

Applicant: <u>Alabama Carbon, LLC</u>
Mine Name: <u>Glade Preparation Plant</u>
Permit Number: <u>P-3829, Revision R-8</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)

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

- Loaders
- Radial Stacker
- Vibratory Screen
- Trucks
- Wet Screen
- Cyclones
- Centrifuges
- Pumps
- Dry Crusher
- Conveyors

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>Estimate Life</u>
1	43	Issuance of Permit	Life of Permit
2	18	04/2012	Life of Permit
3	45	Issuance of R-8	Life of Permit

The sequence of operations will be generally as follows:

- 1) Construction of Sediment Control Structures
- 2) Clearing and Grubbing
- 3) Topsoil Removal
- 4) Processing of Coal
- 5) Re-Grading
- 6) Revegetation

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ATTACHMENT III-A-1

TYPE AND METHOD OF COAL MINING PROCEDURES

There will be no mining at this site this site is a coal preparation plant. Preparation will consist of (a) timber removal (b) topsoil removal (c) coal processing (d) regrading and revegetation. Once the site has been regraded and topsoiled soil samples will be analyzed (where required) and proper nutrients will be added before revegetation. Any problem that may arise will be handled by proper consulting personnel utilizing various support equipment and support personnel.

Revision R-8 proposes to update the Operation Plan by adding Coarse Refuse Disposal Area No. 3 for the disposal of coarse refuse and coal fines generated by the preparation plant. The coarse refuse will be mixed with the coal fines ran through a press prior to mixing and transported by an overland conveyor to Coarse Refuse Disposal Area No.3 for disposal.

Once Coarse Refuse Area No. 3 has reached the maximum deposition level, the disposal area will be covered with four feet of the best available, non-toxic, non acid-forming, and non-combustible material excavated from onsite areas that has been stockpiled onsite and the remaining cover material that is required will be hauled in from an offsite source as needed. The disturbed area will then be fertilized, seeded with a seed mixture approved in the reclamation plan, and mulched to ensure a permanent diverse vegetative cover.

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3. Attach a narrative explaining the construction modification, use, maintenance, and removal of the following facilities: (780.11)
 - (a) Coal removal, handling, storage, cleaning and transportation structures and facilities;
 - (b) Spoil, coal processing waste and non-coal waste removal, handling, storage, transportation and disposal structures and facilities;
 - (c) Mine facilities; and
 - (d) Water pollution control facilities.

See Attachment III-A-3.

5. Describe measures to be taken to ensure that all debris, acid-forming and toxic-forming materials and materials constituting a fire hazard are disposed of in accordance with 816.89 and 816.103; include contingency plans to prevent sustained combustion of such material. (780.18)

See the response in the original permit and subsequent revision applications.

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Attachment III-A-3

- 3.a) All haulage roads shall be designed to the following minimum criteria and/or prudent engineering practice for the design of haulroads, except where said haulroad is a public highway. See Part III-B-5 for primary and ancillary roads detailed design plans.

To the extent possible roads will be located on ridges or on the most stable available slopes to minimize erosion, downstream sedimentation and flooding in an effort to prevent adverse effects to fish, wildlife and related environmental values.

Prior to construction, the roadway areas shall be cleared, grubbed, and all topsoil shall be removed and stockpiled. Vegetation will not be cleared for more than the width necessary for the road and associated ditch construction.

Roads will be constructed by placing and compacting lifts of suitable subgrade material to a grade suitable for the intended use of the road. Drainage pipes will be placed in embankments or cuts as necessary to assure proper drainage. Once the desired grade of subgrade material has been attained and all drainage structures installed roads will be surfaced with available gravel, rock, chert or other suitable material as approved by the state regulatory agency sufficiently durable for the anticipated volume of traffic weight and speed of vehicles to be used. The surface will be compacted until a desirable grade and surface is attained. No toxic or acid forming substances will be used in this surface material. No sustained grade will exceed 10% unless deemed necessary, in which case appropriate sediment control facilities will be constructed. If grades of greater than 15 percent are required cross-over drains, ditch relief drains and road drainways will be located at a minimum of 300 foot intervals.

All roads will be constructed and maintained so as to have adequate drainage, using ditches, cross drains, and ditch relief drains. Drainage pipes will be placed in embankments or cuts as necessary to assure proper drainage and hay bale check dams and silt fences will be used at strategic locations when necessary to control sediment runoff. Natural drainage ways will not be altered unless otherwise approved by the ASMC. For stability the side slopes of the road embankments and/or cuts will be seeded with temporary and perennial type grasses and mulched to aid in preventing erosion and to enhance germination of the seed. No modifications are expected and only routine maintenance will be required to maintain the surface of roads such as periodic grading and resurfacing. Spot seeded and mulching will take place as necessary to improve coverage of vegetation on side slopes and embankments. Haulroads will be maintained with water and/or other materials

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to minimize fugitive dust emissions. Maintenance of erosion control facilities will include periodic removal of sediment from structures and repairs of areas damaged due to weather, etc. Unless retention of the roads is approved for post-mining land use the following procedures will apply. When no longer needed the roadbeds will be ripped, plowed and scarified. All road surfacing materials will be removed and placed within an open pit within the permit area. The natural drainage patterns will be restored by cutting slopes and shaping to blend with the natural drainage of surrounding areas. If necessary cross drains, dikes and water bars will be constructed to minimize erosion. Terraces will be used as necessary to provide long term stability on cut and fill slopes and to minimize erosion. Road surfaces will then be revegetated according to the reclamation plan approved for this permit application, which includes planting a mixture of up to 100 lbs. or more of various legumes and grasses.

- 3.b) Mine facilities added as a result of this application will consist of Coarse Refuse Disposal Area No. 3. This area will be used to store coarse and fine coal waste produced from the washing operations at this facility and will be inspected and maintained until reclamation of the area is complete. Waste bank construction and any subsequent modifications that may be required will be conducted under the general supervision of a qualified registered professional engineer and will be done in accordance with the approved design plans. The waste bank will be constructed of coarse refuse and coal fines produced at this facility. The coarse refuse will be mixed with the coal fines ran through a press prior to mixing and transported by an overland conveyor to Coarse Refuse Disposal Area No. 3 for disposal.

The Coarse Refuse Disposal Area No. 3 will be positioned on unyielding, relatively impermeable consolidated rock. Underdrains as necessary will be constructed under the waste bank to intercept seepage and ensure stability. The waste bank will be built in 24 inch horizontal lifts being thoroughly compacted to 90% of the standard proctor as outlined in the ASTM. Information utilized to describe the potential cover material was taken from samples taken from the groundwater monitoring wells/overburden sampling sites, DH-5, SB-1, SB-2, SB-3, and SB-8. Results of the laboratory analysis are attached.

The Coarse Refuse Disposal Area No. 3 will be constructed to conform to the slopes and configuration as specified within the design plans. Slope benches, diversions, and down drains will be rough graded as soon as possible as the fill is being raised and will be finish graded including the addition of cover material and vegetation upon the completion of outslope grading and rough grading of the subsequent slope bench.

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Temporary diversion around the work area will be constructed as needed. Grading operations will be conducted to allow runoff and prevent ponding on the work area. As the outslope within the area of any down drain is completed and prior to allowing drainage from respective slope benches to enter any down drain, the down drain will be constructed and lined from the lowest section of the down drain to immediately above any slope bench discharge point. This is done to prevent erosion of the fill as a result of discharges from the exit point of any slope bench. Construction of the bank will continue in this fashion until the maximum height and configuration of the waste bank are reached or until the waste bank is abandoned and reclaimed. All surface drainage will be routed around the area through diversion ditches. The diversion ditches will be designed to pass a peak flow from a 100 yr. - 6 hr. precipitation event.

Routine maintenance of Coarse Refuse Disposal Area No. 3 will consist of repair and stabilization of any rills and gullies which may develop and repairs to erosion protection structures as required. The waste bank will be inspected by a registered professional engineer or other qualified professional specialist under the direct supervision of the qualified professional engineer. Inspections will be made at least quarterly and during times of removal of organic material and topsoil, installation of diversion ditches, installation of underdrains, placement and compaction of refuse material, and revegetation of the fill. Certification inspection reports will be filed with the Regulatory Authority stating that proper construction and maintenance are occurring in accordance with approved design plans. Inspection reports will be retained at the facility office.

Upon completion of the filling of Coarse Refuse Disposal Area No. 3, it will be reclaimed by the following procedure: The waste bank area will be graded using mobile equipment to the configuration approved in the design plans. The waste bank will be covered with four (4) feet of non-toxic, non-acid forming, and non-combustible material excavated from onsite areas and the remaining cover material that is required will be hauled in from an offsite source as needed. All disturbed areas will be vegetated with an appropriate combination of grasses and legumes as stated in the reclamation plan, fertilized, and mulched to ensure a permanent diverse vegetative cover. The cover material will be sampled and analyzed to determine the correct amount of soil amendments to be added to the cover material. Soil amendments, including lime and fertilizer, will be added and disced into the cover material in rates as recommended by laboratory analysis performed upon the cover material. These soil amendments will ensure a diverse effective vegetative growth upon the material.

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7. Give a description of steps to be taken to comply with applicable water quality laws, regulations and health and safety standards. (780.18)

Surface runoff will be routed through sediment control basins prior to being discharged from the permit area. Discharges from sediment basins will be monitored by in-house personnel or consultants, at the discretion of the permittee, as necessary to assure compliance with applicable State and Federal Laws and Regulations. Chemical treatment with aqueous sodium hydroxide solution will be used on water entering the drainage course of the existing basins if this is determined necessary to achieve compliance with State and Federal Laws. On occasion, a solution of chemically hydrated lime and water will be used in sediment basins for immediate correction of pH imbalances. With proper pH, the heavy metals will precipitate to the bottom of the basins and will not exit the discharge pipe or spillway. Alum may be used on occasion if necessary to facilitate flocculation and precipitation of suspended solids. A permit to discharge under the National Pollutant Discharge Elimination System has been applied for and discharges from the proposed basins will be monitored and results of that monitoring, both compliant and non-compliant, will be reported in accordance with the NPDES Permit and the hydrologic monitoring plan shown elsewhere in this permit application. A trained and qualified health and safety staff will be contracted to assure that all health and safety standards and MSHA regulations are complied with. Certification and training of all mine personnel will be current and will be updated as necessary by attending MSHA classes taught by certified personnel. All dust, noise and other required control tests will be current and will be performed as necessary by certified MSHA personnel. Records of all testing required will be kept at the mine and will be available for inspection by the Regulatory Authority. All necessary permits for field absorption systems for the office and similar facilities will be obtained prior to construction of these facilities. Primary roads will be maintained with water and/or other materials to minimize fugitive dust emissions.

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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.
See attachments III-B.-2d and III-B-2(d)

(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?

(X) Yes () No

If yes, complete the following:

(a) Is the diversion to be permanent?
() Yes (X) No

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Attachment III-B-2(a)

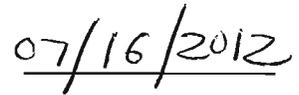
CERTIFICATION STATEMENT:

I hereby certify that Attachment III-B-2(a) prepared for Alabama Carbon, LLC, Glade Preparation Plant, 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, P.L.S. & P.E.

AL. Reg. No. 14117-E



Date



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Attachment III-B-2(a)

ADDENDUM TO GENERAL PLAN

The Addendum to the General Plan consists of adding Coarse Refuse Disposal Area No. 3 and Sediment Basin 006P. Detailed design plans for Coarse Refuse Disposal Area No. 3 and Sediment Basin 006P will be submitted to the Regulatory Authority. And upon written approval from the Regulatory Authority, Sediment Basin 006P will be constructed and certified to the Regulatory Authority prior to disturbance within its drainage area.

Sediment Basin 006P is to be temporary and will be graded and revegetated prior to a request for Phase II bond release. (See attached data and watershed map for basin location and preliminary hydrologic information.)

All surface drainage from the proposed mining area flows into Big Glade Branch.

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

There are no underground workings within or adjacent to the permit area.

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

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

See Attachment III-B-2d & III-B-2(d) for coal waste bank processing requirements.

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Attachment III-B-2(a)

<u>Basin No.</u>	<u>Location</u>	<u>Drainage Area</u>
Basin 006P	NE/NE, NW/NE, SE/NE and SW/NE of Section 25	44 Acres
Coarse Refuse Disposal Area No. 3	NE/NE, NW/NE, SE/NE and SW/NE of Section 25	N/A

All within Township 3 South, Range 8 East, Jackson County, Alabama, as found on the Ider and Flat Rock USGS Quadrangle Map.



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM INDIVIDUAL PERMIT

PERMITTEE: Alabama Carbon, LLC. (formerly GTM Energy Partners, LLC.)
106 Lockheed Drive
Beaver, West Virginia 25813

FACILITY LOCATION: Glade Preparation Plant
Jackson County Road 464
Jackson County
T3S, R8E, Section 25
T3S, R9E, Section 30

PERMIT NUMBER: AL0073962

<u>DSN</u>	<u>Receiving Water</u>
001-1	Big Glade Branch
003-1	Pond Creek
005-1	Flat Rock Creek
007-1	Coon Gulf
009-1	Big Glade Branch
011-1	Big Glade Branch

<u>DSN</u>	<u>Receiving Water</u>
002-1	Pond Creek
004-1	Big Glade Branch
006-1	Flat Rock Creek
008-1	Big Glade Branch
010-1	Big Glade Branch

In accordance with and subject to the provisions of the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1378 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, Code of Alabama 1975, §§ 22-22-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-16, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this Permit, the Permittee is hereby authorized to discharge into the above-named receiving waters.

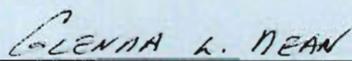
ISSUANCE DATE: September 28, 2007

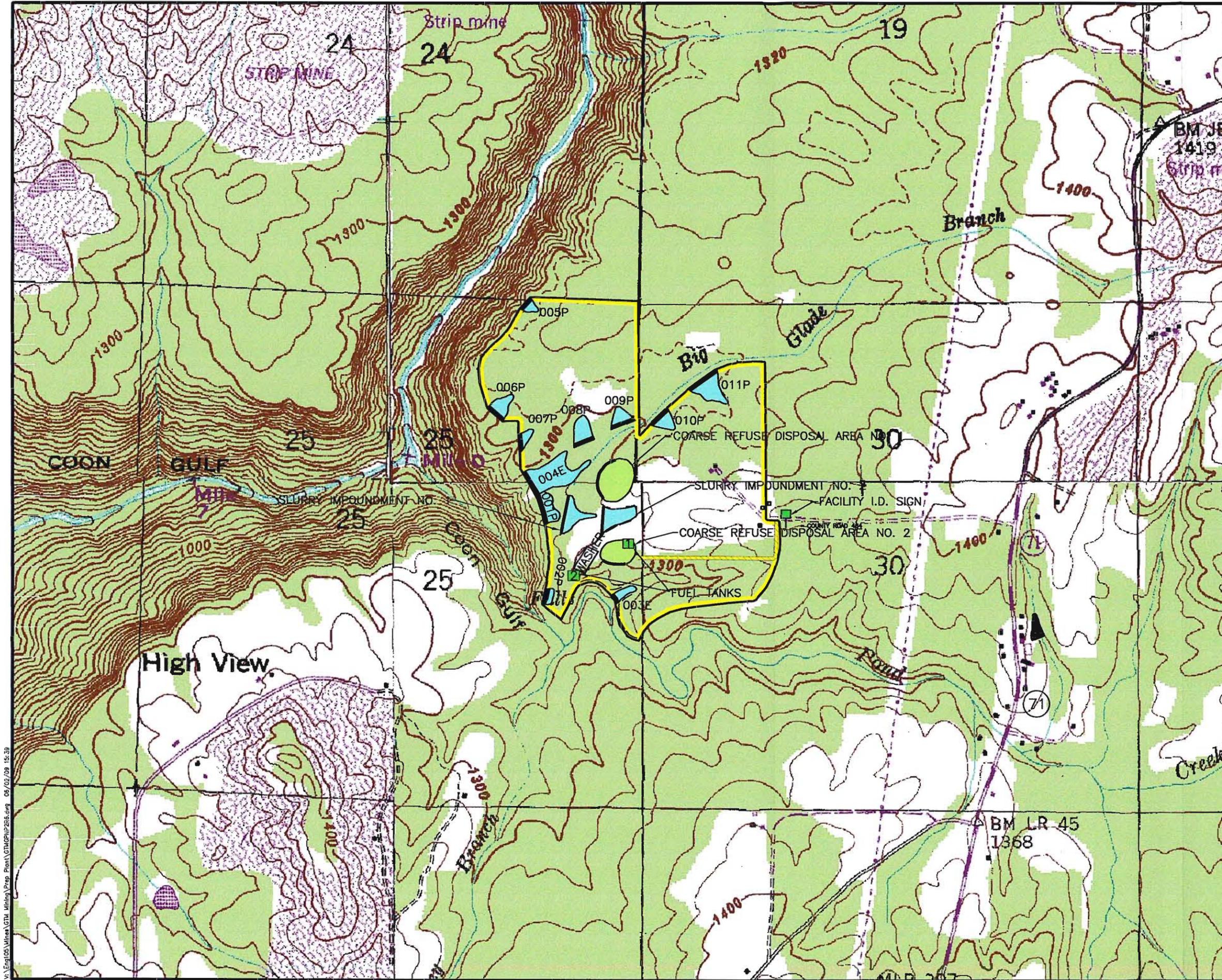
EFFECTIVE DATE: October 1, 2007

EXPIRATION DATE: September 30, 2012

MODIFICATION ISSUANCE DATE: August 31, 2011

MODIFICATION EFFECTIVE DATE: August 31, 2011


Alabama Department of Environmental Management



LEGEND

- Permit Boundary
- Surface Contour
- Sediment Basin
- Natural Drainage Course
- Drainage Divide
- Property Ownership Line Other Than Forty Line
- (S) Represents Surface Ownership
- (M) Represents Mineral Ownership
- Power Line
- Diversion Ditch
- Occupied Dwelling
- Unoccupied Dwelling (Barn, Shed, etc.)
- Private Impoundment
- County Road (Paved unless otherwise designated)
- Road (Private unless otherwise shown)
- Haul Road
- Equipment Fuel Tank
- Backup Generator Fuel Tank

NPDES Permit No. AL0073962
 Issuance Date: 9/28/2007
 Effective Date: 10/1/2007
 Expiration Date: 9/30/2012



NPDES PERMIT & VICINITY MAP
ALABAMA CARBON, LLC
GLADE PREPARATION PLANT
SECTION 25, TOWNSHIP 3 SOUTH,
RANGE 8 EAST, SECTION 30,
TOWNSHIP 3 SOUTH, RANGE 9 EAST,
JACKSON COUNTY, ALABAMA

DRAWN BY: J.W.T.	DATE: 07/11/2012
DWG. NAME: ACGPNR8	
APPROVED BY: L.G.S.	SCALE: 1"=1000'

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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 1.3 for the normal pool with steady seepage saturation conditions.
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

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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.
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

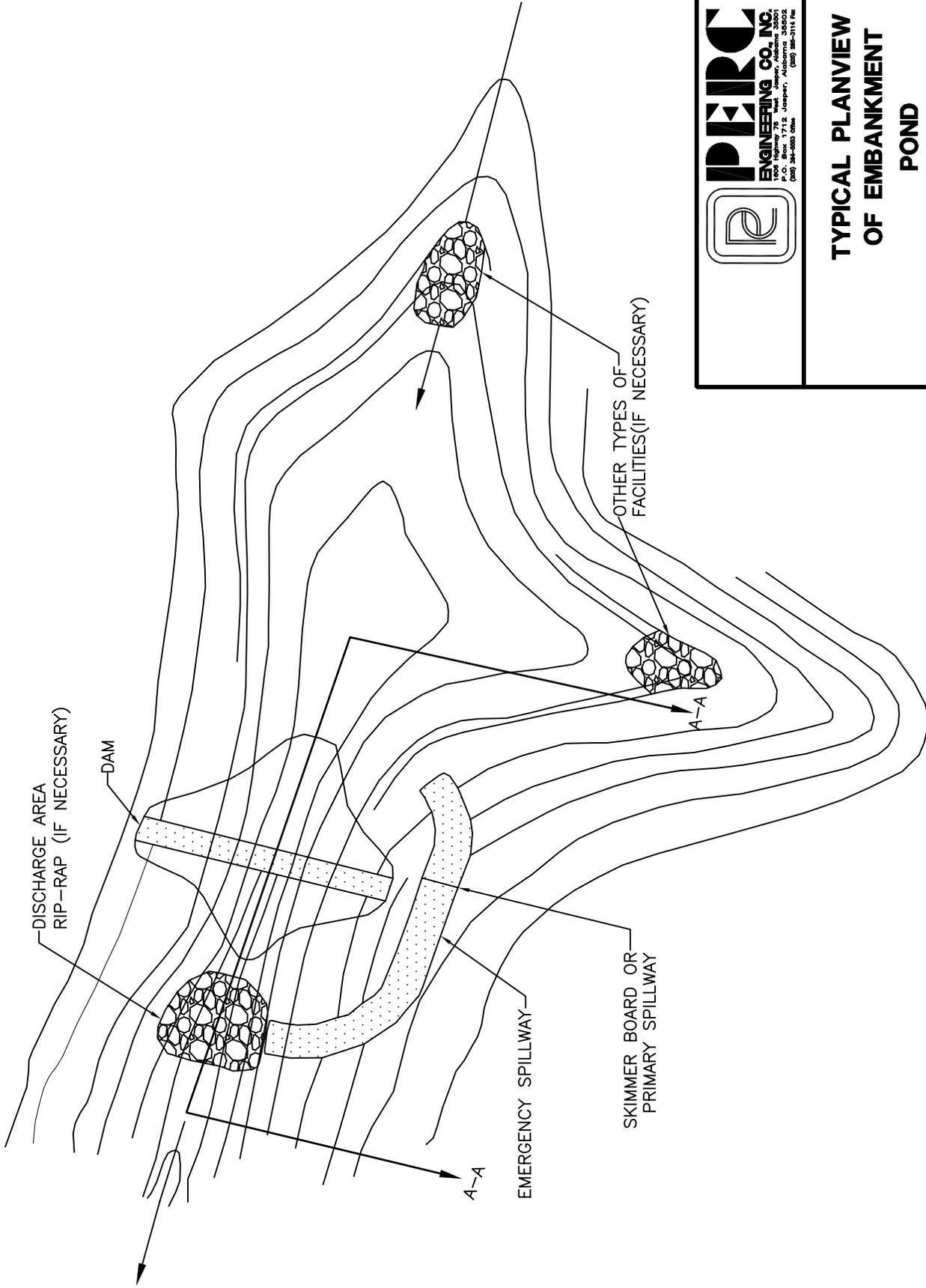
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- water quality, water quantity, depth, size, configuration, postmining land use, etc., for each proposed permanent water impoundment, shall be submitted to the Regulatory Authority for permanent water impoundment approval.
20. All sediment basins 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 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

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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.

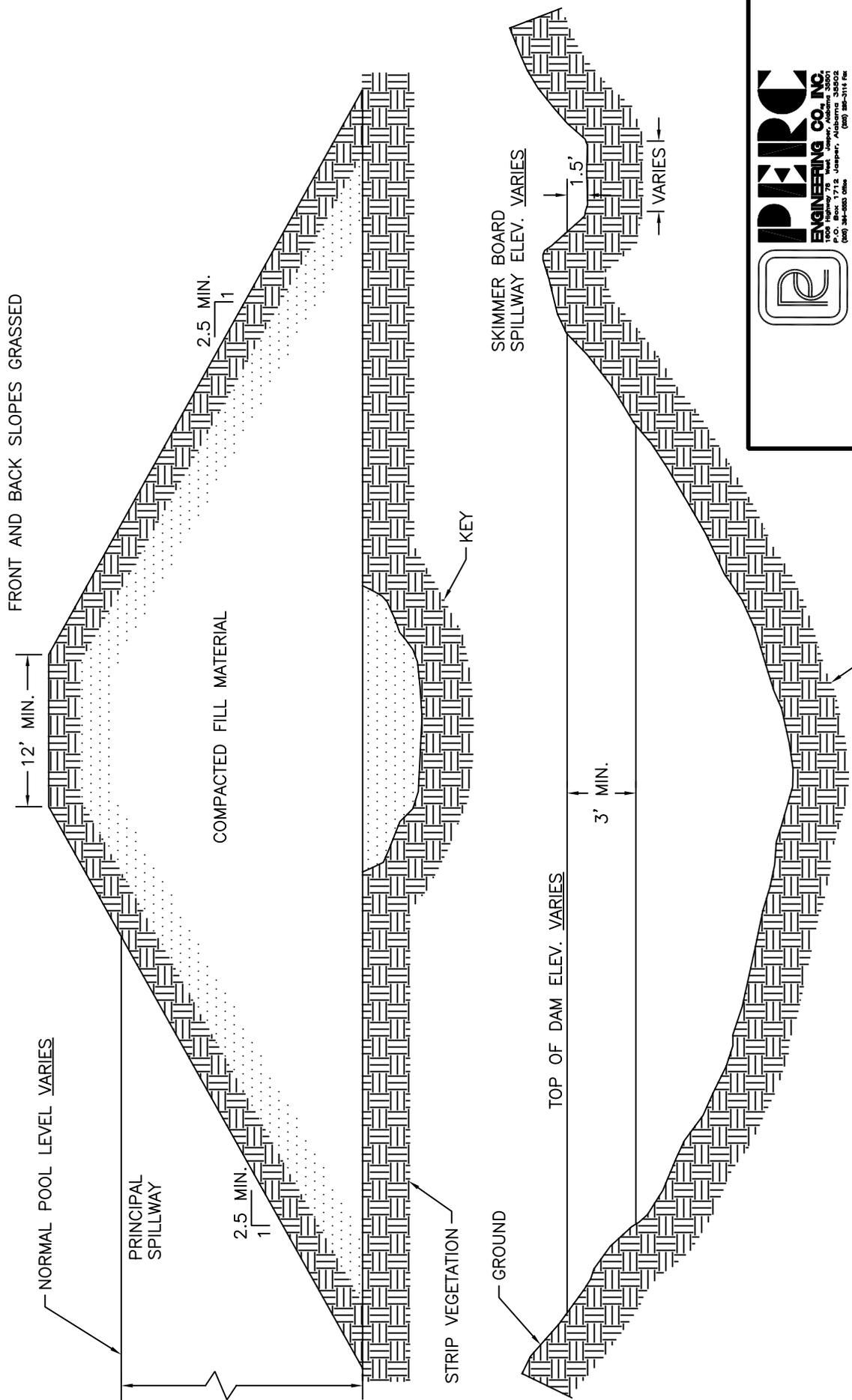


**TYPICAL PLANVIEW
 OF EMBANKMENT
 POND**

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

PLANVIEW OF EMBANKMENT POND

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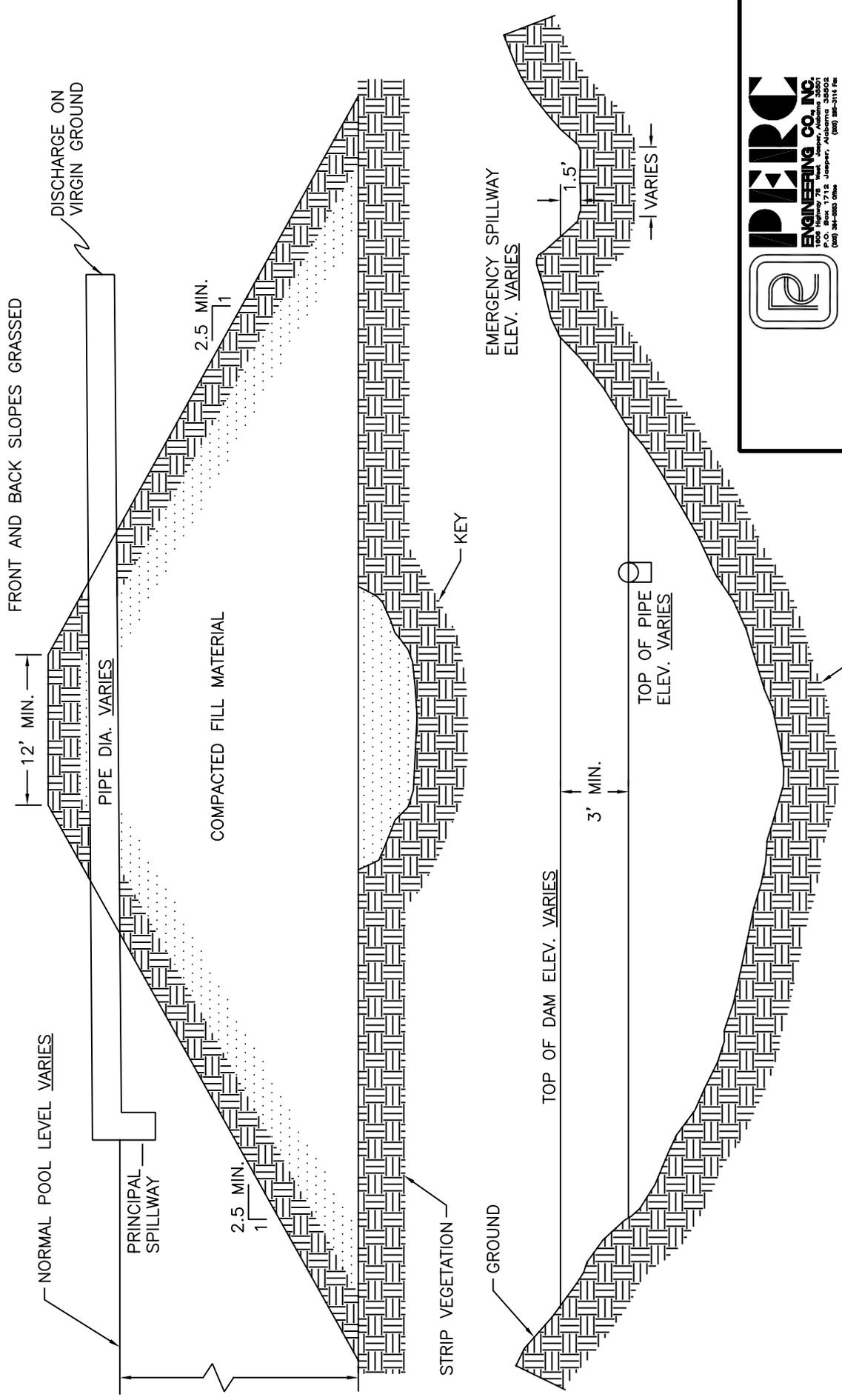


TYPICAL DAM DETAIL

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



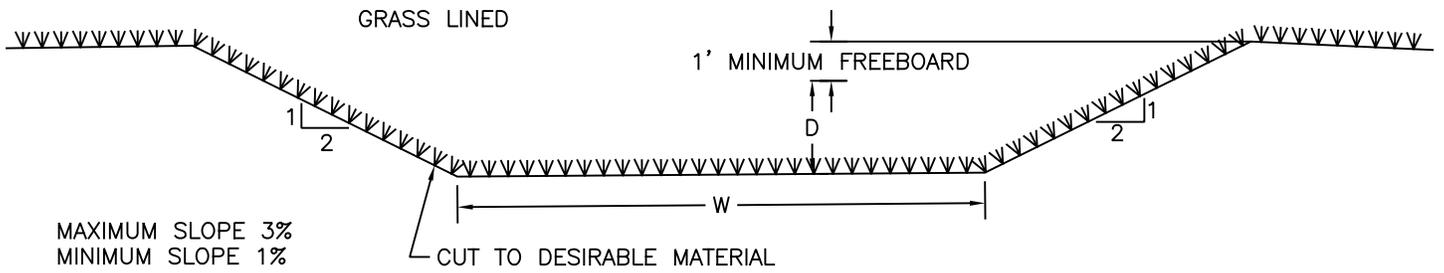
TYPICAL DAM DETAIL
NO SCALE



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



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

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

* 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

Applicant: <u>Alabama Carbon, LLC</u>
Mine Name: <u>Glade Preparation Plant</u>
Permit Number: <u>P-3829, Revision R-8</u>

Attachment III-B-2(d)

FINE COAL PROCESSING WASTE BANK REQUIREMENTS

Coal fines from the Glade Preparation Plant will be ran through a press prior to mixing with coarse refuse and transported by an overland conveyor to Coarse Refuse Disposal Area No. 3 for disposal. The detailed design plans for Coarse Refuse Disposal Area No. 3 will be designed using current prudent engineering practices and Regulatory Authority design criteria and certified by a qualified registered professional engineer.

All surface drainage will be routed around the outslope of the waste bank by using diversion ditches. The diversion ditches will be designed to pass a peak flow from a 100 yr. - 6 hr. precipitation event.

For areas where fill is to be placed into a natural or man made drainage course, springs, or wet weather seeps underdrains will be installed to prevent erosion, ensure stability, and to prevent infiltration. The type of underdrain system will be specified within the detailed design plans.

All vegetation and any organic material will be removed prior to the construction of the coarse refuse disposal area. Any topsoil removed will be segregated and stored on-site for future reclamation needs. An underdrain system will be placed beneath the coarse refuse disposal area as shown in the detailed design plans.

Slopes of the waste bank will be maintained at a minimum slope to be specified within the detailed design plans. The slopes of the waste bank will be designed to exceed a 1.5 minimum long term static safety factor and 1.2 dynamic safety factor.

Sufficient site and laboratory investigations will be performed on the foundation area and the coarse refuse disposal area fill material to be utilized in the design of the waste bank. If a potential hazard is revealed, the Regulatory Authority will be informed and necessary safety measures will be implemented.

The waste bank will be inspected by a registered professional engineer or other qualified professional specialist under the direct supervision of the qualified professional engineer. Inspections will be made at least quarterly and during times of removal of organic material and topsoil, installation of diversion ditches, installation of underdrains, placement of the coarse refuse/fines mixture, placement of cover material, construction of diversion ditches and revegetation of the disturbed area. Photographs of the underdrain will be taken during and after their construction but prior to their cover. Certification inspection reports will be filed with the Regulatory Authority stating that proper construction and maintenance are occurring in accordance

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with approved design plans. Inspection reports will be retained at the facility office.

Upon completion of operations, the waste bank area will be graded using mobile equipment, as outlined in the Detailed Design Plans, to the configuration approved in the design plans. The waste bank will be covered with 4 feet of non-toxic, non-acid forming, and non-combustible material. All disturbed areas will be vegetated with an appropriate combination of grasses and legumes as stated in the reclamation plan, fertilized, and mulched to ensure a permanent diverse vegetative cover. Soil amendments, including lime and fertilizer, will be added and disced into the cover material in rates as recommended by laboratory analysis performed upon the cover material. These soil amendments will ensure a diverse effective vegetative growth upon the material.

See Attachment III-B-2(d), Coarse Refuse Disposal Area No. 3.

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Permit Number: <u>P-3829, Revision R-8</u>

Attachment III-B-2(d)

COARSE COAL PROCESSING WASTE EMBANKMENT REQUIREMENTS

Coal fines from the Glade Preparation Plant will be ran through a press prior to mixing with coarse refuse and transported by an overland conveyor to Coarse Refuse Disposal Area No. 3 for disposal. The detailed design plans for Coarse Refuse Disposal Area No. 3 will be designed using current prudent engineering practices and Regulatory Authority design criteria and certified by a qualified registered professional engineer.

All coarse refuse produced by the screening operation at the Glade Preparation Plant will be mixed with coal fines that have been ran through a press prior to mixing with coarse refuse and transported by an overland conveyor to Coarse Refuse Disposal Area No. 3 for disposal. The disposal plans will be designed using current prudent engineering practices and Regulatory Authority design criteria and certified by a qualified registered professional engineer.

All surface drainage will be routed around the outslope of the waste bank by using diversion ditches. The diversion ditches will be designed to pass a peak flow from a 100 yr. - 6 hr. precipitation event.

For areas where fill is to be placed into a natural drainage course, underdrains will be installed to prevent erosion, ensure stability, and to prevent infiltration. The type of underdrain system will be specified within the detailed design plans.

All vegetation and any organic material will be removed prior the construction of the embankment. Any topsoil removed will be segregated and stored onsite for future reclamation needs.

All refuse material will be transported and placed in a controlled manner in the waste bank. The material will be spread in two feet lifts and compacted to 90% of the standard proctor as outlined in ASTM, as to ensure stability of the area, to prevent combustion of the material, minimize effects of surface and ground water quality and quantity, and not create a public hazard.

Slopes of the waste bank will be maintained at a minimum slope to be specified within the detailed design plans. The slopes of the waste bank will be designed to exceed a 1.5 minimum long term static safety factor.

Sufficient site and laboratory investigations will be performed on the foundation area and the fill material to be utilized in the design of the fill. If a potential hazard is revealed, the Regulatory Authority will be informed and necessary safety measures will be implemented.

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The waste bank will be inspected by a registered professional engineer or other qualified professional specialist under the direct supervision of the qualified professional engineer. Inspections will be made at least quarterly and during times of removal of organic material and topsoil, installation of diversion ditches, installation of underdrains, placement and compaction of refuse material, and revegetation of the fill. Photographs of the underdrain will be taken during and after their construction but prior to their cover. Certification inspection reports will be filed with the Regulatory Authority stating that proper construction and maintenance are occurring in accordance with approved design plans. Inspection reports will be retained at the facility office.

Upon completion of operations, the waste bank area will be graded using mobile equipment to the configuration approved in the design plans. The waste bank will be covered with 4 feet of non-toxic, non-acid forming, and non-combustible material. All disturbed areas will be vegetated with an appropriate combination of grasses and legumes as stated in the reclamation plan, fertilized, and mulched to ensure a permanent diverse vegetative cover. Soil amendments, including lime and fertilizer, will be added and disced into the cover material in rates as recommended by laboratory analysis performed upon the cover material. These soil amendments will ensure a diverse effective vegetative growth upon the material.

See Attachment III-B-2(d), Coarse Refuse Disposal Area No. 3.

Applicant: <u>Alabama Carbon, LLC</u>
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Permit Number: <u>P-3829, Revision R-8</u>

- (b) Describe in detail the proposed diversion and include plans, maps and cross-sections which comply with 816.43 and 816.44.

Temporary diversions required for the Coarse Refuse Disposal Area No. 3 area are shown on the watershed map and a typical section of proposed diversions is included in this application and described in the design and construction guidelines for diversions as prepared for this site.

Should the need for diversions other than those shown become evident, they will be constructed under the same Guidelines within the area permitted and bonded.

After all mining and reclamation activities are complete the diversions will be reclaimed and revegetated.

See Attachment III-B-3 for referenced Guidelines.

See Attachment III-B-2(d), Coarse Refuse Disposal Area No. 3 detailed design plans for Diversions A-A' and B-B' detailed design plans.

- (c) If diversions are temporary, enclose plans for removal, including a timetable and plans for restoration of vegetation, channel characteristics, etc.

See Attachment III-B-3.

- (d) Enclose approvals of other government agencies, where required.

None required.

Applicant: <u>Alabama Carbon, LLC</u>
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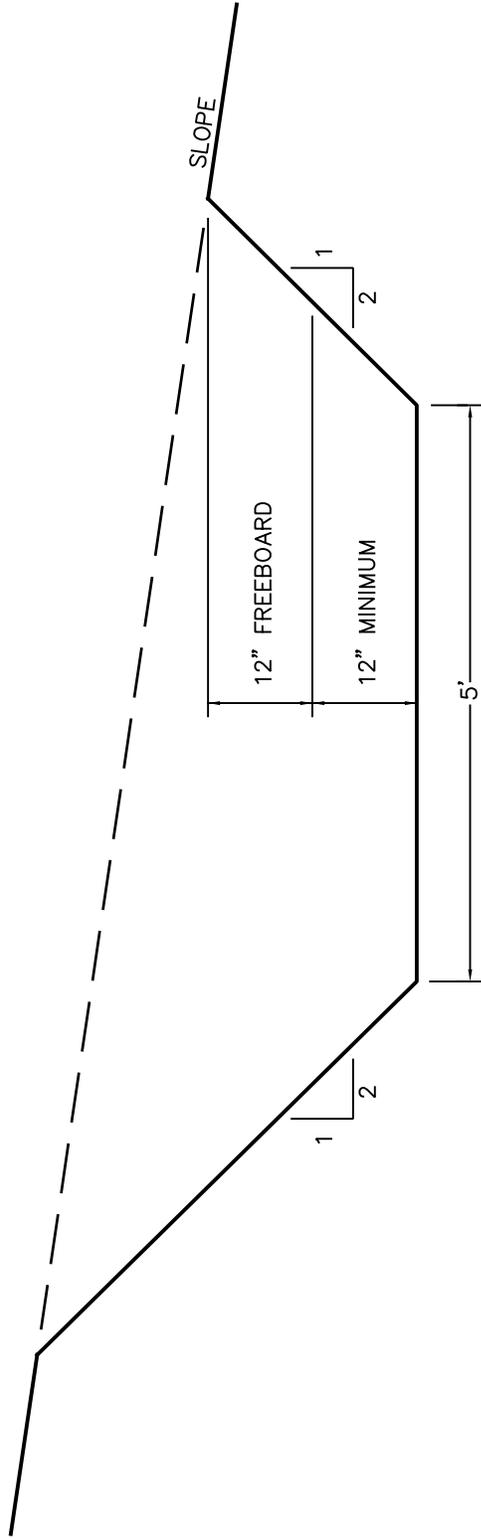
Attachment III-B-3

SPECIFICATIONS FOR DIVERSION CHANNELS
AND DIVERSION BERMS

1. Temporary diversions shall be constructed to pass safely the peak runoff from a 2-year, 6-hour precipitation event.
2. To protect fills and property and to avoid danger to public health and safety, permanent diversions shall be constructed to pass safely the peak runoff from a 10-year, 6-hour precipitation event. Permanent diversions shall be constructed with gently sloping banks that are stabilized by vegetation.
3. Diversions shall be designed, constructed, and maintained in a manner which prevents additional contributions of suspended solids to stream flow and to runoff outside the permit area, to the extent possible, using the best technology currently available. Appropriate sediment control measures for these diversions may include, but not be limited to, maintenance of appropriate gradients, channel lining, revegetation, roughness structures, and detention basins.
4. No diversion shall be located so as to increase the potential for land slides and no diversion shall be constructed on existing land slides.
5. When no longer needed, each temporary diversion shall be removed and the affected land regraded, topsoiled, and revegetated in accordance with Rules 880-X-10C-.10, 880-X-10C-.11, 880-X-10C-.52 - 880-X-10C-.58, 880-X-10C-.60, and 880-X-10C-.62.
6. Channel linings, when slopes are between 1-3 percent shall consist of both perennial and annual grasses and when slopes are greater than 3 percent, shall consist of riprap or be cut into non-erodible material.
7. Freeboard shall provide protection for transition of flows and for critical areas such as swales and curves along the entire channel length.
8. Energy dissipators shall be installed, when necessary, at discharge points where natural streams and exit velocity of the diversion ditch flow is greater than that of the receiving stream.
9. Excess excavated material not necessary for diversion channel geometry or regrading of the channel shall be disposed of in accordance with Rule 880-X-10C-.36.

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Mine Name: Glade Preparation Plant
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10. Topsoil removed from the diversion excavations shall be handled in accordance with Rule 880-X-10C-.07 through 880-X-10C-.11.
11. Diversions shall not be constructed or operated to divert water into underground mines.
12. The embankment or berm foundation area shall be cleared of all organic matter, all surfaces sloped to no steeper than 1v:1h and the entire foundation surface scarified.
13. The entire embankment or berm shall be compacted to 95% density, based on standard proctor as outlined in ASTM.
14. The material placed in the berm 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 as the moisture content of the fill material will permit satisfactory compaction in accordance with paragraph 13.
15. The berm and all disturbed areas shall be seeded with both perennial and annual grasses in order to insure that erosion is minimized. Hay bales or riprap may be placed at the toe of the berm immediately upon completion of construction.
16. All berms shall be examined quarterly for structural weakness, instability, erosion, or other hazardous conditions and maintenance performed as necessary.



DIVERSION DITCH

TYPICAL DIVERSION CROSS-SECTION
NO SCALE

CHANNEL LINING TO CONSIST OF A MIXTURE OF FESCUE AND BERMUDA GRASS

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4. Disposal of excess spoil. (780.35, 816.71)

Are excess spoil fills proposed?

() Yes (X) No

If yes, complete the following:

- (a) Show on a map the location of all proposed fills and provide cross-sections of the proposed site and the design of the disposal structures.
- (b) Include the results of the geotechnical investigation showing:
 - (1) A description of physical characteristics of bedrock and geological conditions in the disposal area; and
 - (2) A determination of possible adverse affects from subsidence due to past, present or future underground mining.
 - (3) Location of springs, seeps, or other ground water observed or anticipated in the disposal area.
 - (4) A technical description of the rock to be used in construction of rock chimney cores or rock drainage blankets, if applicable.
 - (5) Results of stability analyses including strength parameters, pore pressures and long term seepage conditions; and
 - (6) Engineering design assumptions, calculations, and any alternatives considered.
- (c) Describe the construction, operation, maintenance and removal (if applicable) of the structure.
- (d) Include a surface water drainage and control plan for the fill.
- (e) Are rock-toe buttresses or keyway cuts to be used?
() Yes (XX) No

If yes, describe or show:

- (1) The number, location and depth of test borings or test pits used in describing subsurface conditions; and
- (2) Engineering specifications used in the design.

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5. Transportation Facilities (780.33, 780.37)

(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, Primary Road 4P Detailed Design Plans.

(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 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

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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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Mine Name: Glade Preparation Plant
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**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 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. 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 eighteen 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, ironore refuse, gravel, or other durable non-toxic, non-acid forming material approved by the 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

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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 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

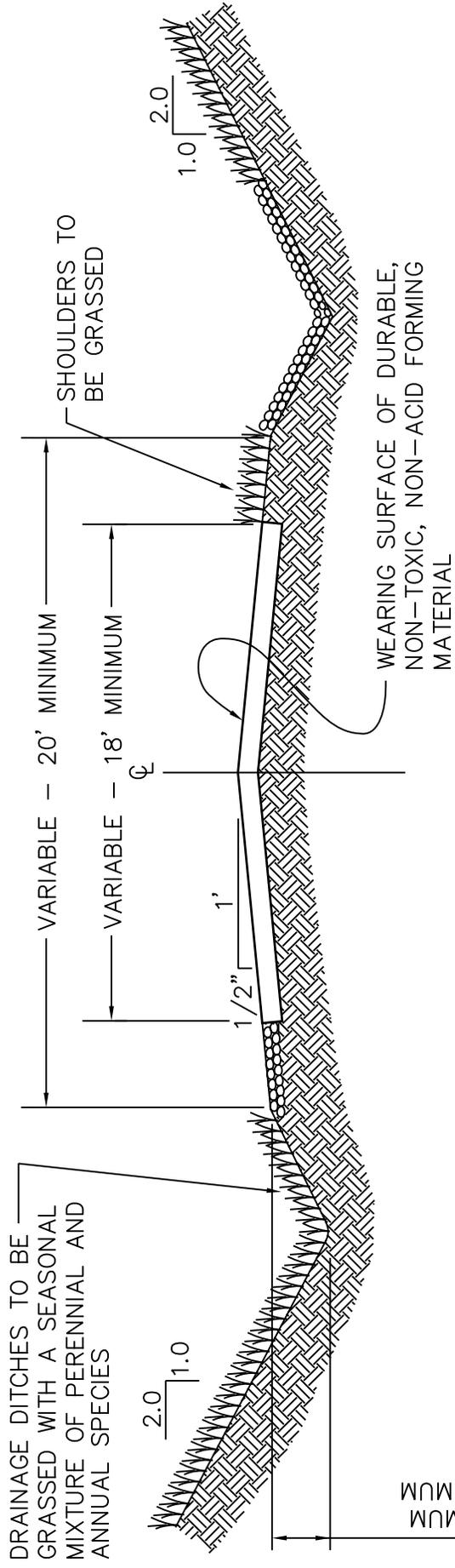
Applicant: Alabama Carbon, LLC
Mine Name: Glade Preparation Plant
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maintenance of sediment control facilities. Dust suppression will consist of the application of water, chemical binders and/or other dust suppressants. No oil will be utilized in this 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



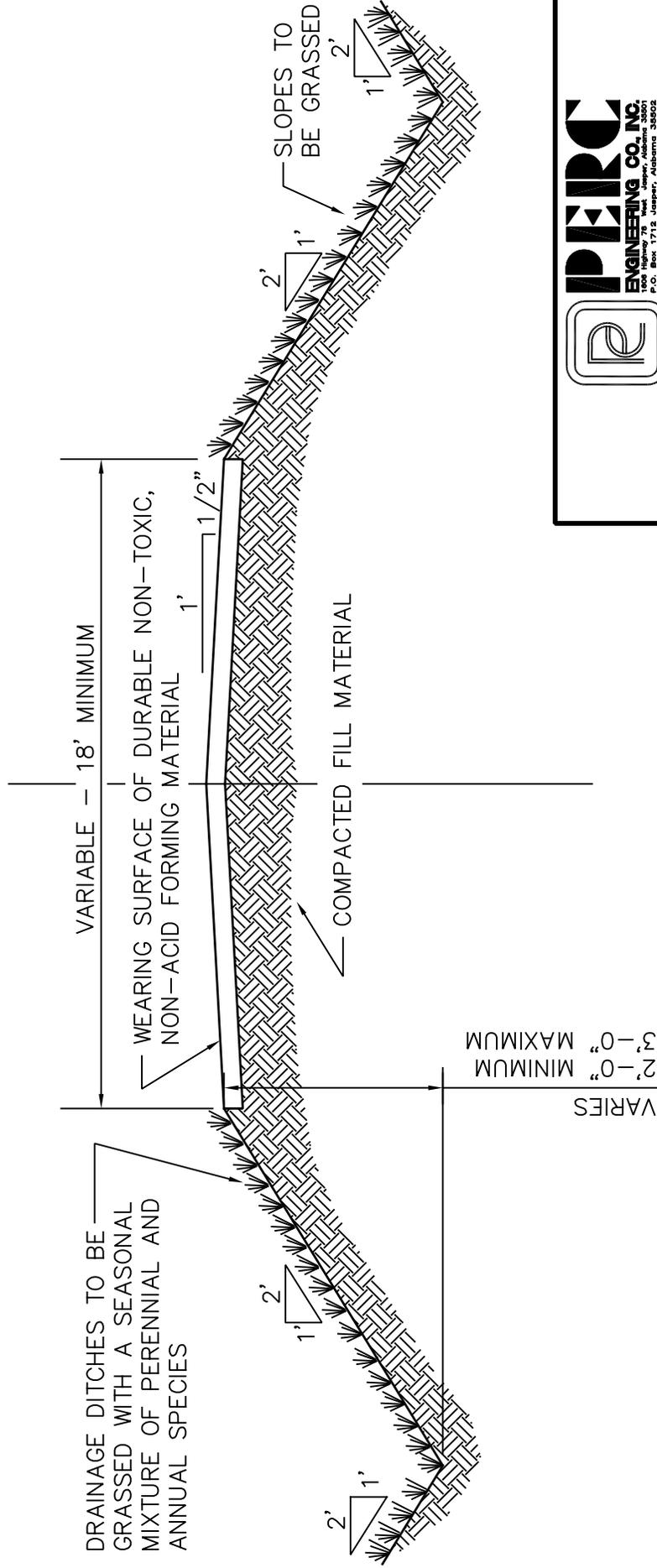
TYPICAL CUT SECTION
PRIMARY HAUL ROAD

DRAWN BY: K.D.P.	DATE: 2-3-97
DWG. NAME: TYPHAULC	
APPROVED BY: S.R.I.	SCALE: NONE

ATTACHMENT III. - B. - 5.

TYPICAL HAUL ROAD FILL SECTION

NO SCALE



TYPICAL FILL SECTION
PRIMARY HAUL ROAD

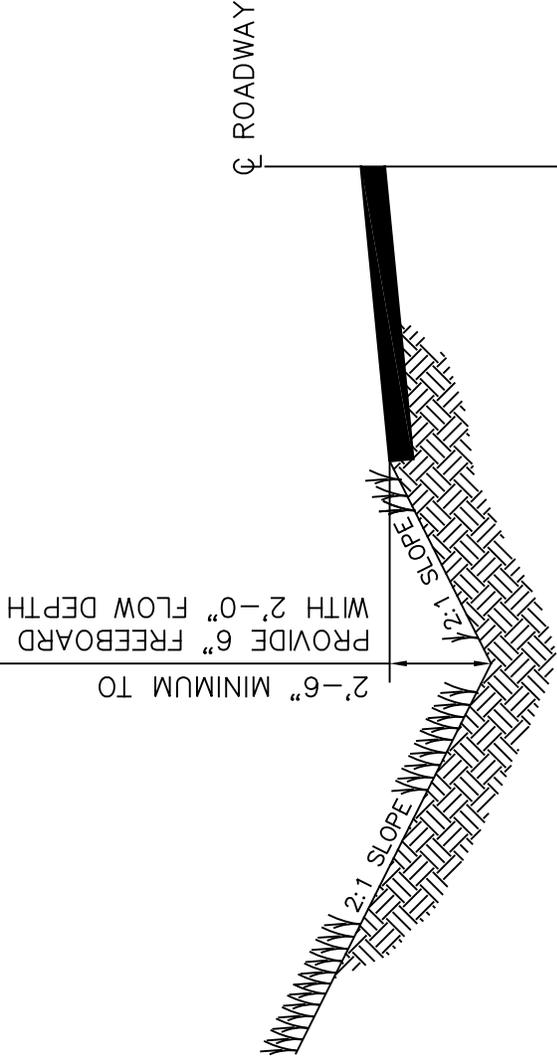
DRAWN BY: K.D.P.
DWG. NAME: TYPHAULF

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.



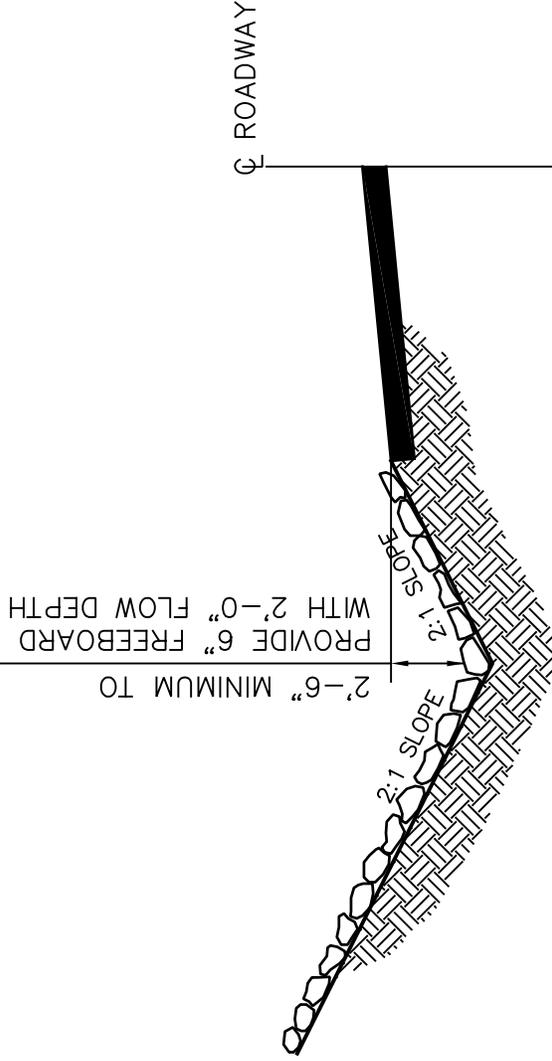
TYPICAL PRIMARY ROADWAY DITCH
 CROSS SECTION

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

DATE: 2-4-97

APPROVED BY: R.E.P.

SCALE: NONE

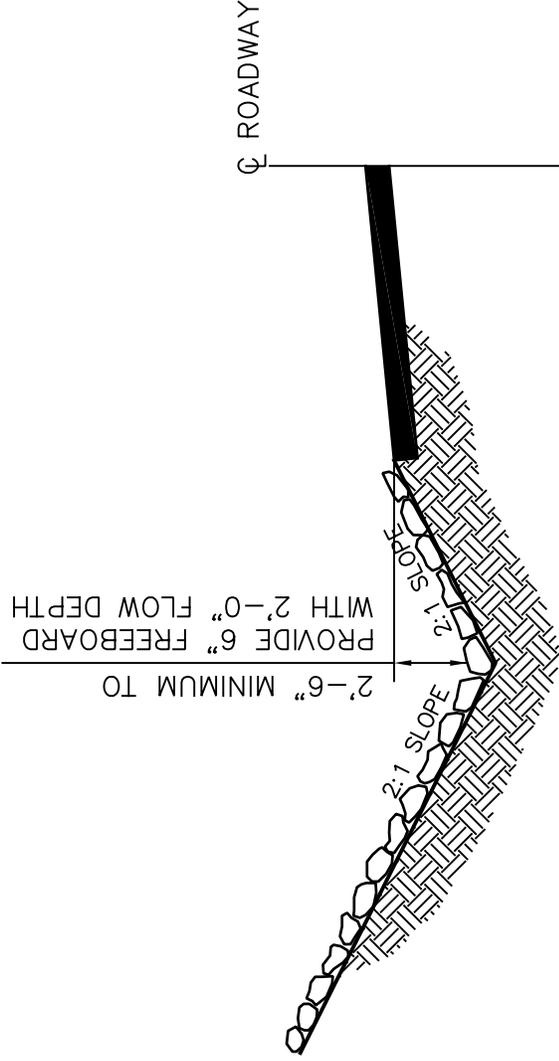


DITCH CHANNEL TO BE LINED WITH NON-ERODIBLE NON-TOXIC, NON-ACID FORMING SANDSTONE OR LIMESTONE RIP-RAP. THE RIP-RAP WILL BE "CLASS 1" RIP-RAP AND HAVE A MINIMUM THICKNESS OF 12".



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 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