



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

Solicitation

NUMBER

DEP16299

PAGE

1

ADDRESS CORRESPONDENCE TO ATTENTION OF

FRANK WHITTAKER
304-558-2316

RFQ COPY

TYPE NAME/ADDRESS HERE

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ENVIRONMENTAL PROTECTION
DEPT. OF
OFFICE OF SPECIAL RECLAMATION
116 INDUSTRIAL DRIVE
OAK HILL, WV
25901 304-465-1911

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DATE PRINTED

07/17/2013

BID OPENING DATE:

08/22/2013

BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		962-73		
RECLAMATION: RESTORATION OF LAND						
SPECIAL RECLAMATION/BOND FORFEITURE PROJECT						
THE WEST VIRGINIA PURCHASING DIVISION, ON BEHALF OF THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING BIDS FROM QUALIFIED CONTRACTORS FOR A CONTRACT TO PROVIDE ALL LABOR AND MATERIALS TO PERFORM RECLAMATION ON THE MINING OPERATION OF ED-E DEVELOPMENT COMPANY, INC. NOW UNDER REVOKED PERMIT NUMBER(S) S-1032-86 THIS SITE CONSISTS OF APPROXIMATELY 11 ACRES AND IS LOCATED NEAR KINGWOOD, WV, PRESTON COUNTY.						
THE RECLAMATION SHALL BE PERFORMED UNDER THE GUIDANCE AND GENERAL SUPERVISION OF THE AGENT ASSIGNED TO THE PROJECT FOR THE STATE OF WEST VIRGINIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION.						
A MANDATORY ON-SITE PREBID CONFERENCE SHALL BE HELD ON 08/06/2013 @ 10:00 AM. ALL INTERESTED PARTIES ARE REQUIRED TO ATTEND THIS MEETING. FAILURE TO ATTEND THE MANDATORY PRE-BID SHALL RESULT IN DISQUALIFICATION OF THE BID. NO ONE PERSON MAY REPRESENT MORE THAN ONE BIDDER.						
DIRECTIONS TO PRE-BID: FROM KINGWOOD POST OFFICE: TRAVEL WEST 0.6 MILES ON EAST MAIN STREET. TURN RIGHT ONTO MORGANTOWN STREET (SR7) AND TRAVEL 3.1 MILES. TURN LEFT ONTO DOGTOWN ROAD (CR 92/4) AND						
SIGNATURE					TELEPHONE	
TITLE					DATE	
FEIN					ADDRESS CHANGES TO BE NOTED ABOVE	

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



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

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2

ADDRESS CORRESPONDENCE TO ATTENTION OF:

FRANK WHITTAKER
304-558-2316

RFQ COPY

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ENVIRONMENTAL PROTECTION
DEPT. OF
OFFICE OF SPECIAL RECLAMATION
116 INDUSTRIAL DRIVE
OAK HILL, WV
25901 304-465-1911

S
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DATE PRINTED

07/17/2013

BID OPENING DATE:

08/22/2013

BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
	TRAVEL 0.3 MILES. TAKE FIRST LEFT ONTO BORGMAN MANOWN ROAD (CR-7/8). TRAVEL APPROXIMATELY 0.6 MILE AND TAKE FIRST RIGHT ONTO BORGMAN MANOWN ROAD (CR-26/30). TRAVEL APPROXIMATELY 0.2 MILE TO GREEN GATE ON RIGHT. CONTACT & PHONE #: NATHAN PARKS 304-465-1911, EXT. 3038					
	ALL WORK MUST BE COMPLETED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS PREPARED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND PURCHASE ORDER ISSUED BY THE DEPARTMENT OF ADMINISTRATION, DIVISION OF PURCHASING.					
	***** THIS IS THE END OF RFQ DEP16299 ***** TOTAL: _____					

SIGNATURE

TELEPHONE

DATE

TITLE

FEIN

ADDRESS CHANGES TO BE NOTED ABOVE

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

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. **REVIEW DOCUMENTS THOROUGHLY:** The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.
2. **MANDATORY TERMS:** The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.
3. **PREBID MEETING:** The item identified below shall apply to this Solicitation.

- ☐ A pre-bid meeting will not be held prior to bid opening.
- ☐ A **NON-MANDATORY PRE-BID** meeting will be held at the following place and time:

- ☒ A **MANDATORY PRE-BID** meeting will be held at the following place and time:
 08/06/2013 at 10:00 am
 Near Kingwood, WV
 Preston County

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one person attending the pre-bid meeting may represent more than one Vendor.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. The State will not accept any other form of proof or documentation to verify attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing. Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required

information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in, but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. **VENDOR QUESTION DEADLINE:** Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are non-binding.

Question Submission Deadline: 08/09/2013

Submit Questions to: Frank Whittaker
 2019 Washington Street, East
 Charleston, WV 25305
 Fax: 304-558-4115
 Email: frank.m.whittaker@wv.gov

5. **VERBAL COMMUNICATION:** Any verbal communication between the Vendor and any State personnel is not binding, including that made at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.
6. **BID SUBMISSION:** All bids must be signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The bid delivery address is:

Department of Administration, Purchasing Division
 2019 Washington Street East
 Charleston, WV 25305-0130

The bid should contain the information listed below on the face of the envelope or the bid may not be considered:

SEALED BID

BUYER: _____

SOLICITATION NO.: _____

BID OPENING DATE: _____

BID OPENING TIME: _____

FAX NUMBER: _____

In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus _____ convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE: ☐ Technical
☐ Cost

7. **BID OPENING:** Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when time stamped by the official Purchasing Division time clock.

Bid Opening Date and Time: 08/22/2013 at 1:30 PM

Bid Opening Location: Department of Administration, Purchasing Division
 2019 Washington Street East
 Charleston, WV 25305-0130

8. **ADDENDUM ACKNOWLEDGEMENT:** Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.
9. **BID FORMATTING:** Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

GENERAL TERMS AND CONDITIONS:

1. **CONTRACTUAL AGREEMENT:** Issuance of a Purchase Order signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. **DEFINITIONS:** As used in this Solicitation / Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation / Contract.
 - 2.1 **"Agency" or "Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.
 - 2.2 **"Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods and services requested in the Solicitation.
 - 2.3 **"Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.
 - 2.4 **"Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.
 - 2.5 **"Purchase Order"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the successful bidder and Contract holder.
 - 2.6 **"Solicitation"** means the official solicitation published by the Purchasing Division and identified by number on the first page thereof.
 - 2.7 **"State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.
 - 2.8 **"Vendor" or "Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. **CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:



Term Contract

Initial Contract Term: This Contract becomes effective on _____
and extends for a period of _____ year(s).

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal must be submitted to the Purchasing Division Director thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Renewal of this Contract is limited to _____ successive one (1) year periods. Automatic renewal of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases. Attorney General approval may be required for vendor terms and conditions.

Reasonable Time Extension: At the sole discretion of the Purchasing Division Director, and with approval from the Attorney General's office (Attorney General approval is as to form only), this Contract may be extended for a reasonable time after the initial Contract term or after any renewal term as may be necessary to obtain a new contract or renew this Contract. Any reasonable time extension shall not exceed twelve (12) months. Vendor may avoid a reasonable time extension by providing the Purchasing Division Director with written notice of Vendor's desire to terminate this Contract 30 days prior to the expiration of the then current term. During any reasonable time extension period, the Vendor may terminate this Contract for any reason upon giving the Purchasing Division Director 30 days written notice. Automatic extension of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases, but Attorney General approval may be required.

Release Order Limitations: In the event that this contract permits release orders, a release order may only be issued during the time this Contract is in effect. Any release order issued within one year of the expiration of this Contract shall be effective for one year from the date the release order is issued. No release order may be extended beyond one year after this Contract has expired.



Fixed Period Contract: This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within _____ 365 _____ days.

☐ **One Time Purchase:** The term of this Contract shall run from the issuance of the Purchase Order until all of the goods contracted for have been delivered, but in no event shall this Contract extend for more than one fiscal year.

☐ **Other:** See attached.

4. **NOTICE TO PROCEED:** Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Purchase Order will be considered notice to proceed

5. **QUANTITIES:** The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

☐ **Open End Contract:** Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

☐ **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

☒ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

☐ **One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

6. **PRICING:** The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification.

7. **EMERGENCY PURCHASES:** The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.

8. **REQUIRED DOCUMENTS:** All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

- ☒ **BID BOND:** All Vendors shall furnish a bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.
- ☒ **PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of 100% . The performance bond must be issued and received by the Purchasing Division prior to Contract award. On construction contracts, the performance bond must be 100% of the Contract value.
- ☒ **LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be issued and delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable.

- ☐ **MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.
- ☒ **WORKERS' COMPENSATION INSURANCE:** The apparent successful Vendor shall have appropriate workers' compensation insurance and shall provide proof thereof upon request.
- ☒ **INSURANCE:** The apparent successful Vendor shall furnish proof of the following insurance prior to Contract award and shall list the state as a certificate holder:

- ☒ **Commercial General Liability Insurance:**
\$2,000,000.00 or more.
- ☐ **Builders Risk Insurance:** builders risk – all risk insurance in an amount equal to 100% of the amount of the Contract.
- ☒ \$2,000,000.00 Aggregate
- ☒ 2,000,000.00 Automobile Liability
- ☐
- ☐
- ☐

The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed above.

- ☐ **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section entitled Licensing, of the General Terms and Conditions, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits prior to Contract award, in a form acceptable to the Purchasing Division.

☐
☐
☐
☐

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications prior to Contract award regardless of whether or not that requirement is listed above.

9. **LITIGATION BOND:** The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified check payable to the Purchasing Division. Cashier's or certified checks will be deposited with and held by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or improper purpose, the bond or deposit shall be returned in its entirety.
10. **ALTERNATES:** Any model, brand, or specification listed herein establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.
11. **EXCEPTIONS AND CLARIFICATIONS:** The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or

other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

- 12. LIQUIDATED DAMAGES:** Vendor shall pay liquidated damages in the amount
\$250.00 per day for each day of delay

This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy.

- 13. ACCEPTANCE/REJECTION:** The State may accept or reject any bid in whole, or in part. Vendor's signature on its bid signifies acceptance of the terms and conditions contained in the Solicitation and Vendor agrees to be bound by the terms of the Contract, as reflected in the Purchase Order, upon receipt.
- 14. REGISTRATION:** Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee if applicable.
- 15. COMMUNICATION LIMITATIONS:** In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.
- 16. FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.
- 17. PAYMENT:** Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears, to the Agency at the address on the face of the purchase order labeled "Invoice To."
- 18. UNIT PRICE:** Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.
- 19. DELIVERY:** All quotations are considered freight on board destination ("F.O.B. destination") unless alternate shipping terms are clearly identified in the bid. Vendor's listing of shipping terms that contradict the shipping terms expressly required by this Solicitation may result in bid disqualification.
- 20. INTEREST:** Interest attributable to late payment will only be permitted if authorized by the West Virginia Code. Presently, there is no provision in the law for interest on late payments.
- 21. PREFERENCE:** Vendor Preference may only be granted upon written request and only in accordance with the West Virginia Code § 5A-3-37 and the West Virginia Code of State Rules. A Resident Vendor Certification form has been attached hereto to allow Vendor to apply for the preference. Vendor's

failure to submit the Resident Vendor Certification form with its bid will result in denial of Vendor Preference. Vendor Preference does not apply to construction projects.

22. **SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES:** For any solicitations publicly advertised for bid on or after July 1, 2012, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to submission of its bid to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.
23. **TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
24. **CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-7.16.2.
25. **WAIVER OF MINOR IRREGULARITIES:** The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.
26. **TIME:** Time is of the essence with regard to all matters of time and performance in this Contract.
27. **APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.
28. **COMPLIANCE:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendors acknowledge that they have reviewed, understand, and will comply with all applicable law.
29. **PREVAILING WAGE:** On any contract for the construction of a public improvement, Vendor and any subcontractors utilized by Vendor shall pay a rate or rates of wages which shall not be less than the fair minimum rate or rates of wages (prevailing wage), as established by the West Virginia Division of Labor under West Virginia Code §§ 21-5A-1 et seq. and available at <http://www.sos.wv.gov/administrative-law/wagerates/Pages/default.aspx>. Vendor shall be responsible for ensuring compliance with prevailing wage requirements and determining when prevailing wage

requirements are applicable. The required contract provisions contained in West Virginia Code of State Rules § 42-7-3 are specifically incorporated herein by reference.

30. **ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.
31. **MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary, no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). **No Change shall be implemented by the Vendor until such time as the Vendor receives an approved written change order from the Purchasing Division.**
32. **WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.
33. **SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.
34. **ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments. Notwithstanding the foregoing, Purchasing Division approval may or may not be required on certain agency delegated or exempt purchases.
35. **WARRANTY:** The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.
36. **STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.
37. **BANKRUPTCY:** In the event the Vendor files for bankruptcy protection, the State of West Virginia may deem this Contract null and void, and terminate this Contract without notice.

38. [RESERVED]

39. CONFIDENTIALITY: The Vendor agrees that it 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/default.html>.

40. DISCLOSURE: Vendor's response to the Solicitation and the resulting Contract are considered public documents and will be disclosed to the public in accordance with the laws, rules, and policies governing the West Virginia Purchasing Division. Those laws include, but are not limited to, the Freedom of Information Act found in West Virginia Code § 29B-1-1 et seq.

If a Vendor considers any part of its bid to be exempt from public disclosure, Vendor must so indicate by specifically identifying the exempt information, identifying the exemption that applies, providing a detailed justification for the exemption, segregating the exempt information from the general bid information, and submitting the exempt information as part of its bid but in a segregated and clearly identifiable format. Failure to comply with the foregoing requirements will result in public disclosure of the Vendor's bid without further notice. A Vendor's act of marking all or nearly all of its bid as exempt is not sufficient to avoid disclosure and WILL NOT BE HONORED. Vendor's act of marking a bid or any part thereof as "confidential" or "proprietary" is not sufficient to avoid disclosure and WILL NOT BE HONORED. In addition, a legend or other statement indicating that all or substantially all of the bid is exempt from disclosure is not sufficient to avoid disclosure and WILL NOT BE HONORED. Vendor will be required to defend any claimed exemption for nondisclosure in the event of an administrative or judicial challenge to the State's nondisclosure. Vendor must indemnify the State for any costs incurred related to any exemptions claimed by Vendor. Any questions regarding the applicability of the various public records laws should be addressed to your own legal counsel prior to bid submission.

41. LICENSING: In accordance with West Virginia Code of State Rules §148-1-6.1.7, Vendor 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, West Virginia Insurance Commission, or any other state agency or political subdivision. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

42. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Purchase Order from any agency of the State of West Virginia, the Vendor agrees to 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 Vendor.

- 43. VENDOR CERTIFICATIONS:** By signing its bid or entering into this Contract, Vendor certifies (1) that its bid was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid for the same material, supplies, equipment or services; (2) that its bid is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this RFQ in its entirety; understands the requirements, terms and conditions, and other information contained herein. Vendor's signature on its bid also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

The individual signing this bid on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

- 44. PURCHASING CARD ACCEPTANCE:** The State of West Virginia currently utilizes a Purchasing Card program, administered under contract by a banking institution, to process payment for goods and services. The Vendor must accept the State of West Virginia's Purchasing Card for payment of all orders under this Contract unless the box below is checked.



Vendor is not required to accept the State of West Virginia's Purchasing Card as payment for all goods and services.

- 45. VENDOR RELATIONSHIP:** The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting,

supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, *etc.* and the filing of all necessary documents, forms and returns pertinent to all of the foregoing. Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

- 46. INDEMNIFICATION:** The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered

by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

- 47. PURCHASING AFFIDAVIT:** In accordance with West Virginia Code § 5A-3-10a, all Vendors are required to sign, notarize, and submit the Purchasing Affidavit stating that neither the Vendor nor a related party owe a debt to the State in excess of \$1,000. The affidavit must be submitted prior to award, but should be submitted with the Vendor's bid. A copy of the Purchasing Affidavit is included herewith.
- 48. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE:** This Contract may be utilized by and extends to other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts ("Other Government Entities"). This Contract shall be extended to the aforementioned Other Government Entities on the same prices, terms, and conditions as those offered and agreed to in this Contract. If the Vendor does not wish to extend the prices, terms, and conditions of its bid and subsequent contract to the Other Government Entities, the Vendor must clearly indicate such refusal in its bid. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.
- 49. CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire any interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.
- 50. REPORTS:** Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:
- ☐ Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.
 - ☐ Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.requisitions@wv.gov.
- 51. BACKGROUND CHECK:** In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information to submit to a fingerprint-based state and federal background inquiry through the state

repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision.

The State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

52. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process.

The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

- a. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
- b. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

53. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance

with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products.

This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

ADDITIONAL TERMS AND CONDITIONS (Construction Contracts Only)

1. **CONTRACTOR'S LICENSE:** West Virginia Code § 21-11-2 requires that all persons desiring to perform contracting work in this state be licensed. The West Virginia Contractors Licensing Board is empowered to issue the contractor's license. Applications for a contractor's license may be made by contacting the West Virginia Division of Labor.

West Virginia Code § 21-11-11 requires any prospective Vendor to include the contractor's license number on its bid. Failure to include a contractor's license number on the bid shall result in Vendor's bid being disqualified. Vendors should include a contractor's license number in the space provided below.

Contractor's Name: _____

Contractor's License No. _____

The apparent successful Vendor must furnish a copy of its contractor's license prior to the issuance of a purchase order/contract.

2. **DRUG-FREE WORKPLACE AFFIDAVIT:** W. Va. Code § 21-1D-5 provides that any solicitation for a public improvement contract requires each Vendor that submits a bid for the work to submit at the same time an affidavit that the Vendor has a written plan for a drug-free workplace policy. To comply with this law, Vendor must either complete the enclosed drug-free workplace affidavit and submit the same with its bid or complete a similar affidavit that fulfills all of the requirements of the applicable code. Failure to submit the signed and notarized drug-free workplace affidavit, or a similar affidavit that fully complies with the requirements of the applicable code, with the bid shall result in disqualification of Vendor's bid.
3. **DRUG FREE WORKPLACE REPORT:** Pursuant to W. Va. Code § 21-1D-7b, no less than once per year, or upon completion of the project, every contractor shall provide a certified report to the public authority which let the contract. For contracts over \$25,000, the public authority shall be the West Virginia Purchasing Division. For contracts of \$25,000 or less, the public authority shall be the agency issuing the contract. The report shall include:

(1) Information to show that the education and training service to the requirements of West Virginia Code § 21-1D-5 was provided;

(2) The name of the laboratory certified by the United States Department of Health and Human Services or its successor that performs the drug tests;

(3) The average number of employees in connection with the construction on the public improvement;

(4) Drug test results for the following categories including the number of positive tests and the number of negative tests: (A) Pre-employment and new hires; (B) Reasonable suspicion; (C) Post-accident; and (D) Random.

Vendor should utilize the attached Certified Drug Free Workplace Report Coversheet when submitting the report required hereunder.

3. **AIA DOCUMENTS:** All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the AIA A101-2007 and A201-2007 or the A107-2007 documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein.
4. **SUBCONTRACTOR LIST SUBMISSION:** In accordance with W. Va. Code § 5-22-1, The apparent low bidder on a contract for the construction, alteration, decoration, painting or improvement of a new or existing building or structure valued at more than \$250,000.00 shall submit a list of all subcontractors who will perform more than \$25,000.00 of work on the project including labor and materials. This provision shall not apply to any other construction projects, such as highway, mine reclamation, water or sewer projects. Additionally, if no subcontractors who will perform more than \$25,000.00 of work are to be used to complete the project, it will be noted on the subcontractor list.
 - a. **Required Information.** The subcontractor list shall contain the following information:
 - i. Bidder's name
 - ii. Name of each subcontractor
 - iii. License numbers as required by W. Va. Code § 21-11-1 et. seq.
 - iv. Notation that no subcontractor will be used to perform more than \$25,000.00 of work, when applicable
 - b. **Submission.** The completed subcontractor list shall be provided to the Purchasing Division within one business day of the opening of bids for review. Failure to submit the subcontractor list within one business day after the deadline for submitting bids shall result in disqualification of the bid.
 - c. **Substitution of Subcontractor.** Written approval must be obtained from the State Spending Unit before any subcontractor substitution is permitted. Substitutions are not permitted unless:
 - i. The subcontractor listed in the original bid has filed for bankruptcy;
 - ii. The subcontractor in the original bid has been debarred or suspended; or
 - iii. The contractor certifies in writing that the subcontractor listed in the original bill fails, is unable, or refuses to perform his subcontract.

5. **GREEN BUILDINGS MINIMUM ENERGY STANDARDS:** In accordance with § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: *Provided*, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.

ADDITIONAL TERMS AND CONDITIONS (Architectural and Engineering Contracts Only)

1. **PLAN AND DRAWING DISTRIBUTION:** All plans and drawings must be completed and available for distribution at least five business days prior to a scheduled pre-bid meeting for the construction or other work related to the plans and drawings.
2. **PROJECT ADDENDA REQUIREMENTS:** The Architect/Engineer and/or Agency shall be required to abide by the following schedule in issuing construction project addenda:
 - a. The Architect/Engineer shall prepare any addendum materials for which it is responsible, and a list of all vendors that have obtained drawings and specifications for the project. The Architect/Engineer shall then send a copy of the addendum materials and the list of vendors to the State Agency for which the contract is issued to allow the Agency to make any necessary modifications. The addendum and list shall then be forwarded to the Purchasing Division buyer by the Agency. The Purchasing Division buyer shall send the addendum to all interested vendors and, if necessary, extend the bid opening date. Any addendum should be received by the Purchasing Division at least fourteen (14) days prior to the bid opening date.
3. **PRE-BID MEETING RESPONSIBILITIES:** The Architect/Engineer shall be available to attend any pre-bid meeting for the construction or other work resulting from the plans, drawings, or specifications prepared by the Architect/Engineer.
4. **AIA DOCUMENTS:** Contracts for architectural and engineering services will be governed by the AIA document B101-2007, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein when procured under Chapter 5G of the West Virginia Code.
5. **GREEN BUILDINGS MINIMUM ENERGY STANDARDS:** In accordance with West Virginia Code § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: *Provided*, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.

**ED-E DEVELOPMENT COMPANY,
INC.**

S-1032-86

DEP16299

**AMD TREATMENT FACILITY UPGRADE
AND
COLLECTION SYSTEM**

**BID PREPARATION,
GENERAL PERFORMANCE STANDARDS,
AND
TECHNICAL SPECIFICATIONS**

MAY 2013

ED-E DEVELOPMENT COMPANY, INC.

S-1032-86

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DIRECTIONS TO SITE

From Kingwood Post Office: travel west 0.6 miles on East Main Street. Turn right onto Morgantown Street (SR7) and travel 3.1 miles. Turn left onto Dogtown Road (CR 92/4) and travel 0.3 miles. Take first left onto Borgman Manown Road (CR- 7/8). Travel approximately 0.6 mile and take first right onto Borgman Manown Road (CR-26/30). Travel approximately 0.2 mile to green gate on right.

The site drains to an Unnamed Tributary of Squires Creek of Kanes Creek Run of the Monongahela River.

CERTIFICATION

ED-E DEVELOPMENT COMPANY, INC.

S-1032-86

DEP16299

I, Nathan L. Parks, the undersigned, hereby certify¹ that the project was designed to adequately treat acid mine drainage to meet and comply with National Pollution Discharge Elimination Systems Permitting.



(Nathan L. Parks)
WV No. 17969



05-29-2013
Date

¹The term "certify" as used herein is defined as follows: An engineer's certification of conditions is a declaration of professional judgment. It does constitute a warranty or guarantee, either expressed or implied.

BID PREPARATION INFORMATION**HISTORICAL INFORMATION**

Prospective bidders may review files at the West Virginia Department of Environmental Protection, Charleston, WV office, or the Regional West Virginia Department of Environmental Protection Office at 105 S. Railroad Street, Suite 301 Philippi, WV 26416. These files may contain additional information not included in the contract. Documents including, but not limited to, permit applications, permits, inspection reports, environmental documents, permit violation history, geological and geotechnical information, probable hydrologic consequences, maps, modifications, NPDES information and other related data. Copies may be obtained upon request and payment of copying fees.

PREBID CONFERENCE

At the time of the Pre-bid conference, potential bidders with questions pertaining to the contract shall provide a written list to the DEP.

DEP shall respond to all questions in a written Addendum prior to the bid opening date.

Considerable foot travel over rough terrain and/or inclement weather may be required.

VIDEO

The information given at the pre-bid showing by the project contact person or the assigned person shall be documented on video tape and shall be an integral part of this contract's requirements, but will not supersede the written contract. All information on video tape that is new or provides clarification to the specifications, will be issued in writing by a formal addendum and will become part of the written contract.

INTENT OF CONTRACT

The intent of the contract is for the reclamation/restoration of forfeited mine lands as required by West Virginia Department of Environmental Protection. The contractor is to provide for the construction and completion in every detail of the work described. The Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the Plans, Specifications, and terms of the Contract.

Should any misunderstanding arise as to the intent or meaning of the Contract, or any discrepancies appear, the decision of the Director of Division of Land Restoration shall be final.

GENERAL PERFORMANCE STANDARDS

INTRODUCTION

The performance standards and non-compliance penalties which govern special reclamation-bond forfeiture projects are in Chapter 22A, Article 3, of the Code of West Virginia and subsequent rules and regulations. The following performance standards are of a general nature and do not represent all the performance standards applicable to a special reclamation-bond forfeiture project. However, some or all of these standards will pertain to each project.

BACKFILLING

1. Unless otherwise noted, the highwall shall be eliminated and the disturbed area graded to the approximate original contour.
2. The material used to backfill and eliminate the highwall shall be sufficiently compacted so as to insure stability of the backfill throughout the warranty period.
3. The land above the highwall shall not be disturbed unless otherwise directed.
4. The best available material to support vegetation, sufficient to establish a permanent vegetative cover and to achieve the approved post mining land use, shall be used.

BLASTING

The performance standards of the most current edition of the Surface Mining Blasting Rule (Title 199, Series 1) must be adhered to.

NOTICE TO PROCEED

A Notice to Proceed shall be issued to the Contractor by the project contact person for the Department of Environmental Protection. Actual construction may only begin after a Notice to Proceed is given and as specified. Such notice shall specify the starting date of the Purchase Order, the Work Performance Period, and the completion date of the Work Performance Period. Extensions may be granted based upon weather conditions and/or unforeseen site conditions and shall be processed as a change order by the WV Purchasing Division.

PRE-CONSTRUCTION CONFERENCE

The Contractor in possession of the awarded Purchase Order shall schedule a Pre-Construction Conference on the site within ten (10) days after receiving the Notice To Proceed. The Contractor's Agent (foreman or the on-the-ground supervisor) must be in attendance.

GENERAL SUPERVISION

This Contract is under the general supervision of the West Virginia Department of Environmental Protection's contact person for the purpose of Contract compliance inspection only. Contractor shall supervise work being conducted at all times. All services rendered by the Engineer/Contact Person consist of professional opinions and recommendations made in accordance with generally accepted engineering practice. Under no circumstances is it the intent of the Engineer/Contact Person to directly control the physical activities of the Contractor or the Contractor's workmen's accomplishment of work on this project.

CONTRACTOR RESPONSIBILITY

The Contractor is responsible for compliance with all aspects of this written Contract. All changes will be issued as a formal change order by the WV Purchasing Division.

A responsible Contractor's Agent (foreman or on the ground supervisor) shall be on the site at all working times who demonstrates a knowledge of mined land reclamation, contract requirements and responds to DEP (Owner) inspections.

The Contractor shall maintain the work covered under this contract during construction and until the project is accepted. All cost of maintenance work during construction and before the project is accepted shall be included in the unit or lump sum prices on the various pay items.

CONCURRENT RECLAMATION

Reclamation of this project shall commence at a definite point as defined and shall progress from that point with total reclamation to include backfilling, grading/regrading, and revegetation. Changes may be granted based upon weather or differing site conditions with prior approval.

DIFFERING SITE CONDITIONS

During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided by the Contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

Upon written notification, the Engineer/Contact Person will investigate the conditions, and if determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding loss of anticipated profits, will be made and the Contract modified in writing accordingly. The Engineer/Contact Person will notify the Contractor of DEP's determination whether or not an adjustment of the Contract is warranted.

No Contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

No Contract adjustment will be allowed under this clause for any effects caused on unchanged work.

HANDLING AND STORAGE OF MATERIALS

Materials which are stored on site, before utilization, shall be stored so as to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may be inspected again prior to their use in the work. Damaged or deteriorated materials shall be removed and replaced by materials meeting the original specifications.

Aggregate stockpiles shall be made on ground that is denuded of vegetation, hard, and well drained. Addition and removal of aggregate from the stockpile shall be done in a manner which will not result in the inclusion of foreign material into the aggregate or result in the separation of sizes. The use of the aggregate will determine if exceptions are permitted.

All materials shall be handled in such a manner as to preserve their quality and fitness for the work.

FINAL INSPECTION

A final inspection meeting by the Department of Environmental Protection's representative and the

ED-E DEVELOPMENT COMPANY, INC. S-1032-86

DEP16299

Contractor is required for the construction phase and prior to Demobilization.

ACREAGE QUANTITIES

The acreage quantities in this Contract are for bidding purposes only and are a set (definite) number for the project area as specified at the pre-bid showing. Only surveyed acreage's through figures the Contractor and/or the State develops will be honored to alter these acreage numbers. No separate payment will be made for surveying.

PAYMENT

Invoices must be submitted on prescribed Department of Environmental Protection, Special Reclamation Program forms and include verification. Certified contractor payrolls for operators directly involved in this project and a current workers compensation certificate must accompany each invoice for payment. Verification of wage rates may include employee interviews. Invoices shall be signed in blue ink so that it is easy to verify that document is an original. Vendor should submit with their bid the current remit-to address to be used for payment processing.

CONTRACT WARRANTY

A Warranty Period of one (1) year shall commence from the final date of service as indicated on the final invoice for payment. No payment will be made for additional work necessary to comply with warranty requirements.

CONTRACT NON-COMPLIANCE

If in the opinion of the Department of Environmental Protection the Contract is not in compliance with any line item specification, that portion of the project shall cease until a compliance schedule and understanding is demonstrated in writing and accepted by the Director of Division of Land Restoration.

CONTRACT DELETIONS

Any line item, or any portion thereof, may be deleted when determined by the DEP project contact person that such line item, or portion thereof, is deemed unnecessary for the successful reclamation of this project. No claim for loss of anticipated profits will be considered. All contract deletions will be processed as a change order by the WV Purchasing Division.

ED-E DEVELOPMENT COMPANY, INC. S-1032-86

DEP16299

Attn:

Re: Notice to Proceed
Permit Name: _____
Permit No. _____
Purchase Order No.: DEP_____

Dear _____ :

The purpose of this letter is to express our appreciation for your work in advance and to recognize a reclamation partnership project. The official starting date for the above mentioned purchase order is _____. The work performance period must be completed by _____. The contract life of one year is provided to accomplish all line items and to process all payments within that period.

You must schedule a pre-construction conference on site within ten (10) days after receiving this notice to proceed. It is then mandatory that construction begins within ten (10) days of the pre-construction conference and continues diligently until completion of the project. Please contact this office to schedule the pre-construction conference. The foreman, superintendent, or on-the-ground supervisor must be in attendance at this conference.

Failure to comply with this notice to proceed will cause termination of the contract and forfeiture of your performance bond.

If you have any questions please feel free to contact this office.

Sincerely,

ED-E DEVELOPMENT COMPANY, INC.
PERMIT S-1032-86
BID SCHEDULE
DEP16299

VENDOR NAME: _____

The WVDEP reserves the right to request additional information and supporting documentation regarding unit prices when the unit price appears to be unreasonable.

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1.0	Mobilization/Demobilization/Project Sign (Limited to 2% total bid maximum for this permit)	Lump Sum	LS	\$	\$
2.0	Spill Containment Area (S.C.A.) (Limited to \$1,000.00 maximum for this permit)	Lump Sum	LS	\$	\$
3.0	Haul Road/Access Road (Limited to 2% total bid maximum for this permit)	Lump Sum	LS	\$	\$
4.0	Utilities	No Bid Item			
5.0	Regrading and Topsoiling	9	AC	\$	\$
6.0	Revegetation	9	AC	\$	\$
7.0	Construction Stakeout (Limited to 2% total bid maximum for this permit)	Lump Sum	LS	\$	\$
8.0	Vegetative Enhancement	2	AC	\$	\$
9.0	Storm Water Management - Silt Fence and Hay Bale Dike (Limited to \$5.00 per linear foot maximum for this permit)	1500	LF	\$	\$
10.0	Constructed Sediment Control Structures				
10.1	Sumps (Limited to \$100.00 per each)	10	EA	\$	\$
10.2	Settling Pond Four (4)	1	EA	\$	\$
11.0	Existing Sediment Control Structures				
11.1	Clean, Modify, and Upgrade Settling Pond 1	1	EA	\$	\$
11.2	Clean, Modify, and Upgrade Settling Pond 2	1	EA	\$	\$
11.3	Clean, Modify, and Upgrade Settling Pond 3	1	EA	\$	\$
11.4	Clean, Modify, and Upgrade Settling Pond 5	1	EA	\$	\$
11.5	Clean, Modify, and Upgrade Settling Pond 6	1	EA	\$	\$
11.6	Eliminate Existing Sludge Disposal Cells	3	EA	\$	\$
12.0	Construct New Haul Road/Access Road One	1600	LF	\$	\$
13.0	Sludge Disposal				
13.1	Lined Sludge Disposal Cell	2	EA	\$	\$
13.2	Sludge Cell Underdrain	250	LF	\$	\$
13.3	6-INCH HDPE Sludge Pipe	2000	LF	\$	\$
13.4	Pump Adaptor Connection	3	EA	\$	\$
13.5	Pump Adaptor Connection With Two-Inch Drain	3	EA	\$	\$
13.6	Six-Inch Gate Valve	5	EA	\$	\$
13.7	WYES (6-INCH HDPE LATERALS 45°)	4	EA	\$	\$
14.0	HDPE Corrugated Ditch Liner	905	LF	\$	\$
15.0	HDPE Corrugated Weir	1	EA	\$	\$
16.0	HDPE Water Line				
16.1	HDPE Drive Water Line -4-Inch	120	LF	\$	\$
SUBTOTAL PAGE 1:					\$

BIDDER'S AUTHORIZED SIGNATURE: _____ DATE: _____

1. Upon mobilization to the site, which will be directed in a written Notice to Proceed, the access roads shall be developed in accordance with bid item #3.0. If fuel and lubricants are to be stored on-site, bid item #2.0 shall be in place before fuel is delivered. Project sign shall be constructed and erected in accordance with attached specifications. The sign shall be maintained during the construction activities and through the life of the warranty period. Sign cost is a No Bid Item and included with mobilization cost (Included in bid item # 1.0). No work shall be authorized or allowed at site until sign is constructed and erected on-site and approved by assigned WVDEP agent.
2. Storm water management shall be in place using bid items # 9.0 & 10.1 in described locations prior to any disturbance of materials or earthwork takes place. See Water Quality Control under the General Performance Standards.
3. Concurrent and continuous reclamation shall be maintained throughout the life of the project. Regrading and Topsoiling and also Revegetation are required for all disturbed areas. (Bid Items # 5.0 & 6.0). Vegetative Enhancement is required for areas located within existing and proposed fence line not disturbed during reclamation activities and as indicated on Overview Map. (Bid Item # 8.0). Reclamation is to be completed according to the attached specifications, plans, and clarifying discussions at the Pre-Bid Conference.
4. Construction stakeout as necessary to carry out work. (Bid Item # 7.0)
5. All bid items specified by ACRE on this project in the Bid Schedule shall require the submittal of a final survey to verify final acreages. This submittal shall include a copy of all field notes, a map to scale in paper and electronic form. The final survey must be conducted under the direct supervision of and certified by a Licensed Land Surveyor or a Registered Professional Engineer licensed in the state of West Virginia. Partial payments may be made for estimated acreages that are field verified and agreed upon with the WVDEP on-site agent. Partial payments may not exceed 75% of bid item prior to final survey. This shall be paid from the Construction Stakeout bid item.
6. It shall be the contractor's responsibility to check for and locate all utilities within the work area to provide and maintain a safe working area in addition to preventing damage to the utility.
7. Remove any and all debris from site. Contractor must provide documentation of proper disposal. Cost of debris removal shall be incidental to and included in the cost of Regrading and Topsoiling. (Bid Item # 5.0)
8. Construct New Haul Road/Access Road 1 beginning north of the proposed Sludge Disposal Cells, continue southerly and terminate just south of proposed culvert in existing access road. Construction of the turn-around area shall be incidental to and included in the Construct New Haul Road/Access Road 1 bid item. See attached Overview Map and Specifications. (Bid Item # 12.0).
9. Install eighteen inch (18-inch) HDPE culverts in ten (10) locations along access road and locations determined by WVDEP agent on-site. See attached Overview Map. (Bid Item # 27.0)
10. Construct Channel 4 to discharge into Channel 12. See attached Overview Map and Specifications. (Bid Item # 35.0)

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11. Construct two (2) lined sludge disposal cells (Bid Item # 13.1) with Sludge Cell Underdrain (Bid Item # 13.2)
 12. Construct approximately seven hundred fifty (750) linear feet of fence to encompass proposed sludge disposal cells and approximately four hundred (400) linear feet in area adjacent to Channel 1 and install gates (Bid Item # 23.1). See attached Overview Map and Specifications. (Bid Item # 23.0)
 13. Install Flow Proportional Siphon System (Bid Item # 31.0). Six (6) inch HDPE pipe shall be paid as 6-Inch HDPE Sludge Pipe (Bid Item # 13.3) Pipe is to discharge into proposed culvert that is to discharge into Channel 3. Six (6) Inch Gate Valve paid under Bid Item # 13.6. See attached Overview Map and Specifications.
 14. Install approximately one hundred sixty (120) linear feet of HDPE drive water line. (Bid Item # 16.1)
 15. Install approximately one hundred sixty (120) linear feet of Eight (8) inch HDPE pipe to treatment channel. (Bid Item # 16.2)
 16. Install approximately seven hundred (700) linear feet of Underdrain (Bid Item # 17.0) to capture AMD and direct flow into proposed manholes.
 17. Install approximately nine hundred (900) linear feet of Seep Conveyance Drain (Bid Item # 18.0) from manholes to Flow Proportional Siphon System Vault A and Channel 5.
 18. Install five (5) pre-cast manholes along the Underdrain/Seep Conveyance Drain. Approximate location of each pre-cast manhole are shown on the attached Overview Map, however, location may be adjusted due to the field conditions as determined appropriate by the Engineer. (Bid Item # 19.0)
 19. Construct Channel 5 to capture seepage south east of the AquaFix Unit and discharge from southern portion of Seep Conveyance Drain System. Channel 5 shall discharge into Channel 3 north of AquaFix Unit.
 20. Install Secondary Chemical Treatment System in existing AquaFix Building (see attached specifications). Bid Item # 20.0.
 21. Modify existing AquaFix Building by installation of secondary access door, channel grate, lime inlet distribution box, gable vent and lowering the Aqua Fix unit, Structure will also be painted. See attached diagram and specifications for Modify Existing Lime Dispensing Unit Structure. (Bid Item # 21.0).
 22. Upgrade existing Aqua Fix Unit which shall include installation of Renewable Energy Vibrator System. See attached diagram and specifications. (Bid Item # 22.0)
 23. Install Adjustable Speed Drive (Bid Item # 33.0) See attached drawings and specifications.
 24. Clean, modify, and upgrade Settling Pond 1. (Bid Item # 11.1)

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25. Clean, modify, and upgrade Settling Pond 2. (Bid Item # 11.2)
 26. Clean, modify, and upgrade Settling Pond 3. (Bid Item # 11.3)
 27. Clean, modify, and upgrade Settling Pond 5. (Bid Item # 11.4)
 28. Construct Limestone Bed 1. (Bid Item # 29.0)
 29. Clean, modify, and upgrade Settling Pond 6 (Bid Item # 11.5) and construct Outlet Gutter (Bid Item # 32.0)
 30. Construct Settling Pond 4. (Bid Item # 10.2)
 31. Install Baffle Curtains in Ponds 1, 2, 3, 4, 5, and 6. See attached detail. (Bid Item # 30.0)
 32. Construct Mixing Channel 2 (Bid Item # 14.0) from mixing flume of existing AquaFix Unit to HDPE Corrugated Weir (Bid Item # 15.0)
 33. Construct Channel 10 from HDPE Corrugated Weir to Inlet Concrete Spreader (Bid Item # 25.0) of Pond 3.
 34. Construct Channel 11 from HDPE Corrugated Weir to inlet Concrete Spreader of Pond 1.
 35. Construct Channel 6 from Pond 1 outlet Concrete Spreader (Bid Item # 25.0) to discharge into proposed eighteen (18) inch HDPE Conveyance Pipe .
 36. Install eighteen (18) inch HDPE Conveyance Pipe (Bid Item # 28.0) from Channel 6 to inlet Concrete Spreader of Pond 2.
 37. Construct Channel 7 from Pond 3 outlet Concrete Spreader to discharge into proposed eighteen (18) inch HDPE Conveyance Pipe.
 38. Install eighteen inch (18-inch) Conveyance Pipe from Channel 7 to inlet Concrete Spreader of Pond 4.
 39. Construct Channel 8 from Pond 2 to discharge into Pond 5 with inlet and outlet Concrete Spreaders.
 40. Construct Channel 9 from Pond 4 to discharge into Channel 8 with outlet Concrete Spreader exiting Pond 4. See Overview Map and drawings.
 41. Construct Diversion Channel 12. Diversion Channel 12 shall divert upland flow away from treatment area and shall adjoin Diversion Channel 13 at location to be determined by WVDEP agent on-site. Diversion Channel 12 shall discharge into Channel 1. See Overview Map.
 42. Construct Diversion Channel 13 from Diversion Channel 12 to divert upland flow away from treatment area and terminate at culvert inlet, Diversion Channel 13 is a grass-lined channel (Bid Item # 34.0). See Overview Map.

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43. Construct Diversion Channel 14 beginning from outlet of culvert conveying drainage from Diversion Channel 13. Diversion Channel 14 shall extend along and pass under proposed access road via culvert and shall extend to permit boundary.
 44. Eliminate approximately seventy (70) linear feet of Existing Channel A, which conveys mine discharge on west side of permit, currently discharging into Pond 3 and redirect flow into Channel 1. (Bid Item # 26.0). See Overview Map.
 45. Install approximately two thousand (2,000) linear feet of sludge disposal pipe from Ponds 1, 2, 3, 4, 5 and 6 to sludge disposal cells as shown on attached specifications and Sludge Cell Detail drawings (Bid Item # 13.3).
 46. Eliminate three (3) existing sludge disposal cells (Bid Item # 11.6).

ENTIRE PERMIT TOTALS

47. Install approximately fifteen hundred (1500) linear feet of silt fence/and or hay bale dike for sediment control during and after construction. WVDEP agent on-site will determine where each type will be used.
48. Regrade and revegetate approximately nine (9) acres of disturbance.
49. Provide Vegetative Enhancement on approximately two (2) acres.
50. Contractor shall place up to one hundred (100) tons of crushed stone as directed by the WVDEP agent on-site and paid under the Incidental Stone bid item. (Bid Item # 24.0).
51. Note: All stone used on this project shall be non-acid producing.

BID ITEM TECHNICAL SPECIFICATIONS**PERMIT: S-1032-86****1.0 MOBILIZATION / DEMOBILIZATION / PROJECT SIGN**

A project sign shall be obtained or manufactured and installed as indicated on the attached specifications and details. Payment for this sign shall be incidental to the mobilization item. No separate payment will be made.

This work shall consist of the performance of construction preparatory operations, including the movement of personnel, equipment and other facilities to the project site necessary to begin work on a substantial phase of the contract.

Prior to demobilization, an inspection shall be conducted by the West Virginia Department of Environmental Protection (WVDEP) and the contractor to insure compliance with contract performance. Once compliance is ascertained, demobilization activities can be initiated and completed. Demobilization shall be totally completed before the invoice for payment shall be processed.

The lump sum bid for this item shall not exceed 2% of the total bid for this permit. Payment shall be made in two 50% amounts, one upon completion of the mobilization and project sign items and the second payment at the completion of demobilization. No deduction shall be made nor shall any increase be made in the lump sum item amount, regardless of decreases or increases in the final total contract amount or any other reason.

2.0 SPILL CONTAINMENT AREA (S.C.A.)

Spill containment measures shall be used for fuel and lubricant storage areas. All containers, barrels, buckets, cans, etc., are to be legally disposed of offsite. Used lubricants are to be disposed of according to state law to minimize pollution to the local surface and ground water supplies. Spills are the responsibility of the contractor and need immediate clean up and maintained at no expense to the State. This S.C.A. shall be constructed in accordance with the typical drawing specification. (See attached drawing: Spill Containment) Alternate containment measures will be considered for approval by the WVDEP Engineer if acceptable results can be shown. Fuel tanks manufactured with secondary containment are desirable. Minimum secondary containment is 110 percent. The lump sum bid for this item shall not exceed \$1,000.00 for this permit.

3.0 HAULROAD / ACCESS ROAD

The contractor shall maintain and/or construct haul road/access road(s) during the reclamation process to provide access on a well-drained surface. The access road on the reclamation site shall be graded, sloped, and maintained to drain to provide a road surface free of excessive mud and standing waters at all times while work is in progress. Dust-control measures may be necessary if hauling creates airborne material. Snow removal is to be included in this item. See attached specifications. The lump sum bid for this item shall not exceed 2% of the total bid for this permit.

4.0 UTILITIES

Utilities shall be relocated, if necessary, at the direction of the utility company and the reimbursed actual cost to contractor. It is the contractor's responsibility to determine the exact location of each utility in the project area where these utilities would be interrupted or damaged by performing work. This is a "No Bid" item due to the method of reimbursement.

5.0 REGRADING AND TOPSOILING

Concurrent regrading and topsoiling shall immediately follow backfilling and shall distribute topsoil or the best available material to support vegetation, as identified by the WVDEP on-site agent, on the surface of the backfill in a smooth, uniform manner. This item shall include the elimination of all rills and gullies, the construction of sediment control sumps, the removal of sediment control sumps, the grading of spoil and/or fill materials. Surface shall be free of all rock exceeding six inches (6-inches) in diameter and shall be tracked, track to track, with cleats parallel to the contour. Topsoil presently stockpiled on-site shall be preserved and spread on the fill surface. In the absence of stockpiled topsoil, material which can be used as a topsoil substitute shall be identified, segregated, and stockpiled for spreading on the surface. If necessary to manufacture fines, mechanical treatment to pulverize the surface layer shall be required. Regrading and topsoiling shall be conducted prior to and in preparation for the revegetation item. The acreage quantities in this contract are estimates for bidding purposes only. It shall be the contractor's responsibility to verify acreage for bidding purposes. The contractor shall not exceed the contract acres as specified from the Bid Schedule without written approval from the WVDEP, prior to any additional work being completed.

Note: Approximately 6.5 acres are within the fenced treatment/disposal area and approximately 2.5 acres are within the potential Borrow Area.

STRUCTURE AND/OR DEBRIS REMOVAL:

All existing man-made items particular to the site and not to be utilized in the total reclamation of this site shall be demolished (if necessary) and disposed of in a legal manner. All iron, steel, aluminum, or any other metal, plastic, or any other man made material, including but not limited to I-Beams, Angle Iron, Channel Iron, Corrugated Metal, Flat Metal, Floc Drums, Grease Drums, Tires, Pipe or Conduit is to be dismantled, removed and properly disposed of offsite and according to state, local, and federal requirements. Contractor must provide documentation of proper disposal. Concrete may be broken into sections no larger than four feet (4-feet) in any direction and buried on-site. Any rebar or reinforcing steel shall be removed to be flush with the surface of the concrete prior to burial and disposed of offsite. Cost of debris removal shall be incidental to and included in the cost of Regrading and Topsoiling.

CLEAR AND GRUB

All vegetative cover (trees, shrubs, bushes etc.) within the entire work area shall be removed to bare ground. It is the contractor's responsibility to obtain all necessary permits and to follow state guidelines for burning and proper disposal of vegetative materials. Disposal of the trees and shrubs on-site with a chipper is an acceptable alternative to burning. Cost of clearing and grubbing shall be incidental to and included in the cost of Regrading and Topsoiling bid item.

6.0 REVEGETATION

The actual seeding date, within the work performance period, shall be at the discretion of the contractor, but a permanent vegetative cover must be established. Verification of materials used shall be required for payment. Seed bed preparation, unless otherwise approved, shall be conducted by industrial disks or tracking with heavy equipment with cleat marks across slope and parallel to the final contours. The surface shall be tracked, track to track. Seeding shall commence after seedbed preparation on a loose and uncompacted soil and with the approval of the WVDEP. Contractor shall provide equipment as necessary to secure approval of the seedbed. Revegetation activities shall be carried out in a continuous, concurrent, timely and uniform manner. Failure to do this may result in nonpayment for portions of or the entire Revegetation item. Hydroseeding or broadcast seeding with the approved species is acceptable. The application rate may be increased but the ratio is to remain constant, but no additional monetary compensation will be awarded. Areas outside the limits of construction, disturbed by the contractor, shall

be revegetated by the contractor at no expense to WVDEP. Water utilized for hydroseeding shall be free of injurious or other toxic substances harmful to plant life. The source of water is subject to the approval of the WVDEP on-site agent. It shall be the contractor's responsibility to repeat the procedures under REVEGETATION until permanent vegetation is established. The acreage quantities in this contract are estimates for bidding purposes only. It shall be the contractor's responsibility to verify acreage for bidding purposes. The contractor shall not exceed the contract acres as specified from the Bid Schedule without written approval from the WVDEP, prior to any additional work being completed.

Note: Approximately 6.5 acres are within the fenced treatment/disposal area and approximately 2.5 acres are within the potential Borrow Area.

The Standards for Evaluating Vegetative Cover as presented in Title 38, CSR 2, Section 9 of the West Virginia Surface Mining Reclamation Regulations will apply.

Equipment for the retracking/scarification to eliminate rills and gullies shall be mobilized and utilized to produce slopes consistent with the regrading and topsoiling bid item prior to warranty reseeding. No additional payment will be made by WVDEP for this warranty work. Final payment of this bid item shall be contingent upon receipt of final surveyed acreage, and verification of quantity of the specified materials by certified weight tickets and/or receipts.

MATERIALS SPECIFIED:

- AGRICULTURAL LIME

Unless otherwise specified, all lime used shall be registered with the West Virginia Department of Agriculture, have an 85% minimum calcium carbonate equivalent, and meet the fineness classification no larger than that for ground lime. The following fineness classifications or combinations of lime are acceptable:

- | | |
|------------|--|
| Pulverized | - 100% passing a U.S. Standard 20 mesh sieve |
| | - 70% passing a U.S. Standard 100 mesh sieve |
| Ground | - 90% passing a U.S. Standard 20 mesh sieve |
| | - 50% passing a U.S. Standard 60 mesh sieve |
| | - 35% passing a U.S. Standard 100 mesh sieve |

Use of blends and low-grade agricultural liming materials shall require prior approval. Lime shall be spread as soon as possible after delivery to site. Lime shall be applied evenly and uniformly distributed over the treated area. Lime shall be thoroughly mixed into the soil material. Lime subjected to adverse conditions before spreading will be deemed unacceptable. Failure to complete this phase shall result in nonpayment of this bid item.

Lime shall be applied at 3 ton/acre.

- FERTILIZER

Fertilizer rates given for REVEGETATION are for 1,000 lbs. of 10-20-20 per acre. These rates are minimum and for bidding purposes. Fertilizer shall be applied evenly and uniformly distributed over the treated area. Common complete fertilizers which meet the minimum standards are acceptable.

- MULCH

Acceptable mulch for this project is wood fiber, hay, or straw.

Mulch: Wood Fiber at a rate of 1.0 ton/acre.

Hay or straw: May be substituted at a rate of 2 tons/acre.

- VEGETATIVE SPECIES

The use of annuals or cover crops will not be considered for vegetative success.

NORTH MIX

VEGETATIVE SPECIES ¹	RATE/ACRE ¹
Orchard Grass	@ 15 lbs. /acre
Birdsfoot Trefoil ²	@ 15 lbs. /acre
Yellow Sweet Clover	@ 5 lbs. /acre
Red Clover ²	@ 10 lbs. /acre
Perennial Ryegrass	@ 25 lbs. /acre
Foxtail Millet ³	@ 12 lbs. /acre
Wheat or Rye ⁴	@ 50 lbs. /acre
Black Locust ⁵	@ 3 lbs. /acre

1. Seeding rate suggested is for pure live seed (pls) in pounds per acre.
2. Herbaceous legumes must be treated with the appropriate bacterium before seeding.
3. Spring mix.
4. Fall mix.
5. Black locust used only for woodland land use.

Post Mining Land Use: Hay land/Pasture

7.0 CONSTRUCTION STAKEOUT

This work shall consist of furnishing, placing, and maintaining construction layout stakes necessary for the proper execution of the work required under the Contract, production of as-built drawings, and of performing topographic surveys and obtaining surveyed cross-sections for accurate determination of pay item quantities. Construction stakeout shall be under the supervision of a Licensed Land Surveyor or a Registered Professional Engineer licensed in the state of West Virginia, and all drawings signed and/or sealed by such. The WVDEP shall provide control points for initial layout of the work. The lump sum bid for this item shall not exceed 2% of the total bid for this permit.

A. MATERIALS

Wooden stakes and other marking materials as described herein.

B. CONSTRUCTION METHODS

B (1) The Contractor shall locate and reference the construction baseline within the limits of work and shall establish bench marks for the proper layout of the work. The Contractor shall make all calculations involved and shall furnish and place all layout stakes or markers.

B (2) The Contractor shall provide field forces and shall set all additional stakes needed, such as offset stakes, reference point stakes, slope stakes, pavement and grade stakes, stakes for roadway drainage, sub-drains, trench drains, fence, culverts or other structures, supplementary bench marks and any other horizontal or vertical controls necessary to secure a correct layout of the work.

B (3) The location of the slope stakes for grading work shall be determined by a calculation method. Elevation control hubs with guard stakes shall be set, at a convenient distance outside the construction limits, and at all stations where original cross-sections are taken. The centerline station, the distance from centerline, and the elevation of the hub shall be recorded on each guard stake.

B (4) The Contractor shall be responsible for having the layout staking work conform to the lines, grades, elevations, and dimensions called for on the Plans. The Contractor shall be responsible for reporting any discrepancies to the WVDEP Engineer for clarification. Minor adjustments to suit field conditions are anticipated and it shall be the responsibility of the WVDEP Engineer to make decisions regarding adjustments.

B (5) The Contractor shall survey cross-sections and/or profiles in areas of on-site excavation, off-site excavation, and ditch construction as necessary to permit accurate determination of pay item quantities. The locations and spacing of cross-sections and profiles shall be as approved or as directed by the WVDEP Engineer. Cross-sections and profiles shall be surveyed:

- a) prior to any excavation
- b) at the completion of excavation

B (6) The Contractor shall furnish a copy of his survey records, both paper and electronic forms, for the WVDEP Engineer and for the WVDEP'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 WVDEP 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 required work.

8.0 VEGETATIVE ENHANCEMENT

Areas which have been revegetated prior to this project, which are of a substandard vegetative stand, shall be enhanced during the active concurrent reclamation phase. Fertilization during the fall shall be accomplished prior to September 15 to ensure vegetation utilizes the full benefit of the nutrients being applied before the onset of the dormant winter season. Seed shall be applied during spring and fall seeding periods only.

Note: Approximately 2.0 acres East of the Proposed Sludge Disposal Cells are to receive Vegetative Enhancement.

MATERIALS SPECIFIED:

- **AGRICULTURAL LIME**

Unless otherwise specified, all lime used shall be registered with the West Virginia Department of Agriculture, have an 85% minimum calcium carbonate equivalent, and meet the fineness classification no larger than that for ground lime. The following fineness classifications or combinations of lime are acceptable:

- | | |
|------------|--|
| Pulverized | - 100% passing a U.S. Standard 20 mesh sieve |
| | - 70% passing a U.S. Standard 100 mesh sieve |
| Ground | - 90% passing a U.S. Standard 20 mesh sieve |
| | - 50% passing a U.S. Standard 60 mesh sieve |
| | - 35% passing a U.S. Standard 100 mesh sieve |

Use of blends and low-grade agricultural liming materials shall require prior approval. Lime shall be spread as soon as possible after delivery to site. Lime shall be applied evenly and uniformly distributed over the treated area. Lime shall be thoroughly mixed into the soil material. Lime subjected to adverse conditions before spreading will be deemed unacceptable. Failure to complete this phase shall result in nonpayment of this bid item.

Lime shall be applied at 3 ton/acre.

- **FERTILIZER**

Fertilizer rates given for VEGETATIVE ENHANCEMENT are for 300 lbs. of 18-46-0 per acre. These rates are minimum and for bidding purposes. Fertilizer shall be applied evenly and uniformly distributed over the treated area. Common complete fertilizers which meet the minimum standards are acceptable.

- **VEGETATIVE SPECIES**

VEGETATIVE SPECIES ^{1,3}
Alfalfa

RATE/ACRE ¹
@ 5 lbs. /acre

Birdsfoot Trefoil ²
 Red Clover ²

@ 5 lbs. /acre
 @ 5 lbs. /acre

1. Seeding rate suggested is for pure live seed (pls) in pounds per acre.
2. Herbaceous legumes must be treated with the appropriate bacterium before seeding.
3. Areas with poor vegetation will require scarification of the soil surface prior to top dress with seed.

9.0 STORM WATER MANAGEMENT - SILT FENCE AND HAY BALE DIKE

Disturbed areas which have storm water runoff and do not pass through a sediment control structure or other areas where excess sedimentation is to be controlled shall utilize the following Best Management Practice (BMP) methods to manage storm water runoff. (For more information on BMP methods go to the WVDEP website http://www.dep.wv.gov/WWE/Programs/stormwater/csw/Pages/ESC_BMP.aspx and click on BMP Manual. The WV Erosion and Sediment Control Best Management Practice Manual may be accessed or printed.)

The attached drawings and specifications are prepared with all sediment controls anticipated to keep the project within the requirements of the approved plan. However, any adjustments needed to be made to this plan during the execution of this project in order to maintain, at a minimum, compliance with said permit shall be the Contractor's responsibility and expense at no additional cost to WVDEP. Any adjustments to the sediment controls described herein will be at the discretion and prior approval of the WVDEP on-site agent.

This bid item shall not exceed \$5.00 per linear foot for this permit.

CONSTRUCTION - Approximately 1,500 LF of silt fence and hay bale dike are proposed for this project, as shown on the attached site plan. Construction of all sediment controls shall comply with the following:

1. Silt fence shall be utilized on perimeter barriers and internally as shown on the attached plans or as determined necessary by WVDEP agent on-site. Silt fence shall be properly removed after permanent vegetation has been established, as directed by the WVDEP designated on-site agent. Silt fence shall be installed per the manufacturer's recommendations. See the attached drawing for further details.
2. Silt fence shall be placed on the contour. On slopes with grades greater than seven (7%) percent, the silt fence should be located at least five (5) to seven (7) feet beyond the base. Turn the ends of the silt fence upslope so that a certain depth of storm water may be retained in front of the silt fence. The impounded depth should be at least twelve (12) inches, but no more than the height of the silt fence. Hay bale dike shall be staked in place at the end of the row of silt fence as an emergency overflow. This will allow detained water, exceeding the capacity of the silt fence, to be filtered and released quickly. Silt fence shall not be installed in streams or swales or in any area where there is a reasonable chance of concentrated flow. In areas where concentrated flows can be expected, use hay bale dike with the construction of sumps. **THE BOTTOM EDGE OF SILT FENCE SHALL BE ENTRENCHED AND BACKFILLED.**
3. The silt fence should be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter cloth should be spliced together only at a supporting post, with a minimum six (6) inch overlap and securely sealed with a sewn seam or two supporting posts and the attached silt fence may be butted together and twisted prior to supporting posts being driven. See Silt Fence Details and installation requirements. Payment for silt fence will

be per linear foot installed excluding laps. Cost of the silt fence shall include the removal from the project upon stabilization and permanent vegetation being established.

4. Rock filtered outlets are to be placed in the silt fencing as needed to control areas exhibiting concentrated flows to prevent breaching of the fence. Outlets are to be placed at locations per direction of the WVDEP on-site agent. See attached detail: Rock Filter Outlets.
5. Hay bales shall be utilized on internal areas, as a supplement to silt fencing, to control areas where excess runoff may create excessive erosion and instability, per the direction of the WVDEP on-site agent. For slope stability, place bales on the contour; at the top of cuts; and at the toe of slopes. Bales shall be placed in a row with ends tightly abutting the adjacent bales.
6. Bales shall be placed on unbound edge, embedded, and securely anchored in place by stakes driven through the bales. Rebar shall not be permitted for use as stakes. Stakes shall be removed after permanent vegetation has been established, as directed by the WVDEP designated on-site agent. The first stake in each bale shall be driven toward previously laid bale to force the bales together. See attached drawing for further details.
7. Construction of sediment control sumps before culvert inlets and/or rock check dams in ditch lines (see attached drawing) may become necessary to supplement the silt fence and hay bale dikes. These items shall be constructed as shown on the attached plans and at other determined locations upon request of the WVDEP designated on-site agent. Construction of small sumps and rock check dams shall be incidental to this bid item.

INSPECTION - Inspect all erosion and sediment controls before anticipated storm events (or series of storm events such as intermittent showers over one or more days) and within twenty-four (24) hours after the end of a storm event greater than 0.5 inches per 24-hour period, and at least once every seven (7) calendar days. Where sites have been finally or temporarily stabilized, such inspection may be conducted only once per month.

MAINTENANCE - Sediment should be removed once it has accumulated to one-half (1/2) the original height of the barrier or one-half (1/2) the sediment capacity of any particular control structure. Filter fabric should be replaced whenever it has deteriorated to such an extent that the effectiveness of the fabric is reduced (approximately six (6) months). Silt fence should remain in place until disturbed areas have been permanently stabilized. All sediment accumulated at the fence should be removed and properly disposed of before the fence is removed.

PAYMENT – Payment will be by the linear foot installed. This bid item shall not exceed \$5.00 per linear foot for this permit. **Price of the silt fence and hay bales shall include the removal of all such materials from the project upon stabilization and permanent vegetation being established,** per direction of the WVDEP on-site agent.

10.0 CONSTRUCTED SEDIMENT CONTROL STRUCTURES

A sediment control structure shall be constructed as per attached detailed plans. Such structures shall be cleaned out when the sediment capacity reaches 60%, repaired, maintained and reclaimed if required until demobilization. This item will be a one-time payment. Clean-out, maintenance and reclamation shall be conducted by the contractor at no expense to the WVDEP. See attached Profile Map for approximate elevations; elevations may be adjusted due to site conditions as determined by the Engineer.

EMBANKMENT CONSTRUCTION

Embankments shall be constructed in compacted lifts with no lift exceeding six (6) inches. The entire width of each 6" lift shall be compacted with an overlapping pattern. Compaction equipment (10 ton combined compactive effort -vibratory roller, sheep's foot roller, etc.) shall be used to help secure a solid embankment, which will not slip or allow seepage of the ponded water. The base of any fill areas shall be undercut to solid material, and benched or keyed into the existing bank. All stones exceeding six-inches (6-inches) shall be removed from the embankment material prior to being placed. Also, any organic material (tree limbs, roots, top soil, etc.) shall be removed from embankment material prior to compaction. Weak or compressible areas, which cannot be satisfactorily compacted, shall be removed and replaced with properly compacted fill material. During dry conditions, water may need to be added to the fill material during the placement process to achieve optimum compaction. Water shall be applied with suitable sprinkling devices and shall be thoroughly incorporated into the material which is to be compacted. Embankment and subgrade materials which contain excess moisture shall be dried, prior to or during compaction, as necessary to obtain satisfactory compaction. After appropriate compaction of material is achieved, the embankment slopes may be cut back to a 12.0 feet top width. The top width of embankments may be reduced if site conditions warrant as determined by the Engineer.

See POLY-FLEX LINER INSTALLATION & SPECIFICATIONS attached. A minimum of 60-mil is to be used for constructed sediment control structures and existing sediment control structures as specified.

10.1 SUMPS

A sediment control structure shall be constructed as per attached detailed plans. Such structures shall be cleaned out when the sediment capacity reaches 60%, repaired, maintained and reclaimed if required until demobilization. This item will be a one-time payment. Clean-out, maintenance and reclamation shall be conducted by the contractor at no expense to the WVDEP. See attached detail: Sediment Control Sump. This bid item shall not exceed \$100.00 per each for this permit.

10.2 SETTLING POND FOUR

One new lined settling pond shall be constructed. The pond shall have a top width of approximately forty five feet (45-feet) and top length of one hundred feet (100-feet) at water level. The pond shall have a water depth of approximately six feet (6-feet) to eight-feet (8-feet), with two-feet (2-feet) of freeboard. The total volume capacity (not including freeboard) shall be approximately twenty two thousand cubic feet (22,000-feet³). The liner, inlet and outlet spillways, and vegetation removal is incidental to and shall be paid for under the settling pond bid item and shall be the size and shape as shown on the attached drawing.

11.0 EXISTING SEDIMENT CONTROL STRUCTURES

Existing structures shall be cleaned out, repaired, eliminated or otherwise reconstructed as directed at the time of the pre-bid conference. Such structures shall be cleaned out when the sediment capacity reaches 60%, repaired, and maintained until demobilization. This item will be a one-time payment. Clean-out and maintenance shall be conducted by the contractor at no expense to WVDEP. (See Attachment) See attached Profile Map for approximate elevations; elevations may be adjusted due to site conditions as determined by the Engineer.

See POLY-FLEX LINER INSTALLATION & SPECIFICATIONS attached. A minimum of 60-mil is to be used for constructed sediment control structures and existing sediment control structures as specified.

EMBANKMENT CONSTRUCTION

Embankments shall be constructed in compacted lifts with no lift exceeding six (6) inches. The entire width of each 6" lift shall be compacted with an overlapping pattern. Compaction equipment (10 ton

combined compactive effort -vibratory roller, sheep's foot roller, etc.) shall be used to help secure a solid embankment, which will not slip or allow seepage of the ponded water. The base of any fill areas shall be undercut to solid material, and benched or keyed into the existing bank. All stones exceeding six-inches (6-inches) shall be removed from the embankment material prior to being placed. Also, any organic material (tree limbs, roots, top soil, etc.) shall be removed from embankment material prior to compaction. Weak or compressible areas, which cannot be satisfactorily compacted, shall be removed and replaced with properly compacted fill material. During dry conditions, water may need to be added to the fill material during the placement process to achieve optimum compaction. Water shall be applied with suitable sprinkling devices and shall be thoroughly incorporated into the material which is to be compacted. Embankment and subgrade materials which contain excess moisture shall be dried, prior to or during compaction, as necessary to obtain satisfactory compaction. After appropriate compaction of material is achieved, the embankment slopes may be cut back to a 12.0 feet top width. The top width of embankments may be reduced if site conditions warrant as determined by the Engineer.

NOTE: Water shall be pumped from ponds and sludge cells prior to modification or elimination. Water in the existing ponds and sludge cells shall be analyzed and treated before discharging into receiving waters of the state. Contractor shall coordinate with WVDEP representative on-site to ensure treatment of water is addressed prior to pumping each pond and sludge cell. With coordination and direction of the WVDEP agent on-site, the on-site chemical treatment and settling ponds can be utilized to treat water from ponds and sludge cells. Contractor shall provide pumping equipment, testing, and personnel or other items needed to complete this bid item. Contractor will not be required to supply chemical to treat water. The water pumped out of the ponds and sludge cells during dewatering shall be pumped into the existing Channel 3 that discharges into the AquaFix unit on-site. This shall be incidental to and included in the cost of pond cleaning and modification of each pond or sludge cell. If deemed unnecessary to treat water from ponds and sludge cells, as determined by WVDEP agent on-site, contractor shall pump water from ponds into geotextile filter bag (see attached specification) prior to water leaving the permit area. Cost of geotextile filter bag(s) shall be incidental to and included in the cost of pond cleaning and modification and Sludge Cell Elimination. If deemed necessary by the WVDEP agent on-site, silt fence and hay bale dike and sump(s) shall be used in conjunction with geotextile filter bag(s). Silt fence and hay bale dike and sump(s) shall be paid under bid items # 9.0 & 10.1.

NOTE: Ponds to be cleaned modified and upgraded shall have side slopes of two horizontal to one vertical (2h:1v). Prior to 60 mil textured liner placement, one foot (1-foot) on soil material shall be placed on any rocky areas as to prevent damage to the liner. It may be necessary to undercut rocky areas to achieve the one foot of soil material at no extra cost to the WVDEP. See attached requirement for embankment construction. Install 60 mil textured liner throughout the pond. Cost of pond liner, inlet and outlet spillways and vegetation removal shall be incidental to and included in the cost of Pond Cleaning and Modification. See attached drawings and specifications for approximate sizes and volumes.

NOTE: Concrete Spreaders and Outlet Gutter are to be constructed as per attached drawings and specifications and shall be paid under bid items # 25.0 and # 32.0.

NOTE: Vegetation removal is incidental to and shall be paid for under the settling pond bid item.

11.1 CLEAN, MODIFY AND UPGRADE SETTLING POND ONE

Clean the pond by removing all sediment and solids in Pond 1. Pond cleaning shall be accomplished by removing all silt and sludge by pumping and mechanically excavating any solids. Proper silt disposal methods must be utilized. Water shall be pumped from Pond 1 prior to modification.

Modification of Pond One will be to move it to the west approximately twenty (20) feet and shall have a new top width of approximately forty five feet (45-feet) and top length of one hundred feet (100-feet) at water level. The pond shall have a water depth of approximately six feet (6-feet) to eight-feet (8-feet), with two-feet (2-feet) of freeboard. The total volume capacity (not including freeboard) shall be approximately twenty two thousand cubic feet (22,000-feet³).

11.2 CLEAN, MODIFY AND UPGRADE SETTLING POND TWO

Clean the pond by removing all sediment and solids in Pond 2. Pond cleaning shall be accomplished by removing all silt and sludge by pumping and mechanically excavating any solids. Proper silt disposal methods must be utilized. Water shall be pumped from Pond 2 prior to modification.

Modification of Pond Two will consist of raising pond elevation by means of placing suitable fill material to raise embankment and shall have a new top width of approximately thirty-five feet (35-feet) and top length of one hundred fifty-feet (150-feet) at water level. The pond shall have a water depth of approximately six feet (6-feet) to eight-feet (8-feet), with two-feet (2-feet) of freeboard. The total volume capacity (not including freeboard) shall be approximately twenty four thousand cubic feet (24,000-feet³).

11.3 CLEAN, MODIFY AND UPGRADE SETTLING POND THREE

Clean the pond by removing all sediment and solids in Pond 3. Pond cleaning shall be accomplished by removing all silt and sludge by pumping and mechanically excavating any solids. Proper silt disposal methods must be utilized. Water shall be pumped from Pond 3 prior to modification.

Modification of Pond Three will consist of raising pond elevation by means of placing suitable fill material to raise embankment and shall have a new top width of approximately forty five- feet (45-foot) and top length of one hundred feet (100-feet) at water level. The pond shall have a water depth of approximately six feet (6-feet) to eight-feet (8-feet), with two-feet (2-feet) of freeboard. The total volume capacity (not including freeboard) shall be approximately twenty-two thousand cubic feet (22,000-feet³).

11.4 CLEAN, MODIFY AND UPGRADE SETTLING POND FIVE

Clean the pond by removing all sediment and solids in Pond 5. Pond cleaning shall be accomplished by removing all silt and sludge by pumping and mechanically excavating any solids. Proper silt disposal methods must be utilized. Water shall be pumped from Pond 5 prior to modification.

Modification of Pond Five will be to place approximately a ten (10) foot wide area along the east side of pond as to facilitate the construction of Proposed Channel #8, a portion of this area may be embankment material placed into pond area prior to liner installation if site conditions warrant as determined by the Engineer. Pond Five shall have a new top width of approximately thirty-five feet (35-feet) and top length of one hundred fifty-feet (150-feet) at water level. The pond shall have a water depth of approximately six feet (6-feet) to eight-feet (8-feet), with two-feet (2-feet) of freeboard. The total volume capacity (not including freeboard) shall be approximately twenty four thousand cubic feet (24,000-feet³) (including the area to be used by Proposed Limestone Bed 1 Bid Item # 29.0). Proposed Limestone Bed 1 shall be installed as shown on the attached drawings and specifications.

11.5 CLEAN, MODIFY AND UPGRADE SETTLING POND SIX

Clean the pond by removing all sediment and solids in Pond 6. Pond cleaning shall be accomplished by removing all silt and sludge by pumping and mechanically excavating any solids. Proper silt disposal methods must be utilized. Water shall be pumped from Pond 6 prior to modification.

Modification of Pond Six will include moving Pond Six to the South East approximately fifteen (15) feet as to allow of widening of New Haul Road/Access Road One, removing the existing discharge pipe and replacing discharge pipe with new a eighteen inch (18-inch) Type S HDPE culvert pipe. New discharge pipe shall be placed within the proposed grouted riprap emergency spillway (see attached detail and specifications). Pond Six shall have a top width of approximately thirty-five feet (35-feet) and top length of one hundred fifteen feet (115-feet) at water level. The pond shall have a water depth of approximately six feet (6-feet) to eight-feet (8-feet), with two-feet (2-feet) of freeboard. The total volume capacity (not including freeboard) shall be approximately eighteen thousand five hundred cubic feet (18,500-feet³).

The pond liner shall be embedded placed into the Outlet Gutter (Bid Item # 32.0) as to minimize potential leakage between liner and Outlet Gutter. See attached detail and specifications.

The emergency spillway shall be re-worked to incorporate construction of a grouted riprap drive-thru spillway and Outlet Gutter. The emergency spillway shall contain durable rock placed in a 2.0 foot thick blanket. Twenty-five percent (25%) of the rock will be 18 inches or larger. Ten percent (10%) of the rock shall be no smaller than six (6) inches. The remaining sixty-five percent (65%) of the rock shall be well graded between six (6) and eighteen (18) inches. In-place rammed or hammered rock shall be acceptable. The grout filler shall be composed of a mixture of one part Type II (sulfate resistant) Portland cement and three parts sand, mixed with water to produce a workable consistency. The stone shall be thoroughly wet immediately before grout is applied. As soon as the grout is deposited on the surface, it shall be thoroughly worked into the joints. The stones shall then be brushed, so that their top surfaces are exposed. Grout shall penetrate 100% of the riprap thickness. Cost of pond liner, grouted drive-thru spillway shall be incidental to and included in the cost of Pond Cleaning and Modification.

11.6 ELIMINATE EXISTING SLUDGE CELLS

Existing sludge disposals cells shall be eliminated by dewatering with pumps, backfilling with all available spoil material and regrading areas to sheet flow. Water shall be pumped from existing sludge cells prior to cell elimination. Existing sludge lines shall be removed and disposed of in a legal manner and be incidental to and included in Regrading and Topsoiling.

12.0 NEW HAULROAD/ ACCESS ROAD ONE

Construct Access Road One beginning north of the proposed Sludge Disposal Cells, continue in a southerly direction for approximately one thousand six hundred (1,600) linear feet and terminate just south of proposed culvert in existing access road. Construction of a turn-around area, minimal size of twenty (20) feet wide and one hundred thirty (130) feet long shall be constructed and paid per linear foot as length of road. In areas where roadway is to curve around ponds 2 and 6 roadway is to widen to twenty (20) feet at no additional cost. Accompanying plans show the details of the construction of the road. The contractor shall provide all services, materials, construction layout, equipment, or other materials necessary to execute the work. See attached Overview Map and Specifications.

Payment shall be for completed length of road and shall include engineering fabric, labor/equipment, stone, and any truck turn-around areas (which shall be paid as length of road). Any turn-around area locations shall be designated by the WVDEP on-site agent.

CONSTRUCTION METHOD:

SITE PREPARATION

Any areas with soft unsuitable foundation materials shall be undercut to remove this material. The material removed shall be disposed of within the construction area at a site agreed to between the contractor and the

WVDEP on-site agent. Construction stake out shall be completed as necessary to complete the phase of the work being undertaken. Roadway construction stakeout shall be incidental to and included in this bid item.

ROAD CONSTRUCTION

Suitable foundation material shall then be placed in compacted layers not to exceed six (6) inches in thickness to obtain the desired grade and alignment. Compaction equipment shall be utilized, and is to be approved by WVDEP on-site agent. Engineering fabric (Tylar 3401, Mirafi 500X, or equivalent) shall be placed over the completed foundation and covered with a six (6) inch minimum layer of No. 1 limestone (3½ to 1½ inches). If a solid road base already exists, the clean base stone may be substituted with a 6 inch thick layer of 3 inch size crusher run stone for better compaction. The base stone shall then be covered with 1½ inch size crusher run limestone so that the surface is choked off and a three (3) inch minimum layer remains on top. All base stone and fabric shall be completely covered with crusher run stone. The completed road shall have a minimum running surface width as shown on the attached drawing. The surface shall be crowned and sloped to both sides a minimum of 24-horizontal to 1 vertical. NO sections of roadway, shall impound water. See attached detail: New Haul Road/Access Road.

ROADSIDE DITCHING

The total length of roadside ditch shall be along the entire length of the road. A roadside drainage ditch shall be established along the upslope side of the road, and shall be free draining to any culverts crossing under the road. The ditch shall be vegetated and constructed as indicated in the New Haul Road/Access Road drawing. Roadside ditching shall be incidental to and included in the cost of New Haul Road/Access Road bid item.

COMPACTION EQUIPMENT

A smooth drum 10 ton compactive effort vibratory roller shall be utilized for the compaction of all roadway material layers and lifts. The roadway sub-grade material shall be compacted prior to placement of engineering fabric. The base stone layer and any subsequent layers shall be compacted after spreading and grading of each layer. The final top layer of crusher run limestone shall be compacted, and a minimum 3 inch thick layer shall remain AFTER COMPACTION.

13.0 SLUDGE DISPOSAL

The 60 mil textured liner, emergency spillways and vegetation removal is incidental to and shall be paid for under Lined Sludge Cell bid item. Lined Sludge Cell shall be the size and shape as shown on the attached drawings and described in attached specifications. See attached POLY-FLEX LINER INSTALLATION SPECIFICATIONS.

13.1 CONSTRUCT LINED SLUDGE DISPOSAL CELLS

Construct two (2) lined sludge disposal cells. Sludge disposal areas shall be constructed to receive sludge pumped from the settling ponds. Each cell shall have a completed holding volume of at least 29,000 cubic feet. The approximate size of each pond shall be fifty feet (50-feet) top width, a top length of seventy five feet (75-feet), and a total depth of ten-feet (10-feet). Each constructed sludge disposal cell shall have two-feet (2-feet) of freeboard. The sludge disposal cell shall have internal side slopes not exceeding one horizontal to one vertical (1h: 1v). The bottom of the sludge cell shall slope toward the underdrain as shown on the attached Sludge Cell Underdrain Detail drawing. The outer slopes shall be a minimum of two horizontal to one vertical (2h: 1v). The sludge disposal cells shall be constructed in an area north of the current treatment area and west of the existing diversion channel, and approved by the WVDEP on-site representative. Material which is removed during the pond construction and which is suitable for reclamation shall be stockpiled on-site and vegetated. Some material may be used for partial embankment

construction. This pond shall be dugout in nature to facilitate its future reclamation. The exit channel spillway shall consist of a one foot riprap V-ditch and shall be included in and incidental to this Bid Item. Exit channel spillway shall cross proposed culvert as shown on the overview map and discharge into the existing swell leading into existing Channel 3. Payment will be for each sludge disposal cell completed upon approval of the WVDEP on-site agent.

13.2 SLUDGE CELL UNDERDRAIN

Install approximately two hundred and fifty (250) linear feet of sludge cell underdrain. An underdrain shall be excavated and installed according to the attached drawings and specifications. This component of the sludge cell shall consist of a three foot deep by four foot wide (3-foot D X 4-foot W) trough lined with filter fabric. The trough shall be excavated down the side and along the entire bottom of the cell. Starting at ground level, the six-inch (6-inch) SCH 35 PVC perforated pipe shall run the entire length of the trough. A SCH-35 PVC cap shall be placed on the high end of the pipe to allow for future maintenance. The six-inch (6-inch) pipe shall be surrounded by 1/4-inch to 3/8-inch pea gravel which will then have a twelve-inch (12-inch) layer of sand placed on top. The sand layer shall be clean and graded filter media with an effective size of 0.6 mm to 0.8 mm and a uniformity coefficient of less than 2.0. Filter media must be certified by quarry or lab to meet the listed specifications PRIOR to placement. A layer of non-woven filter fabric shall separate the pea gravel and the sand.

The drain line for the underdrain shall be Six-Inch HDPE Sludge Pipe (a separate bid item) and shall connect to the six inch (6-inch) SCH 35 PVC pipe at the end of the underdrain as indicated on the attached drawing. The drain line shall be fitted with a six inch gate valve (a separate bid item) and have the capability to discharge into Channel 4 via the Six-Inch HDPE Sludge Pipe. The pipe shall be buried with a minimum of two and one-half feet (2.5-feet) of cover to avoid freezing.

Excavation necessary to construct trough, furnishing and placement of filter fabric, liner, aggregate, labor, and all materials specified above and on the attached drawing, and all other work necessary for the acceptable installation of the underdrain will not be measured but shall be considered incidental to and included in this bid item. Payment shall be for each sludge cell underdrain installed and verified by WVDEP on-site agent. The method of measurement for payment shall be on a linear foot basis measured along the centerline of the sludge cell underdrain not including section of solid pipe extending through embankment.

13.3 SIX- INCH HDPE SLUDGE PIPE

Install approximately two thousand linear feet (2,000 LF) of 6-inch diameter, SDR 15.5 or 17 HDPE of standard manufacture. Install to manufacturers recommendations. Install the pipe as indicated in the specifications and/or as shown on the drawings.

This 6-inch HDPE pipe shall be used for sludge line. Provide all materials, equipment and personnel necessary for installation. The pipe shall be buried with a minimum of two and one-half feet (2.5-feet) of cover to avoid freezing. Use butt weld fusion process to join pipes. A qualified fusion technician shall supervise the fusion of all joints. See site plan for location and additional specifications. Payment shall be for the actual length of pipe installed.

13.4 PUMP ADAPTOR CONNECTION

The settling pond 5 end of the HDPE 6-inch diameter sludge line pipe shall be fitted with a threaded stainless steel adaptor to receive a 6-inch cam-lock (lockable style) adaptor. Install one (1) four inch (4-inch) pressure treated post on each side of sludge line pipe near roadway for a total of two (2) posts at each

location to protect outlet from damage. Use riprap around pipe as necessary. Include a cam-lock lockable cap for sealing each adaptor. The cap shall withstand pressures developed during pumping at other pumping points. The sludge disposal cell ends of sludge line pipe will be the same as the settling pond ends. All threads shall be treated with anti-seize coating. Payment shall be for each location installed.

13.5 PUMP ADAPTOR CONNECTION WITH 2-INCH DRAIN

The settling ponds 1,2,3,4 and 6 ends of the 6-inch diameter HDPE pipe shall be fitted with a threaded stainless steel adaptor to receive a 2-inch stainless steel ball valve. A six-inch (6-inch) by two-inch (2-inch) HDPE reducer shall be used to reduce down to the smaller pipe size. Install pressure treated posts or pipes to protect outlet from damage. Use butt weld fusion process to join fittings to pipes. Use riprap around pipe as necessary. All threads shall be treated with anti-seize coating. Payment shall be for each location installed, and the 2-inch valve and 6-inch wye shall be incidental to this pay item.

13.6 SIX - INCH GATE VALVE

One 6 inch 316 grade stainless steel knife gate valve with flanged ends shall be provided and installed on the flanged end of the 6-inch diameter HDPE line. A piece of thirty (30) inch diameter HDPE pipe and insulated metal cap shall be provided for a riser to access the valve. Appropriate rubber flange gaskets, all HDPE flanges, and stainless steel bolts/nuts shall also be incidental to this bid item. All threads shall be treated with anti-seize coating. Payment shall be for each location installed.

13.7 WYES (6 INCH HDPE LATERALS 45°)

Wyes shall be of standard manufacture for 6 inch diameter HDPE pipe to allow 45° junction. Use butt weld fusion process to join fittings to pipes. A qualified fusion technician shall supervise the fusion of all joints. Payment shall be for each location installed.

14.0 HDPE CORRUGATED DITCH LINER

I. DESCRIPTION OF WORK

- a. This work shall include furnishing all labor, equipment and materials to install the HDPE Corrugated Ditch Liner. The HDPE Corrugated Ditch Liner shall include the installation kit and any other appurtenances necessary to complete the installation. The HDPE Corrugated Ditch Liner shall be as manufactured and provided by Penda Corporation as SmartDitch™ or an approved equivalent.

II. APPLICABLE PUBLICATIONS

- a. The following documents can be referenced to indicate specific manufacturing and material performance capabilities:
 - i. ASTM D618 - Practice for Conditioning Plastics for Testing
 - ii. ASTM D638 – Test Method for Tensile Properties of Plastics
 - iii. ASTM D746 – Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
 - iv. ASTM D883 – Terminology Relating to Plastics
 - v. ASTM D1238 – Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer
 - vi. ASTM D1505 - Test Method for Density of Plastics by the Density-Gradient Technique
 - vii. ASTM D1506 – Test Method for Carbon Black – Ash Content
 - viii. ASTM D1693 – Test Method for Environmental Stress-cracking of Ethylene Plastics

- ix. ASTM D5420 – Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight

III. PRODUCTS AND MATERIALS

a. HDPE Corrugated Ditch Liner.

Shall be made from high molecular weight, high density polyethylene (HDPE) material, uniform throughout and free from tears, holes, or other defects that can affect the serviceability. The product shall be packaged so as to prevent damage from rough handling during shipment and so as to facilitate placement at the job site.

b. HDPE Corrugated Ditch Liner Installation Kit

- i. Self-tapping Screws. Shall be 5/16" x 9 UNS – 2A x 1-5/8" Screw. Screws shall be 1022 Steel Case Hardened. The head style is indented hex serrated washer. A black dorken finish shall be provided. Other self-tapping screws shall be approved by the Engineer prior to installation.
- ii. Joint sealant (foam gaskets). Shall be Xcellite Xi41 by Lakeview Industries or approved equivalent. Other joint sealant shall be approved by the Engineer prior to installation.
- iii. Earth Anchor. Standard earth anchor shall be BetterBilt Model #680, or approved equivalent, and consist of earth anchor, cable, washer and cable lock.

IV. INSTALLATION

a. General

- i. Installation of HDPE Corrugated Ditch Liner shall be per the SmartDitch™ Technical Manual or equivalent as approved by the Engineer. Visit the SmartDitch™ website at www.smartditch.com to download an electronic copy or contact Penda Corporation at 866-576-2783 for a copy.

b. Subgrade/Ditch Preparation

- i. Subgrade on which HDPE Corrugated Ditch Liner will be placed shall be prepared to remove all large clumps, roots, brush, sod or rocks that might endanger the liner. Trim and remove any tree roots. Remove unstable soils and replace with compacted granular soil fill. In rocky areas, a bedding layer of fine granular soil shall be provided as a protection against irregularities that cannot be removed. Subgrade shall be approved by the Engineer prior to installing the liner. The ditch shall be excavated to the shape and size of the HDPE Corrugated Ditch Liner prior to placement.
- ii. The ditch subgrade of suitable material shall provide uniform and continuous support against the HDPE Corrugated Ditch Liner sidewalls.

c. Bedding and Backfill Materials

- i. Bedding backfill and general installation requirements shall be in accordance with project plans and specifications and manufacturer's recommendations.
- ii. Care must be taken to choose foundation, bedding and haunching materials that are compatible to minimize migration or loss of bedding or haunching support into the surrounding soils. Most coarse grained soil (as classified by the Unified Soils

Classification System) are acceptable bedding backfill material. Bedding and backfill materials shall be approved by Engineer prior to placement.

- iii. The moisture content and methods of placing and compacting the material shall ensure a firm and stable embankment results. The fill material shall be placed in horizontal lifts of such thickness that proper compaction and prescribed densities are obtained as determined by WVDEP agent on-site. Fill material shall be compacted to at least 90 Percent Modified Proctor density. Acceptance of fill material compaction shall be based on visual inspection by the WVDEP agent on-site; however WVDEP agent on-site may request nuclear density testing by the contractor at no cost to the WVDEP.

d. HDPE Corrugated Ditch Liner Assembly

- i. Install foam gasket sealant at each joint as supplied by the manufacturer. All joints shall be free of debris prior to placement. Contractor shall ensure a tight seal.
- ii. HDPE Corrugated Ditch Liner section shall be connected using self-tapping screws as supplied by the manufacturer. Install a minimum of 5 self-tapping screws and 9 self-tapping screws per joint for the 12" trapezoidal and 24" trapezoidal HDPE Corrugated Ditch Liner respectively.
- iii. BetterBilt Model #680 anchor kits, or approved equivalents, as supplied by the manufacturer shall be installed to secure the HDPE Corrugated Ditch Liner. At a minimum, install anchors at each joint and mid-section along the top knuckle on each side of the HDPE Corrugated Ditch Liner. A minimum anchor depth of 30 inches is recommended unless otherwise specified. Anchoring plans are site specific so additional anchoring and increased anchor depths shall be required depending on flows, slope, soils and other site conditions.

V. MEASUREMENT AND PAYMENT

a. Measurement

HDPE Corrugated Ditch Liner shall be measured along the center line of each ditch liner installed. Where branch connections are made, each ditch liner will be measured along centerlines to points of intersection. Fittings (corners, end sections, etc.) shall be measured and included in the per linear foot price.

b. Payment

Payment shall be per linear foot and all bedding, materials, excavation and labor necessary for proper installation shall be incidental to and included in this bid item.

Smart Ditch is an approved supplier of HDPE Corrugated Ditch Liner.

Approved Manufacturer: Penda Corporation
2344 W. Wisconsin Street
Portage, WI 53901
(866) 576-2783
www.smartditch.com

15.0 HDPE CORRUGATED WEIR**VI. DESCRIPTION OF WORK**

- a. This work shall include furnishing all labor, equipment and materials to install the HDPE Corrugated Weir and Baffle. The HDPE Corrugated Weir and Baffle shall be as manufactured and provided by Penda Corporation or an approved equivalent.

VII. APPLICABLE PUBLICATIONS

- a. The following documents can be referenced to indicate specific manufacturing and material performance capabilities:
 - i. ASTM D618 - Practice for Conditioning Plastics for Testing
 - ii. ASTM D638 – Test Method for Tensile Properties of Plastics
 - iii. ASTM D746 – Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
 - iv. ASTM D883 – Terminology Relating to Plastics
 - v. ASTM D1238 – Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer
 - vi. ASTM D1505 - Test Method for Density of Plastics by the Density-Gradient Technique
 - vii. ASTM D1506 – Test Method for Carbon Black – Ash Content
 - viii. ASTM D1693 – Test Method for Environmental Stress-cracking of Ethylene Plastics
 - ix. ASTM D5420 – Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight

VIII. PRODUCTS AND MATERIALS

- a. HDPE Corrugated Weir,
Shall be made from high molecular weight, high density polyethylene (HDPE) material, uniform throughout and free from tears, holes, or other defects that can affect the serviceability. The product shall be packaged so as to prevent damage from rough handling during shipment and so as to facilitate placement at the job site.
- b. HDPE Baffle
 - i. Baffle. Shall be manufactured to the dimensions shown on the drawings.
 - ii. Hardware. All hardware shall be 316 stainless steel unless otherwise noted.

IX. INSTALLATION

- a. General
 - i. Installation of HDPE Corrugated Weir shall be per the SmartDitch™ Technical Manual or equivalent as approved by the Engineer. Visit the SmartDitch™ website at www.smartditch.com to download an electronic copy or contact Penda Corporation at 866-576-2783 for a copy.
- b. Subgrade/Ditch Preparation
 - i. Subgrade on which HDPE Corrugated Weir will be placed shall be prepared to remove all large clumps, roots, brush, sod or rocks that might endanger the weir. Trim and remove any tree roots. Remove unstable soils and replace with compacted granular soil fill. In rocky areas, a bedding layer of fine granular soil shall be provided as a protection against irregularities that cannot be removed. Subgrade

- shall be approved by the Engineer prior to installing the weir. The area shall be excavated to the shape and size of the HDPE Corrugated Weir prior to placement.
- ii. The subgrade of suitable material shall provide uniform and continuous support against the HDPE Corrugated Weir sidewalls.

c. Bedding and Backfill Materials

- i. Bedding backfill and general installation requirements shall be in accordance with project plans and specifications and manufacturer's recommendations.
- ii. Care must be taken to choose foundation, bedding and haunching materials that are compatible to minimize migration or loss of bedding or haunching support into the surrounding soils. Most coarse grained soil (as classified by the Unified Soils Classification System) are acceptable bedding backfill material. Bedding and backfill materials shall be approved by Engineer prior to placement.
- iii. The moisture content and methods of placing and compacting the material shall ensure a firm and stable embankment results. The fill material shall be placed in horizontal lifts of such thickness that proper compaction and prescribed densities are obtained as determined by WVDEP agent on-site. Fill material shall be compacted to at least 90 Percent Modified Proctor density. Acceptance of fill material compaction shall be based on visual inspection by the WVDEP agent on-site; however WVDEP agent on-site may request nuclear density testing by the contractor at no cost to the WVDEP.

d. HDPE Corrugated Ditch Liner and Weir Assembly

- i. Install foam gasket sealant at each joint as supplied by the manufacturer. All joints shall be free of debris prior to placement. Contractor shall ensure a tight seal.
- ii. HDPE Corrugated Ditch Liner and Weir section shall be connected using self-tapping screws as supplied by the manufacturer. Install a minimum of 5 self-tapping screws and 9 self-tapping screws per joint for the 12" trapezoidal and 24" trapezoidal HDPE Corrugated Ditch Liner respectively.
- iii. BetterBilt Model #680 anchor kits, or approved equivalents, as supplied by the manufacturer shall be installed to secure the HDPE Corrugated Ditch Liner and Weir. At a minimum, install anchors at each joint and on each side of incoming weir section along the top knuckle on each side of the HDPE Corrugated Weir. A minimum anchor depth of 30 inches is recommended unless otherwise specified. Anchoring plans are site specific so additional anchoring and increased anchor depths shall be required depending on flows, slope, soils and other site conditions.

X. MEASUREMENT AND PAYMENT

a. Measurement

HDPE Corrugated Weir shall be paid per each.

b. Payment

Payment shall be per each and all bedding, materials, excavation and labor necessary for proper installation shall be incidental to and included in this bid item. Contractor shall supply two HDPE Baffles and baffles shall be incidental to and included in this bid item.

Smart Ditch is an approved supplier of HDPE Corrugated Weir.

Approved Manufacturer: Penda Corporation
2344 W. Wisconsin Street
Portage, WI 53901
(866) 576-2783
www.smartditch.com

16.0 HDPE WATER LINE

Pipe shall be buried at least 2.5 feet deep. Use butt weld fusion process to join pipes. A qualified fusion technician shall supervise the fusion of all joints. Payment shall be for the actual length of pipe installed. Provide all materials, equipment and personnel necessary for installation.

16.1 HDPE DRIVE WATER LINE-4-INCH

Pipe shall be four inches (4-inches) in diameter. SDR 15.5 or 17 HDPE of standard manufacture. Install to manufactures recommendations. The piping shall extend from the distribution box of the Flow Proportional Siphon System to the tee in the existing AquaFix Unit (see attached drawings).

16.2 HDPE WATER LINE-8-INCH

Pipe shall be eight inches (8-inches) in diameter. SDR 15.5 or 17 HDPE of standard manufacture. Install to manufactures recommendations. The piping shall extend from the distribution box of the Flow Proportional Siphon System to the inlet of the existing AquaFix Unit flume as (see attached drawings).

Pipe shall be buried at least 2.5 feet deep. Use butt weld fusion process to join pipes. A qualified fusion technician shall supervise the fusion of all joints. Payment shall be for the actual length of pipe installed. Provide all materials, equipment and personnel necessary for installation.

17.0 UNDERDRAIN

Install approximately seven hundred linear feet (700 LF) of Underdrain. Collection Underdrains shall be constructed to collect all seep water and convey to the proposed manholes. The collection Underdrain shall be 4-foot X 4-foot in cross-section. Stone for the Underdrain shall be non-calcareous with a size of 3-inch to 6-inch in diameter. The drain shall be wrapped with nonwoven filter fabric (Tytar 3401 or equivalent). A 12-inch perforated SDR-35 PVC pipe shall extend the length of the Underdrain and discharge into the manholes. The solid pipe (Seep Conveyance Drain Bid Item # 18.0) shall daylight into Channel 5 and Flow Proportional Siphon System Vault A. The perforated end of the 12-inch pipe underdrain shall extend to the surface as a clean-out and may be reduced to 6-inch diameter pipe with a cap. A minimum of 40 mil HDPE synthetic liner shall cover the bottom and lower side/ends of the Underdrain.

Cover the Underdrain with a minimum of one foot (1-foot) of material and grade the surface so it is well drained. Material on the downslope side of the drain shall be impervious to prevent leakage from the Underdrain to the surface. Excavation necessary to construct Underdrain, furnishing and placement of filter fabric, aggregate, all fittings necessary for installation, all materials specified above and on the attached drawing, and all other work necessary for the acceptable installation of the Underdrain, including pumping will not be measured but shall be considered incidental to the construction of the respective Underdrain and shall be incidental to this bid item. See attached drawing and specification. Water shall be pumped from underdrain trench during construction. Water shall be directed to Aquafix unit for treatment and use as drive water.

Payment for each underdrain is for complete installation and verified by WVDEP on-site agent with photos. The method of measurement for payment shall be on a linear foot basis measured along the centerline of the Underdrain.

18.0 SEEP CONVEYANCE DRAIN

Install approximately nine hundred (900) linear feet of Seep Conveyance Drain. Seep conveyance drains shall be constructed to convey all seep water from manholes to Flow Proportional Siphon System and Channel 5. A 12-inch solid SDR-35 PVC pipe shall extend from manholes to either Flow Proportional Siphon System or Channel 5 as shown on attached Overview Map. Drain(s) shall be placed on a consistent slope of 0.5% or as determined by Engineer during construction. Note: Seepage shall be conveyed to Channel 5 only from manholes (most southerly manhole(s)) that elevation does not permit conveyance from those manholes to Flow Proportional Siphon System. The solid pipes shall daylight into Channel 5 and Flow Proportional Siphon System Vault A. Two clean-outs with solid 12-inch diameter pipe and cap shall be installed at locations determined by WVDEP agent on-site. Animal guards shall be constructed and installed on the exit of the pipe as shown in the attached detail for pipe exiting into Channel 5. The animal guards must be installed the same day to prevent animal entry during non-work time.

Cover the seep conveyance drain with a minimum of one foot (1-foot) of material and grade the surface so it is well drained. Provide all fittings necessary for installation. See attached drawings and specification. All materials specified above and on the attached drawings shall be incidental to this bid item. Excavation necessary to construct the seep conveyance drain, bedding material, erosion control matting (where required), cleanouts and all other work necessary for the acceptable installation of the seep conveyance drain, including pumping will not be measured but shall be considered incidental to the construction of the respective seep conveyance drains. Water shall be pumped from Seep Conveyance Drain trench during construction. Water shall be directed to Aquafix unit for treatment and use as drive water.

Payment for seep conveyance drain is for complete installation and verified by WVDEP on-site agent with photos. The method of measurement for payment shall be on a linear foot basis measured along the centerline of the seep conveyance drain.

19.0 PRE-CAST MANHOLE

Install five (5) pre-cast manholes along the Underdrain. See attached detail for specifications. See attached Profile Map for approximate elevations; elevations may be adjusted due to site conditions as determined by the Engineer.

The manhole shall be "Type A" as specified by the West Virginia Department of Highways or shown on drawings. The elevation and height of the manhole shall be determined according to the invert of the 12-inch SDR-35 PVC pipe exiting the underdrain (see Hydraulic Profile drawing). Excavation shall be completed to the elevation determined by the underdrain excavation. Undercutting shall be required if competent foundation conditions are not encountered. Compacted crushed stone in 6-inch layers (1 foot minimum) shall be placed under manhole for bedding. See attached Manhole Lid Details for lid specifications. Entrance and exit pipes shall extend four (4) inches past the manhole interior wall. The exit pipe is a 12-inch SDR 35 pipe. This pipe shall be paid under a separate bid item. All predetermined openings shall use Z-Loc brand or equal type rubber boots with stainless steel band clamps to seal around pipes. Ensure that the all pipes without rubber boots are sealed into the manhole wall (use of mastic sealant followed by hydraulic cement grout or as approved by the WVDEP Engineer is required). The purpose of the manhole is to establish a collection point to convey seepage to proposed Flow Proportional Siphon

System and Channel 5 from the Underdrain. Also, the manhole shall serve as an entry point to perform maintenance on the conveyance and underdrain pipes. See Overview Map for layout and desired location. Payment shall be made upon completion of each installation of the manhole. Payment is for all of the work, and associated materials specified above, and in the attached details and shall be paid per each manhole installed. Pumping shall be incidental to and included in this bid item.

Water shall be pumped from Manhole excavation during construction. Water shall be directed to Aquafix unit for treatment and use as drive water.

20.0 SECONDARY CHEMICAL TREATMENT SYSTEM

This item includes all work necessary to purchase, install and initiate operation of one secondary chemical treatment system as indicated on the attached drawings and specifications. This unit must utilize caustic soda (sodium hydroxide) of 20% concentration. This includes but is not limited to the labor, equipment, 330-gallon chemical treatment tote, all stainless steel valves, piping and initial filling of the tote.

Payment is for all of the work specified in the attached details and shall be made per each secondary chemical treatment system installed and operation verified by WVDEP agent onsite.

21.0 MODIFY EXISTING LIME DISPENSING UNIT STRUCTURE

Modification of the existing lime dispensing unit structure shall include the following upgrades.

1. Four foot door shall be installed in accordance with the attached drawings and specifications. Steel for materials shall be of same grade as those existing on structure. Entire circumference of all adjoining surfaces shall be welded to insure structural integrity. "Spot welding" materials together is not acceptable. Line item shall also include all parts/materials shown in the Latch Detail View including door pin, two plates, two inch plate welded on door, 3.5 inch plate as a lock weather guard. The latch shall be made to either unlock door from outside, or open the door from the inside by removing the pin. Door shall also include three welded hinges, a door pull on each side of door, and a welded tab for holding door open on outside wall, see detailed drawings. Door installation shall include removing any affected insulation prior to door modifications, then replacement of insulation with original attachments or use of Loctite or approved equivalent adhesive. Painting for all accompanying materials shall be included in this line item.
2. Walking grate shall be installed to insure safe movement over treatment trough. Four feet non corrodible fiberglass anti-slip grading of grate shall be installed from the edge of the structure towards the outlet of the dosing unit. Grating must be cut to fit the trough's varying width. Top of grating shall be level with top of concrete. To support the grating use: 2 inch by 2 inch by ¼ inch thick stainless steel angle, which shall be fastened to each side of the trough with removable hex head bolt anchors for concrete. These anchors shall be stainless steel 3/8 diameter and 2.25 inch length. Use a minimum of four anchors per side, see detailed drawings. Installation shall be field proven and in compliance with the construction documents and specifications.
3. A twelve inch by twelve inch gable vent shall be installed at a location determined by DEP onsite representative. Vent shall be Builders Edge 12" x 12" white vinyl gable vent or equivalent. Hole, grinding, finishing, adhesive and painting to install vent shall be included in this line item. Adhesive to secure vent shall be Loctite Heavy Duty Construction Adhesive or approved equivalent that is approved for use on metal.
4. The silo and steel security enclosure shall be painted Tan in accordance with WVDOH

Specification 711. All steel surfaces on the interior and exterior of the enclosure and exterior of the silo shall be thoroughly cleaned, primed, and painted, utilizing Carboline brand Rustbond FC primer and two to three coats of Carboline brand Carbothane 133HB paint, or approved equivalents.

5. Top hatch grate shall be installed to insure safety when accessing top hatch of dosing unit. An approximately 2 foot by 2 foot section of non-corrodible fiberglass anti-slip grading of grate of 1.5 inch thickness shall be installed inside of the top hatch of the dosing unit. Grating must be cut to fit the top hatch's varying width and length, and may be slightly different at each site. Grating shall have 1.5 inch by 1.5 inch openings. Top of grating shall be level with top of the hatch and must allow for complete closing of the top hatch lid. Grating shall be supported by installation of 1 inch by 1 inch by 1/4 inch thick stainless steel angle, which shall be welded on the entire circumference of all adjoining surfaces to insure structural integrity. "Spot welding" materials together is not acceptable. Installation shall be field proven and in compliance with the construction documents and specifications.
6. Inlet target box will be mounted on the silo roof. Target box will be securely mounted to silo with a continuous weld to insure a dust and water tight enclosure. Target box will be designed to reduce the velocity of the chemical being conveyed and allow it to drop into the storage bin in an even pattern. The existing fill pipe will be modified to connect to target box and entire circumference of filler pipe will be welded to target box as to insure a dust and water tight connection.
7. Lower existing lime dispensing unit by installation of a flanged steel tube. Flanges shall be compatible with bolt pattern of existing unit. Tube shall be of the same inside diameter as that of the silo exit orifice and auger intake orifice and shall have a minimum wall thickness of one-quarter (1/4) inch. This steel tube will be placed between silo and auger screw intake. Tube shall be of proper length so that top of drive wheel shroud is four (4) feet above the existing floor elevation adjacent to the lime dispensing unit.

Contractor is responsible for removing the remaining calcium oxide prior to relocation. Calcium Oxide may be removed pneumatically or by any other means found acceptable by WVDEP Engineer. Any chemical removed can be utilized on-site for revegetation/vegetative enhancement following established procedures. All threads shall be treated with anti-seize coating.

See attached drawing for details and specifications.

Payment is for all of the work specified above and in the attached details and shall be paid per each unit structure modified.

22.0 RENEWABLE ENERGY VIBRATOR SYSTEM

I. DESCRIPTION OF WORK

- a. Install a MS Control (or approved equivalent) Renewable Energy Vibrator System (REVS); which shall include all materials, control equipment, accessories and incidentals required and as shown on the attached drawings, described in the Operations and Maintenance Manuals, and according to manufacturer's specifications. The manufacturer of all of the REVS components shall be fully experienced, reputable, and qualified in the manufacturing of the equipment. All work must be in compliance with local, state, federal codes and regulations. The principle items shall include a vibrator, controls, and renewable energy source.

I. APPLICABLE PUBLICATIONS

- a. The following documents can be referenced to indicate specific manufacturing and material performance capabilities:
 - i. WV DOT Specification 711 – Paints and coatings
 - ii. ISO 9001 – Quality management standard for solar panels
 - iii. UL1703 - Flat-Plate Photovoltaic Modules and Panels

II. PRODUCTS AND MATERIALS

- a. Documents
 - i. A plate shall be made and securely installed in plain view that includes but is not limited to the Manufacturer's name, address, telephone number, make/type/style of unit, model name and number, serial number, date installed, installers name and telephone number.
 - ii. Three (3) copies of an Operation & Maintenance Manual shall be provided to the WVDEP OSR prior to system start-up. The manual(s) shall include, but not be limited to description of installation, system operation, maintenance procedures, repair parts list, equipment schematics, electrical schematics, troubleshooting tips, etc.
- b. General Requirements
 - i. Enclosures
 - a) The enclosure and solar panel shall be four-inch (4") steel schedule 80 pipe anchored three feet (3') in the ground with concrete and extending eight-feet (8') above the ground level and the exposed end shall have a welded end cap. The pipe and end cap shall be coated with industrial epoxy paint in accordance with WVDOH Specification 711.
 - ii. Wiring
 - b) All wire, inclusive of control and power outside of enclosures shall be contained inside of at a minimum schedule 40 PVC conduit, all connections water tight, and all 90° elbows long sweep type.

III. INSTALLATION

- a. General
 - i. Installation of a MS Control (or equivalent) Renewable Energy Vibrator System (REVS) or equivalent as approved by the WVDEP Engineer and shall include all materials, control equipment, accessories and incidentals required and as shown on the attached drawings, described in the Operations and Maintenance Manuals, and according to manufacturer's specifications. The manufacturer of all of the REVS components shall be fully experienced, reputable, and qualified in the manufacturing of the equipment. All work must be in compliance with local, state, federal codes and regulations. The principle items shall include a vibrator, controls, and renewable energy source.
- b. System Requirements

-
- i. This REVS shall be a standalone system. The installation site is remote with NO ELECTRICAL GRID for power supply. There shall be an itemized energy budget displaying equipment energy requirements, energy generating capacity, and energy storage capacity of the system to WVDEP OSR for approval prior to installation. The WVDEP Engineer shall provide the silo size and type of material used for chemical water treatment.
 - ii. At the completion of installation, the contractor shall be responsible for the system start-up and verify that the system is operating properly. After the system comes online and is operating properly, the contractor must provide onsite training of the REVS to WVDEP OSR staff. Technical support shall be provided at NO CHARGE to the WVDEP for a period of one (1) year from the date of start-up.
- c. VIBRATOR
- i. The vibrator shall be a Vibco, Inc. Model DC-300, 24 DC Volt/8 amps OR an approved equivalent, delivering a minimum Force Impact of 350 lbs. at a speed of 4,000 VPM. The vibrator shall be controlled by a prewired control panel providing H – O – A switch, intensity switch, and a timer. The timer circuit shall have 0 – 300 minute cycle ability for both on and off. The vibrator and controls shall operate on 24 volt direct current provided by either solar panels or battery(s). The vibrator shall be mounted to the silo 1/3 of the way up the cone section (measure from the bottom of the cone). A 1' x 3' x 1/4" plate shall be welded to the exterior of the cone at the location of the vibrator installation. A 3' x 4" X 7.25 lbs/LF C-channel shall be welded to the plate. The manufacturer supplied plate shall be welded at the proper location to the C-channel, then connect the vibrator to plate using the manufacturer supplied bracket. There shall be a minimum of 20 feet of electrical service line provided to connect the vibrator control panel to the vibrator.
- d. RENEWABLE ENERGY SOURCE
- i. This REVS system shall be a standalone. The installation site is remote with NO ELECTRICAL GRID for power supply. The system shall be capable of operating 24 hours per day for a period of four (4) days without a system recharge, and shall have the capability to fully recharge the system under load in 48 hours.

- ii. The contractor is responsible for selecting the size and number of solar panels required to meet the demand as listed in the energy budget. The solar panels shall meet ISO 9001 and UL1703 Testing Standards and utilize multi-crystalline technology with a silicon nitride (SiN) coating that enhances cell efficiency. Panels must be encapsulated beneath high transmission tempered glass is accomplished using an advanced, UV resistant thermal setting plastic. The rear surface of the module shall be completely sealed from moisture and mechanical damage by continuous high strength polymer sheet. The panel must incorporate a reinforced anodized aluminum frame, designed for corrosion resistance. Brackets and associated hardware attaching the solar panels to the support structure shall be either anodized aluminum or stainless steel.
 - a) The solar controller shall provide a system status display, electronic protection (inclusive of lightening and surge protection, reverse current, voltage spikes) and must be the appropriate version to operate with the selected energy producing and storage devices.
 - b) The battery(s) shall be sealed lead-acid battery(s) that utilize Absorbent Glass Mat (AGM) technology. Battery(s) shall be valve regulated with spill proof construction. No single battery shall exceed 70 pounds. The contractor is responsible for selecting the size and number of battery(s) required to meet the storage requirements as listed in the energy budget.

IV. MEASUREMENT AND PAYMENT

a. Payment

- i. Payment shall be for all labor, materials, control equipment, accessories and incidentals required for the successful installation and operation of a MS Control (or equivalent) Renewable Energy Vibrator System (REVS).

V. WARRANTY

- a. The contractor shall warrant all components of the REVS to be free from defects in material and workmanship and will replace or repair (at no cost to WVDEP) any parts or parts returned to which examination shall show to have failed under normal use and service by the user within twelve (12) months following start-up and operation.

NOTE: Prior to plant startup, all equipment shall be inspected and approved by WVDEP Engineer. Once the system is fully charged and operational, the Renewable Energy Storage shall be tested by disconnecting the solar panels for a period of four (4) days, during which time the system will be expected to operate normally. At the end of four (4) days the solar panels shall be reconnected and timed to determine the amount of time it takes to fully recharge the system.

23.0 FENCE

Provide and install all materials for a fence system, approximately 1,150 feet in length, around all sludge cells, ponds, and other areas of the project as shown on the drawings, as specified and as needed for a complete and proper installation. Contractor shall provide adequate numbers of skilled workman who are trained and experienced in the necessary crafts and who are familiar with specified requirements to perform the work in this section. Final location of fence and gates shall be approved by the WVDEP on-site agent.

Remove fence north of the Proposed Flow Proportional Siphon System between the two corner assemblies. Remove existing fence from fence corner near final discharge to the corner north of existing Channel A to be eliminated.

Install new fence from corner northwest Proposed Flow Proportional Siphon System, encompass proposed sludge disposal cells and connect to the existing fence corner north of lime dosing unit. Install fence from corner north of Channel A and continue southwestward to west side of existing riprap diversion channel. Then continue southward between tree line and existing riprap channel and tie back in at existing corner near the final discharge point. See attached drawing.

FENCE STANDARDS

This item shall consist of providing all necessary material, equipment, and personnel needed to provide and install fence at the locations shown on the plans and/or as directed by the WVDEP on-site agent.

Unless otherwise indicated, the ASAE Specifications for Farm Fence Construction shall apply. (ASAE EP250.2 DEC01). Exceptions to the specifications are listed below:

1. Woven wire fence fabric shall be used (10-47-6-11).
2. One strand of barbed wire shall be placed 3 inches above the top strand of the woven wire.
3. Use gate specifications for placing gates in fence line.
4. Line posts shall be placed spaced a 10 feet apart with a maximum distance of 15 feet in rocky soil conditions.
5. Some fence curvature is anticipated. However contractor shall use a string line to align straight runs of fencing as near straight as practical.
6. Line posts shall have a minimum length of 7 ½ feet.
7. Posts may be driven, tamped, or set in concrete as necessary.
8. Landscape timbers with flat sides do not meet minimum thickness requirements, and shall NOT be utilized as line or brace posts.

MATERIALS

Woven wire fabric shall conform to the current American Society for Testing and Materials ASTM A116, Specifications for Zinc-Coated (Galvanized) Iron or Steel Farm-Field and Railroad Right-of-Way Wire Fencing. The wire shall be coated with Class-1 zinc coating.

Barbed wire shall be composed of one main strands of number 15 ½ gage wire with 16 gage round barbs. If four-point barbed wire is specified, barbs shall be spaced on approximately 5 inch centers. Barbed wire shall conform to the requirements of the current ASTM A121.

Smooth wire for braces shall be galvanized 0.40 oz. per sq. ft. or aluminum-coated 0.34 oz. per sq. ft. No 9 gage steel wire, minimum tensile strength 45,000 psi. Wire ties, clamps and staples shall be coated equivalent to fence or barbed wire specified. Staples shall be 9-gage, and 1 inch long for use in dense hardwoods and 1.5 inch long for use in preservative-treated softwoods. Nails, bolts, and other fence hardware shall be hot-dipped galvanized as per ASTM A153, Specifications for Zinc Coating (Hot Dip) on Iron and Steel Hardware. Wood posts and braces shall be pressure-preservative treated according to Federal Specification TT-W-571, Wood Preservation: Treating Practices, latest revision and may be round or square. Decay-resistant species may be used untreated if specified. Minimum normal size and lengths shall be as follows, or as specified in the plans. Wood vertical corner, intermediate, and end posts shall be a minimum 6 inch top diameter or square and 8 feet length. Wood horizontal brace posts shall be a minimum 4 inch top diameter or square and 7.5 feet length. Wood vertical line posts shall be a minimum 4 inch top diameter or square, a minimum 7.5 feet length, and shall be set a minimum 3 feet deep. Post spacing shall be as specified on the plans. Posts pointed for driving shall be shaped before preservative treatment. Landscaping timbers with flat sides do not meet the minimum thickness; therefore are not

allowed.

ASSEMBLIES

Corner assemblies are constructed as two end assemblies with a single end post.

Horizontal brace assemblies shall have the end or corner, and brace, posts set a minimum of 3.0 feet deep. Brace posts shall be spaced to accommodate 7.5 minimum feet long brace. Horizontal braces shall be mounted 12 inch below the top of the end post. Wire braces shall be four strands of 9 gage steel wire positively fastened 4 inch below the top of the post and 4 inch above grade. They shall be tightened (twisted) with a 0.75 X 1 inch wood slat or 0.38 inch diameter steel rod until the entire assembly is rigid. Slat or rods shall be left in position. Diagonal brace assemblies recommended in soft soils shall have the end or corner, and brace posts set a minimum of 3.0 feet deep. Brace posts shall be spaced to accommodate 7.5 feet long brace. Fencing is stretched from the first brace post. Ends are filled in after wire is attached. Pull-post assemblies shall be placed a maximum of 500 feet apart in straight runs and at the top and bottom (ridge and valley) of appreciable slope changes. Construction will follow the specifications. Smooth wire braces shall be placed as in details. See attached drawings for more details.

CONSTRUCTION

Contractor string shall be first stretched at the bottom to determine alignment of line posts and shall be temporarily fastened to end posts. The fence shall be attached to one end (or corner) post and the fence stretchers attached to the opposite end (corner post) post (or pull-post assembly). The fence at the stretcher end is then attached directly to the pull-post corner or end. The fence or stretchers shall be attached to the first brace post in the assembly. Its design provides for maximum strain taken at this point. A slack span of fence fabric is used between the end (or corner) post and the first brace post after stretching is completed.

With the pull-post assembly the fence fabric shall be extended past the first post and attached to the middle post. The wires shall be cut and wrapped around the post. The tension for stretching the woven-wire fence shall be applied at two points on the clamp bar for all fences over 32 inch high by using stretchers designed and manufactured for that purpose. Stretchers shall be so designed that tension can be applied to both ends of the bar at the same time. All splices in the fabric shall be securely made, with a Western Union splice or commercial splicing device approved by the WVDEP engineer. The tension for stretching the barbed wire shall be applied by use of single-wire stretchers designed and manufactured for that purpose, and in accordance with the manufacture's recommendations.

Method of measurement for this item shall be per linear foot of fence in conformance with the drawings, specifications and accepted by the WVDEP on-site agent or Engineer.

Removal of existing fence as described above shall be incidental to and included in this bid item.

23.1 10-FOOT GATE

Gates shall be hot-dipped galvanized as per ASTM A153 specifications for zinc coating (hot dip) on iron and steel hardware. Gates shall be painted Forest Green. Wood posts and braces shall be pressure-preservative treated according to Federal Specification TT-W-571, Wood Preservation: Treating Practices, latest revision and may be round or square. Decay-resistant species may be used untreated with prior approval from WVDEP Engineer. Gate posts shall be a minimum 6-inch top diameter or square and 8-feet long.

Postholes shall be a minimum of three feet (3-feet) deep and twelve inches (12-inches) in diameter or square. Sides shall be nearly vertical. Posts shall be embedded in concrete. The embedment shall extend 2-inches above grade at the post and shall slope to grade at the edge of the concrete. Concrete shall have minimum 28-day test strength of 4000 psi. Posts shall be braced to support the weight of the gate.

Conventional bracing or use of a dead man will be considered for approval. The gates shall be four (4) 10-foot wide, **two (2) inch diameter heavy-duty pipe gates or approved equivalent**. Provide a lockable latch, which includes protection from the elements; for the lock. All hardware and/or accessories necessary for installation of gates shall be included as part of this per each bid item. Gates shall be located in area delineated by the WVDEP on-site representative. See attached drawing. Payment shall be made at the completion of each installation and acceptance by the WVDEP on-site representative.

24.0 INCIDENTAL STONE

During construction of culverts installations, roadway ditch improvements, reshaping of the roadway, rock check dams, rock filter outlets, and any additional areas that may need stone. Gradation and placement as directed by the WVDEP agent on-site. Also limestone placed in Channel 5 on this project shall be paid as incidental stone.

Payment shall be paid per ton of stone applied by weight ticket and will be made at completion of all work and acceptance by WVDEP.

25.0 CONCRETE SPREADER

Provide all materials, including concrete, reinforcing steel, riprap, weir plate and weir base and any accessories and incidentals required for the successful installation and operation of the Concrete Spreader. All excavation, fill placement, leveling, forming and machining are considered incidental to and included in the Concrete Spreader pay item. All threads shall be treated with anti-seize coating.

The concrete shall be Type II Sulfate Resistant Concrete (WVDOH Sec. 601). The concrete spreader shall have dimensions as shown on drawings. Reinforcing steel shall be utilized as indicated in the attached drawings. The weir plate, weir base, and all hardware shall be 316 stainless steel. The pond liner shall be considered incidental to and included in the each pond pay item.

Payment for each concrete spreader constructed and approved by WV DEP agent on-site.

26.0 ELIMINATE CHANNEL A

Eliminate approximately seventy (70) linear feet of Existing Channel A, which conveys mine discharge on west side of permit, currently discharging into Pond 3 and redirect flow into Channel 1, as shown on attached drawings by means of regrading ditch line. This is a lump sum bid item.

27.0 HDPE CULVERTS – 18-INCH

Install approximately two hundred (200 LF) of 18-inch HDPE culvert. The culvert shall be HDPE, dual wall smooth interior, corrugated exterior twenty (20) foot joint type. The pipe joints shall be silt-tight and the pipe shall meet ASTM D3350 manufacturing standards. The culvert locations shall be determined by project plans or by the on-site WVDEP representative.

STANDARD INSTALLATION

Culverts installed in access roads shall cross the road at a 30 degree angle downgrade with a minimum grade of three percent (3%) from inlet to outlet, except in streams or diversion ditches where the pipe shall be installed straight and coincide with the normal direction of flow.

The culvert inlet and outlet ends shall be protected by a headwall of stable non-erodible material and the slope at the outlet shall be protected with an apron of rock riprap, energy dissipater or other designated material. The culvert shall be installed in a trench excavated in solid undisturbed ground or formed by

compacted earth. Belled ends of culvert sections shall be orientated upslope.

The culvert shall be imbedded in a formed trench to a depth no less than 1/10 the outside diameter of the pipe. Selected backfill material shall be placed around the culvert in four (4) inch layers and thoroughly compacted by means of hand tamping or manually directed power tampers or plate vibrators. The culvert shall be covered with a minimum of two (2) feet of material.

Payment shall be for length of culvert installed, and any riprap for rock aprons, headwalls and end walls shall be incidental to and included in this bid item.

28.0 CONVEYANCE PIPE - 18-INCH

Install approximately two hundred seventy five (275) linear feet of 18-inch conveyance pipe. Pipe(s) shall be 18-inch diameter, SDR 15.5 or 17 HDPE of standard manufacture. Conveyance pipes shall be constructed to convey water from Channel 6 to Pond 2 and from Channel 7 to Pond 4 as shown on attached Overview Map. Pipes shall be placed on a consistent slope of 2.0% or as determined by Engineer during construction.

Provide all materials, equipment, personnel and fittings necessary for installation which shall include joining pipe (s) with the HDPE liners of Channels 6 and 7. Excavation necessary to install the pipes and all other work necessary for the acceptable installation of the conveyance pipe will not be measured but shall be considered incidental to the installation of the respective conveyance pipe. Use butt weld fusion process to join pipes. A qualified fusion technician shall supervise the fusion of all joints. See attached Overview Map and specifications. Payment shall be for the actual length of pipe installed. The method of measurement for payment shall be on a linear foot basis measured along the centerline of the pipe.

29.0 LIMESTONE BED

Limestone Bed One (1) shall be placed within Pond 5 as shown on the attached Overview Map. Limestone Bed 1 shall be constructed by means of placing a layer of woven engineering fabric (fabric for separation) on liner as a protective barrier between limestone and liner. Contractor shall then place a minimum of 450 tons of WVDOH #57 limestone on fabric for separation using caution to not damage liner during placement operations. Limestone bed shall be divided perpendicular to flow by means of placing a single layer of woven (fabric for separation) mid length of bed. See attached Overview Map and Limestone Bed Detail drawing. During construction of Limestone Bed One a layer of safety barrier shall be installed as shown on attached Limestone Bed Detail.

Payment for Limestone Bed shall be per each. Cost of fabric for separation, safety barrier, limestone, materials, equipment and personnel associated with installation of limestone bed shall be incidental to and included in the cost of this bid item.

30.0 BAFFLE CURTAIN

The baffle curtain shall be of an ultraviolet (UV) resistant type vinyl coated polyester material with a minimum total weight rating of 17 oz. /sq. yd. Styrofoam floats of minimum size 3"x4"x24" shall be hot seam sealed into the top of baffle curtain, and shall be evenly spaced 4 inches apart end to end. A grommet shall be placed between each of the Styrofoam floats. A 1/4 inch diameter stainless steel wire cable shall be seamed into the top of the baffle to anchor at the sides of the pond, and shall extend 10 feet past the cut length of the baffle curtain on each end. A 5/16 inch diameter link chain shall be hot seam sealed into the bottom of the baffle for weight. Curtain shall have aluminum plates attached at each end through the top hot seam to create another anchor point for the curtain. A shackle shall be attached through the plates. Secure anchor points (pipe, rods, or treated posts) shall be installed at the ponds edge to hold the baffle in

place. Anchor points and the baffle location shall be approved by the WVDEP on-site representative before installation. The wire cable and shackles shall be attached in such a way to allow for easy disconnect while sludge is being pumped from the pond. All cable fasteners, eye bolts, and other accessories shall be stainless steel to prevent corrosion, and shall be incidental to this pay item. The baffle curtain opening slots shall be cut into the curtain below the hot seam seal at the top of the baffle, as directed by WVDEP on-site representative. The spacing and the size of the slots shall be determined by the WVDEP Engineer or on-site representative, and shall be installed at the time of installation at pond site. Any adjustment to the quantity of baffle curtains must be approved by WVDEP agent on-site. . Baffle curtains shall be installed at eleven (11) different locations. The approximate total length of curtain is five hundred and thirty linear feet (530 LF). Payment shall be per linear feet of baffle curtain installed and accepted by WVDEP.

31.0 FLOW PROPORTIONAL SIPHON SYSTEM

Provide all materials and components shown drawings including concrete vaults, vault hatches, siphon, piping, valves, fittings, trough, weirs, grout, reinforcing steel, stone, any accessories and incidentals required for the successful installation and operation of the Flow Proportional Siphon System. See attached specification for Structural Precast Concrete. All excavation, fill placement, leveling, forming and machining are considered incidental to and included in the Flow Proportional Siphon System pay item.

All components from Vault A inlet to the Distribution Box outlet shall be considered incidental to and included in the Flow Proportional Siphon System pay item as well as modifications to the drive water line as shown on the Flow Proportional Siphon System/Drive Line Details drawing. The Seep Conveyance Drain pipe entering Vault A and the Four Inch and Eight Inch HDPE pipes exiting the Distribution Box are individual pay items.

Note: If contractor wishes to cast concrete structures in place instead of installing precast structures contractor must submit a structure design certified by a Professional Engineer licensed in the State of WV. WVDEP reserves the right to reject any proposed designs. All threads shall be treated with anti-seize coating.

Payment for each Flow Proportional Siphon System constructed and approved by WV DEP agent on-site.

32.0 OUTLET GUTTER

See attached Outlet Gutter Detail and Outlet Gutter Rebar Detail for dimensions and specifications.

A two (2) inch thick fiberglass grate with 2" by 2" square openings shall be installed in the Outlet Gutter notch as to prevent unintentional entry into the Outlet Gutter. Grating shall be secured to Outlet Gutter notch by means of four Type 316 Stainless Steel anchor bolts and four stainless steel type "M" hold down clips.

The concrete shall be Type II Sulfate Resistant Concrete (WVDOH Sec. 601). Reinforcing steel shall be placed as indicated in the attached drawings. Cost of reinforcing steel, materials, equipment and personnel associated with installation of Outlet Gutter shall be incidental to and included in the cost of this bid item. Outlet Gutter top surface must be level as to provide even distribution of flow from pond surface into gutter.

Payment for Outlet Gutter shall be paid per each unit installed and accepted by WVDEP.

33.0 ADJUSTABLE SPEED DRIVE

Provide all materials and components shown drawings including adjustable speed drive, journal bearings,

pillow block bearings, couplings, overload safety couplings, vertical and horizontal braces, any accessories and incidentals required for the successful installation and operation of the Adjustable Speed Drive System. All fitting and machining as well as removal of existing components in order to facilitate the installation of the Adjustable Speed Drive System are considered incidental to and included in the Adjustable Speed Drive System.

Payment for each Adjustable Speed Drive System constructed, installed and approved by WV DEP agent on-site.

34.0 GRASS LINED CHANNEL

Provide all materials, excavate and construct channel as indicated on the attached typical plans, cross-section, specifications, and as discussed at the Pre-Bid Showing. Channels shall be free draining upon completion of construction. Length of channel may be adjusted to meet on site conditions. See Revegetation standards for vegetation requirements. See attached table for detailed dimensions and locations for each channel.

Payment shall be per linear feet of Grass Lined Channel constructed and accepted by WVDEP. Vegetation of channel(s) will not be included in the Revegetation bid item pay quantity but shall be considered included in and incidental to the Grass Lined Channel pay item. See attached table for channel details.

35.0 RIPRAP CHANNEL

Provide all materials, excavate and construct ditch or channel as indicated on the attached typical plans, cross-section, specifications, and as discussed at the Pre-Bid Showing. Channels and ditches shall be free draining upon completion of construction. Length of channel may be adjusted to meet on site conditions. (See riprap standards below.) See attached table for detailed dimensions and locations for each channel.

RIPRAP STANDARD FOR: CHANNELS, DITCHES, ROAD CROSSINGS

Rock riprap for channels, ditches and crossings shall consist of hard durable sandstone or limestone. The rock shall be composed of a well-graded mixture ranging in size from 3-inches minimum to 18-inches maximum diameter. The mixture shall have a d50 of 12 inches with no more than 15% of weight less than 6 inches. Fifty percent (50%) of the mixture by weight shall be larger than the d50 size. See detailed chart for actual d50 size and other details for specific channels, ditches and crossings.

A well-graded mixture is defined as a mixture composed primarily of the larger stone sizes but with a sufficient mixture of other sizes to fill the progressively smaller voids between the stones. The diameter of the largest stone size in such a mixture shall be considered to be 1.5 times the d50 size. The riprap size as shown on the plans and specifications or for other construction purposes shall be the size of the largest stone in the mixture, i.e., $1.5 \times d_{50}$. The thickness of the riprap blanket shall be equal to the maximum stone diameter or $1.5 \times d_{50}$, whichever is greater.

Stone for riprap shall consist of shot rock or rough unhewn quarry stone of approximately rectangular shape. The stone shall be hard and angular and of such quality that it will not disintegrate on exposure to water or weathering, and it shall be suitable in all other respects for the purpose intended. Shale shall not be used for riprap. The specific gravity of the individual stones shall be at least 2.5.

All rock shall have a maximum weighted loss of 30 percent when subjected to 5 cycles of the sodium sulfate soundness test as outlined by ASTM C88, as modified by AASHTO T-104. If riprap suitability is questionable, durability shall be determined by the sodium sulphate soundness test (ASTM C 88/AASHTO

T 104-77).

See attached table for channel details.

POLY-FLEX LINER INSTALLATION & SPECIFICATIONS

1. GENERAL REQUIREMENTS

1.1 Scope

The following describes parameters for the manufacture, supply, and installation of Poly-Flex polyethylene geomembranes. All procedures, operations, and methods shall be in strict accordance with the engineer's specifications, plans, and drawings.

1.2 Qualifications

1.2.1 Manufacturing

The manufacturer shall have at least five (5) years continuous experience in manufacturing polyethylene geomembrane and/or experience totaling 10,000,000 square feet of manufactured polyethylene geomembrane.

1.2.2 Installation

The installation contractor shall be the manufacturer or a dealer trained to install geomembrane.

Installation shall be performed under the constant direction of a field installation supervisor who shall remain on-site and be responsible, throughout the liner installation, for liner layout, seaming, testing, repairs, and all other activities by the Installer. The field installation supervisor shall have installed or supervised the installation of a minimum of 2,000,000 square feet of polyethylene geomembrane. Seaming shall be performed under the direction of a master seamer (who may also be the field installation supervisor) who has seamed a minimum of 2,000,000 square feet of polyethylene geomembrane, using the same type of seaming apparatus specified for this project. The field installation supervisor and/or master seamer shall be present whenever seaming is performed.

1.3 Submittals

1.3.1 Manufacturer

The manufacturer shall provide the following information:

A. Submittals After Contract Award, Prior to Liner Installation

1. List of material properties.
2. Manufacturing quality control program.
3. Copy of quality control certificates issued by the resin supplier.
4. Copy of quality control certificates for the geomembranes in conformance with Section 2.4.3.

1.3.2 Installation Contractor

The installer shall provide the following written information:

A. Submittals by Successful Bidder Prior to Commencement of Installation

A list of completed facilities, totaling a minimum of 2,000,000 square feet, for which the installer has installed polyethylene geomembrane. For each installation, the following information shall be provided:

- a. Name and purpose of facility, location, and date of installation.
- b. Name of owner, design engineer, manufacturer, and name and telephone number of contact at the facility who can discuss the project.
- c. Thickness and quantity of the installed geomembrane.
- d. Proposed installation panel layout.

1.4 Meeting

A daily meeting shall be held at the work area just prior to commencement of the work to discuss work activities. The earthwork contractor, the liner installer, and the inspector shall be present.

1.5 Warranty

A written Warranty shall be obtained from the manufacturer (for material) and the installation contractor (for workmanship). These documents shall warrant both the quality of the material and workmanship for a specified duration of time.

2. MATERIAL SPECIFICATIONS

2.1 Materials

1. The geomembrane shall be High-Density Polyethylene (HDPE) or Linear Low Density Polyethylene (LLDPE).
2. Gasket material shall be neoprene, closed cell medium, 1/4-inch thick, 2 inches wide with adhesive on one side, or other compatible gasket materials as required.
3. Metal battens or banding and hardware shall be stainless steel.
4. Water cut-off mastic shall be Neoprene Flashing Cement as supplied by Poly-Flex, Inc., or as required.
5. Sealant shall be General Electric Silicone, RTV 103, or equivalent.

2.2 Geomembrane Raw Materials

The geomembrane shall be manufactured of polyethylene resins produced in the United States and shall be compounded and manufactured specifically for the intended purpose. The resin manufacturer shall certify each lot for the following properties.

The natural polyethylene resin without the carbon black shall meet the following requirements:

Property	Test Method	HDPE	LLDPE
		Requirements	Requirements
Density, g/cc	ASTM D 4883, ASTM D 1505, or ASTM D 792	0.932 - 0.940	0.915 - 0.926
Melt Index, g/10 min.	ASTM D 1238 Condition E	<1.0	<1.0

2.3 Rolls

The geomembrane shall be a minimum 23.0 ft seamless width, as manufactured by Poly-Flex, Inc. (2000 W. Marshall Dr., Grand Prairie, TX 75051, 888-765-9359). Carbon black shall be added to the resin if the resin is not compounded for ultra-violet resistance.

The surface of the smooth geomembrane shall not have striations, roughness, pinholes, or bubbles.

The geomembrane shall be supplied in rolls. Labels on each roll shall identify the thickness of the material, the length and width of the roll, lot and roll numbers, and name of manufacturer.

Applicable Test Methods

ASTM International

ASTM D 792	Specific gravity (relative density) and density of plastics by displacement
ASTM D 1004	Initial tear resistance of plastic sheeting
ASTM D 1238	Flow rates of thermoplastics by extrusion plastometers
ASTM D 1505	Density of plastics by the Density-Gradient technique
ASTM D 1603	Carbon black in olefin plastics
ASTM D 1898	Sampling of plastics
ASTM D 3895	Test method for oxidative induction time of polyolefins by thermal analysis
ASTM D 4833	Index Puncture Resistance of geotextiles, geomembranes and related products
ASTM D 4883	Density of polyethylene by the Ultrasound technique
ASTM D 5199	Test method for measuring nominal thickness of geotextiles and geomembrane
ASTM D 5323	Determination of 2% secant modulus for polyethylene geomembranes
ASTM D 5397	Procedure to perform a single point notched constant tensile load - Appendix (SP-NCTL) test
ASTM D 5596	Test method for microscopic evaluation of the dispersion of carbon black in polyolefin geosynthetics

ASTM D 5617	Multi-axial tension test for geosynthetics
ASTM D 5641	Practice for geomembrane seam evaluation by vacuum chamber
ASTM D 5721	Practice for air-oven aging of polyolefin geomembranes
ASTM D 5820	Practice for the pressurized air channel evaluation of dual seamed geomembrane
ASTM D 5885	Test method for oxidative induction time of polyolefin geosynthetics by high pressure differential scanning calorimetry
ASTM D 5994	Test method for measuring the core thickness of textured geomembranes
ASTM D 6392	Determining the integrity of nonreinforced geomembrane seams produced using thermo-fusing methods
ASTM D 6693	Determining tensile properties of nonreinforced polyethylene and nonreinforced flexible polypropylene geomembranes
ASTM D7466	Test method for measuring the asperity height of textured geomembrane
Geosynthetic Research Institute (GRI)	
GRI GM 10	Specification for the stress crack resistance of geomembrane sheet
GRI GM 11	Accelerated weathering of geomembranes using a florescent UVA-condensation exposure device
GRI GM 19	Seam strength and related properties of thermally bonded polyolefin geomembranes

The geomembrane rolls shall meet the following specifications:

TEXTURED HDPE GEOMEMBRANE (ENGLISH UNITS)

Property	Test Method	Minimum Average Values			
		40 mil	60 mil	80 mil	100 mil
Thickness, mils	ASTM D 5994				
minimum average		38	57	76	95
lowest individual of 8 of 10 readings		36	54	72	90
lowest individual of 10 readings		34	51	68	85
Asperity Height ¹ , mils	ASTM D 7466	10	10	10	10
Sheet Density, g/cc	ASTM D 1505/D 792	0.940	0.940	0.940	0.940
Tensile Properties ²	ASTM D 6693				
1. Yield Strength, lb/in		84	126	168	210
2. Break Strength, lb/in		60	90	120	150
3. Yield Elongation, %		12	12	12	12
4. Break Elongation, %		100	100	100	100
Tear Resistance, lb	ASTM D 1004	28	42	56	70
Puncture Resistance, lb	ASTM D 4833	60	90	120	150
Stress Crack Resistance ³ , hrs	ASTM D 5397 (App.)	300	300	300	300
Carbon Black Content ⁴ , %	ASTM D 1603	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon Black Dispersion	ASTM D 5596	—Note 5—			
Oxidative Induction Time (OIT)					
Standard OIT, minutes	ASTM D 3895	100	100	100	100
Oven Aging at 85°C	ASTM D 5721				
High Pressure OIT - % retained after 90 days	ASTM D 5885	80	80	80	80

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UV Resistance ⁶	GRI GM11				
High Pressure OIT ⁷ - % retained after 1600 hrs	ASTM D 5885	50	50	50	50
Seam Properties	ASTM D 6392 (@ 2 in/min)				
1. Shear Strength, lb/in		80	120	160	200
2. Peel Strength, lb/in - Hot Wedge		60	91	121	151
- Extrusion Fillet		52	78	104	130
Roll Dimensions					
1. Width (feet):		23	23	23	23
2. Length (feet)		750	500	375	300
3. Area (square feet):		17,250	11,500	8,625	6,900
4. Gross weight (pounds, approx.)		3,500	3,500	3,470	3,470

- 1 Of the 10 readings; 8 must be ≥ 7 mils and lowest individual reading must be ≥ 5 mils.
- 2 Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction. Yield elongation is calculated using a gauge length of 1.3 inches; Break elongation is calculated using a gauge length of 2.0 inches.
- 3 The yield stress used to calculate the applied load for the SP-NCTL test should be the mean value via MQC testing.
- 4 Other methods such as ASTM D 4218 or microwave methods are acceptable if an appropriate correlation can be established.
- 5 Carbon black dispersion for 10 different views: Nine in Categories 1 and 2 with one allowed in Category 3.
- 6 The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.
- 7 UV resistance is based on percent retained value regardless of the original HP-OIT value.

2.4 Quality Control Specifications

2.4.1 Raw Materials

A. Resin

All resins for use in geomembrane must pass a candidate pre-approval process before being eligible for use. Each incoming railcar shall be sampled by compartment with the following testing performed and compared to the manufacturer's specifications:

1. Density: ASTM D 1505.
2. Melt Index: ASTM D 1238.
3. Oxidative Induction Time (OIT): ASTM D 3895.

B. Additives

All incoming materials are to be tested and approved prior to use with the following testing performed and compared to the manufacturer's specifications:

1. Carbon Black Content: ASTM D 1603.
2. Oxidative Induction Time (OIT): ASTM D 3895.

2.4.2 Finished Product: During Production

A. Inspection

Performed on each roll during manufacturing.

1. Appearance

Sheet surface appearance shall be monitored for flaws.

2. Thickness

A full width sample shall be cut from the end of each roll for thickness measurement.

B. Out-of-Spec. Material

Any roll not meeting the specification for any of the above inspections shall be separated from other rolls and placed on hold.

C. Roll Identification

Four tags per roll shall be used.

1. Outside the core.
2. On the core plug.

3. On the roll surface.
4. On the production roll sample.

2.4.3 Manufacturer's Quality Control & Quality Assurance Testing

A. Sampling

Full width samples shall be taken as retains from the end of each roll to the manufacturer's laboratory.

B. Testing

The geomembrane quality control testing shall meet the following frequency requirements:

Property	Test Method	Testing Frequency (min.)
Thickness (smooth sheet) (textured sheet)	ASTM D 5199 ASTM D 5994	per roll
Asperity Height (textured sheet only) Alternate the measurement side for double-sided textured sheet.	ASTM D 7466	every second roll
Sheet Density	ASTM D 1505/D 792	200,000 lb (90,000 kg)
Tensile Properties 1. Yield Strength (HDPE only) 2. Break Strength 3. Yield Elongation (HDPE only) 4. Break Elongation	ASTM D 6693	20,000 lb (9,000 kg)
2% Modulus (LLDPE only)	ASTM D 5323	per each formulation
Tear Resistance	ASTM D 1004	45,000 lb (20,000 kg)
Puncture Resistance	ASTM D 4833	45,000 lb (20,000 kg)
Axi-Symetric Break Strain (LLDPE only)	ASTM D 5617	per each formulation
Stress Crack Resistance (HDPE only)	ASTM D 5397 (App.)	per GRI GM10
Carbon Black Content	ASTM D 1603	20,000 lb (9,000 kg)
Carbon Black Dispersion	ASTM D 5596	45,000 lb (20,000 kg)
Oxidative Induction Time (OIT) Standard OIT	ASTM D 3895	200,000 lb (90,000 kg)
Oven Aging at 85°C High Pressure OIT	ASTM D 5721 ASTM D 5885	per each formulation
UV Resistance	GRI GM11	
High Pressure OIT	ASTM D 5885	per each formulation

C. Reporting

Results from the testing shall be reviewed by the quality control manager. Material that does not meet specifications shall be identified and placed on hold. The test data shall then be transferred to the product data file for roll certification.

D. Welding Rod

A sample of welding rod shall be tested at the frequency of once per 25 rolls of welding rod. The following

tests shall be performed on the sample:

- | | |
|-------------------------|-------------|
| 1. Diameter | ASTM D 5199 |
| 2. Density | ASTM D 1505 |
| 3. Melt Index | ASTM D 1238 |
| 4. Carbon Black Content | ASTM D 1603 |

3. GEOMEMBRANE INSTALLATION

3.1 Materials Logistics

3.1.1 Transportation and On-site Storage

The geomembrane rolls shall be shipped by flatbed trailer to the job site. The geomembrane shall be stored so as to be protected from puncture, dirt, grease, moisture, and excessive heat. Damaged material shall be stored separately for repair or replacement. The rolls shall be stored on a prepared smooth surface (not wooden pallets) and should not be stacked more than two rolls high.

3.2 Earthwork

3.2.1 General

The owner or his representative (soil quality assurance inspector) shall inspect the subgrade preparation. Prior to liner installation the subgrade shall be compacted in accordance with the project specifications. Weak or compressible areas which cannot be satisfactorily compacted should be removed and replaced with properly compacted fill. All surfaces to be lined shall be smooth, free of all foreign and organic material, sharp objects, or debris of any kind. The subgrade shall provide a firm, unyielding foundation with no sharp changes or abrupt breaks in grade. Standing water or excessive moisture shall not be allowed.

The installer, on a daily basis, shall approve the surface on which the geomembrane will be installed. After the supporting soil surface has been approved, it shall be the installer's responsibility to indicate to the inspector any changes to its condition that may require repair work.

3.2.2 Anchor Trench

The anchor trench shall be excavated to the line, grade, and width shown on the project construction drawings, prior to liner system placement. Slightly rounded corners shall be provided in the trench to avoid sharp bends in the geomembrane.

3.3 Method of Placement

The rolls shall be deployed using a spreader bar assembly attached to a loader bucket or by other methods approved by the project engineer.

The installer shall be responsible for the following:

1. Equipment or tools shall not damage the geomembrane during handling, transportation and deployment.
2. Personnel working on the geomembrane shall not smoke or wear damaging shoes.
3. The method used to unroll the panels shall not cause scratches or crimps in the geomembrane and shall not damage the supporting soil.
4. Adequate loading (e.g., sand bags or similar items that will not damage the geomembrane) shall be placed to prevent uplift by wind (in case of high winds, continuous loading is recommended along edges of panels to minimize risk of wind flow under the panels).

3.3.1 Weather Conditions

Geomembrane deployment shall proceed between ambient temperatures of 32° F and 104° F. Placement can proceed below 32° F only after it has been verified by the inspector that the material can be seamed according to the specification. Geomembrane placement shall not be done during any precipitation, in the presence of excessive moisture (e.g., fog, rain, dew) or in the presence of excessive winds, as determined by the installation supervisor.

3.4 Field Seaming

Approved seaming processes are fusion and extrusion welding. On side slopes, seams shall be oriented in the general direction of maximum slope, i.e., oriented down, not across the slope. In corners and odd-shaped geometric locations, the number of field seams shall be minimized.

No base T-seam shall be closer than 5 feet from the toe of the slope. Seams shall be aligned with the least possible number of wrinkles and "fishmouths". If a fishmouth or wrinkle is found, it shall be relieved and cap-stripped.

3.4.1 Seam Overlap

Geomembrane panels must have a finished minimum overlap of 4 inches for fusion welding and 6 inches for extrusion welding.

Cleaning solvents may not be used unless the product is approved by the liner manufacturer.

3.4.2 Test Seams

Field test seams shall be conducted on the liner to verify that seaming conditions are satisfactory. Test seams shall be conducted at the beginning of each seaming period and at least once every 4 hours, for each seaming apparatus and personnel used that day.

All test seams shall be made in contact with the subgrade. Welding rod used for extrusion welding shall have the same properties as the resin used to manufacture the geomembrane. The test seam samples shall be 10 feet long for fusion welding and 3 feet long for extrusion welding with the seam centered lengthwise. Three specimens shall be cut from each end of the test seams by the inspector. The inspector shall use a tensiometer to test 3 specimens for shear and 3 specimens for peel. Each specimen shall be one inch wide with a grip separation of 4 inches plus the width of the seam. The seam shall be centered between the clamps. The rate of grip separation shall be 2 inches per minute.

3.4.3 Assessment of Seam Test Results

Seam testing shall be performed in accordance with ASTM D 6392 and meet the requirements of GRI GM 19.

3.4.4 Non-Destructive Seam Testing

The installer shall non-destructively test all field seams over their full length.

A. Vacuum Box Testing

1. Seam testing shall be performed in accordance with ASTM D 5641.
2. All areas where animated soap bubbles appear shall be marked, repaired, and then retested.

B. Air Pressure Testing (For Double Fusion Seams Only)

1. Seam testing shall be performed in accordance with ASTM D5820.
2. Energize the air pump to a pressure between 25 and 30 psi, allow 2 minutes for the injected air to come to equilibrium in the channel, and sustain pressure for approximately 5 minutes.
3. If loss of pressure exceeds 4 psi, or pressure does not stabilize, locate faulty area, repair, and retest.

The following procedures shall apply to locations where seams cannot be non-destructively tested.

1. If the seam is accessible to testing equipment prior to final installation, the seam shall be non-destructively tested prior to final installation.
2. If the seam cannot be tested prior to final installation, the seam shall be spark tested according to the spark tester manufacturer's procedures.

3.4.5 Destructive Seam Testing

Destructive seam testing should be minimized to preserve the integrity of the liner. The installer shall provide the inspector with one destructive test sample per project specifications (usually once per 500 feet of seam length) from a location specified by the inspector.

A. Sampling Procedure

In order to obtain test results prior to completion of liner installation, samples shall be cut by the installer as the seaming progresses. The installer shall also record the date, location, and pass or fail description. All holes in the geomembrane resulting from obtaining the seam samples shall be immediately patched and vacuum tested.

B. Size and Disposition of Samples

The samples shall be 12 inches wide by 36 inches long with the seam centered lengthwise. The sample shall be cut into three equal-length pieces, one to be given to the inspector, one to be given to the owner, and one to the installer.

C. Field Laboratory Testing

Seam testing shall be performed in accordance with ASTM D 6392 and meet the requirements of GRI GM 19.

D. Independent Laboratory Testing

The owner, at his discretion and expense, may send seam samples to a laboratory for testing. The test method and procedures to be used by the independent laboratory shall be the same as used in field testing.

E. Procedures for Destructive Test Failure

The following procedures shall apply whenever a sample fails the field destructive test:

1. The installer shall cap strip the seam between the failed location and any passed test locations.
2. The installer can retrace the welding path to an intermediate location (usually 10 feet from the location of the failed test), and take a sample for an additional field test. If this test passes, then the seam shall be cap stripped between that location and the original failed location. If the test fails, then the process is repeated.
3. Over the length of seam failure, the installer shall either cut out the old seam, reposition the panel and reseam, or add a cap strip.

3.4.6 Defects and Repairs

All seams and non-seam areas of the geomembrane shall be inspected by the inspector. The surface of the geomembrane shall be clean at the time of inspection.

A. Evaluation

Each suspect location in seam and non-seam areas shall be non-destructively tested as appropriate in the presence of the inspector. Each location that fails the non-destructive testing shall be marked by the inspector, and repaired accordingly.

B. Repair Procedures

1. Defective seams shall be cap stripped or replaced.
2. Small holes shall be repaired by extrusion welding a bead of extrudate over the hole. If the hole is larger than $\frac{1}{4}$ inch, it shall be patched.
3. Tears shall be repaired by patching. If the tear is on a slope or an area susceptible to stress and has a sharp end it must be rounded prior to patching.
4. Blisters and large cuts shall be repaired by patches.
5. Patches shall be completed by extrusion welding. The weld area shall be ground no more than 10 minutes prior to welding. No more than 10% of the thickness shall be removed by grinding. Welding shall commence where the grinding started and must overlap the previous seam by at least 2 inches. Reseaming over an existing seam without regrinding shall not be permitted. The welding shall restart by grinding the existing seam and rewelding a new seam.

Patches shall be round or oval in shape, made of the same geomembrane, and extend a minimum of 6 inches beyond the edge of defects.

C. Verification of Repairs

Each repair shall be non-destructively tested. Repairs that pass the non-destructive test shall be taken as an indication of an adequate repair. Failed tests indicate that the repair shall be repeated and retested until passing test results are achieved.

The inspector shall keep daily documentation of all non-destructive and destructive testing. This documentation shall identify all seams that initially failed the test and include evidence that these seams were repaired and successfully retested.

3.5 Cover Material and Backfilling of Anchor Trench

The geomembrane shall be covered as soon as possible. The covering operation shall not damage the geomembrane. The cover soil material shall be free of foreign and organic material, sharp objects, or debris of any kind, which could potentially damage the geomembrane. No construction equipment or machinery that may damage the geomembrane shall operate directly on the geomembrane. The use of lightweight machinery (e.g., generator, etc.) with low ground pressure is allowed.

The anchor trench shall be backfilled by the earthwork contractor. Trench backfill material shall be placed and compacted in accordance with the project specifications.

Care shall be taken when backfilling the trenches to prevent any damage to the geomembrane. If damage occurs, it shall be repaired prior to backfilling.

3.6 Geomembrane Acceptance

The installer shall retain all ownership and responsibility for the geomembrane until accepted by the owner.

Final acceptance is when all of the following conditions are met:

1. Installation is complete.
2. Verification of the adequacy of all field seams and repairs, including associated testing, is complete.

END OF LINER SPECIFICATIONS

STRUCTURAL PRECAST CONCRETE

1.0 GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract apply to this section.

1.2 DESCRIPTION OF WORK

A. Work included:

1. This section of the specifications shall cover pre-cast pre-stressed structural concrete construction, including product design not shown on contract drawings, manufacture, transportation, erection, and other related items such as anchorage, openings in units, bearing pads, storage and protection of pre-cast concrete.

1.3 QUALITY ASSURANCE

- A. Acceptable manufacturers: A company specializing in providing pre-cast and/or pre-cast pre-stressed concrete products and services normally associated with the industry for at least five years. When requested by the Engineer, written evidence shall be submitted to show experience qualifications and adequacy of plant capability and facilities for performance of contract requirements.
- B. Erector qualifications: Regularly engaged for at least three years in erection of pre-cast structural concrete similar to the requirements of this project.
- C. Qualifications of welders: In accordance with AWS D 1.1. Qualified within the past year.
- D. Testing shall be arranged for and be paid by the contractor. All tests shall be in general compliance with applicable provisions of Pre-stressed Concrete Institute MNL-116, "Manual for Quality Control for Plans and Production of Pre-cast Pre-stressed Concrete Products".
- E. Requirements of regulatory agencies: All local codes plus the following specifications, standards and codes are a part of these specifications:
 1. ACI 318 - Building Code Requirements for Reinforced Concrete.
 2. AWS D1.1 - Structural Welding Code.
 3. AWS D12.1 - Reinforcing Steel Welding Code.
 4. ASTM Specifications - As referred to in Part 2 - Products, of this Specification.
 5. PCI MNL 116, Manual for Quality Control for Plants and Production of Pre-cast Pre-stressed Concrete.
 6. PCI Design Handbook, Pre-cast and Pre-stressed Concrete.

1.4 SUBMITTALS

A. Shop Drawings

1. Erection Drawings
 - a. Plans and elevations locating and defining all material furnished by manufacturer.
 - b. Sections and details showing connections, cast-in items and their relation to the structure.
 - c. Description of all loose, cast-in and field hardware.

- d. Field installed anchor location drawings.
 - e. Erection sequences and handling requirements.
 - f. All dead, live and other applicable loads used in the design.
- 2. Production Drawings
 - a. Elevation view of each member.
 - b. Sections and details to indicate quantities and position of reinforcing steel, anchors inserts, etc.
 - c. Lifting and erection inserts.
 - d. Dimensions and finishes.
 - e. Pre-stress for strand and concrete strengths.
 - f. Estimated cambers.
 - g. Method of transportation.
- B. Product Design Criteria
 - 1. Loading for design
 - a. Initial handling and erection stresses.
 - b. All dead and live loads as specified on the contract drawings.
 - c. All other loads specified for member where they are applicable.
 - 2. Design calculations of members and connections shall be performed by a registered Professional Engineer in West Virginia experienced in pre-cast pre-stressed concrete design and submitted for approval upon request.
 - 3. Design shall be in accordance with ACI 318, and all applicable state and local building codes.
- C. Test reports: Reports of tests on concrete and other materials upon request.

1.5 DELIVERY, STORAGE AND HANDLING

A. Delivery and Handling

- 1. Pre-cast concrete members shall be lifted and supported during manufacturing, stockpiling, transporting and erection operations only at the lifting or supporting points, or both, as shown on the contract and shop drawings, and with approved lifting devices. All lifting devices shall have a minimum safety factor of 4.
- 2. Transportation, site handling, and erection shall be performed with acceptable equipment and methods, and by qualified personnel.

B. Storage

- 1. Store all units off ground.
- 2. Place stored units so that identification marks are discernible.
- 3. Separate stacked members by battens across full width of each bearing point.
- 4. Stack so that lifting devices are accessible and undamaged.
- 5. Do not use upper member of stacked tier as storage area for shorter member or heavy equipment.

2.0 PRODUCTS

2.1 MATERIALS

A. Portland Cement:

- 1. ASTM C150 - Type II Sulfate Resistant.

B. Admixtures:

- 1. Air-entraining Admixtures when required: ASTM 260.
- 2. Water Reducing, Retarding, Accelerating Admixtures: ASTM C494.
- 3. XPEX 07160 Cementitious Crystalline or equivalent additive.

C. Aggregates:

- 1. ASTM C33

D. Water: Potable or free from foreign materials in amounts harmful to concrete and embedded steel.

E. Reinforcing Steel:

- 1. Bars:
 - a. Deformed Billet Steel: ASTM A615, Grade 60.

- b. Deformed Rail Steel: ASTM A616, Grade 60.
 - c. Deformed Axle Steel: ASTM A617, Grade 60.
 - 2. Wire Fabric:
 - a. Welded Steel: ASTM A185.
- F. Strand:
 - 1. Uncoated, 7-wire, Stress-Relieved Strand: ASTM A416-Grade 250K or 270K.
- G. Anchors and Inserts:
 - 1. Materials
 - a. Structural Steel: ASTM A36.
 - 2. Finish
 - a. Hot Dipped Galvanized: ASTM A153, unless otherwise authorized by the Architect/Engineer.
- H. Grout:
 - 1. Cement grout: 1 part Portland cement to 2 ½ parts sand and water sufficient for placement and hydration.
- I. Bearing Pads: Non-staining pressed (60 or 70 durometer hardness) neoprene or plastic with a compressive strength of 8,000 PSI minimum.

2.2 CONCRETE MIXES

- A. Twenty-eight day compressive strength: Minimum 5,000 psi.
- B. Release strength: Minimum of 5,000 psi.
- C. Use of calcium chloride, chloride ions or other salts is not permitted.

2.3 MANUFACTURER

- A. Manufacturing procedures shall be in compliance with PCI MNL-116.
- B. Finishes
 - 1. Standard Underside: Resulting from casting against approved forms using good industry practice in cleaning of forms, design of concrete mix, placing and curing. Small surface holes caused by air bubbles, normal color variations, normal form joint marks, and minor chips and spalls will be tolerated, but no major or unsightly imperfections, honeycomb, or other defects will be permitted.
 - 2. Standard Top: Result of vibrating screed and additional hand finishing at projections. Normal color variations, minor indentations, minor chips and spalls will be permitted. No major imperfections, honeycomb, or defects will be permitted.
 - 3. Exposed Vertical Ends: Strands shall be recessed and the ends of the member will receive sacked finish.
- C. Holes and Openings:
 - 1. Openings indicated on the contract drawings shall be incorporated into the design and fabrication.
 - 2. The contract drawings shall be carefully reviewed for the openings and inserts required by the work of all trades, and all openings and inserts which are beyond the limitations of field modification shall be provided by the manufacturer.
 - 3. Saddles, headers, or other suitable supports shall be provided as necessary for the sizes and locations of openings.
 - 4. The manufacturer's submittals shall state the limitations for field cutting or modification.
- D. Patching: Patching will be acceptable providing the structural adequacy of the product and the appearance are not impaired.
- E. Fasteners: The manufacturer shall cast in structural inserts, bolts and plates where required.

3.0 EXECUTION

3.1 ERECTION

- A. Preparation: Inspect areas that are to receive pre-cast concrete for:
 - 1. Providing true, level bearing surfaces on all field placed bearing walls and other field placed supporting members.

2. Placement and accurate alignment of anchor bolts, plates or dowels in column footings, grade beams and other field placed supporting members.
- B. Installation:
1. Installation of pre-cast pre-stressed concrete shall be performed by the manufacturer or a competent erector.
 2. Members shall be lifted by means of suitable lifting devices at points provided by the manufacturer.
 3. Temporary shoring and bracing, if necessary, shall comply with manufacturer's recommendations.
- C. Alignment:
1. Members shall be properly aligned and leveled as required by the approved shop drawings.
 2. Variations between adjacent members shall be reasonably leveled out by jacking, loading or any other feasible method as recommended by the manufacturer and acceptable to the Architect/Engineer.
- D. Field Welding: Field welding shall be done by qualified welders using equipment and materials compatible to the base material.
- E. Grouting: Fill grout keys and slab end joints as required, placing any reinforcing as shown on plans for approved shop drawings. Strike off flush with top surface. Remove any grout that may seep through to the bottom surface before it hardens.

4.0 METHOD OF MEASUREMENT

The method of measurement for determining the quantity of Structural Pre-Cast Concrete as described above is to be included in the lump sum bid price for **Item 31.0 Flow Proportional Syphon System**, including furnishing all materials and doing all the work prescribed in a workmanlike and acceptable manner, including all labor, tools, equipment, supplies, and incidentals & appurtenance necessary to complete the work as shown on the Contract Drawings.

4.1 BASIS OF PAYMENT

The quantity of Structural Pre-Cast Concrete completed will be paid at the contract lump sum price bid for **Item 31.0 Flow Proportional Syphon System**. No deduction will be made nor will any increase be made in the lump sum "Flow Proportional Syphon System" item amount regardless of decreases or increases in the final total contract amount or for any other cause.

4.2 PAY ITEM

Item 31.0 "Flow Proportional Syphon System", per lump sum.

END OF STRUCTURAL PRECAST CONCRETE SPECIFICATIONS

GEOTEXTILE FILTER BAG

Geotextile Filter Bag Properties

Properties	Minimum Value
Grab Tensile	250 pounds
Puncture	165 pounds
Flow Rate	70 gallons/minute/ft ²
Permittivity	1.3 sec ⁻¹
Mullen Burst	550 pounds/ in ²
UV Resistant	70%
AOS % Retained	100%

All properties are minimum average roll value.

- Contractor shall select filter bags that are of adequate size to accommodate flow rate of pump used.
- The filter bag shall be placed on an aggregate or hay bale bed to maximize water flow through the entire surface area of the bag.
- The filter bags must be inspected frequently during pumping operations and repaired or replaced once the filter bag is no longer functioning as designed.
- The filter bag is full when it no longer can effectively filter sediment or pass water at a reasonable rate.
- Sediment from the filter bags may be left onsite and vegetated, however filter bags must be disposed of offsite.

END OF GEOTEXTILE FILTER BAG SPECIFICATIONS



west virginia department of environmental protection

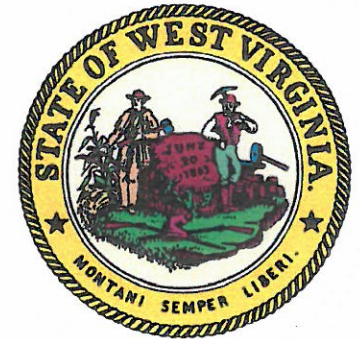
EARL RAY TOMBLIN, GOVERNOR

RANDY C. HUFFMAN, CABINET SECRETARY

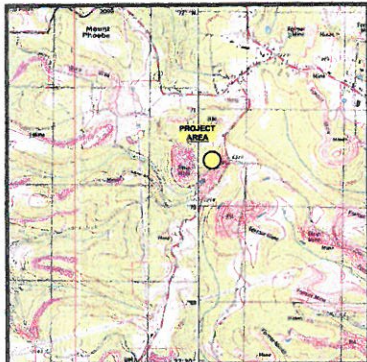
DIVISION OF LAND RESTORATION OFFICE OF SPECIAL RECLAMATION

Ed-E DEVELOPMENT COMPANY, INC
PERMIT S-1032-86
WVDEP16299

**NEAR KINGWOOD
PRESTON COUNTY, WEST VIRGINIA**



VICINITY MAP



KINGWOOD AND NEWBURG USGS 7.5' QUADRANGLE
SCALE: 1"=2000'

39° 28' 31.80" N 79° 44' 56.04" W

[illegible]

ENGINEER:

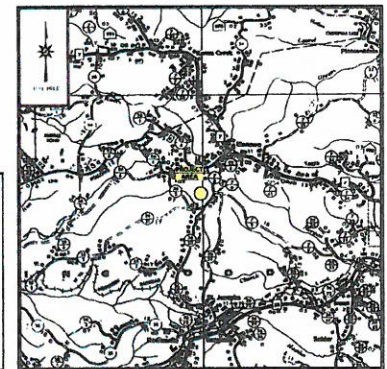
REGISTERED PROFESSIONAL ENGINEER
P.E. NO. 17969

NATHAN L PARKS

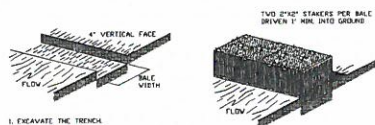
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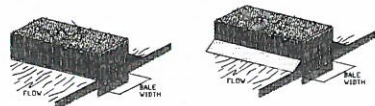
LOCATION MAP



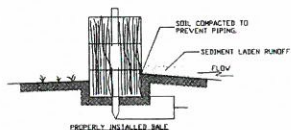
WEST VIRGINIA COUNTY HIGHWAY MAP
PRESTON COUNTY
SCALE: 1"=1 MILE



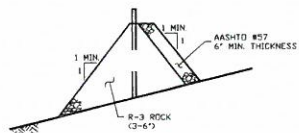
2. PLACE AND STAKE THE BALES.



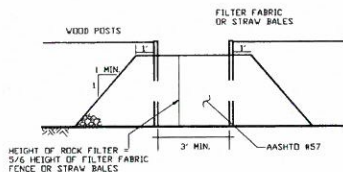
4. BACKFILL AND COMPACT THE EXCAVATED SOIL. HAY OR STRAW BALE INSTALLATION SEQUENCE.



HAY BALE INSTALLATION DETAIL



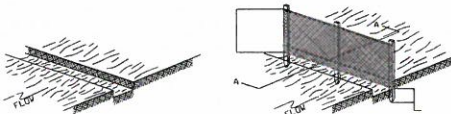
OUTLET CROSS-SECTION



UP-SLOPE FACE

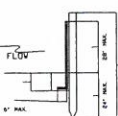
NOTE: Sediment must be removed when accumulations reach 1/3 the height of the outlet.

ROCK FILTER OUTLET



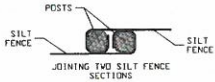
2. PLACE FENCE AT BACK EDGE OF TRENCH (FABRIC FACING DIRECTION OF FLOW)

3. DRIVE POST UNTIL FABRIC REACHES BOTTOM OF TRENCH



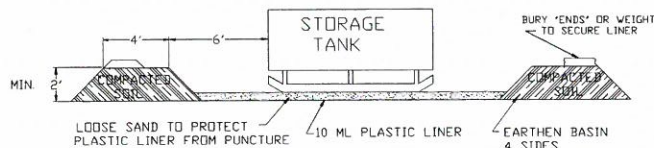
SECTION A-A

4. FILL TRENCH WITH EMBANKMENT & TAMP



NOTE: WHEN MORE THAN ONE ROLL OF SILT FENCE IS USED, THE FENCE AT THE JUNCTION MUST BE PLACED SO THAT THE LAST POST OF THE FIRST RUN & THE FIRST POST OF THE SECOND RUN OVERLAP & ARE TIED TOGETHER.

SILT FENCE INSTALLATION DETAIL

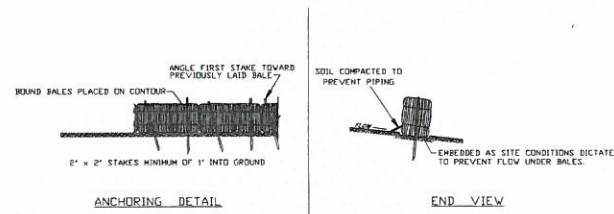


SELECTED HEIGHT OF EARTHEN BERM IS TO BE A TWO (2) FOOT MINIMUM OR ONE HUNDRED TEN PERCENT (110%) OF THE CAPACITY OF THE TANK(S) TOTAL VOLUME WITHIN THE BERM. A SIX (6) INCH FREEBOARD MUST BE INCLUDED.

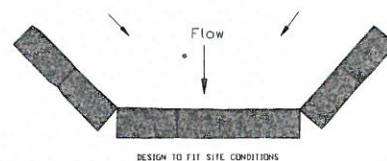
NOTE: A TWO INCH (2") WATER REMOVAL DRAIN SHALL BE LOCATED AT THE LOWEST POINT IN THE BOTTOM OF THE CONTAINMENT VOLUME. IT SHALL CONNECT TO A NORMALLY CLOSED VALVE OUTSIDE THE DIKE. THE VALVE SHALL BE MANUALLY OPERATED AND PROTECTED FROM UNAUTHORIZED OPERATION. RAINWATER CONTAINED WITHIN THIS DIKE SHALL BE EXAMINED PRIOR TO RELEASE TO ENSURE THAT HARMFUL QUANTITIES OF FUELS AND LUBRICANTS ARE NOT DISCHARGED. ALTERNATE METHODS OF WATER REMOVAL WILL BE CONSIDERED FOR APPROVAL.

TANKS WITH SECONDARY CONTAINMENT MAY BE USED AS AN ALTERNATIVE.

SPILL CONTAINMENT DETAIL



ANCHORING DETAIL



HAY BALE INSTALLATION DETAIL



SEDIMENT SUMP DETAIL

OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE 1-304-465-1911
FAX 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

West Virginia
dep Division of Land Restoration
Office of Special Reclamation

REVISIONS		
DATE	BY	VS

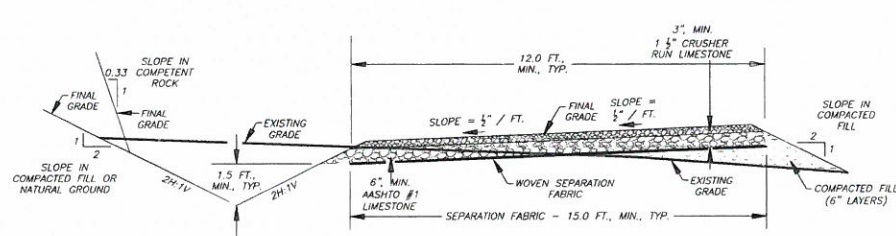
ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299
PRESTON COUNTY, WEST VIRGINIA

SITE PREPARATION DETAILS

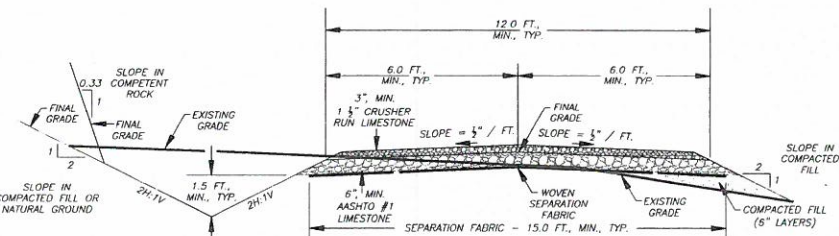
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DATE: MAY 2013

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3
TOTAL
20



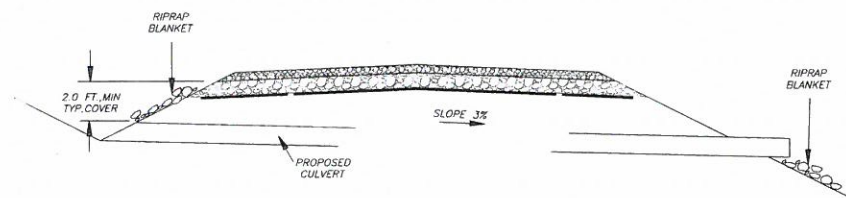
CONSTRUCTED ACCESS ROAD, TYP.



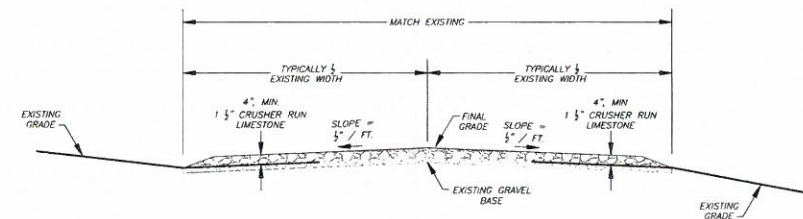
CONSTRUCTED ACCESS ROAD, TYP.

NOTES:

1. ROADWAY SURFACE MAY BE SLOPED TO EITHER SIDE AS TOPOGRAPHY AND CONDITIONS WARRANT.
2. 1 1/2 INCH CRUSHER RUN LIMESTONE SHALL MEET THE GRADATION REQUIREMENTS FOR CLASS 1 AGGREGATE IN TABLE 704.6.2A OF THE WVDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES.
3. AASHTO #1 LIMESTONE IS 3 1/2 TO 1 1/2 INCH SIZE.
4. IN CUT THROUGH SECTIONS, CONSTRUCT DITCHES ON BOTH SIDES OF ROAD OR SLOPE THE ROADWAY TOWARD THE SOLITARY CONSTRUCTED DITCH.
5. THE SUB BASE SURFACE, BASE STONE LAYER, AND THE FINAL SURFACE SHALL BE COMPACTED USING A SMOOTH DRUM VIBRATORY ROLLER.
6. ANY TREES OR BRUSH WITHIN THE 30 FOOT RIGHT OF WAY (R.O.W.) OF THE ROAD SHALL BE REMOVED.
7. ANY OVERHANGING TREE LIMBS IN THE R.O.W. AT A HEIGHT OF 15 FEET OR LESS SHALL BE REMOVED.



CULVERT INSTALLATION, TYP.



GRAVEL ACCESS ROAD REHABILITATION, TYP.

NOTES:

1. PRIOR TO STONE PLACEMENT, REGRADE EXISTING ROADWAY INTO "CROWNED" OR "SLOPE TO DITCH" CONFIGURATION AS DIRECTED BY THE ENGINEER. REMOVE, REFILL, AND COMPACT SOFT SPOTS AS DIRECTED BY THE ENGINEER. ALL CUT/FILL SLOPES SHALL BE 2H:1V.
2. 1 1/2 INCH CRUSHER RUN STONE SHALL MEET THE GRADATION REQUIREMENTS FOR CLASS 1 AGGREGATE IN TABLE 704.6.2A OF THE WVDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES.

OFFICE OF SPECIAL RECLAMATION
264 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-465-1911
FAX: 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:



Division of Land Restoration
Office of Special Reclamation

REVISIONS

DATE	BY	W/L

ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299

PRESTON COUNTY, WEST VIRGINIA

HAULROAD DETAILS

SCALE: NONE

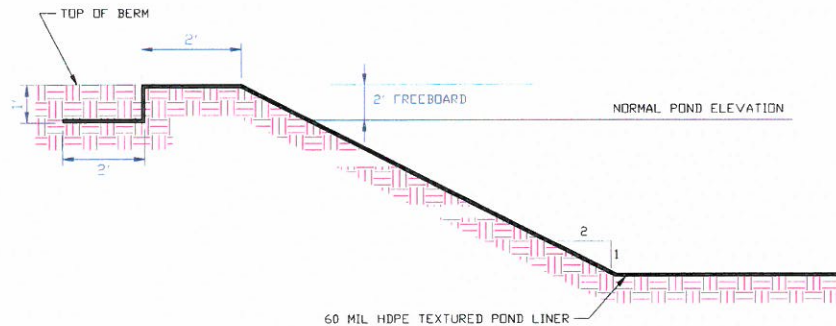
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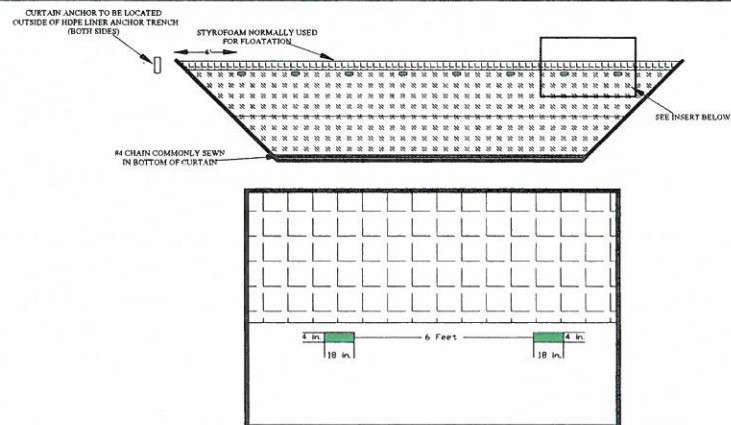
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TOTAL

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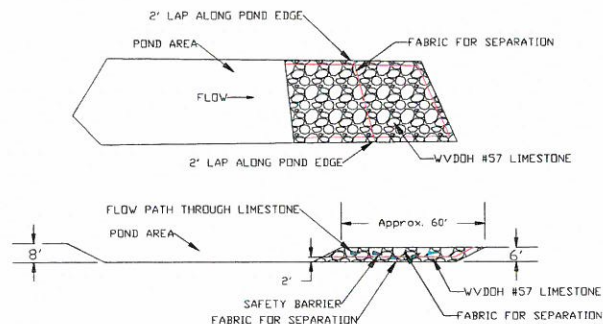
POND LINER ANCHOR DETAILS



NOTES:

1. WINDOWS ON BAFFLE CURTAINS SHALL BE CUT ON THE TOP, LEFT AND RIGHT SIDES LEAVING A FLAP ON THE BOTTOM PORTION.
2. BAFFLE CURTAINS MUST BE FOLDED AND SEWN TO CONFORM TO THE 2H/1V POND SIDE SLOPES.
3. BAFFLE CURTAINS MUST EXTEND TO THE BOTTOM OF THE POND.
4. CABLE MUST EXTEND 10 FEET BEYOND BOTH ENDS OF THE BAFFLE CURTAIN.

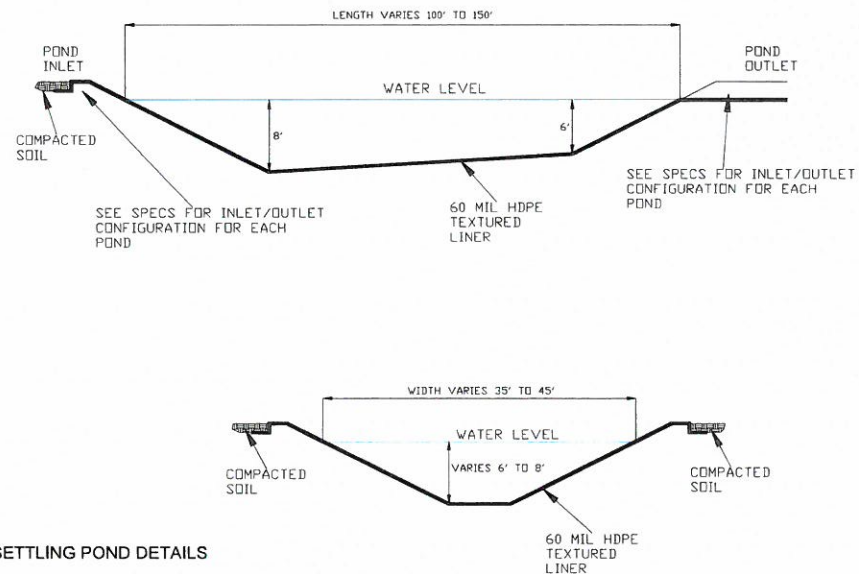
BAFFLE CURTAIN DETAILS



NOTES:

1. LIMESTONE BED DIMENSIONS WILL BE APPROXIMATE TO THE MINIMUM AMOUNT OF STONE SPECIFIED.
2. GEOTEXTILE FABRIC FOR SEPARATION MEETING REQUIREMENTS OF AASHTO M289 SECTION 7 CLASS 2 WILL BE UTILIZED TO FORCE WATER FLOW DOWN AND THROUGH THE BOTTOM 2 FOOT PORTION OF THE LIMESTONE BED.
3. THE GEOTEXTILE FABRIC FOR SEPARATION WILL BE PLACED AT THE APPROXIMATE CENTER LOCATION OF THE LIMESTONE BED. THE FABRIC WILL EXTEND TO THE TOP OF THE LIMESTONE BED AND TO THE DEPTH OF THE SAFETY BARRIER.
4. GEOTEXTILE FABRIC FOR SEPARATION WILL ALSO BE USED AS A PROTECTIVE BARRIER BETWEEN HDPE LINER AND STONE.
5. A SAFETY BARRIER WILL BE PLACED AT 2 FEET (+/- 3 INCHES) ABOVE THE BOTTOM AND SIDES OF THE POND IN THE LIMESTONE AS TO PROVIDE A DEFINED LOCATION OF THE 2 FOOT HEIGHT ABOVE THE HDPE LINER TO PREVENT DAMAGE TO THE HDPE LINER DURING FUTURE MAINTENANCE OF THE LIMESTONE BED.
6. SAFETY BARRIER SHALL BE OF A HIGH VISIBILITY ORANGE POLYPROPYLENE CONSTRUCTION OF AT LEAST 4 FOOT IN WIDTH AND A MAX MESH OPENING OF 2 INCH X 4 INCH AS DICTATED UNDER ASTM D4873. ANY CONNECTIONS WILL HAVE A MINIMUM 1 FOOT OVERLAP.

LIMESTONE BED DETAILS



SETTLING POND DETAILS

OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-465-1911
FAX: 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

dep **West Virginia**
Division of Land Restoration
Office of Special Reclamation

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DATE	BY	LV

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PERMIT S-1032-86
DEP16299

PRESTON COUNTY, WEST VIRGINIA

MISCELLANEOUS POND DETAILS

SCALE: NONE

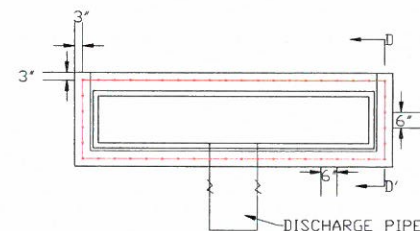
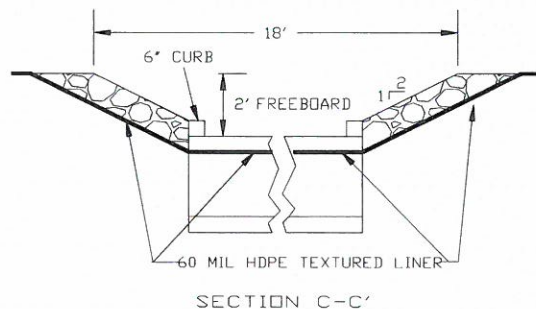
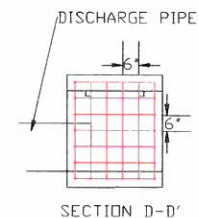
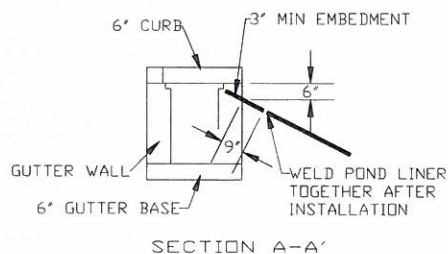
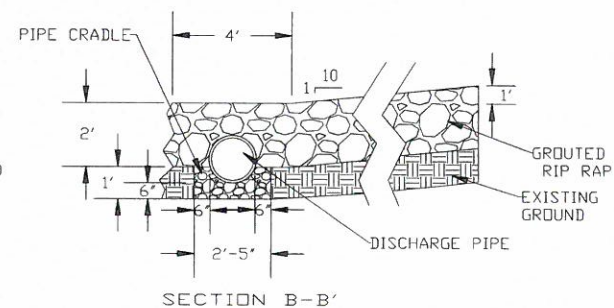
DATE: MAY 2013

SHT. NO.

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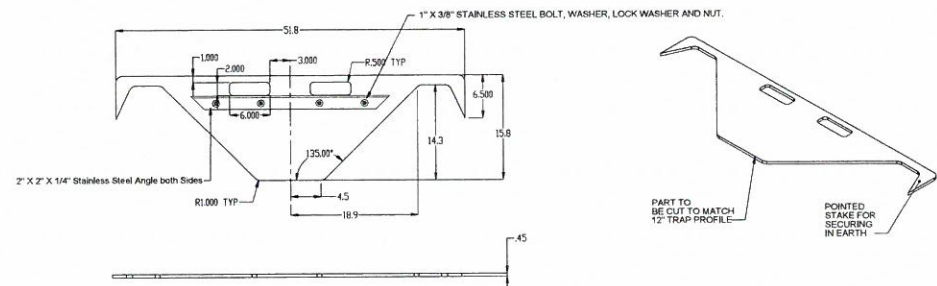
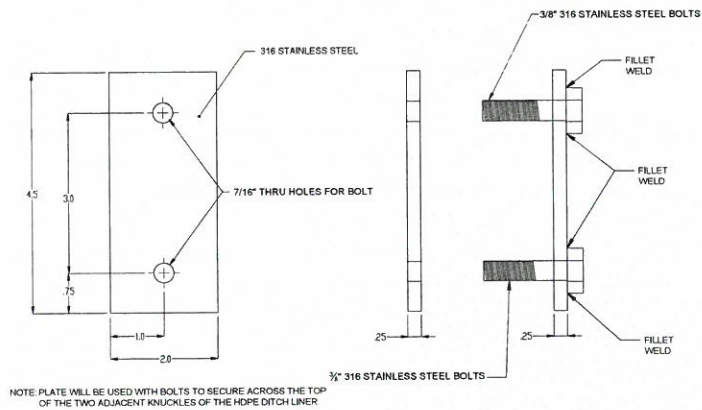
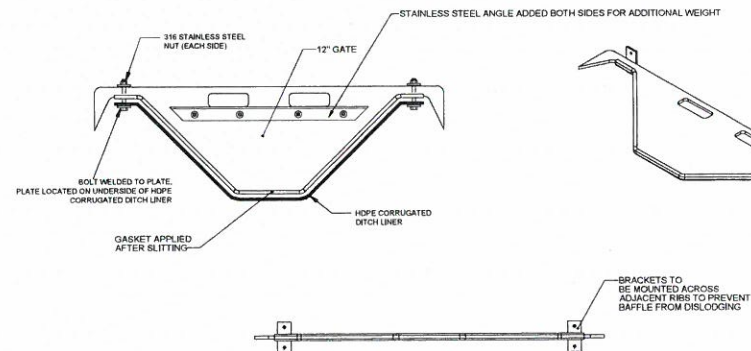
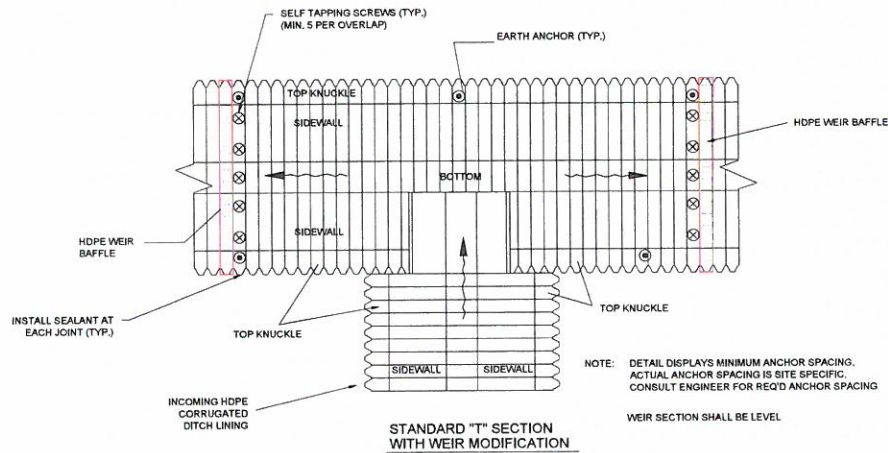
TOTAL

20



NOTES:

1. REBAR SHALL BE #5 BAR AND LOCATED ON A 6 INCH CENTER TO CENTER SPACING VERTICAL AND HORIZONTAL
2. 2 INCH MINIMUM CONCRETE COVER OVER REBAR
3. ANY SPLICES IN REBAR SHALL BE 30 BAR DIAMETERS



OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-465-1911
FAX: 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:



REVISIONS		
DATE	BY	CS

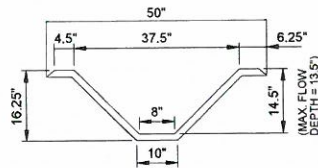
ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299
PRESTON COUNTY, WEST VIRGINIA

12" TRAPEZOIDAL HDPE CORRUGATED
WEIR AND BAFFLE DETAIL

SCALE: NONE

DATE: MAY 2013

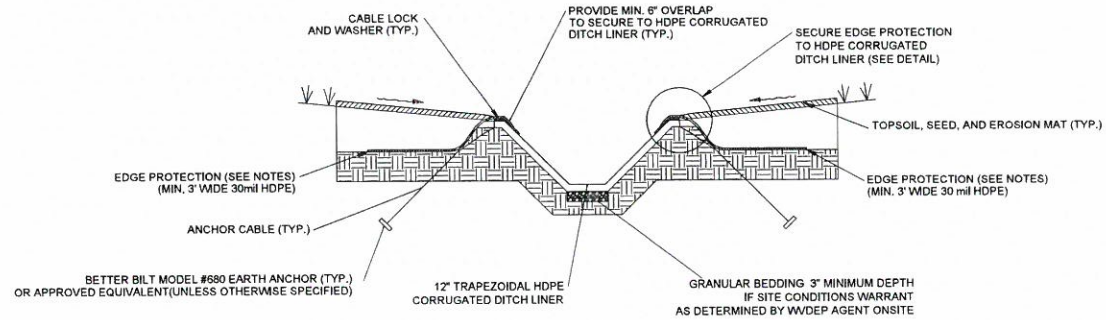
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7
TOTAL
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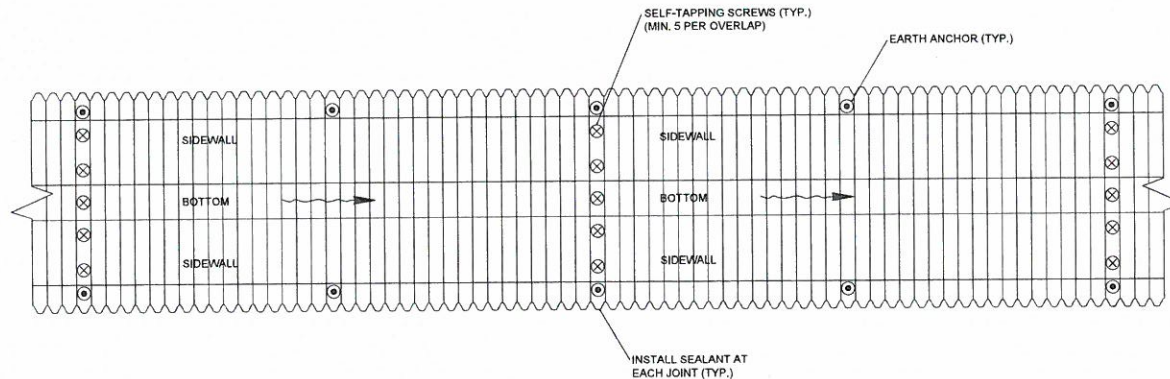
12" TRAPEZOIDAL HDPE CORRUGATED DITCH LINER

NOTES:

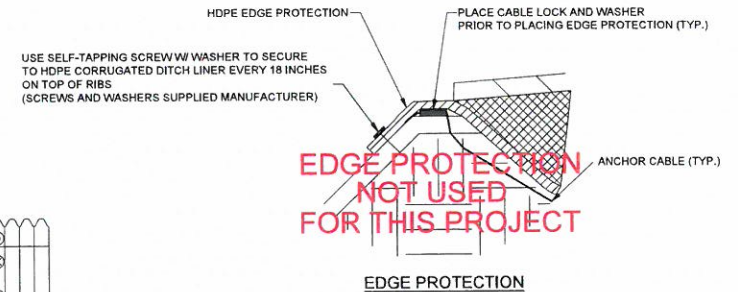
1. EDGE PROTECTION IS RECOMMENDED WHERE HDPE CORRUGATED DITCH LINER RECEIVES LATERAL FLOWS.
2. USE SELF-TAPPING SCREWS W/ WASHER TO ATTACH THE HDPE EDGE PROTECTION DIRECTLY TO THE HDPE CORRUGATED DITCH LINER. SPACE SCREWS EVERY 18 INCHES. (SCREWS AND WASHERS SUPPLIED BY MANUFACTURER)
3. ANCHOR SPACING AND DEPTH IS SITE SPECIFIC AND DEPENDS ON DITCH SLOPE, FLOWS, VELOCITIES, AND SITE SOILS. A TYPICAL INSTALLATION CONSISTS OF 6 ANCHORS PER SECTION (2 OVERLAP AT THE JOINT) WITH A MINIMUM ANCHOR DEPTH OF 30 INCHES.
4. ANCHOR KITS (CABLE, EARTH ANCHOR, ANCHOR LOCK, AND WASHER) ARE SUPPLIED BY MANUFACTURER.
5. GRANULAR BEDDING IS RECOMMENDED IF NECESSARY TO PROVIDE A SMOOTH UNIFORM BASE FOR PLACEMENT OF THE HDPE CORRUGATED DITCH LINER.
6. IT IS RECOMMENDED THAT THE DITCH BE SHAPED TO THE DIMENSIONS OF THE HDPE CORRUGATED DITCH LINER PRIOR TO PLACEMENT.
7. REFER TO THE MANUFACTURER'S TECHNICAL MANUAL FOR GENERAL INSTALLATION PRACTICES.
8. HDPE CORRUGATED DITCH LINER SHALL BE AS MANUFACTURED AND PROVIDED BY PENDA CORPORATION AS SMARTDITCH TM OR AN APPROVED EQUIVALENT.



12" TRAPEZOIDAL HDPE CORRUGATED DITCH LINER TYPICAL SECTION DETAIL



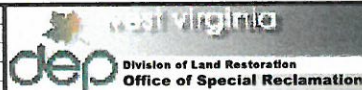
STANDARD ANCHORING DETAIL



NOTE: DETAIL DISPLAYS MINIMUM ANCHOR SPACING. ACTUAL ANCHOR SPACING IS SITE SPECIFIC. CONSULT ENGINEER FOR REQ'D ANCHOR SPACING

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REVISIONS

DATE	BY	VS

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PERMIT S-1032-86
DEP16299
PRESTON COUNTY, WEST VIRGINIA

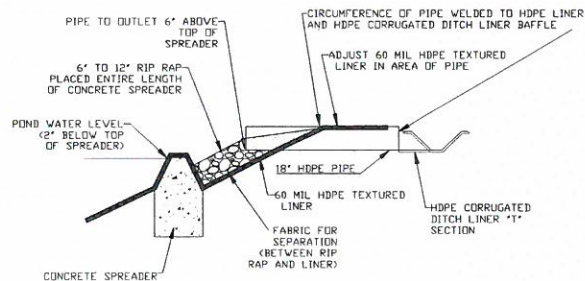
12" TRAPEZOIDAL HDPE CORRUGATED DITCH LINER & EDGE PROTECTION

SCALE: NONE

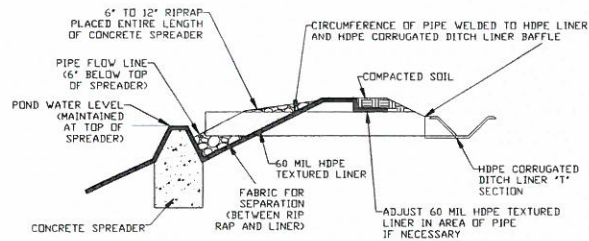
DATE: MAY 2013

SHT. NO.
8

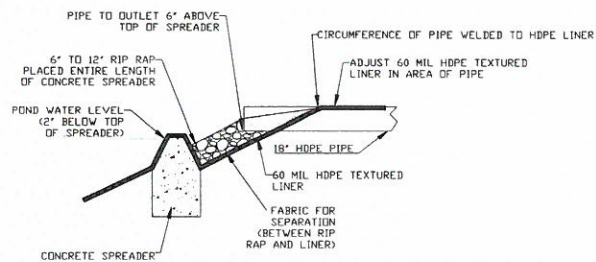
TOTAL
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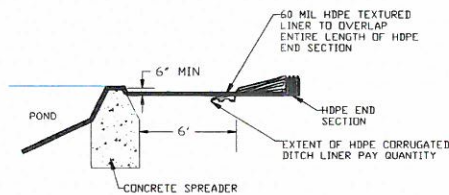
CONCRETE SPREADER POND INLET
FLOW PARALLEL TO POND
EMBANKMENT



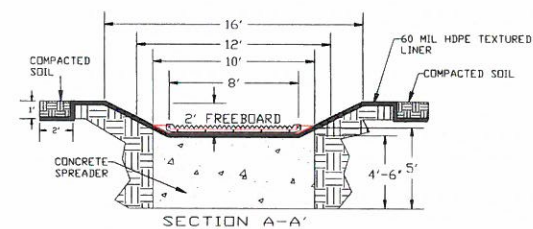
CONCRETE SPREADER POND OUTLET
FLOW PARALLEL TO POND
EMBANKMENT



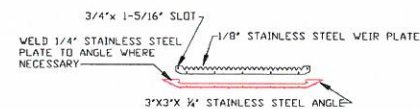
CONCRETE SPREADER POND INLET
FLOW PERPENDICULAR TO POND
EMBANKMENT



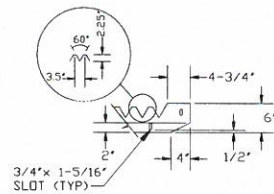
CONCRETE SPREADER POND OUTLET
FLOW PERPENDICULAR TO POND
EMBANKMENT



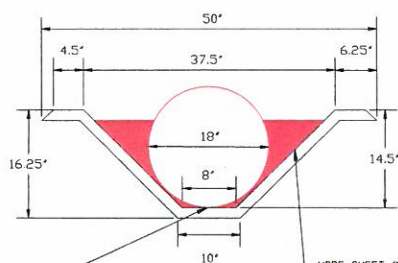
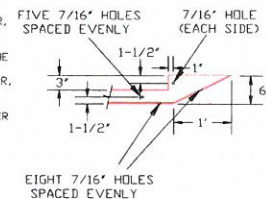
SECTION A-A'



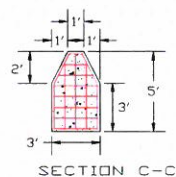
STAINLESS STEEL WEIR PLATE AND BASE



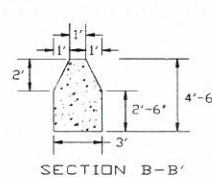
- NOTES:
1. ATTACH WEIR PLATE TO WEIR BASE WITH 3/8 INCH x 1 INCH STAINLESS STEEL BOLTS WITH A WASHER ON BOTH SIDES, LOCK WASHER, AND NUT.
 2. THE WEIR BASE SHALL BE ANCHORED, ABOVE THE HDPE LINER, TO THE CONCRETE SPREADER WITH 3/8 INCH x 1-5/16 INCH CONCRETE DROP IN ANCHORS, SPACED EVENLY AS SHOWN. THE BOLTS SHALL HAVE A WASHER, LOCK WASHER, AND NUT.
 3. INDUSTRIAL SILICONE SHALL BE PLACED BETWEEN THE WEIR AND WEIR BASE IMMEDIATELY PRIOR TO INSTALLING.
 4. SLOTS IN WEIR PLATE AND HOLES IN WEIR BASE SHALL BE ALIGNED AND SPACED EVENLY.



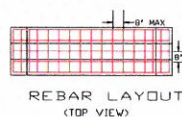
HDPE PIPE AND CORRUGATED
DITCH LINER CROSS SECTION



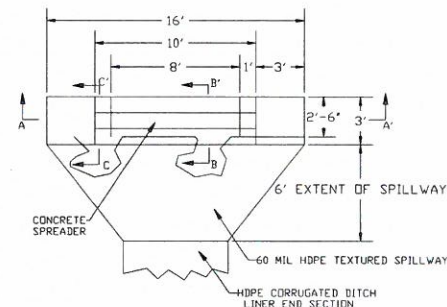
SECTION C-C'



SECTION B-B'
(REBAR NOT SHOWN)



REBAR LAYOUT
(TOP VIEW)



- NOTES:
1. 1 INCH CHAMFER ON ALL CONCRETE CORNERS IN CONTACT WITH HDPE LINER.
 2. FABRIC FOR SEPARATION ON TOP OF 60 MIL HDPE TEXTURED LINER IN AREAS THAT ARE COVERED WITH STONE.
 3. 2 INCH MINIMUM CONCRETE COVER OVER ALL REBAR.
 4. REBAR SHALL BE #5 BAR AND LOCATED ON A 8 INCH MAX CENTER TO CENTER SPACING VERTICAL AND HORIZONTAL AND SHALL BE TIED USING STEEL WIRE AT EACH INTERSECTION.
 5. ANY SPLICES IN REBAR SHALL BE A MINIMUM OF 30 BAR DIAMETERS.
 6. FINISH GRADE OF CONCRETE SPREADER SHALL BE LEVEL WITH A MAXIMUM TOLERANCE OF 1/8 INCH MEASURED VERTICALLY THE ENTIRE 8 FOOT LENGTH OF SPILLWAY.
 7. FINISH GRADE OF CONCRETE SPREADER SHALL BE LEVEL WITH A MAXIMUM TOLERANCE OF 1/8 INCH MEASURED VERTICALLY THE ENTIRE 8 FOOT LENGTH OF SPILLWAY.

OFFICE OF SPECIAL RECLAMATION
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DEP16299
PRESTON COUNTY, WEST VIRGINIA

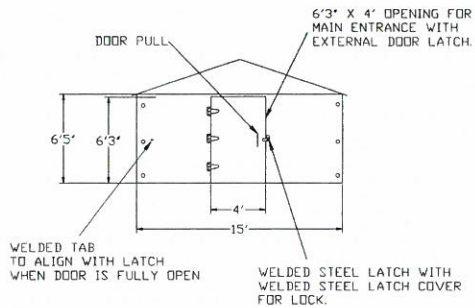
CONCRETE SPREADER DETAILS

SCALE: NONE

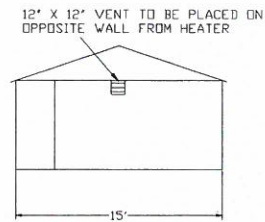
DATE: MAY 2013

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9
TOTAL
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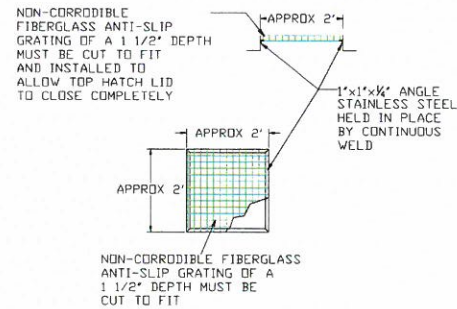
4' WIDE DOOR



VENT DETAIL



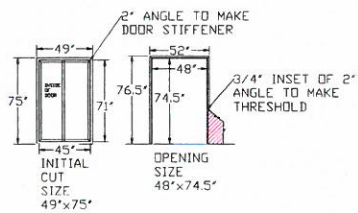
TOP HATCH DETAILS



3' WIDE DOOR

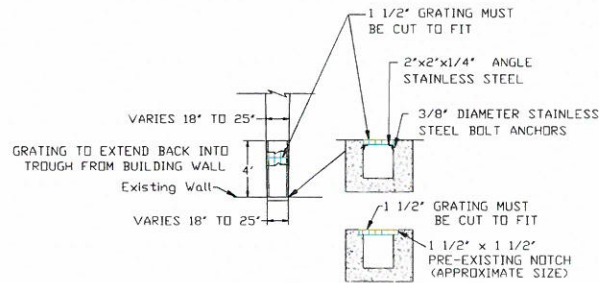


4' WIDE DOOR DETAILS



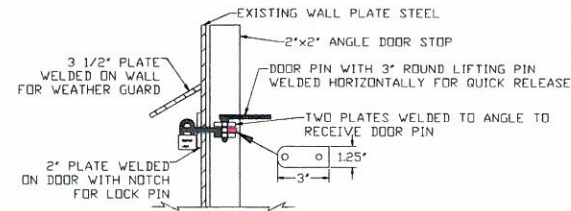
- NOTES: 1. NEED 44 FEET OF 2 INCH X 2 INCH ANGLE 1/4 INCH THICK FOR OPENINGS AND DOOR STIFFENER
2. ALL ANGLE STIFFENERS SHALL BE ON THE INSIDE OF BUILDING AND DOOR
3. DOOR SHALL BE 1/4 INCH ABOVE FLOOR AS TO ALLOW FREE MOVEMENT OF DOOR

TROUGH GRATING DETAILS

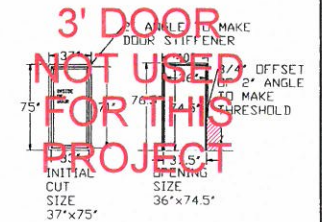


NOTE: DEP AGENT ON SITE WILL VERIFY THE ANCHORING METHOD TO BE USED

LATCH DETAIL VIEW

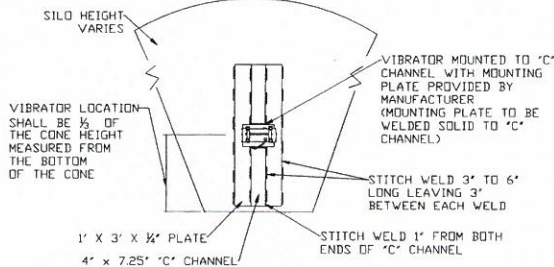


3' WIDE DOOR DETAILS

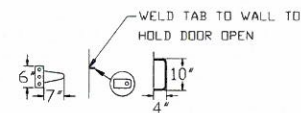


NOTE: NEED 35 FEET OF 2 INCH X 2 INCH ANGLE 1/4 INCH THICK FOR THRESHOLD AND DOOR STIFFENER

SILLO VIBRATOR DETAILS

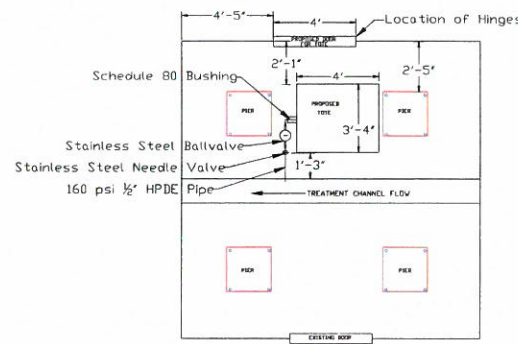


HINGE AND PULL DETAILS



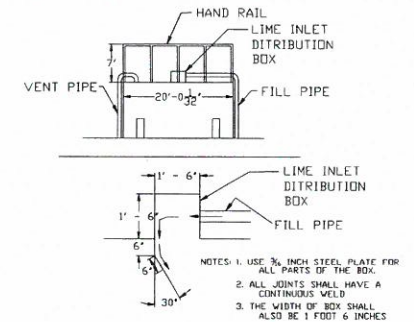
- NOTES: 1. THREE HINGES PER DOOR, DEP TO VERIFY LOCATION AND HINGE SIDE WELD HINGES TO WALL AND DOOR PLATING.
2. 1/2 INCH ROUND STEEL ROD FOR DOOR PULLS TO BE WELDED ON EACH SIDE OF DOOR.
3. WELD TAB TO WALL FOR RUBBER STRAP TO SECURE DOOR WHEN OPEN.

SECONDARY CHEMICAL TREATMENT SYSTEM



NOTE: All Pipe Connections to be Completed with 1/2 inch Hose Clamps of 160 psi

FILLING PIPE MODIFICATION DETAILS



- NOTES: 1. USE 3/4 INCH STEEL PLATE FOR ALL PARTS OF THE BOX.
2. ALL JOINTS SHALL HAVE A CONTINUOUS WELD.
3. THE WIDTH OF BOX SHALL ALSO BE 1 FOOT 6 INCHES

OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
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DEP CONTRACT NO. 16299
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DRAWN BY:
CHECKED BY:
APPROVED BY:

dep **West Virginia**
Division of Land Restoration
Office of Special Reclamation

REVISIONS		
DATE	BY	CHK

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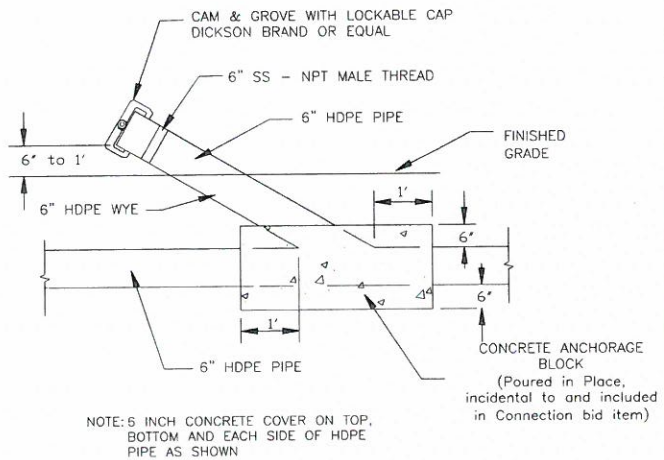
PRESTON COUNTY, WEST VIRGINIA

AQUA-FIX BUILDING MODIFICATION DETAILS

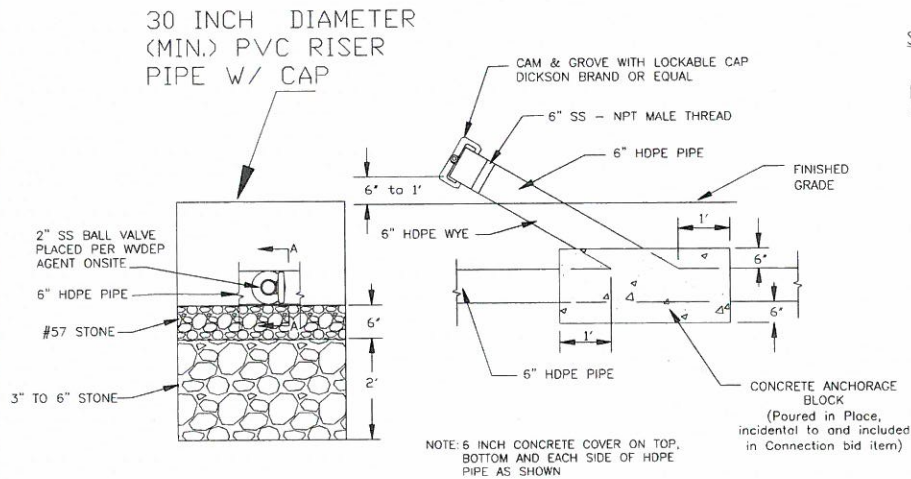
SCALE: NONE

DATE: MAY 2013

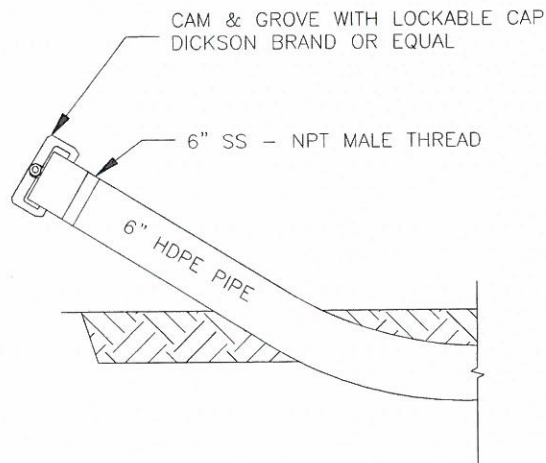
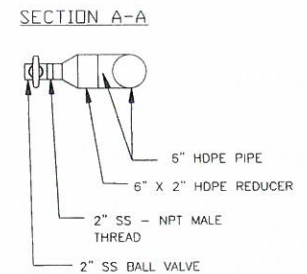
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TOTAL
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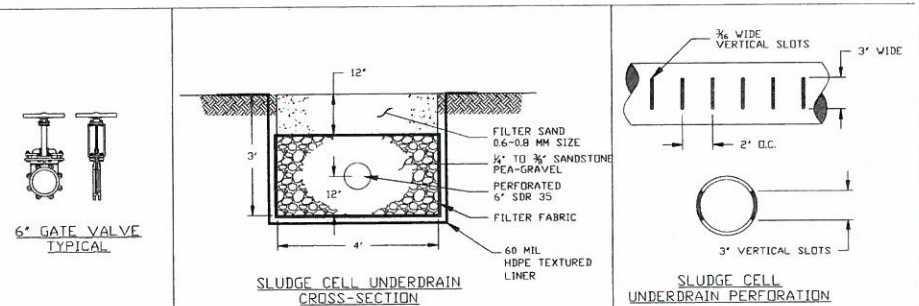
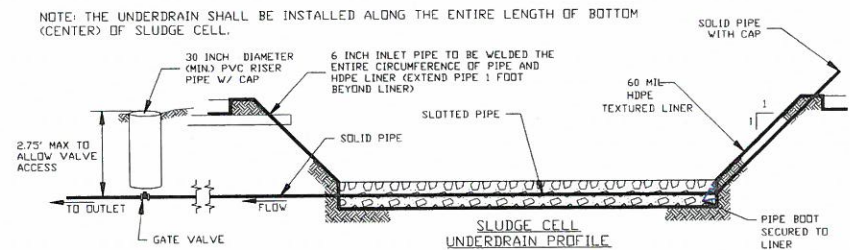
PUMP CONNECTION END (INLINE)



PUMP CONNECTION END WITH DRAIN (INLINE)



PUMP CONNECTION END



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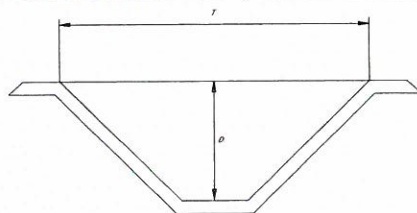
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PRESTON COUNTY, WEST VIRGINIA

SLUDGE CELL DETAILS

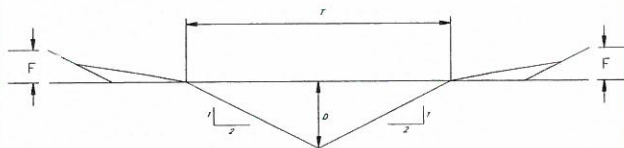
SCALE: NONE

DATE: MAY 2013

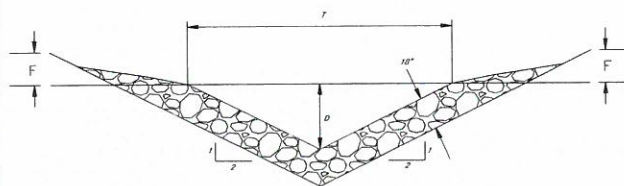
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TOTAL
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HDPE DITCH LINER



GRASS LINED



RIPRAP

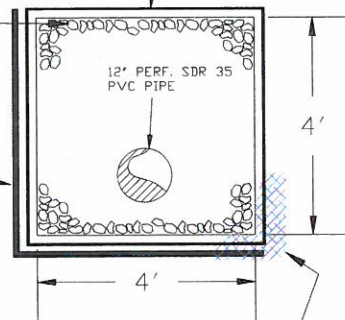
Rip Rap Channel	Depth (ft)	Top Width (ft)	Length (ft)	Freeboard (ft)	Lining
Number	D	T		F	
2	1.2	3.1	155	0.0	HDPE CORRUGATED
4	1	4	200	0.5	RIP RAP
5	1.2	3.1	170	0.0	HDPE CORRUGATED (FILLED WITH 3" LIMESTONE)
6	1.2	3.1	30	0.0	HDPE CORRUGATED
7	1.2	3.1	30	0.0	HDPE CORRUGATED
8	1.2	3.1	265	0.0	HDPE CORRUGATED
9	1.2	3.1	160	0.0	HDPE CORRUGATED
10	1.2	3.1	35	0.0	HDPE CORRUGATED
11	1.2	3.1	25	0.0	HDPE CORRUGATED
12	1	4	380	0.5	RIP RAP
13	1	4	545	0.5	GRASS
14	1	4	275	0.5	RIP RAP
15	1.2	3.1	35	0.0	HDPE CORRUGATED

CHANNEL DETAIL

WRAP 360 DEGREES WITH FILTER FABRIC (NONWOVEN) WITH 1 FOOT OVERLAP

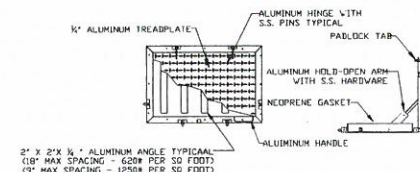
3' TO 6" STONE NON-CALCAREOUS (R-3 SIZE)

WRAP BOTTOM AND SIDE WITH MINIMUM 40 MIL HDPE LINER

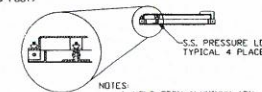


TO BE INSTALLED ON COMPETENT MATERIAL AS APPROVED BY THE WVDEP ON-SITE AGENT.

UNDERDRAIN DETAIL



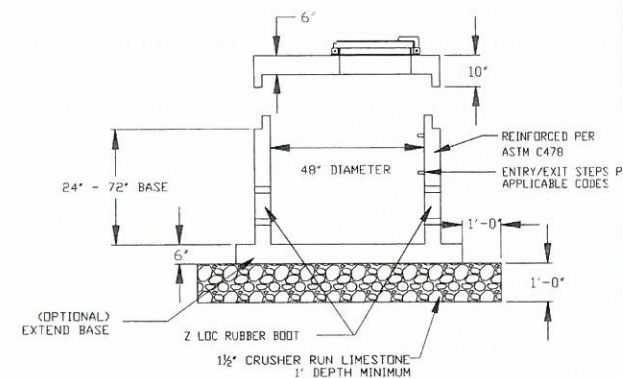
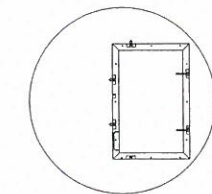
2" X 2" X 1/4" ALUMINUM ANGLE TYPICAL (18" MAX SPACING - 620# PER SQ FOOT) (9" MAX SPACING - 1250# PER SQ FOOT)



NOTES:

- HOLD-OPEN ALUMINUM ARM
- STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- 1/2" INCH ALUMINUM ANGLE FRAME
- PADLOCK PROVIDED BY WVDEP
- HATCH ABLE TO WITHSTAND 10 FEET OF STANDING WATER

MANHOLE LID DETAIL



CONCRETE MANHOLE NOTES:

- CONFORMS TO ASTM C478
- 4000 PSI /28 DAY
- 2 LOC RUBBER BOOTS (PER PIPING SIZES)
- REBAR GRADE 60
- XYPEX ADMIXTURE USED AS NEEDED

MANHOLE DETAIL

OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
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West Virginia

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Office of Special Reclamation

REVISIONS

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ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299

PRESTON COUNTY, WEST VIRGINIA

MISCELLANEOUS DETAILS

SCALE: NONE

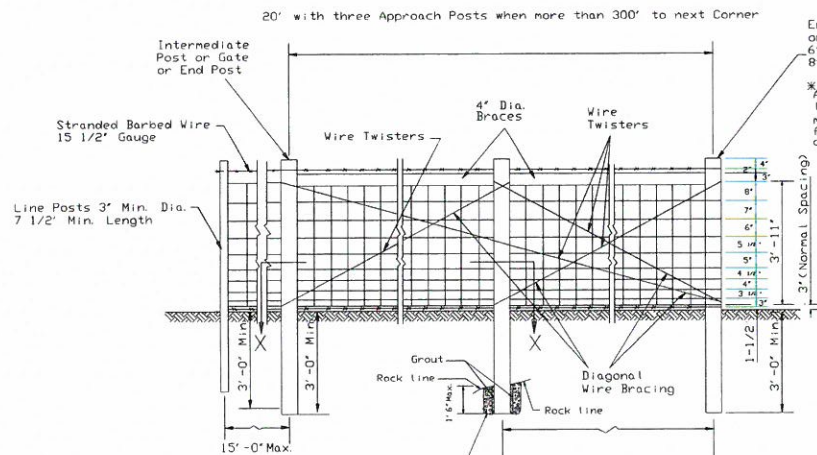
DATE: MAY 2013

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12

TOTAL

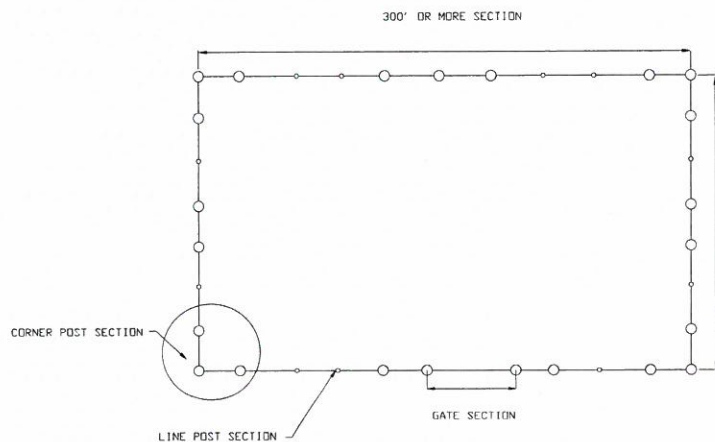
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When a portion of any post falls in rock, that portion shall be grouted in place as shown above.

10' with one Intermediate Post when less than 300' to next Corner, Intermediate, Gate, or End Post. Notch Post and Dowel with 5/8\"/>

DETAIL SHOWING TYPICAL FENCE SECTION



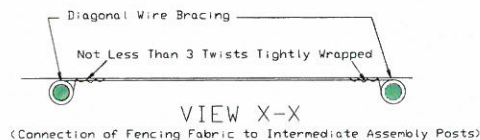
PLAN SHOWING TYPICAL SECTIONS OF FENCE

End Post, Corner Post or Intermediate Posts 6\"/>

* Applies on level terrain may be adjusted for slope construction.

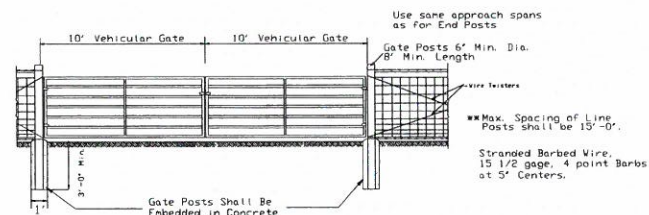
Note: Type FV-4-5 Nicopress Dual Sleeve Wire Splices, or other equal sleeve splices approved by the Engineer, may be used in lieu of the above wrapped wire splices.

TYPICAL WIRE FENCE SPICE

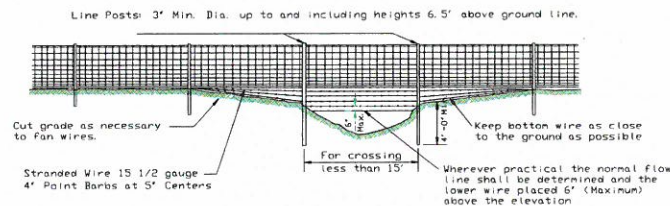


NOTES:

1. Posts and braces may be either round or square shaped. Dimensions shown on the Plans are for round posts and braces only. When square posts are used, line posts shall be 3\"/>



DETAIL SHOWING TYPICAL SECTION AT GATE



DETAIL SHOWING TYPICAL SECTION AT MINOR DEPRESSIONS AND WET WEATHER CROSSINGS

OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-465-1911
FAX: 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

West Virginia
dep Division of Land Restoration
Office of Special Reclamation

REVISIONS

DATE	BY	LS

ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299

PRESTON COUNTY, WEST VIRGINIA

FENCE AND GATE DETAILS

SCALE: NONE

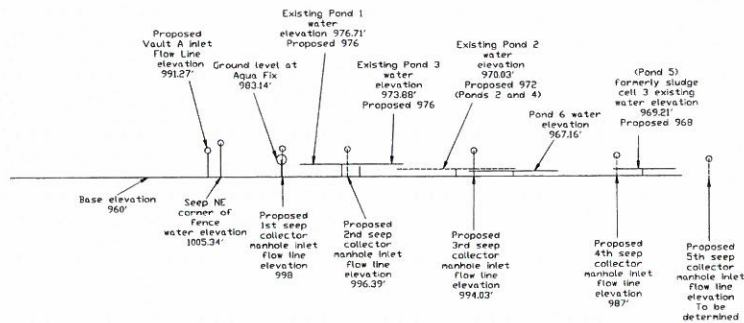
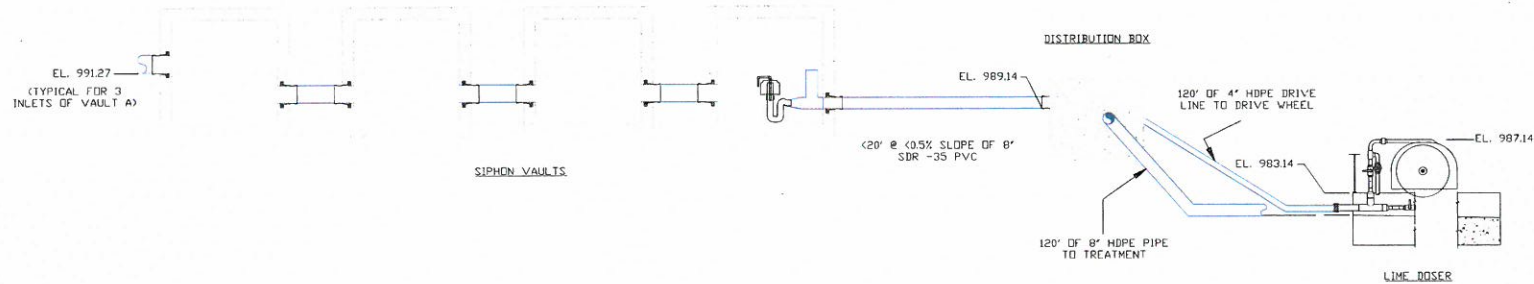
DATE: MAY 2013

SHT. NO.

13

TOTAL

20



Note: All elevations are relative to floor elevation of Aqua Fix structure. Engineer may change elevations and locations of any structure if Engineer deems necessary at no cost to the WVEP. Contractor shall not adjust location nor elevation of any structure prior to Engineer's approval.

ELEVATION VIEW

OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-465-1911
FAX: 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:



West Virginia
Division of Land Restoration
Office of Special Reclamation

REVISIONS

DATE	BY	CHK

ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299

PRESTON COUNTY, WEST VIRGINIA

FLOW PROPORTIONAL SIPHON SYSTEM
HYDRAULIC PROFILE

SCALE: NTS

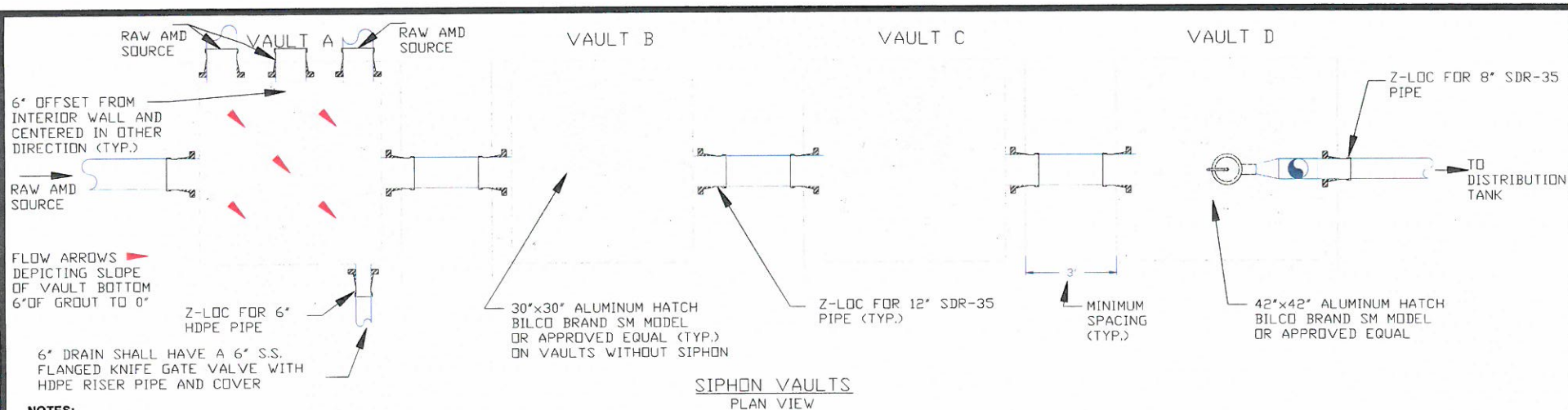
DATE: MAY 2013

SHT. NO.

14

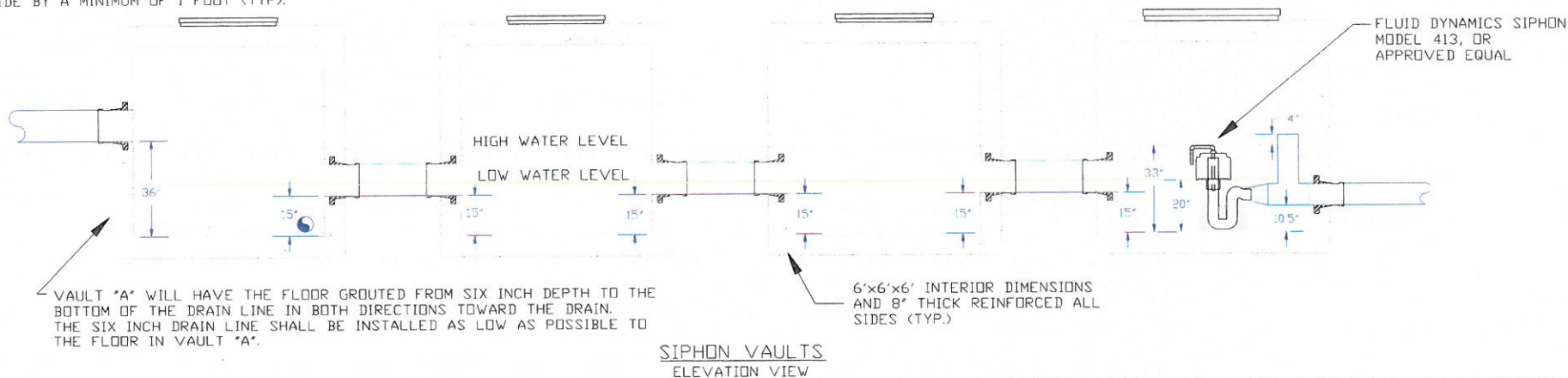
TOTAL

20



NOTES:

1. THE WVDEP SHALL REQUIRE APPROVED SHOP DRAWINGS OF ALL STRUCTURES FROM THE CONCRETE PRECAST COMPANY THROUGH THE CONTRACTOR.
2. THE PRECAST MANUFACTURER IS RESPONSIBLE FOR THE DESIGN OF THE STRUCTURAL REINFORCEMENT.
3. THE PRECAST MANUFACTURER SHALL INCLUDE EACH SECTION WEIGHT INFORMATION TO CONTRACTOR FOR PURPOSES OF HAVING APPROPRIATE SIZE CRANE OR LIFTING EQUIPMENT ONSITE.
4. THE STRUCTURES SHALL BE FABRICATED IN FORMS IN WHICH HORIZONTAL AND VERTICAL ALIGNMENT IS MAINTAINED.
5. THE Z-LOCK FLEXIBLE SLEEVES SHALL BE CAST INTO THE SECTIONS.
6. THE PRECAST SECTIONS SHALL BE HANDLED BY INSERTS OR OTHER MEANS WHICH WILL PERMIT THEM TO BE LIFTED AND TRANSPORTED WITHOUT INCURRING CRACKING AND SPALLING.
7. THE CONCRETE SHALL USE PORTLAND TYPE II SULPHATE RESISTANT CEMENT AND SHALL REACH A MINIMUM COMPRESSION STRENGTH OF 2500 PSI AFTER 24 HOURS AND HAVE A MINIMUM COMPRESSION STRENGTH OF 5000 PSI AFTER 28 DAYS.
8. THE CONCRETE SHALL HAVE A COMPLETE BOND TO THE REINFORCEMENT STEEL.
9. VAULT 'A' SHALL HAVE THE BOTTOM GROUTED TO SLOPE TOWARD THE SIX INCH DRAIN PIPE.
10. THE SIPHON SHALL BE MOUNTED LEVEL IN A PLASTIC BUCKET WITH A MIN. DIAMETER OF 16 INCHES, FILLED WITH CONCRETE TO A HEIGHT OF 12 INCHES WITH THE EXCESS BUCKET TO BE TRIMMED.
11. TWO 6 INCH LIFTS OF COMPACTED 1-1/2 INCH CRUSHER RUN AGGREGATE SHALL BE PLACED UNDER THE BASE OF THE VAULTS AND SHALL EXTEND BEYOND THE EXTENTS OF EACH VAULT ON EACH SIDE BY A MINIMUM OF 1 FOOT (TYP.).



OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-465-1911
FAX: 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:



Division of Land Restoration
Office of Special Reclamation

REVISIONS

DATE	BY	Q

ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299

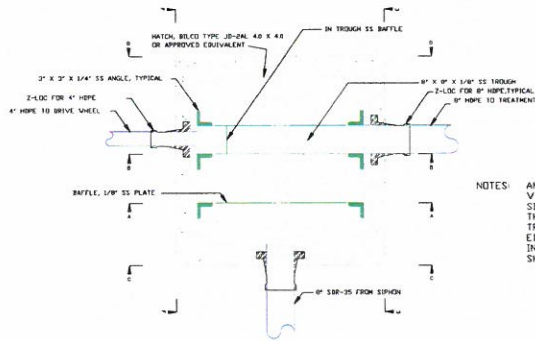
PRESTON COUNTY, WEST VIRGINIA

FLOW PROPORTIONAL SIPHON SYSTEM
SIPHON VAULTS

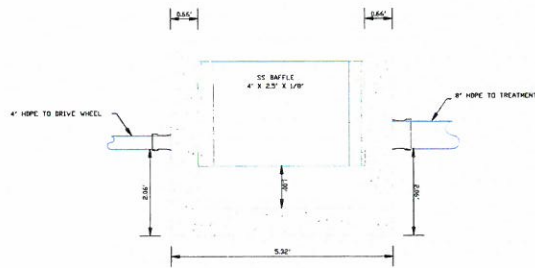
SCALE: NTS

DATE: MAY 2013

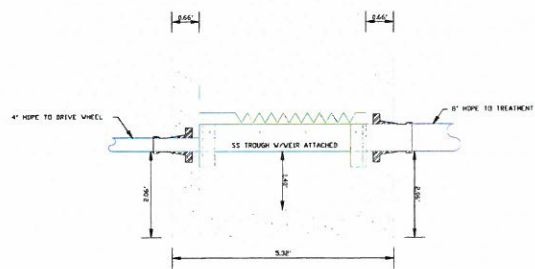
SHT. NO.
15
TOTAL
20



DISTRIBUTION BOX
PLAN VIEW

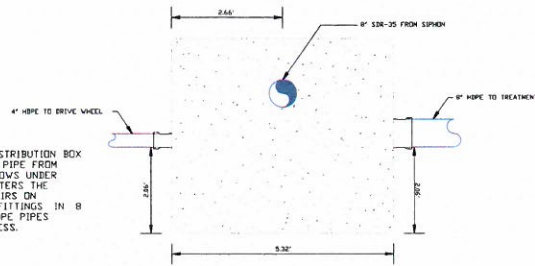


DISTRIBUTION BOX
SECTION A-A

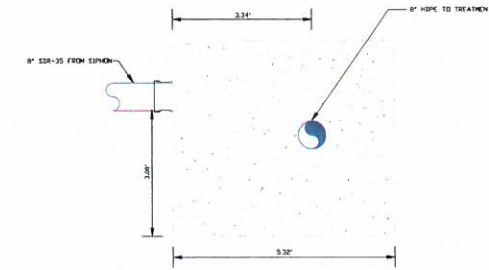


DISTRIBUTION BOX
SECTION B-B

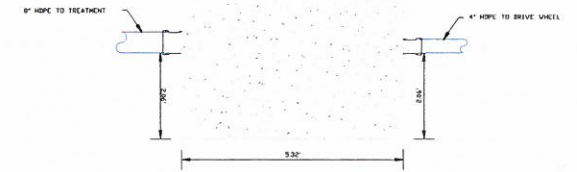
NOTES:
AMD ENTERS THE DISTRIBUTION BOX VIA THE 8" SDR-35 PIPE FROM SIPHON. THE AMD FLOWS UNDER THE BAFFLE AND ENTERS THE TROUGH VIA THE WEIRS ON EITHER SIDE. ALL FITTINGS IN 8 INCH AND 4 INCH HDPE PIPES SHALL BE 45° OR LESS.



DISTRIBUTION BOX
SECTION C-C



DISTRIBUTION BOX
SECTION E-E



DISTRIBUTION BOX
SECTION D-D



DISTRIBUTION BOX
FOUNDATION

NOTES:
PRECAST CONCRETE SHALL BE MINIMUM OF 5000 PSI @ 28 DAYS. THE MANUFACTURER SHALL PROVIDE THE W/VEP A STRUCTURAL REINFORCEMENT PLAN.
THE CONCRETE SHALL BE PORTLAND TYPE II SULFATE RESISTANT, XYPEX OR EQUIVALENT ADDITIVE SHALL BE USED AS PART OF THE MIX.
THE BAFFLE SHALL BE ANCHORED WITH STAINLESS STEEL 3/8" X 3" CONCRETE DROP IN ANCHORS. THE BAFFLE SHALL HAVE 4 ANCHORS PER SIDE ON 5" CENTERS STARTING 3" INCHES FROM THE TOP OF THE BAFFLE.
ALL HDPE PIPE SHALL BE SDR 17.

OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-465-1011
FAX: 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY: LLR
DRAWN BY: LLR
CHECKED BY: DBM
APPROVED BY: DBM

West Virginia
dep
Division of Land Restoration
Office of Special Reclamation

REVISIONS		
DATE	BY	CHK

ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299

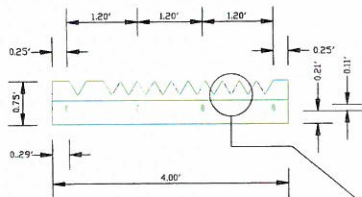
PRESTON COUNTY, WEST VIRGINIA

FLOW PROPORTIONAL SIPHON SYSTEM
DISTRIBUTION BOX DETAILS

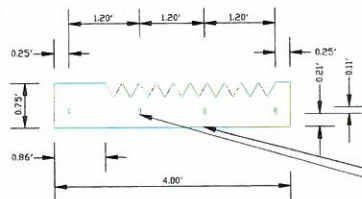
SCALE: NTS

DATE: MAY 2013

SHT. NO.
16
TOTAL
20



WEIR PLATE DETAIL
EFFLUENT SIDE - NTS



WEIR PLATE DETAIL
INFLUENT SIDE - NTS

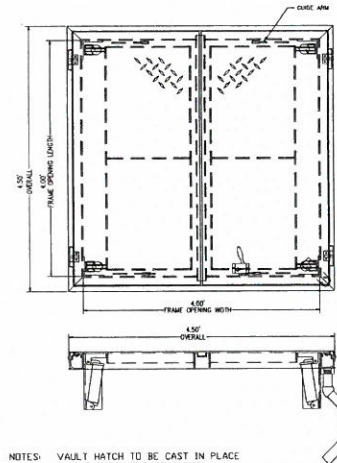
NOTES: WEIR PLATE LOCATED ON THE EFFLUENT SIDE OF THE TROUGH SHALL HAVE 11 WEIRS. 1-WEIR FOR DRIVE WATER AND 10-WEIRS FOR AND TO BE TREATED.

NOTES: WEIR PLATE LOCATED ON THE INFLUENT SIDE OF THE TROUGH SHALL HAVE 10 WEIRS.

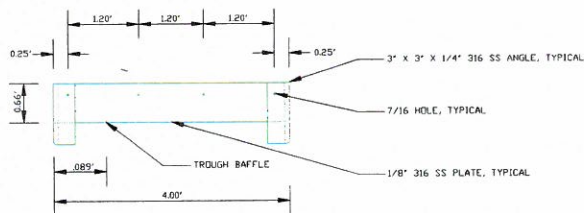
60" V NOTED WEIR FLOW DURING

WEIR NO.	WEIR TYPE	WEIR WIDTH	WEIR HEIGHT	WEIR AREA	WEIR PERIMETER	WEIR VOLUME	WEIR WEIGHT
1	1	1.20	0.25	0.30	3.14	0.03	0.03
2	1	1.20	0.25	0.30	3.14	0.03	0.03
3	1	1.20	0.25	0.30	3.14	0.03	0.03
4	1	1.20	0.25	0.30	3.14	0.03	0.03
5	1	1.20	0.25	0.30	3.14	0.03	0.03
6	1	1.20	0.25	0.30	3.14	0.03	0.03
7	1	1.20	0.25	0.30	3.14	0.03	0.03
8	1	1.20	0.25	0.30	3.14	0.03	0.03
9	1	1.20	0.25	0.30	3.14	0.03	0.03
10	1	1.20	0.25	0.30	3.14	0.03	0.03
11	1	1.20	0.25	0.30	3.14	0.03	0.03
12	1	1.20	0.25	0.30	3.14	0.03	0.03
13	1	1.20	0.25	0.30	3.14	0.03	0.03
14	1	1.20	0.25	0.30	3.14	0.03	0.03
15	1	1.20	0.25	0.30	3.14	0.03	0.03
16	1	1.20	0.25	0.30	3.14	0.03	0.03
17	1	1.20	0.25	0.30	3.14	0.03	0.03
18	1	1.20	0.25	0.30	3.14	0.03	0.03
19	1	1.20	0.25	0.30	3.14	0.03	0.03
20	1	1.20	0.25	0.30	3.14	0.03	0.03
21	1	1.20	0.25	0.30	3.14	0.03	0.03
22	1	1.20	0.25	0.30	3.14	0.03	0.03
23	1	1.20	0.25	0.30	3.14	0.03	0.03
24	1	1.20	0.25	0.30	3.14	0.03	0.03
25	1	1.20	0.25	0.30	3.14	0.03	0.03
26	1	1.20	0.25	0.30	3.14	0.03	0.03
27	1	1.20	0.25	0.30	3.14	0.03	0.03
28	1	1.20	0.25	0.30	3.14	0.03	0.03
29	1	1.20	0.25	0.30	3.14	0.03	0.03
30	1	1.20	0.25	0.30	3.14	0.03	0.03
31	1	1.20	0.25	0.30	3.14	0.03	0.03
32	1	1.20	0.25	0.30	3.14	0.03	0.03
33	1	1.20	0.25	0.30	3.14	0.03	0.03
34	1	1.20	0.25	0.30	3.14	0.03	0.03
35	1	1.20	0.25	0.30	3.14	0.03	0.03
36	1	1.20	0.25	0.30	3.14	0.03	0.03
37	1	1.20	0.25	0.30	3.14	0.03	0.03
38	1	1.20	0.25	0.30	3.14	0.03	0.03
39	1	1.20	0.25	0.30	3.14	0.03	0.03
40	1	1.20	0.25	0.30	3.14	0.03	0.03
41	1	1.20	0.25	0.30	3.14	0.03	0.03
42	1	1.20	0.25	0.30	3.14	0.03	0.03
43	1	1.20	0.25	0.30	3.14	0.03	0.03
44	1	1.20	0.25	0.30	3.14	0.03	0.03
45	1	1.20	0.25	0.30	3.14	0.03	0.03
46	1	1.20	0.25	0.30	3.14	0.03	0.03
47	1	1.20	0.25	0.30	3.14	0.03	0.03
48	1	1.20	0.25	0.30	3.14	0.03	0.03
49	1	1.20	0.25	0.30	3.14	0.03	0.03
50	1	1.20	0.25	0.30	3.14	0.03	0.03
51	1	1.20	0.25	0.30	3.14	0.03	0.03
52	1	1.20	0.25	0.30	3.14	0.03	0.03
53	1	1.20	0.25	0.30	3.14	0.03	0.03
54	1	1.20	0.25	0.30	3.14	0.03	0.03
55	1	1.20	0.25	0.30	3.14	0.03	0.03
56	1	1.20	0.25	0.30	3.14	0.03	0.03
57	1	1.20	0.25	0.30	3.14	0.03	0.03
58	1	1.20	0.25	0.30	3.14	0.03	0.03
59	1	1.20	0.25	0.30	3.14	0.03	0.03
60	1	1.20	0.25	0.30	3.14	0.03	0.03

BILCO TYPE JD-2AL 4.0' X 4.0' OR EQUIVALENT



NOTES: VAULT HATCH TO BE CAST IN PLACE DURING PRECAST FABRICATION.



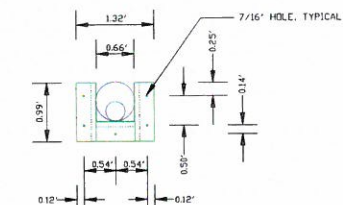
TROUGH DETAIL
NTS

NOTES: ALL HARDWARE SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED.

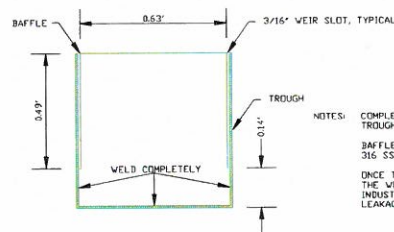
ATTACH WEIRS TO TROUGH WITH 3/8" X 1" BOLTS WITH A WASHER ON BOTH SIDES, LOCK WASHER, AND NUT.

TROUGH SHALL BE ANCHORED TO THE CONCRETE WITH 3/8" X 1-3/16" CONCRETE DROP IN ANCHORS. THE BOLT SHALL HAVE A WASHER, LOCK WASHER, AND NUT.

INDUSTRIAL SILICONE SHALL BE PLACED BETWEEN THE TROUGH AND CONCRETE IMMEDIATELY PRIOR TO INSTALLING THE TROUGH.



TROUGH DETAIL
BOTH ENDS - NTS

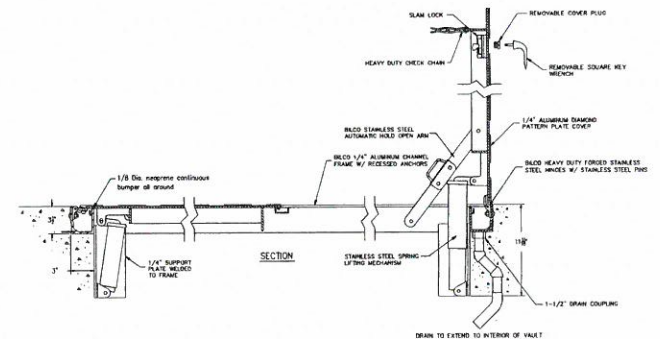


TROUGH BAFFLE DETAIL
CROSSSECTION - NTS

NOTES: COMPLETELY WELD BAFFLE TO TROUGH AT ALL POINTS OF CONTACT.

BAFFLE SHALL BE MADE OF 1/8" 316 SS PLATE.

ONCE THE WEIR PLATES ARE INSTALLED, THE WEIR SLOT SHALL BE SEALED WITH INDUSTRIAL SILICONE TO ELIMINATE LEAKAGE.



VAULT HATCH DETAIL
NTS

OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-455-1911
FAX: 1-304-455-0031

DEP CONTRACT NO. 16299
DESIGNED BY: LLR
DRAWN BY: LLR
CHECKED BY: DBM
APPROVED BY: DBM

West Virginia
dep
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Office of Special Reclamation

REVISIONS	
DATE	BY

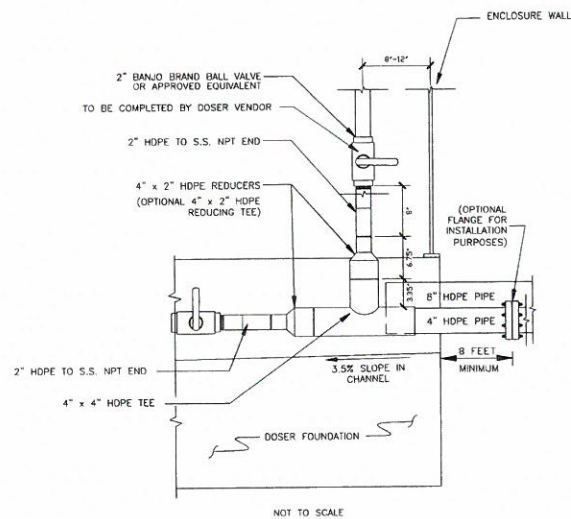
ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299
PRESTON COUNTY, WEST VIRGINIA

FLOW PROPORTIONAL SIPHON SYSTEM
DISTRIBUTION BOX DETAILS

SCALE: NTS

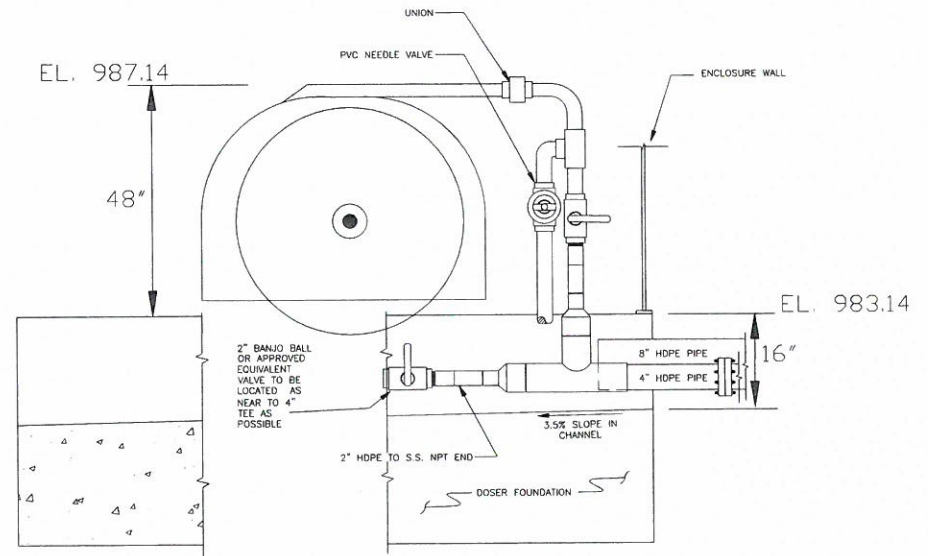
DATE: MAY 2013

SHT. NO.
17
TOTAL
20



NOTE: THIS IS FOR AN AQUAFIX SYSTEM.
THIS SCHEMATIC IS FOR PIPES ENTERING FROM THE REAR OF THE CHANNEL.

DRIVE WATER LINE SCHEMATIC - LOWER DETAILS
ELEVATION VIEW



DRIVE WATER LINE SCHEMATIC - UPPER DETAILS
ELEVATION VIEW

Note: Engineer may change elevations of any structure if Engineer deems necessary at no cost to the WVDEP. Contractor shall not adjust location nor elevation of any structure prior to Engineer's approval.

OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-465-1911
FAX: 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY: LLR
DRAWN BY: LLR
CHECKED BY: DBM
APPROVED BY: DBM



West Virginia
Division of Land Restoration
Office of Special Reclamation

REVISIONS		
DATE	BY	VS

ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299

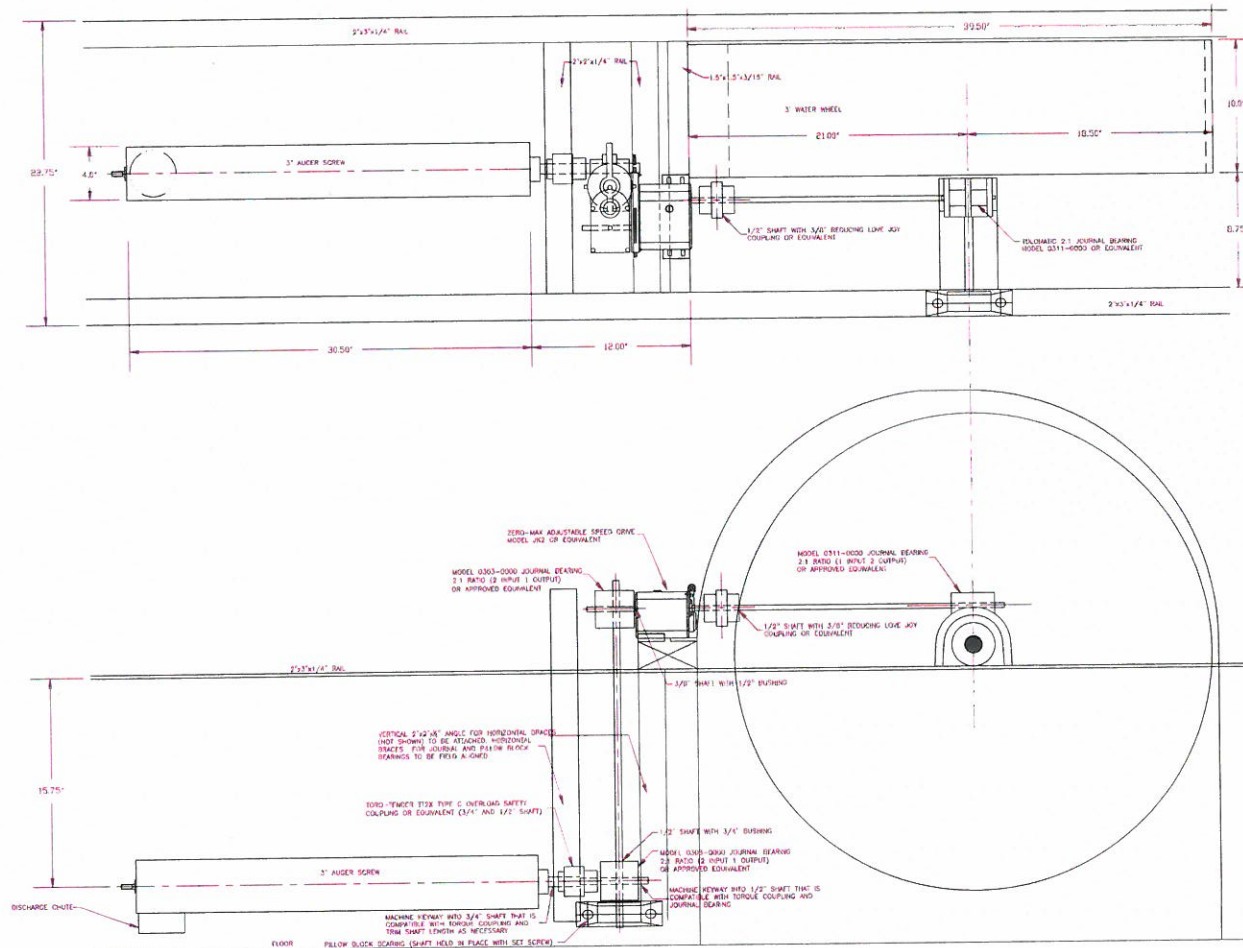
PRESTON COUNTY, WEST VIRGINIA

FLOW PROPORTIONAL SIPHON SYSTEM
DRIVE LINE DETAILS

SCALE: NTS

DATE: MAY 2013

SHT. NO.
18
TOTAL
20



DRIVE LINE SCHEMATIC
NEW CONFIGURATION - SHAFT OPTION
PLAN VIEW - NTS

- NOTE: 1. ALL SHAFTS SHALL BE COLD ROLLED STEEL.
2. ALL MECHANISMS WITH GREASE FITTINGS SHALL BE FITTED WITH HYDRAULIC GREASE HOSES. HOSES SHALL BE CONCENTRATED ON A COMMON GREASE BIB IN A LOCATION TO BE DETERMINED BY WVDEP FOR EACH SITE.

OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-465-1911
FAX: 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY: LLR
DRAWN BY: KAH
CHECKED BY: NLP
APPROVED BY:



Division of Land Restoration
Office of Special Reclamation

REVISIONS

DATE	BY	CHK

ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299

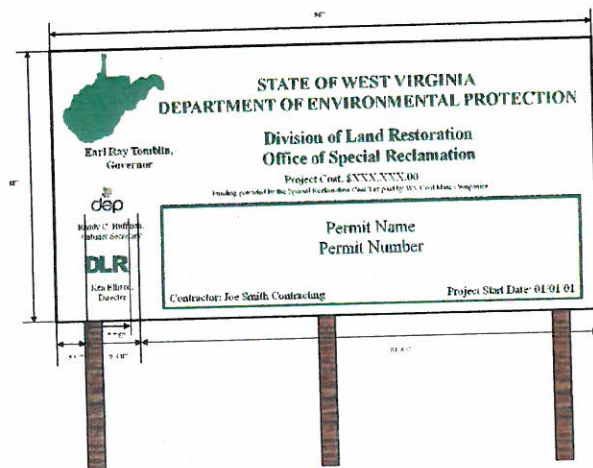
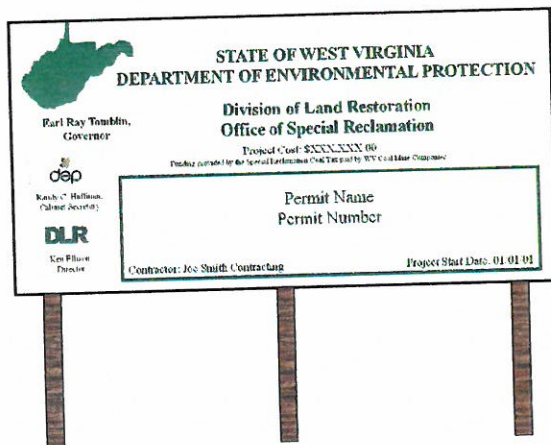
PRESTON COUNTY, WEST VIRGINIA

ADJUSTABLE SPEED DRIVE DETAILS

SCALE: NTS

DATE: MAY 2013

SHT. NO.
19
TOTAL
20



General Requirements

Project Construction Sign

Work Required

The work to be performed under this Section consists of providing all labor, material and equipment necessary to install a project sign as indicated on the detail included herein and as specified herein.

Materials

- Paint. Paint for the project sign shall be one (1) coat Exterior-Grade Wood Primer-Sealer, and two (2) coats Exterior-Grade Enamel by Glidden or equivalent.
- Wood. Sign face shall be 3/4" x 4' x 8' Marine Exterior plywood, 4' x 4' x 12' posts and 2" x 4" cross braces shall be pressure treated.
- Hardware. All hardware shall be manufactured from good, commercial-quality material and be rust resistant such as galvanized coating.

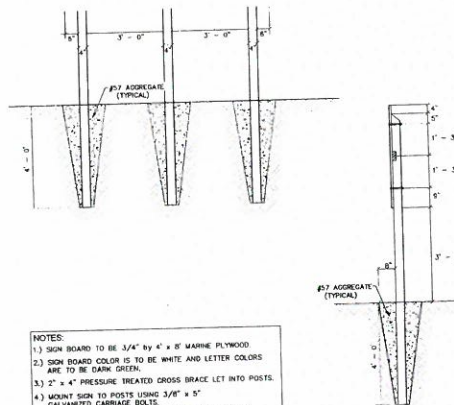
Execution

- Project Sign. The signboard shall be cut to the dimensions shown on the details herein. The sign shall be painted with one (1) coat of primer and two (2) coats of white enamel. All exterior cut edges shall be smooth sanded prior to painting. All edges shall be double primed. The letters, border and strips shall be painted as shown on the detail drawing.

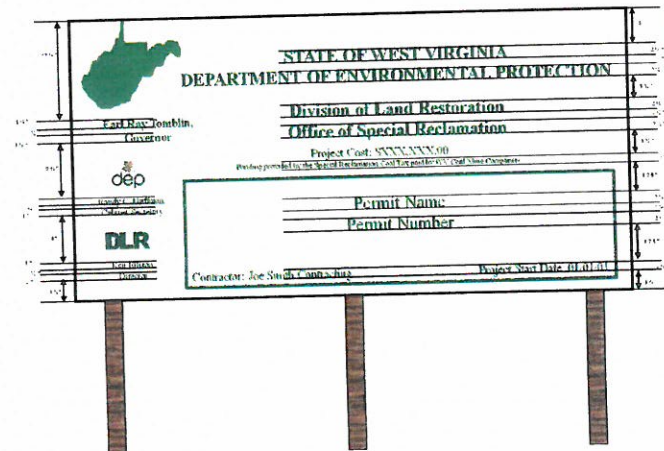
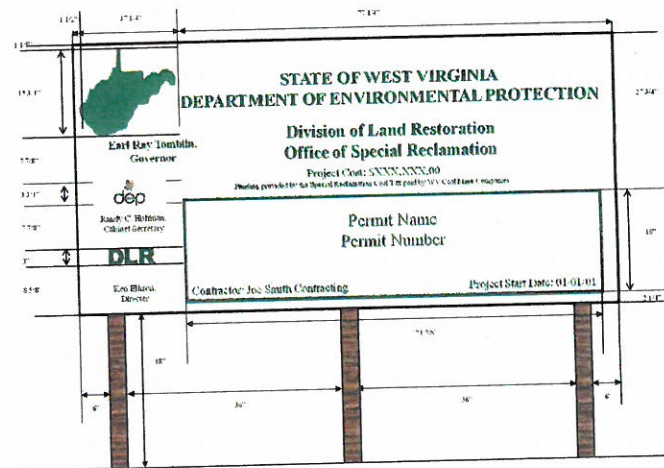
The Contractor shall bolt the sign to posts and provide required cross bracing. The posts and sign shall be erected and posts set in gravel base, as shown on the drawings. One (1) sign is required and is to be located at the direction of WVDEP.

- Payment. Payment for the work which shall include installation of the project sign shall be incidental to the lump sum bid item for "Mobilization/Demobilization".

Note: No construction work shall commence prior to the project sign being installed.



- NOTES:
- 1) SIGN BOARD TO BE 3/4" x 4' x 8' MARINE PLYWOOD
 - 2) SIGN BOARD COLOR IS TO BE WHITE AND LETTER COLORS ARE TO BE DARK GREEN.
 - 3) 2" x 4" PRESSURE TREATED CROSS BRACE LET INTO POSTS.
 - 4) MOUNT SIGN TO POSTS USING 3/8" x 5" GALVANIZED CARBIDE BOLTS.
 - 5) POSTS ARE TO BE PRESSURE TREATED 4" x 4' x 12'.
 - 6) LOCATION DETERMINED BY WDEP.



OFFICE OF SPECIAL RECLAMATION
254 INDUSTRIAL DRIVE
OAK HILL, WV 25901
OFFICE: 1-304-465-1911
FAX: 1-304-465-0031

DEP CONTRACT NO. 16299
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

West Virginia
dep Division of Land Restoration
Office of Special Reclamation

REVISIONS		
DATE	BY	NO.

ED-E DEVELOPMENT COMPANY INC
PERMIT S-1032-86
DEP16299
PRESTON COUNTY, WEST VIRGINIA

CONSTRUCTION SIGN DETAILS

SCALE: NONE

DATE: MAY 2013

SHT. NO.
20
TOTAL
20

Agency _____
 REQ.P.O# _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, _____
 _____ of _____, _____, as Principal, and _____
 _____ of _____, _____, a corporation organized and existing under the laws of the State of _____
 _____ with its principal office in the City of _____, as Surety, are held and firmly bound unto the State
 of West Virginia, as Obligee, in the penal sum of _____ (\$ _____) for the payment of which,
 well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the
 Department of Administration a certain bid or proposal, attached hereto and made a part hereof, to enter into a contract in writing for

NOW THEREFORE,

(a) If said bid shall be rejected, or
 (b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal
 attached hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform
 the agreement created by the acceptance of said bid, then this obligation shall be null and void, otherwise this obligation shall remain in
 full force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no
 event, exceed the penal amount of this obligation as herein stated.

The Surety, for the value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no
 way impaired or affected by any extension of the time within which the Obligee may accept such bid, and said Surety does hereby
 waive notice of any such extension.

WITNESS, the following signatures and seals of Principal and Surety, executed and sealed by a proper officer of Principal and
 Surety, or by Principal individually if Principal is an individual, this _____ day of _____, 20____

Principal Seal

 (Name of Principal)

By _____

(Must be President, Vice President, or
 Duly Authorized Agent)

 (Title)

Surety Seal

 (Name of Surety)

 Attorney-in-Fact

**IMPORTANT – Surety executing bonds must be licensed in West Virginia to transact surety insurance, must affix its seal, and
 must attach a power of attorney with its seal affixed.**

BID BOND PREPARATION INSTRUCTIONS

 AGENCY (A)
 RFQ/RFP# (B)
Bid Bond

- (A) WV State Agency
(Stated on Page 1 "Spending Unit")
- (B) Request for Quotation Number (upper right corner of page #1)
- (C) Your Business Entity Name (or Individual Name if Sole Proprietor)
- (D) City, Location of your Company
- (E) State, Location of your Company
- (F) Surety Corporate Name
- (G) City, Location of Surety
- (H) State, Location of Surety
- (I) State of Surety Incorporation
- (J) City of Surety's Principal Office
- (K) Minimum amount of acceptable bid bond is 5% of total bid. You may state "5% of bid" or a specific amount on this line in words.
- (L) Amount of bond in numbers
- (M) Brief Description of scope of work
- (N) Day of the month
- (O) Month
- (P) Year
- (Q) Name of Business Entity (or Individual Name if Sole Proprietor)
- (R) Seal of Principal
- (S) Signature of President, Vice President, or Authorized Agent
- (T) Title of Person Signing for Principal
- (U) Seal of Surety
- (V) Name of Surety
- (W) Signature of Attorney in Fact of the Surety

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned,
(C) of (D), (E)
 as Principal, and (F) of (G),
(H), a corporation organized and existing under the laws
 of the State of (I) with its principal office in the City of
(J), as Surety, are held and firmly bound unto The State
 of West Virginia, as Obligee, in the penal sum of (K)
 (\$ (L)) for the payment of which, well and truly to be made,
 we jointly and severally bind ourselves, our heirs, administrators, executors,
 successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the Department of Administration a certain bid or proposal, attached hereto and made a part hereof to enter into a contract in writing for _____

(M)

NOW THEREFORE

(a) If said bid shall be rejected, or
 (b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the agreement created by the acceptance of said bid then this obligation shall be null and void, otherwise this obligation shall remain in full force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated

The Surety for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of time within which the Obligee may accept such bid: and said Surety does hereby waive notice of any such extension.

WITNESS, the following signatures and seals of Principal and Surety, executed and sealed by a proper officer of Principal and Surety, or by Principal individually if Principal is an individual, the (N) day of (O), 20(P)

Principal Seal

(R)

(Q)
 (Name of Principal)

 By (S)
 (Must be President, Vice President, or
 Duly Authorized Agent)

(T)
 Title

Surety Seal

(U)

(V)
 (Name of Surety)

(W)
 Attorney-in-Fact

NOTE 1: **Dated Power of Attorney with Surety Seal must accompany this bid bond.**

IMPORTANT – Surety executing bonds must be licensed in West Virginia to transact surety insurance, must affix its seal, and must attach a power of attorney with its seal affixed.



State of West Virginia

PURCHASING DIVISION

Construction Bid Submission Review Form

This list has been provided for informational purposes only and is not to be construed as a complete list of request for quotation or bidding requirements for any individual construction project. This list does not and cannot include every item, mistake or oversight that could cause a contractor's bid to be disqualified. Rather, this list is intended to draw attention to some of the most common problems that the Purchasing Division encounters in the bidding process for construction projects. All potential bidders must read the request for quotation, all additional documents, and all instructions relating thereto ("Bid Documents") in their entirety to identify the actual request for quotation and bidding requirements. Failure to read the Bid Documents in their entirety and comply with the stated requirements contained therein may result in bid disqualification.

Errors That Shall Be Reason for Immediate Bid Disqualification

1. Failure to attend a mandatory pre-bid meeting
2. Failure to sign the bid
3. Failure to supply West Virginia contractor's license # on bid
4. Failure to supply a signed drug free workplace affidavit with the bid
5. Failure to supply a valid bid bond or other surety approved by the State of West Virginia
6. Failure to meet any mandatory requirement of the RFQ
7. Failure to acknowledge receipt of Addenda (only if stipulated as mandatory)
8. Failure to submit bid prior to the bid opening date and time
9. Federal debarment
10. State of West Virginia debarment or suspension

Errors that May Be Reason for Bid Disqualification Before Contract Award

1. Uncontested debt to the State exceeding \$1,000.00 (must be cured prior to award)
2. Workers' Compensation or Unemployment Compensation delinquency (must be cured prior to award)
3. Not registered as a vendor with the State (must be cured prior to award)
4. Failure to obtain required bonds and/or insurance
5. Failure to provide the sub-contractor listing within 1 business day of bid opening.
6. Failure to use the provided RFQ form (only if stipulated as mandatory).



State of West Virginia
DRUG FREE WORKPLACE CONFORMANCE AFFIDAVIT
West Virginia Code §21-1D-5

STATE OF _____

COUNTY OF _____, TO-WIT:

I, _____, after being first duly sworn, depose and state as follows:

1. I am an employee of _____; and,
 (Company Name)
2. I do hereby attest that _____
 (Company Name)

maintains a valid written drug free workplace policy and that such policy is in compliance with **West Virginia Code §21-1D-5**.

The above statements are sworn to under the penalty of perjury.

 (Company Name)

By: _____

Title: _____

Date: _____

Taken, subscribed and sworn to before me this _____ day of _____.

By Commission expires _____

(Seal)

 (Notary Public)

THIS AFFIDAVIT MUST BE SUBMITTED WITH THE BID IN ORDER TO COMPLY WITH WV CODE PROVISIONS. FAILURE TO INCLUDE THE AFFIDAVIT WITH THE BID SHALL RESULT IN DISQUALIFICATION OF THE BID.

RFQ No. _____

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: _____

Authorized Signature: _____ Date: _____

State of _____

County of _____, to-wit:

Taken, subscribed, and sworn to before me this ____ day of _____, 20__.

My Commission expires _____, 20__.

AFFIX SEAL HERE

NOTARY PUBLIC _____

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

(Company)

(Authorized Signature)

(Representative Name, Title)

(Phone Number)

(Fax Number)

(Date)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|---|--|
| <input type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Company

Authorized Signature

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.