

Applicant: <u>CClay, Inc.</u> Mine Name: <u>Skelton Creek Operation</u> Permit Number: P- <u>3934, Revision R-1</u>

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)

See Attachment III-A-1

Major equipment to be used includes but may not be limited to:

- Backhoes
- Off Road Haulers
- Loaders
- Service Trucks
- Dozers
- Track Backhoes
- Dry Screens

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:

<u>Increment No.</u>	<u>Acres</u>	<u>From</u>	<u>Estimated Life</u>
1	25	Currently Being Mined	60 Months
2	2	12 Months after Permit Issuance	12 Months
3	3	24 Months after Permit Issuance	36 Months
4	6	12 Months after Permit Issuance	60 Months
5	7	Upon the Completion Of Increment No. 3	12 Months
6	5	Issuance of R-1	Life of Mine

The sequence of mining operations will be generally as follows:

- 1) Installation of Best Management Practices Sedimentation Control
- 2) Clearing and Grubbing
- 3) Construction of Sediment Control Structures
- 4) Fines Recovery
- 5) Re-Grading
- 6) Revegetation

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ATTACHMENT III-A-1

TYPE AND METHOD OF COAL MINING PROCEDURES

Operation procedures at this facility will consist of the following: (a) installation of sediment control facilities (BMP's) along the perimeter of the stream setback zone. (b) removal of vegetation from the surface of the fines impoundment in the location of proposed sediment pond dams. (c) construction of the sediment pond dams. (d) loading the coal fines onto mobile transport. (f) regrading of borrow area material over disturbed areas. (g) soil sampling and analysis. (h) application of recommended soil amendments. (I) revegetation. Any problem that may arise will be handled by the operator in consultation with proper consulting personnel, utilizing various support equipment and support personnel.

Fines within Increment No. 1 are currently being removed as previously approved. And, the fines removal for Increments No. 2 and No. 3 shall follow the previously approved operation plan in the original permit application.

Upon completion of removal of fines in the area of Basin 001P, the operation will move to Increment 5 in the area of Basin 006P. Prior to the excavation of coal fines from within the area of Basin 006P, impervious staked barriers will be erected along the proposed 25 foot setback from the stream adjacent to the embankment as shown on Attachment III-A-1. Construction of the dam for Basin 006P will begin at cut no. 1, where the coal fines will be excavated and an engineered fill, from the borrow area, will be placed in 8" lifts and compacted to 95% Standard Proctor, approximately 100 feet in length to construct the embankment up to ground level before advancing to cut no. 2. This sequence will be repeated through cut no. 11, until the dam and spillway system is fully constructed. During the construction process of the embankment for Basin 006P, all runoff from the disturbed area for each cut will be redirected into the sump excavation area, by an impervious fence as shown on Attachment III-A-1, and then pumped into Basin 005P until the construction of Basin 006P is completed. The impervious staked barriers shall be installed a minimum of 100 linear feet in advance of the disturbance and wrapped back into the disturbed area in a manner to prevent any runoff from the disturbed area leaving the permitted area. Basin 006P shall be certified to the regulatory authority prior to any additional fines removal in Increment No. 5. Excavated fines removed to allow construction of Basin 006P will be stockpiled in the approximate vicinity of Basin 006 where raw coal will be mixed with the fines and readied for shipment to market. The excavation and dam construction process will continue in a generally southwest direction until reaching cut no. 11 and the southwest corner of Increment 5 and "tying into" the natural ground near the southwest corner of the Increment. Upon completion of Basin 006P and certification of its construction in accordance with the approved plans to the Regulatory Authority, fines will be

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excavated from Increment 5 beginning with cut no. 12 at the southern most portion of the constructed dam of Basin 006P. Removal of the fines will generally align northwest to southeast with advancement to the northeast. Removal of the fines will continue in this manner until the limits of the increment are reached.

The estimated volume of engineered fill required for the embankment of Basin 006P shall be approximately 10,000 cubic yards. Borrow material from Increment No. 4 shall be used to construct the embankment of Basin 006P.

Excavated fines will be stockpiled in the approximate vicinity of the excavation site where it will be screened by utilizing a mobile screen. Also, processed coal from offsite facilities will be hauled onsite where it will be stockpiled. The processed coal will then be mixed with the processed coal fines to provide for a more usable, marketable product. Once fines have been exhausted in the vicinity of the screening unit, the screen will be moved to a more accommodating location and the screening/blending process will continue for the life of the coal fines recovery operation.

See Attachment III-A-1, Operation Map, for the sequence of construction of basins and mining.

See Attachment III-A-1, Imperious Staked Barriers Typical.

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8. Is surface mining to be conducted within 500 feet of an underground mine? (780.27, 816.79) (X) Yes () No

If yes, describe measures to be used to comply with Section 816.79. Attach a map showing the location and extent of known workings in accordance with 780.14(a)(13)+

Revision R-1 proposes to add 11 acres to the Skelton Creek Operation which are located adjacent to the Praco Underground Mine.

The Praco Underground Mine that is in the vicinity of this site, particularly near basin 006 had secondary coal recovery operations performed in it prior to abandonment. The cross-hatched pillars on Attachment III-A-8 indicate the secondary coal removal and areas with relatively immediate subsidence after the pillar removal, therefore there is no planned subsidence in the future for this area. A portion of the mine collapsed during the secondary coal recovery operations, as per information obtained from Charles Whitson, P.E. of the Department of Industrial Relations-Mining and Reclamation Division, which caused the loss of life for some number of the miners involved. However, in the event subsidence does occur, the embankment and spillway system will be repaired and reconstructed to the approved detailed design plans elevation and configuration.

The coal fines removal operations will result in the recovery of a useable natural resource that would otherwise be lost; furthermore the removal of the coal fines will improve the water quality by removing the pollutant source and constructing permanent impoundment structures that will create fish and wildlife habitats within the permit boundary which will also enhance the fish and wildlife habitat in Skelton Creek and the surrounding area, as has been demonstrated in the area just south of the permit boundary.

See Attachment III-A-8 Underground Mine Location Map.

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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.

None proposed.

(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.

3. Diversions. (780.29, 816.43, 816.44)

Are diversions of overland flow or stream channel diversions proposed?

(XXX) Yes () No

If yes, complete the following:

(a) Is the diversion to be permanent?

() Yes (XXX) No

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Attachment III-B-2(a)

CERTIFICATION STATEMENT:

I hereby certify that Attachment III-B-2(a) prepared for CClay, Inc.'s Skelton Creek Operation, 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 and belief.

Leslie G. Stephens

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

03/20/2012
Date



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Attachment III-B-2(a)

ADDENDUM TO THE GENERAL PLAN

The addendum to the general plan consists of adding Basin 006P. Detailed design plans for Basin 006P will be submitted to the Regulatory Authority and upon written approval from the Regulatory Authority Basin 006P shall be constructed and certified to the Regulatory Authority as described in ATTACHMENT III-A-1 TYPE AND METHOD OF COAL MINING PROCEDURES prior to disturbance within the watershed of Basin 006P.

Basin 006P is to remain as a permanent water impoundment, fish and wildlife habitat. Data to qualify Basin 006P as permanent water impoundment will be submitted to the regulatory authority prior to Phase II Bond Release. (See attached data and watershed map for basin location and preliminary hydrologic information)

The Praco Underground Mine that is in the vicinity of this site, particularly near Basin 006 had secondary coal recovery operations performed in it prior to abandonment. The cross-hatched pillars on Attachment III-A-8 indicate the secondary coal removal and areas with relatively immediate subsidence after the pillar removal, therefore there is no planned subsidence in the future for this area. A portion of the mine collapsed during the secondary coal recovery operations, as per information obtained from Charles Whitson, P.E. of the Department of Industrial Relations-Mining and Reclamation Division, which caused the loss of life for some number of the miners involved. However, in the event subsidence does occur, the embankment and spillway system will be repaired and reconstructed to the approved detailed design plans elevation and configuration.

Geologic investigations of the area indicate layers of sandstone, siltstone, shale and minor amounts of bituminous coal and underclay. The coal fines to be excavated by CClay, Inc., originated as a result of the operation of a coal washing facility at the nearby Praco Underground Mine which reportedly recovered coal from the Mary Lee Seam of the Mary Lee Coal Group. The strata in the area is characterized by small scale normal faulting and gentle open folding.

All surface drainage from the proposed permit area flows into Skelton Creek which flows into the Locust Fork of the Black Warrior River.

See Attachment III-B-2(a), Watershed Map.

See Attachment III-B-2(a), Basin 006P detailed design plans.

See Attachment III-B-2(a), 100 Year Flood Study.

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Attachment III-B-2-.a

Basin No.	Location	Drainage Area (Acres)
006	NW/NW 1/4 & SW/NW, Section 1 and SE/NE, Section 2	53.0

Located within Township 17 South, Range 6 West, Jefferson County, Alabama, as shown by the Gilmore, Alabama United States Geological Survey Quadrangle Map.

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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.

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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.
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.

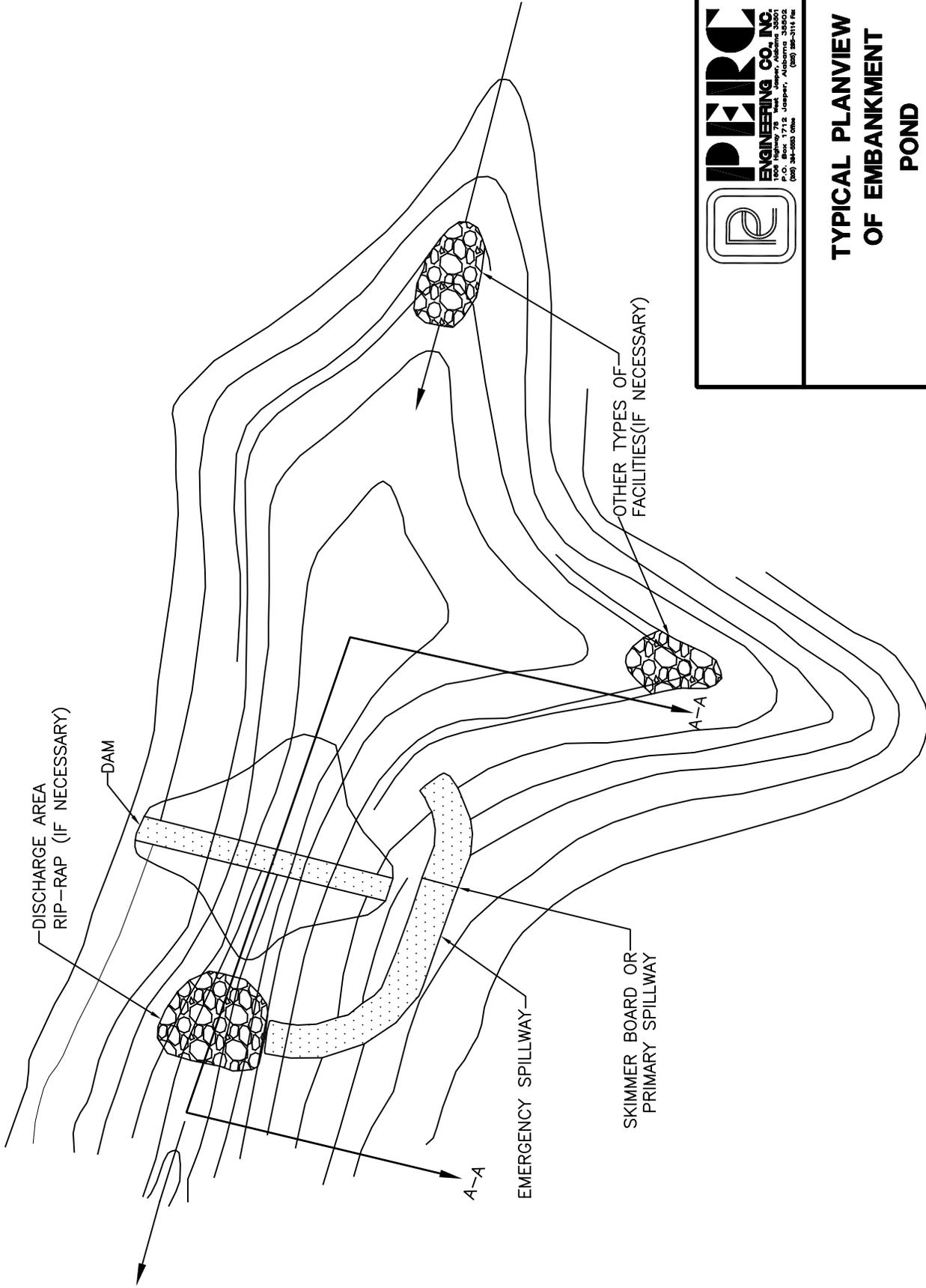
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18. Final graded slopes of the entire permanent water impoundment area shall not exceed 2.5H-1.0V to provide for adequate safety and access for proposed water users.
19. Prior to Phase II bond release, additional data concerning water quality, water 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.
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[1(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

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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, additional design and construction criteria shall be submitted prior to certification.

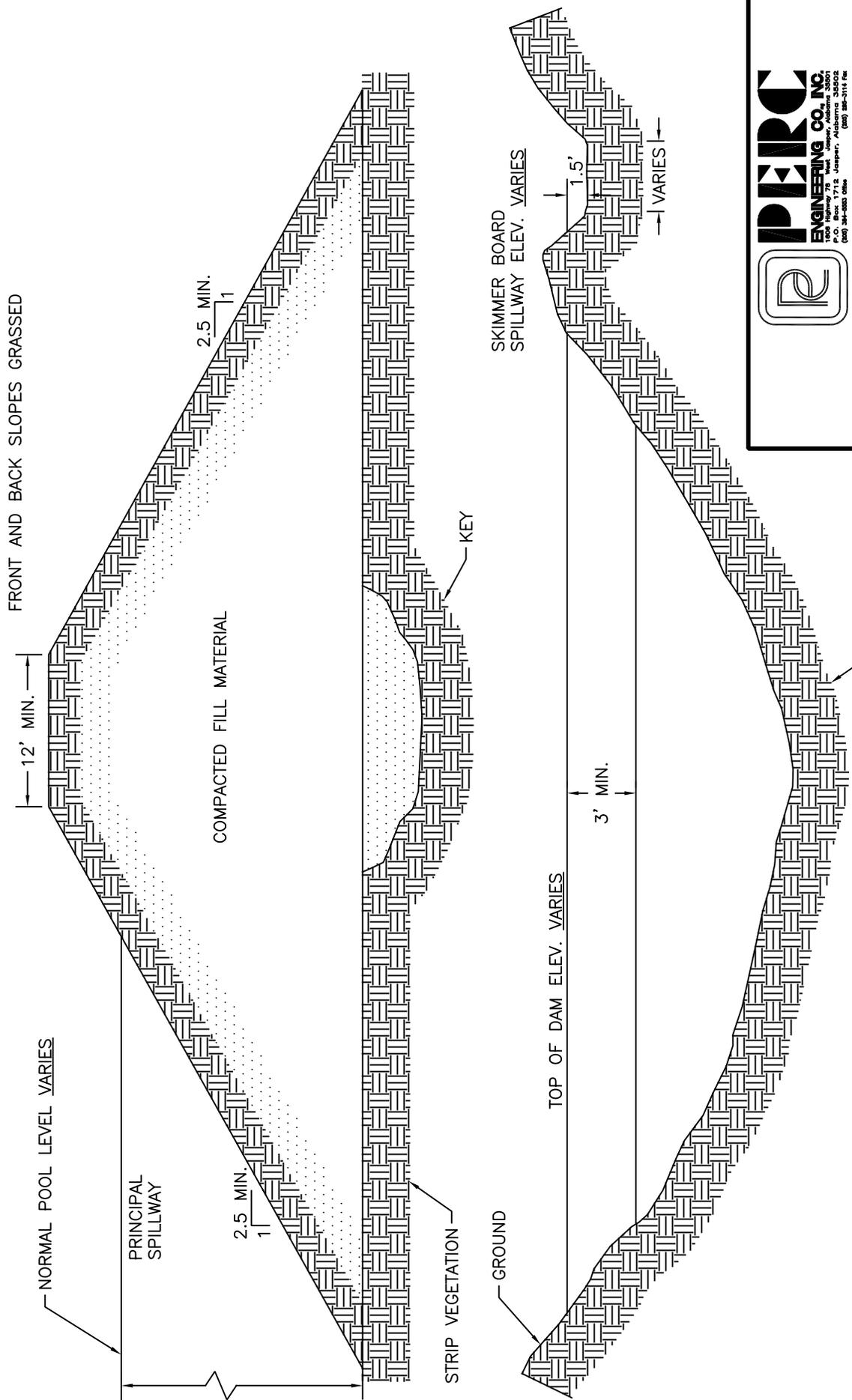


**TYPICAL PLANVIEW
 OF EMBANKMENT
 POND**

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

PLANVIEW OF EMBANKMENT POND

\\Perc600\perc_eng\Steve Miles\Steve_Doccs\Typicals\III-B-2(a)\Attachment_III-B-2(a).dwg 07/01/09 14:59



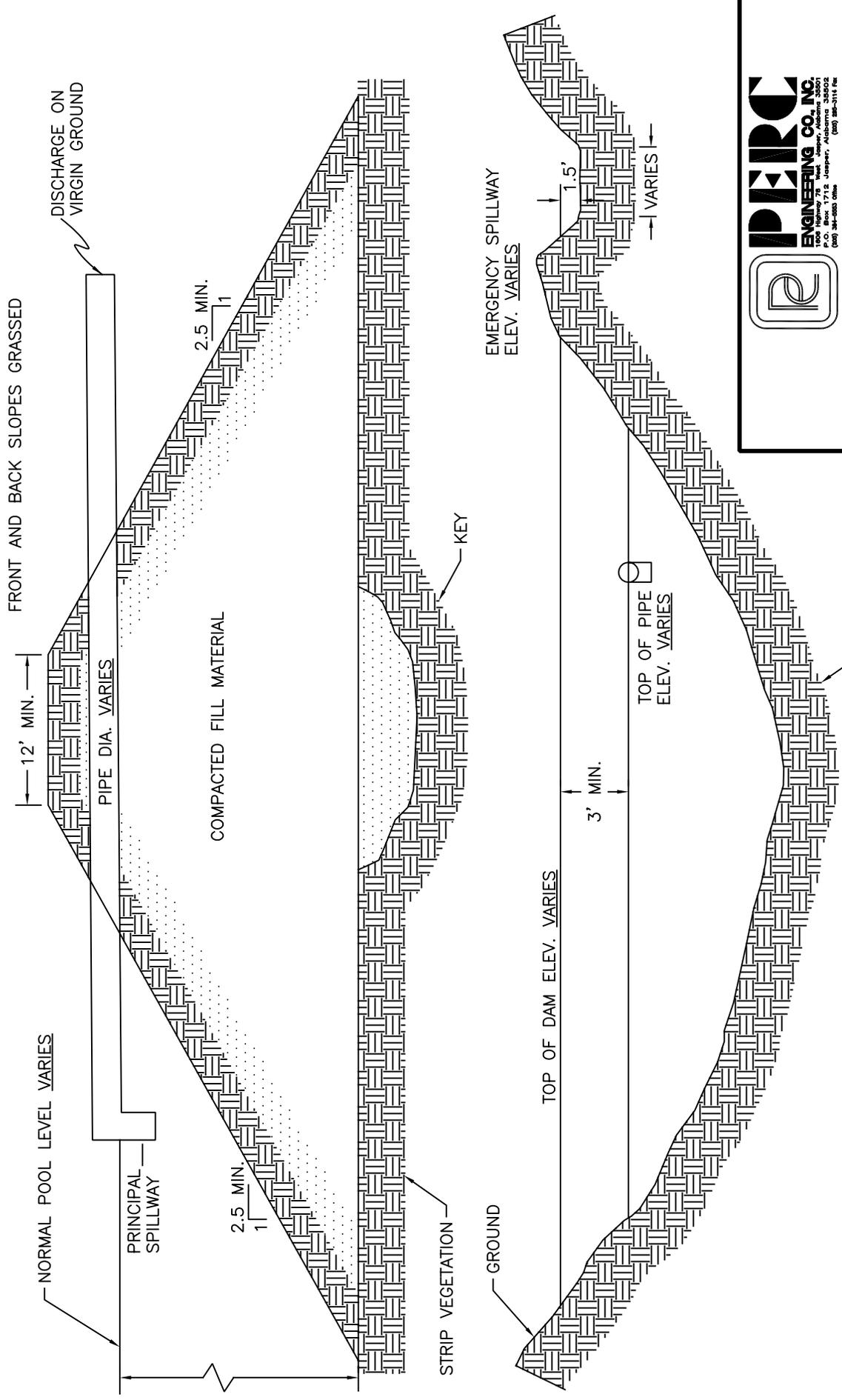
TYPICAL DAM DETAIL
NO SCALE



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

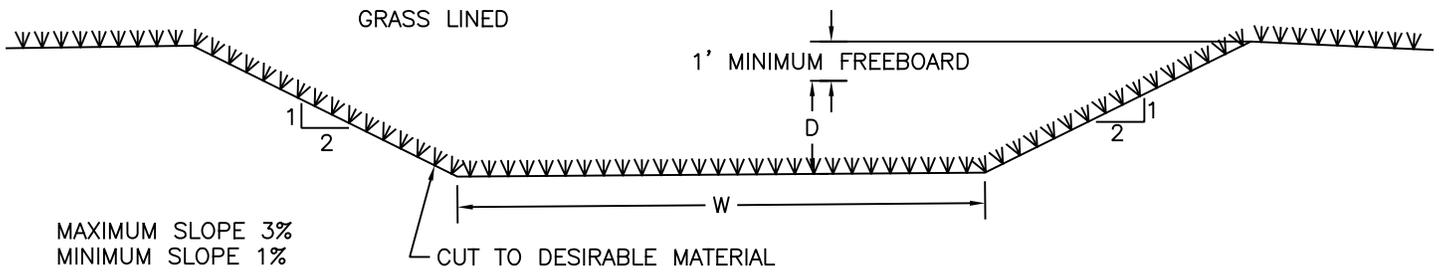


TYPICAL DAM DETAIL

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



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

$N(\text{LOOSE STONE OR GRASS LINED}) = 0.035$
 $A = \text{AREA}$
 $R = \text{AREA/WETTED PERIMETER}$
 $S = \text{SLOPE}$

* 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



TYPICAL PERMANENT DIVERSION FOR BASIN DISPOSAL

DRAWN BY: S.D.M.
DWG. NAME: TYPICALS

DATE: 1/4/2011

APPROVED BY: L.G.S.

SCALE: NONE

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5. Transportation Facilities (780.33, 780.37)

Primary Roads 4P and 5P are proposed to be added by this revision.

- (a) Describe the measures to be taken to ensure the interest of the public and landowners affected are protected if disturbance within 100 feet of the right-of-way or relocation of a public road is proposed.
- 1) Safety berms will be constructed adjacent to roadways to be disturbed to contain traffic.
 - 2) Proper signs, informing the traveling public of the disturbance, will be posted along the road right-of-ways 500 feet from the beginning of the disturbance.
 - 3) All safety requirements of the appropriate public health and safety, will be followed.
- (b) Describe any unique design, feature, or structure which is necessary for the road to meet the performance standards of Subchapter K using any necessary maps, plans, or cross-sections.

See Attachment III-B-5, Primary Road Location Map.

See Attachment III-B-5, detailed design plans for Primary Roads 4P and 5P.

- (c) Describe, in detail, the measures to be taken during construction, maintenance and use of the transportation facilities to prevent damage to fish and wildlife and their habitat; public and private property; and erosion, siltation, and pollution of water.

Roads will be constructed with the required ditching for proper drainage. Roads will be maintained with a dozer and motor grader patrol as required. Water will be used to reduce erosion and dust emissions. Roads will be located on ridge tops where possible or on the most stable slopes to minimize erosion. Vegetation will not be cleared except as necessary for roadway and ditch construction. After construction of the roads is complete, vegetation will be established on cut and fill slopes that exist along the all roads. To the extent possible, roads will be located above the sediment basins to be constructed for the mining operation in an effort to control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area and to comply with State and Federal water quality standards applicable to receiving waters and avoid the alteration of the normal flow of water in stream beds or drainage channels while preventing or controlling damage to public or private property. Where it is not possible or is impractical to locate roads in this manner, sediment control

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devices such as silt fencing, hay bale check dams and rock filter check dams will be used as necessary to maintain water quality. Roads not required for fire and sediment basin access will be reclaimed. See Attachment III-B-5, Attachment III-B-5(b), and Specifications for the construction, maintenance, and reclamation of primary roads.

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**SPECIFICATIONS FOR THE CONSTRUCTION, MAINTENANCE
AND RECLAMATION OF ANCILLARY ROADS**

1. To the extent possible, roads will be located on ridges or on the most stable available slopes to prevent or minimize erosion, downstream sedimentation and flooding in an effort to prevent adverse effects to fish, wildlife and related environmental values.
2. To the extent possible, roads will be located above the sediment basins to be constructed for the mining operation in an effort to control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area and to comply with State and Federal water quality standards applicable to receiving waters and avoid the alteration of the normal flow of water in streambeds or drainage channels while preventing or controlling damage to public or private property. Where it is not possible or is impractical to locate roads in this manner, sediment control devices such as silt fencing, hay bale check dams and rock filter check dams will be used as necessary to maintain water quality.
3. Prior to construction, the roadway will be cleared, grubbed and will have the topsoil removed. The clearing limits will be kept to the minimum necessary to accommodate the roadbed and associated ditch construction.
4. Roads will be constructed of suitable subgrade material compacted to ninety-five percent of the standard proctor density and will have a minimum width of ten feet and a maximum width necessary to accommodate the largest equipment traveling the road.
5. Roadbeds will be cut to consolidated non-erodible material or will be surfaced with durable non-toxic, non-acid forming substances. It is anticipated that durable sandstone overburden on site will be utilized as surfacing material. If there should not be adequate sandstone on site, then a durable sandstone material, chert, crushed limestone, crushed concrete, crushed asphalt, red rock, ironore refuse, gravel, or other durable non-toxic, non-acid forming material approved by the Regulatory Authority will be hauled in from off site and placed on the roadbed to a depth of two inches.
6. No sustained grades will exceed ten percent unless deemed necessary, in which case appropriate sediment control facilities will be constructed. If grades in excess of fifteen percent are required, cross drains, ditch relief

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drains and road drainways will be located at a minimum distance of three-hundred feet.

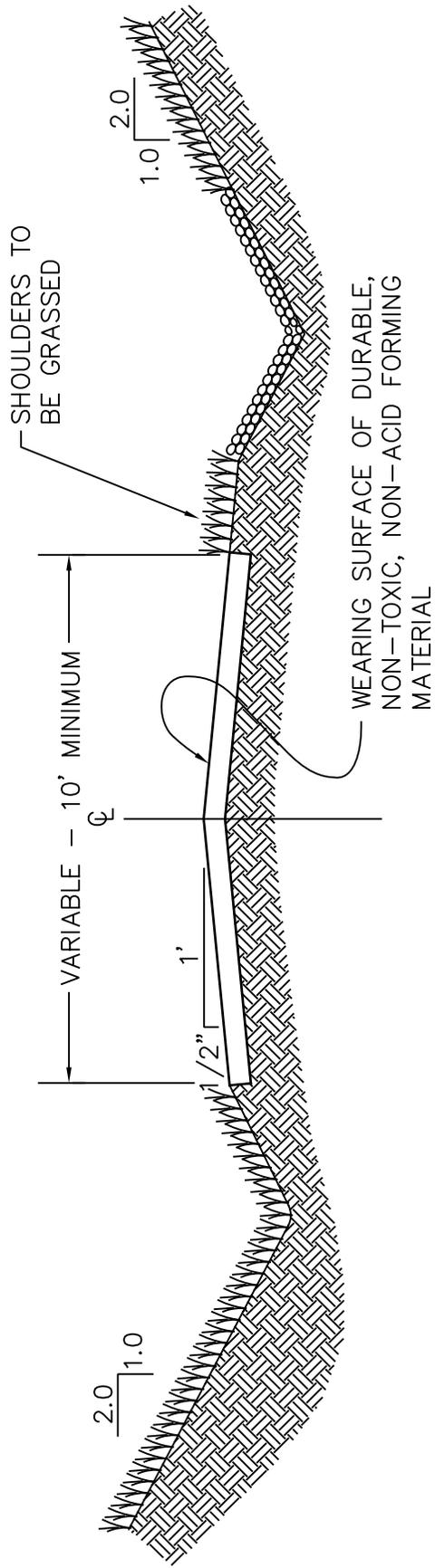
7. Roads will be constructed so as to have adequate drainage utilizing ditches, cross drains and ditch relief drains. Roads will not be located in the channel of an intermittent or perennial stream unless specifically approved by the Alabama Surface Mining Commission. Additionally, no relocation and/or alteration of an intermittent or perennial stream will be done unless specifically approved by the Alabama Surface Mining Commission. In the event that it becomes evident that any drainage structures including culverts, bridges and/or low water crossings will be required in order to cross an intermittent or perennial stream, the structure will be designed in accordance with Alabama Surface Mining Commission requirements and prudent engineering practice and the approval of the design(s) will be acquired prior to the commencement of construction. Hay bale check dams and silt fences will be used at strategic locations when necessary to control sediment runoff. Immediately upon completion of construction, the side slopes of the road embankments and/or cuts will be fertilized, seeded with annual and perennial grasses and mulch will be added to aid in the prevention of erosion and to enhance seed germination. The seed mix will consist of, but is not limited to, some combination of the following species: bermuda grass, fescue, lespedeza, rye grass, brown top millet, clover and vetch. The particular species to be planted will vary with the planting season at the time of seed application.
8. Routine maintenance will be required to assure that the road continually meets performance standards and will consist of periodic grading, resurfacing, dust suppression and maintenance of sediment control facilities. Dust suppression will consist of the application of water, chemical binders and/or other dust suppressants. No oil will be utilized in this process. Spot seeding, fertilizing and mulching will be performed as necessary to improve vegetative cover on roadway slopes. A road damaged by a catastrophic event shall be repaired as soon as practicable after the damage has occurred.
9. Roads not to be retained as part of the post mine land use shall be reclaimed in accordance with the approved reclamation plan for this permit as soon as practicable after they are no longer needed as part of the mining and reclamation operation, using the following procedures:
 - a. The road will be closed to traffic.

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- b. All bridges, culverts and other drainage structures not approved as part of the post mine land use will be removed.
 - c. All road surfacing materials that are not compatible with the post mine land use or revegetation requirements will be properly disposed of on-site or removed from the site for re-use.
 - d. Roadway cut and fill slopes shall be regraded and reshaped to be compatible with the post mine land use and to compliment the natural drainage pattern of the surrounding terrain.
 - e. The natural drainage patterns shall be protected from surface runoff and erosion utilizing the installation of dikes and/or cross drains as necessary.
 - f. The roadbed shall be ripped or scarified as necessary, the topsoil or substitute or approved growing medium shall be replaced and revegetated in accordance with the approved reclamation plan for this permit.
10. The following drawings illustrate typical roadbed configurations for ancillary roads.

TYPICAL HAUL ROAD CUT SECTION

NO SCALE



TYPICAL CUT SECTION
ANCILLARY HAUL ROAD

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

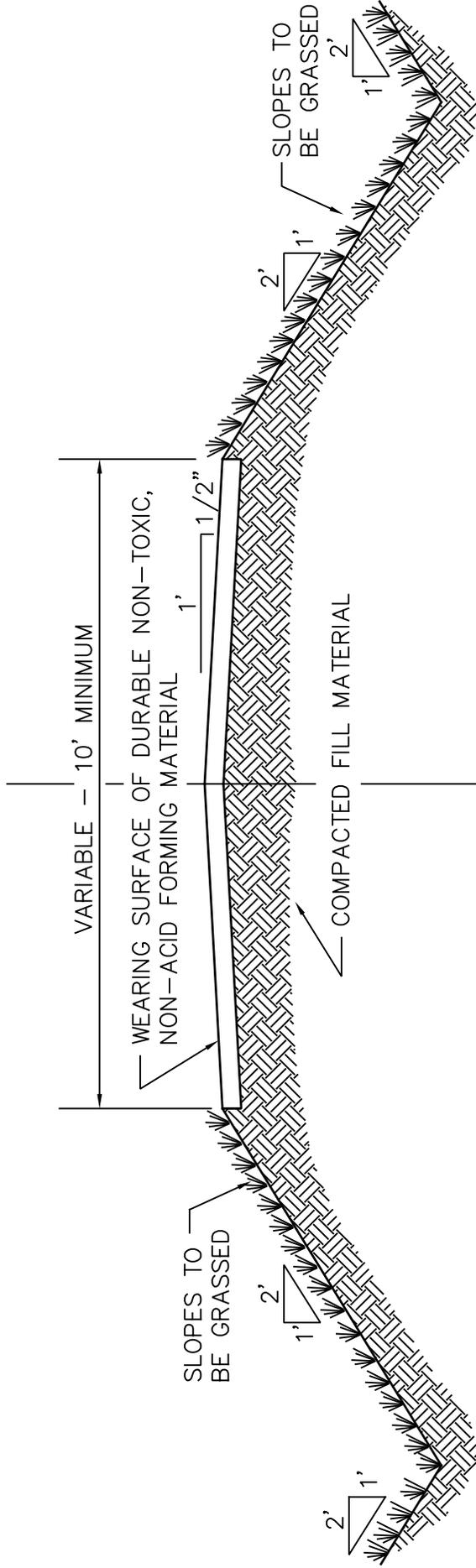
DATE: 2-3-97

APPROVED BY: S.R.I.
SCALE: NONE

ATTACHMENT III. - B. - 5.

TYPICAL HAUL ROAD FILL SECTION

NO SCALE



TYPICAL FILL SECTION
ANCILLARY HAUL ROAD

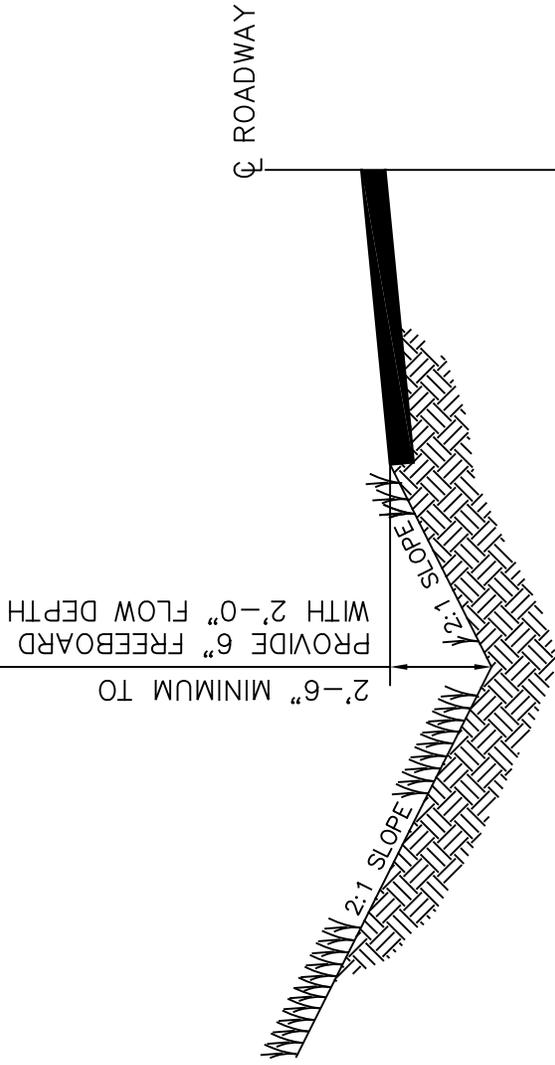
DRAWN BY: K.D.P.
DWG. NAME: TYPHAULA

DATE: 2-3-97

APPROVED BY: S.R.I.

SCALE: NONE

ATTACHMENT III. - B. - 5.



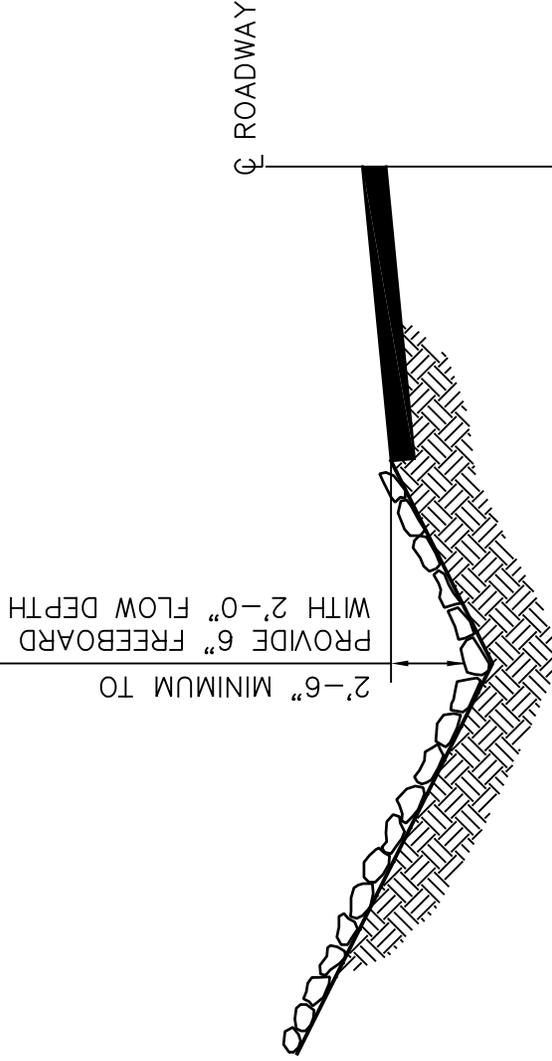
MINIMUM DITCH GRADIENT = 1%
 MAXIMUM DITCH GRADIENT = 5%

DITCH CHANNEL TO BE VEGETATED WITH
 A MIXTURE OF BERMUDA GRASS, FESCUE,
 AND LESPEDEZA TO CONFORM TO CLASS
 "D" RETARDANT CLASS.



TYPICAL ANCILLARY ROADWAY DITCH
 CROSS SECTION

DRAWN BY: K.D.P.	DATE: 2-4-97
DWG. NAME: ANCIROAD	
APPROVED BY: R.E.P.	SCALE: NONE



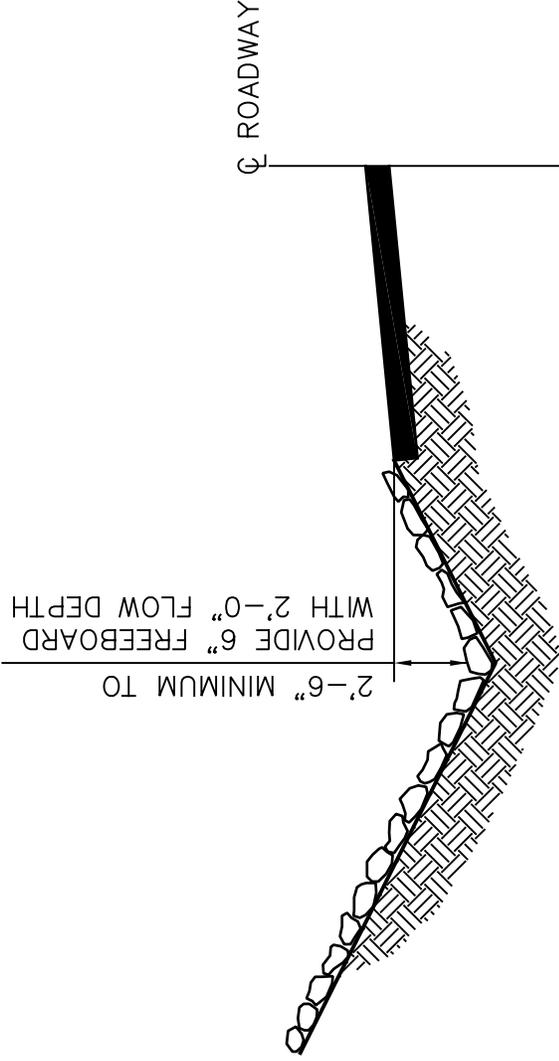
DITCH GRADIENT 5% TO 10%

DITCH CHANNEL TO BE LINED WITH NON-ERODIBLE NON-TOXIC, NON-ACID FORMING SANDSTONE OR LIMESTONE RIP-RAP. THE RIP-RAP WILL BE "CLASS 1" RIP-RAP AND HAVE A MINIMUM THICKNESS OF 12".



TYPICAL ANCILLARY ROADWAY DITCH
CROSS SECTION

DRAWN BY: K.D.P.	DATE: 2-4-97
DWG. NAME: PRIMRD1	
APPROVED BY: R.E.P.	SCALE: NONE



DITCH GRADIENT 11% TO 17%

DITCH CHANNEL TO BE LINED WITH NON-ERODIBLE NON-TOXIC, NON-ACID FORMING SANDSTONE OR LIMESTONE RIP-RAP. THE RIP-RAP WILL BE "CLASS 2" RIP-RAP AND HAVE A MINIMUM THICKNESS OF 16".



TYPICAL ANCILLARY ROADWAY DITCH
CROSS SECTION

DRAWN BY: K.D.P.	DATE: 2-4-97
DWG. NAME: PRIMRD2	SCALE: NONE
APPROVED BY: R.E.P.	

Applicant: <u>CClay, Inc.</u>
Mine Name: <u>Skelton Creek Operation</u>
Permit Number: P- <u>3934, Revision R-1</u>

**SPECIFICATIONS FOR THE CONSTRUCTION, MAINTENANCE
AND RECLAMATION OF PRIMARY ROADS**

1. Primary roads shall be designed by or under the direction of a registered professional engineer in accordance with the Alabama Surface Mining Commission rules and regulations and prudent engineering practice.
2. Each roadway embankment will be designed and constructed so as to have a minimum static safety factor of 1.3.
3. To the extent possible, roads will be located on ridges or on the most stable available slopes to prevent or minimize erosion, downstream sedimentation and flooding in an effort to prevent adverse effects to fish, wildlife and related environmental values.
4. To the extent possible, roads will be located above the sediment basins to be constructed for the mining operation in an effort to control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area and to comply with State and Federal water quality standards applicable to receiving waters and avoid the alteration of the normal flow of water in stream beds or drainage channels while preventing or controlling damage to public or private property. Where it is not possible or is impractical to locate roads in this manner, sediment control devices such as silt fencing, hay bale check dams and rock filter check dams will be used as necessary to maintain water quality. No fording of intermittent or perennial streams will be conducted unless specifically approved by the Alabama Surface Mining Commission as temporary routes to be used during road construction.
5. Prior to construction, the roadway will be cleared, grubbed and will have the topsoil removed. The clearing limits will be kept to the minimum necessary to accommodate the roadbed and associated ditch construction.
6. Roads will be constructed of suitable compacted subgrade material and will have a minimum width of ten feet and a maximum width necessary to accommodate the largest equipment traveling the road.
7. Roadbeds will be cut to consolidated non-erodible material or will be surfaced with durable non-toxic, non-acid forming substances. The wearing surface will consist of durable sandstone, chert, crushed limestone, crushed concrete, crushed asphalt, red rock, iron ore refuse, gravel, or other durable non-toxic, non-acid forming material approved by the

Applicant: CCLay, Inc.
Mine Name: Skelton Creek Operation
Permit Number: P- 3934, Revision R-1

Regulatory Authority. The wearing surface will be placed on the roadbed to a depth of four inches.

8. No sustained grades will exceed ten percent unless deemed necessary, in which case appropriate sediment control facilities will be constructed. If grades in excess of fifteen percent are required, cross drains, ditch relief drains and road drainways will be located at a minimum distance of three-hundred feet.
9. Roads will be constructed so as to have adequate drainage utilizing ditches, culverts, cross drains and ditch relief drains designed to safely pass the peak runoff from a ten year, six hour precipitation event. Drainage pipes and culverts shall be installed as designed and will be maintained in a free and operating condition to prevent and control erosion at inlets and outlets. Culverts have been designed to support the load of the heaviest equipment to travel the road and are based on the Handbook of Steel Drainage and Highway Construction Products by the American Iron and Steel Institute and the equipment specifications. Drainage ditches will be constructed and maintained in accordance with the approved design to prevent uncontrolled drainage over the road surface and embankment. Roads will not be located in the channel of an intermittent or perennial stream unless specifically approved by the Alabama Surface Mining Commission. Additionally, no relocation and/or alteration of an intermittent or perennial stream will be done unless specifically approved by the Alabama Surface Mining Commission. In the event that it becomes evident that any drainage structures including culverts, bridges and/or low water crossings will be required in order to cross an intermittent or perennial stream, the structure will be designed and constructed in accordance with Alabama Surface Mining Commission requirements and prudent engineering practice and the approval of the design(s) will be acquired prior to the commencement of construction. Hay bale check dams and silt fences will be used at strategic locations when necessary to control sediment runoff. Immediately upon completion of construction, the side slopes of the road embankments and/or cuts will be fertilized, seeded with annual and perennial grasses and mulch will be added to aid in the prevention of erosion and to enhance seed germination. The seed mix will consist of, but is not limited to, some combination of the following species: bermuda grass, fescue, lespedeza, rye grass, brown top millet, clover and vetch. The particular species to be planted will vary with the planting season at the time of seed application. Upon completion of construction of each phase of the roadway the construction will be certified to the Alabama Surface Mining Commission as having been done in

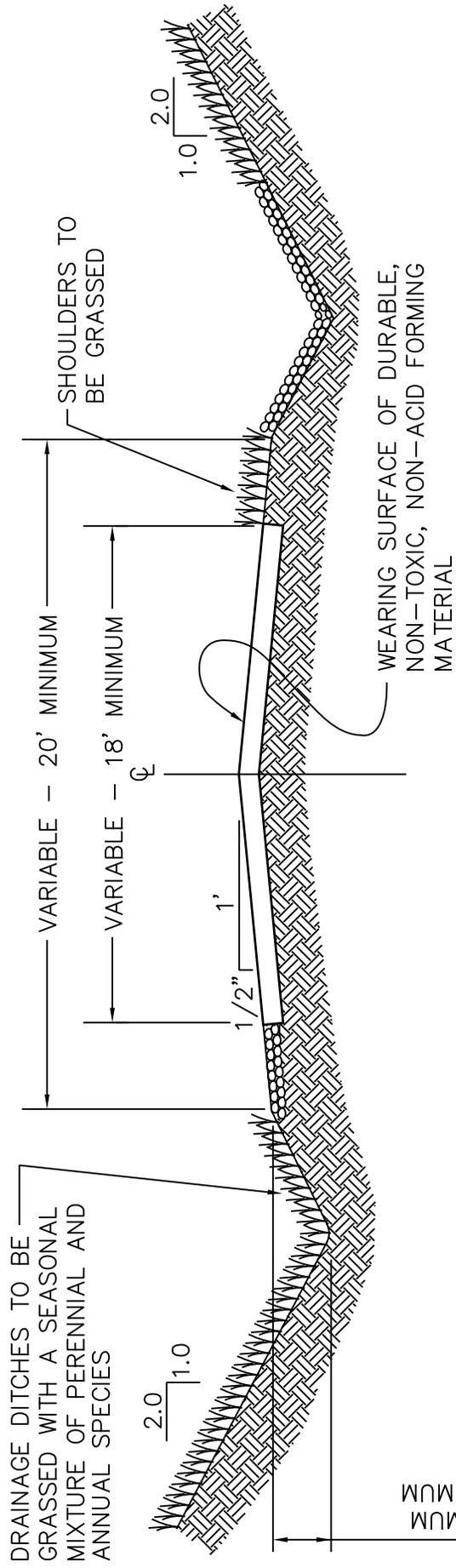
Applicant: <u>CClay, Inc.</u>
Mine Name: <u>Skelton Creek Operation</u>
Permit Number: P- <u>3934, Revision R-1</u>

accordance with the approved plans for the roadway and associated facilities.

10. Routine maintenance will be required to assure that the road continually meets performance standards and will consist of periodic grading, resurfacing, dust suppression and maintenance of sediment control facilities. Dust suppression will consist of the application of water, chemical binders and/or other dust suppressants. No oil will be utilized in this process. Spot seeding, fertilizing and mulching will be performed as necessary to improve vegetative cover on roadway slopes. A road damaged by a catastrophic event shall be repaired as soon as practicable after the damage has occurred.
11. Roads not to be retained as part of the post mine land use shall be reclaimed in accordance with the approved reclamation plan for this permit as soon as practicable after they are no longer needed as part of the mining and reclamation operation, using the following procedures:
 - a. The road will be closed to traffic.
 - b. All bridges, culverts and other drainage structures not approved as part of the post mine land use will be removed.
 - c. All road surfacing materials that are not compatible with the post mine land use or revegetation requirements will be properly disposed of on-site or removed from the site for re-use.
 - d. Roadway cut and fill slopes shall be regraded and reshaped to be compatible with the post mine land use and to compliment the natural drainage pattern of the surrounding terrain.
 - e. The natural drainage patterns shall be protected from surface runoff and erosion utilizing the installation of dikes and/or cross drains as necessary.
 - f. The roadbed shall be ripped or scarified as necessary, the topsoil or substitute or approved growing medium shall be replaced and revegetated in accordance with the approved reclamation plan for this permit.
12. The drawings and data contained in the specific design plans illustrate typical roadbed configurations for primary roads as well as site specific design of drainage structures, stability analysis and ditch sections.

TYPICAL HAUL ROAD CUT SECTION

NO SCALE



PERC
ENGINEERING CO., INC.
1808 Highway 78 West, Jasper, Alabama 35001
P.O. Box 974, Jasper, Alabama 35002
(205) 381-3333 FAX
(205) 381-3331 TEL

TYPICAL CUT SECTION
PRIMARY HAUL ROAD

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

DATE: 2-3-97

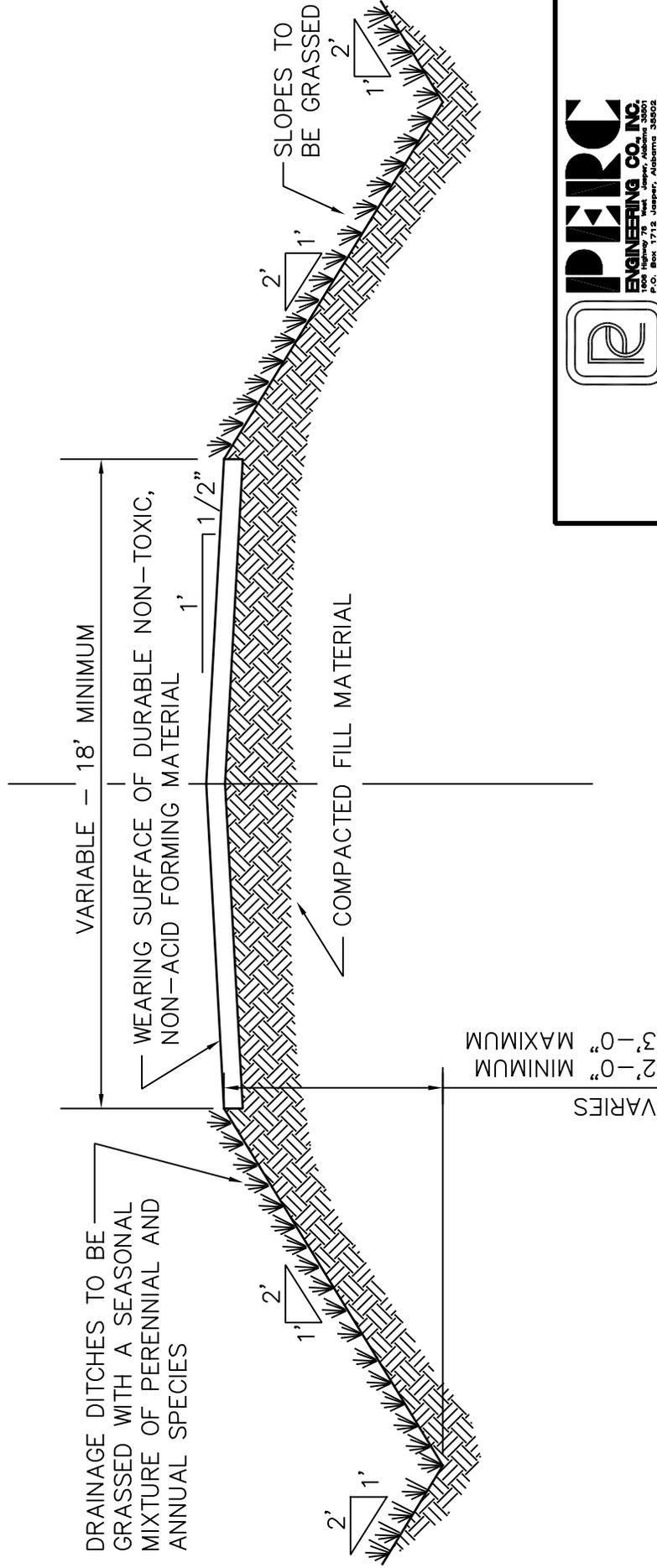
APPROVED BY: S.R.I.

SCALE: NONE

ATTACHMENT III. - B. - 5.

TYPICAL HAUL ROAD FILL SECTION

NO SCALE



TYPICAL FILL SECTION
PRIMARY HAUL ROAD

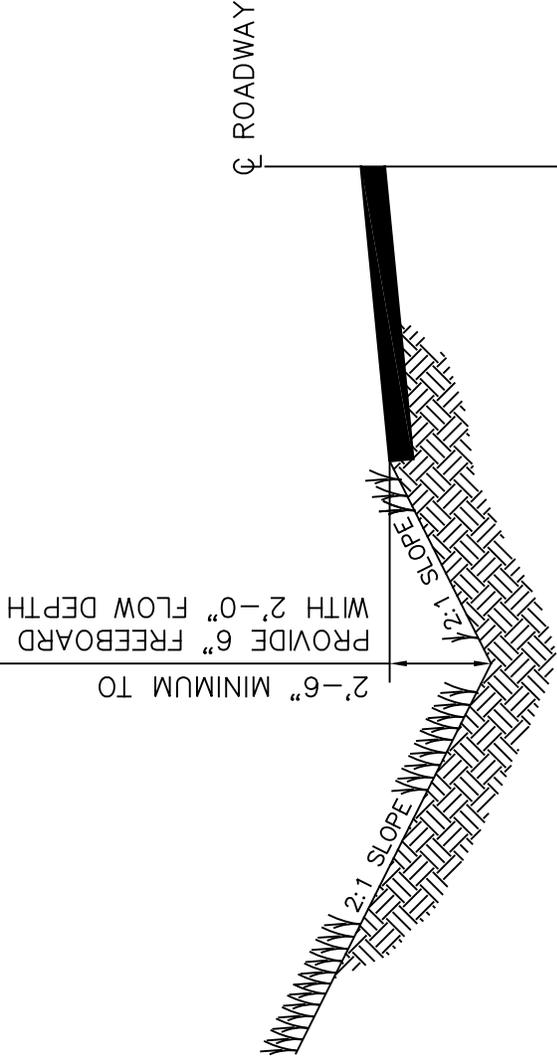
DRAWN BY: K.D.P.
DWG. NAME: TYPHAULF

DATE: 2-3-97

APPROVED BY: S.R.I.

SCALE: NONE

ATTACHMENT III - B. - 5.



MINIMUM DITCH GRADIENT = 1%
 MAXIMUM DITCH GRADIENT = 5%

DITCH CHANNEL TO BE VEGETATED WITH
 A MIXTURE OF BERMUDA GRASS, FESCUE,
 AND LESPEDEZA TO CONFORM TO CLASS
 "D" RETARDANT CLASS.



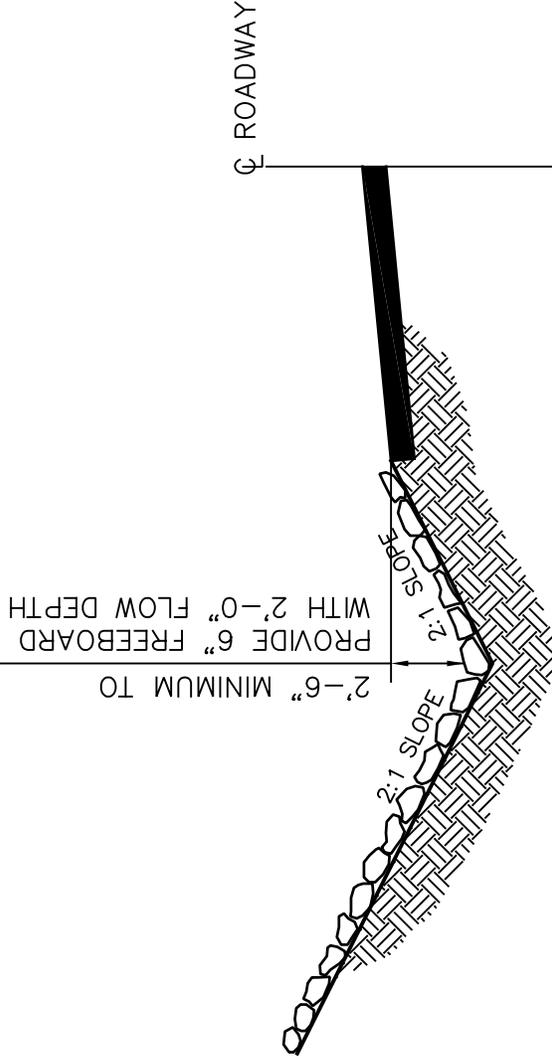
TYPICAL PRIMARY ROADWAY DITCH
 CROSS SECTION

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

DATE: 2-4-97

APPROVED BY: R.E.P.

SCALE: NONE

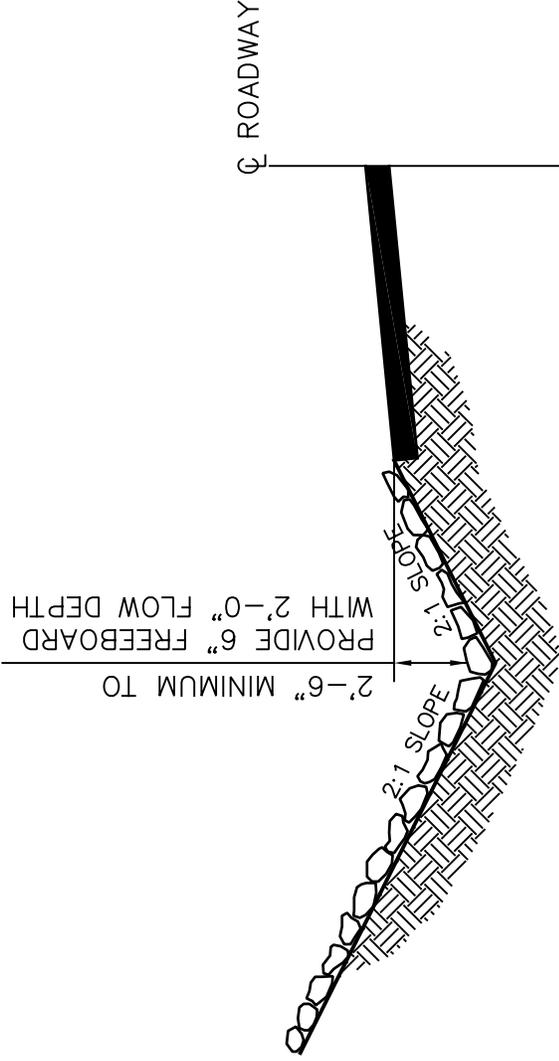


DITCH CHANNEL TO BE LINED WITH NON-ERODIBLE NON-TOXIC, NON-ACID FORMING SANDSTONE OR LIMESTONE RIP-RAP. THE RIP-RAP WILL BE "CLASS 1" RIP-RAP AND HAVE A MINIMUM THICKNESS OF 12".



TYPICAL PRIMARY ROADWAY DITCH
CROSS SECTION

DRAWN BY: S.D.M. DWG. NAME: PRIMRD1	DATE: 11/8/2011
APPROVED BY: L.G.S.	SCALE: NONE



DITCH GRADIENT 11% TO 17%

DITCH CHANNEL TO BE LINED WITH NON-ERODIBLE NON-TOXIC, NON-ACID FORMING SANDSTONE OR LIMESTONE RIP-RAP. THE RIP-RAP WILL BE "CLASS 2" RIP-RAP AND HAVE A MINIMUM THICKNESS OF 16".



TYPICAL PRIMARY ROADWAY DITCH
CROSS SECTION

DRAWN BY: S.D.M.
DWG. NAME: PRIMRD2

DATE: 11/8/2011

APPROVED BY: L.G.S.

SCALE: NONE