

Applicant: Centennial Natural Resources LLC
Mine Name: Hay Valley Mine No. 1
Permit Number: P- 3805 Revision R-9

Part III - Operation Plan

A. General Operation Information

1. Describe the type and method of coal mining procedures and major equipment to be used. (780.11)

Mining is complete and the Permit is in the Reclamation phase.

2. Describe the sequence and timing of increments to be mined (as shown on permit map) over the total life of the permit. (780.11)

The timing increments are as follows:

Increment No.	Acres	Dates	
		From	To
1		Phase III released	
2		Phase III released	
3		Phase III released	
4		Phase III released	
5		Phase III released	
6	24	Issuances of Rev. R-9	End of Permit

*Month depends on date permit is issued.

The sequence of mining operations will be generally as follows:

- 1) Construction of Sediment Control Structures
- 2) Clearing and Grubbing
- 3) Topsoil Removal (if required)
- 4) Overburden Drilling and Blasting
- 5) Overburden Removal
- 6) Recovery
- 7) Grading
- 8) Revegetation

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2. Ponds, impoundments, banks, dams and embankments. (780.25)
- (a) Submit a general plan which complies with Section 780.25(a)(1) for each proposed sedimentation pond, water impoundment, and coal processing waste bank, dam or embankment to be located within the proposed permit area. See attachment III-B.-2.A
 - (b) Submit detailed design plans which comply with Sections 780.25(a)(2 and 3) and 816.46 for each sedimentation pond to be constructed on the increment you currently propose to mine. If the sediment pond is to remain as a permanent water impoundment, design plans shall also comply with Section 816.49. See attachment III-B.-2.A
 - (c) Submit detailed design plans which comply with Sections 780.25(a)(2 and 3) and 816.49 for each temporary or permanent water impoundment to be constructed on the increment you currently propose to mine. See attachment III-B.-2.A
 - (d) Submit detailed design plans which comply with Sections 780.25(a) (2 and 3) and 816.81-816.85 for each coal processing waste bank to be constructed on the increment you currently propose to mine. None proposed.
 - (e) Submit detailed design plans which comply with Sections 780.25(a)(2 and 3) and 816.91-816.93 for each coal processing waste dam and embankment to be constructed on the increment which you currently propose to mine. None proposed.

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CERTIFICATION STATEMENT:

I hereby certify that Attachment III-B.-2.A prepared for Centennial Natural Resources LLC's Hay Valley Mine No. 2, P-3805, Revision R-9 are in accordance with the Regulations of the Alabama Surface Mining Commission as adopted by Act 81-435 of December 18, 1981 and amended to date, and are true and correct to the best of my knowledge, information and belief.

Leslie G. Stephens, P.L.S. & P.E.
AL Registration No. 14117-E

Date

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Attachment III-B-2(a)
Addendum to the General Plan

The addendum to the general plan consists of changing the post mining landuse of Sediment Basin 001AE from temporary to permanent water impoundment, fish and wildlife habitat.

Basin 001AE will remain as permanent water impoundment, fish and wildlife habitat. Data to qualify these basins as permanent water impoundments will be submitted to the Regulatory Authority prior to Phase II Bond Release. (See attached data and preliminary hydrologic information).

Geologic investigations of the area indicate layers of sandstone, shale and minor amounts of bituminous coal and underclay. The coal to be mined by Centennial Natural Resources LLC will be confined to the New Castle and Mary Lee Seams. The strata in the area is characterized by small gentle open folding.

All surface drainage from the proposed mining area flows into unnamed tributaries of Bullbarn Creek.

All diversions are to be temporary and will be re-graded and re-vegetated (See diversion ditch criteria).

No existing or proposed underground mines are known to exist within 500' of the permit boundary.

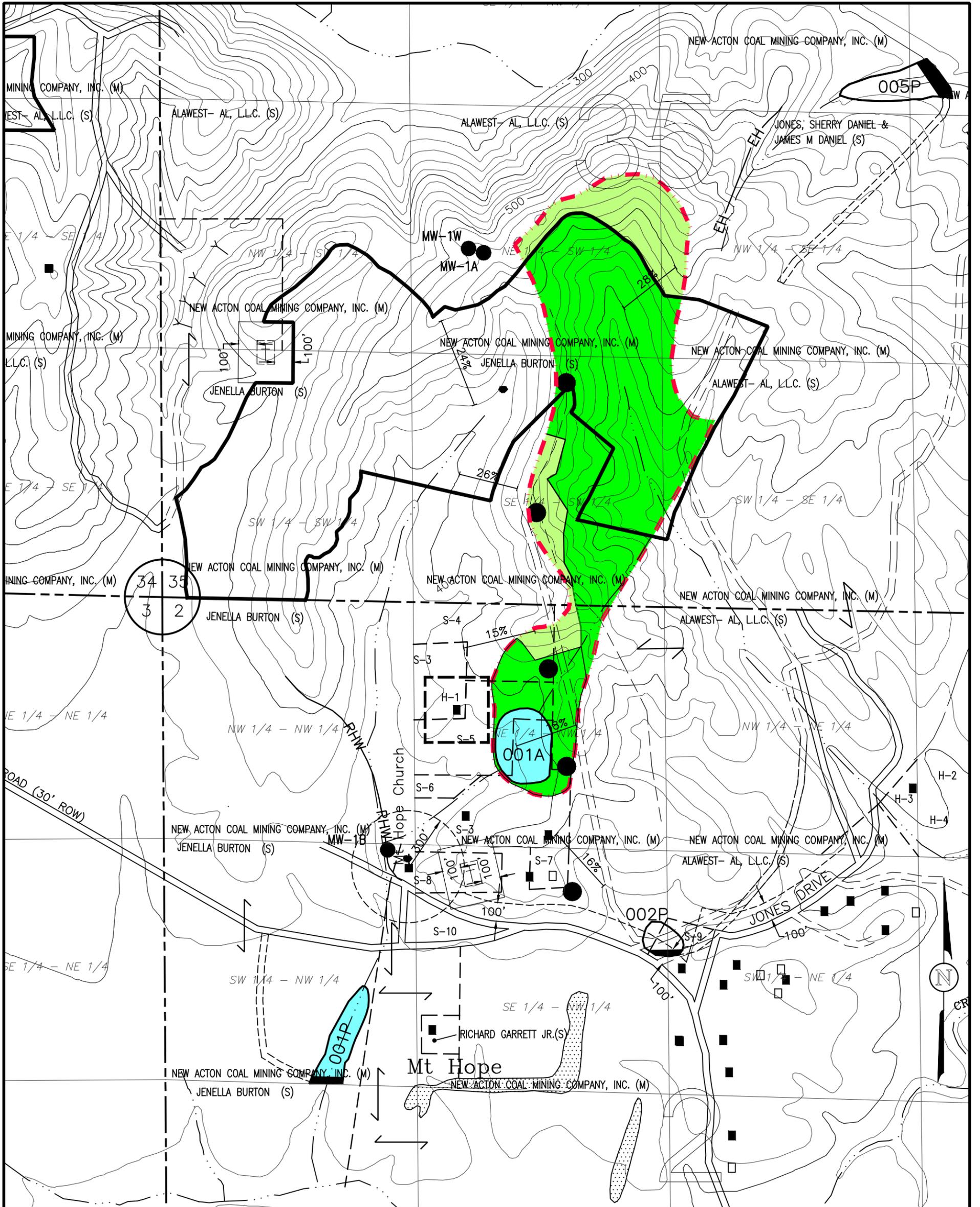
See Attachment III-B-2(a) Current Watershed Map

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Attachment III-B-2-A

<u>Basin No.</u>	<u>Location</u>	<u>Drainage Area</u>
001AE	NE 1/4 of NW 1/4 Of Section 2	43 Acres

Within Township 15 South, Range 7 West, Walker County, Alabama,
as found on the Cordova USGS Quadrangle Map.



LEGEND

- - - - - WATERSHED BOUNDARY
- PERMIT BOUNDARY
- DIVERSIONS
- 001P** SEDIMENT BASIN
- EH** EXISTING HIGHWALL

LANDUSE & CURVE NUMBER INFORMATION

- UNMANAGED TIMBERLAND, CURVE NUMBER, 70
- RE-VEGETATED OVER 36 MONTHS, CURVE NUMBER, 74
- SEDIMENT BASIN, CURVE NUMBER, 100

SMALL SURFACE OWNERS

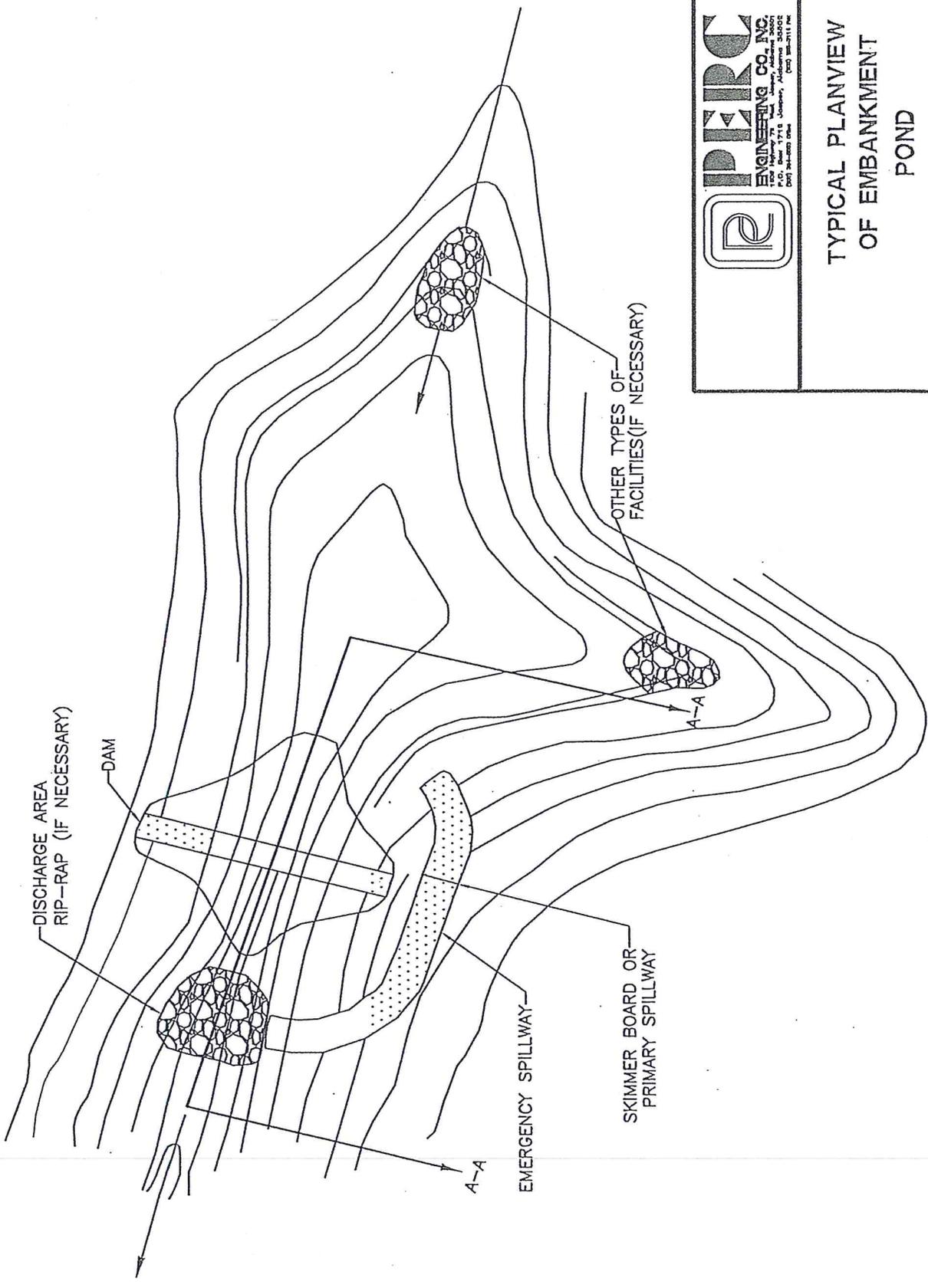
- S-3 DONNY JACKS
- S-4 DONNY JACKS, RONNY JACKS, GAYNELL J. FORD, HELEN K. JACKS.
- S-5 DEBORAH S. MOORE
- S-6 ELEENE SMITH
- S-7 DALE F. SPROUL
- S-8 MT. HOPE CHURCH OF CHRIST
- S-9 CENTENNIAL NATURAL RESOURCES LLC
- S-10 ELDERS OF CHRISTIAN CHURCH MT. HOPE



**CENTENNIAL NATURAL RESOURCES LLC
HAY VALLEY MINE NO. 1
WATERSHED MAP
ATTACHMENT III. - B. - 2a.
P-3805 / REVISION R-9**

DRAWN BY: L.G.S.	DATE: 3-28-2016
DWG. NAME: CENHW001A	
APPROVED BY: L.G.S.	SCALE: 1" = 500'

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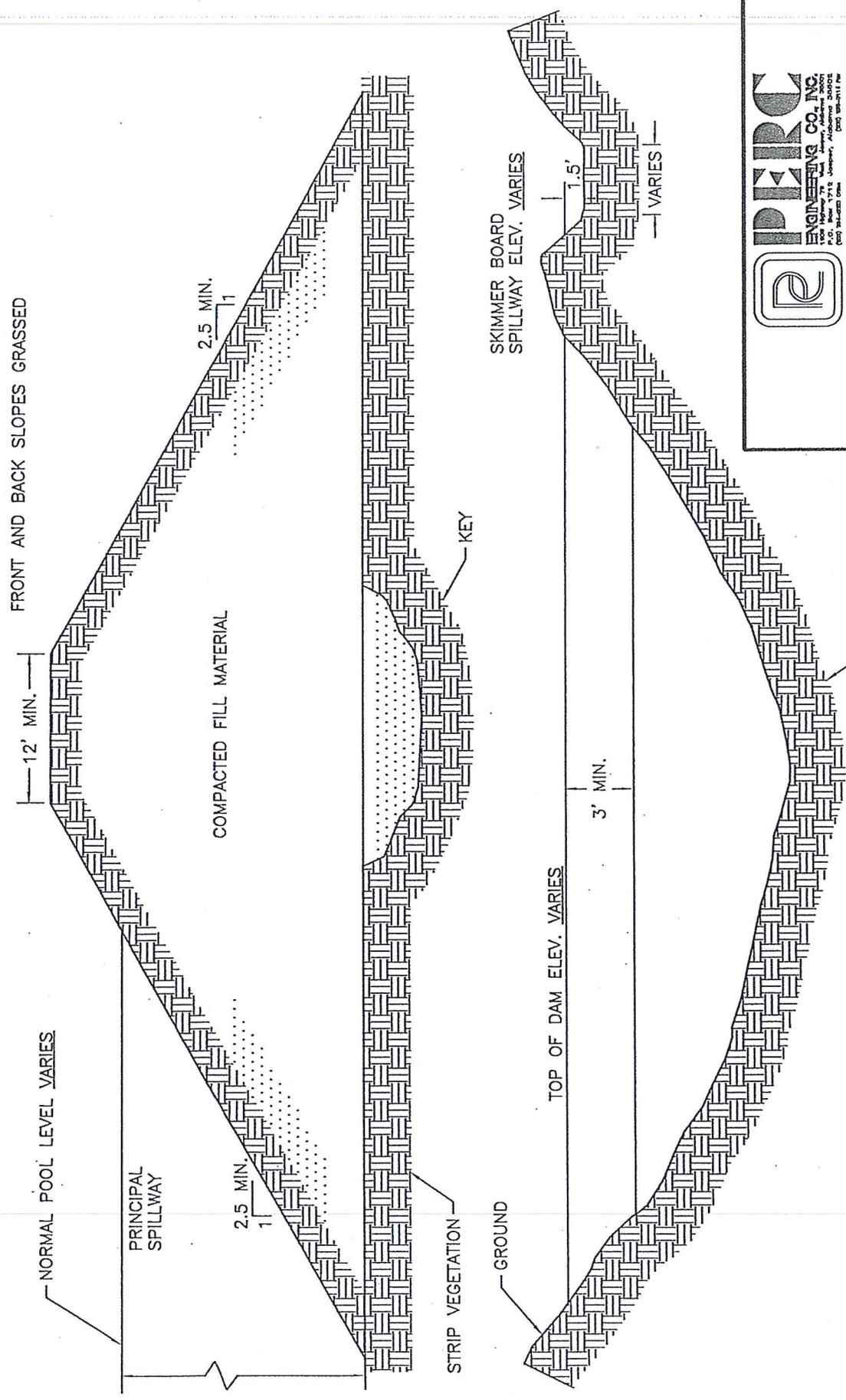


TYPICAL PLANVIEW
 OF EMBANKMENT
 POND

DRAWN BY: P.T.O.	DATE: 8-10-05
DWG. NAME: TYPICALS	
APPROVED BY: W.K.M.	SCALE: NONE

PLANVIEW OF EMBANKMENT POND

ATTACHMENT III-B-2-A



TYPICAL DAM DETAIL
NO SCALE

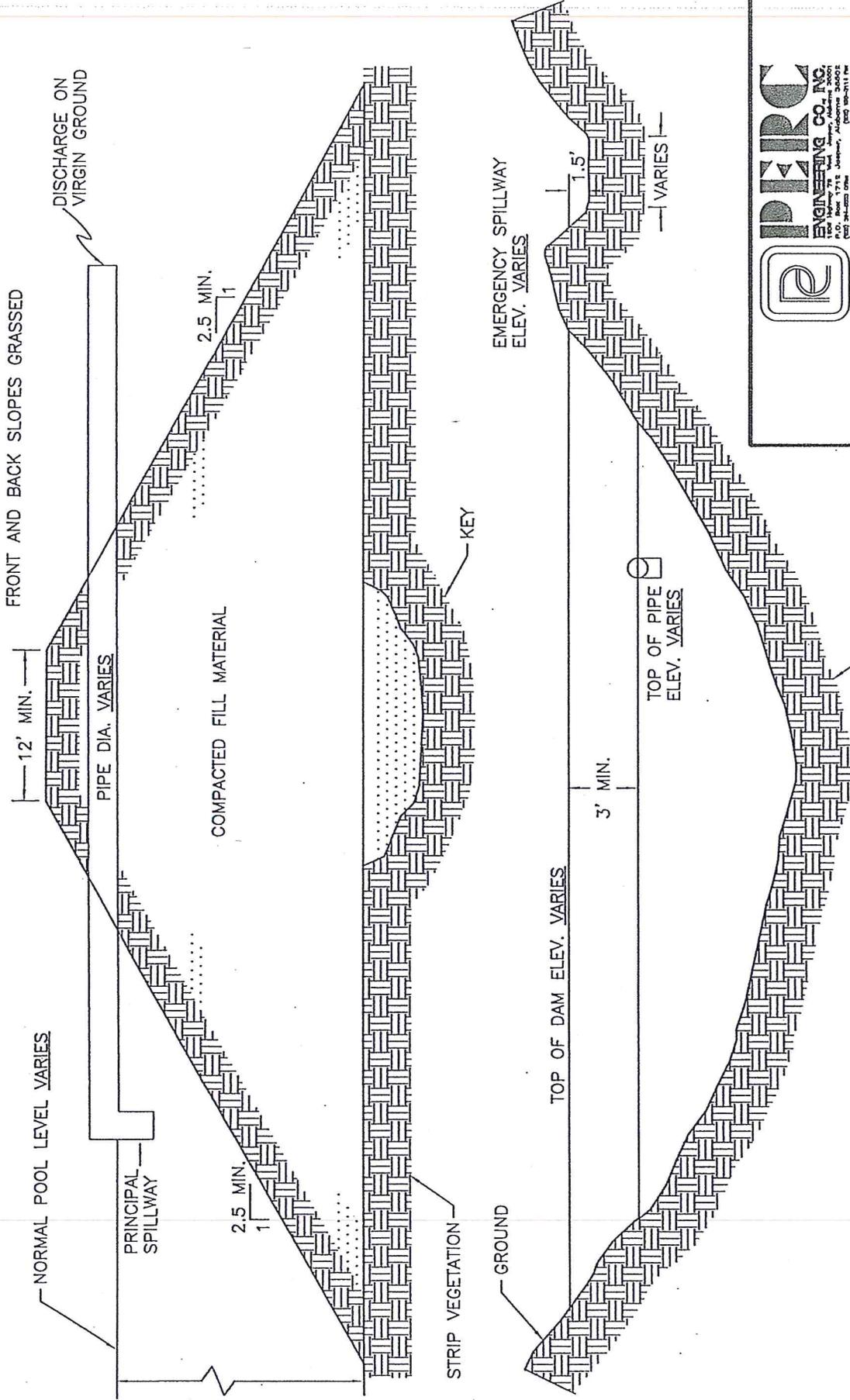


TYPICAL DAM DETAIL

DRAWN BY: P.T.O.	DATE: 8-10-05
DWG. NAME: TYPICALS	
APPROVED BY: W.K.M.	SCALE: NONE

ATTACHMENT III-B-2-A

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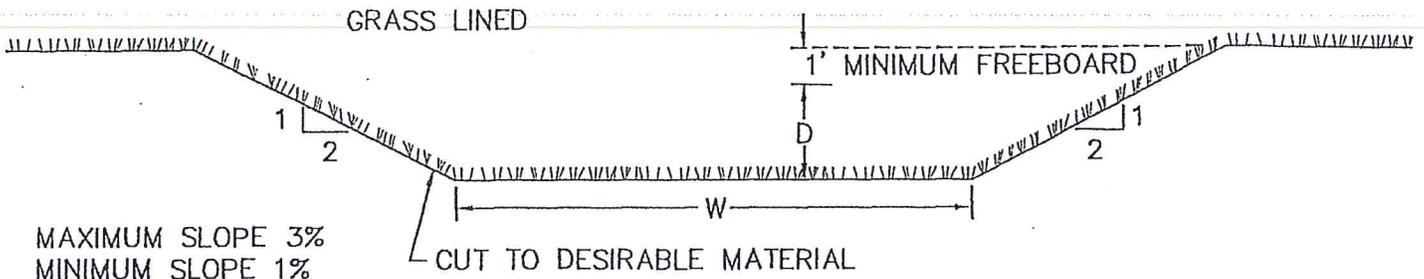


TYPICAL DAM DETAIL

TYPICAL DAM DETAIL NO SCALE

DRAWN BY: P.T.O.	DATE: 8-10-05
DWG. NAME: TYPICALS	
APPROVED BY: W.K.M.	SCALE: NONE

ATTACHMENT III-B-2-A



MAXIMUM SLOPE 3%
MINIMUM SLOPE 1%

$$Q = \frac{1.49}{N} A R^{2/3} S^{1/2}$$

N(loose stone or grass lined) = 0.035
A = area
R = area/wetted perimeter
S = slope

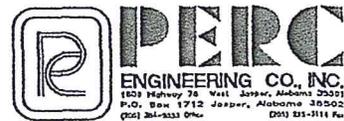
* Grass lining: fescue, bermuda, rye grass

DIVERSION CHANNEL DEPTH (D) FOR WIDTH (W) 8.0 Ft.	
PEAK FLOW Q (CFS)	DEPTH D (Ft.)
0-15	0.5
15-50	1.0
50-100	1.5
100-180	2.0
180-270	2.5

DIVERSION CHANNEL DEPTH (D) FOR WIDTH (W) 10.0 Ft.	
PEAK FLOW Q (CFS)	DEPTH D (Ft.)
0-15	0.5
15-60	1.0
60-120	1.5
120-210	2.0
210-320	2.5

DIVERSION CHANNEL DEPTH (D) FOR WIDTH (W) 12.0 Ft.	
PEAK FLOW Q (CFS)	DEPTH D (Ft.)
0-20	0.5
20-70	1.0
70-150	1.5
150-250	2.0
250-383	2.5

DIVERSION CHANNEL DEPTH (D) FOR WIDTH (W) 15.0 Ft.	
PEAK FLOW Q (CFS)	DEPTH D (Ft.)
0-25	0.5
25-90	1.0
90-180	1.5
180-300	2.0
300-450	2.5



**PERMANENT DIVERSION CHANNEL
FOR BASIN DISPOSAL**

DRAWN BY:
DWG. NAME:

DATE:

APPROVED BY:

SCALE:

ATTACHMENT III-B-2-A

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Attachment III-B-2-A

Pond Construction Criteria

The embankment for sediment basins (temporary and permanent) shall be designed and built using the following as minimum criteria:

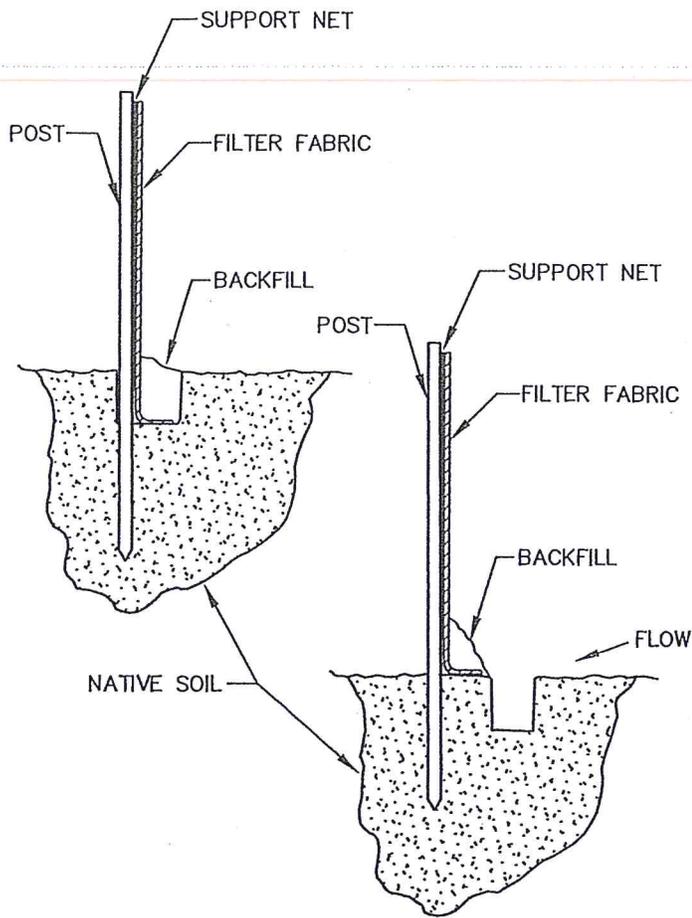
1. The top of the dam shall be no less than 12 feet wide.
2. See design sheet for maximum and minimum embankment slopes.
3. The foundation and abutments for the impounding structure shall be designed to be stable under all conditions of construction and operation of the impoundments, with a minimum static safety factor of 1.5 for the normal pool with steady seepage saturation conditions, and a seismic safety factor of at least 1.20.
4. The dam shall be constructed with a cutoff trench based upon prudent engineering practices for the site. The cutoff shall be located on the dam centerline and be of sufficient depth to extend into a relatively impervious material from which the core of the dam shall also be constructed.
5. The embankment foundation area shall be cleared of all organic matter, all surfaces sloped to no steeper than 1v:1h, and the entire foundation surface scarified.
6. The entire embankment and cutoff trench shall be compacted to 95 percent density, based on standard proctor as outlined in ASTM.
7. The material placed in the embankment shall be free of sod, roots, stones over 6 inches in diameter, and other objectionable materials. The fill material shall be placed and spread over the entire fill area, starting at the lowest point of the foundation, in layers not to exceed 12 inches in thickness. Construction of the fill shall be undertaken only at such times that the moisture content of the fill material will permit satisfactory compaction in accordance with paragraph 5.
8. The pool area of the basin will be cleared of timber and large undergrowth.
9. The primary decant system when consisting of a pipe shall be installed according to Class C pipe installation for embankment bedding.
10. The primary decant system shall be equipped with a device, or constructed, such as to insure that subsurface withdrawal is accomplished to prevent discharge of floating solids. If a channel is used as the primary decant a skimmer shall be installed to prevent floating solids from discharging.

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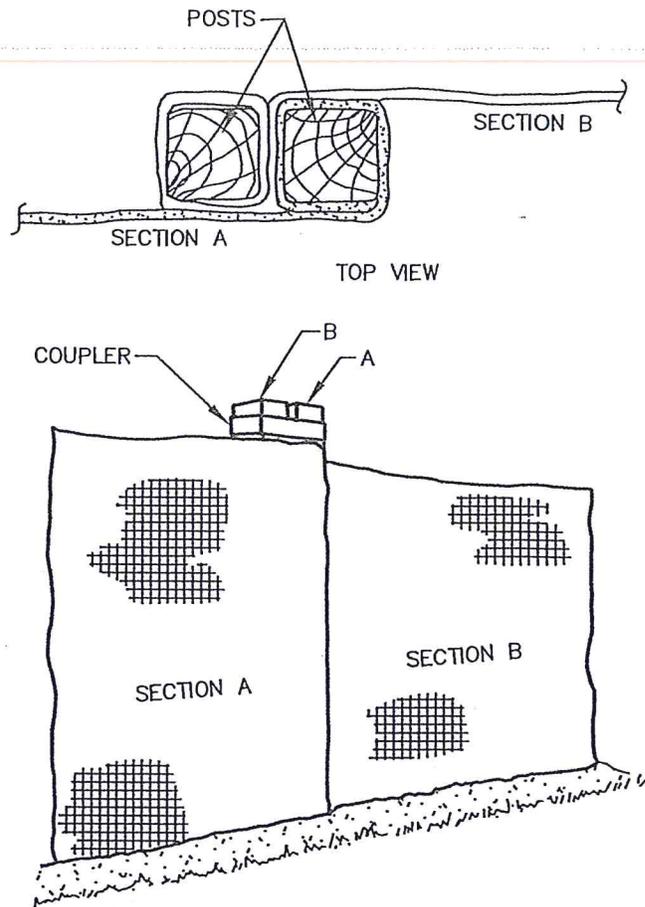
11. A splash pad or riprap may be required under the discharge of the primary decant system where necessary to insure that the discharge does not erode the embankment.
12. The combination primary and secondary decant system shall be designed to safely carry the expected peak flow from a 25 year - 6 hour storm. The entire emergency overflow spillway channel will be a stabilized channel and will be stabilized upon completion of construction as specified within the detailed design plans using prudent engineering measures. These measures may consist of lining the spillway with concrete or a durable rock riprap, or the spillway being constructed in consolidated non-erodible material and planted with a mixture or both annual and perennial grasses, or a combination of any or all of the above.
13. Sediment basins using a single spillway system shall be an open channel of non-erodible construction consisting of concrete, durable rock riprap or its being constructed in consolidated non-erodible material as specified in the detailed design plans.
14. The settled embankment for temporary impoundments shall be a minimum of 1.0 foot above the maximum water elevation for the runoff from a 25 year - 6 hour, or a 10 year - 24 hour precipitation event (whichever has the greatest runoff). The settled embankment for permanent impoundments shall be a minimum of 1.0 foot above the maximum water elevation for the runoff from a 25 year - 6 hour, or a 10 year - 24 hour precipitation event (whichever has the greatest runoff).
15. If basins are built in series, then the combined decant system for each shall be designed to accommodate the entire contributing drainage area.
16. The dam and all disturbed areas shall be seeded with both perennial and annual grasses, fertilized and mulched in order to insure erosion is minimized. Hay bales or riprap may be placed at the toe of the dam immediately upon completion of construction.
17. The constructed height of the dam shall be increased a minimum of 5 percent over the design height to allow for settlement over the life of the embankment.
18. Final graded slopes of the entire permanent water impoundment area shall not exceed 2.5H-1.0V to provide for adequate safety and access for proposed water users.
19. Prior to Phase II bond release, additional data concerning water quality, water quantity, depth, size, configuration, postmining land use, etc., for each proposed permanent water impoundment, shall be submitted to the Regulatory Authority for permanent water impoundment approval.

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20. All sediment basins will be inspected for stability, erosion, etc. two (2) times a month until removal of the structure or release of the reclamation bond.
21. The embankment and spillway will be maintained by repairing any damage such as erosion, slope failure or spillway damage until removal of the structure or release of the performance bond.
22. All ponds shall be examined quarterly for structural weakness, instability, erosion, or other hazardous conditions and maintenance performed as necessary. Formal inspections shall be made on an annual basis, including any reports or modifications, in accordance with 880-X-10C-.20[l(j)] of the Alabama Surface Mining Commission Regulations.
23. Sediment will be removed from each pond when the accumulated sediment reaches the sediment storage volume as shown on the detailed design sheet.
24. Upon completion of mining, successful reclamation and effluent standards being met, each sediment basin not remaining as a permanent water impoundment will be dewatered in an environmentally safe manner (such as siphoning, pumping, etc.) and reclaimed to approximate original contours by the following procedure: A permanent diversion channel (designed for a 10 year - 24 hour precipitation event) shall be cut along the outer edge of the basin to re-route drainage around the basin and back through the stabilized spillway to allow reclamation of the sediment basin. The diversion channel shall be designed and grassed as per enclosed information. (See permanent diversion for basin disposal). Upon completion of the diversion channel the back slope of the dam shall be graded to a minimum 3H to 1V slope. The dewatered sediment basin area shall be seeded with some combination of the following: Fescue, bermuda, rye grass, canary grass and willows. After seeding the area shall be mulched. Any additional sediment or embankment material not used to meet original contour, if non-toxic, shall be spread in thin layers within the permit area and vegetated as stated in the approved reclamation plan. All toxic material encountered in the basin disposal shall be buried and covered with 4 feet of non-toxic material and vegetated as stated in the approved reclamation plan.
25. A qualified registered professional engineer or other qualified professional specialist, under the direction of the professional engineer shall conduct regular inspections during construction and upon completion shall inspect each basin for certification purposes.
26. Point source discharge embankments shall be constructed and abutments keyed into desirable material if at all possible. In the event that undesirable material is encountered, addition design and construction criteria shall be submitted prior to certification.



TOE-IN METHOD



JOINING SECTIONS OF SILT FENCE

CONSTRUCTION SPECIFICATIONS

- 1.) SILT FENCING SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY FITTING THE ADJACENT FENCE SECTION.
- 2.) EACH SECTION OF FENCING SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 6".
- 3.) FENCING SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS AT A SPACING NOT TO EXCEED 6'.
- 4.) INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.



SILTFENCE TYPICAL

DRAWN BY: K.D.P.
DWG. NAME: SILTFENCE

DATE: 4-24-2015

APPROVED BY: R.E.P.

SCALE: NONE

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Silt Fencing Design and Construction Specifications

1. Silt Fencing will consist of Marifi 100X or equivalent product.
2. Fence height - 3' including 6" trench flap.
3. Silt fencing will be secured into place by prefabricated wood or metal posts spaced as necessary.
4. The silt fence will have an equivalent opening size of 20 mesh by U.S. Standard Sieve.
5. The maximum particle size passing the silt fence will be .84 millimeter.
6. The flow rate of the silt fence will be 20 gallon per minute per square foot.
7. The silt fence will have a burst strength of 300 pound per square inch.
8. The grab tensile elongation of the silt fence will be 10%.
9. The grab tensile strength of the silt fence will be 100 pounds.
10. The silt fence will be installed by initially excavating a trench approximately 6" wide by 6" deep along the contour for the entire length of the silt fence. Upon completion of the trench, the silt fence will be stretched along the trench with the prefabricated wood or metal posts being driven into the ground approximately 1.5' deep against the upper wall of the trench. The 6" trench flap will then be placed into the trench and covered with compacted fill material.
11. Inspections of the silt fence will be made bi-monthly and repair or replacement will be made promptly as required.
12. Accumulated sediment will be removed from the silt fencing when necessary to ensure the proper function of the silt fencing. Accumulated sediment will be disposed of within Coarse Refuse Area No. 1.
13. Prior to the removal of the silt fence, any silt or sediment retained by the silt fence will be seeded with a mixture of both annual and perennial grasses, fertilized, and mulched to establish a permanent and diverse vegetative cover.

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3. Diversions. (780.29,816.43, 816.44)

Are diversions of overland flow or stream channel diversions proposed?

() Yes (X) No

If yes, complete the following:

(a) Is the diversion to be permanent?

() Yes () No