the plan view, neglecting slope) and shall include all earthwork and other items necessary for satisfactory construction. The method of measurement for the smooth grading of coal refuse piles A and C shall be by the lump sum, and shall include all labor and all other necessary items needed for satisfactory construction.

The method of measurement for entrance road reclamation site shall be by the lump sum, and shall include all labor and materials to reclaim the site, including excavation, hauling, and recompacting material, relocating the access road, installing riprap protection, removing rails, and revegetating. The relocated access road, and installation of riprap shall not be measured and paid under other pay items.

Payment shall be full compensation for doing all the work herein prescribed in a workmanlike and acceptable manner, including the furnishing of all labor, materials, tools, equipment, supplies, and incidental necessary to complete the work.

## 8.5 Pay Items

Item 8.1, "Unclassified Excavation," per cubic yard.

Item 8.2, "Access Road," per linear feet.

Item 8.3, "Miscellaneous Regrading," per square yard (plan view).

Item 8.4, "Entrance Road Reclamation Site," per lump sum.

Item 8.5, "Coal Refuse Pile A Grading," per lump sum.

Item 8.6, "Coal Refuse Pile C Grading," per lump sum.

## 9.0 MINE SEALS

### 9.1 Description

This work shall consist of dewatering the existing mine pools, treating water (if necessary), excavating mine openings, installing pipes and field adjusting to connect proposed downstream

drainage structures (if required), installing the stone bulkhead (wet mine, auger hole and dry mine) seal or the block seal, installing the bat opening (if required), and backfilling the opening (if required).

## **9.2 Materials**

### **9.2.1 Stone**

The bulkhead stone shall consist of commercially supplied No. 4 non-calcareous crushed stone or river gravel in accordance with ASTM C-33. Any stone considered for use must first be visually approved by the WVDEP. The gravel shall have a soundness resistance of maximum 15 percent loss when subjected to five cycles of the sodium sulfate test in accordance with ASTM C-88.

### **9.2.2 Filter Fabric**

Filter fabric shall consist of TerraTex No.4 or an approved equal.

### **9.2.3 Pipe**

Drain pipes for the bulkhead seals will consist of perforated and non-perforated 12-inch and 16-inch diameter SDR 35 PVC.

### **9.2.4 Reinforcing Bar**

Reinforcing bar (rebar) shall be ASTM A615, Grade 75, and the size noted on the Drawings.

### **9.2.5 Block and Mortar**

Standard construction materials, approved by the Engineer.

### **9.2.6 Other**

As noted on the Drawings, or as necessary for satisfactory construction.

## **9.3 Construction Methods**

The Contractor is advised that abandoned mine workings could contain impounded water of an unknown depth.

A Dewatering Plan shall be submitted and approved by the Engineer prior to any work taking place. The Contractor shall install and operate a water treatment system utilizing soda ash briquettes in a manner approved by the engineer to maintain a pH between 6.0 and 9.0 in all water above base flow while dewatering mine.

The Contractor shall dewater the mine pool in a controlled manner. The Contractor shall be responsible for any damages resulting from dewatering, even if the dewatering plan is approved by the WVDEP. The Contractor will be responsible for any necessary water treatment.

If flowable iron-oxide and/or aluminum precipitate is discharging from the mines or if low pH water is encountered, the Contractor shall devise a method, acceptable to the Engineer, for temporary control and disposal or treatment of precipitates. The Contractor shall prevent these precipitates or low pH water from entering streams. The Contractor shall exercise extreme caution in dewatering the mine. Dewatering methods and procedures are subject to the approval of the Engineer. Dewatering and treatment are considered incidental to mine seal construction.

The location of the proposed mine seals are shown on the Drawings. The mine opening shall be excavated to the satisfaction of the WVDEP. The excavations may contain methane or other gases which may be combustible or otherwise harmful to people nearby. Furthermore, the air around the mine entries may be oxygen deficient. The Contractor shall have equipment capable of detecting the presence of toxic and combustible gases and the absence of oxygen in the excavation, and must have personnel trained in the use of such equipment. If any of these conditions are encountered, the Contractor shall have equipment available either to permit personnel to work in the condition encountered, or to change the condition by removing any gases or blowing breathable air into the excavation. Work cannot proceed until the Engineer is satisfied that the working conditions near the mine entries are safe. Approval by the Engineer of the Contractor's procedures does not relieve the Contractor of responsibility for site safety.

Prior to installation of portal seals, each portal will be examined by the Engineer to determine whether a seal with openings for bats is necessary. If openings for bats are required, openings in the seal will match the same cross sectional area as currently exists.

In the absence of surveys conducted to determine if bats are utilizing an open portal, it shall be assumed that bats are present. If presence of bats is assumed, then bat gates should only be installed between May 1 and August 31 to avoid disturbing hibernating bats. However, there may be an opportunity to finish gate installation between September 1 and October 1, if the weather is warm enough that bats have not begun to hibernate and the construction equipment will not block the portal entrance at night when bats will be exiting to forage.

Based on field investigation, one of two seal designs will be constructed to address bats. For portals that have a small cross sectional area open, a back stow seal (i.e., wet mine seal) that utilizes pipes placed near the mine roof will be constructed as noted on the Drawings. For portals that are completely open or have a large cross sectional area open, a seal using a combination of block and steel bars will be constructed as noted on the Drawings.

For wet mine seals, two 12-inch diameter perforated PVC pipe shall be installed in the mine floor as shown on the Drawings prior to placing the stone bulkhead. The pipe will be fitted with perforated riser and cap and fitted with steel plates (for support) and animal guards. The pipes will connect to 12-inch diameter non-perforated PVC pipes, which will extend through the final

grade and outlet to downgradient structures or as noted on the Drawings. The stone shall be placed as per the detail on the Drawing and covered with filter fabric.

For auger hole wet seals, one 12-inch diameter perforated PVC pipe shall be installed in the mine floor as shown on the Drawings prior to placing the stone bulkhead. The pipe will be fitted with steel plates (for support) and animal guards. The pipe will connect to 12-inch diameter non-perforated PVC pipes, which will extend through the final grade and outlet to downgradient structures or as noted on the Drawings. The stone shall be placed per the detail on the Drawing and covered with filter fabric.

Some of the mine portals have previously been constructed on and only require a few items (i.e., bate gate, animal guards, additional backfill, etc.) to complete the appropriate mine seal. The portals are shown on the Drawings and indicate what missing component is required to complete the mine seal.

#### **9.4 Method of Measurement**

The method of measurement shall be per each type mine seal installed and shall include dewatering, water treatment, excavation, monitoring of gases, stone, pipe (including extending pipes to "daylight" and discharge to downstream drainage structures), risers, fittings, filter fabric, backfill, block wall, rebar, bat opening (if applicable), and all incidentals to complete the work in a manner satisfactory by the Engineer. For the mine seals that have been previously worked on the method of measurement shall be per each item (i.e., bat gate, animal guards, additional backfill, etc.) installed and all incidentals to complete the work in a manner satisfactory by the Engineer.

The method of measurement for soda ash briquettes shall be measured per 50-pound bag used.

#### **9.5 Pay Item**

- Item 9.1, "Wet Mine Seal," per each.
- Item 9.2, "Wet Mine Seal with Bat Openings," per each.
- Item 9.3, "Block Seal," per each.
- Item 9.4, "Dry Mine Seal," per each.
- Item 9.5, "Bat Gate," per each.
- Item 9.6, "Animal Guard," per each.
- Item 9.7, "Additional Backfill for Mine Seal Repair," per each.
- Item 9.8, "Auger Hole Wet Seal," per each.
- Item 9.9, "Auger Hole Dry Seal," per each.
- Item 9.10, "Soda Ash Briquettes (50 Pound Bag)," per each.

## **10.0 UTILITIES**

### **10.1 Description**

This work shall consist of all necessary measures to relocate, maintain and protect all utilities within the limits of work specified herein and on the construction drawings. It should be noted that at least two gas lines require relocation, as noted on the Drawings. Other relocations may be necessary.

The Contractor shall notify the utility in writing at least 15, but preferably 30 days prior to the time work within the area will be done.

The Contractor shall be responsible for making all necessary arrangements and/or performing all necessary work to the satisfaction of the affected utility company and/or the West Virginia Division of Highways in connection with any disturbances within their right-of-way or services.

The Contractor shall be solely responsible for locating all utilities within the limits of work. All damage made to existing utilities by the Contractor shall be the sole responsibility of the Contractor. In the event damage does occur, the Contractor shall notify the affected utility and the WVDEP immediately and make or have made all necessary repairs and bear the expenses thereof and resulting damage caused thereby.

The Contractor shall obtain right-of-entry and/or any necessary permits for repairs or relocation.

**Miss Utility:** Miss Utility of West Virginia  
Phone: (800) 245-4848

### **10.2 Materials**

All materials used for utility related disturbance shall be in accordance with these Specifications or as indicated by the affected utility.

### **10.3 Construction Methods**

All work shall be in accordance with these Specifications or in accordance with those methods as indicated by the affected utility.

### **10.4 Method of Measurement**

The Contractor will not bid on utility work but will be reimbursed the actual approved invoice cost. The Contractor shall submit an estimate for utility relocation to the WVDEP for approval. The WVDEP will not reimburse the Contractor for any WVDOT costs. Only utilities affected by the proposed reclamation will be reimbursed.

## **11.0 DEMOLITION AND REMOVAL OF ABANDONED MINE STRUCTURES AND REMOVAL OF EXISTING DRAINAGE STRUCTURES**

### **11.1 Description**

This work shall consist of the demolition, removal, and disposal of abandoned mine structures (and equipment) and existing drainage channels (i.e., grouted riprap lined channels) at the locations shown on the Drawings and as directed by the Engineer. Included are:

1. Demolition, removal, and disposal of structures and ruins associated with old mining activity as delineated on the Drawings.
2. Demolition, removal, and disposal of existing drainage channels associated with past construction activities on site.
3. Salvaging and stockpiling some materials as described herein, or as directed by the Engineer.

### **11.2 Materials**

As required.

### **11.3 Construction Methods**

#### **11.3.1 Structure Demolition, Removal and Disposal**

The structures to be demolished, removed and disposed (or salvaged) are identified on the Drawings. These structures include a hoist house, rotary dump, button conveyor (chute), aerial tram and related structures including cables, fan house, rails, mine cars, drainage channels and other miscellaneous equipment and structures.

Demolition of existing structures shall be performed using standard construction equipment wherever practical. Demolition operations shall be performed with the utmost care not to endanger life or property. The Contractor shall be responsible for analyzing all of the structures to be razed so that demolition operations are performed in a manner which results in a total and safe collapse of the structures while maintaining the safety of construction laborers, equipment operators and vehicular traffic along public and private roads. Use of explosives shall not be permitted.

All salvageable material shall become the property of the Contractor, unless noted. Combustible material shall be burned in accordance with Technical Specifications Section 4.2.8, if approved by the Engineer. That material which is not combustible shall be disposed of at an approved landfill, unless the Engineer allows on-site burial as a disposal method.



The Contractor shall be responsible for any permits and fees required for disposal of the material at an approved landfill.

The burning of trash, garbage, roofing, tires, etc., shall not be permitted. The Contractor shall be responsible for any permits and fees required for disposal of the material.

Existing drainage channels to be demolished shall be removed and disposed of at the discretion of the WVDEP. Material from the demolition of the drainage channels shall be reused if it meets the requirement of Section 7.0 of these Specifications.

Concrete piers, foundations and other structures, shall be completely removed or cut to a minimum of 12 inches below the existing ground surface, and the holes shall be backfilled to the ground surface.

Items described on the Drawings as requiring removal shall be removed. In addition, mine cars on the site shall be removed, and brought to an accessible location at the site, for eventual collection by the State Historic Preservation Officer (SHPO). The accessible location shall be as directed by the Engineer. The method of removing, transporting, and unloading mine cars shall be approved by the Engineer.

All areas disturbed shall be graded and dressed as directed by the Engineer and revegetated in accordance with Technical Specifications Section 6.0, "Revegetation."

If any asbestos containing materials (ACM) are determined to exist in other structures to be demolished, the Contractor shall cease work or demolition and notify the Engineer immediately. Removal and disposal of ACMs, if necessary, shall be in accordance with environmental regulations. Cost for such removal and disposal is incidental to the price bid for demolition and removal of abandoned mine structures.

Work included with removing and disposing of other mining related debris such as drums, miscellaneous metallic items, other waste products, etc. are covered under Technical Specifications Section 4.0, "Site Preparation."

#### **11.4 Method of Measurement**

The method of measurement for demolishing and removal of abandoned mine structures and doing all the work described herein will be on a lump sum basis. Included in the lump sum price shall be earthwork and demolition, removal, disposal of structures and equipment, removal and disposal of asbestos containing materials (if necessary), and salvaging equipment as noted (including the mine cars). The method of measurement for demolishing and removal of the existing drainage channels and doing all the work described herein will be on a linear foot basis. Included in the linear foot price shall be earthwork and demolition, removal and disposal of the grouted riprap channels. Payment shall be full compensation for doing all the work herein prescribed in a workmanlike and acceptable manner, including the furnishing of all labor, materials, tools, equipment, supplies, and incidental necessary to complete the work.

## **11.5 Pay Items**

Item 11.0, "Demolition and Removal of Abandoned Mine Structures," per lump sum.

Item 11.1, "Demolition and Removal of Existing Drainage Structures," per linear foot field measured.

## **12.0 SOIL COVER**

### **12.1 Description**

The work consists of covering the regraded refuse areas and/or any other area required by WVDEP with a minimum 6-inch thick layer of soil cover material.

### **12.2 Materials**

Soil cover material shall be natural occurring earthen material from potential borrow areas. This material shall be capable of supporting vegetation.

The Contractor shall obtain soil cover material from borrow areas within the project work limits or from additional off-site borrow areas, as necessary.

Potential borrow areas for soil (inclusive of rock and soil) are shown on Drawing Nos. 5, 7, 9, 10, 13, 14 and 15.

### **12.3 Construction Methods**

**12.3.1** Prior to placement of soil cover material, the areas to receive the soil cover shall be graded to remove all surface irregularities.

**12.3.2** All areas cut to grade in topsoil or soil material do not require soil cover. All areas cut to grade otherwise shall be covered with a minimum of 6 inches of soil cover material.

**12.3.3** Soil cover material shall neither be frozen nor shall it be placed on frozen ground or under moisture conditions that prevent grading equipment from producing a uniform surface.

**12.3.4** After placement, the soil cover material shall be tracked-in to ensure proper bonding of the soil cover material to the regraded area. Equipment shall be capable of operating on the slopes shown on the Drawings and shall produce a uniform surface free of ruts and loose soil. No minimum density shall be required for compaction, but soil cover material shall be "tracked-in" with on-site equipment. "Tracking-in" shall take place by operating the equipment up and down the soil covered slope such that the cleat marks are parallel to the final contours.

- 12.3.5** The final grade of the soil cover shall be free of surface irregularities and shall be built to the lines and grades shown on the Drawings.
- 12.3.6** As the soil cover material is placed and compacted, it shall be protected from erosion by installation of silt barriers and shall be fertilized, limed, seeded and mulched in accordance with Technical Specification Section 6.0, "Revegetation."
- 12.3.7** Upon completion of the work, the borrow area and related disturbance shall be neatly trimmed and all debris and soil disposed of in an acceptable manner. All roadways created are to be eliminated and final grade soil slopes shall not be steeper than 2H:1V unless otherwise proven to be stable or compatible to the reclamation project. All borrow areas outside the project limits shall require that a reclamation plan be submitted to the WVDEP for approval. The borrow areas and related disturbance shall be graded, fertilized, limed, seeded, and mulched in accordance with Technical Specification Section 6.0, "Revegetation" of these specifications.
- 12.3.8** It shall be the responsibility of the Contractor to obtain, at no expense to the WVDEP, all necessary off-site borrow areas or waste areas, in accordance with any applicable local, state, and/or federal regulations including compliance with NEPA requirements. Any borrow or waste areas shall be obtained in accordance with Section 2.15 of these specifications.
- 12.3.9** The Contractor shall maintain and keep in full force and effect insurance to protect and indemnify the WVDEP and/or its agents or representative, from claims for damages and shall defend all suits of law.
- 12.3.10** See other requirements in Special Provisions Section 7.0, "Borrow (Disposal) Areas."

#### **12.4 Method of Measurement**

- 12.4.1** The method of measurement for soil cover placed and maintained in conformance with the specifications and accepted by the WVDEP will be to the acre (plan view, neglecting slope) and rounded to the nearest whole acre. Payment to include excavating, stockpiling, hauling, spreading, and compacting/tracking-in of soil cover material and maintenance of soil cover, and reclamation of the borrow areas. Payment is limited only to regraded refuse areas that are covered.

#### **12.5 Pay Items**

Item 12.1, "Soil Cover," per plan view acre.

## 13.0 UNDERDRAIN

### 13.1 Description

This work shall consist of constructing subsurface drains at the locations and to the dimensions shown on the plans to control seepage. This shall also consist of additional underdrains as required and approved by WVDEP during construction. The proposed underdrains are intended to intercept subsurface drainage and safely direct it to the drainage channel or other designated location. The underdrains are to be constructed in accordance with the typical plan detail. Pipe clean-outs may be installed if lengths exceed 100 feet or whenever required by the WVDEP.

### 13.2 Materials

**13.2.1** Stone for underdrain shall consist of crushed, non-calcareous stone aggregate meeting the gradation requirements of AASHTO No. 1 aggregate. Crushed stone shall consist of particles of clean, hard, tough, durable rock, free from adherent coating and meeting the requirements of Section 703.1 of the WVDOH Standard Specifications for Roads and Bridges, Adopted 2010. Stone shall have a maximum weight loss of 15% when subjected to five cycles of the Sodium Sulfate Soundness Test.

**13.2.2** Filter fabric for the underdrain shall be non-woven type, meeting the requirements of Section 715.11.4 of the WVDOH Standard Specifications for Roads and Bridges, Adopted 2010.

**13.2.3** Pipe shall consist of perforated 8-inch PVC SDR 35. Clean outs shall consist of necessary wye fittings and connections compatible with SDR 35 PVC pipe and extending from the outlet pipe to within a maximum of 6 inches above final grades shown on the Plans.

### 13.3 Construction Methods

**13.3.1** The underdrains shall be constructed at the locations and to the lines, grades, and cross section as directed by the Engineer based on the field conditions encountered.

**13.3.2** Trench width for the underdrain (both 8-inch and 12-inch diameter pipes) shall be not less than 4 feet, measured at the bottom of the trench. Trenching will involve excavation of in-place material including soil and rock.

**13.3.3** Trench exceeding 5 feet in depth shall be supported in compliance with the OSHA requirements. Trench bottom shall be cleared of any loose debris and any standing water.

**13.3.4** Filter fabric shall be installed in the trench as shown on the Construction Drawings. The aggregate shall be placed carefully to prevent puncturing, tearing or shifting of the filter fabric. The filter fabric shall not be installed over the ends of the underdrains where the rock shall daylight directly into existing or modified drainage ways.

**13.3.5** Animal guards shall be constructed and installed on the downstream end of each outlet pipe as detailed on the Plans. These guards will be installed the same day to prevent animal entry during non-work time.

#### **13.4 Method of Measurement**

The method of measurement for constructing underdrain shall be on a linear foot (field measured) basis measured along the centerline of the underdrain. Excavation necessary to construct the underdrain; furnishing and placement of filter fabric, AASHTO No. 1 aggregate, erosion control matting (where required), cleanouts, and all other work necessary for the acceptable installation of the underdrain will not be measured but shall be considered incidental to the construction of the respective underdrains. The cost of these incidental items shall be included in the unit price bid for aggregate underdrains.

#### **13.5 Pay Items**

Item 13.0, "8-inch Underdrain," per linear foot (per field measured).

### **END OF TECHNICAL SPECIFICATIONS**

## SIGN IN SHEET

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Request for Proposal No. DEP15740

Date: February 21, 2012

Project: Sundial (Hatfield) Refuse Piles

Bid Opening Date: March, 13, 2012

\*PLEASE BE SURE TO PRINT LEGIBLY – IF POSSIBLE, LEAVE A BUSINESS CARD

FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
Company: <u>POTESTA &amp; ASSOCIATES</u>	<u>7012 MACCORKLE AVE SE</u>	PHONE <u>304-342-1400</u> TOLL FREE
Rep: <u>JASON GAUDEE</u>	<u>MARKKISER CHARLESTON WV 25304</u>	
Email Address: <u>markkiser@potesta.com</u>		FAX <u>304 343 9031</u>
Company: <u>DAVID L RYDER</u>	<u>CONTRACT INC</u>	PHONE <u>304-536-9383</u> TOLL FREE
Rep: <u>NAEL C RYDER</u>		
Email Address: <u>EMAIL: RYDER CONTRACTING CO SUNDIAL LINK PROJECT.COM</u>		FAX <u>304-536-9381</u>
Company: <u>DEI SHIRES INC</u>	<u>Box 1273</u>	PHONE <u>304-673-9358</u> TOLL FREE
Rep: <u>Robert Cowlesburg</u>	<u>Blue Hills Drive 24701</u>	
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Rep: <u>CARL LAWSON</u>	<u>@ DEI SHIRES.COM</u>	
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Company: <u>Aspen Corporation</u>	<u>2400 Riter Drive</u>	PHONE <u>304-763-4573</u> TOLL FREE
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Company: <u>JF Allen Co</u>	<u>P.O. Box 2049</u>	PHONE <u>304 472 8890</u>
Rep: <u>JAMES ALLEN</u>	<u>Buckhannon WV</u>	TOLL FREE
Email Address: <u>JAMES.ALLEN@JF-ALLIEN.CO.COM</u>	<u>26201</u>	FAX <u>304 472 8897</u>
Company: <u>ATC Assoc</u>	<u>3 Thompson Drive, New York, NY</u>	PHONE <u>330-620-1252</u>
Rep: <u>MIKE FURMAN</u>	<u>8501C</u>	TOLL FREE
Email Address: <u>MIKE@ATC-ASSOCIATES.COM</u>		FAX
Company: <u>S.E.B. Mountain Company</u>		PHONE <u>304 925 0253</u>
Rep: <u>DAUG H. Bowman</u>	<u>511 50th St</u>	TOLL FREE
Email Address: <u>DHB722@yahoo.com</u>	<u>Charleston WV 25304</u>	FAX <u>925 9230</u>
Company: <u>Pineville Paving &amp; Excavating Inc.</u>	<u>P.O. Box 1290</u>	PHONE <u>304-732-8303</u>
Rep: <u>Kevin D Bradford</u>	<u>Pineville WV 24844</u>	TOLL FREE
Email Address: <u>Tony PPI @ AOL.COM</u>		FAX <u>304-732-7855</u>

Request for Proposal No. DEP15740

Date: February 21, 2012

Project: Sundial (Hatfield) Refuse Piles

Bid Opening Date: March, 13, 2012

\*PLEASE BE SURE TO PRINT LEGIBLY - IF POSSIBLE, LEAVE A BUSINESS CARD

FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
Company: <u>WISSEMAN EXCAVATING</u>		PHONE <u>586 3736</u>
Rep:	<u>BRAD WISSEMAN</u>	TOLL FREE
Email Address:	<u>RT 1 BOX 190 LIBERTY WV 25124</u>	FAX <u>586 3789</u>
Company: <u>Cowgirl Up Inc</u>	<u>P.O. Box 243 Simpson, WV</u>	PHONE <u>304-739-41397</u>
Rep: <u>Brian Morse</u>	<u>26435</u>	TOLL FREE
Email Address: <u>DCE - cowgirlup@earthlink.net</u>		FAX <u>-739-4461</u>
Company: <u>Collins Building &amp; Contracting Inc</u>	<u>3706 Carly Rd</u>	PHONE <u>304-765-3521</u>
Rep: <u>Roger Collins Jr</u>	<u>Flatwoods, WV</u>	TOLL FREE
Email Address: <u>Collins Building &amp; Contracting Inc</u>	<u>26621</u>	FAX <u>304-765-3521</u>
Company: <u>Heeter Construction Inc</u>	<u>513 Charleston Rd</u>	PHONE <u>304-927-3032</u>
Rep: <u>Don Britton</u>	<u>Spencer WV 25276</u>	TOLL FREE
Email Address:		FAX
Company: <u>TEASTREZAN Arizona</u>	<u>PO BOX 4108</u>	PHONE <u>304-644-0255</u>
Rep: <u>Ann V. Anderson</u>	<u>CHANDLER, AZ 85225</u>	TOLL FREE
Email Address: <u>eastern@roadsofhotmail.com</u>		FAX <u>0256</u>

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FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
Company: Carpenter Reclamation, Inc.	P.O. Box 13015	PHONE 304-984-1115
Rep: Mike Carpenter	Sissonville, WV	TOLL 304-543-1726 FREE
Email Address: RCARPEN103@AOL.COM	25360	FAX 304-984-2770
Company: NANCY ROBERTS	1027 Virginia St E	PHONE 304-347-7162
Rep: OSM	CHARLESTON WV 25301	TOLL FREE
Email Address: NROBERTS@OSMRE.GOV		FAX
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX