



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

Request for Quotation

RFQ NUMBER:
DEP13575

PAGE:
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
**CHUCK BOWMAN
 304-558-2157**

VENDOR

RFQ COPY
 TYPE NAME/ADDRESS HERE

SHIP TO

ENVIRONMENTAL PROTECTION
 DEPT. OF
 OFFICE OF SPECIAL RECLAMATION
 105 S. RAILROAD STREET
 PHILIPPI, WV
 26416-9998 304-457-3219

DATE PRINTED 04/25/2007	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
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BID OPENING DATE: **05/24/2007** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		962-73		
<p>RECLAMATION: RESTORATION OF WATER</p> <p>THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S OFFICE OF SPECIAL RECLAMATION, IS SOLICITING BIDS FOR THE RECLAMATION PROJECT SPECIFIED BELOW.</p> <p>THE PURPOSE OF THE CONTRACT IS TO PERFORM WATER RECLAMATION ON THE MINING OPERATION OF STEWARTOWN COAL CORPORATION, NOW UNDER REVOKED PERMIT NUMBER(S) 67-78.</p> <p>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.</p> <p>A MANDATORY ON SITE PREBID CONFERENCE SHALL BE HELD ON 05/08/07 @ 10:00 AM. FAILURE TO ATTEND THE PREBID CONFERENCE WILL RESULT IN BID DISQUALIFICATION.</p> <p>THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND OTHER NECESSARY SERVICES SO AS TO ACCOMPLISH THE ITEMS AS SPECIFIED IN THIS CONTRACT. PROJECT IS LOCATED NEAR STEWARTSTOWN, WV, MONONGALIA COUNTY AND CONSISTS OF APPROXIMATELY 4 ACRES.</p> <p>ALL WORK MUST BE COMPLETED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS PREPARED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND PURCHASE ORDER ISSUED BY</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

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

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

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125.00 registration fee.
5. All services performed or goods delivered under State Purchase Orders/Contracts are to be continued for the term of the Purchase Order/Contract, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this contract is automatically null and void, and is terminated without further order.
14. **HIPAA Business Associate Addendum** - The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Covered Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in cases of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications.

SIGNED BID TO:

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



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<p>THE DEPARTMENT OF ADMINISTRATION, PURCHASING DIVISION.</p> <p>EXHIBIT 5</p> <p>NOTICE TO PROCEED: THIS CONTRACT IS TO BE PERFORMED WITHIN 365 CALENDAR DAYS AFTER THE NOTICE TO PROCEED IS RECEIVED. UNLESS OTHERWISE SPECIFIED, THE FULLY EXECUTED PURCHASE ORDER WILL BE CONSIDERED NOTICE TO PROCEED.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE MATERIALS OR WORKMANSHIP SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM WITH THE SPECIFICATIONS OF THE THE BID AND CONTRACT HEREIN.</p> <p>WAGE RATES: THE CONTRACTOR OR SUBCONTRACTOR SHALL PAY THE HIGHER OF THE U.S. DEPARTMENT OF LABOR MINIMUM WAGE RATES AS ESTABLISHED FOR MONONGALIA COUNTY, PURSUANT TO WEST VIRGINIA CODE 21-5A, ET,SEQ.</p> <p>ARBITRATION: ANY REFERENCES MADE TO ARBITRATION OR INTEREST FOR PAYMENTS DUE (EXCEPT FOR ANY INTEREST REQUIRED BY STATE LAW) CONTAINED IN THIS CONTRACT OR IN ANY AMERICAN INSTITUTE OF ARCHITECTS DOCUMENTS PERTAINING TO THIS CONTRACT ARE HEREBY DELETED.</p> <p>WORKERS' COMPENSATION: VENDOR IS REQUIRED TO PROVIDE A CERTIFICATE FROM WORKERS' COMPENSATION IF SUCCESSFUL.</p> <p>ALL OF THE ITEMS CHECKED BELOW WILL BE A REQUIREMENT OF THIS CONTRACT:</p> <p>(XX) INSURANCE: SUCCESSFUL VENDOR SHALL FURNISH PROOF</p>						

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				<p>OF COMMERCIAL GENERAL LIABILITY INSURANCE PRIOR TO ISSUANCE OF CONTRACT. UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS, THE MINIMUM AMOUNT OF INSURANCE COVERAGE REQUIRED IS \$250,000.</p> <p>() BUILDERS RISK INSURANCE: SUCCESSFUL VENDOR SHALL FURNISH PROOF OF BUILDERS RISK - ALL RISK INSURANCE IN AN AMOUNT EQUAL TO 100% OF THE AMOUNT OF THE CONTRACT.</p> <p>(XX) BONDS: FIVE PERCENT (5%) OF THE TOTAL AMOUNT OF THE BID PAYABLE TO THE STATE OF WEST VIRGINIA, SHALL BE SUBMITTED WITH EACH BID AS A BID BOND. THE SUCCESSFUL BIDDER SHALL ALSO FURNISH A PERFORMANCE BOND AND LABOR/MATERIAL BOND FOR 100% OF THE AMOUNT OF THE CONTRACT. BONDS MAY BE PROVIDED IN THE FORM OF A CERTIFIED CHECK, IRREVOCABLE LETTER OF CREDIT, OR BOND FURNISHED BY A SOLVENT SURETY COMPANY AUTHORIZED TO DO BUSINESS IN TH STATE OF WEST VIRGINIA. A LETTER OF CREDIT SUBMITTED IN LIEU OF A PERFORMANCE AND LABOR & MATERIAL BOND WILL ONLY BE ALLOWED FOR PROJECTS UNDER \$100,000. PERSONAL OR BUSINESS CHECKS ARE NOT ACCEPTABLE IN LIEU OF THE 5% BID BOND, PERFORMANCE BOND, OR LABOR/MATERIAL BOND.</p> <p>() MAINTENANCE BOND: A TWO (2) YEAR MAINTENANCE BOND COVERING THE ROOFING SYSTEM WILL BE A REQUIREMENT OF THE SUCCESSFUL VENDOR.</p> <p>REV. 11/00</p> <p>CONTRACTORS LICENSE</p> <p>WEST VIRGINIA STATE CODE 21-11-2 REQUIRES THAT ALL PERSONS DESIRING TO PERFORM CONTRACTING WORK IN THIS STATE MUST BE LICENSED. THE WEST VIRGINIA CONTRACTORS LICENSING BOARD IS EMPOWERED TO ISSUE THE CONTRACTORS</p>		

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<p>LICENSE. APPLICATIONS FOR A CONTRACTORS LICENSE MAY BE MADE BY CONTACTING THE WEST VIRGINIA DIVISION OF LABOR CAPITOL COMPLEX, BUILDING 3, ROOM 319, CHARLESTON, WV 25305. TELEPHONE: (304) 558-7890.</p> <p>WEST VIRGINIA STATE CODE 21-11-11 REQUIRES ANY PROSPECTIVE BIDDER TO INCLUDE THE CONTRACTORS LICENSE NUMBER ON THEIR BID.</p> <p>BIDDER TO COMPLETE:</p> <p>CONTRACTORS NAME -</p> <p>CONTRACTORS LICENSE NO. -</p> <p>THE SUCCESSFUL BIDDER WILL REQUIRED TO FURNISH A COPY OF THEIR CONTRACTORS LICENSE PRIOR TO ISSUANCE OF A PURCHASE ORDER/CONTRACT.</p> <p>APPLICABLE LAW</p> <p>THE WEST VIRGINIA STATE CODE, PURCHASING DIVISION RULE AND REGULATIONS, AND THE INFORMATION PROVIDED IN THE "REQUEST FOR QUOTATION" ISSUED BY THE PURCHASING DIVISION IS THE SOLE AUTHORITY GOVERNING THIS PROCUREMENT.</p> <p>ANY INFORMATION PROVIDED IN SPECIFICATION MANUALS, OR ANY OTHER SOURCE, VERBAL OR WRITTEN, WHICH CONTRADICTS OR ALTERS THE INFORMATION PROVIDED FROM THE SOURCES AS DESCRIBED IN THE ABOVE PARAGRAPH IS VOID AND OF NO EFFECT.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER</p>						

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<p>ORDER.</p> <p>EXHIBIT 7</p> <p>DOMESTIC ALUMINUM, GLASS & STEEL IN PUBLIC WORKS PROJECTS</p> <p>IN ACCORDANCE WITH WEST VIRGINIA CODE 5-19-1 ET., SEQ., EVERY CONTRACT FOR CONSTRUCTION, RECONSTRUCTION, ALTERATION, REPAIR, IMPROVEMENT OR MAINTENANCE OF PUBLIC WORKS, WHERE THE COST IS MORE THAN \$50,000 AND, IN THE CASE OF STEEL ONLY, WHERE THE COST OF STEEL IS MORE THAN \$50,000 OR WHERE MORE THAN 10,000 POUNDS OF STEEL ARE REQUIRED, THE STATE WILL ACCEPT ONLY ALUMINUM GLASS, OR STEEL PRODUCTS PRODUCED IN THE UNITED STATES. IN ADDITION, ITEMS OF MACHINERY OR EQUIPMENT PURCHASED FOR USE AT THE SITE OF PUBLIC WORKS SHALL BE MADE OF DOMESTIC ALUMINUM, GLASS OR STEEL, UNLESS THE COST OF THE PRODUCT IS LESS THAN \$50,000 OR LESS THAN 10,000 POUNDS OF STEEL ARE USED IN PUBLIC WORKS PROJECTS.</p> <p>FOREIGN MADE ALUMINUM, GLASS OR STEEL PRODUCTS MAY BE ACCEPTED ONLY IF THE COST OF DOMESTIC PRODUCTS IS FOUND TO BE UNREASONABLE. SUCH COST IS UNREASONABLE IF IT IS 20% OR MORE HIGHER THAN THE BID PRICE FOR FOREIGN MADE 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, FOREIGN PRODUCTS MAY BE SUPPLIED ONLY IF DOMESTIC PRODUCTS ARE 30% OR MORE HIGHER IN PRICE THAN THE FOREIGN MADE PRODUCTS.</p> <p>IF, PRIOR TO THE AWARD OF A CONTRACT UNDER THE ABOVE PROVISIONS, THE SPENDING OFFICER OF THE SPENDING UNIT DETERMINES THAT THERE EXISTS A BID FOR LIKE FOREIGN ALUMINUM, GLASS OR STEEL THAT IS REASONABLE AND LOWER</p>						

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<p>THAN THE LOWEST BID FOR DOMESTIC PRODUCTS, THE SPENDING OFFICE MAY REQUEST, IN WRITING, A REEVALUATION AND REDUCTION IN THE LOWEST BID FOR SUCH DOMESTIC PRODUCTS. ALL VENDORS MUST INDICATE IN THEIR BID IF THEY ARE SUPPLYING FOREIGN ALUMINUM, GLASS OR STEEL.</p> <p>REV. 3/88</p> <p>EXHIBIT 9</p> <p>NOTICE FOR ISSUANCE & ACKNOWLEDGEMENT OF CONSTRUCTION PROJECT ADDENDA</p> <p>THE ARCHITECT/ENGINEER AND/OR AGENCY SHALL BE REQUIRED TO ABIDE BY THE FOLLOWING SCHEDULE IN ISSUING CONSTRUCTION PROJECT ADDENDA FOR STATE AGENCIES:</p> <p>(1) THE ARCHITECT/ENGINEER SHALL PREPARE THE ADDENDUM AND A LIST OF ALL PARTIES THAT HAVE PROCURED DRAWINGS AND SPECIFICATIONS FOR THE PROJECT. THE ADDENDUM AND LIST SHALL BE FORWARDED TO THE BUYER IN THE STATE PURCHASING DIVISION. THE ARCHITECT/ENGINEER SHALL ALSO SEND A COPY OF THE ADDENDUM TO THE STATE AGENCY FOR WHICH THE CONTRACT IS ISSUED.</p> <p>(2) THE BUYER SHALL SEND THE ADDENDUM TO ALL INTERESTED PARTIES AND, IF NECESSARY, EXTEND THE BID OPENING DATE. ANY ADDENDUM SHOULD BE RECEIVED BY THE BUYER WITHIN FOURTEEN (14) DAYS PRIOR TO THE BID OPENING DATE.</p> <p>(3) ALL ADDENDA SHOULD BE FORMALLY ACKNOWLEDGED BY ALL BIDDERS AND SUBMITTED TO THE STATE PURCHASING DIVISION AND THE STATE AUDITOR'S OFFICE. THE SAME RULES AND REGULATIONS THAT APPLY TO THE ORIGINAL BIDDING DOCUMENT</p>						

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<p>SHALL ALSO APPLY TO AN ADDENDUM DOCUMENT. THE ONLY EXCEPTION MAY BE FOR AN ADDENDUM THAT IS ISSUED FOR THE SOLE PURPOSE OF CHANGING A BID OPENING TIME AND/OR DATE.</p> <p>REV. 11/96</p> <p>EXHIBIT 10</p> <p style="text-align: center;">REQUISITION NO.: DEP13574</p> <p>ADDENDUM ACKNOWLEDGEMENT</p> <p>I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.</p> <p>ADDENDUM NO.'S:</p> <p>NO. 1</p> <p>NO. 2</p> <p>NO. 3</p> <p>NO. 4</p> <p>NO. 5</p> <p>I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.</p> <p style="text-align: center;">..... SIGNATURE</p>						

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<p>.....</p> <p>COMPANY</p> <p>.....</p> <p>DATE</p>						
REV. 11/96						
NOTICE						
A SIGNED BID MUST BE SUBMITTED TO:						
DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130						
THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:						
SEALED BID						
BUYER: CB-23						
RFQ. NO.: DEP13575						
BID OPENING DATE: 05/24/2007						
BID OPENING TIME: 1:30 PM						
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY						

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TO CONTACT YOU REGARDING YOUR BID: ----- CONTACT PERSON (PLEASE PRINT CLEARLY): ***** THIS IS THE END OF RFQ DEP13575 ***** TOTAL: _____						

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BUYER CB-23	PAGE 010	REQ. OR PO NO. DEP 13575
SPENDING UNIT WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION/SPECIAL RECLAMATION		

WV-36a STATE OF WEST VIRGINIA
 Rev. 1/29/02 PURCHASING CONTINUATION SHEET
 VENDOR:

SCOPE OF WORK

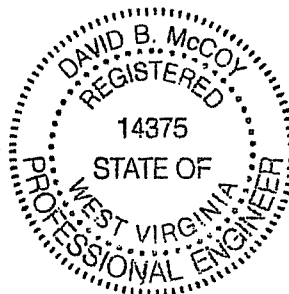
The successful bidder shall provide appropriate equipment, materials, labor and any technical services needed for the successful reclamation of **STEWARTOWN COAL CORP.**, Permit **67-78**, and any disturbance associated with such operation. The General Performance Standards (GPS) shall apply to all items in Scope of Work.

Work necessary on this site will include the following items, but is not limited to these:

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 & 4. If, fuel and lubricants are to be stored on site, bid item #2 shall be in place before fuel is delivered. Project sign is to be obtained and installed.
2. Storm water management in the form as described in bid item #11 shall be installed (described locations).
3. Construct new access road and upgrade existing access road.
4. Construct freshwater holding pond and install synthetic HDPE liner.
5. Construct settling pond and install curtain baffles.
6. Construct foundation and install Aquafix treatment unit.
7. Construct riprap ditches.
8. Eliminate pond.
9. Construct sludge disposal cell and sludge pumping line.
10. Install culverts.
11. Vegetative enhancement with seed, lime, fertilizer, and mulch.
12. Any other site specific items required.

I, David B. McCoy, the undersigned, hereby certify ¹ that this Reclamation Plan is correct and shows to the best of my knowledge and belief all the information required by the surface mining laws of the State of West Virginia. The source of information was the approved mining and reclamation plan contained in the forfeited surface mine permit, existing site conditions and information contained in the WV DEP, Inspection and Enforcement files.

David B. McCoy
 Registered Professional Engineer WV No. 14375



DBS
 3/4/07

Date: 3-29-2007

¹ The term "certify" as used herein is defined as follows: An engineer's certification of conditions is a declaration of professional judgment. It does not constitute a warranty or guarantee, either expressed or implied.

WV-36a STATE OF WEST VIRGINIA
 Rev. 1/29/02 PURCHASING CONTINUATION SHEET
 VENDOR:

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
BID SCHEDULE				
PERMIT NAME: <u>STEWARTOWN COAL CORP.</u>				
PERMIT NUMBER(S): <u>67-78</u>				
1.0	LUMP SUM	<u>MOBILIZATION/DEMobilIZATION/PROJECT SIGN</u> (5% Total Bid Maximum for this permit)	LUMP SUM	\$ _____
2.0	LUMP SUM	<u>SPILL CONTAINMENT AREA (S.C.A.)</u> (\$1,000.00 Maximum Bid for this permit)	LUMP SUM	\$ _____
<u>ROAD CONSTRUCTION</u>				
3.0	<u>2500</u> LF	<u>NEW HAULROAD/ACCESS ROAD</u>	\$ _____ PER LF	\$ _____
4.0	<u>4225</u> LF	<u>HAULROAD/ACCESS ROAD UPGRADE</u>	\$ _____ PER LF	\$ _____
5.0	<u>1500</u> LF	<u>FILTER FABRIC FOR ROAD UPGRADE</u>	\$ _____ PER LF	\$ _____
6.0	<u>450</u> TON	<u>INCIDENTAL #1 STONE FOR ROAD UPGRADE</u>	\$ _____ PER TON	\$ _____
7.0	<u>100</u> LF	<u>HDPE CULVERT 48" DIAMETER</u>	\$ _____ PER LF	\$ _____
8.0	<u>140</u> LF	<u>HDPE CULVERT 24" DIAMETER</u>	\$ _____ PER LF	\$ _____
9.0	<u>100</u> LF	<u>HDPE CULVERT 15" DIAMETER</u>	\$ _____ PER LF	\$ _____
10.0	LUMP SUM	<u>CLEAR AND GRUB</u>	LUMP SUM	\$ _____
11.0	<u>400</u> LF	<u>HAYBALE DIKE</u> (Max. Bid \$5.00 Per LF)	\$ _____ PER LF	\$ _____

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<u>WATER QUALITY ABATEMENT</u>				
12.0	<u>820</u> LF	<u>RIPRAP V - DITCH</u>	\$ _____ PER LF	\$ _____
13.0	LUMP SUM	<u>FRESH WATER POND</u>	LUMP SUM	\$ _____
14.0	LUMP SUM	<u>HDPE 60 MIL. POND LINER</u>	LUMP SUM	\$ _____
15.0	<u>325</u> LF	<u>RIPRAP TRAPEZOIDAL DITCH</u>	\$ _____ PER LF	\$ _____
16.0	<u>120</u> LF	<u>SEEP COLLECTOR</u>	\$ _____ PER LF	\$ _____
17.0	<u>52</u> LF	<u>SDR 35 PVC PIPE 12" DIAMETER</u>	\$ _____ PER LF	\$ _____
18.0	LUMP SUM	<u>SETTLING POND</u>	LUMP SUM	\$ _____
19.0	LUMP SUM	<u>BAFFLE CURTAIN</u>	LUMP SUM	\$ _____
20.0	<u>10</u> LF (Depth)	<u>SUB-FOUNDATION PREPARATION</u>	\$ _____ PER LF	\$ _____
21.0	LUMP SUM	<u>FOUNDATION</u>	LUMP SUM	\$ _____
22.0	LUMP SUM	<u>CRANE</u>	LUMP SUM	\$ _____
23.0	LUMP SUM	<u>DOSING UNIT AND SILO</u>	LUMP SUM	\$ _____
24.0	<u>180</u> LF	<u>4-INCH HDPE PIPE</u>	\$ _____ PER LF	\$ _____
25.0	LUMP SUM	<u>WATER CONNECTION AT DISPENSING UNIT</u>	LUMP SUM	\$ _____
26.0	<u>540</u> LF	<u>6-INCH HDPE PIPE</u>	\$ _____ PER LF	\$ _____

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27.0	<u>1</u> EA	<u>6-INCH GATE VALVE</u>	\$ _____ PER EA	\$ _____
28.0	<u>2</u> EA	<u>6-INCH HDPE BLIND FLANGE</u>	\$ _____ PER EA	\$ _____
29.0	LUMP SUM	<u>SLUDGE DISPOSAL CELL</u>	LUMP SUM	\$ _____
30.0	<u>2</u> EA	<u>6 INCH HDPE PUMP ADAPTORS</u>	\$ _____ PER EA	\$ _____
31.0	<u>1</u> EA	<u>6 INCH HDPE WYES</u>	\$ _____ PER EA	\$ _____
32.0	LUMP SUM	<u>POND ELIMINATION</u>	LUMP SUM	\$ _____
33.0	<u>100</u> LF	<u>RIPRAP TRAPEZOIDAL SPILLWAY CHANNEL</u>	\$ _____ PER LF	\$ _____
34.0		<u>REVEGETATION</u>		
34.1	<u>4</u> AC	<u>AGRICULTURAL LIME</u>	\$ _____ PER ACRE	\$ _____
34.2	<u>4</u> AC	<u>FERTILIZER</u>	\$ _____ PER ACRE	\$ _____
34.3	<u>4</u> AC	<u>MULCH</u>	\$ _____ PER ACRE	\$ _____
34.4	<u>4</u> AC	<u>VEGETATIVE SPECIES</u>	\$ _____ PER ACRE	\$ _____
		<u>TOTAL PERMIT #67-78</u>		\$ _____

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BID ITEM TECHNICAL SPECIFICATIONS

1.0 MOBILIZATION/DEMOBILIZATION/PROJECT SIGN 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.

MOBILIZATION

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.

DEMOBILIZATION

Prior to demobilization, an inspection shall be conducted by the Department of Environmental Protection 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.

PAYMENT

The lump sum bid for this item shall not exceed 5% 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 off site. 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 Attachment) Alternate containment measures will be considered for approval by the Program Manager if acceptable results can be shown. Fuel tanks manufactured with secondary containment are desirable. Minimum secondary containment is 110 percent. (Bid limited to \$1,000.00 maximum)

3.0 NEW HAULROAD/ACCESS ROAD

This required road will be approximately 2500 LF. 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.

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 DEP on site representative. Construction stake out shall be completed as necessary to complete that phase of the work being undertaken. Payment for the construction stakeout is to be included in the road price. No separate payment will be made for construction stake out.

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 is to be approved by DEP on site representative. Filter Fabric (Tyvar 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). The No. 1 stone shall then be

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covered with 1½ inch crusher run limestone so that the surface is choked off and a three (3) inch minimum layer remains on top. The completed road shall have a minimum width of twelve (12) feet and the surface shall be crowned and sloped to both sides a minimum of 24-horizontal to 1 vertical. Any fill sections, if used, shall not impound water. The total length of roadside ditch shall be along the entire length of the road. A roadside drainage ditch shall be established along the hillside 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 Access Road drawing.

Payment shall be for completed length of road, and shall include a truck turn-around area paid as length of road (264 LF). The turn-around area shall be approximately twenty four (24) feet wide and one hundred twenty (120) feet in length with twelve (12) feet wide corners. The turn-around area location shall be designated by the DEP on-site representative.

4.0 HAULROAD/ACCESS ROAD UPGRADE

The contractor shall maintain and/or construct haulroad/access road(s) during the reclamation process to provide access on a well drained surface. Plan to upgrade the existing access road to the specifications and details as indicated in the Upgrade Access Road drawing. 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. Upon completion of all reclamation activities, a final 3 inch layer of 1 ½ crusher run limestone shall be placed on the roadway. Dust-control measures may be necessary if hauling creates airborne material.

5.0 FILTER FABRIC FOR ROAD UPGRADE

Filter Fabric (Tyvar 3401, Mirafi 500X, or equivalent) shall be placed over the completed road foundation (12' width) and covered with a six (6) inch minimum layer of No. 1 limestone (3½ to 1½ inches) (separate bid item). The fabric shall be paid for by the linear foot of road construction.

6.0 INCIDENTAL #1 STONE FOR ROAD UPGRADE

During construction of culvert installations, roadway ditch improvements, and reshaping of the roadway, areas may need additional base layer stone. After any necessary re-compaction and re-grading work on roadways has been performed by the contractor, a six (6) inch layer of #1 limestone (3.5" to 1.5" size) shall be placed as needed. This stone shall be graded and tracked in with a dozer or other equipment to achieve a compacted base for the final top layer of 1 ½ inch crusher run limestone (separate bid item).

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

7.0 HDPE CULVERT 48" DIAMETER

The culverts shall be HDPE, dual wall smooth interior corrugated twenty (20) foot joint type. The pipe joints shall be silt-tight and the pipe shall meet ASTM D3350 manufacturing standards. This culvert (with 100 LF of 24" diameter culvert- bid item #8.0) will replace two existing 36 inch diameter corrugated metal culverts in Camp Run on the existing access road.

Culverts installed in access roads shall cross the road at a 30 degree angle downgrade with a minimum grade of two percent (2%) 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 inlet and outlet rock riprap headwall shall be grouted to stabilize the rock and prevent erosion. Also, rock riprap at the entrance and exit of the pipe invert shall be grouted to prevent movement and erosion. The culvert shall be installed in a trench excavated in solid undisturbed ground or formed by compacted earth.

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.

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This 48 inch diameter culvert shall be covered with a minimum of twenty four (24) inches of material. Payment shall be for length of culvert installed.

8.0 HDPE CULVERT 24" DIAMETER

The culvert shall be HDPE, dual wall smooth interior corrugated twenty (20) foot joint type. The pipe joints shall be silt-tight and the pipe shall meet ASTM D3350 manufacturing standards. This culvert shall replace an existing culvert near the access gate.

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.

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 twelve (12) inches of material. Payment shall be for length of culvert installed.

9.0 HDPE CULVERT 15" DIAMETER

The culvert shall be HDPE, dual wall smooth interior corrugated 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 the onsite DEP representative.

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.

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 twelve (12) inches of material. Payment shall be for length of culvert installed.

10.0 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. The contractor shall work with the on-site DEP representative to identify clearing areas. Any timber cut in the clear and grub area that the landowner wishes to retain shall be de-limbed and stockpiled.

11.0 HAYBALE DIKE

Disturbed areas which have storm water runoff which does not pass through a sediment control structure shall utilize the following method to manage storm water runoff: Max. Bid of \$5.00/LF of Hay Bale Dike.

1. All bales shall be placed on the contour.
2. Bales shall be placed in a row with ends tightly abutting the adjacent bales.
3. Bales shall be securely anchored in place by stakes or rebars driven through the bales. Rebar to be removed

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at the direction of DEP. The first stake in each bale shall be driven toward previously laid bale to force the bales together. Construction of sediment control sumps and rock check dams may become necessary to supplement the hay bale dikes. Sumps and check dams shall be incidental to this bid item.

12.0 RIPRAP V - DITCH

Provide all materials, excavate and construct the riprap ditch as indicated on the attached typical plans, cross-section, specifications, and as discussed at the Pre-Bid Showing (See riprap specifications). Ditches shall be free draining upon completion of construction. Length of ditch may be adjusted to meet on site conditions. Payment shall be made by the linear foot installed. R-5 limestone riprap shall be used at a thickness of 1 ½ feet.

13.0 FRESH WATER POND

One fresh water pond shall be constructed. The pond shall have a top inside width of one hundred (100) feet, a top inside length of one hundred forty (140) feet, a total depth of ten (10) feet, and a total excavation volume of approximately 97,333 cubic feet. The pond shall have a water depth of 8 ft. with 2 ft. of freeboard. Inside slopes shall be two horizontal to one vertical (2h:1v). The pond top berm shall be a minimum of twelve (12) feet wide.

The pond is a lump sum bid item. The pond outlet spillway shall be paid for under the trapezoidal spillway channel bid item #33.0, and shall transition to a trap-ditch at the toe of the embankment. See the attached pond drawings for additional details.

EMBANKMENT CONSTRUCTION WITH COMPACTION EQUIPMENT

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 (vibratory smooth drum roller, sheep's foot roller, etc.) with a capacity of 8 ton or larger shall be used to help secure a solid embankment, which will not slip or allow seepage of the ponded water. Each 6 inch fill layer shall be compacted with multiple roller passes (five or more) until the fill material is stable and does not move. If compaction is performed with a smooth roller, the material must be scarified with dozer tracks over the entire rolled surface, prior to placing the next lift of fill material. A "proof-roll" test shall be required as a check after each one (1) foot of material is added. The primary purposes of proof rolling are to locate soft areas and check compaction. Proof roll the lift with two passes of rubber-tired equipment, such as a loaded dump truck with appropriate tire pressure. Operate the equipment at a speed to allow the onsite representative to evaluate that the material does not pump out, rut, or move. The contractor shall notify the DEP onsite representative prior to performing these proof roll tests.

Weak or compressible areas, which cannot be satisfactorily compacted, shall be removed and replaced with properly compacted fill material. The base of any fill areas shall be undercut to solid material, and benched or keyed into the existing bank. All stones exceeding 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. During dry conditions, water may need to be added to the fill material during the placement process to achieve optimum compaction. If the fill material is over saturated with water, the material may need to be spread and aerated prior to placement at the fill site for compaction. The top pond berm width shall be a minimum of 12.0 feet wide. Prior to placement of the HDPE liner (separate bid item), the final layer of fill material and pond inside slope surfaces shall be free of any sharp rocks and objects, foreign or organic material, or debris of any kind. The pond 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.

14.0 HDPE 60 MIL. POND LINER

This bid item shall be for the purchase and installation of an HDPE 60 mil. smooth geomembrane liner made

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by Poly-Flex or approved equivalent. The liner shall be installed in accordance to the manufacturer specifications and general requirements, attached. A 4 inch diameter HDPE line and a 6 inch diameter HDPE line shall extend into the pond, and shall be sealed with fitted boots to the pond liner and pipe. The HDPE lines shall be paid for under a separate bid item. After completion of liner installation, the pond liner shall not leak or seep any water away from the pond. The pond liner shall be paid as a lump sum bid item at the completion of installation and approval by the DEP.

15.0 RIPRAP TRAPEZOIDAL DITCH

Provide all materials, excavate and construct trapezoidal ditch as indicated on the attached typical plans, cross-section, specifications, and as discussed at the Pre-Bid Showing. Ditches shall be free draining upon completion of construction. Length of ditch may be adjusted to meet on site conditions. (See riprap specifications) R-5 limestone riprap shall be used at a thickness of 1 ½ feet.

16.0 SEEP COLLECTOR

Provide all materials and construct the seep collector according to the attached typical plans, cross-section, specifications, and as discussed at the Pre-Bid Showing. The twelve-inch (12") SDR35 PVC shall be perforated within the seep collector according to the specifications and drawings. The length of twelve (12") inch solid pipe exiting the seep collector is included under bid item (#17.0). Any 45° elbows, end caps, or other fittings for constructing a cleanout shall be incidental to this bid item. Seep collectors shall be installed in a minimum of two separate locations. Payment for each seep collector shall be paid per linear foot, and is for complete installation and verified by DEP with photos.

17.0 SDR 35 PVC PIPE 12" DIAMETER

The twelve inch diameter SDR-35 PVC shall be solid pipe (gasket joint type) used to convey the water from seep collectors to the trapezoidal ditch, and shall extend above ground as cleanouts (see drawing). The pipe shall be buried with a minimum of two and one-half (2.5 ft) feet of cover to avoid freezing. Approximately 52 linear feet will be required. The end of the pipe shall have an animal guard installed (see drawing), and shall be incidental to this bid item. Payment shall be made for the actual measured length of pipe installed.

18.0 SETTLING POND

One settling pond shall be constructed according to the attached detailed drawings and specifications. The pond shall have three cells with two dividing earthen dikes. This new pond site was a former pond site, which was reclaimed. The two separation dike foundations may need to be undercut and filled in with suitable base material. Base materials are available onsite, and shall be approved for use by the DEP onsite representative. Any unsuitable material shall be removed and disposed at an onsite location approved by the DEP onsite representative. The pond shall have a water depth of approximately 8 ft. with 2 ft. of freeboard. Side slopes shall be two horizontal to one vertical (2h:1v). A twelve feet wide (minimum) level top pond berm shall be constructed around the entire pond.

The settling pond is a lump sum bid item. The settling pond spillways shall be paid for under the trapezoidal spillway channel bid item #33.0. Remove all vegetation during clearing & grubbing operations for the pond site, which is paid under a separate bid item.

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. If necessary, compaction equipment (vibratory roller, sheep's foot roller, etc.) may be used to help secure a solid embankment, which will not slip or allow seepage of the

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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 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. If the fill material is over saturated with water, the material may need to be spread and aerated prior to placement at the fill site for compaction. The top pond berm width shall be a minimum of 12.0 feet. During construction if the above mentioned compaction equipment is not utilized, the top berm may need to be wider than 12.0 feet (20 feet wide) to accommodate multiple dozer passes and overlapping tracking to obtain compaction across the entire top width of pond berm. After appropriate compaction of material is achieved, the embankment slopes may be cut back to a 12.0 feet top width.

19.0 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 size 3"x4"x12" 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 5/16 inch diameter stainless steel wire cable shall be seamed into the top of the baffle to anchor at the sides of the pond. A 1/4 inch diameter link chain shall be hot seam sealed into the bottom of the baffle for weight, and to anchor at the sides of the pond. 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 DEP onsite representative before installation. The wire cable and chain 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 indicated on the attached drawing. The spacing and the size of the slots shall be determined by the DEP engineer or onsite representative. The baffle curtain shall be installed across the first cell of the new settling pond, and shall be approximately 65' in length. The exact installation location shall be approved by the onsite DEP representative.

20.0 SUB-FOUNDATION PREPARATION

The sub-foundation shall be undercut to remove all fill (unconsolidated material) down to a competent foundation as determined by the DEP on site representative. The sub-foundation shall be constructed in substantial conformity to the plans and/or specifications. The DEP on site representative shall be present during this work.

The sub-foundation material shall be suitable material free of particles larger than three inches in diameter and consist of granular material conforming to WVDOH specification 716.1.1.2. A bearing capacity of approximately 6 tons per square ft should be obtained.

Compaction shall be done with a suitable compactor to obtain approximately 98% Standard Proctor Density. Layers shall be six (6) inches or less in thickness before compaction is initiated. Moisture content of the fill material shall be controlled to obtain maximum compaction.

Payment shall be made for each one (1) foot depth of undercut required.

21.0 FOUNDATION

The foundation shall be Type II Sulfate Resistant Concrete and shall conform to the dimensions and shape shown in the detail drawings and specifications. Include all reinforcing bars with supports and anchor bolts as necessary. Provide all forms, personnel and equipment required for the placement, finishing, and curing of the concrete. The concrete shall be consolidated with use of an internal spud vibrator to liquefy the concrete so that entrapped air and water can come to the surface. Adverse weather conditions shall be avoided during completion of this item. WVDOH specifications for concrete shall apply to this item. Concrete shall cure for a minimum of 5 to 7 days before the silo may be erected in place. Excavation for the foundation is incidental to this item with no separate payment being made.

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The channel in the foundation is to receive water from the 6" diameter HDPE line from the fresh water pond. After treatment with the reagent, the water will exit the foundation into a V- ditch (bid item #12.0). This item shall be paid for as a lump sum item after completion of the foundation and acceptance by the DEP.

22.0 CRANE

This shall include furnishing a crane of sufficient capacity to unload and erect the silo structure on its foundation and to install the reagent dispensing unit. The silo is estimated to weigh less than 10 ton.

Payment for this work shall be made based on the lump sum contract and paid upon final acceptance by DEP.

23.0 DOSING UNIT AND SILO

This item includes all work necessary to purchase, install and initiate operation of an Aquafix water powered dosing unit (Unit type MSS-SM-OA-20). This item shall be subcontracted to:

Aqua-Fix Water Treatment Systems.
 Michael Jenkins
 301 Maple Lane
 Kingwood, WV 26537 Telephone: (304) 329-1056.

Structural elements shall be warranted by the manufacturer to withstand normal static and dynamic loads as commonly accepted by industry. Changes to these specifications shall be made only with the written approval of the Program Manager.

A 20 ton steel silo to store the reagent is required. The silo shall be equipped with an interior ladder, an exterior ladder with a protective cage and a lockable steel safety door, a steel safety fence around the top of the silo, and a filler pipe to extend to the unloading port. A steel cone shall be placed at the base of the silo to direct the discharge of the reagent through a steel flange, which is sized and located to accommodate the reagent dispensing unit. Silo shall include a vent pipe to prevent pressure buildup during filling. An emergency pop off valve shall be included in case the vent pipe malfunctions. Pneumatic filling of the silo is to be utilized.

An insulated steel security enclosure attached to the silo structure support system to protect the dosing unit from vandalism and the weather is required. The wall thickness of the silo enclosure shall be equivalent to the steel used in the construction of the silo. The enclosure shall be equipped with a hinged, lockable steel door of sufficient size to facilitate removal of the dosing unit for repair and/or future replacement. The enclosed structure shall be fitted with a propane heating unit with a capacity to prevent freezing of the dosing unit during the winter. The heater will include all needed piping, regulator and fittings to connect to the tank. A 100 gallon tank shall be included, and will need to be filled one time.

Painting of the silo and steel security enclosure shall be done in accordance with WVDOH Specification 711. Preferred colors are green and/or tan.

The dosing unit, silo, and filler pipe shall be designed to facilitate the use of Calcium Oxide (CaO) during the service life of the unit. A water line will be installed to power the water wheel. This portion of the work shall include the initial filling and the start up of the unit, at the direction of the Program Manager, to confirm that all units function as intended. Any repairs and/or adjustments required to the unloading system and dosing unit to allow them to function as designed shall be performed at no cost to the DEP. The system shall be operated successfully for a one-week period before acceptance by the DEP. All settling ponds and riprap ditches leading to them must be completed before testing is initiated. The Calcium Oxide shall be 20 tons in amount and delivered as scheduled by the on site DEP representative.

Payment for all of the work specified above shall be made based on the lump sum contract price.

24.0 4-INCH HDPE PIPE

One (1) HDPE (DR 15.5 or 17) 4 inch diameter water line shall be provided to connect the water from the

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fresh water pond to the ball valve at the dispensing unit. The line shall be buried with a minimum of two and one-half (2.5') feet of cover to avoid freezing. Approximately 180 linear feet will be required. Payment shall be made for the actual measured length of pipe installed.

25.0 WATER CONNECTION AT DISPENSING UNIT

At the dispensing unit, the 4 inch diameter HDPE line (bid item #24.0) shall be connected with a four (4) inch True union PVC ball valve and a two (2) inch True union PVC ball valve, various HDPE fittings (see Drive Line Schematic drawing), cleanouts, molded elbows, caps, reducer fittings, and flanges to supply water to the unit. This is a lump sum payment upon completion of work. All material costs are incidental to this bid item.

26.0 6-INCH HDPE PIPE

One (1) HDPE (DR 15.5 or 17) 6 inch diameter water line shall be provided to connect the water from the fresh water pond to a gate valve at the concrete treatment channel. The 6-inch HDPE line is also used as a sludge pump line from the treatment pond to the sludge cell. The line shall be buried with a minimum of two and one-half (2.5') feet of cover to avoid freezing. Approximately 180 linear feet will be required for the fresh water pond line, and the additional amount is for the sludge line. Payment shall be made for the actual measured length of pipe installed.

27.0 6-INCH GATE VALVE

One 6 inch epoxy coated cast iron gate valve with flanged ends shall be provided and installed on the flanged end of the 6 inch diameter HDPE line from the fresh water pond to the foundation channel inside the treatment building. The valve shall have a 2 inch square top nut, and resilient wedge gate type meeting AWWA C509 standards. A 2 inch square valve box key wrench shall be provided, and is incidental to this bid item. Appropriate rubber flange gaskets and stainless steel bolts/nuts shall also be incidental to this bid item.

28.0 6-INCH HDPE BLIND FLANGE

On each end of the 6 inch HDPE line from the fresh water pond to the treatment channel, a 6-inch HDPE flange with a stainless steel backer ring shall be welded to the manufacturer's standards. The HDPE blind end caps shall be provided with stainless steel bolts/nuts.

29.0 SLUDGE DISPOSAL CELL

A sludge disposal area shall be constructed to receive sludge pumped from the settling pond. This area shall have a completed holding volume of at least 30,000 cubic feet. The constructed sludge disposal cell shall have a two-foot freeboard. The approximate size of the pond shall have a forty (40) foot top width, a top length of one hundred fifty (150) feet, and a total depth of ten (10) feet. The sludge disposal cell shall have side slopes not exceeding one horizontal to one vertical. The cell shall be constructed in an area approved by the DEP onsite representative. Material which is removed during the pond construction and which is suitable for reclamation shall be stockpiled on site and vegetated, and 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 V-ditch and shall be paid under Bid Item #12.0. The V-ditch shall continue to the trapezoidal treatment ditch. Lump sum payment shall be for the completed item upon approval of the DEP on site representative.

30.0 6-INCH HDPE PUMP ADAPTOR

A 6" HDPE to threaded NPT End adaptor shall be installed to accommodate a cam-lock male adaptor so a 6" flexible pump line can be attached. Include a female cam-lock cap for sealing each adaptor. The cap shall withstand pressures developed during pumping at other pumping points. Install posts or pipes to protect the end from damage. The sludge cell end of the 6" sludge line shall have riprap placed around the pipe outlet to prevent erosion as necessary. The male end cam-lock fitting and female end dust cap are part of this bid item.

31.0 6-INCH HDPE WYE

The 6-inch diameter HDPE pipe shall be of standard manufacture. Payment shall be for each installed item. The wye shall be installed at the settling pond end of the sludge pumping line to drain the line to avoid freezing in the

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winter months.

32.0 POND ELIMINATION

An existing pond with an approximate size of 150 ft. x 150 ft. shall be eliminated. Existing material surrounding the pond shall be used to regrade the area. Surface runoff currently enters the pond, and may need to be temporarily diverted around the pond during elimination. The final grading of the pond site shall blend with the surrounding land and shall not hold or pond water at completion. A V-ditch may be needed at completion of the pond elimination to control excessive runoff, and shall be paid for under bid item #12.0. The pond elimination work is a lump sum bid item to be paid at completion of work.

33.0 RIPRAP TRAPEZOIDAL SPILLWAY CHANNEL

Provide all materials, excavate and construct trapezoidal spillway channel as indicated on the attached typical plans, cross-section, specifications, and as discussed at the Pre-Bid Showing. Ditches shall be free draining upon completion of construction. Length of ditch may be adjusted to meet on site conditions. R-5 limestone riprap shall be used at a thickness of 1 1/2 feet.

34.0 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 Department of Environmental Protection. 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 DEP. 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 DEP Specialist. It shall be the vendor's responsibility to repeat the procedures under REVEGETATION until a permanent vegetation is established. The acreage quantities in this contract are for bidding purposes only.

A warranty period of one (1) year shall commence upon completion and payment of the revegetation item of the contract. No payment will be made for additional seeding necessary to comply with warranty requirements. The warranty period will be extended for one (1) year from the date of the last augmented seeding done by the contractor. The performance bond and labor and materials bond shall remain in effect throughout the warranty period. The Standards for Evaluating Vegetative Cover as presented in Title 38, CSR2, 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 DEP for this warranty work.

34.1 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

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- 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 10 ton/acre.

34.2 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.

34.3 MULCH

Acceptable mulch for this project is wood fiber, hay, or straw.
 Mulch: Wood Fiber @ 1.0 ton/Acre
 Hay or straw mulch may be substituted at a rate of 2 tons/Acre

34.4 VEGETATIVE SPECIES

Seeding rate required is for pure live seed (pls) in pounds per acre. The use of annuals or cover crops will not be considered for vegetative success.

NORTH MIX

<u>VEGETATIVE SPECIES</u> ¹	RATE/ACRE ¹
Orchard Grass	@ 15 lbs/acre
Birdsfoot Trefoil ²	@ 15 lbs/acre
Yellow Sweet Clover	@ 5 lbs/acre
Red Clover	@ 10 lbs/acre
Ky 31 Fescue	@ 15 lbs/acre
Foxtail Millet ³	@ 12 lbs/acre
Wheat or Rye ⁴	@ 50 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.

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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 South Railroad St., 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.

EXAMINATION OF BID PACKAGE AND SITE OF WORK

The bidder is required to examine, carefully, the bid package (plans, specifications, supplemental specifications, contract forms, etc.) and the site of the work contemplated. The submission of a bid shall be considered prima facie evidence that the bidder has made such examination and has judged for and satisfied themselves as to the character, quantity, and quality of work to be performed and the materials required to be furnished under the contract.

PREBID CONFERENCE

Only the prospective bidders on the sign-in sheet in attendance for the entire Pre-Bid Conference will be eligible to submit bids for consideration of this project.

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.

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 discrepancy appear, the decision of the Director of Division of Land Restoration shall be final.

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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 blasting regulations must be adhered to.

LIFE OF CONTRACT

The purchase order contract becomes effective on the starting date as specified in the notice to proceed as issued by the Department of Environmental Protection. This contract extends for a period of one (1) year and may be renewed until such "reasonable time" thereafter as is necessary to complete the payment therefore. A responsible Contractor's Agent 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.

WORK PERFORMANCE PERIOD

The work performance period is a defined portion of the contract in which all items shall be completed. The work performance period is to be performed within 365 calendar days. Extensions may be granted based upon contractor's performance, weather conditions and site-specific site conditions.

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.

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 foreman or the on-the-ground supervisor must be in attendance.

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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. No changes will be honored without prior approval from the Program Supervisor.

SILENCE OF SPECIFICATIONS

The apparent silence of these Specifications, Supplemental Specifications, plans and Special Provisions as to any detail, or the apparent omission from them of a detailed description concerning any point shall be regarded as meaning that only material and workmanship of acceptable quality are to be used.

LAWS TO BE OBSERVED

The Contractor shall keep fully informed of all Federal and State laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders and decrees; and shall protect and indemnify the State and its representatives against any claim or liability arising from or based on the violation of any such laws, ordinances, regulations, orders, or decrees, whether by themselves, their subcontractors or their employees.

PERMITS, LICENSES AND TAXES

The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work.

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.

WATER QUALITY CONTROL

Shall commence with initial start-up of the project and remain in effect for the extent of the backfilling, regrading and revegetation activity. DEP obtains a storm water permit for each project from the Water Resources Division. (General Water Pollution Control Permit WVO115924) The Contractor is responsible for performing the best management practices. Adequate facilities shall be installed, operated and maintained using the best management practices of the U.S. Environmental Protection Agency's Non-Point Source (NPS) Program for sediment control during the active reclamation. The contractor shall take any and all steps necessary to prevent erosion or silting problems from occurring and to minimize pollution or sedimentation of the stream. If any such problems develop, the contractor shall be responsible to take immediate corrective action. No separate payment for this work will be honored. All impounded waters which require removal during reclamation, shall be pumped with appropriate measures taken to prevent erosion from the discharge. The contractor shall be responsible for treatment of said waters to meet pH standards. The water shall be discharged only when the quality meets a pH equivalent to the pH of the receiving stream but not less than 6.0.

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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. 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. 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.

MAINTENANCE DURING CONSTRUCTION

The contractor shall maintain the work 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.

FINAL INSPECTION

A final inspection meeting by the Department of Environmental Protection's Specialist and the contractor is required for the construction phase and prior to demobilization.

ACREAGE QUANTITIES

The acreage quantities in this contract are for bidding purpose and are 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.

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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.

MOBILIZATION/DEMobilIZATION shall be invoiced at fifty percent (50%) with the first invoice and the last 50% invoiced after demobilization and acceptance of the road abandonment or final invoice. Demobilization must have written approval.

SPILL CONTAINMENT AREA shall not exceed \$1,000.00 and will be payable in two payments. The first fifty percent (50%) payable with the first invoice and the remainder payable when all fuel tanks, containers and etc., are removed from the site.

Lump sum items shall be percentage payments based on work completed at time of invoice and paid upon acceptance by the Department of Environmental Protection.

Unit items shall be invoiced by specified units completed and accepted by the DEP.

ROAD ABANDONMENT shall be included in the final construction invoice.

FAILURE TO COMPLETE ON TIME AND LIQUIDATED DAMAGES

Time is an essential element of the Contract and it is important that the work be completed within the time specified. The cost to the Department of the administration of the Contract, including engineering, inspection and supervision, will increase as the time required to complete the work is increased.

The work performance period as specified in the contract's Notice to Proceed shall be complied with or result in liquidated damages. Such damages shall be assessed at an amount of two hundred and fifty dollars (\$250.00) per day for each and every day beyond the work performance period as specified in the Notice to Proceed. The total amount of daily charges will be deducted from any moneys due the Contractor, not as a penalty but as liquidated damages.

REVEGETATION AND WARRANTY

The seeding date shall be at the discretion of the contractor once an approved seedbed has been prepared. In all cases a permanent vegetative cover capable of supporting the post-mining land use must be established. A warranty period of one (1) year shall commence upon completion and payment of the revegetation item of the contract. No payment will be made for additional seeding necessary to comply with warranty requirements. The warranty period will be extended for one (1) year from the date of the last augmented seeding done by the contractor. The performance bond and labor and materials bond shall remain in effect throughout the warranty period. The Standards for Evaluating Vegetative Cover as presented in Title 38, CSR2, 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 DEP for this warranty work.

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 DEP contact person.

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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 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.

CANCELLATION

The performance of work under contract may be terminated by the State in whole, or from time to time in part whenever the State shall determine that such termination is in the best interest of the State. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of work under the Contract is terminated and the date upon which such termination becomes effective.

When contracts, or any portion thereof, are terminated before completion of all items of work in the Contract, payment will be made for the actual number of units or items of work completed and accepted at the contract unit price. No claim for loss of anticipated profits will be considered. Reimbursement for organization of the work, when not otherwise included in the Contract, and moving equipment to and from the job will be considered where the volume of work completed and accepted is too small to compensate the Contractor for these expenses under the contract unit prices, the intent being that an equitable settlement will be made with the Contractor.

Termination of the Contract or a portion thereof shall not relieve the Contractor of his responsibilities for the completed work, nor shall it relieve his surety of it's obligation for and concerning any just claims arising out of the work performed.

This contract may be cancelled in whole or in part in writing by the Director of Purchasing, without prejudice to any other right or remedy it may have, provided that the contractor is given not less than thirty (30) calendar days written notice, (delivered by certified mail, return receipt requested) of intent to terminate. This contract objective is to comply with the reclamation laws of this state and must be expedient to meet the time requirements for reclamation of revoked surface mine permits.

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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,

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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

- (a) 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.
- (b) Wood. Sign face shall be ¾" X 4' X 8' Marine Exterior plywood, and posts and cross braces shall be treated.
- (c) Hardware. All hardware shall be manufactured from good, commercial-quality material and be rust resistant such as galvanized coated.

Execution

- (a) 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.

- (b) 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.



STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Joe Manchin, III
Governor



Stephanie Timmermeyer,
Cabinet Secretary



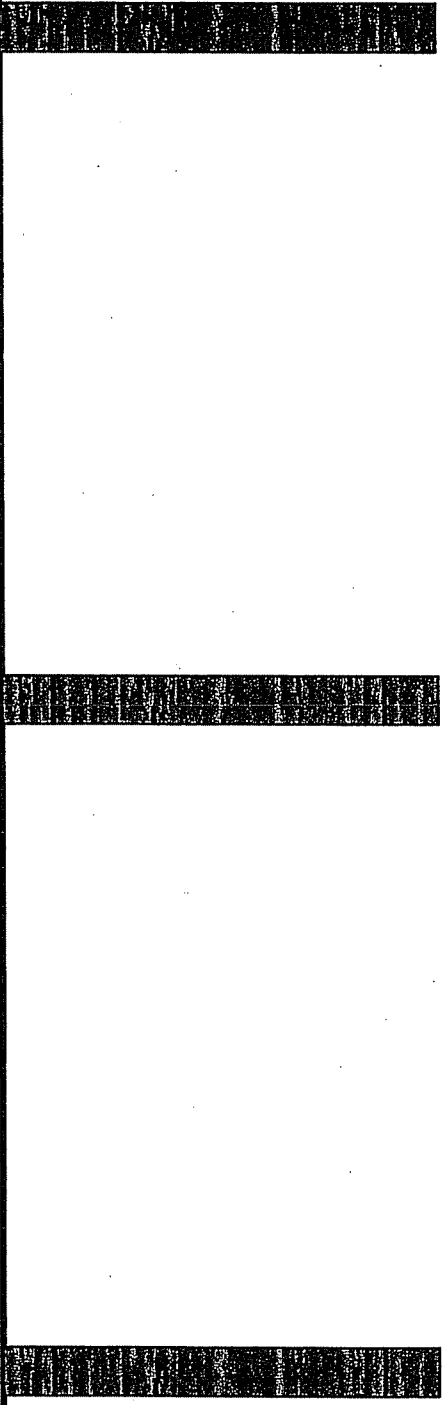
Ken Ellison,
Director

Division of Land Restoration
Office of Special Reclamation

Project Cost: \$XXX,XXX.00

Funding provided by the Special Reclamation Coal Tax paid by WV Coal Mine Companies

Permit Name	
Permit Number	
Contractor: Joe Smith Contracting	Project Start Date: 01/01/01



77 1/4"

27 3/4"

18"

2 1/4"

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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Office of Special Reclamation

Project Cost: \$XXX,XXX.00
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Permit Name
Permit Number

Contractor: Joe Smith Contracting
Project Start Date: 01/01/01

17 1/4"

1 1/8"

15 3/4"

7 7/8"

3 3/4"

7 7/8"

3"

8 5/8"



Joe Manchin, III
Governor



Stephanie Timmermeyer,
Cabinet Secretary



Ken Ellison,
Director

73 7/8"

36"

36"

48"

6"

6"

96"



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Director

Permit Name
Permit Number

Project Start Date: 01/01/01

Contractor: Joe Smith Contracting

81 3/8"

7 7/8"

9 3/8"

5 1/2"

48"

6"

2 1/4"

1 1/4"

2 1/4"

3 3/4"

2 1/4"

1 1/4"

2 1/4"

3 3/4"

1 1/4"

4 7/8"

2 1/4"

1 1/4"

2 1/4"

4 7/8"

1 1/4"

3 3/4"

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Permit Name

Permit Number

Contractor: Joe Smith Contracting

Project Start Date: 01/01/01



1 1/4"

17 1/4"

1/4"

3/4"

1 1/4"

Joe Manchin, III
Governor



9 1/4"

1"

3/4"

1"

Stephanie Timmermeyer,
Cabinet Secretary



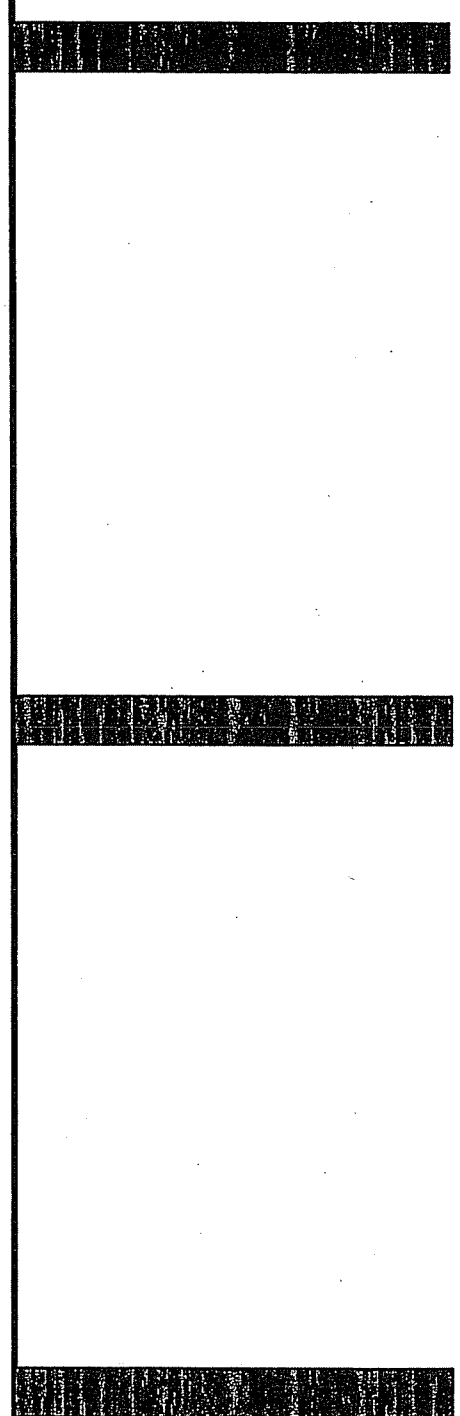
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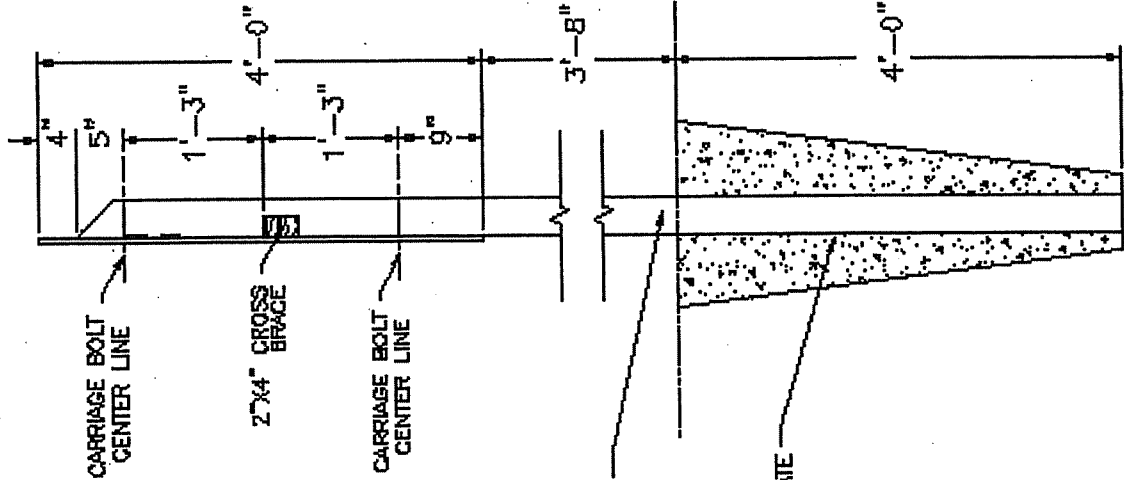
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3/4"

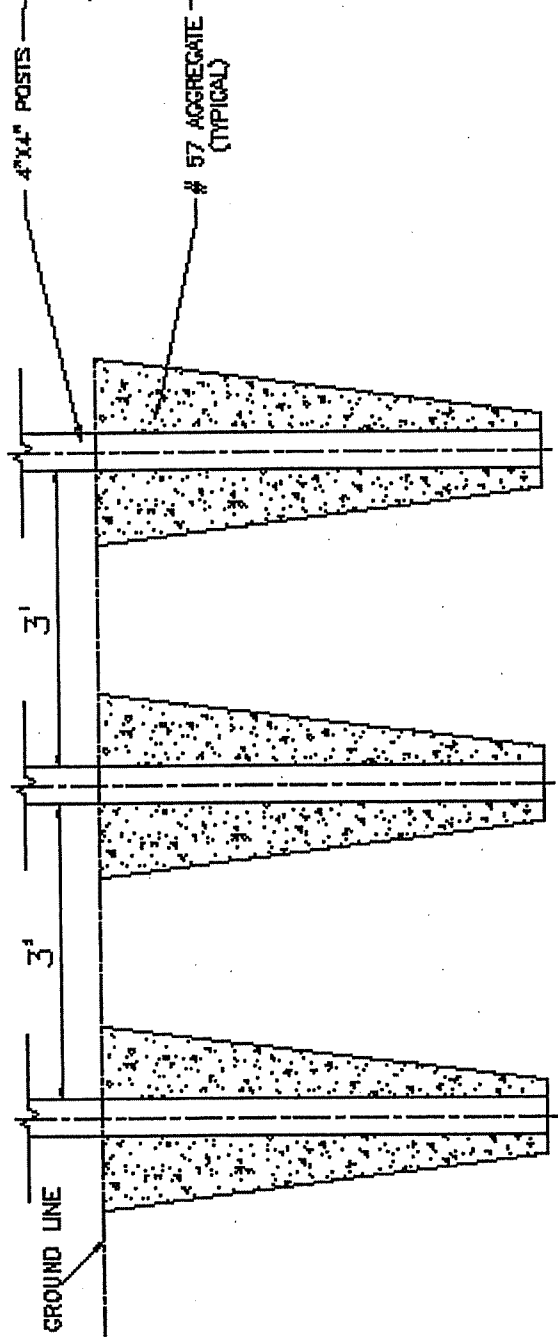
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Ken Ellison,
Director





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

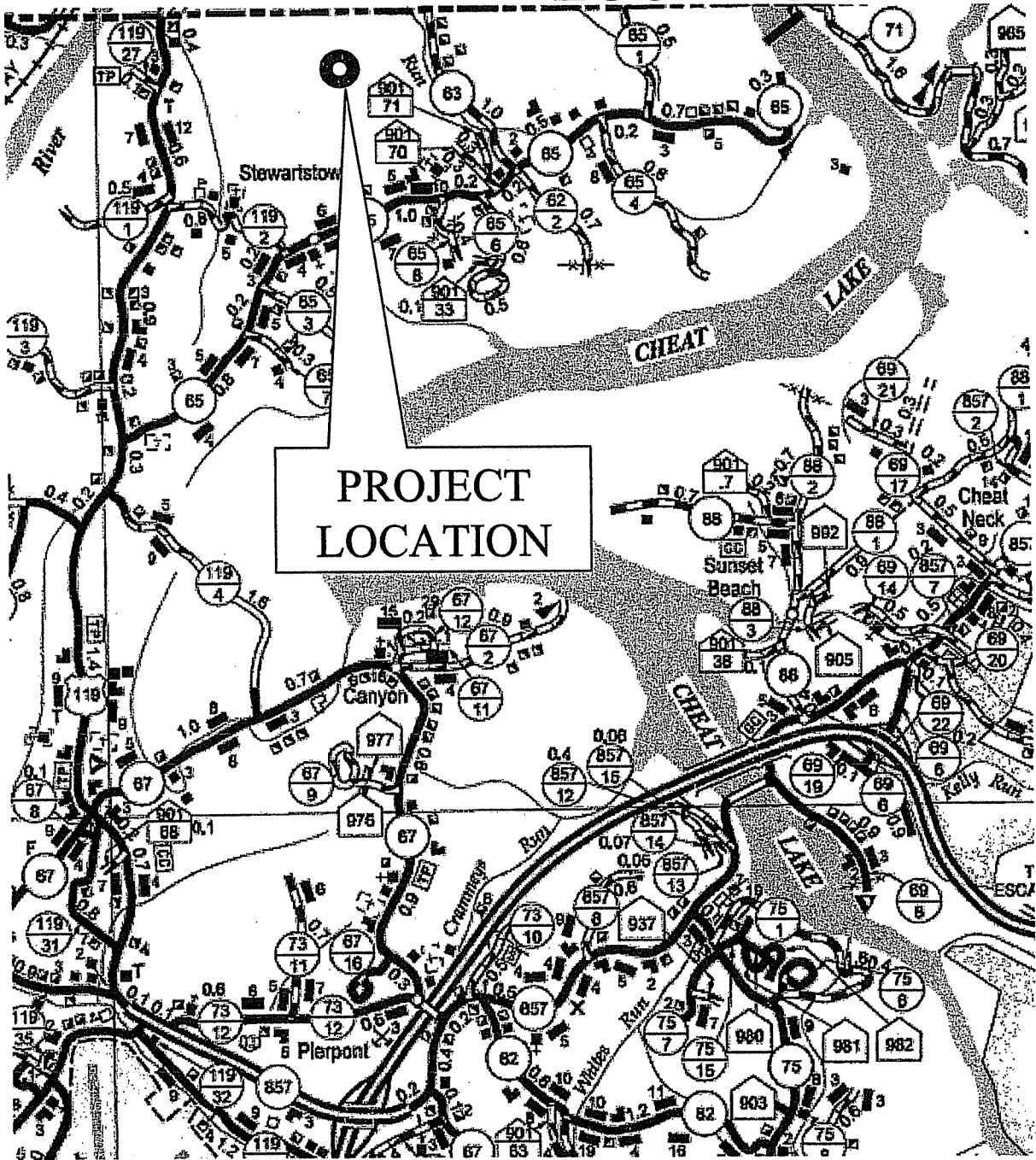


PROJECT SIGN
NOT TO SCALE

Stewartown Coal Corp

Permit No. 67-78

LOCATION MAP



From Interstate 68 Peirpont Exit, North on 857/US Route 119 approximately 4.1 miles to County Route 65. Right on County Route 65 approximately 2.4 miles. North (left) onto County Route 63 approximately 0.5 mile to entrance road on left.

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POLY FLEX LINER 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 of Contractor Work Activities

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 the manufacturer's 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 with Bid Documents

1. List of material properties.
2. Manufacturing quality control program.

B. Submittals After Contract Award, Prior to Liner Installation

1. Copy of quality control certificates issued by the resin supplier.
2. 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 With Bid Documents

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.

POLY FLEX LINER SPECIFICATIONS

c. Thickness and quantity of the installed geomembrane.

B. Submittals by Successful Bidder Prior to Commencement of Installation

1. Proposed installation panel layout.
2. Resume of the field installation supervisor and master seamer.

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 1505 or ASTM D 792	0.935 - 0.940	0.915 - 0.926
Melt Index, g/10 min.	ASTM D 1238 Condition E	<0.4	<0.6

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

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POLY FLEX LINER SPECIFICATIONS

width of the roll, lot and roll numbers, and name of manufacturer.

Applicable Test Methods

American Society for Testing and Materials (ASTM)

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 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 5721	Practice for air-oven aging of polyolefin geomembranes
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

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 12	Measurement of the asperity height of textured geomembranes using a depth gauge

The geomembrane rolls shall meet the following specifications:

POLY FLEX LINER SPECIFICATIONS
SMOOTH HDPE GEOMEMBRANE (ENGLISH UNITS)

Property	Test Method	Minimum Average Values				
		30 mil	40 mil	60 mil	80 mil	100 mil
Thickness, mils	ASTM D 5199					
minimum average		30	40	60	80	100
lowest individual reading		27	36	54	72	90
Sheet Density, g/cc	ASTM D 1505/D 792	0.940	0.940	0.940	0.940	0.940
Tensile Properties ¹	ASTM D 6693					
1. Yield Strength, lb/in		63	84	126	168	210
2. Break Strength, lb/in		114	152	228	304	380
3. Yield Elongation, %		12	12	12	12	12
4. Break Elongation, %		700	700	700	700	700
Tear Resistance, lb	ASTM D 1004	21	28	42	56	70
Puncture Resistance, lb	ASTM D 4833	54	72	108	144	180
Stress Crack Resistance ² , hrs	ASTM D 5397 (App.)	300	300	300	300	300
Carbon Black Content ³ , %	ASTM D 1603	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon Black Dispersion	ASTM D 5596	--Note 4--				
Oxidative Induction Time (OIT)						
Standard OIT, minutes	ASTM D 3895	100	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	80
UV Resistance ⁵	GRI GM11					
High Pressure OIT ⁶ - % retained after 1600 hrs	ASTM D 5885	50	50	50	50	50
Seam Properties	ASTM D 6392 (@ 2 in/min)					
1. Shear Strength, lb/in		57	80	120	160	200
2. Peel Strength, lb/in - Hot Wedge		45	60	91	121	151
- Extrusion Fillet		39	52	78	104	130
Roll Dimensions						
1. Width (feet):		23	23	23	23	23
2. Length (feet)		1000	750	500	375	300
3. Area (square feet):		23,000	17,250	11,500	8,625	6,900
4. Gross weight (pounds, approx.)		3,470	3,470	3,470	3,470	3,470

1 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.
2 The yield stress used to calculate the applied load for the SP-NCTL test should be the mean value via MQC testing.
3 Other methods such as ASTM D 4218 or microwave methods are acceptable if an appropriate correlation can be established.
4 Carbon black dispersion for 10 different views: Nine in Categories 1 and 2 with one allowed in Category 3.
5 The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.
6 UV resistance is based on percent retained value regardless of the original HP-OIT value.

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POLY FLEX LINER SPECIFICATIONS

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. 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.

C. 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.

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.

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POLY FLEX LINER SPECIFICATIONS

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.	GRI GM12	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 High Pressure OIT	GRI GM11 ASTM D 5885	per each formulation

C. 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:

- Diameter ASTM D 5199

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POLY FLEX LINER SPECIFICATIONS

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

D. 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.

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

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the supporting soil.

- 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 precede 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

For both smooth and textured seams the strength of two out of three 1.0 inch (25 mm) wide strip specimens should meet or exceed values given in this specification. The third must meet or exceed 80% of the given values. The shear percent elongation should exceed 50%. The assumed gauge length is considered to be the unseamed sheet material on either side of the welded area. Elongation measurements should be omitted for field testing. In addition, the peel separation should not exceed 25% based on the proportion of area of separated bond to the area of the original bonding. Regarding the locus-of-break patterns of the different seaming methods in shear and peel, the following are unacceptable break codes per their description in the ASTM D 6392. In this regard, SIP is an acceptable break code.

Unacceptable Break Codes

Hot Wedge: AD and AD-BRK > 25%

Extrusion Fillet: AD1, AD2 and AD-Weld (unless strength is achieved)

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POLY FLEX LINER SPECIFICATIONS

3.4.4 Non-Destructive Seam Testing

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

A. Vacuum Box Testing

Equipment for testing extrusion seams shall be comprised of the following:

1. A vacuum box assembly consisting of a rigid housing, a transparent viewing window, a soft rubber gasket attached to the bottom, port hole or valve assembly, and a vacuum gauge.
2. Soapy solution in a plastic bucket with a mop.

The following procedures shall be followed by the installer:

1. Excess sheet overlap shall be trimmed away.
2. Wet a strip of geomembrane approximately 12 inches wide by the length of box with the soapy solution.
3. Place the box over the wetted area and compress.
4. Create a vacuum of 3 - 5 psi.
5. Ensure that a leak tight seal is created.
6. For a period of approximately 10 seconds, examine the geomembrane through the viewing window for the presence of animated soap bubbles.
7. If no animated bubbles appear after 10 seconds, close the vacuum valve and open the bleed valve, move the box over the next adjoining area with a minimum 3 inches overlap and repeat the process.
8. All areas where animated soap bubbles appear shall be marked, repaired and then retested.

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 seams shall be spark tested according to the spark tester manufacturer's procedures.

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

Equipment for testing double fusion seams shall be comprised of the following:

1. An air pump equipped with pressure gauge capable of generating and sustaining a pressure between 25 and 30 psi.
2. A pressure gauge equipped with a sharp hollow needle.

The following procedures shall be followed by the installer:

1. Seal one end of the seam to be tested.
2. Insert needle or other approved pressure feed device through the sealed end of the channel created by the double wedge fusion weld.
3. Energize the air pump to verify the unobstructed passage of air through the channel.
4. Seal the other end of the channel.
5. Energize the air pump to a pressure between 25 and 30 psi, close valve, allow 2 minutes for the injected air to come to equilibrium in the channel, and sustain pressure for approximately 5 minutes.

POLY FLEX LINER SPECIFICATIONS

6. If loss of pressure exceeds 4 psi, or pressure does not stabilize, locate faulty area, repair and retest.
7. If pressure does not drop below the acceptable value after five minutes, cut the air channel open at the opposite end from the pressure gauge. The air channel should deflate immediately indicating that the entire length of the seam has been tested.

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

The inspector shall test ten 1-inch wide specimens from his sample, five specimens for shear strength and five for peel strength.

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 for defects, holes, blisters, undispersed raw materials, and any sign of contamination by foreign matter. 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

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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 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, large cuts and undispersed raw materials 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. Grinding 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 shall operate directly on the geomembrane. The use of lightweight machinery (i.e., 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 finished.
2. Verification of the adequacy of all field seams and repairs, including associated testing, is complete.

END OF SECTION

BUYER CB-23	PAGE 049	REQ. OR P.O. No. DEP 13575
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POLY FLEX LINER SPECIFICATIONS

POLY-FLEX LINER SPECIFICATIONS

INHERENT PROPERTIES OF POLYETHYLENE LINERS

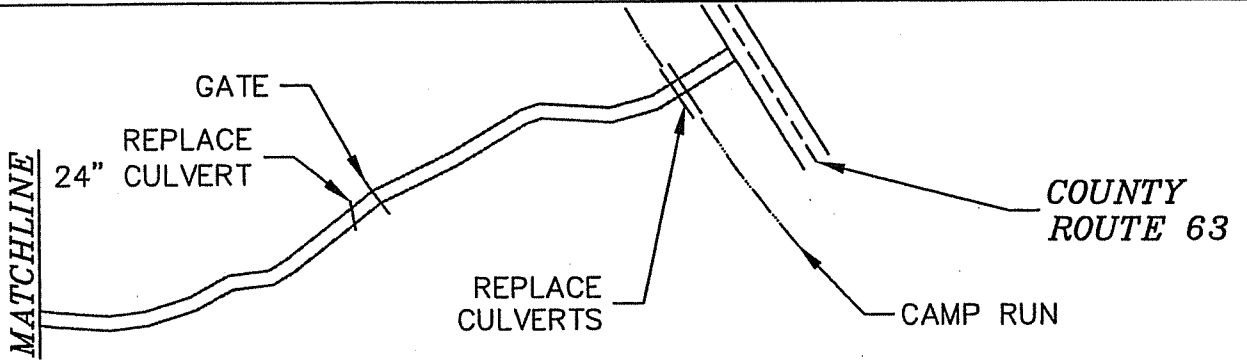
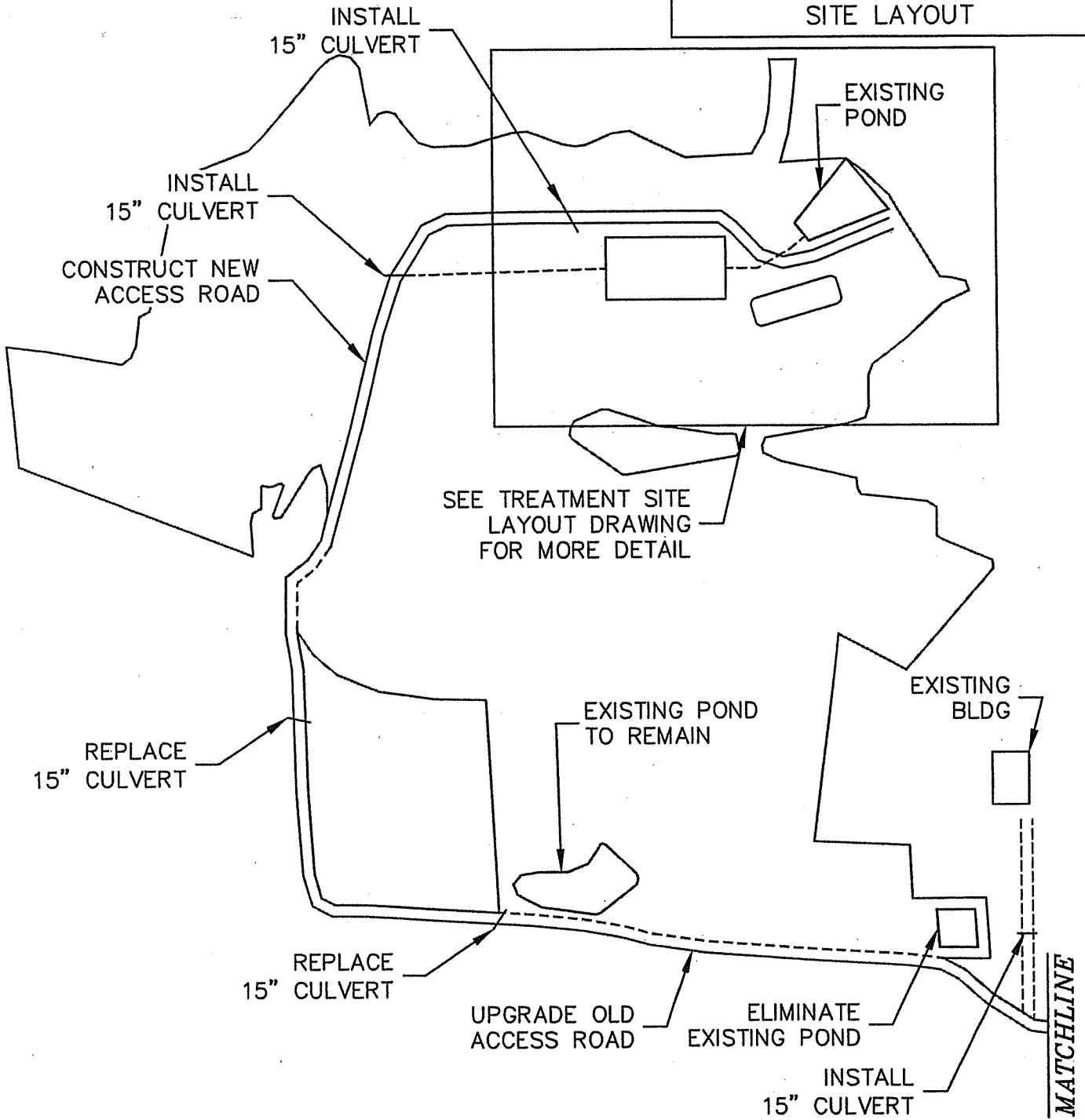
The properties listed in the table below are primarily inherent on the resin type used to produce the liner or are directly proportional to the thickness of the liner and less dependent on the manufacturing method. Therefore, these properties will not change from roll to roll or even lot to lot. Hence, they should not be included as part of routine quality control testing. The exception to this is Oxidative Induction Time. This test is a measurement of the amount of anti-oxidant added to the resin to produce the finished sheet. This test can function both as a performance test and a quality control test. As a quality control test it is desirable to run the test at high temperatures to keep the test duration short. This test is routinely run at the time of manufacture. As a performance test it is desirable to run the test at lower temperatures. Testing at lower temperatures cannot be done for quality control purposes.

The information given below is based on nominal values. Individual test results may vary from these values depending upon the reproducibility of the test.

NOMINAL PROPERTIES

TEST DESCRIPTION	TEST METHOD	UNITS	HDPE	LLDPE
Modulus of Elasticity	ASTM D 6693	lb/in ²	110,000	45,000
Secant Modulus	ASTM D 5323	lb/in ²	60,000	45,000
Volatile Loss	ASTM D 1203	%	0.1	0.1
Dimensional Stability	ASTM D 1204	%	+/- 0.5	+/- 1.0
Water Absorption (24 hr @ 23 °C)	ASTM D 570	% change	0.1	0.1
Coefficient of Linear Thermal Expansion	ASTM D 696	(cm/cm • °C)	1.2 x 10 ⁻⁴	1.4 x 10 ⁻⁴
Moisture Vapor Transmission Rate (100 °F and 100% relative humidity)	ASTM E 96	g/m ² ·day 100 mil	0.17	—
		80 mil	0.20	0.25
		60 mil	0.26	0.33
		40 mil	0.39	0.45
		30 mil	0.50	0.57
Low Temperature Brittleness	ASTM D 746	°F	<-112	<-112
Oxidative Induction Time	ASTM D 3895	minutes @ 200 °C	100	100
		minutes @ 150 °C	2000	2000
Multi-Axial Tension	ASTM D 5617	stress, lb/in ²	2200	1500
		strain, %	18	40+
Melt Index	ASTM D 1238	g/10 minutes	0.20	0.20

SITE LAYOUT



TREATMENT SITE LAYOUT

UPGRADE
COLLECTION
DITCH

INSTALL
15" CULVERT

CONSTRUCT
ACCESS ROAD

COLLECTION
POND

4" DRIVE LINE

6" AUXILIARY LINE

UPGRADE
CHANNEL

TRUCK
TURN-AROUND

AQUAFIX

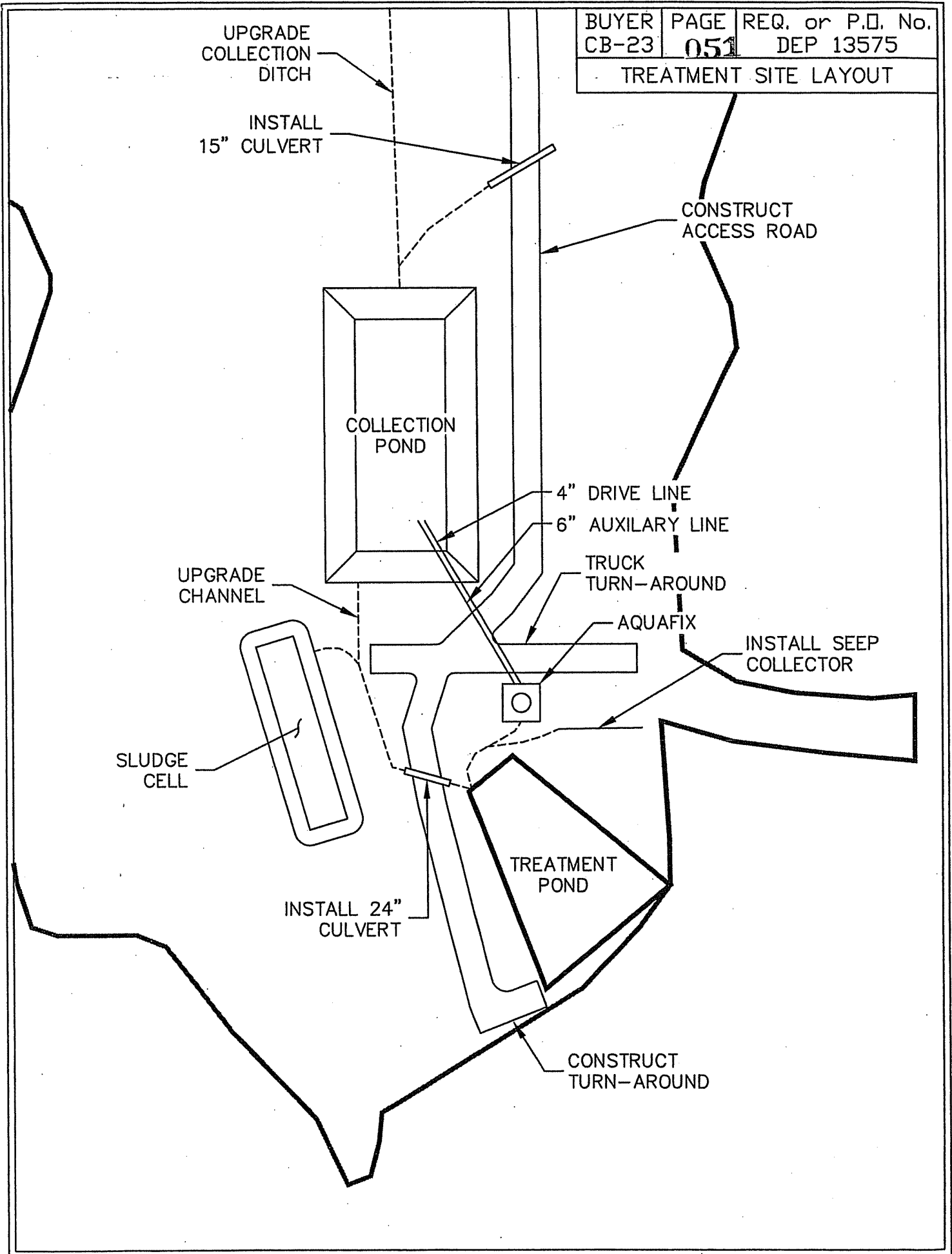
INSTALL SEEP
COLLECTOR

SLUDGE
CELL

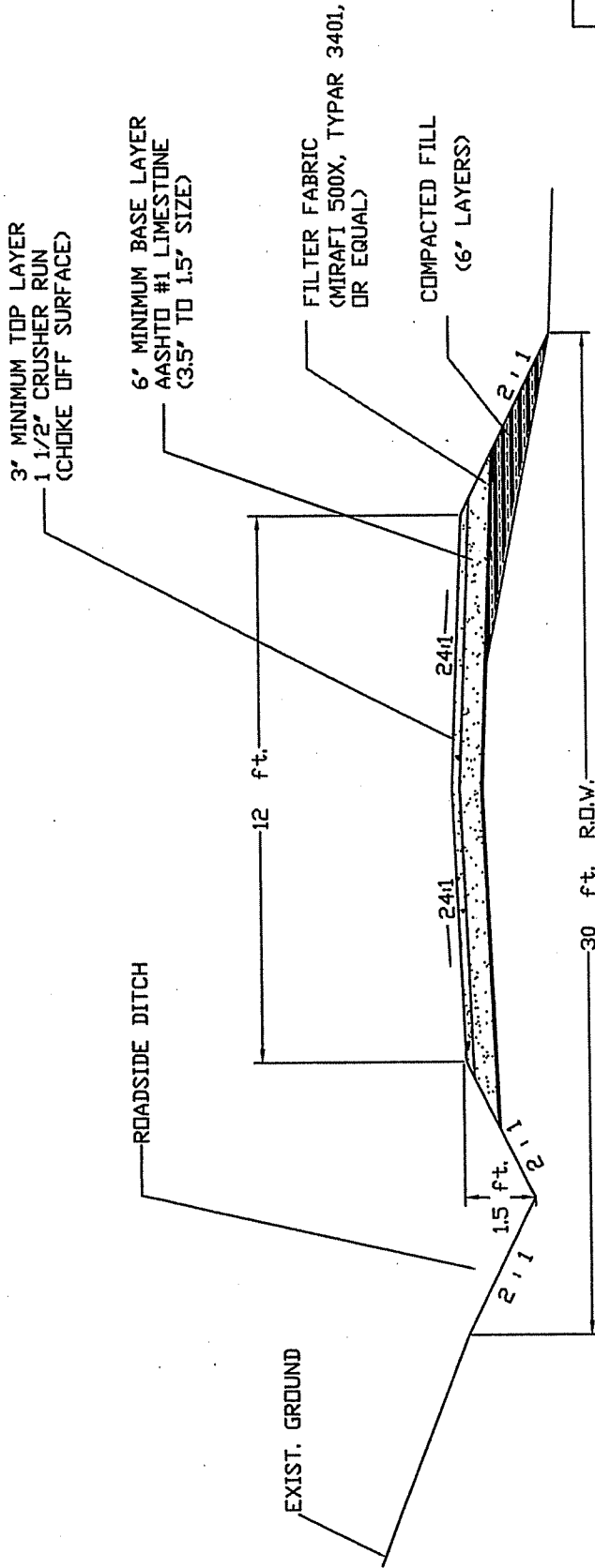
TREATMENT
POND

INSTALL 24"
CULVERT

CONSTRUCT
TURN-AROUND



ACCESS ROAD UPGRADE



TYPICAL SECTION

NOTES: THE EXISTING ROAD SHALL BE REGRADED, SHAPED, AND ROCKED AS NECESSARY TO MEET THESE SPECIFICATIONS.

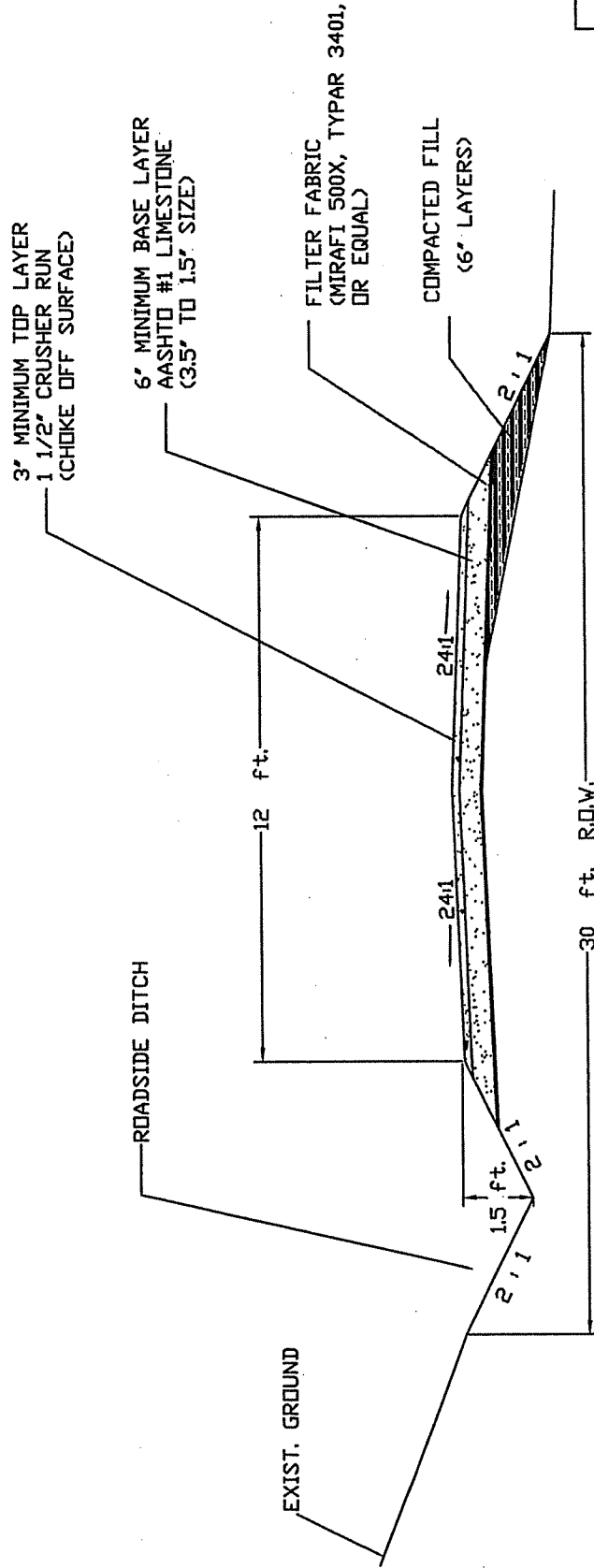
ANY TREES OR BRUSH WITHIN THE 30 FEET R.O.W. OF THE ROAD SHALL BE REMOVED.

ANY OVERHANGING TREE LIMBS IN THE R.O.W. AT A HEIGHT OF 15 FEET OR LESS SHALL BE REMOVED.

THE 6' BASE LAYER OF STONE SHALL BE USED AS NEEDED, AND SHALL BE PAID BY THE TON.

THE FILTER FABRIC SHALL BE USED AS NEEDED, AND SHALL BE PAID BY THE LINEAR FOOT OF ROAD SECTION.

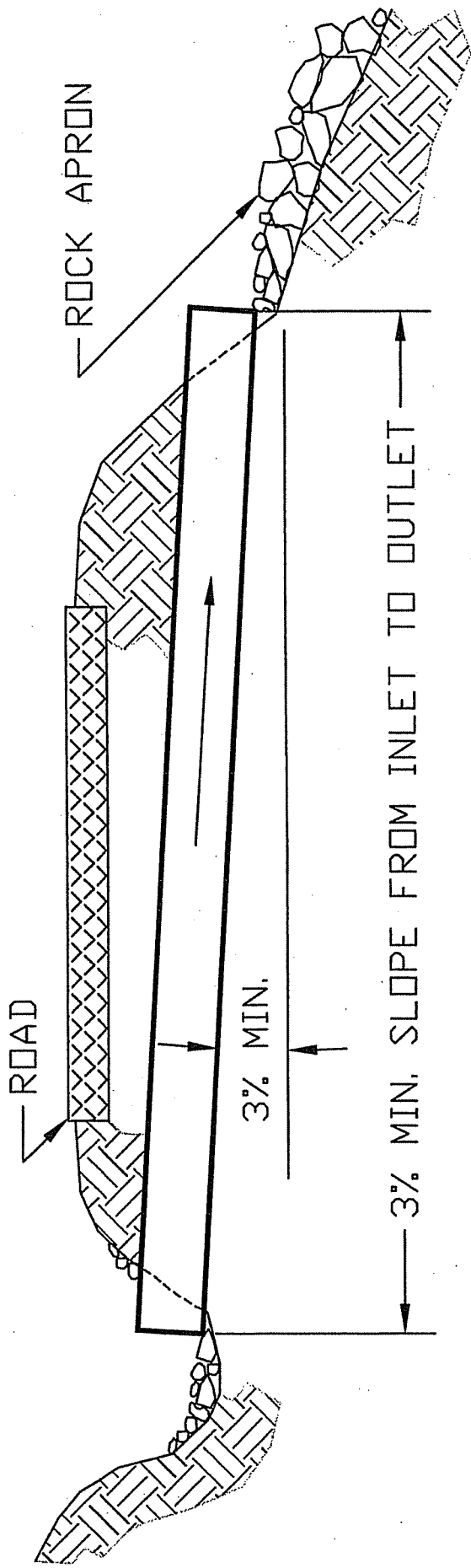
NEW ACCESS ROAD



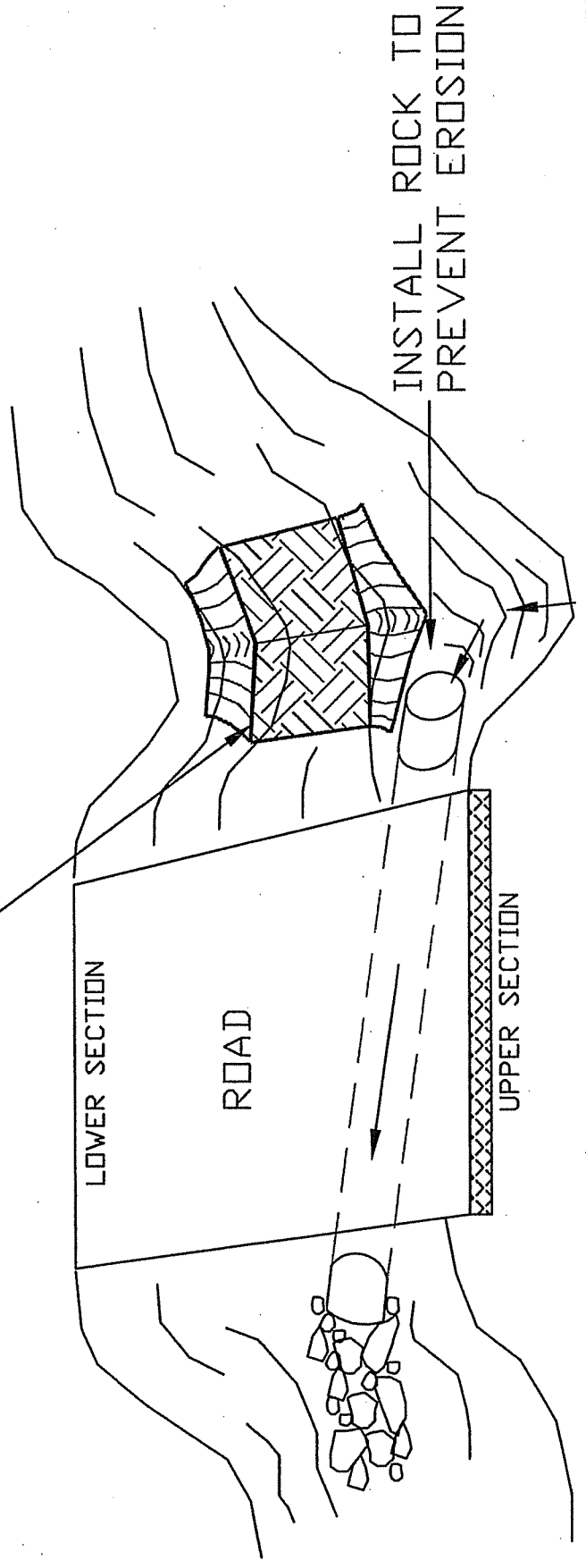
TYPICAL SECTION

NOTES: ANY TREES OR BRUSH WITHIN THE 30 FEET R.O.W. OF THE ROAD SHALL BE REMOVED.
 ANY OVERHANGING TREE LIMBS IN THE R.O.W. AT A HEIGHT OF 15 FEET OR LESS SHALL BE REMOVED.

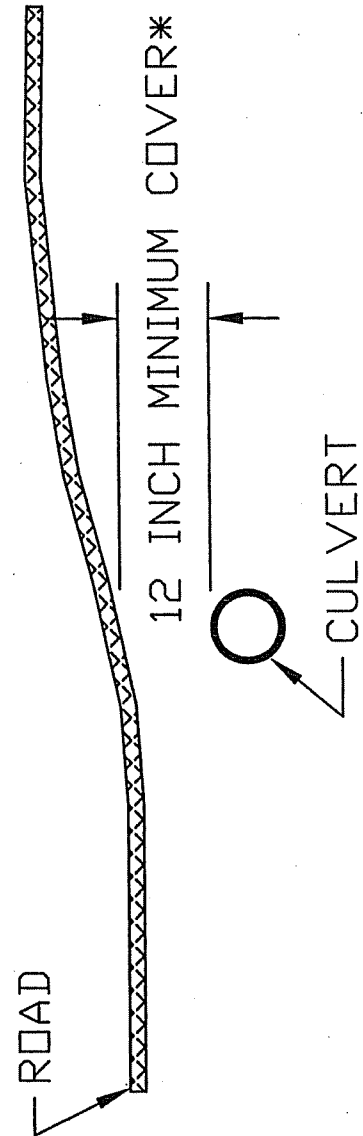
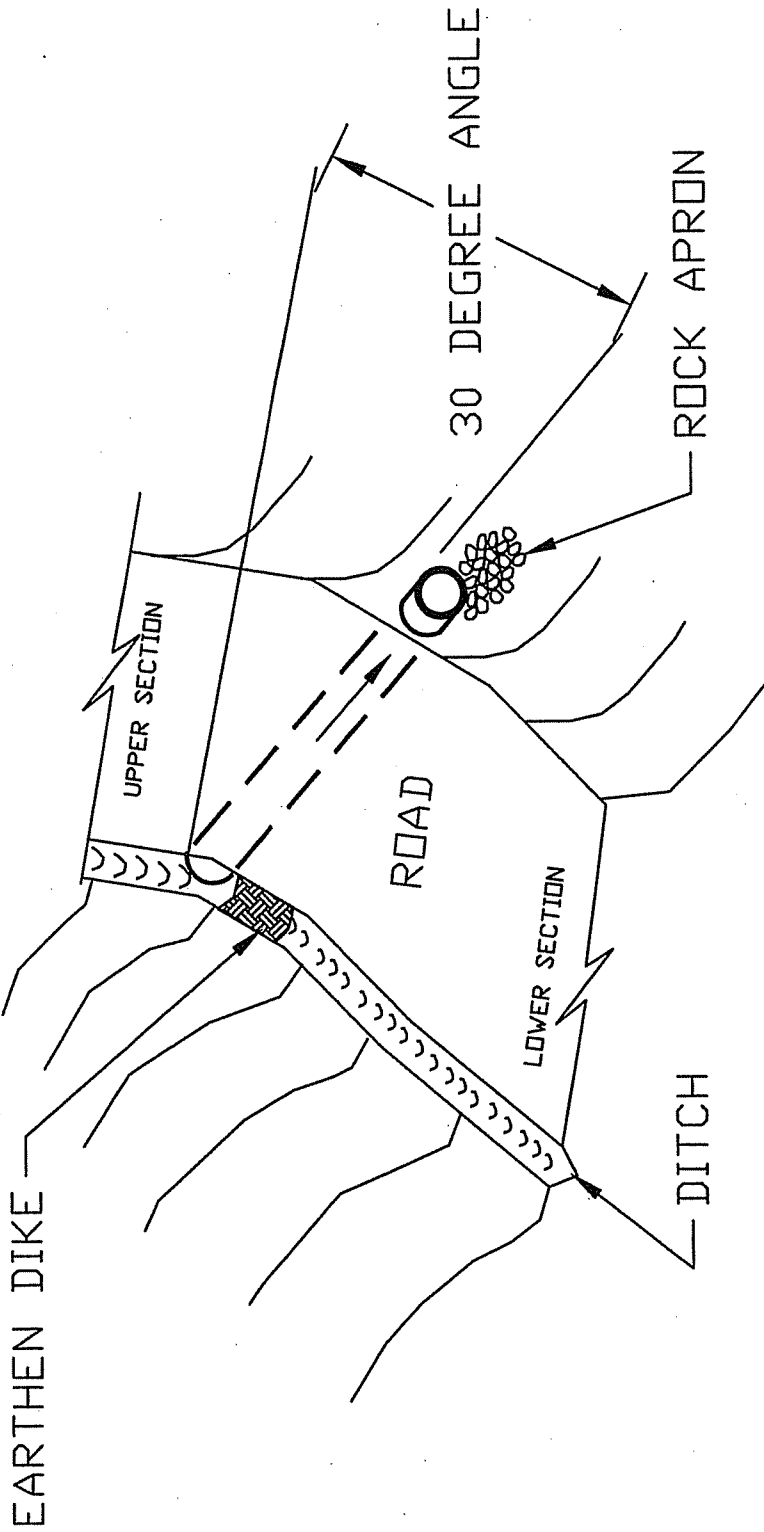
BUYER CB-23	PAGE 053	REQ. or P.O. No. DEP 13575
NEW ACCESS ROAD		



EARTHEN DIKE TO BE INSTALLED IN DITCH
LINE BELOW CULVERT INLET

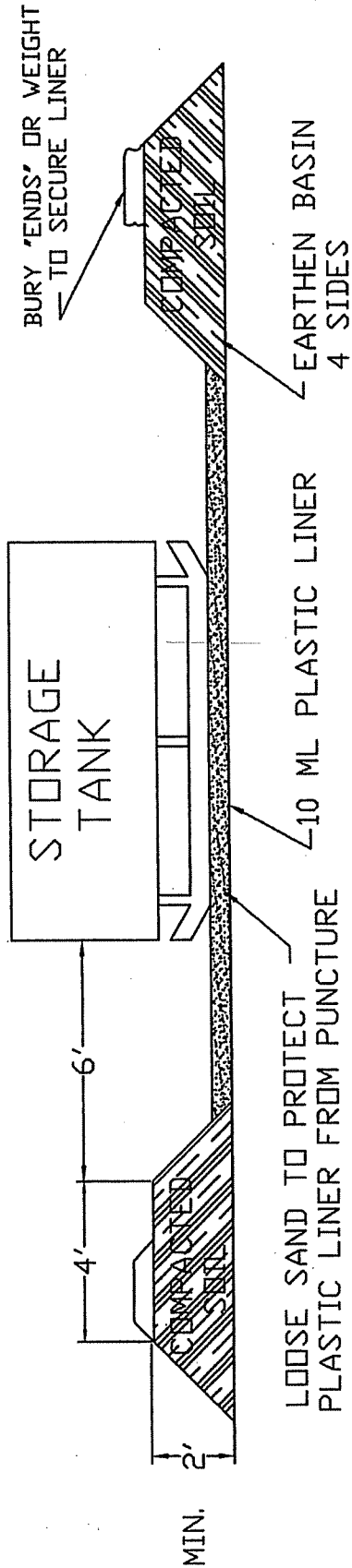


CULVERT INSTALLATION



*OR 1/2 CULVERT DIAMETER, WHICHEVER IS GREATER.

SPILL CONTAINMENT

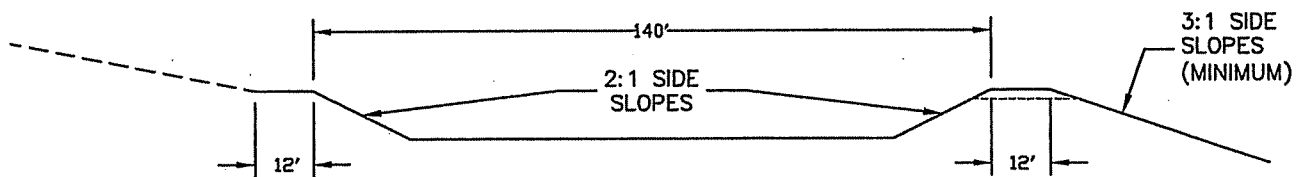
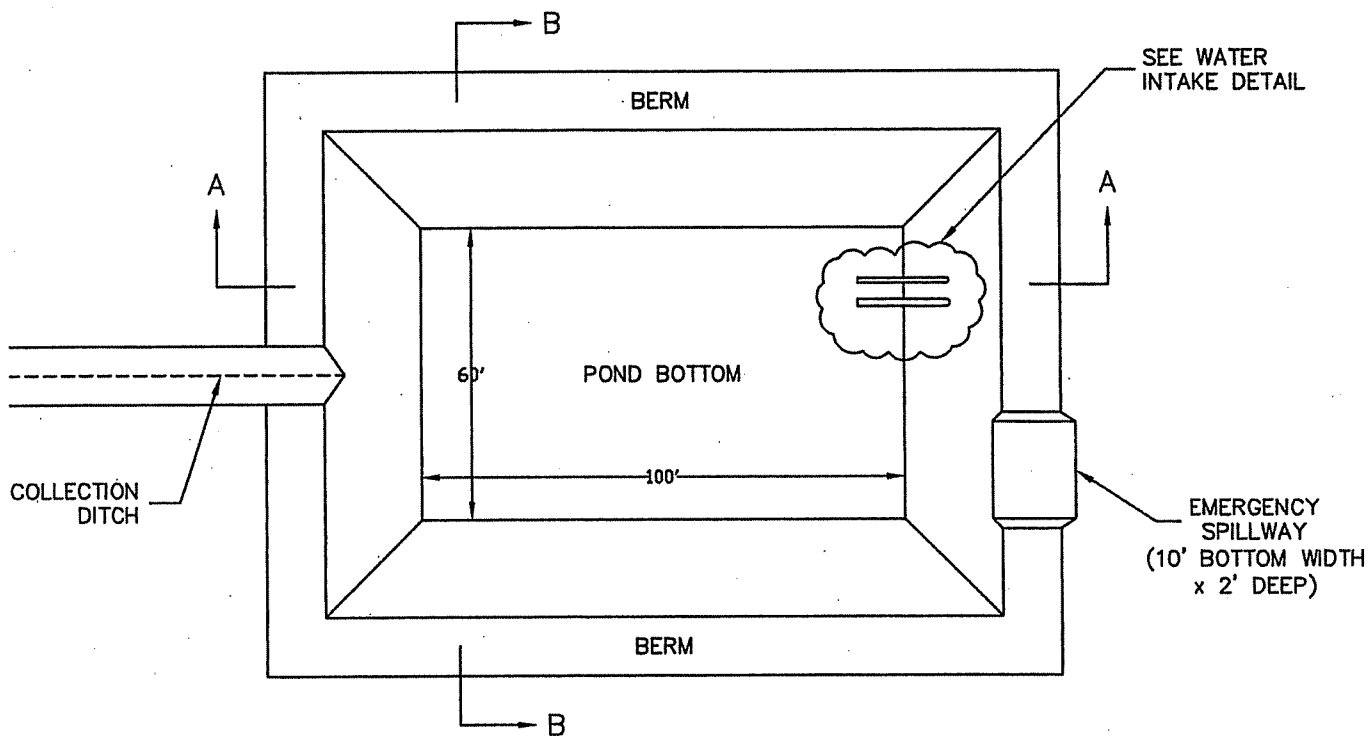


SELECTED HEIGHT OF EARTHEN BERM IS TO BE A TWO (2') FOOT MINIMUM OR ONE HUNDRED TEN PERCENT (110%) OF THE CAPACITY OF THE TANK(S) TOTAL VOLUME WITHIN THE BERM. A SIX (6") INCH FREEBOARD MUST BE INCLUDED.

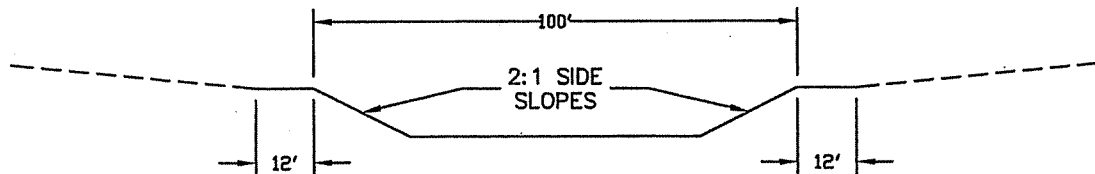
NOTE: A TWO INCH (2") WATER REMOVAL DRAIN SHALL BE LOCATED AT THE LOWEST POINT IN THE BOTTOM OF THE CONTAINMENT VOLUME. IT SHALL CONNECT TO A NORMALLY CLOSED VALVE OUTSIDE THE DIKE. THE VALVE SHALL BE MANUALLY OPERATED AND PROTECTED FROM UNAUTHORIZED OPERATION. RAINWATER CONTAINED WITHIN THIS DIKE SHALL 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.

COLLECTION POND

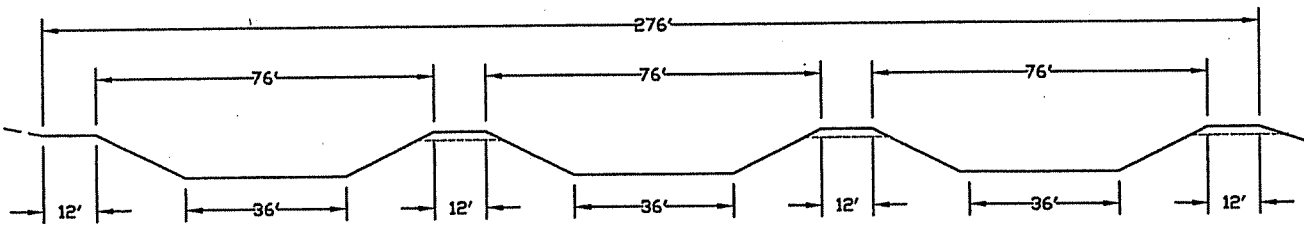
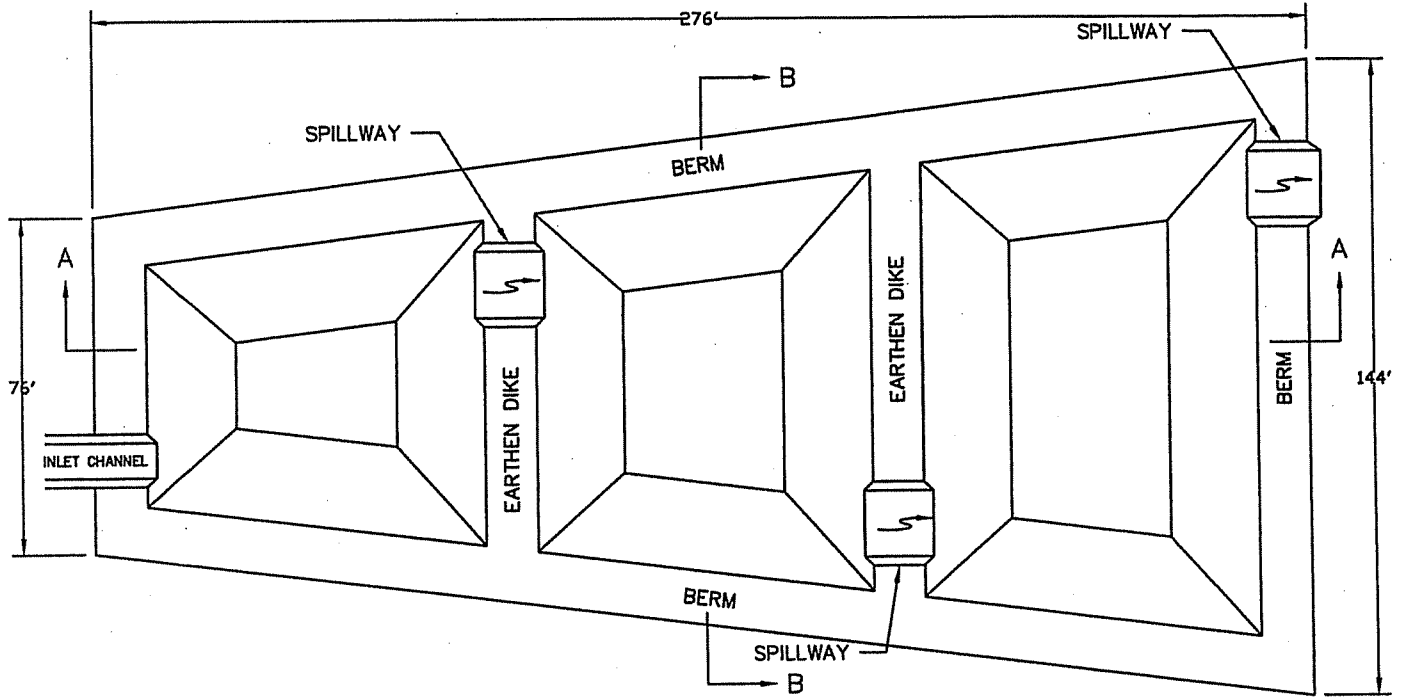


SECTION A-A

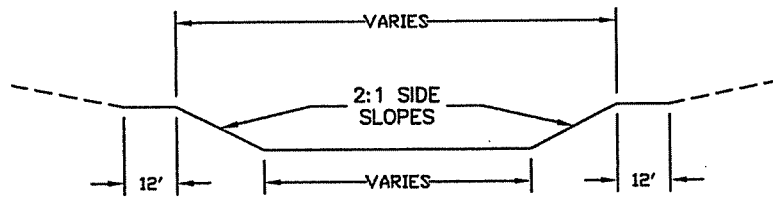


SECTION B-B

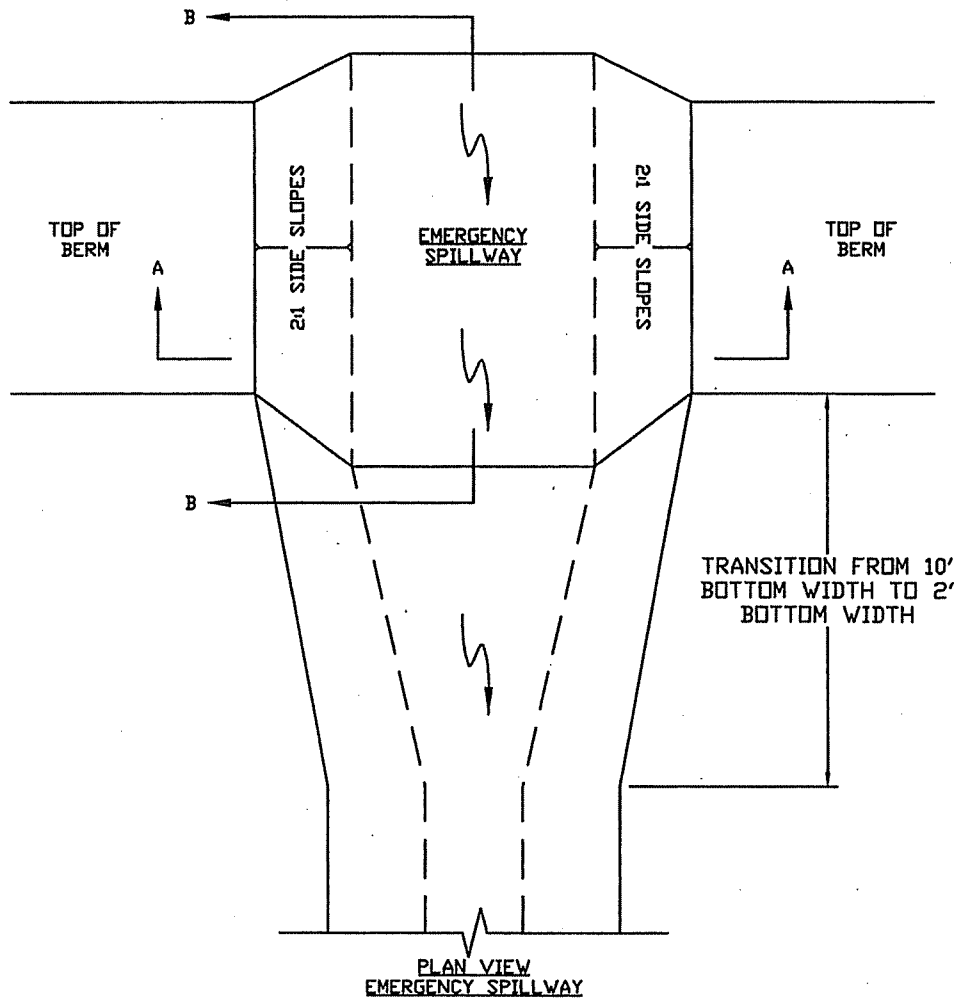
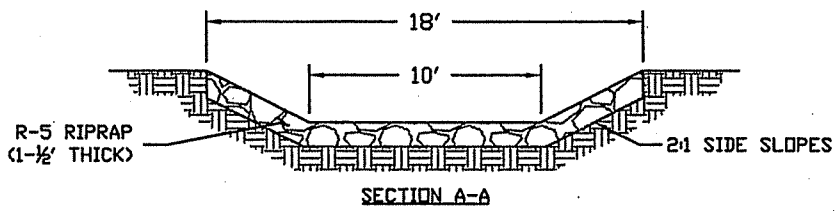
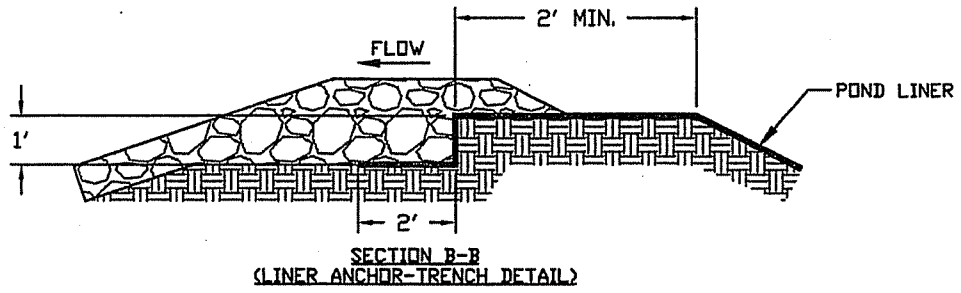
TREATMENT POND

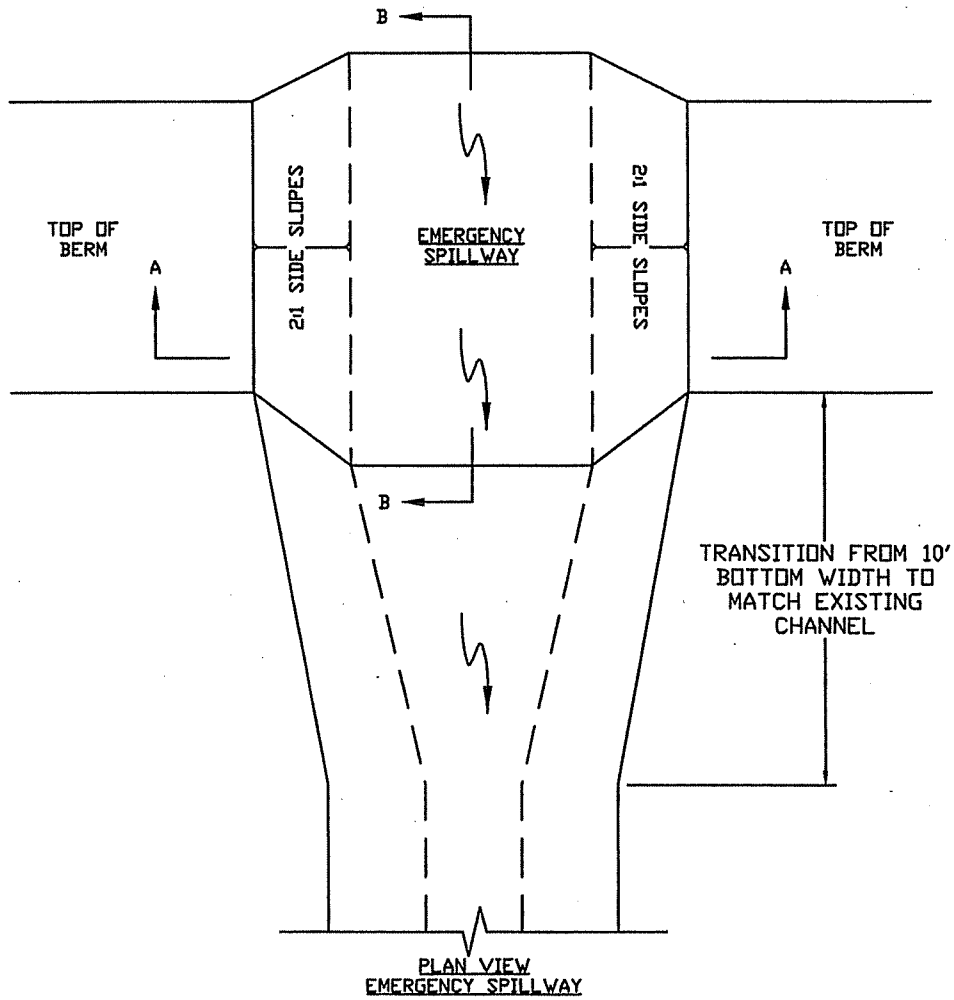
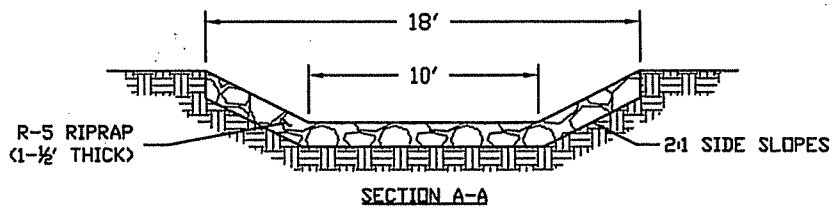
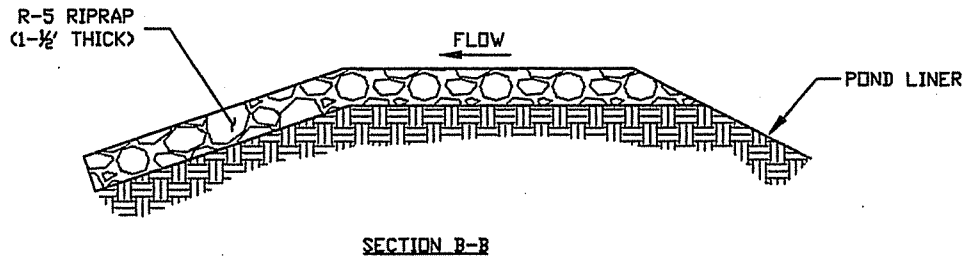


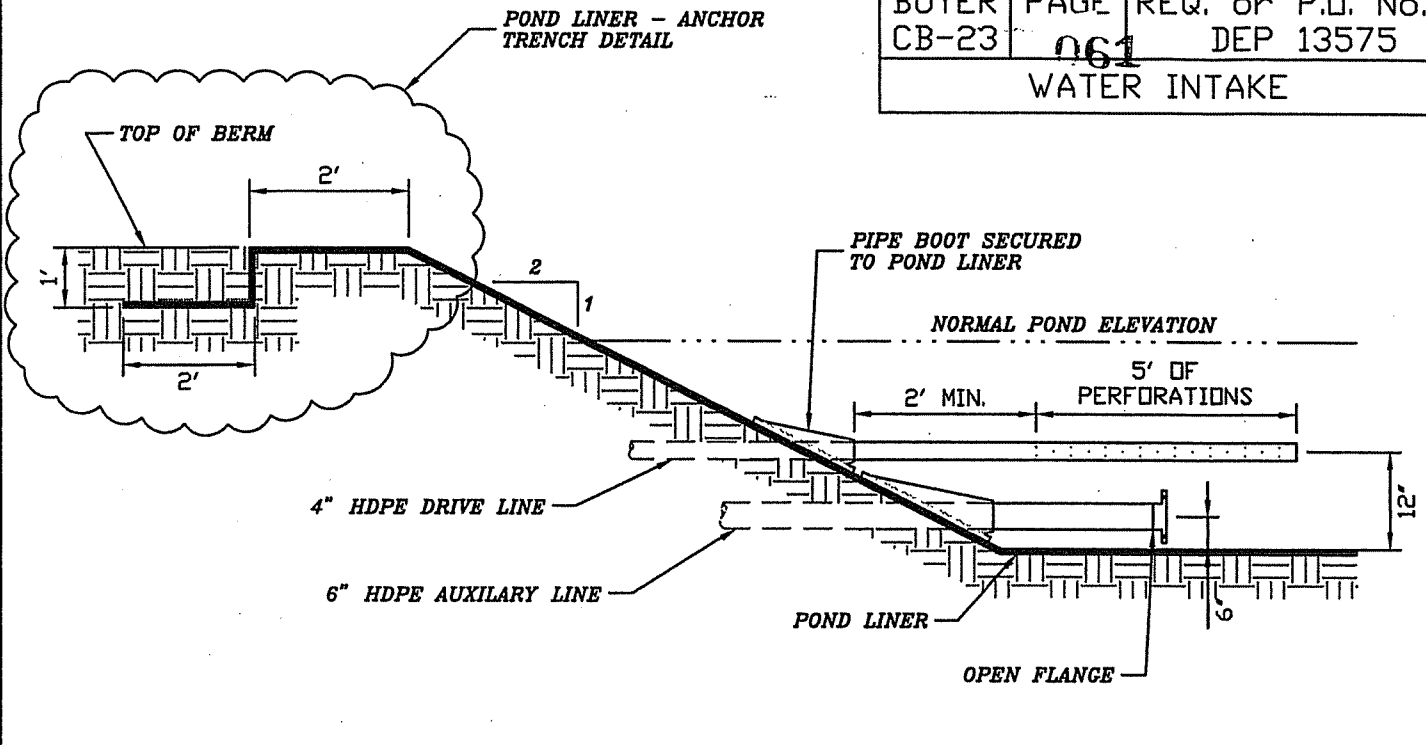
SECTION A-A



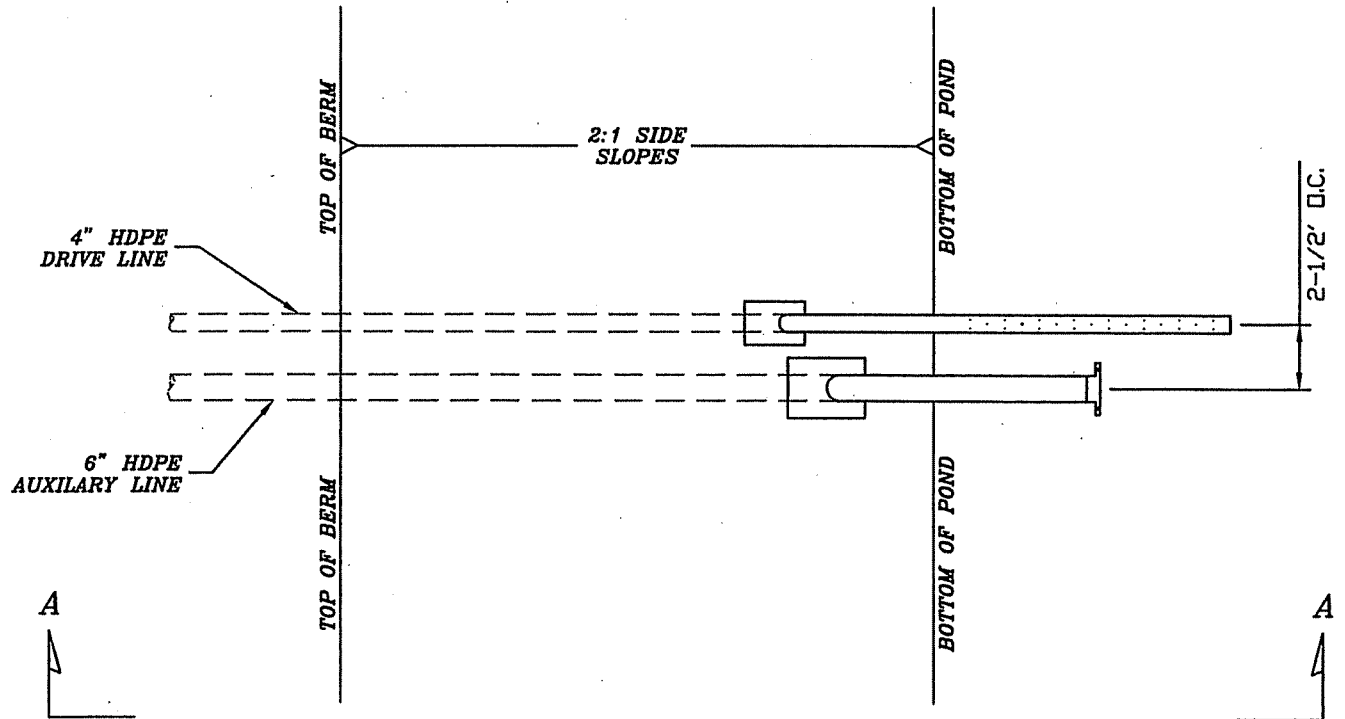
SECTION B-B







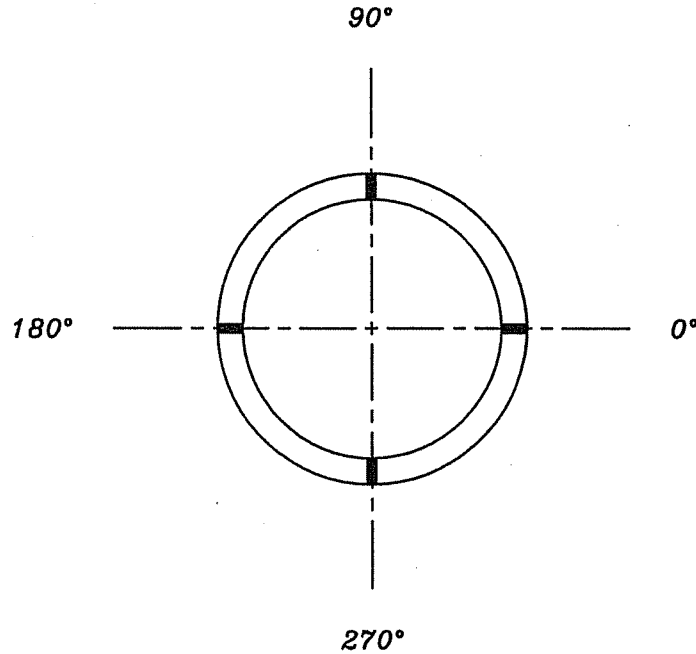
SECTION A' - A'



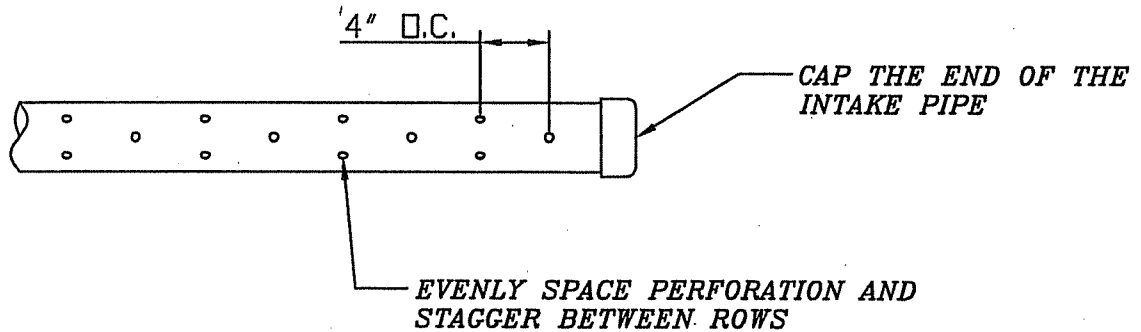
NOT TO SCALE

INTAKE PERFORATIONS

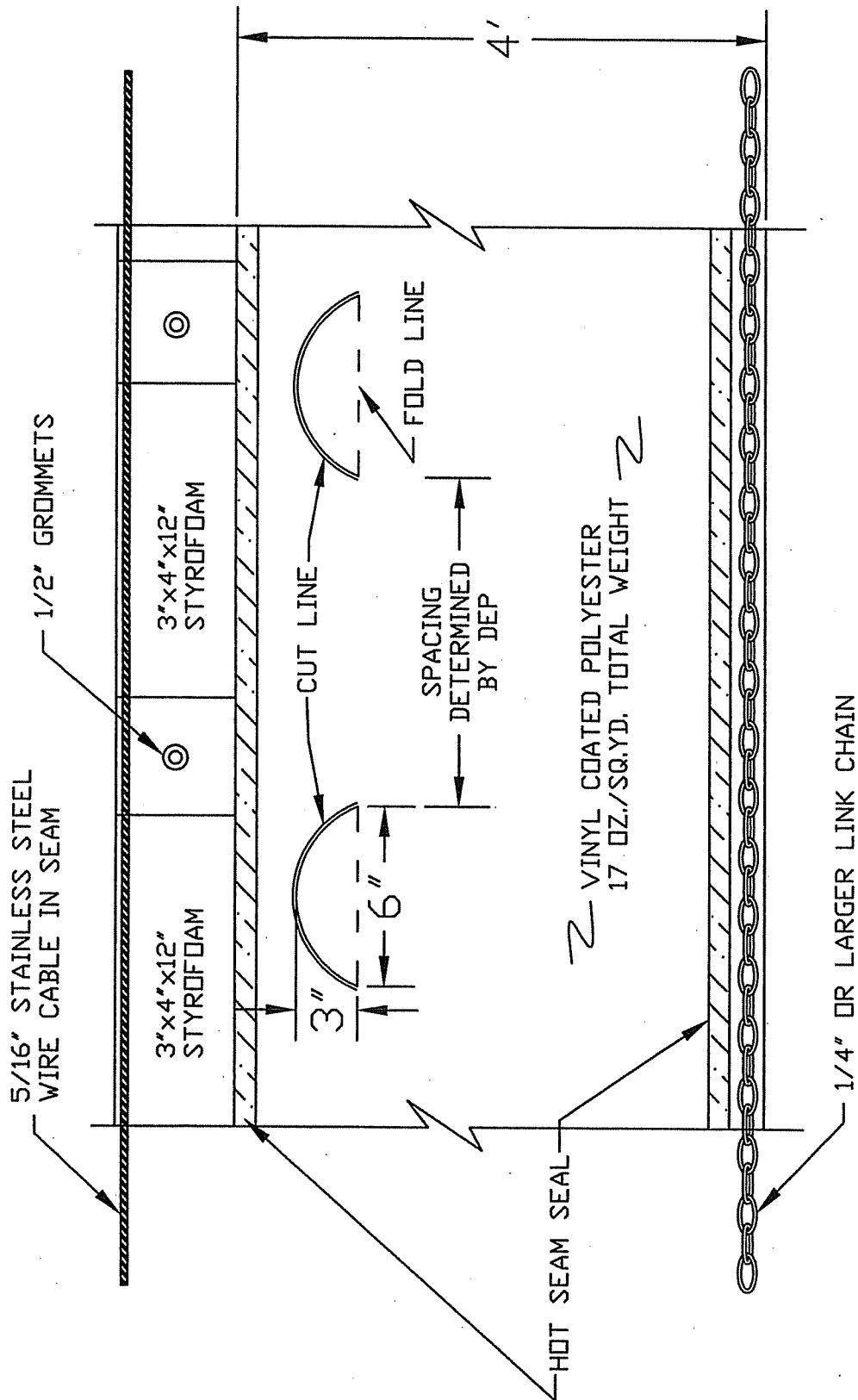
4" HDPE INTAKE
PERFORATION SPACING
4 - 3/4" DIAMETER PERFORATIONS PER ROW



4 - 3/4" DIAMETER PERFORATIONS PER ROW
15 ROWS IN 5 FEET
(4" O.C. SPACING)

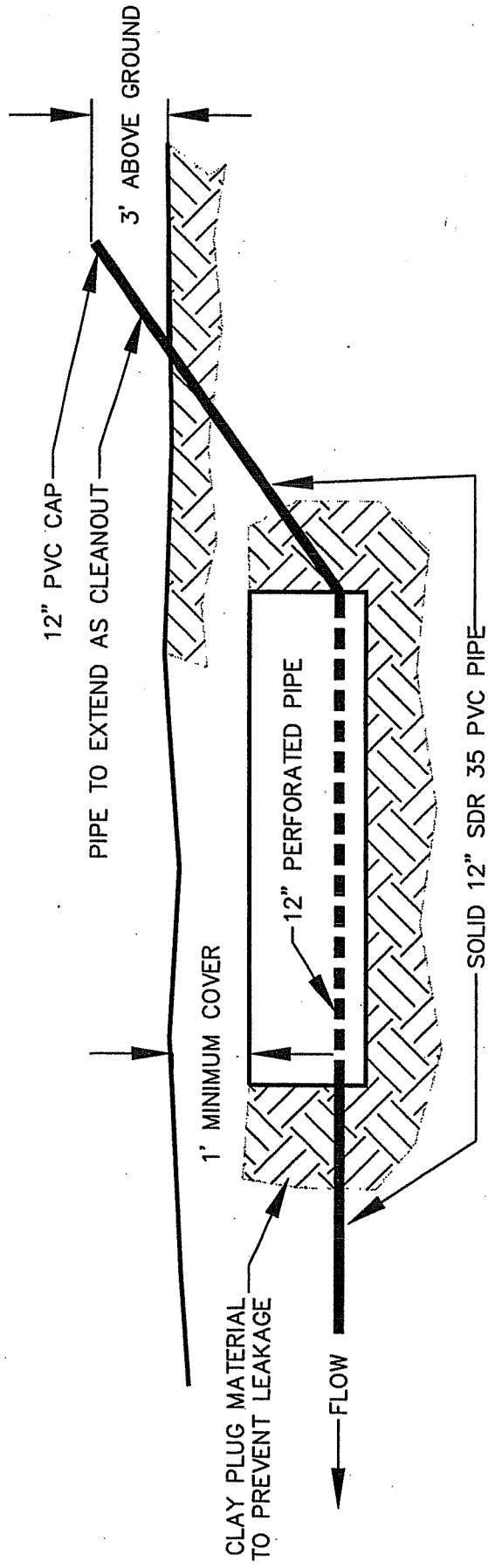


CURTAIN BAFFLE DETAIL



NOTE: THE CABLE MUST EXTEND 10 FEET PAST THE BAFFLE MATERIAL ON EACH END.

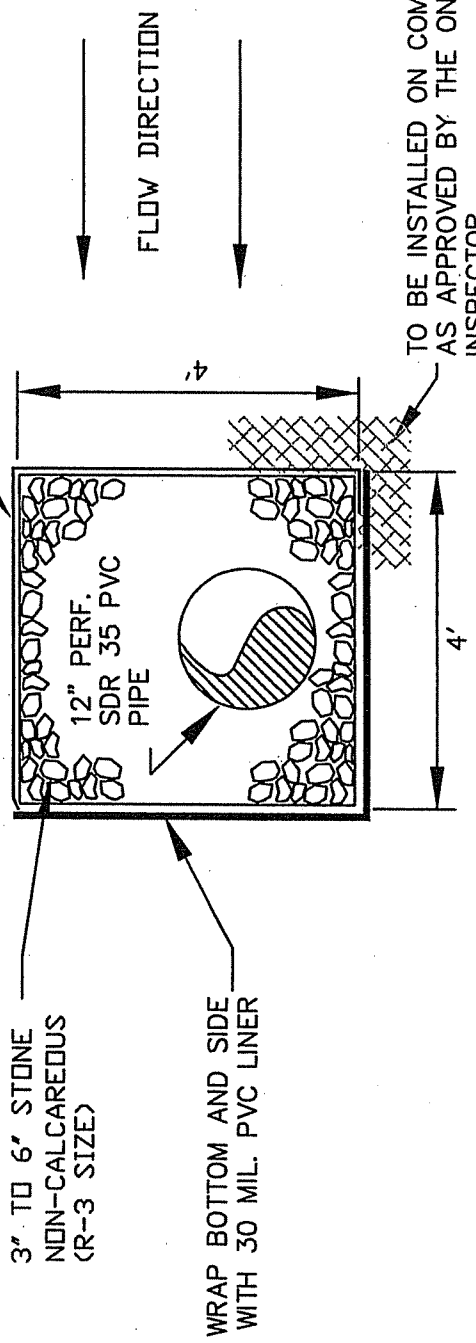
SEEP COLLECTOR



SIDE VIEW

NOT TO SCALE

WRAP WITH FILTER FABRIC (NONWOVEN)
TYPAR 3401 or EQUIVALENT



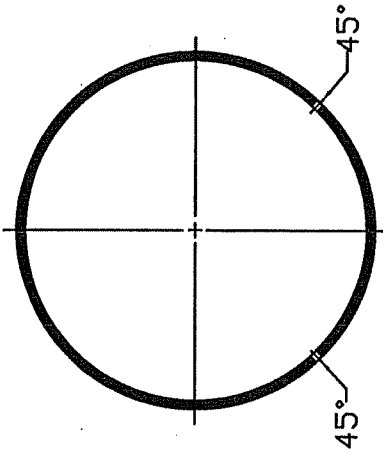
END VIEW

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

WRAP BOTTOM AND SIDE
WITH 30 MIL. PVC LINER

TO BE INSTALLED ON COMPETENT MATERIAL
AS APPROVED BY THE ON-SITE DEP
INSPECTOR.

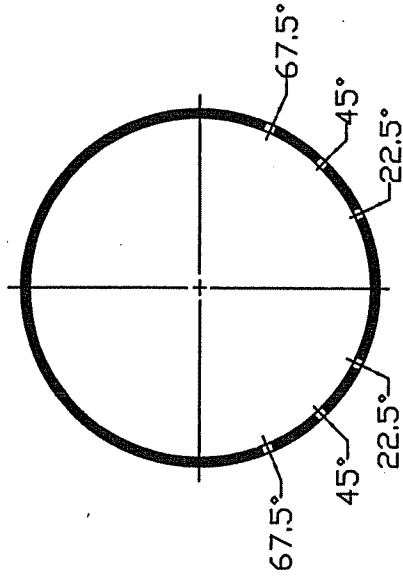
PIPE PERFORATION DETAILS



2, 4, & 6 INCH DIAMETER PIPE PERFORATIONS

HOLES SHALL BE 1/2 INCH DIAMETER FOR 2 & 4 INCH PIPE. USE 1 INCH DIAMETER HOLES FOR 6 INCH PIPE.

HOLE SPACING SHALL BE 4 INCHES ON CENTER ALONG THE LENGTH OF PIPE WITHIN SEEP COLLECTOR.

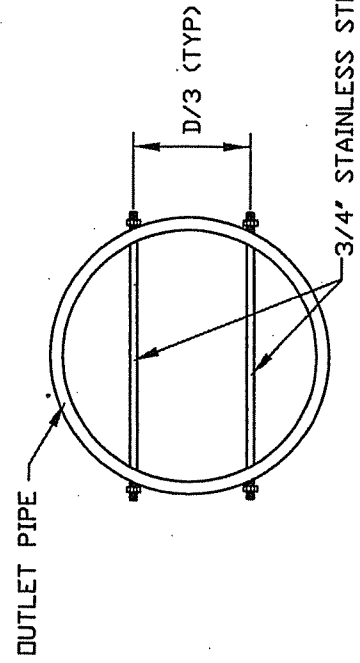


12 INCH DIAMETER PIPE PERFORATIONS

HOLES SHALL BE 1 INCH DIAMETER.

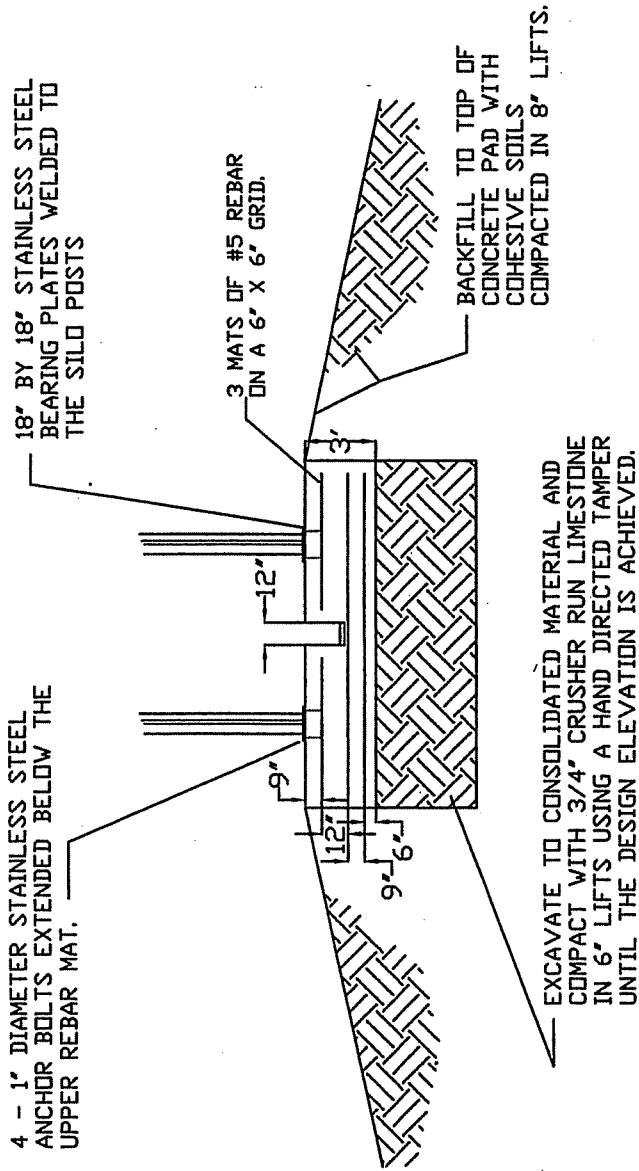
HOLE SPACING SHALL BE 6 INCHES ON CENTER ALONG THE LENGTH OF PIPE WITHIN SEEP COLLECTOR.

ANIMAL GUARD DETAILS



BUYER CB-23	PAGE 065	REQ. or P.O. No. DEP 13575
PIPE PERFORATION & ANIMAL GUARD DETAILS		

FOUNDATION DETAILS



CROSS -SECTION B-B'

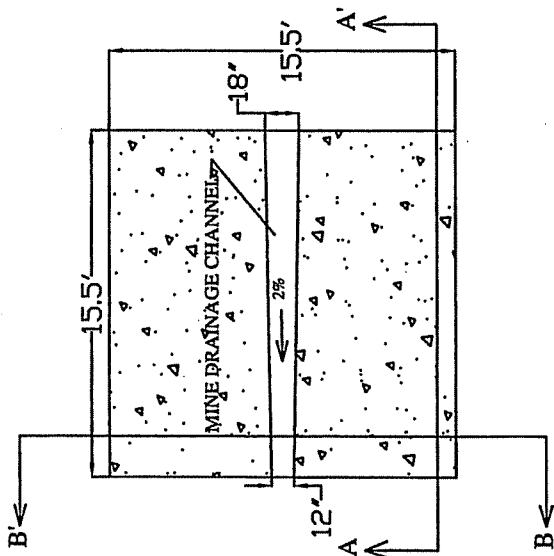
MOUNTING PLATE DETAILS

ANCHOR BOLTS ARE SPACED 15' APART MEASURED FROM CENTER TO CENTER.

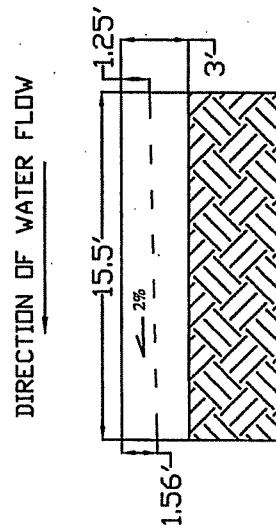
STAINLESS STEEL PLATES ARE 18" BY 18" BY 1" THICK

HOLES ARE 1 1/8" IN DIAMETER.

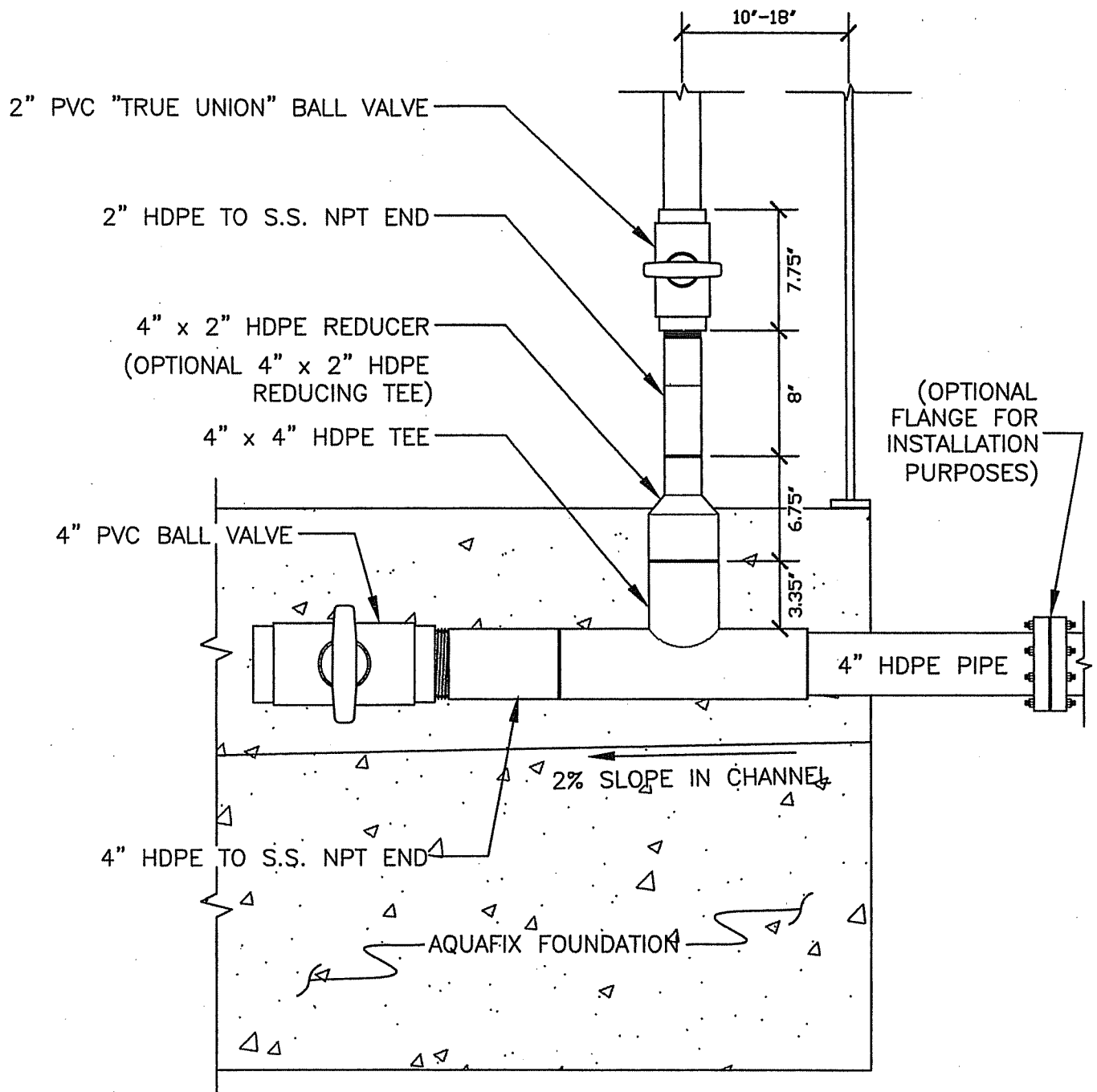
ANCHOR BOLT SPACING TEMPLATE TO BE PROVIDED BY LIME SILD MANUFACTURER.



PLAN VIEW

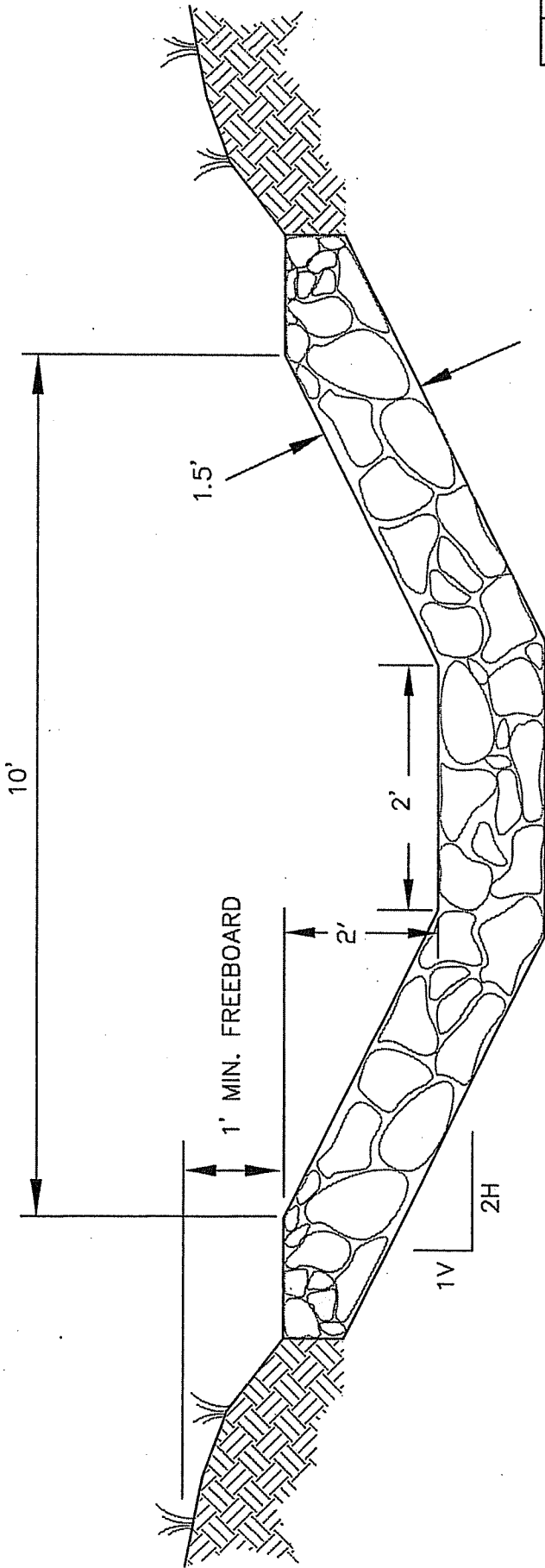


CROSS -SECTION A-A'



NOT TO SCALE

TRAPEZOIDAL - DITCH



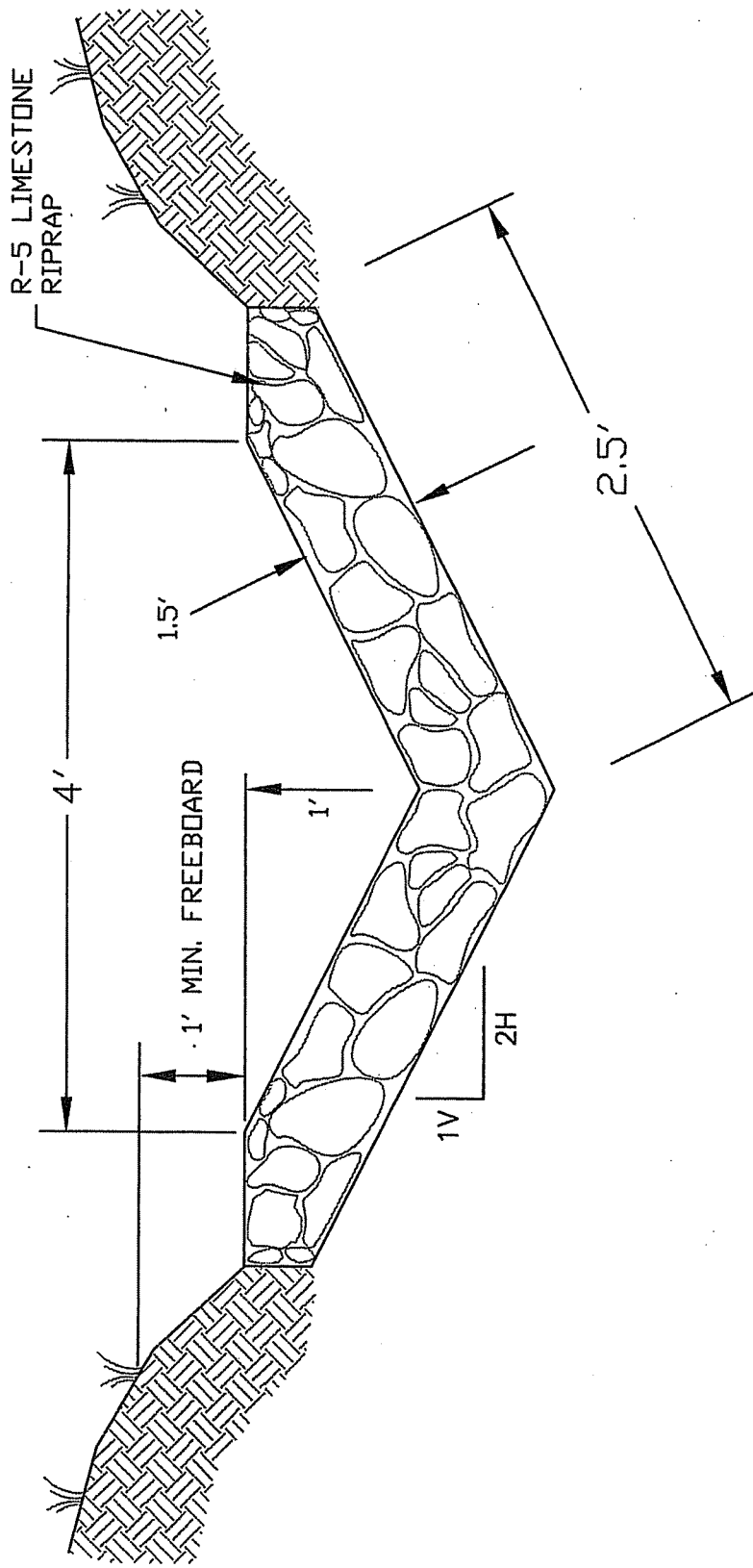
TRAPEZOIDAL - DITCH

NOT TO SCALE

PAYMENT SHALL BE FOR ACTUAL LENGTH OF DITCH CONSTRUCTED.

R-5 LIMESTONE RIPRAP (STANDARD) UNLESS OTHERWISE NOTED, RIPRAP SHALL BE DURABLE ROCK PLACED IN A 1.5 FOOT BLANKET. TWENTY-FIVE (25%) OF THE ROCK WILL BE OF 18 INCHES OR LARGER, THE REMAINING SEVENTY-FIVE (75%) SHALL BE WELL GRADED MATERIAL (MINIMUM 3 INCHES TO MAXIMUM 15 INCHES) OF SUFFICIENT ROCK SMALL ENOUGH TO FILL THE VOIDS BETWEEN THE LARGER ROCK. SHALE SHALL NOT BE USED FOR RIPRAP. IF RIPRAP STABILITY IS QUESTIONABLE, DURABILITY SHALL BE DETERMINED BY THE SODIUM SULPHATE TEST ASTM C 88/AASHTO T 104-77.

V - DITCH

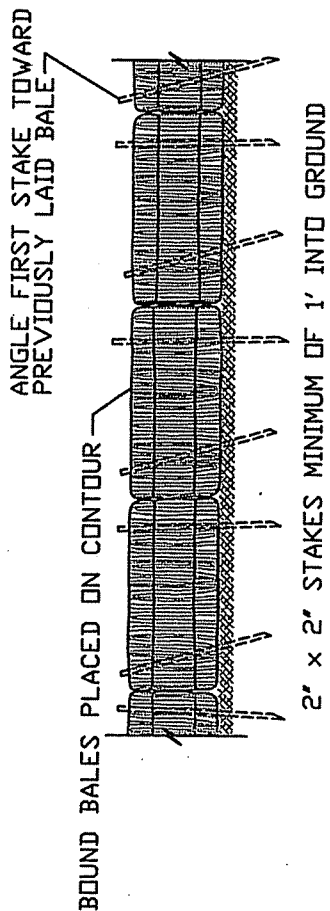


NOT TO SCALE

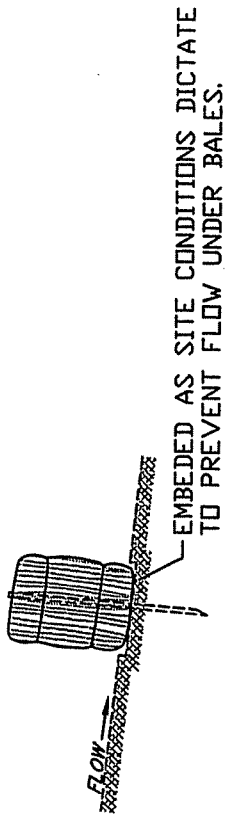
PAYMENT SHALL BE FOR ACTUAL LENGTH OF DITCH CONSTRUCTED.

R-5 LIMESTONE RIPRAP (STANDARD) UNLESS OTHERWISE NOTED, RIPRAP SHALL BE DURABLE ROCK PLACED IN A 1.5 FOOT BLANKET. TWENTY-FIVE (25%) OF THE ROCK WILL BE OF 18 INCHES OR LARGER, THE REMAINING SEVENTY-FIVE (75%) SHALL BE WELL GRADED MATERIAL (MINIMUM 3 INCHES TO MAXIMUM 15 INCHES) OF SUFFICIENT ROCK SMALL ENOUGH TO FILL THE VOIDS BETWEEN THE LARGER ROCK. SHALE SHALL NOT BE USED FOR RIPRAP. IF RIPRAP STABILITY IS QUESTIONABLE, DURABILITY SHALL BE DETERMINED BY THE SODIUM SULPHATE TEST ASTM C 88/AASHTO T 104-77.

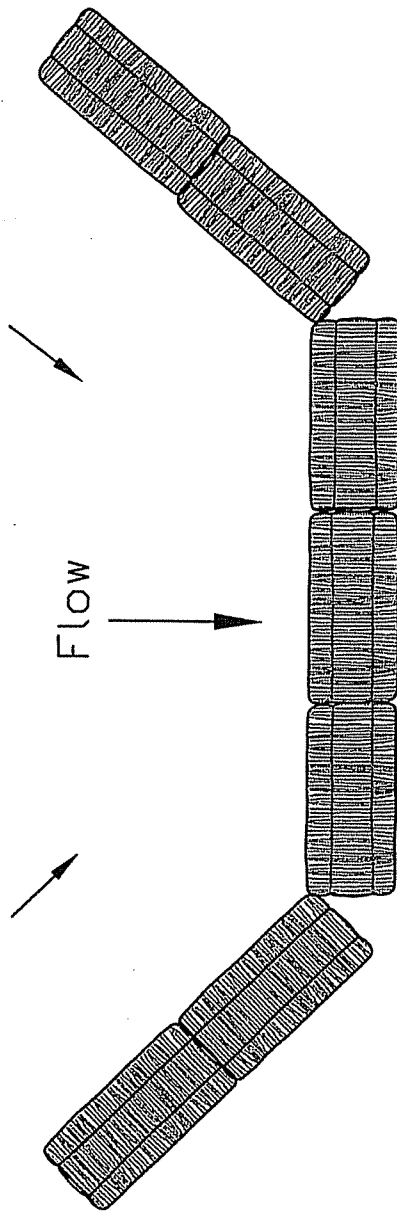
HAY/STRAW BALE DIKE
SEDIMENT CONTROL



ANCHORING DETAIL



END VIEW



NOT TO SCALE

BID BOND

071

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
give notice of any such extension.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations
have caused their corporate seals to be affixed hereunto and these presents to be signed by their proper officers, this
_____ day of _____, 20____.

Principal Corporate Seal

(Name of Principal)

By _____
(Must be President or
Vice President)

(Title)

Surety Corporate Seal

(Name of Surety)

Attorney-in-Fact

NOTICE - Surety executing bonds must be licensed in West Virginia to transact surety insurance. Corporate seals must be affixed,
power of attorney must be attached.

BID BOND PREPARATION INSTRUCTIONS

072

AGENCY (A)
RFQ/RFP# (B)

Bid Bond

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.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be affixed hereto and these presents to be signed by their proper officers, this _____ (N) day of _____ (O), 20 _____ (P).

Principal Corporate Seal

(R)

(U)
Surety Corporate Seal

(Name of Principal)
By _____
(Must be President or Vice President)

Title

(Name of Surety)

Attorney-in-Fact

- (A) WV State Agency
(Stated on Page 1 "Spending Unit")
Request for Quotation Number (upper right corner of page #1)
- (C) Your Company Name
- (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 Incorporation
- (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 figures
- (M) Brief Description of scope of work
- (N) Day of the month
- (O) Month
- (P) Year
- (Q) Name of Corporation
- (R) Raised Corporate Seal of Principal
- (S) Signature of President or Vice President
- (T) Title of person signing
- (U) Raised Corporate Seal of Surety
- (V) Corporate Name of Surety
- (X) Signature of Attorney in Fact of the Surety

NOTE: Dated, Power of Attorney with Raised Surety Seal must accompany this bid bond.

IMPORTANT - Surety executing bonds must be licensed in West Virginia to transact surety insurance. Corporate seals must be affixed, a power of attorney must be attached.

A F F I D A V I T

073

West Virginia Code §5A-3-10a states:

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 the debt owned is an amount greater than one thousand dollars in the aggregate

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.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "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 exceed five percent of the total contract amount.

EXCEPTION:

The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this 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.

LICENSING:

Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:

The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendors should visit www.state.wv.us/admin/purchase/privacy for the Notice of Agency Confidentiality Policies.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), it is hereby certified that the vendor acknowledges the information in this said affidavit and are in compliance with the requirements as stated.

Vendor's Name: _____

Authorized Signature: _____ Date: _____