LANCE R. LEFLEUR
DIRECTOR

ROBERT J. BENTLEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ▪ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ▪ FAX (334) 271-7950

September 23, 2016

ANDRE BITTAS
DIRECTOR
CITY OF BIRMINGHAM, DEPARTMENT OF PLANNING, ENGINEERING & PERMITS
710 20TH STREET NORTH ROOM 220
BIRMINGHAM AL 35203

RE: Shades Creek Dredging
Jefferson County (073)

Dear Mr. Bittas:

Based on your request, coverage under **General NPDES Permit Number ALR10B689** is granted. The effective date of coverage is September 22, 2016.

Coverage under this permit does not authorize the discharge of any pollutant or wastewater that is not specifically identified in the permit and by the Notice of Intent.

You are responsible for compliance with all provisions of the permit including, but not limited to, the performance of required inspections and/or monitoring, and the preparation and implementation of a Construction Best Management Practices Plan (CBMPP) required by the permit.

The Alabama Department of Environmental Management encourages you to exercise pollution prevention practices and alternatives at your facility. Pollution prevention will assist you in complying with permit requirements.

A copy of the General NPDES Permit under which coverage of your discharges has been granted is enclosed. If you have any questions concerning this permit, please contact Heather Griffin by email at hmgriffin@adem.alabama.gov or by phone at (334) 274-4197.

Sincerely,

Glenda L. Dean

Glenda L. Dean, Chief
Water Division

GLD/hmg

Enclosure: Permit

File: NOI/1776

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
3664 Dauphin Street, Suite B
Mobile, AL 36608
(251) 304-1176
(251) 304-1189 (FAX)

[redacted]

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT GENERAL PERMIT

DISCHARGE AUTHORIZED: DISCHARGES FROM CONSTRUCTION ACTIVITIES THAT RESULT IN A TOTAL LAND DISTURBANCE OF ONE ACRE OR GREATER AND SITES LESS THAN ONE ACRE BUT ARE PART OF A COMMON PLAN OF DEVELOPMENT OR SALE

AREA OF COVERAGE: THE STATE OF ALABAMA

PERMIT NUMBER: ALR10B689

RECEIVING WATERS: ALL WATERS OF THE STATE OF ALABAMA

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-15, 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: March 29, 2016

EFFECTIVE DATE: April 1, 2016

EXPIRATION DATE: March 31, 2021

Glenda L. Dean

Alabama Department of Environmental Management

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PART I Part I Coverage Under This General Permit

A. Permit Coverage

This permit authorizes, subject to the conditions of this permit, discharges associated with construction activity that will result in land disturbance equal to or greater than one (1) acre or from construction activities involving less than one (1) acre and which are part of a common plan of development or sale equal to or greater than one (1) acre occurring on or before, and continuing after the effective date of this permit, except for discharges identified under Part I.C. of the permit. Coverage under this permit is not required for discharges associated with minor land disturbing activities (such as home gardens or individual home landscaping, repairs, maintenance work, fences and other related activities which result in minor soil erosion), animal feeding operation (AFO) or concentrated animal feeding operation (CAFO) construction activity that has been granted NPDES registration coverage pursuant to Chapter 335-6-7, normal agricultural practices and silvicultural operations as defined in Part V.

B. Eligibility

1. Allowable Stormwater Discharges

This permit authorizes the following stormwater discharges:

(a) Stormwater associated with construction activities defined in Part I.A. of this permit;

(b) The following stormwater discharges have been determined by the Director to require coverage under this permit:

(i) Sites, irrespective of size, whose stormwater discharges have a reasonable potential to be a significant contributor of pollutants to a water of the state, as determined by the Department;

(ii) Sites, irrespective of size, whose stormwater discharges have a reasonable potential to cause or contribute to a violation of an applicable Alabama water quality standard as determined by the Department.

(c) Discharges from support activities (e.g., equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:

(i) The support activity is solely related to the construction site covered under this permit;

(ii) The support activity is not a commercial operation serving multiple unrelated construction projects by different operators, and does not operate beyond the completion of the construction activity at the last construction project it supports; and

(iii) Pollutant discharges from support activity areas are minimized to the maximum extent practicable and do not pose a reasonable potential to exceed applicable water quality standards.

2. Allowable Non-Stormwater Discharges

This permit authorizes the following non-stormwater discharges provided the non-stormwater component of the discharge is in compliance with Part III.D.

(a) Discharges from fire-fighting activities;

(b) Fire hydrant flushings;

(c) Water used to wash vehicles where detergents are not used;

(d) Water used to control dust;

(e) Potable water including uncontaminated water line flushings not associated with hydrostatic testing;

(f) Routine external building wash down associated with construction that does not use detergents;

(g) Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used. The operator is prohibited from directing pavement wash waters directly into any surface water, storm drain inlet, or stormwater conveyance, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control;

(h) Uncontaminated air conditioning or compressor condensate associated with temporary office trailers and other similar buildings;

(i) Uncontaminated ground water or spring water;

(j) Foundation or footing drains where flows are not contaminated with process materials such as solvents;

(k) Landscape irrigation;

C. Prohibited Discharges

The following discharges associated with construction are not authorized by this permit:

1. Stormwater discharges that are mixed with sources of non-stormwater unless such stormwater discharges are:
   (a) In compliance with a separate NPDES permit, or
   (b) Determined by the Department not to be a contributor of pollutants to waters of the State.
2. Stormwater discharges currently covered under another NPDES permit;
3. Wastewater from washout of concrete, unless managed by an appropriate control. (Wastewater from Concrete Batch Plants are prohibited unless such discharges are authorized by and in compliance with a separate NPDES permit);
4. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
5. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
6. Soaps or solvents used in vehicle and equipment washing;
7. Discharges from dewatering activities, including discharges of ground water or accumulated stormwater from dewatering of trenches, excavations, foundations, vaults, or other similar points of accumulation, unless managed by appropriate controls;
8. Discharges to surface waters from sediment basins or impoundments, unless an outlet structure that withdraws water from the surface, unless infeasible, is utilized;
9. Discharges where the turbidity of such discharge will cause or contribute to a substantial visible contrast with the natural appearance of the receiving water;
10. Discharges where the turbidity of such discharge will cause or contribute to an increase in the turbidity of the receiving water by more than 50 NTUs above background. For the purposes of determining compliance with this limitation, background will be interpreted as the natural condition of the receiving water without the influence of man-made or man-induced causes. Turbidity levels caused by natural runoff will be included in establishing background levels;
11. Discharges of any pollutant into any water for which a total maximum daily load (TMDL) has been finalized or approved by EPA unless the discharge is consistent with the TMDL; and
12. Discharges to waters listed on the most recently approved 303(d) list of impaired streams unless the discharge will not cause or contribute to the listed impairment.

PART II Notice of Intent (NOI) Requirements

A. Deadlines for Notices of Intent

Any person wishing to obtain coverage under this general permit shall submit an NOI in accordance with the following schedule:

1. Any person wishing to be permitted to discharge under this general permit shall submit a complete NOI prior to the initiation of construction activity.
2. Any Permittee authorized to discharge under the April 1, 2016 NPDES Construction General Permit, who wishes to continue to discharge upon the expiration of that permit, shall submit a complete NOI to be covered by this reissued General Permit. Such NOI shall be submitted at least 30 days prior to the expiration date of the April 1, 2011 NPDES Construction General Permit.
3. Failure of the Permittee to submit a complete NOI for reauthorization under this permit at least 30 days prior to the previous permit's expiration will void the automatic continuation of the authorization to discharge under that permit as provided by ADEM Admin. Code r. 335-6-6-.06. Should the permit not be reissued for any reason prior to its expiration date, Permittees who failed to meet the 30-day submittal deadline will be illegally discharging without a permit after the expiration date of the April 1, 2016 permit.

B. Continuation of the Expired General Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the ADEM Administrative Code Chapter 335-6-6 and remain in force and effect if the Permittee submits an updated and complete NOI meeting the requirements of Part II.C. at least 30 days prior to the expiration of this permit. Any Permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earlier of:

1. Reissuance or replacement of this permit, at which time the Permittee must comply with the Notice of Intent conditions of the new permit to maintain authorization to discharge; or
2. Issuance of an individual permit; or
3. A formal permit decision by the Department not to reissue this general permit, at which time the Permittee must seek coverage under an alternative general permit or an individual permit.

C. Contents of the Notice of Intent (NOI)

1. The NOI shall include:
   (a) A general description of the construction activity for which coverage is desired, which shall be in sufficient detail to allow the Department to determine that the stormwater and non-stormwater discharges are included in the authorized discharges category of this general permit.
   (b) The latitude and longitude to the nearest second of the entrance to the construction site and each point of discharge for which coverage under this general permit is desired. For the purposes of this requirement the entrance to the construction site will be identified as the primary point of access by normal vehicle traffic. For linear projects, the latitude and longitude to the nearest second should be provided for the starting and ending point of the project boundaries.
   (c) Identification of the waterbodies receiving discharges for which coverage under this general permit is desired.
   (d) The correct fee pursuant to ADEM Admin. Code R. 335-1.
   (e) A portion or copy of a recent U.S. Geological Survey map showing the site location.
   (f) A contact person, address and phone number for the site to be covered under the general permit.

(g) For priority construction sites, as defined in Part V, the NOI must be accompanied by a copy of the CBMPP prepared and certified by a QCP as required by Part III.C.

(h) The number of estimated disturbed acres and total site acreage

(i) The estimated start and completion dates of project.

2. The NOI shall be signed by a person meeting the requirements for signatories under ADEM Admin. Code r. 335-6-6-.09 and the person signing the NOI shall make the certification required for submission of documents under ADEM Admin Code r. 335-6-6-.09.

3. The NOI shall be signed by a QCP and shall have the following certification statement: "I certify under penalty of law that a comprehensive Construction Best Management Practices Plan (CBMPP) for the prevention and minimization of all sources of pollution in stormwater and authorized related process wastewater runoff has been prepared under my supervision for this site/activity, and associated regulated areas/activities. The CBMPP meets the requirements of this permit and if properly implemented and maintained by the operator, discharges of pollutants in stormwater runoff can reasonably be expected to be effectively minimized to the maximum extent practicable according to the requirements of ADEM Administrative Code Chapter r.335-6-6-.23 and this Permit. The CBMPP describes the erosion and sediment control measures that must be fully implemented and regularly maintained as needed at the permitted site in accordance with sound sediment and erosion control practices to ensure the protection of water quality."

D. Submittal of Documents

The Permittee must complete and submit the NOI electronically, using the Department's eNOI system, unless the Permittee submits in writing valid justification as to why the electronic submittal process cannot be utilized and the Department approves in writing the utilization of hard copy submittals. The eNOI system can be accessed at the following link https://app.adem.alabama.gov/eNOI/Default.aspx. Permit requests for initial issuance and modifications of the existing permit should all be submitted through the eNOI system.

All other documents required to be submitted to the Department by this general permit shall be delivered to the following address:

Alabama Department of Environmental Management

Water Division

Stormwater Management Branch

Post Office Box 301463 (Zip Code: 36130-1463)

1400 Coliseum Boulevard (Zip Code: 36110-2059)

Montgomery, Alabama

E. Additional Permittees Under a Single NOI

Multiple operators conducting regulated land disturbances in a common plan of development may jointly submit an NOI. An NOI covering multiple operators must include a site plan clearly describing each operator's areas of operational control.

F. Authorization to Discharge

1. Except as otherwise limited by Part II.F.2 or II.F.3, the operator is authorized to discharge in accordance with the requirements of this permit upon the Department's receipt of a complete and timely NOI which meets the requirements of this permit and ADEM Admin. Code r. 335-6-6-.23.

2. Coverage under this permit is conditionally granted, and the requirement to submit an NOI is suspended for governmental agencies and utilities for construction activity associated with immediate and effective emergency repairs and response to natural disasters, human health or environmental emergencies, or to avert/avoid imminent, probable, or irreparable harm to the environment or severe property damage. The operator or controlling/participating federal, State, or local government agencies/entities conducting emergency construction activity shall document the emergency condition, ensure compliance with the requirements of this permit to the extent possible, and shall notify the Department as promptly as possible regarding the occurrence of the emergency construction disturbance and measures that have been implemented and are being implemented to protect water quality. Unless the requirement to obtain a permit pursuant to the requirements of this permit are suspended or voided by the Director on a categorical or individual emergency basis, the operator shall submit the appropriate project information, NOI, and the required application fee for construction or reconstruction activity after emergency repairs have been accomplished, according to a schedule acceptable to the Department.

3. For priority construction sites, the operator is authorized to discharge thirty (30) days from the Department's receipt of a complete and technically adequate NOI and CBMPP meeting the requirements of Parts II.C. and III.E, unless, within thirty (30) days from the Department's receipt of the NOI, the Department notifies the operator that additional time is needed to review the NOI and CBMPP. Where the operator receives such notification from the Department, that operator may not discharge until the Department formally acknowledges receipt of a complete and technically adequate NOI and CBMPP.

PART III Stormwater Pollution Prevention Requirements

The stormwater control requirements in this Part are the technology-based, non-numeric effluent limitations and conditions that apply to all discharges from construction projects eligible for coverage under this permit. These requirements apply the national effluent limitations guidelines and new source performance standards found at 40 CFR Part 450.

Where the requirements in this Part are stricter than any corresponding Federal, State, or local requirements, the requirements in this permit take precedence.

A. Erosion Controls and Sediment Controls

The Permittee shall design, install, and maintain effective erosion controls and sediment controls, appropriate for site conditions to, at a minimum:

1. Minimize the amount of soil exposed during construction activity through the use of project phasing or other appropriate techniques;
2. Provide and maintain a 25 foot natural riparian buffer around surface waters as discussed in detail in Part III.B.;
3. Control stormwater volume and velocity within the site to minimize soil erosion;
4. Implement measures or requirements to achieve the pollutant reductions consistent with a TMDL finalized or approved by EPA. Applicable TMDLs are located and/or can be accessed at http://adem.alabama.gov/programs/water/approvedTMDLs.htm
5. Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points;
6. Minimize the disturbance of steep slopes, as defined by Part V;
7. Minimize sediment discharges from the site;
8. Minimize the generation of dust through the appropriate application of water or other dust suppression techniques;
9. Minimize all stream crossings;
10. Stabilize all construction entrances and exits; and minimize off-site tracking of sediment from vehicles;
11. Where applicable, install storm drain inlet protection measures to further prevent sediment discharges;
12. Direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible; and
13. Minimize soil compaction and, unless infeasible, preserve topsoil.
14. Additional Design Requirements
    (a) Sediment control measures, erosion control measures, and other site management practices must be properly selected based on site-specific conditions, must meet or exceed the technical standards outlined in the Alabama Handbook and the site-specific CBMPP prepared in accordance with Part III.D.
    (b) Unless specified otherwise by the Alabama Handbook, sediment control measures, erosion control measures, and other site management practices shall be designed and maintained to minimize erosion and maximize sediment removal resulting from a 2-year, 24-hour storm event.
    (c) The Permittee is encouraged to design the site, the erosion prevention measures, sediment controls measures, and other site management practices with consideration of minimizing stormwater runoff, both

during and following construction, including facilitating the use of low-impact development (LID) and green infrastructure.

B. Provide Natural Riparian Buffers or Equivalent Sediment Controls

Natural riparian buffer requirements apply to all waters of the state adjacent to construction sites or contained within their overall project boundary. A 25-foot natural riparian buffer zone adjacent to all waters of the state at the construction site shall be preserved, to the maximum extent practicable, during construction activities at the site. The natural riparian buffer should be preserved between the top of stream bank and the disturbed construction area. The water quality buffer zone aids in the protection of waters of the state (e.g., perennial and intermittent streams, rivers, lakes, wetlands) located within or immediately adjacent to the boundaries of the project. Natural riparian buffers are not primary sediment control measures and should not be relied on as such. The natural riparian buffer requirement only applies to new construction sites.

1. Compliance Alternatives

   (a) Provide and maintain a 25-foot undisturbed natural riparian buffer; or

      (i) If land disturbances are located 25 feet or further from surface water, then compliance with this alternative has been achieved.

      (ii) Rehabilitation and enhancement of a natural riparian buffer is allowed, if necessary, for improvement of its effectiveness of protection of the waters of the state.

      (iii) Any preexisting structures (e.g., buildings, parking lots, roadways, utility lines, structures, impervious surfaces) are allowed in the natural riparian buffer; provided the Permittee retains and protects from disturbance any additional natural buffer area contained within the natural riparian buffer but outside the preexisting structures footprint.

   (b) Provide and maintain an undisturbed natural riparian buffer that is less than 25 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 25-foot undisturbed natural riparian buffer; or

   (c) If it is infeasible to provide and maintain an undisturbed natural riparian buffer of any size, the Permittee must implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 25-foot undisturbed natural riparian buffer.

   (d) All discharges from the area of earth disturbance to the natural riparian buffer must first be treated by the site's erosion and sediment controls, and use velocity dissipation devices if necessary to prevent erosion caused by stormwater within the natural riparian buffer.

   (e) All compliance alternatives must be documented in the CBMPP and comply with all requirements. The natural riparian buffer boundary should be indicated on the site plan.

   (f) Compliance alternatives must be maintained throughout the duration of permit coverage.

   (g) All natural riparian buffer areas should be delineated, and clearly marked off with flags, tape, or similar marking device.

2. Construction activities at sites that have been permitted prior to April 1, 2016, are exempt from the requirements of this Part III.B. Confirmation of permit coverage prior to April 1, 2016, must be submitted with the NOI.

3. If there is no discharge of stormwater to waters of the state through the areas between the construction site and any waters of the state located within 25 feet of the construction site, compliance with this requirement is achieved.

4. Where no natural riparian buffer exists due to preexisting development disturbances (e.g., buildings, parking lots, roadways, utility lines, structures, impervious surfaces) that occurred prior to the initiation of planning for the current development of the site, the Permittee is not required to comply with the requirements in this section, unless portions of the preexisting development will be removed.

5. Where some natural riparian buffer exists but portions of the area within 25 feet of the waters of the state are occupied by preexisting development disturbances (e.g., buildings, parking lots, roadways, utility lines, structures, and impervious surfaces), the Permittee is required to comply with the requirements in this section. Only the portion of the buffer zone that contains the footprint of the existing "structure" is exempt from the natural riparian buffer. Activities necessary to maintain uses are allowed provided that no additional vegetation is removed from the natural riparian buffer.

6. For "linear construction projects", the Permittee is not required to comply with the requirements in this section if site constraints (e.g., limited right-of-way) prevent the Permittee from meeting any of the compliance alternatives provided that, to the extent practicable, disturbances within 25 feet of the water of the state are limited and/or supplemental erosion and sediment controls to treat stormwater discharges from earth disturbances within 25 feet of the waters of the state are provided. It must be documented in the CBMPP as to why compliance with this section is infeasible, and describe any buffer width retained and/or supplemental erosion and sediment controls installed.

7. The following disturbances within 25 feet of a water of the state are exempt from the requirements in this Part:

   (a) Construction approved under a CWA Section 404 permit; or

   (b) Construction of a water-dependent structure or water access area (e.g., pier, boat ramp, seawall, bridge, drainage structure, trail, etc.)

C. Soil Stabilization

Final stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site. Temporary stabilization of disturbed areas must be initiated immediately whenever work toward project completion and final stabilization of any portion of the site has temporarily ceased on any portion of the site and will not resume for a period exceeding thirteen (13) calendar days.

D. Pollution Prevention Measures

The Permittee must design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented and maintained to:

1. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, concrete washout, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

   (a) Liquid waste shall not be directly discharged into storm sewers.

   (b) Washout and cleanout activities should be located as far away as possible from surface waters, natural buffer areas, stormwater inlets, and conveyances.

2. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater;

3. Minimize the discharge of pollutants from any spills and leaks from, including but not limited to vehicles; mechanical equipment; chemical storage; and refueling activities; and

4. Use of polymers, flocculants, or other treatment chemicals at the site may only be applied where treated stormwater is directed to a sediment control prior to discharge.

E. Construction Best Management Practices Plan (CBMPP)

1. Except as provided by Part II.F.2, construction activity may not commence until a CBMPP has been prepared in a format acceptable to the Department and certified by a QCP as adequate to meet the requirements of this permit.
2. The NOI and CBMPP must be prepared in accordance with the requirements of this permit by the QCP prior to commencing construction at a new construction site or prior to continued construction at an existing construction site, or as otherwise required by the Director.
3. The Permittee shall properly implement and regularly maintain the controls, practices, devices, and measures specified in the CBMPP.
4. The CBMPP shall include:
   (a) A general description of the construction site activity, including:
      (i) The function of the construction site activity (e.g. residential subdivision, shopping mall, highway, etc.); and
      (ii) Identification of all known operators of the construction site, and the areas of the site over which each operator has control;
   (b) A description of the intended sequence of major activities which disturb soils, including but not limited to, grubbing, excavation, and/or grading;
   (c) Estimates of the total area expected to be disturbed by grubbing, excavation, and/or grading, including offsite borrow and fill areas (if areas are to be included in permit coverage);
   (d) A detailed description (including but not limited to site specific dimensions, storage capacity, and drainage calculations are required for engineered BMPs) of the erosion controls, sediment controls, and management practices to be implemented at the site during each sequence of activity in accordance with Part III.A;
   (e) A clear outline and identification of the 25-foot natural riparian buffer for all sites that discharge directly to waters of the state and where a water of the state lies within the boundaries of the project;
   (f) A detailed description of controls needed to meet State water quality standards, waste load allocations or other measures necessary for consistency with applicable TMDLs finalized or approved by EPA;
   (g) A detailed description of BMPs needed to prevent or eliminate discharges of sediment and other pollutants of concern from priority construction sites;
   (h) A description of temporary and permanent stabilization practices, including a schedule and/or sequence for implementation;
   (i) A description of energy or flow velocity dissipation devices at discharge locations and along the length of any outfall channel;
   (j) Identification of all allowable sources of non-stormwater discharges listed in Part I.B.2, except for flows from fire fighting activities that are or may be combined with stormwater discharges associated with construction activity at the site;
   (k) A description of the pollution prevention measures used to manage non-stormwater discharges;
   (l) A description of the best management practices to be installed during site construction and operated and maintained following final stabilization at sites where the post-construction volumes or velocities of stormwater runoff are significantly different from conditions existing prior to the construction activity;
   (m) A listing of all flocculants or chemical stabilization products to be used at the site, including Material Safety Data Sheets (MSDS) and the dosage(s) to be used and the location(s) where these materials will be used;

(n) The most recent site topographic map (e.g.USGS quadrangle map) at an appropriate contour interval, clearly showing:

(i) Sufficient detail to identify the location of the construction site;

(ii) Existing topography and drainage patterns and features, existing structures proposed roads, utilities, ROWs, and waterbody(s);

(iii) Drainage patterns and approximate slopes anticipated after major grading activities;

(iv) The external and internal (if subdivided) property boundaries of the project;

(v) Areas to be disturbed by excavation, grading, or other activities;

(vi) Identification of sediment control measures, erosion control measures, planned stabilization measures, and other site management practices;

(vii) Locations of all waters of the State within a 1 mile radius of the site

(viii) Locations of wetlands and riparian zones;

(ix) Locations of all points where stormwater leaves the property or after the last point of treatment;

(x) Locations of all points of discharges to waters of the State;

(o) A description of procedures for:

(i) Sweeping or removal of sediment and other debris that has been tracked from the site or deposited from the site onto streets and other paved surfaces;

(ii) Removal of sediment or other pollutants that have accumulated in or near any sediment control measures, stormwater conveyance channels, storm drain inlets, or water course conveyance within or immediately outside of the construction site; and

(iii) Removal of accumulated sediment that has been trapped by sediment control measures at the site, in accordance with applicable maintenance requirements covered under this permit; and .

(p) A description of the procedures for handling and disposing of wastes generated at the site, including, but not limited to, clearing and demolition debris, sediment removed from the site, construction and domestic waste, hazardous or toxic waste, and sanitary waste.

5. Maintain an Updated CBMPP

(a) The CBMPP shall be updated as necessary to address changes in the construction activity, site weather patterns, new TMDLs finalized or approved by EPA, new 303(d) listings approved by EPA, or manufacturer specifications for specific control technologies.

(b) The CBMPP shall be amended if inspections or investigations by site staff or by local, state, or federal officials determine that the existing sediment control measures, erosion control measures, or other site management practices are ineffective or do not meet the requirements of this permit. All necessary modifications to the CBMPP shall be made within seven (7) calendar days following notification of the inspection unless granted an extension of time by the Department.

(c) If existing sediment control measures, erosion control measures, or other site management practices prove ineffective in protecting water quality or need to be modified; or if additional sediment control measures, erosion control measures, or other site management practices are necessary to meet the requirements of Part III.A. B. C. D. and E., implementation shall be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, then new land disturbance activities must cease until the modified or additional controls can be implemented.

(d) A copy of the CBMPP shall be maintained at the site during normal operating hours as defined by Part V of this permit when regulated land disturbing activities are occurring.

F. Spill Prevention, Control, and Management

The Permittee shall prepare, implement, and maintain a Spill Prevention, Control and Countermeasures (SPCC) Plan in accordance with 40 CFR Part 112 and ADEM Admin Code r.335-6-6-.12(r) for all applicable onsite petroleum storage tanks. The Permittee shall also prepare, implement, and maintain a SPCC Plan in accordance with ADEM Admin Code r.335-6-6-.12(r) for any stored pollutant(s) that may, if spilled, be reasonably expected to enter a water of the state or the collection system for a publicly or privately owned treatment works. The SPCC Plan(s) shall be maintained as a separate document or as part of the CBMPP Plan required in Part III.D. above. The Permittee shall implement appropriate structural and/or non-structural spill prevention, control, and/or management sufficient to prevent any spills of pollutants from entering a water of the state or a publicly or privately owned treatment works. The plan(s) must be consistent with the requirements of 40 CFR Part 112 and/or ADEM Admin Code r.335-6-6-.12(r). Any containment system used to implement this requirement shall be constructed of materials compatible with the substance(s) contained and of materials which shall prevent the contamination of groundwater and shall be capable of retaining 110 percent of the volume of the largest container of pollutants for which the containment system is provided. The Permittee shall maintain onsite or have readily available sufficient oil & grease absorbing material and aflotation booms to contain and clean-up fuel or chemical spills and leaks. Soil contaminated by paint or chemical spills, oil spills, etc. must be immediately cleaned up, remediated, or be removed and disposed of in a Department approved manner.

G. Training

Unless the Permittee has employed or contracted with a QCP that performs duties as required by this permit, and the QCP is readily available and able to be present onsite as often as is necessary to ensure full compliance with the requirements of this permit, the Permittee shall ensure that:

1. At least one onsite employee shall be certified as a Qualified Credentialed Inspector (QCI) by completing an initial training and annual refreshers through an ADEM-approved Qualified Credentialed Inspector Program (QCIP) conducted by a cooperating training entity.
2. The QCIP must be approved by the Department prior to use and provide training in the following areas:
   (a) The applicable requirements of the Alabama NPDES rules;
   (b) The requirements of this permit;
   (c) The evaluation of construction sites to ensure that QCP designed and certified erosion controls and sediment controls detailed in a CBMPP are effectively implemented and maintained;
   (d) The evaluation of conveyance structures, receiving waters and adjacent impacted offsite areas to ensure the protection of water quality and compliance with the requirements of this permit; and
   (e) The general operation of a turbidity meter or similar device intended for the measurement of turbidity.
3. Each individual holding a QCI Certification need not be on-site continuously and they may conduct site inspections at multiple sites permitted by them or their employer.
4. Each individual holding QCI certification shall obtain annual certification of satisfactory completion of formal refresher education or training regarding general erosion controls and sediment controls, the requirements of this permit, and the general operation of a turbidity meter or similar device intended for the measurement of turbidity. The refresher training requirements, including but not limited to, appropriate curricula, course content, course length, and any participant testing, shall be subject to acceptance by the Director prior to use.

H. Inspection Requirements

1. Pre-Construction Observations
   (a) A pre-construction site inspection shall be conducted prior the placement of any BMPs, or the commencement of land disturbing activities.

(b) Pre-construction inspection shall consist of a complete and comprehensive inspection of the entire proposed construction site including all proposed areas of land disturbance, proposed areas used for storage of materials that may be exposed to precipitation, affected ditches, and other stormwater conveyances, as well as all proposed outfalls, receiving waters and stream banks to determine if there are pre-existing areas of concern.

(c) Pre-construction inspections shall be conducted by the QCP a qualified person under the direct supervision of a QCP;

(d) The inspection shall be documented and made available to the Department upon request;

(e) Pre-construction inspection shall include dated electronic photographic documentation of all areas described in paragraph (b) above;

(f) The Permittee shall maintain record of the pre-construction site inspection pursuant to Part IV.K.

2. Daily Observations

(a) Each day there is activity at the site, the Permittee shall visually observe that portion of the construction project where active disturbance, work, or construction occurred to note any rainfall measurements occurring since the previous observation, and any apparent BMP deficiencies in the area of active disturbance.

(b) Such daily observations may be performed by appropriate site personnel.

(c) The Permittee shall maintain a log of all daily observations and record in such log any rainfall measurements and BMP deficiencies observed.

3. Site Inspections

(a) A site inspection shall consist of a complete and comprehensive observation of the entire construction site including all areas of land disturbance, areas used for storage of materials that are exposed to precipitation, equipment storage and maintenance areas, affected ditches and other stormwater conveyances, as well as all outfalls, receiving waters and stream banks to determine if, and ensure that:

(i) Effective erosion controls and sediment controls have been fully implemented and maintained in accordance with this permit, the site CBMPP, and the Alabama Handbook;

(ii) Pollutant discharges are being prevented/minimized and

(iii) Discharges do result in a contravention of applicable State water quality standards for the receiving stream(s) or other waters impacted or affected by the Permittee.

(b) Site inspections shall be performed by a QCI, QCP, or a qualified person under the direct supervision of a QCP.

(c) For non-linear projects, a site inspection shall be performed once each month and after any qualifying precipitation event, commencing as promptly as possible, but no later than 24-hours after resuming or continuing active construction or disturbance, and completed no later than 72-hours following the qualifying precipitation event;

(d) For linear projects where active construction or areas where perennial vegetation has not been fully established, meeting the definition of final stabilization, a site inspection shall be performed at least once a month and after any qualifying precipitation event since the last inspection, beginning as promptly as possible, but no later than 24-hours after resuming or continuing active construction or disturbance and completed no later than five (5) days after the qualifying precipitation event;

(e) A site inspection shall also be performed as often as is necessary until any poorly functioning erosion controls or sediment controls, non-compliant discharges, or any other deficiencies observed during a prior inspection are corrected and documented as being in compliance with the requirements of this permit.

(f) On all active disturbance, dredging, excavation, or construction undertaken or located within the banks of a waterbody, including but not limited to, equipment/vehicle crossings, pipelines, or other transmission

line installation, conveyor structure installation, and waterbody relocation, streambank stabilization, or other alterations, a site inspection shall be performed at least once a week and as often as is necessary until the disturbance/activity impacting the waterbody is complete and reclamation or effective stormwater quality remediation is achieved.

(g) The inspection shall be recorded in a written format acceptable to the Department. The inspection record shall include:

(i) The site name and location, discharge point number, date, time and exact place of any sampling performed;

(ii) The name(s) of person(s) who performed the inspection and/or obtained any samples or measurements taken;

(iii) The dates and times of the inspection and any samples or measurements taken;

(iv) A description of any sampling and analytical techniques or methods used, including source of method and method number;

(v) The results of any analyses performed;

(vi) Weather conditions at the time of the inspection;

(vii) Description of any discharges of sediment or other pollutants from the site;

(viii) Locations of discharges of sediment or other pollutants from the site;

(ix) Locations of BMPs that need to be maintained;

(x) Locations of BMPs that failed to operate as designed;

(xi) Locations where BMPs required by the CBMPP are not installed or installed in a manner inconsistent with the CBMPP; and

(xii) Locations where additional BMPs are needed that did not exist at the time of the inspection. This requirement is applicable only to site inspections performed by a QCP or qualified persons under the direct supervision of a QCP.

(h) Results of all required inspections shall be available for inspection no later than 15 days following the date of the inspections, monitoring or sampling.

(i) Reports shall be legible and bear an original signature or in the case of electronic reports, an electronic signature.

4. CBMPP Evaluations

(a) The QCP shall perform an onsite evaluation of all erosion and sediment controls being implemented for adequacy and consistency with site conditions.

(b) The CBMPP evaluation shall be performed as often as necessary until poorly functioning or damaged erosion controls or sediment controls are corrected, and, at a minimum, once every six months.

(c) If, based on the CBMPP evaluation, the QCP identifies any needed modifications or additions to erosion and sediment controls, the CBMPP shall be updated in accordance with Part III.E.4.

(d) The Permittee shall maintain appropriate documentation of the CBMPP evaluation.

I. Corrective Action

1. Any poorly functioning erosion controls or sediment controls, non-compliant discharges, or any other deficiencies observed during the inspections required under Part III.G.2 shall be corrected as soon as possible, but not to exceed five (5) days of the inspection unless prevented by unsafe weather conditions. If unsafe weather conditions are present, they should be documented.

2. In the event of a breach of a sediment basin/pond temporary containment measures shall be taken within 24 hours after the inspection. Permanent corrective measures shall be implemented within five (5) days of the inspection; however, if permanent corrective measures cannot be implemented within the timeframes provided herein the Permittee shall contact the Department; and

3. The operator shall promptly take all reasonable steps to remove, to the maximum extent practical, pollutants deposited offsite or in any waterbody or stormwater conveyance structure.

J. Suspension of Monitoring

Suspension of applicable monitoring and inspection requirements for phased projects or developments may be granted provided:

1. The Department is notified in writing at least thirty days prior to the requested suspension;

2. The Permittee and the QCP certify in the request that all disturbance has been graded, stabilized, and/or fully vegetated or otherwise permanently covered, and that appropriate, effective steps have been and will be taken by the Permittee to ensure compliance with the requirements of this permit and commit that these measures will remain continually effective until the permit is properly terminated;

3. The request should be accompanied by a construction stormwater inspection report confirming permanent stabilization of all previously disturbed areas, including material storage areas, and associated support activities. In addition, photo documentation may be submitted for confirmation purposes; and

4. The Permittee notifies the Department in writing within 15 days prior to resumption of disturbance or commencement of the next phase of development and the Permittee complies with the requirements of this Permit prior to commencement of additional disturbance.

K. Precipitation Measurement

The Permittee shall measure and record all precipitation occurring at the construction site (including rainfall and snowfall). Precipitation measurements shall be taken using continuous recorders, daily readings of an onsite rain gauge, daily readings of an offsite precipitation gauge located adjacent to or in close proximity (for non-linear projects a maximum 1 mile distance) to the facility, or by other measurement devices acceptable to the Department (e.g. online resources). Precipitation measurements must be representative of the Permittee's site.

L. Impaired Waters and Total Maximum Daily Load (TMDL) Waters

1. The Permittee must determine whether the discharge from any part of the construction site contributes directly or indirectly to a waterbody that is included on the latest §303(d) list or designated by the Department as impaired;

2. If the Permittee's construction site discharges to a waterbody included on the latest §303(d) or designated by the Department as impaired, it must demonstrate the discharges, as controlled by the Permittee, do not cause or contribute to the impairment. The CBMPP must detail the BMPs that are being utilized to control discharges of pollutants associated with the impairment. If existing BMPs are not sufficient to achieve this demonstration, the Permittee must, within sixty (60) days following the publication of the latest final §303(d) list, Department designation, or the effective date of this permit, submit a revised CBMPP detailing new or modified BMPs. The CBMPP must be revised as directed by the Department and the new or modified BMPs must be implemented within ninety (90) days from the publication of the latest final §303(d) list or Department designation.

3. Permittees discharging from construction sites into waters with EPA-Approved TMDLs and/or EPA-Established TMDLs

   (a) The Permittee must determine whether its construction site discharges to a waterbody for which a total maximum daily load (TMDL) has been established or approved by EPA. If a construction site discharges

into a water body with an EPA approved or established TMDL, then the CBMPP must include BMPs targeted to meet the assumptions and requirements of the TMDL. If additional BMPs will be necessary to meet the requirements of the TMDL, the CBMPP must include a schedule for installation and/or implementation of such BMPs.

(b) If, during this permit cycle, a TMDL is approved by EPA or a TMDL is established by EPA for any waterbody into which a construction site discharges, the Permittee must review the applicable TMDL to see if it includes requirements for control of storm water discharges from the construction site.

(i) If it is found that the Permittee must implement specific allocations of the TMDL, it must assess whether the assumptions and requirements of the TMDL are being met through implementation of existing BMPs or if additional BMPs are necessary. The CBMPP must include BMPs targeted to meet the assumptions and requirements of the TMDL. If existing BMPs are not sufficient, the Permittee must, within sixty (6o) days following the approval or establishment of the TMDL by EPA, submit a revised CBMPP detailing new or modified BMPs to be utilized along with a schedule of installation and/or implementation of such BMPs. Any new or modified BMPs must be implemented within ninety (90) days, unless an alternate date is approved by the Department, from the establishment or approval of the TMDL by EPA.

PART IV Standard and General Permit Conditions

A. Duty to Comply

1. The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the AWPCA and the FWPCA and is grounds for: enforcement action, termination, or suspension of coverage under this permit; denial of a NOI for renewal; a requirement that the Permittee submit an application for an individual NPDES permit.
2. For any violation(s) of this Permit, the Permittee may be subject to a civil penalty as authorized by the AWPCA, the FWPCA, and Code of Alabama 1975, §§22-22A-1 et. seq., as amended, and/or a criminal penalty as authorized by Code of Alabama 1975, §22-22-1 et. seq., as amended.
3. The discharge of a pollutant from a source not specifically identified in the NOI to be covered under this Permit and not specifically included in the description of an outfall (where applicable) in this permit is not authorized and shall constitute noncompliance with this permit.
4. Nothing in this Permit shall be construed to preclude or negate the Permittee's responsibility or liability to apply for, obtain, or comply with other ADEM, federal, state, or local government permits, certifications, licenses, or other approvals.

B. Duty to Reapply

1. The Permittee authorized to discharge under this General Permit, who wishes to continue to discharge upon the expiration of this permit, shall submit a NOI to be covered by the reissued General Permit. Such NOI shall be submitted at least 30 days prior to the expiration date of this General Permit.
2. Failure of the Permittee to submit a complete NOI for reauthorization under this permit at least 30 days prior to the permit's expiration will void the automatic continuation of the authorization to discharge under this permit as provided by ADEM Admin. Code r. 335-6-6-.06. Should the permit not be reissued for any reason prior to its expiration date, Permittees who failed to meet the 30-day submittal deadline will be illegally discharging without a permit after the expiration date of the permit.

C. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce construction activities in order to maintain compliance with the conditions of the permit.

D. Duty to Mitigate

The Permittee shall take all reasonable steps to mitigate or prevent any violation of the permit or to minimize or prevent any adverse impact of any permit violation.

E. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities only when necessary to achieve compliance with the conditions of this permit.

F. Permit Modification, Revocation and Reissuance, Suspension, and Termination

1. During the term of this General Permit the Director may, for cause, and subject to the public notice procedure of ADEM Administrative Code r. 335-6-6-21, modify or revoke and reissue this General Permit. The causes for this action include the causes listed below:

   (a) When the Director receives any information that was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance;

   (b) When the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued;

   (c) Upon failure of the state to notify, as required by Section 402(b)(3) of the FWPCA, another state whose waters may be affected by a discharge;

   (d) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology based treatment requirements appropriate to the discharge under 40 CFR 125.3(c)(1994);

   (e) To correct technical mistakes, such as errors in calculations, or mistaken interpretations of the law made in determining permit conditions;

   (f) When the permit limitations are found not to be protective of water quality standards; or

   (g) For any applicable cause set forth in 40 CFR Sections 122.61, 122.62, 122.63, and 122.64 (1994).

2. Subject to the public notice procedures of rule 335-6-.6-21, the Director may terminate this General Permit during its term for any of the causes for modification listed in ADEM Admin Code r. 335-6-6-.23(7)(a).

3. The Director may terminate coverage of a discharge under this general permit for cause. Cause shall include but not be limited to noncompliance with Department rules; or a finding that the general permit does not control with wastewater discharge sufficiently to protect water quality or comply with treatment based limits applicable to the discharge.

4. Any person may petition the Director for withdrawal of this General Permit authority from a discharger. The Director shall consider the information submitted by the petitioner and any other information he may be aware of and may obtain additional information from the discharger and through inspections by Department staff and shall decide if coverage should be withdrawn. The petitioner shall be informed of the Director's decision and shall be provided a summary of the information considered.

G. Property Rights

This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of federal, state, or local laws or regulations, nor does it authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any waters of the state or of the United States.

H. Duty to Provide Information

1. The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and re-issuing, suspending, or terminating this permit or to determine compliance with this Permit. The Permittee shall also furnish to the Director upon request, copies of records required to be kept by this Permit.

2. The Permittee shall inform the Director in writing of any change in the Permittee's mailing address or telephone number or in the Permittee's designation of a facility contact or officer having the authority and responsibility to prevent and abate violations of the AWPCA, the Department's rules and the terms and conditions of this permit no later than ten (10) days after such change. Upon request of the Director, the Permittee shall furnish an update of any information provided in the NOI.

3. If the Permittee becomes aware that it failed to submit any relevant facts in the NOI; or submitted incorrect information in the NOI; or in any report to the Director, it shall promptly submit such facts or information with a written explanation for the mistake and/or omission.

I. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

1. Enter upon the Permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this Permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the AWPCA, any activities, substances or parameters at any location.

J. Noncompliance Notification

1. The Permittee must notify the Department if, for any reason, the Permittee's discharge:
   (a) Potentially threatens human health or welfare;
   (b) Threatens fish or aquatic life;
   (c) Causes an in-stream water quality criterion as stated in ADEM. Admin. Code Ch. 335-6-10 to be exceeded;
   (d) Does not comply with an applicable toxic pollutant effluent standard or prohibition established under Section 307(a) of the FWPCA, 33 U.S.C. §1317(a); or
   (e) Contains a quantity of a hazardous substance which has been determined may be harmful to the public health or welfare under Section 311(b)(4) of the FWPCA, 33 U.S.C. §1321(b)(4).

The Permittee shall orally report the occurrences, describing the circumstances and potential effects of such discharge to the Director no later than 24-hours after the Permittee becomes aware of the occurrence of such discharge. In addition to the oral report, the Permittee shall submit to the Director a written report as provided in Part IV.J.2 below, no later than five (5) days after becoming aware of the occurrence of such discharge.

2. The written report shall be in a format acceptable to the Department and shall include:
   (a) A description of the noncompliant event, its cause, if known, and location;
   (b) The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
   (c) A description of the steps taken and/or being taken to reduce or eliminate the noncomplying discharge and to prevent its recurrence.

K. Retention of Records

1. The Permittee shall retain records of all inspection records, monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete such reports, for a period

of at least three (3) years from the date of the inspection, sample measurement, or report. This period may be extended by request of the Director at any time. If litigation or other enforcement action, under the AWPCA and/or the FWPCA, is ongoing which involves any of these records, the records shall be kept until the litigation is resolved.

2. All records required to be kept for a period of three (3) years shall be kept at the permitted facility or an alternate location identified to the Department in writing and shall be available for inspection upon request.

L. Signatory Requirements

The NOI and all reports or information submitted to the Director shall be signed and certified according to the requirement of ADEM Admin Code r. 335-6-6-.09. Where required by this Permit, documents will also be signed by a QCP or QCI.

M. Transfers

This Permit may not be transferred without notice to the Director and subsequent modification or revocation and reissuance of this Permit. In the case of a change in name, ownership or control of the Permittee's premises, a request for permit modification in a format acceptable to the Director is required within 15 days of the change occurring.

N. Bypass

Any bypass of erosion controls, sediment controls, or any other stormwater management/treatment controls specified in the CBMPP is prohibited except as provided by ADEM Admin Code r. 335-6-6-.12(m).

O. Upset

1. Effect of an Upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit limitation if the requirements of subparagraph 335-6-6-.12(n)2. are met.
2. Conditions Necessary for Demonstration of an Upset. A Permittee who wishes to establish the affirmative defense of an upset shall demonstrate through properly signed, contemporaneous operating logs, or other relevant evidence that:
   (a) An upset occurred and that the Permittee can identify the specific cause(s) of the upset;
   (b) The treatment facility was at the time being properly operated;
   (c) The Permittee submitted notice of the upset as required in subparagraph 335-6-6-.12(l)6.; and
   (d) The Permittee complied with any remedial measures required under paragraph 335-6-6-.12(d).
3. Burden of Proof. In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

P. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

Q. Issuance of an Individual Permit

The Director may require the Permittee to obtain an individual permit for discharges covered by this permit in accordance with ADEM Admin. Code r. 335-6-6-.23(9).

R. Request for Individual Permit by General Permit Holder

1. Any person covered by this General Permit may apply for termination of coverage by applying for an individual NPDES permit.
2. A permit application submitted voluntarily or at the direction of the Director for the purpose of termination of coverage by this General Permit shall be processed in accordance with the rules found in ADEM Admin. Code ch. 335-6-6 applicable to individual permits.

S. Termination of Coverage

The Director may suspend or terminate coverage under this permit for cause without the consent of the Permittee. Cause shall include, but not be limited to noncompliance with this permit or the applicable requirements of Department rules, or a finding that this permit does not control the stormwater discharge sufficiently to protect water quality.

1. Notice of Termination

   The Permittee must submit a Notice of Termination (NOT) in a format acceptable to the Department within thirty (30) days of one of the following conditions:

   (a) Final stabilization as defined in Part V has been achieved on all portions of the site;

   (b) Another operator has assumed control over all areas of the site that have not achieved final stabilization and the new operator has submitted an NOI for coverage under this permit; or

   (c) Coverage under an individual permit or alternative general permit has been obtained.

2. Content of the Notice of Termination

   The NOT shall include:

   (a) The Permittee name, permit number, and location of the site; and

   (b) Certification by the Permittee and the QCP that all construction activity covered by this permit has been completed and final stabilization has been achieved; or

   (c) Identification, including complete contact information, of the person that has assumed legal or operational control over the construction site.

      (i) Loss of operational control does not relieve the operator from liability and responsibility for compliance with the provisions of this permit until the complete and correct request for termination is received by the Department.

      (ii) Sale or transfer of operational responsibility for the site by the operator prior to the succeeding operator obtaining permit coverage required by this chapter, does not relieve the operator from the responsibility to comply with the requirements of this permit

T. Facility Identification

The Permittee shall post and maintain sign(s) at the front gate/entrance, and if utility installation, where project crosses paved county, State, or federal highways/roads, and/or at other easily accessible location(s) to adequately identify the site prior to commencement of and during NPDES construction until permit coverage is properly terminated. Such sign shall display the name of the Permittee, "ADEM NPDES ALR10" followed by the four digit

NPDES permit number, facility or project name, and other descriptive information deemed appropriate by the Permittee.

U. Schedule of Compliance

The Permittee shall achieve compliance with the requirements of this permit on the effective date of coverage under this permit.

V. Discharge of Wastewater Generated by Others

The discharge of wastewater generated by any process, facility, or by any other means not under the operational control of the Permittee or not identified in the application for this permit or not identified specifically in the description of an outfall in this permit is not authorized by this permit except as allowed by Part I.

W. Compliance with Water Quality Standards and Other Provisions

1. On the basis of the Permittee's application, plans, or other available information, the Department has determined that compliance with the terms and conditions of this Permit will assure compliance with applicable water quality standards. However, this Permit does not relieve the Permittee from compliance with applicable State water quality standards established in ADEM Admin. Code ch. 335-6-10, and does not preclude the Department from taking action as appropriate to address the potential for contravention of applicable State water quality standards which could result from discharges of pollutants from the permitted facility.
2. Compliance with Permit terms and conditions notwithstanding, if the Permittee's discharge(s) cause(s) or contribute(s) to a condition in contravention of State water quality standards, the Department may require abatement action to be taken by the Permittee, modify the Permit pursuant to the Department's rules and regulations, or both.
3. If the Department determines, on the basis of any investigation, inspection, or sampling, that a modification of this Permit is necessary to assure maintenance of water quality standards or compliance with other provisions of the AWPCA or FWPCA, the Department may require such modification and, in cases of emergency, the Director may prohibit the noticed act until the Permit has been modified.

X. Civil and Criminal Liability

1. Tampering: Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained or performed under this Permit shall, upon conviction, be subject to penalties and/or imprisonment as provided by the AWPCA and/or the AEMA.
2. False Statements: Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished as provided by applicable State and Federal law.
3. Permit Enforcement: This NPDES Permit is a Permit for the purpose of the AWPCA, the AEMA, and the FWPCA, and as such all terms, conditions, or limitations of this Permit are enforceable under State and Federal law.
4. Relief From Liability: Except as provided in Part IV.M. (Bypass) and Part IV.N. (Upset), nothing in this Permit shall be construed to relieve the Permittee of civil or criminal liability under the AWPCA, AEMA, or FWPCA for noncompliance with any term or condition of this Permit.

Y. Oil and Hazardous Substance Liability

Nothing in this Permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject to under Section 311 of the FWPCA, 33 U.S.C. §1321.

Z. Availability of Reports

Except for data determined to be confidential under Code of Alabama 1975, §22-22-9(c), all reports prepared and submitted in accordance with the terms of this Permit shall be available for public inspection at the offices of the Department or the Department's electronic filing system (eFile) at http://app.adem.alabama.gov/eFile/. Effluent data shall not be considered confidential. Knowingly making any false statement in any such report may result in the imposition of criminal penalties as provided for in Section 309 of the FWPCA, 33 U.S.C. §1319, and Code of Alabama 1975, §22-22-14.

AA. Coastal Zone Management (Mobile and Baldwin Counties)

1. Except for those activities described in Part IV.AA.2 below, this permit is conditionally consistent with the Alabama Coastal Area Management Plan (ACAMP) upon continued compliance with the ACAMP.
2. The Permittee shall obtain, as appropriate, a coastal permit or coastal consistency determination from the Department if any activity conducts a use as described in ADEM Admin. Code r. 335-8-1-.08, 335-8-1-.09, 335-8-1-.10 or 335-8-1-.11.

BB. Removed Substances

Solids, sludges, or any other pollutants or other wastes removed in the course of treatment or control of stormwater shall be disposed of in a manner that complies with all applicable Department rules and regulations.

CC. Compliance with Statutes and Rules

1. This permit has been issued under ADEM Admin. Code ch. 335-6-6. All provisions of this chapter, that are applicable to this permit, are hereby made a part of this permit. A copy of this chapter can be found on the ADEM website at:
2. http://www.adem.state.al.us/alEnviroRegLaws/files/Division6Vol1.pdf.
3. This permit does not authorize the noncompliance with or violation of any Laws of the State of Alabama or the United States of America or any regulations or rules implementing such laws. FWPCA, 33 U.S.C. Section 1319, and Code of Alabama 1975, Section 22-22-14.

PART V Definitions

2-year, 24-hour storm event means the maximum 24-hour precipitation event with a probable recurrence interval of once in two years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, or equivalent regional or rainfall probability information developed there from.

AEMA means the Alabama Environmental Management Act, Code of Alabama 1975, §§ 22-22A-1, et seq.

Alabama Handbook means the September 2014 edition of the Alabama Handbook for Erosion Control, Sediment Control, And Stormwater Management On Constructions Sites And Urban Areas, Alabama Soil and Water Conservation Committee (ASWCC) published at the time permit coverage is obtained.

ADEM means the Alabama Department of Environmental Management.

AWPCA means the Alabama Water Pollution Control Act.

Best Management Practices or BMPs means implementation and continued maintenance of appropriate structural and non-structural practices and management strategies to prevent and minimize the introduction of pollutants to stormwater and to treat stormwater to remove pollutants prior to discharge.

Borrow Area "Pit" means the activity of removing material (soil, gravel, sand) from one area to use in another area. For the purposes of this permit, this activity is solely in conjunction with the project requesting permit coverage and not to be sold for profit. The borrow area and associated activity will open and close with the project requesting permit coverage.

Chronic and Catastrophic Precipitation means precipitation events which may result in failure of the properly designed, located, implemented, and maintained BMPs or other structure/practices required by this chapter. Catastrophic precipitation conditions means any single event of significant total volume, or of increased intensity and shortened duration, that exceeds normally expected or predicted precipitation over the time period that the disturbance is planned or is ongoing, as determined by the Department. Catastrophic conditions could also include tornadoes, hurricanes, or other climatic conditions which could cause failure due to winds or mechanical damage. Chronic precipitation is also that series of wet-weather conditions over a limited time-period which does not provide any opportunity for emergency maintenance, reinstallation, and corrective actions and which equals or exceeds the volume of normally expected or predicted precipitation for the time period that the disturbance is planned or is ongoing.

Common Plan of Development or Sale means any announcement or piece of documentation (e.g., sign, public notice, or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design, etc.) or physical demarcation (e.g., boundary signs, lot stakes, surveyor markings, etc.) indicating construction activities may occur on a specific plot.

Construction means any land disturbance or discharges of pollutants associated with, or the result of building, excavation, land clearing, grubbing, placement of fill, grading, blasting, reclamation, areas in which construction materials are stored in association with a land disturbance or handled above ground, and other associated areas including, but not limited to, construction site vehicle parking, equipment or supply storage areas, material stockpiles, temporary office areas, and access roads. Construction also means significant pre-construction land disturbance activities performed in support or in advance of construction activity including, but not limited to, land clearing, excavation, removal of existing buildings, dewatering and geological testing.

Construction Activity means the disturbance of soils associated with clearing, grading, excavating, filling of land, or other similar activities which may result in soil erosion. Construction activity does not include agricultural and silvicultural practices, but does include agricultural buildings.

Construction Best Management Practices Plan (CBMPP) means any research, planning considerations, systems, procedures, processes, activities, and practices implemented for the prevention and/or minimization of pollutants in stormwater to the maximum extent practicable, and collection, storage, treatment, handling, transport, distribution, land application, or disposal of construction stormwater and onsite management of construction waste generated by the construction activity, and to comply with the requirements of this permit. The CBMPP shall be prepared and certified, and when necessary updated by a qualified credentialed professional (QCP) in accordance with the requirements of this permit.

Construction Site means any site regardless of size where construction or construction associated activity has commenced, or is continuing, and associated areas, including sites where active work is suspended or has ceased, until the activity is completed and effective reclamation and/or stormwater quality remediation has been achieved.

Construction Waste means construction and land disturbance generated materials, including but not limited to, waste chemicals, sediment, trash, debris, litter, garbage, construction demolition debris, land clearing and logging slash or other materials or pollutants located or buried at the site prior to disturbance activity or that is generated at a construction site.

Control Measure refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the State.

CWA or The Act means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 1251 et.seq.

Department means the Alabama Department of Environmental Management or an authorized representative.

Director means the Director of the Department or his designee.

Discharge, "[t]he addition, introduction, leaking, spilling or emitting of any sewage, industrial waste, pollutant or other waste into waters of the state." Code of Alabama 1975, §22-22-1(b)(8).

EPA refers to the U.S. Environmental Protection Agency.

Ephemeral Stream means a stream or portion of a stream which flows briefly in direct response to precipitation in the immediate vicinity, and whose channel is at all times above the ground-water reservoir.

Final Stabilization means the application and establishment of the permanent ground cover (vegetative, pavements of erosion resistant hard or soft material or impervious structures) planned for the site to permanently eliminate soil erosion to the maximum extent practicable. Established vegetation will be considered final if 100% of the soil surface is uniformly covered in permanent vegetation with a density of 85% or greater. Permanent vegetation shall consist of; planted trees, shrubs, perennial vines; an agricultural or a perennial crop of vegetation appropriate for the region. Final stabilization applies to each phase of construction.

FWPCA means the Federal Water Pollution Control Act

Intermittent Stream means a stream where portions flow continuously only at certain times of the year. At low flow there may be dry segments alternating with flowing segments.

Green Infrastructure refers to systems and practices that use or mimic natural processes to infiltrate, evapotranspirate (the return of water to the atmosphere either through evaporation or by plants), or reuse storm water or runoff on the site where it is generated.

Linear Project means land disturbing activities conducted by an underground /overhead utility or highway department, including, but not limited to any cable line or wire for the transmission of electrical energy; any conveyance pipeline for transportation of gaseous or liquid substance; any cable line or wire for utility communications; or any other energy resource transmission ROW or utility infrastructure, e.g., roads and highways. Activities include the construction and installation of these utilities within a corridor. Linear project activities also include the construction of access roads, staging areas, and borrow/spoil sites associated with the linear project.

Low Impact Development or LID is an approach to the maintenance of predevelopment hydrology in land development (or re-development) that works with nature to manage storm water as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat storm water as a resource rather than a waste product.

Maximum extent practicable (MEP) means full implementation and regular maintenance of available industry standard technology and effective management practices, such as those contained in the Alabama Handbook and site-specific CBMPP, designed to prevent and/or minimize discharges of pollutants and ensure protection of groundwater and surface water quality.

Minor Land Disturbing Activities means activities which will result in minor soil erosion such as home gardens or individual home landscaping, repairs, maintenance work, fences, routine maintenance and other related activities.

National Pollutant Discharge Elimination System "NPDES" means the national program for issuing, modifying, revoking, and reissuing, terminating, monitoring, and enforcing permits for the discharge of pollutants into waters of the state.

Natural Buffer (Riparian buffer) means a strip of dense undisturbed perennial native vegetation, either original or re-established, that borders streams and rivers, ponds and lakes, and wetlands. Buffer zones are established for the purposes of slowing water runoff, enhancing water infiltration, and minimizing the risk of any potential nutrients or pollutants from leaving the upland area and reaching surface waters. Buffer zones are most effective when stormwater runoff is flowing into and through the buffer zone as shallow sheet flow, rather than in concentrated from such as in channels, gullies, or wet weather conveyances.

Nephelometric Turbidity Unit or NTU means a numerical unit of measure based upon photometric analytical techniques for measuring the light scattered by fine particles of a substance in suspension.

New Construction Site means any initial construction or construction activity covered under this General Permit where the disturbance begins after the effective date of this permit. This includes subsequent phases of a previously permitted development.

Non-stormwater Discharges means discharges that do not originate from storm events. They can include, but are not limited to, discharges of process water, air conditioner condensate, non-contact cooling water, vehicle wash water, sanitary wastes, concrete washout water, paint wash water, irrigation water, or pipe testing water.

Normal Operating Hours means from 6:00 a.m. to 6:00 p.m, Monday through Friday, excluding federal holidays established pursuant to 5 U.S.C. § 6103. Normal operating hours also include any time when workers are present or when construction activity is occurring, regardless of the particular day or time of day.

NOI means Notice of Intent.

Operator means any person or other entity, that owns, operates, directs, conducts, controls, authorizes, approves, determines, or otherwise has responsibility for, or exerts financial control over the commencement, continuation, or daily operation of activity regulated by this permit. An operator includes any person who treats and discharges stormwater or in the absence of treatment, the person who generates and/or discharges stormwater, or pollutants. An operator may include but may not be limited to, property owners, agents, general partners, LLP partners, LLC members, leaseholders, developers, builders, contractors, or other responsible or controlling entities.

Outfall means the location where stormwater in a discernible, confined and discrete conveyance, leaves a facility or construction site discharging into the receiving water.

Perennial Stream means a stream or portion of a stream that flows year-round, is considered a permanent stream, and for which baseflow is maintained by ground-water discharge to the streambed due to the ground-water elevation adjacent to the stream typically being higher than the elevation of the streambed.

Permittee means a person to whom a permit has been issued.

Plan or Sale as included in the phrase "larger common plan of development or sale" is broadly defined to mean any announcement or documentation, sales program, permit application, presentation, zoning request, physical demarcation, surveying marks, etc., associated with or indicating construction activities may occur in an area.

Pollutant of concern refers to sediment, turbidity, and any other pollutant known or reasonably expected to be found in untreated discharges associated with the construction site.

Post-construction refers to any phase of construction where final stabilization has been achieved, and all but minor construction activities have been completed. The term post-construction is not affected by the final operational status of the site or whether the site has been placed into operation according to its final intended use.

Priority construction site means any site that discharges to a waterbody which is listed on the most recently EPA approved 303(d) list of impaired waters for turbidity, siltation, or sedimentation, any waterbody for which a TMDL has been finalized or approved by EPA for turbidity, siltation, or sedimentation, any waterbody assigned the Outstanding Alabama Water use classification in accordance with ADEM Admin. Code r. 335-6-10-.09, and any waterbody assigned a special designation in accordance with ADEM Admin. Code r. 335-6-10-.10.

Qualified Credentialed Inspector or QCI means a permittee, permittee employee, or permittee designated qualified person who has successfully completed initial training and annual refresher Qualified Credentialed Inspection Program (QCIP) training, and holds a valid certification from a Department approved cooperating training entity.

Qualified Credentialed Inspector Program or QCIP means a Department approved program conducted by a cooperating training entity. Approved programs provide training in the requirements of the Alabama NPDES rules and regulations to ensure that QCP designed and certified BMPs detailed in a BMP Plan are effectively implemented and maintained, and evaluation of conveyance structures, receiving waters and adjacent impacted offsite areas to ensure the protection of water quality and compliance with the requirements of this Permit.

Qualified Credentialed Professional or QCP means a licensed professional engineer (PE), or a Certified Professional in Erosion and Sediment Control (CPESC) as determined by EnviroCert International. Other registered or certified professionals such as a registered landscape architect, licensed land surveyor, registered geologist, registered forester, Registered Environmental Manager as determined by the National Registry of Environmental Professionals (NREP), or Certified Professional and Soil Scientist (CPSS) as determined by ARCPACS. The QCP shall be in good standing with the authority granting the registration or designation. The design and implementation of certain structural BMPs may involve the practice of engineering and require the certification of a professional engineer pursuant to Alabama law.

A qualified person under the direct supervision of a QCP refers to an individual who is an employee of the QCP or the QCP's firm, and is familiar with current industry standards for erosion and sediment controls and able to inspect and assure that

BMPs or other pollution control devices (silt fences, erosion control fabric, rock check devices, etc.) and erosion control efforts (grading, mulching, seeding, growth management, etc.) or management strategies have been properly implemented and regularly maintained. Such individual may not certify the CBMPP or modifications to the CBMPP.

Qualifying precipitation event refers to any precipitation of 0.75 inches or greater in any 24-hour period.

Receiving Stream means the "waters" receiving a "discharge" from a construction site.

Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Silvicultural Operations:

Non-point source Silvicutural activities means activities such as nursery operations, site preparation, reforestations, and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance from which there is natural runoff.

Point source Silvicultural activities means any discernable, confined and discrete conveyance related to rock crushing, gravel washing, log sorting, or log storage facilities which are operated in conjunction with silvicultural activities and from which pollutants are discharged into waters of the State. Silvicultural point sources, excluding mining operations regulated pursuant to ADEM Administrative Code rule 335-6-9; 40 CFR Part 122.27 (1994).

Site means the land or water area where any facility or activity for which coverage under this permit is required is physically located or conducted, including adjacent land use in connection with the facility or activity.

State water quality standards refer to numeric and narrative standards set forth at ADEM Admin Code chaps. 335-6-10 and 335-6-11.

Stormwater means runoff, accumulated precipitation, process water, and other wastewater generated directly or indirectly as a result of construction activity, the operation of a construction material management site, including but not limited to, precipitation, upgradient or offsite water that cannot be diverted away from the site, and wash down water associated with normal construction activities. Stormwater does not mean discharges authorized by the Department via other permits or regulations.

Steep Slope means a slope of 15% or greater.

Surface water means a water of the State of Alabama as defined in ADEM Admin. Code R. 335-6-10-.02.

Temporary Stabilization means the application and establishment of temporary ground cover (vegetative, pavements of erosion resistant hard or soft materials or impervious structures) for the purpose of temporarily reducing raindrop impact and sheet erosion in areas where Final Stabilization cannot be established due to project phasing, seasonal limitations or other project related restrictions.

Total Maximum Daily Load or TMDL means the calculated maximum permissible pollutant loading to a waterbody at which water quality standards can be maintained; The sum of wasteload allocations (WLAs) and load allocations (LAs) for any given pollutant.

Treatment facility and treatment system means all structures which contain, convey, and as necessary, chemically or physically treat stormwater. This includes all pipes, channels, ponds, tanks, and all other equipment serving such structures.

TSS means the pollutant parameter Total Suspended Solids

24-hour precipitation event means that amount of precipitation which occurs within any 24-hour period.

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation. For purposes of this definition, Chronic and Catastrophic Precipitation constitutes an exceptional incident.

Waters of the state means "[a]ll waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the State, natural or artificial. This does not include waters which are entirely confined and retained completely upon the property of a single individual, partnership, or corporation unless such waters are used in interstate commerce." Code of Alabama 1975, §22-22-1(b)(2). "Waters" include all "navigable waters" as defined in §502(7) of the FWPCA, 33 U.S.C. §1362(7), which are within the State of Alabama.

Week means the period beginning at twelve midnight Saturday and ending at twelve midnight the following Saturday.

CONSTRUCTION STORMWATER
TMDL BMP PERCENT REMOVAL CALCULATIONS

Date	September 23, 2016
Staff Member	Heather Griffin
Registrant Name	City of Birmingham, Department of Planning, Engineering & Permits
Facility/Site Name	Shades Creek Dredging
Permit Number	ALR10B689
County	Jefferson
Impaired Watershed	Shades Creek
Impaired Receiving Water	Shades Creek
TMDL Pollutant of Concern (POC)	Siltation
TMDL POC Required Reduction	53% [1]

Control Measure, Outfall No. #:1(Sheet Flow)

Measure: (silt fence)

Units Entering [3]	Percent Reduction[2]	Units Removed	Units Leaving
100	70% [4]	70	30

100 Units entering control measures – 30 units leaving = 70 units removed, therefore, **70% reduction**

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1 Based on the Best Professional Judgment of the Department, requiring a 53% reduction in TSS will meet the TMDL requirement for a 53% reduction in siltation.
2 Reduction capabilities assuming the control measures have been appropriately installed and maintained.
3 Applying the controls in order and working in terms of "units" of TSS starting at 100 units.
4 Based on USEPA NPDES Menu of BMPs.

DHM
51155

NOTICE OF INTENT – GENERAL PERMIT NUMBER ALR100000

NPDES PERMIT NUMBER ALR100000 IS A GENERAL PERMIT AUTHORIZING DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT RESULT IN A TOTAL LAND DISTURBANCE OF ONE ACRE OR GREATER AND SITES LESS THAN ONE ACRE BUT ARE PART OF A LARGER COMMON PLAN OF DEVELOPMENT OR SALE

ALR10BC489
IG - 3C132

Mail to: **Alabama Department of Environmental Management**
Water Division
Stormwater Management Branch
Post Office Box 301463
Montgomery, Alabama 36130-1463

PLEASE COMPLETE ALL QUESTIONS. INCOMPLETE OR INCORRECT ANSWERS, OR MISSING SIGNATURES WILL DELAY PROCESSING. IF SPACE IS INSUFFICIENT, CONTINUE ON AN ATTACHED SHEET(S) AS NECESSARY. ATTACH CBMPP AND OTHER INFORMATION AS NEEDED. PLEASE TYPE OR PRINT LEGIBLY IN INK.

I. PERMITTEE INFORMATION Initial: ■ Modification: ☐ Transfer: ☐ Renewal: ☐ Previous ALR10 _____

Permittee Name (Legal Name) City of Birmingham, Department of Planning, Engineering & Permits	Responsible Official Phone Number 205-714-8644
Responsible Owner/Operator or Official, and Title Andre Bittas, Director – Planning Engineering and Permits	Responsible Official E-Mail Address
Responsible Official (RO) Street/Physical Address 710 20th Street North Room 220	City, State, and Zip Code Birmingham, AL 35203
Responsible Official (RO) Mailing Address 710 20th Street North Room 220	City, State, and Zip Code Birmingham, AL 35203
☐ Corporation ☐ Individual ☐ Sole Proprietorship ☐ Partnership ☐ LLC ☐ LLP ■ Government Agency ☐ Other _____	

II. FACILITY INFORMATION

Facility/Site Name Shades Creek Dredging	Facility Contact and Title Paul Ward, Solid Waste Administrator
Facility Street Address or Location Description Shades Creek near the Elder Road bridge.	Facility Contact Company Name City of Birmingham, Solid Waste
City: Birmingham Zip Code: 35201 County(s): Jefferson	Facility Contact Phone Number 205-718-3800
Facility Front Gate Latitude and Longitude (For linear projects, please include coordinates for both the beginning and ending points of the project.) 33.521030, -86.716910	Facility Contact e-Mail Address: paul.ward@birminghamal.gov
Detailed Directions to the Site From Elder Road, East on Maryland Ave, South on Cinnamon Street.	

III. ACTIVITY DESCRIPTION

Brief Description of Construction / Land disturbance activity(s): Routine maintenance dredging of Shades creek	
(For Modifications Only) Brief description of the action/change that has resulted in the request for permit modification:	
Primary SIC Code: 1629 Heavy Const. Not Elsewhere	Primary NAICS Code: 238910 Site Preparation, Contractors

IV. PROPOSED SCHEDULE

Anticipated Activity schedule:	Commencement date: 07/01/16		Completion date: 3/31/21
Area of the Registered site:	Total site area in acres: 1 acre or less		Total disturbed area in acres: 1 acre or less

V. PRIORITY CONSTRUCTION SITE

Is this a Priority Construction Site as defined by Part V of the construction stormwater general permit? Yes ■ No ☐ If yes, attach/submit a copy of the CBMPP that meets or exceeds the requirements of Parts III A. and E. of the construction stormwater general permit.

VI. TOPOGRAPHIC MAP SUBMITTAL

Please attach a recent 7.5 minute series USGS topographic map(s) no larger than 11 by 17 inches (several pages may be necessary), showing the location of the Facility including site boundaries, area of disturbance, a 1 mile radius, perennial, intermittent, and ephemeral streams, lakes/springs/wells/wetlands and contour lines. The map should also show the point(s) at which stormwater runoff will exit (outfall) the facility and the point(s) where stormwater runoff from the site will enter the receiving water.

VII. RECEIVING WATERS

Are there any surface waters within 25 feet of your project's earth disturbances? YES ■ NO ☐

List name of receiving water(s), latitude & longitude (decimal or deg, min, sec) of location(s) that run-off enters the receiving water, and the waterbody classification. Please refer to ADEM Admin. Code 335-6-11 for a detailed list of water use classifications. (Attach a separate list if necessary)

Receiving Water	Latitude	Longitude	Waterbody Classification
Shades Creek	33.521030	-86.716910	F&W

VIII. GENERAL INFORMATION

Will flocculants or other chemical stabilization products be used on site? Yes ☐ No ■

IX. QUALIFIED CREDENTIALED PROFESSIONAL (QCP) CERTIFICATION

"I certify under penalty of law that a comprehensive Construction Best Management Practices Plan (CBMPP) for the prevention and minimization of all sources of pollution in stormwater and authorized related process wastewater runoff has been prepared under my supervision for this site/activity, and associated regulated areas/activities. The CBMPP meets the requirements of this permit and if properly implemented and maintained by the operator, discharges of pollutants in stormwater runoff can reasonably be expected to be effectively minimized to the maximum extent practicable according to the requirements of ADEM Administrative Code Chapter 335-6-6-.23 and this Permit. The CBMPP describes the erosion and sediment control measures that must be fully implemented and regularly maintained as needed at the permitted site in accordance with sound sediment and erosion control practices to ensure the protection of water quality."

QCP Designation/Description: Professional Engineer

Address 2 20th Street North, Suite 300, Birmingham, AL 35203 Registration / Certification: PE 25089

Name and Title (type or Print) Theotis Johnson, Project Engineer Phone Number 205-214-5500

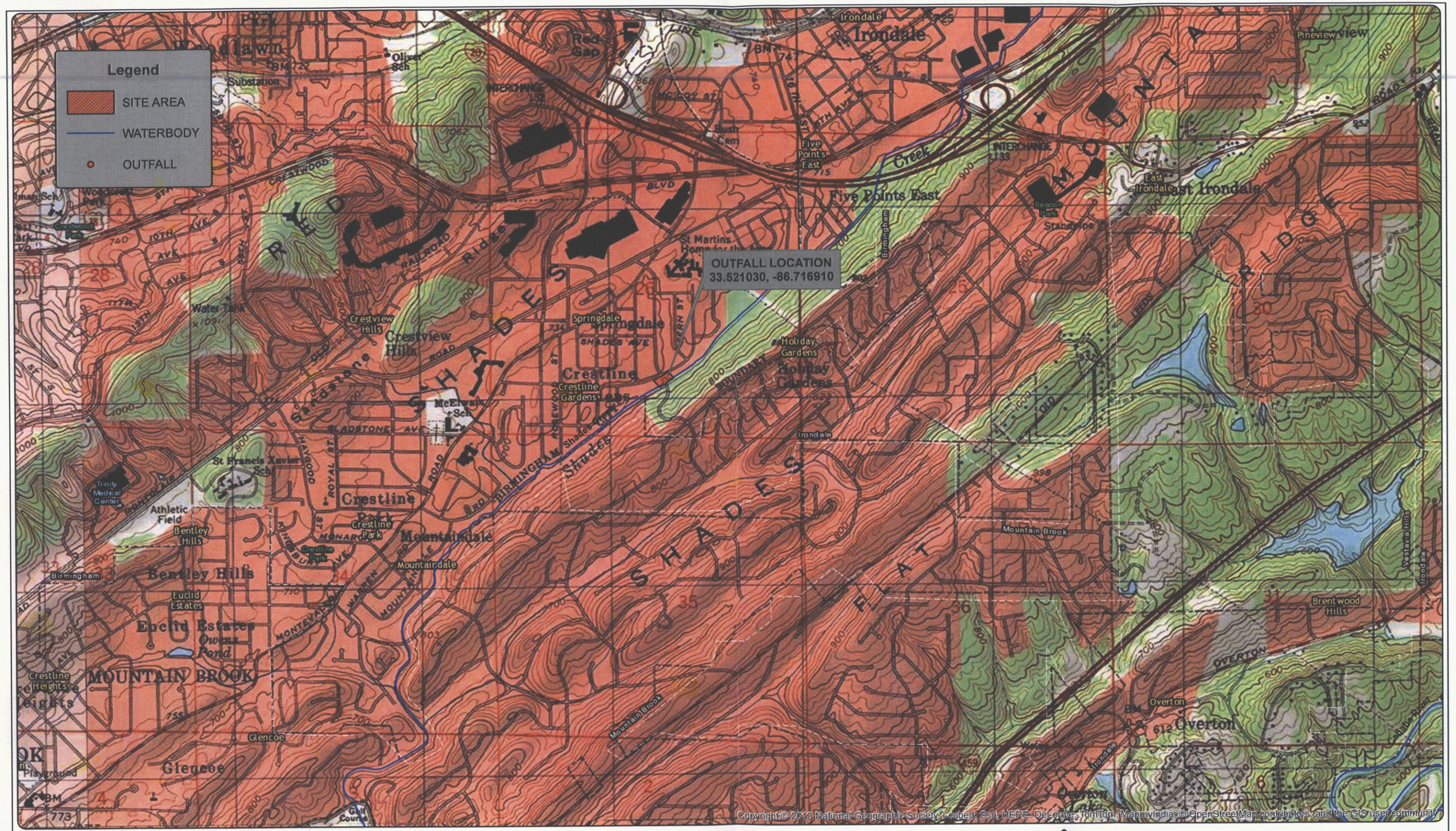
Signature [signature] Date Signed 8/26/16

X. OPERATOR - RESPONSIBLE OFFICIAL SIGNATURE

Pursuant to ADEM Administrative Code Rule 335-6-6-.09, this NOI must be signed by a Responsible Official of the permittee who is the operator, owner, the sole proprietor of a sole proprietorship, a general/controlling member or partner, a ranking elected official or other duly authorized representative for a unit of government; or an executive officer of at least the level of vice-president for a corporation, having overall responsibility and decision making for the site/activity. "I certify under penalty of law that this form, the CBMPP, and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the qualified credentialed professional (QCP) and other person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, correct, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine or imprisonment for knowing violations. I certify that this form has not been altered, and if copied or reproduced, is consistent in format and identical in content to the ADEM approved form. I further certify that the proposed discharges described in this registration have been evaluated for the presence of any non-construction and/or coal/mineral mining stormwater, or process wastewaters have been fully identified."

Name and Title (type or Print) Andre Bittas, Director – Planning Engineering and Permits Official Title Director

Signature [signature] Date Signed 8/24/16



VOLKERT

0 750 1,500 3,000 Feet

1 inch = 1,500 feet

N

OUTFALL LOCATION

Construction Best Management Practices Plan

for:

Shades Creek Drainage
Shades Creek near the Elder Road Bridge
Birmingham, AL,
Insert Project Site Telephone Number (if applicable)

Permittee:

City of Birmingham
Andre Bittas, Director – Planning Engineering and Permits
710 20th Street North Room 220
Birmingham, AL 35203
205-254-2424
Insert Fax/Email

CBMPP Contact(s) / QCP:

Volkert Inc.
Theotis Johnson, P.E.
2 20th St N #300
Birmingham, AL 35203
(205) 214-5500
theo.johnson@volkert.com

CBMPP Preparation Date:

06/05/2016

Estimated Project Dates:

Project Start Date: ***07/01/2016***
Project Completion Date: ***03/31/2021***

Contents

Appendix H – Additional Information (i.e., Endangered Species, Historic Preservation and U.S. Corps of Engineers Documentation)

SECTION 1: SITE EVALUATION, ASSESSMENT, AND PLANNING

1.1 Project/Site Information

Project/Site Name: Shades Creek Dredging
Project Street/Location: Shades Creek near the Elder Road bridge.
City: Birmingham State: AL ZIP Code: 35201
County: Jefferson

Total Disturbed Acres: 1 acre or less

Latitude/Longitude of the Project Site (front gate). [Use **one** of three possible formats, and specify method]

Latitude:	Longitude:
1. _ _ ° _ _ ' _ _ " N (degrees, minutes, seconds)	1. _ _ ° _ _ ' _ _ " W (degrees, minutes, seconds)
2. _ _ ° _ _ . _ _ ' N (degrees, minutes, decimal)	2. _ _ ° _ _ . _ _ ' W (degrees, minutes, decimal)
3. ***33.521030*** ° N (decimal)	3. ***-86.716910*** ° W (decimal)

Method for determining latitude/longitude:
☐ USGS topographic map (specify scale): _____ ☐ EPA Web site ☒ GPS
☐ Other (please specify): _____

1.2 Contact Information/Responsible Parties

Permittee:
City of Birmingham, Department of Planning, Engineering, and Permits
Andre Bittas
710 20th Street North Room 220
Birmingham, AL 35203
205-254-2424
Insert Fax/Email:

Project Manager(s) or Site Supervisor(s):

City of Birmingham
Paul Ward
501 6th Avenue South
Birmingham, AL 35205
205-718-3800
paul.ward@birminghamal.gov

CBMPP Contact(s) / QCP:

Volkert Inc.
Theotis Johnson, P.E.
2 20th St N #300
Birmingham, AL 35203
(205) 214-5500
theo.johnson@volkert.com

QCI or Qualified Person(s):

City of Birmingham
Thomas Miller
710 20th Street North Room 220
Birmingham, AL 35203
205-714-8644
thomas.miller@birminghamal.gov

This CBMPP was Prepared by:

Volkert Inc.
Brad Ehrman, P.E.
2 20th St N #300
Birmingham, AL 35203
(205) 214-5500
brad.ehrman@volkert.com

Emergency 24-Hour Contact:

City of Birmingham
Paul Ward
205-718-3800

1.3 Nature and Sequence of Construction Activity

The proposed Shades Creek drainage is a continuous maintenance operation along the entire length of Shades Creek. Activities include, removal of trash and debris and accumulated sediment from Shades Creek. The work will be performed by an excavator from the bank of the stream. Dredged material will be loaded into trucks and hauled to one of the City's Landfills. Disturbed area along the banks of the stream will include incidental clearing and grading associated with movement of construction equipment.

Dredging and removal of trash and debris will be performed by tracked equipment positioned on the bank of the stream and reaching in the stream with the boom arm. Equipment shall not enter the stream. Minor clearing to provide access to the streambank shall be performed using hand equipment (i.e. chainsaws, weed eater, hand tools, etc.) Dump Trucks will be used to haul off any cleared items. Pesticides and Herbicides will not be used under this project. Fueling maintenance and cleaning of equipment will be performed off site.

Proposed Activity(ies) to be Conducted:

☐ Residential ☐ Commercial ☐ Industrial ☐ Road Construction ☐ Linear Utility

☒ Other (please specify): ***Stream Maintenance***

Lot(s) or Parcel(s) Covered under this Permit:

Table 2: Multiple Operators

Operator Name	Contact Information	Area of Control
City of Birmingham *Paul Ward*	*205-718-3800*	*Entirety of Shades Creek in City of Birmingham (see site map)*

1.4 Receiving Waters

Description of receiving waters:

Shades Creek Classification Fish and Wildlife (F&W)

Description of storm sewer systems:

N/A – Storm water will sheet flow directly into Shades Creek

Description of impaired waters or waters subject to TMDLs:

Shades Creek – Fecal Coliform, Siltation, Turbidity, Habitat Alteration

Other:

This is a priority Construction Site due to Shades Creek TMDL

1.5 Potential Sources of Pollution

Potential sources of sediment to stormwater runoff:
Site construction related erosion
Potential pollutants and known sources, other than sediment, to stormwater runoff:
Small leaks from equipment

Table 3. Known Potential Pollutants

Trade Name Material	Potential Known Stormwater Pollutants	Storage Location
Hydraulic Fluids	*Petroleum Hydrocarbons*	*In equipment reservoirs and hydraulic lines.*
Oil & Grease	*Petroleum Hydrocarbons*	*In equipment reservoirs and hydraulic lines.*
Diesel Fuel	*TPH, VOC's*	*In equipment reservoirs and hydraulic lines.*
Gasoline	*Petroleum Hydrocarbons*	*In equipment reservoirs and hydraulic lines.*

1.6 Maps

See Appendix A for General Location Map

See Appendix B for Site Map

SECTION 2: EROSION AND SEDIMENT CONTROL BMPS

2.1 Phase Construction Activity

- Phase I
  - Describe phase: ***Dredging of Shades Creek and removal of stream material The maximum disturbed area will be less than 1 acre at a time. Additional area will not be disturbed until area is fully stabilized with a permanent stand of vegetation.***
  - Duration of phase (start date, end date): ***07/01/2016 to 03/31/2021***
  - List BMPs associated with this phase: ***These activities will not be performed if rainfall is anticipated or if streambanks are wet or muddy. Material removed from Shades Creek will not be stockpiled. Any material removed during the work will placed directly into vehicles to be hauled to the landfill. Wattles and silt fencing (Type A) will be installed as per the BMP Sheets and as directed by the engineer. A single row of Turbidity Barrier will be installed in the stream adjacent to the work area to function as a backup to minimize sediment loss in the event of a silt fence failure. The type of barrier will be as directed by engineer. Because of the nature of the construction activity, equipment will be within the 25' stream buffer. Prior to begining work, the 25' riparian buffer will be clearly marked with flags. Any required clearing within the buffer will be cleared using hand tools only to minimize disturbance of the vegetation and underlying root structures, Grubbing is not permitted within the buffer. Any equipment entering the buffer will be on mats to minimize disturbance of the buffer.***
  - Describe stabilization methods for this phase: ***Temporary stabilization of disturbed areas must be initiated immediately whenever work toward project completion and final stabilization of any portion of the site has temporarily ceased on any portion of the site and will not resume for a period exceeding thirteen (13) calendar days. Temporary stabilization will consist of mulch, and grass.***

- Phase II
  - Describe phase: ***Final Stabilization***
  - Duration of phase (start date, end date): ***07/01/2016 to 03/31/2021***
  - List BMPs associated with this phase: ***Mulch, Seeding***
  - Describe stabilization methods for this phase (describe any temporary stabilization methods that will be used before final stabilization): ***Final stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site. Additional mulch and seed will be added as directed by the engineer as needed until area is stabilized.***

2.2 Control Stormwater Flowing onto and through the Project

Berms, ditches, storage basins, are not installed because installation and or removal would significantly increase the disturbed area for the project. Additionally, the storm water runoff is leaving the site via sheet flow from a narrow area, and exposure time was minimized.

2.3 Stabilize Soils

☐ ***Permanent***	☒ ***Temporary***
Detailed BMP Description: Annual seed mixture and mulching.	
Maintenance:	***Maintenance includes watering and fertilizing as necessary to promote a thick vegetative cover. Reseed areas where seed is not well established. Grade the areas before applying seeds or mulch. Plant seasonally appropriate vegetation and seed at the correct rate for the type of seed and the soil conditions.***
Inspection:	***Inspections are to be conducted weekly until a stand is established and thereafter at least monthly.***
Responsible Staff:	***Inspection – City of Birmingham, Storm water Management*** ***Maintenance – City of Birmingham, Public Works***

☐ ***Permanent***	☒ ***Temporary***
Detailed BMP Description: Perennial seed mixture and mulching.	
Maintenance:	***Maintenance includes watering and fertilizing as necessary to promote a thick vegetative cover. Reseed areas where seed is not well established. Grade the areas before applying seeds or mulch. Plant seasonally appropriate vegetation and seed at the correct rate for the type of seed and the soil conditions.***
Inspection:	***Inspections will be performed at least once per week and after each ¾" rainfall event.***
Responsible Staff:	***Inspection – City of Birmingham, Storm water Management*** ***Maintenance – City of Birmingham, Public Works***

2.4 Stabilize Slopes

☐ *Permanent*	☒ *Temporary*
Detailed BMP Description: Rolled Erosion Control Products	
Maintenance:	*Installation and maintenance is to be performed by the city. Installation and maintenance for Rolled Erosion Control Products will be according to what construction stage the project is in. Devices need to be checked after each rainfall event. See Appendix H for installation and maintenance details.*
Inspection:	*Inspect at least once a week and after each significant rain event (>.75 inches). Repair or replace damaged devices.*
Responsible Staff:	*Inspection – City of Birmingham, Storm water Management* *Maintenance – City of Birmingham, Public Works*

2.5 Protect Storm Drain Inlets

☐ Permanent	☒ Temporary
Detailed BMP Description: Inlet protection devices	
Maintenance:	Installation and maintenance is to be performed by the city. Installation and maintenance for inlet protection will be according to what construction stage the project is in. Protection devices will be block and gravel. Devices need to be checked after each rainfall event. Sediment accumulation should be removed when it reaches no greater than ½ the design volume. Any sediment removed from the device will be loaded into trucks and disposed of at a landfill or spread out back onto the site and seeded and mulched per section 4 of the CBMPP. Should a sediment loss occur into adjacent streams, city maintenance forces will dredge any accumulated sediment as described in Section 2.1. See Appendix H for installation and maintenance details.
Inspection:	Inspect at least once a week and after each significant rain event (>.75 inches). Remove sediment that accumulates behind the device to allow for adequate water flow. Repair or replace damaged devices.
Responsible Staff:	Inspection – City of Birmingham, Storm water Management Maintenance – City of Birmingham, Public Works

The Shades creek TMDL for Siltation, Turbidity and Habitat Alteration calls for a 53% reduction. Rolled Erosion control Products with Silt fence Inlet protection demonstrate an 87% removal rate. Floating Turbidity Barrier is also used as a backup in the event of a failure of the silt fence. It is not included in the reduction calculations. See Appendix H Total Sediment Percentage load calculation.

2.6 Establish Perimeter Controls and Sediment Barriers

☐ Permanent	☒ Temporary
Detailed BMP Description: Temporary silt fence	
Maintenance:	Installation and maintenance is to be performed by the city. Installation and maintenance for inlet protection will be according to what construction stage the project is in. A double row of silt fence will be installed adjacent to any disturbed areas within the 25' stream buffer. There shall be a 5' spacing between silt fences. Devices need to be checked after each rainfall event. Built-up sediment needs to be removed from silt barriers when it has reached ½ of the height of the barrier Any sediment removed from the device will be loaded into trucks and disposed of at a landfill or spread out back onto the site and seeded and mulched per section 4 of the CBMPP. Should a sediment loss occur into adjacent streams, city maintenance forces will dredge any accumulated sediment as described in Section 2.1. See Appendix H for installation and maintenance details.
Inspection:	Inspect at least once a week and after each significant rain event (>.75 inches) for proper anchorage and leakage underneath. Silt fencing should also be inspected for tears. Remove sediment that accumulates behind the device to allow for adequate water flow. Repair or replace damaged devices.
Responsible Staff:	Inspection – City of Birmingham, Storm water Management Maintenance – City of Birmingham, Public Works

The Shades creek TMDL for Siltation, Turbidity and Habitat Alteration calls for a 53% reduction. A double row of Silt fence combined with Rolled Erosion control Products demonstrate an 91.45% removal rate. See Appendix H Total Sediment Percentage load calculation.

2.7 Retain Sediment On-Site

Sediment Traps, sediment basins were not constructed because installation of these items would significantly increase the disturbed area for the project. Ditch checks and check dams were not installed because no drainage ditches flowed through the site.

2.8 Establish Stabilized Construction Exits

☐ *Permanent*	☒ *Temporary*
Detailed BMP Description: *Construction Exit Pad*	
Maintenance:	*The construction exit pad shall be maintained in a condition that will allow it to perform its function to prevent offsite tracking. Additional stabilization of the vehicular route leading to the stabilized entrance may be required to limit the mud tracked.*
Inspection:	*Inspection should be performed each day there is activity on the site.*
Responsible Staff:	*Inspection – City of Birmingham, Storm water Management* *Maintenance – City of Birmingham, Public Works*

2.9 Additional BMPs

There are no additional BMPs anticipated at this time. If for any reason the need to implement new BMPs occurs, they will be done in compliance with the Alabama Handbook for Erosion Control, Sediment Control, and Storm water Management on Construction Sites and Urban Areas (September 2014) and immediately inspected by city personnel for compliance.

SECTION 3: GOOD HOUSEKEEPING (GROUNDS KEEPING) BMPS

3.1 Material Handling and Waste Management

☐ *Permanent*	☒ *Temporary*
Detailed BMP Description: Clearing and Demolition Debris	
Maintenance:	***Any cleared and construction debris generated will immediately be loaded onto trucks and hauled to a landfill. Debris will not be stockpiled on this project.***
Inspection:	***Daily observation.***
Responsible Staff:	*Inspection – City of Birmingham, Storm water Management* *Maintenance – City of Birmingham, Public Works*

3.2 Establish Proper Building Material Staging Areas

Fill materials and construction materials will not be delivered to this site. If for any reason fill or construction materials are brought in, additional BMPs will be added in compliance with the Alabama Handbook for Erosion Control, Sediment Control, and Storm water Management on Construction Sites and Urban Areas (September 2014) and immediately inspected by city personnel for compliance.

3.3 Designate Washout Areas

Currently, there is no designated washout area planned on-site. Equipment requiring designated washout areas (i.e. concrete mixers, paint, stucco, etc.) will not be used for this project. If a washout area is needed, it will be installed, maintained and implemented per the guidelines and standards in the Alabama Handbook for Erosion Control, Sediment Control, and Storm water Management on Construction Sites and Urban Areas (September 2014).

3.4 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices

☐ *Permanent*	☒ *Temporary*
Detailed BMP Description: *Spill prevention kit and practices*	
Maintenance:	***Inspections of construction equipment shall be performed daily by the equipment operator to identify leaks of any type. The operator shall have a supply of sorbent pads/spill kits for minor equipment leaks if they should occur. The operator shall have on-site at all times enough sorbent pads/materials to clean up a worst-case scenario spill. All used sorbent pads or other used absorbent materials will be promptly placed in covered containers and will be removed from the site and disposed in an approved landfill once the necessary authorizations are received from ADEM.***
Inspection:	***Daily observation each day there is equipment on site.***
Responsible Staff:	***Inspection – City of Birmingham, Storm water Management Maintenance – City of Birmingham, Public Works***

3.5 Control Equipment/Vehicle Washing

Currently, there are no plans to have any vehicular washing allowed on-site.

3.6 Spill Prevention, Control and Management

Steps to be taken in the case of a spill on-site are as follows:

- *Identify and train site/equipment personnel and make them responsible for spill prevention*
- *Stop the spill at its source*
- *Stop the spill from spreading*
- *Clean up the spilled material*
- *Properly dispose of the spilled material*
- *Document and report the spill in accordance with the permit*

The steps listed above are general guidelines. Equipment operators need to be trained in spill cleaning techniques prior to any construction activity. There needs to be enough absorbent material to accommodate for a "worst case scenario" on-site during the construction phase. Removal of spilled material will also account for any of the soil in the immediate (~5ft) vicinity of the spill. The soil needs to be removed off-site in a safe and appropriate manner along with the spilled material.

Should any hydraulic fluid spill directly into the stream or within 5' of the stream, the operator shall move the equipment away from the stream, stop the spill from spreading and immediately contact the Jefferson county Hazmat team for additional direction in handling the spilled material.

3.7 Non-Stormwater Discharge Management

Table 4. Non-Stormwater Discharges

Non-Stormwater Discharges	Pollution Prevention Measures
N/A	

SECTION 4: SELECTING POST-CONSTRUCTION BMPs

Detailed BMP Description: *Erosion Control Products (ECPs)*	
Installation Schedule:	*Immediately following dredging activities.*
Maintenance:	*Installation is to be immediately following cessation of final earth disturbing activities. Maintenance includes replacement of damaged ECPs, Reapplying ECPs to bare soil areas caused by erosive events. Installation and class guidelines can be found in Appendix J and Appendix K.*
Inspection:	*Inspect weekly and after storm events until vegetation is established. Proper establishment is when the sod has rooted.*
Responsible Staff:	*Inspection – City of Birmingham, Storm water Management* *Maintenance – City of Birmingham, Public Works*

Detailed BMP Description: Perennial grass seed and mulch	
Installation Schedule:	*Immediately following dredging activities.*
Maintenance:	*Maintenance includes watering and fertilizing as necessary to promote vigorous growth and deep roots. Reseeding of areas where grass has not become well established. This maintenance will continue until the QCP has determined that all grass is well rooted and healthy, the site is fully stabilized, the final inspection has been conducted and the permit is terminated. Refer to Appendix H for installation and maintenance.*
Inspection:	*Monthly, also inspect site for erosion and periodically after rainstorms for erosion and damage to the mulch.*
Responsible Staff:	*Inspection – City of Birmingham, Storm water Management* *Maintenance – City of Birmingham, Public Works*

SECTION 5: INSPECTIONS

5.1 Inspections

1. Inspection Personnel:

   Pre construction Inspection – City Personnel
   Daily Observations: City personnel.
   Weekly (if required) or after any ¾" rainfall event: City personnel.
   Monthly Inspections: City personnel.
   Comprehensive CBMPP Evaluation (to be conducted at a minimum of once every 6 months by QCP): City personnel.

2. Inspection Schedule and Procedures:

   Describe the inspection schedules and procedures you have developed for your site (include frequency of inspections for each BMP or group of BMPs, indicate when you will inspect, e.g., before/during/and after rain events, spot inspections):

   City personnel will perform a pre-construction site inspection as required in section H 1 (a) of the ALR100000 permit. City personnel will perform a site inspection once each month and after any qualifying precipitation events, as defined in Part V - Definitions – Page 28 of ADEM General Permit ALR100000 as "any precipitation of 0.75 inches or greater in any 24-hour period.", commencing as promptly as possible, but no later than 24-hours after resuming or continuing active construction and disturbance and completed no later than 72 hours following the qualifying precipitation event. City Personnel shall also perform site inspections as often as necessary until any poorly functioning erosion controls or sediment controls, non-compliant discharges, or any other deficiencies being observed during a prior inspection are corrected and documented as being in compliance with the requirements of the permit. Precipitation shall be monitored daily at the site and this will require the installation of a rain gauge at the site and recording the 24-hour accumulation of precipitation on a daily basis.

   Describe the general procedures for correcting problems when they are identified. Include responsible staff and time frames for making corrections:

   The city personnel will make every possible attempt to correct problems within 48-hours of their identification. This correction time limit could potentially be exceeded due to several extenuating circumstances including, but not limited to, continuous non-stop heavy rainfall for periods longer than 48-hours that would make repairs impossible until high flow conditions subside, natural disasters and extraordinary acts of nature (hurricanes, massive flooding, etc.), equipment failure or inability to access damaged areas with the equipment required to correct the problem due to flooded or extremely saturated soils that would cause the equipment to get "stuck", and other unanticipated and currently unknown circumstances that could potentially arise during construction.

5.2 Corrective Action

If for any reason, discharge does not comply with any limitation or condition of this permit, the permit holder will verbally notify the Director or his/her designee within 24 hours of the non-compliant event followed by a non-compliance notification written report within five (5) days of the event. All deficiencies will be corrected as soon as practicable but not to exceed five (5) days of the inspection unless prevented by unsafe weather conditions. The operator shall promptly take all reasonable steps to remove, to the maximum extent practical, pollutants deposited offsite or in any water body or storm water conveyance structure.

Contact the QCP immediately for assistant in developing a remediation plan to repair offsite damage.

After a breach of a sediment basin, temporary measures shall be taken within 24 hours and permanent measures shall be implemented within five hours. If this is impossible, the Permittee shall contact the Division.

These corrective actions shall be documented in the Corrective Action Log.

Corrective Action Log:
See **Appendix E** for an example of the Corrective Action Log.

SECTION 6: RECORDKEEPING AND TRAINING

6.1 Recordkeeping

Records will be retained on site with the permit. Retained records will include all inspection records, monitoring information, copies of reports required by the permit, and records of all data used to create reports for a period of three years from the date of the inspection or report.

The Construction Best Management Practices Plan is designed to be a living document that may be modified due to changing conditions. ADEM requires the CBMPP to be updated to address changes in the construction activity, site weather patterns, and new TMDLs finalized or approved by the EPA, new 303 (d) listings approved by the EPA, or manufacturer specifications for specific control technologies.

The CBMPP shall be amended if inspections or investigations by site staff or by local, state or federal officials determine that the existing sediment control measures, erosion control measures or other site management practices are ineffective or do not meet the requirements of this permit. All necessary modifications to the CBMPP shall be made within seven (7) days following notification of the inspection unless granted an extension by the Department.

If existing sediment control measures, erosion control measures, or other site management practices prove ineffective in protecting water quality or need to be modified, or if additional sediment control measures, erosion control measures or other site management practices are necessary to meet the requirements of Part III A,B,C, and E, implementation shall be completed before the next storm event is impracticable then new land disturbance activities must cease until the modified or additional controls can be implemented. A log entry should be made to the Grading and Stabilization Log in Appendix G when the following activities occur: Date(s) when major grading activities occur, date(s) when construction activities temporarily or permanently cease on a portion of the site, date(s) when an area is either temporarily or permanently stabilized.

Date(s) when major grading activities occur:
See Appendix G
Date(s) when construction activities temporarily or permanently cease on a portion of the site:
See Appendix G
Date(s) when an area is either temporarily or permanently stabilized:
See Appendix G

6.2 Log of Changes to the CBMPP

Any additions of new BMPs, replacement of failed BMPs, significant changes in the activities or their timing on the project, changes in personnel, changes in inspection and maintenance procedures, updates to the site maps, etc. will be logged on the CBMPP Amendment Log. See **Appendix F**.

The CBMPP shall be amended if inspections or investigations by site staff or by local, state or federal officials determine that the existing sediment control measures, erosion control measures or other site management practices are ineffective or do not meet the requirements of this permit. All necessary modifications to the CBMPP shall be made with seven (7) calendar days following notification of the inspection unless granted an extension of time by the department.

Log of changes and updates to the CBMPP
See **Appendix F**

6.3 Training

Individual(s) Responsible for Training:
City Personnel

Describe Training Conducted:

General storm water and BMP awareness training for staff and subcontractors: Staff and all contractors should be presented with an overview of general installation, inspection and maintenance of BMPs. Also, they should be provided a copy of the NPDES permit and CBMPP for the site.

SECTION 7: FINAL STABILIZATION

BMP Description: Perennial grass seed and mulch of all disturbed areas not covered by pavement or concrete.	
Maintenance:	***Maintenance includes watering and fertilizing as necessary to promote vigorous growth and deep roots. Installation and maintenance will be done by the contractor. Reseeding of areas where grass has not become well established. This maintenance will continue until the QCP has determined that all grass is well rooted and healthy, the site is fully stabilized, the final inspection has been conducted and the permit is terminated. Final stabilization will meet the definition as outlined below and in accordance with Part V of the NPDES General Permit. See Appendix-H for installation and maintenance details.***
Inspection:	***Inspections and final inspection will be done by City Personnel inspections scheduled as per outlined in detail in section 5.1 of this document. Final inspection to be conducted once City Personnel has determined that grass is well rooted, healthy and providing proper permanent stabilization on all surfaces and slopes not covered by pavement. Final Stabilization means the application and establishment of the permanent ground cover (vegetative, pavements of erosion resistant hard or soft material or impervious structures) planned for the site to permanently eliminate soil erosion to the maximum extent practicable. Established vegetation will be considered final if 100% of the soil surface is uniformly covered in permanent vegetation with a density of 85% or greater. Permanent vegetation shall consist of planted trees, shrubs, perennial grasses.***
Responsible Staff:	***Inspection – City of Birmingham, Storm water Management*** ***Maintenance – City of Birmingham, Public Works***

SECTION 9: CERTIFICATION AND NOTIFICATION

I certify under penalty of law that a comprehensive Construction Best Management Practices Plan (CBMPP) for the prevention and minimization of all sources of pollution in stormwater and authorized related process wastewater runoff has been prepared under my supervision for this site/activity, and associated regulated areas/activities. The CBMPP meets the requirements of this permit and if properly implemented and maintained by the operator, discharges of pollutants in stormwater runoff can reasonably be expected to be effectively minimized to the maximum extent practicable according to the requirements of ADEM Administrative Code Chapter 335-6-6-.23 and this Permit. The CBMPP describes the erosion and sediment control measures that must be fully implemented and regularly maintained as needed at the permitted site in accordance with sound sediment and erosion control practices to ensure the protection of water quality.

Name: Theotis Johnson Title: Project Engineer

QCP Designation/Description: Professional Engineer Registration/Certification: PE 25089

Address: 2 20th Street North, Suite 300 Phone Number: 205-214-5500

Birmingham, AL 35203

Signature: Date: 8/26/16

CBMPP APPENDICES

Attach the following documentation to the CBMPP:

Appendix A – General Location Map

Appendix B – Site Maps

Appendix C – NOI and Copy of Permit

Appendix D – Inspection Reports

Appendix E – Corrective Action Log (or in Part 5.2)

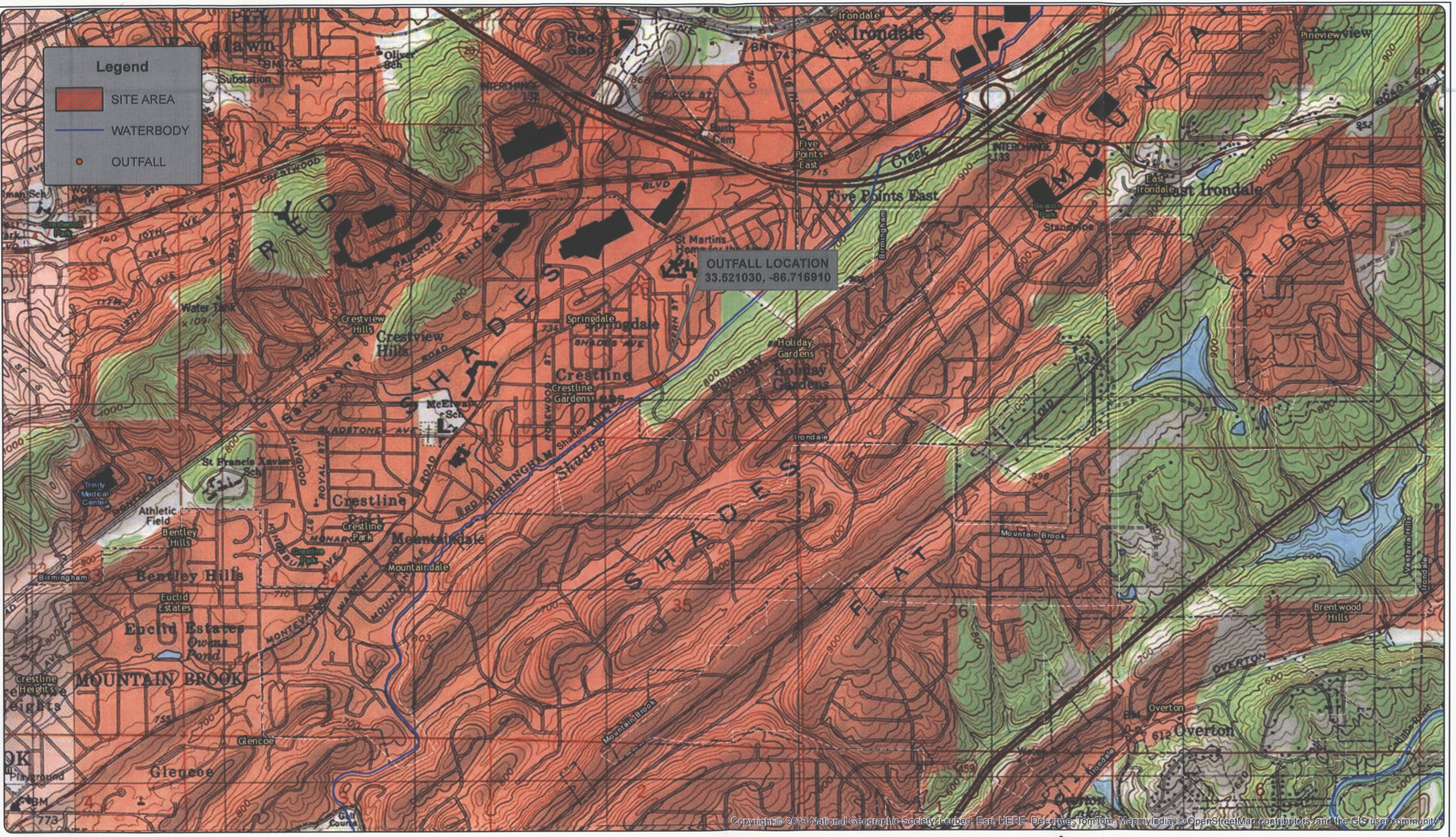
Appendix F – CBMPP Amendment Log (or in Part 6.2)

Appendix G – Grading and Stabilization Activities Log (or in Part 6.1)

Appendix H – Additional Information (i.e., Endangered Species, Historic Preservation, and U.S. Corps of Engineers Documentation)

Appendix A – General Location Map

[INSERT MAP HERE]



VOLKERT

0 750 1,500 3,000 Feet

1 inch = 1,500 feet

N

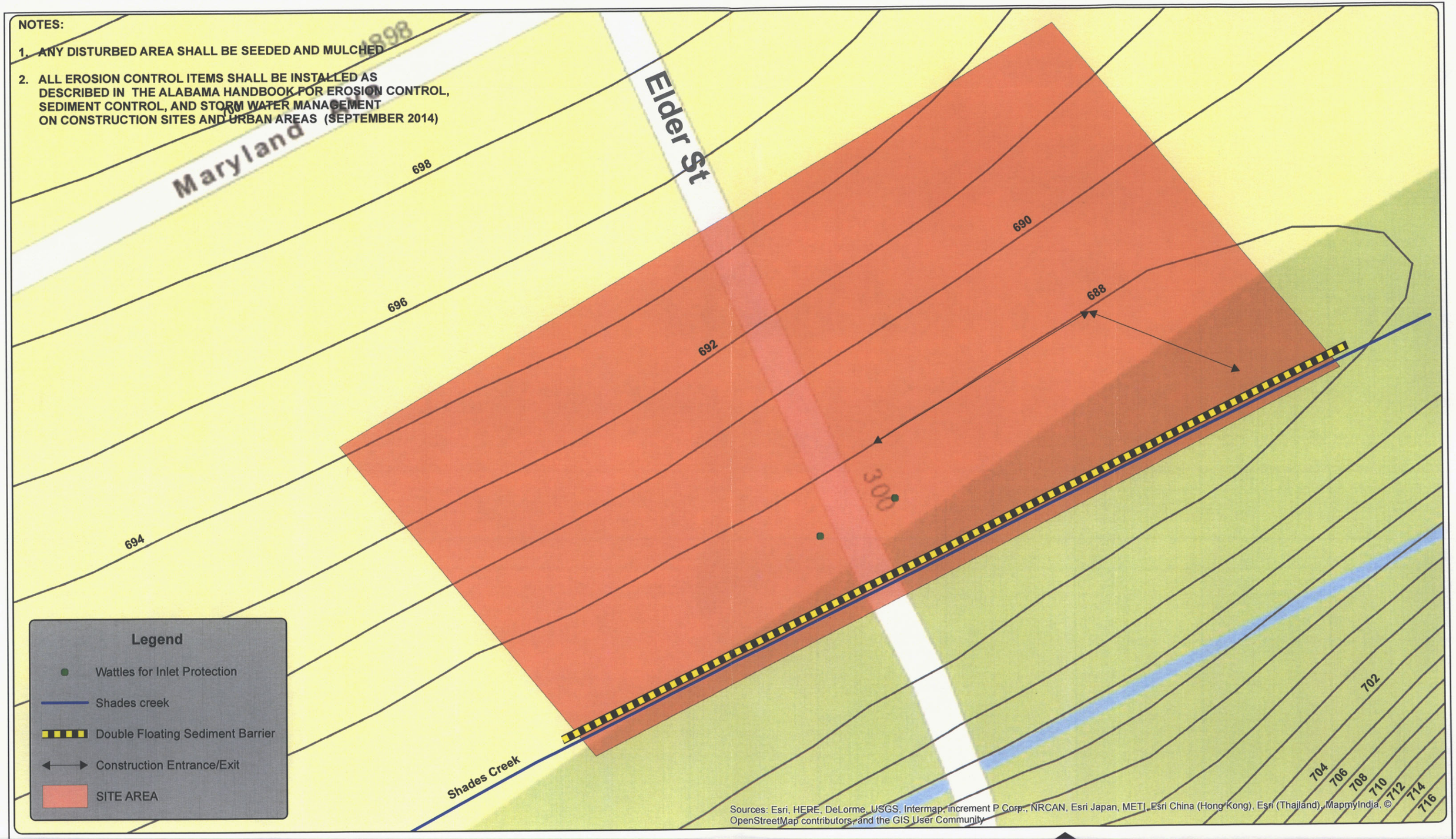
OUTFALL LOCATION

Appendix B – Site Maps

[INSERT MAPS HERE]

NOTES:

1. ANY DISTURBED AREA SHALL BE SEEDED AND MULCHED.
2. ALL EROSION CONTROL ITEMS SHALL BE INSTALLED AS DESCRIBED IN THE ALABAMA HANDBOOK FOR EROSION CONTROL, SEDIMENT CONTROL, AND STORM WATER MANAGEMENT ON CONSTRUCTION SITES AND URBAN AREAS (SEPTEMBER 2014)



VOLKERT

0 15 30 60 Feet

1 inch = 30 feet

N

SITE AREA

VOLKERT

0 40 80 Feet

SITE AREA

Appendix C – NOI and Copy of Permit

[INSERT DOCUMENTS HERE]

Appendix D – Inspection Reports

[INSERT REPORTS HERE]

Appendix E – Sample Corrective Action Log

Project Name:
CBMPP Contact:

Inspection Date	Inspector Name(s)	Description of BMP Deficiency	Corrective Action Needed (including planned date/responsible person)	Date Action Taken/Responsible person

Appendix F – Sample CBMPP Amendment Log

Project Name:
CBMPP Contact:

Amendment No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Appendix G – Sample Grading and Stabilization Activities Log

Project Name:
CBMPP Contact:

Date Grading Activity Initiated	Description of Grading Activity	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures are Initiated	Description of Stabilization Measure(s) and Location(s)

Appendix H – Additional Information (i.e., Endangered Species, Historic Preservation, and U.S. Corps of Engineers Documentation)

[INSERT ADDITIONAL INFORMATION HERE]

Sediment Percentage Load Reduction

STORMWATER BEST MANAGEMENT PRACTICES TOTAL SEDIMENT PERCENTAGE LOAD REDUCTION							
	CONTROL #1		CONTROL #2		CONTROL #3		TOTAL SEDIMENT
DISCHARGE POINT NUMBER	CONTROL MEASURE	REMOVAL RATE (%)	CONTROL MEASURE	REMOVAL RATE (%)	CONTROL MEASURE	REMOVAL RATE (%)	REDUCTION %
Sheet Flow	SILT FENCE	70	SILT FENCE	15.75	ROLLED EROSION CONTROL PRODUCT	5.7	91.45%
Inlet Proteciton	ROLLED EROSION CONTROL PRODUCT	80	INLET PROTECTION, WATTLE	5.8	NONE	0	85.80%

SHADES CREEK BMP'S ATTACHMENTS

CONSTRUCTION EXIT

INLET PROTECTION- Block and Gravel

SILT FENCE TYPE "A"

BLANKETS AND MATTING

TURBIDITY CURTAIN

MULCHING

PERMANENT SEEDING

TEMPORARY SEEDING

SODDING

BMP
Construction Exit Pad

DESCRIPTION

A construction access road is a stabilized rock (or an alternative material) pad located at points of vehicular egress at a construction site. This provides a buffer area where mud and caked soil can be removed from the tires of construction vehicles to avoid transporting it onto public roads. The construction access road may include a fabric underliner.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Allowing stability for vehicle access to construction sites.
- Limiting mud and debris deposited on roadways from adjacent construction sites.

APPLICATIONS

This BMP may be used at construction sites with unstable soils and/or steep slopes to gain traction, especially during wet weather. It may be used in combination with other BMPs.

LIMITATIONS

This BMP should not be used:

- As the sole BMP.

CONSTRUCTION GUIDELINES

- Unsuitable material should be excavated prior to placement of fabric and rock.
- Place an optional "fabric underliner" the full width and length of the access road, as required by design.
- Compact road as appropriate.
- Drainage is designed to state and local design standards.

BMP MAINTENANCE

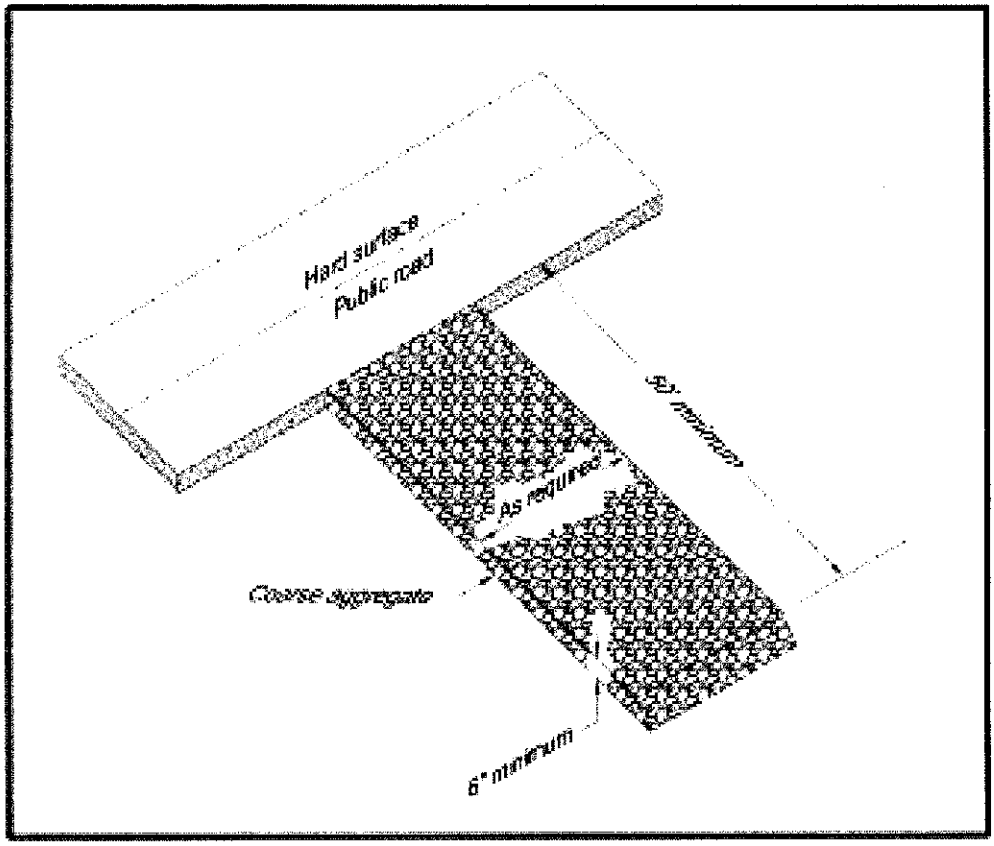
- During construction, inspect BMPs daily during the workweek.

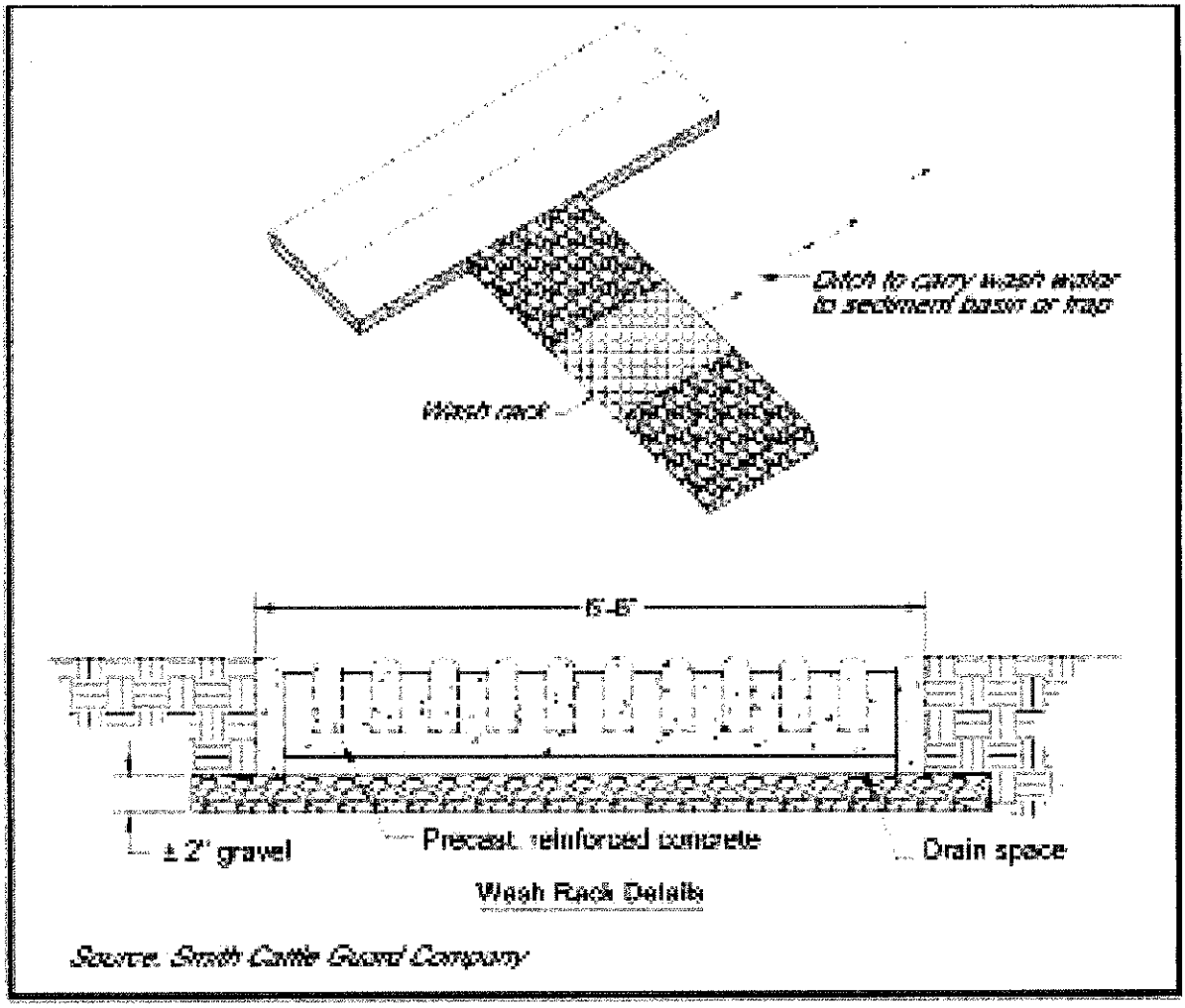
- Schedule additional inspections during storm events. Make any required repairs.
- Materials spilled, dropped or tracked from vehicles onto roadways should be removed.
- Water trucks will not be used to remove dropped, spilled, or tracked materials, unless the water can be treated by other BMPs.

BMP REMOVAL

- Remove BMP if appropriate (recycle and/or re-use if applicable).
- Re-vegetate and/or restore area disturbed by BMP.

Construction Exit Pad


Hard surface
Public road
50' minimum
As required
Coarse aggregate
6" minimum



Wash Rack Details

Source: Smith Cattle Guard Company

City of Birmingham
Stormwater Management

BMP

Soil Stabilization (erosion control blankets and matting)

DESCRIPTION

Soil stabilization can be accomplished through the installation of a protective blanket (covering) or a soil stabilization mat on a prepared planting area, a steep slope, channel and/or shoreline. Protective covering can be made of straw, jute, wood, or other plant fibers; plastic, nylon, paper, or cotton.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Reducing erosion.
- Providing a microclimate that protects young vegetation and promotes its establishment.
- "Reinforcing the turf" to resist the forces of erosion during storm events.

APPLICATIONS

This BMP may be used on short, steep slopes where erosion hazard is high and planting is likely to be slow in establishment. It may also be used on stream banks or tidal shorelines where moving water is likely to wash out new plantings. Soil stabilization blankets and matting may be used in combination with other BMPs.

LIMITATIONS

This BMP should not be used:

- In watercourses or streams without proper permits.

CONSTRUCTION GUIDELINES

- Grade the site to a smooth uniform surface, free of debris.
- Incorporate soil amendments and seed according to plans and specifications.
- Install erosion control blankets according to manufacturer's recommendations, especially concerning check slots and stapling patterns.
- Anchor blanket so that continuous, firm contact is maintained with the soil surface.
- Check materials used for compliance with specifications and suitability for application.
- Check finished grade and dimensions for compliance with specifications.
- Check staple instillation for compliance with recommendations.

- Installation is site specific.
- See following drawings and specifications.

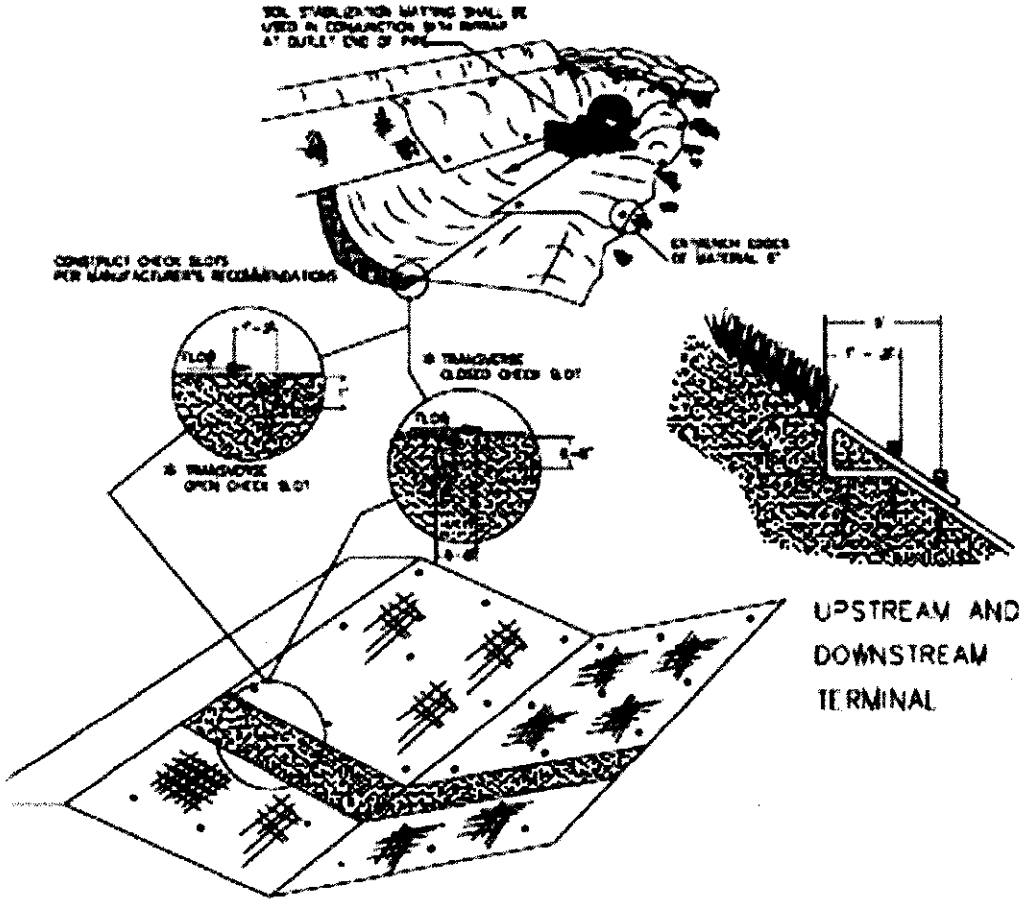
BMP MAINTENANCE

- If vegetation is incorporated, inspect during the plant establishment period. Re-plant, due to mortality, as necessary.
- Schedule additional inspections during storm events. Check for erosion or undermining; any required repairs shall be made.

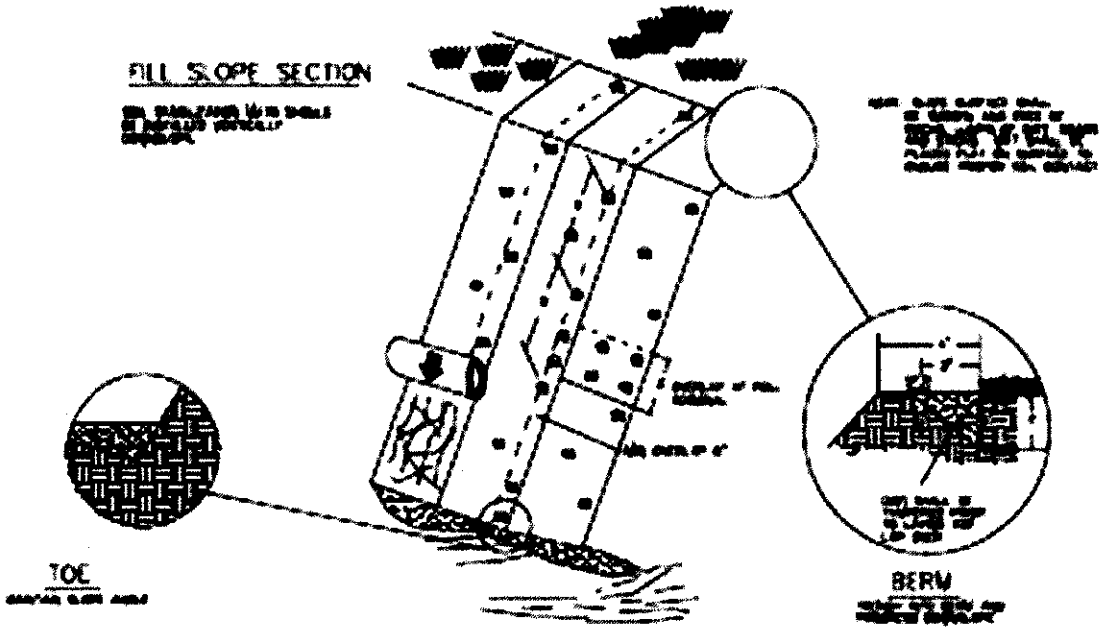
BMP REMOVAL

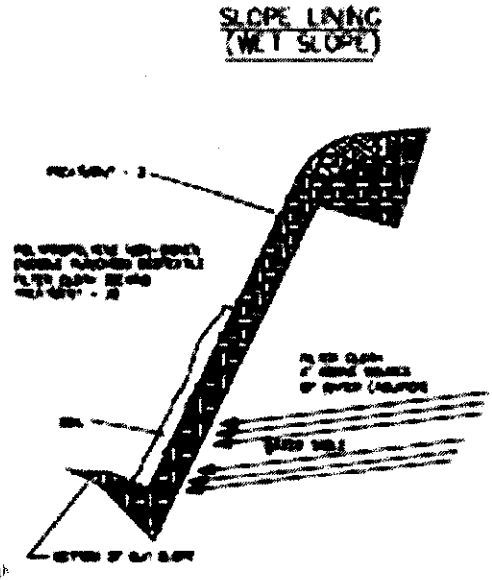
- BMP removal is not necessary.

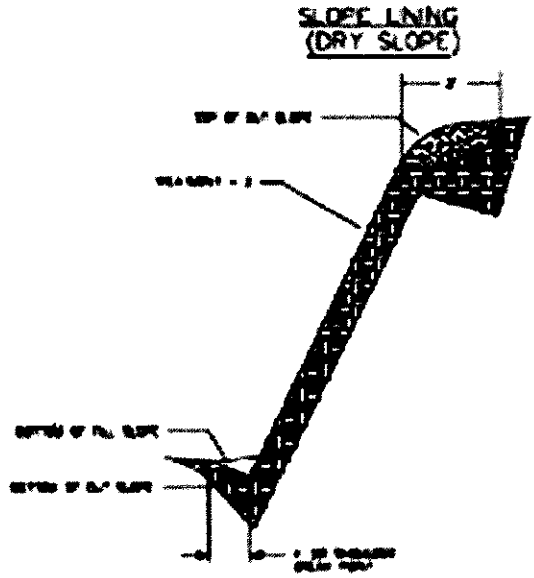
TYPICAL TREATMENT
SOIL STABILIZATION MATTING INSTALLATION



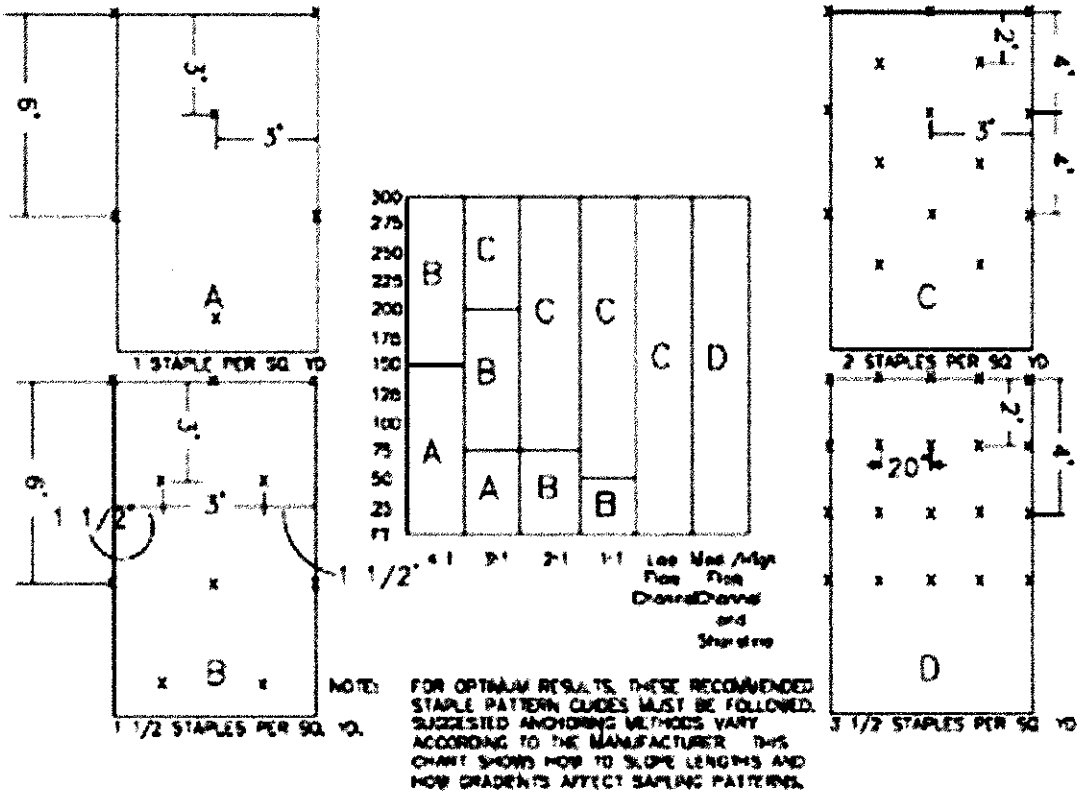
TYPICAL TREATMENT
SOIL STABILIZATION MATTING SLOPE INSTALLATION







GENERAL STAPLE PATTERN GUIDE AND RECOMMENDATIONS AND (SOIL STABILIZATION MATTING



NOTE: FOR OPTIMUM RESULTS, THESE RECOMMENDED STAPLE PATTERN GUIDES MUST BE FOLLOWED. SUGGESTED ANCHORING METHODS VARY ACCORDING TO THE MANUFACTURER. THIS CHART SHOWS HOW TO SLOPE LENGTHS AND HOW GRADIENTS AFFECT SAMPLING PATTERNS.

BMP
Turbidity Curtain

DESCRIPTION

A turbidity curtain is a pre-manufactured geotextile structure with floats on the top, weights on the bottom, and an anchorage system that minimizes sediment transport from a disturbed area that is adjacent to or within a body of water. This device allows for settling of suspended solids and/or reducing water velocity. The barrier provides sedimentation and turbidity protection for a watercourse from up-slope land disturbance activities where conventional erosion and sediment controls cannot be used or need supplemental sediment control, or from dredging or filling operations within a watercourse. The practice can be used in non-tidal and tidal watercourses where intrusion into the watercourse by construction activities has been permitted and subsequent sediment movement is unavoidable.

Floating turbidity barriers are normally classified into 3 types:

- Type I is used in protected areas where there is no current and the area is sheltered from wind and waves.
- Type II is used in areas where there may be small to moderate current (up to 2 knots or 3.5 ft/sec) and/or wind and wave action can affect the curtain.
- Type III is used in areas where considerable current (up to 3 knots or 5 ft/sec) may be present, where tidal action may be present, and/or where the curtain is potentially subject to wind and wave action.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Minimizing the mixing of turbid water with the adjacent clean water.
- Containing soil particles during construction and/or repair activities.

APPLICATIONS

This BMP may be used in water including open drainage systems and non-tidal watercourses where construction activities create turbidity. This includes removal of sedimentation from within City streams.

LIMITATIONS

This BMP should not be used:

- Across the entire flow of the watercourse or stream.
- Where flow volume or water velocity inhibit BMP function.

CONSTRUCTION GUIDELINES

- All work shall be within turbidity curtain(s) to avoid the release of unintended material downstream.
- Turbidity barrier types must be selected based on the flow conditions within the waterbody, whether it is a flowing channel, lake, pond, or a tidal watercourse. The specifications contained within this practice pertain to minimal and moderate flow conditions where the velocity of flow may reach 5 ft/sec (or a current of approximately 3 knots).
- For situations where there are greater flow velocities or currents, a qualified design professional and product manufacturer should be consulted.
- When sizing the length of the floating curtain, allow an additional 10-20% variance in the straight-line measurements.
- Turbidity curtains must be installed according to applicable permit requirements.
- Follow manufacturer recommendations and guidelines for installation and safety measures.
- Turbidity curtains should extend the entire depth of the watercourse whenever the watercourse in question is not subject to tidal action and/or significant wind and wave forces.
- Turbidity curtains are available in various heights. The units are preassembled in 50-foot lengths and are used by connecting the number of units required.
- In tidal and/or wind and wave action situations, the curtain should never be so long as to touch the bottom. A minimum 1 foot gap should exist between the weighted, lower end of the skirt and the bottom at "mean" low water.
- Add a suitable weight or anchoring system to the bottom of the curtain.
- See drawings on following pages
- The turbidity curtain can be deployed in standing and/or in flowing water (see limitations).
- External anchors may consist of 2" x 4" or 2½" minimum diameter wooden stakes, or 1.33 pounds/linear foot steel posts when Type I installation is used. When Type II or Type III installations are used, bottom anchors should be used.
- Excavation shall only be used with a long arm excavator. No heavy equipment should be permitted in the stream flow way.

BMP MAINTENANCE

- During construction, inspect BMPs daily during the workweek.
- Schedule additional inspections during storm events.
- Make any required repairs.
- Inspect daily.
- If repairs are required, follow directions in repair kit instructions.
- No excavation material shall be placed in adjacent areas to the excavation nor on ditch banks or at the top of bank. All material should be removed from the site by container trucks and deposited at area appropriate landfills for construction materials

BMP REMOVAL

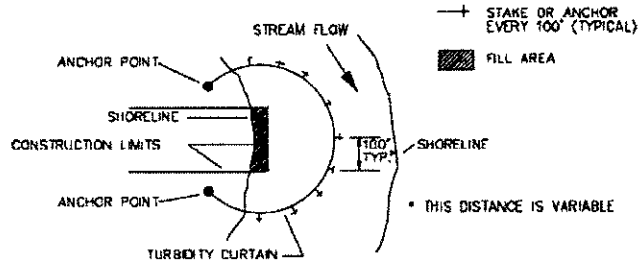
- Soil particles should always be allowed to settle for a minimum of 6-12 hours before removal by equipment or before removal of a turbidity curtain.
- Remove BMP (recycle and/or reuse if applicable).
- Follow manufacturer recommendations for removal.
- When curtain is removed it shall be in such a manner as to minimize turbidity. Remaining soil particles shall be sufficiently settled before removing the curtain.
- Water discharged from turbidity curtain shall meet permit requirements at the point of discharge.

A turbidity curtain being used to contain turbid waters during construction activities

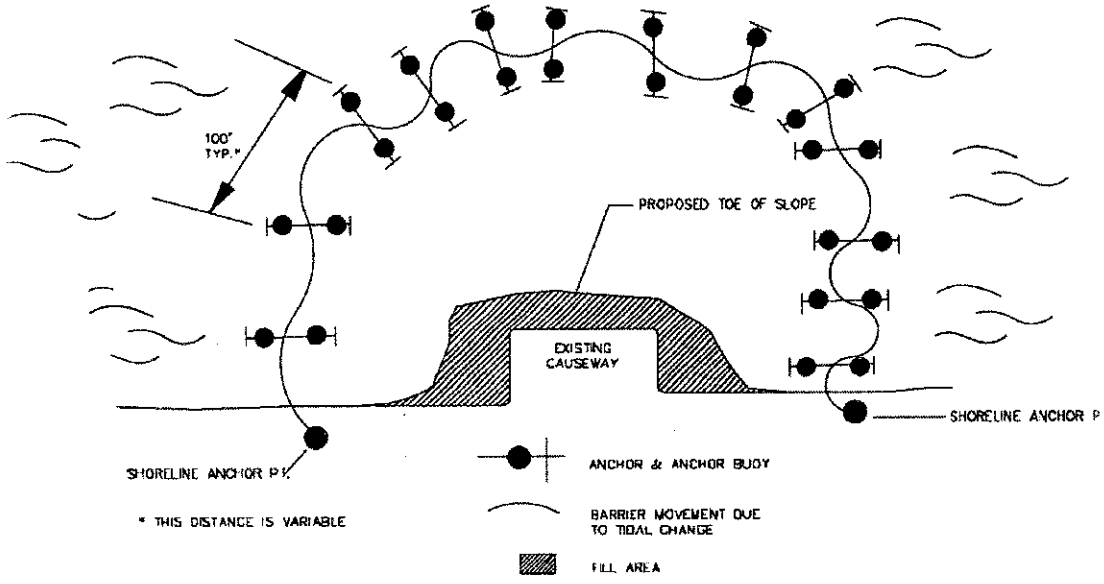
The combined efforts of the turbidity curtain and other BMPs

TURBIDITY CURTAIN

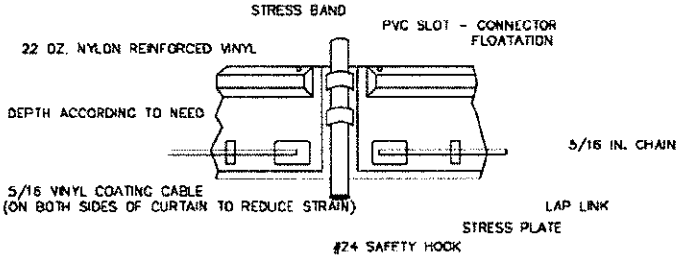
TYPICAL LAYOUTS;
STREAMS, PONDS, AND LAKES (PROTECTED AND NON-TIDAL



TIDAL WATERS AND/OR HEAVY WIND AND WAVE ACTION



TURBIDITY CURTAIN TYPE III



ORIENTATION WHEN INSTALLED (TIDAL SITUATION – TYPE III)

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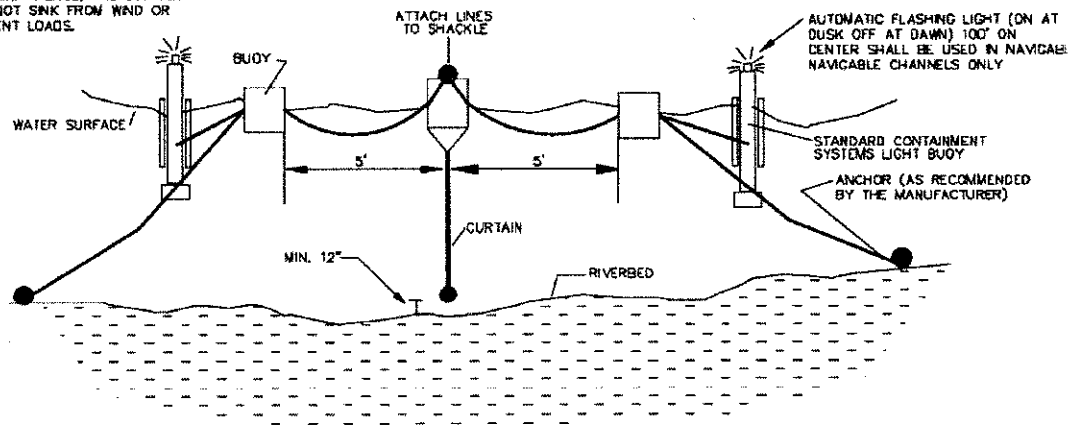
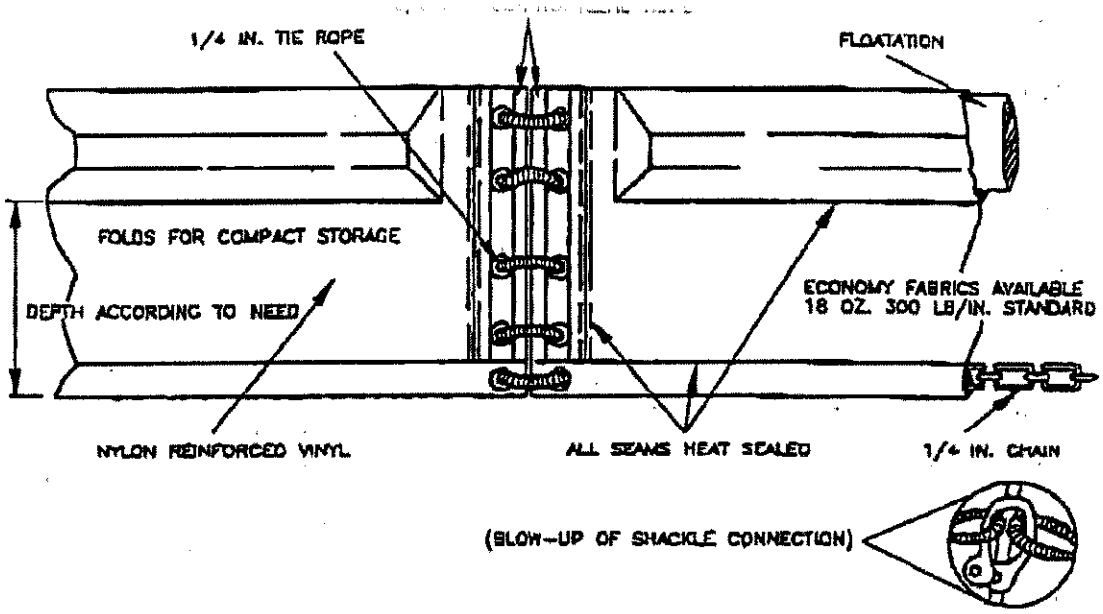
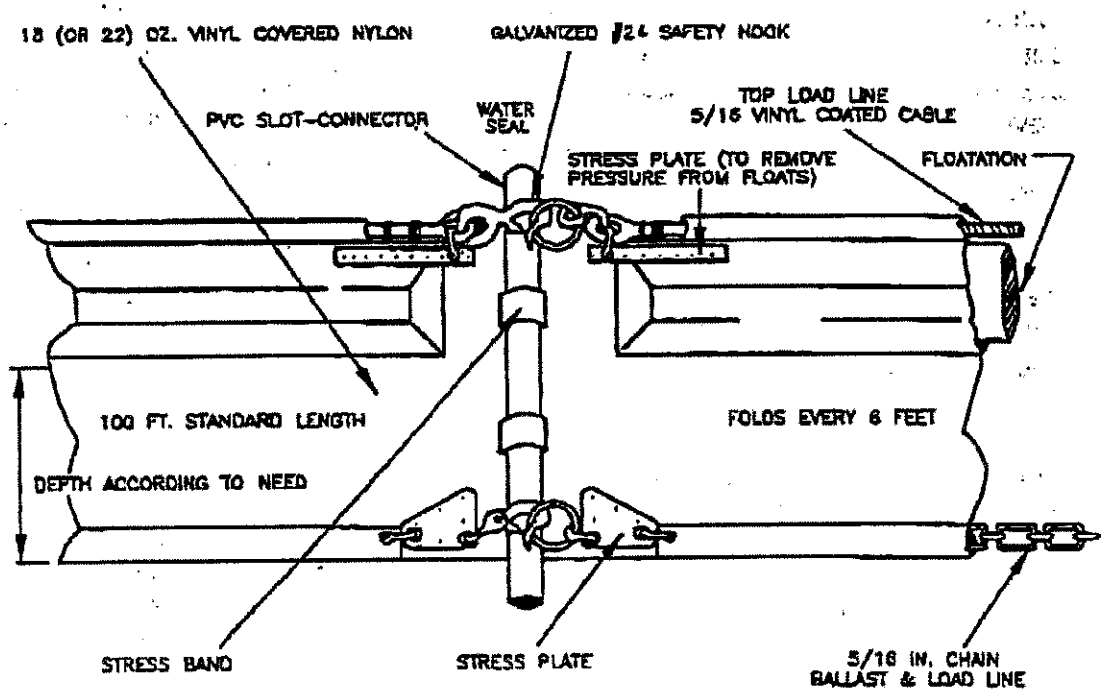


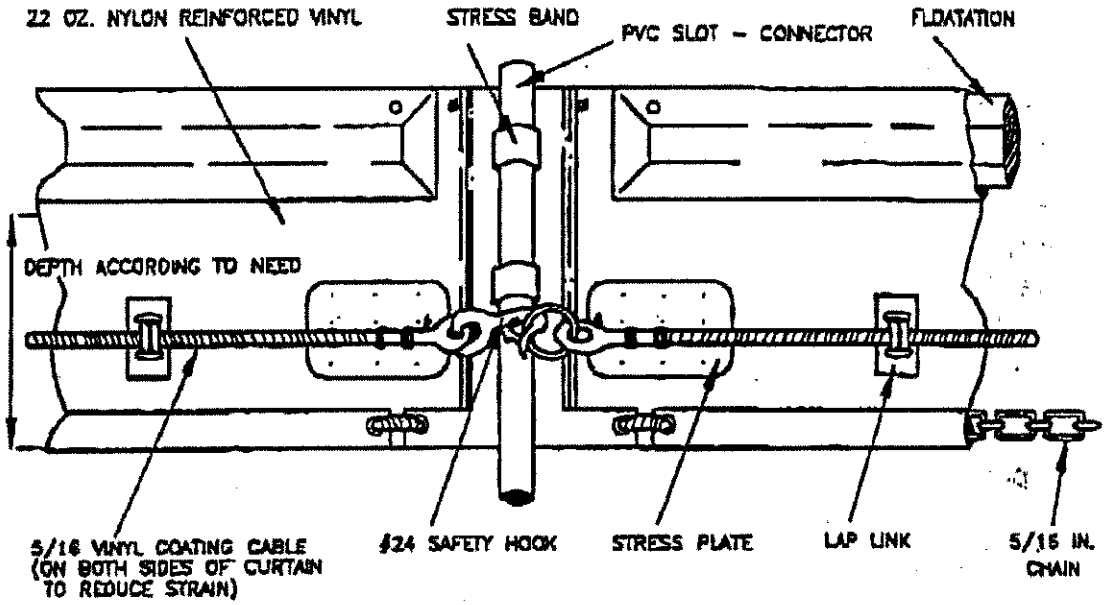


Type I

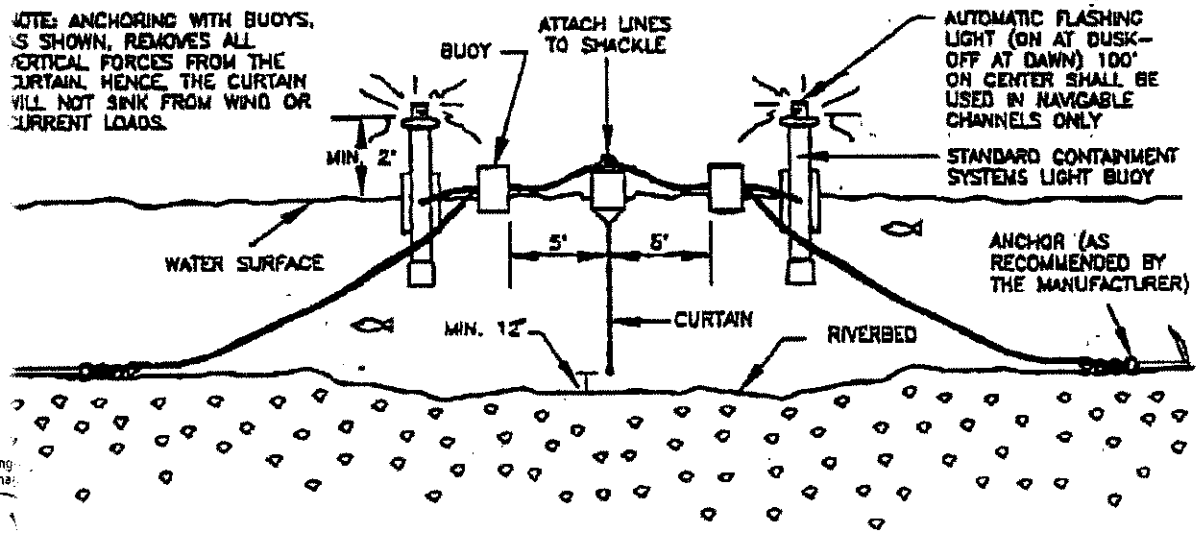


Type II

Type III



Orientation When Installed
(Tidal Situation - Type III)

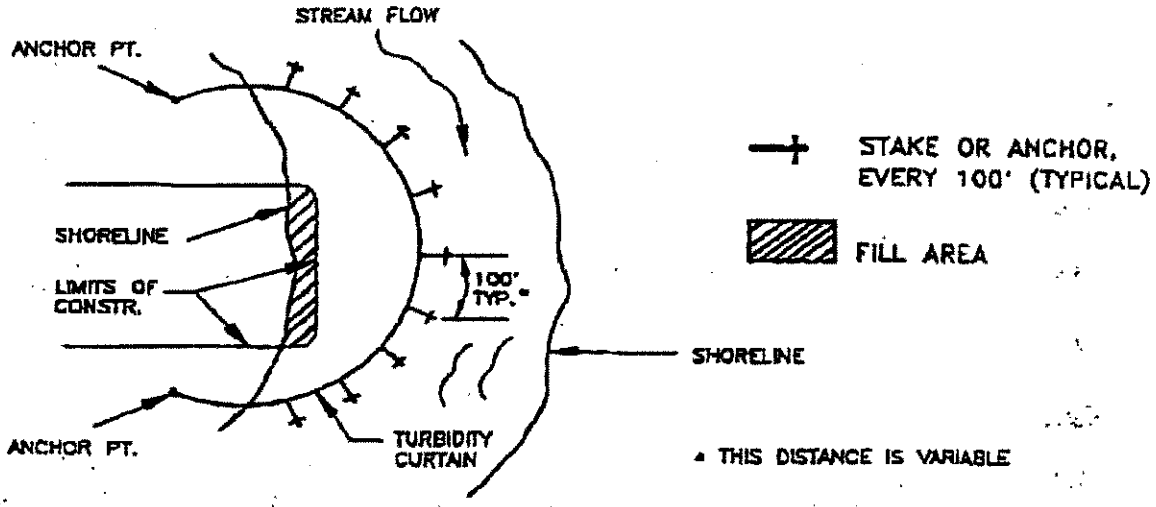


BIRMINGHAM FORWARD

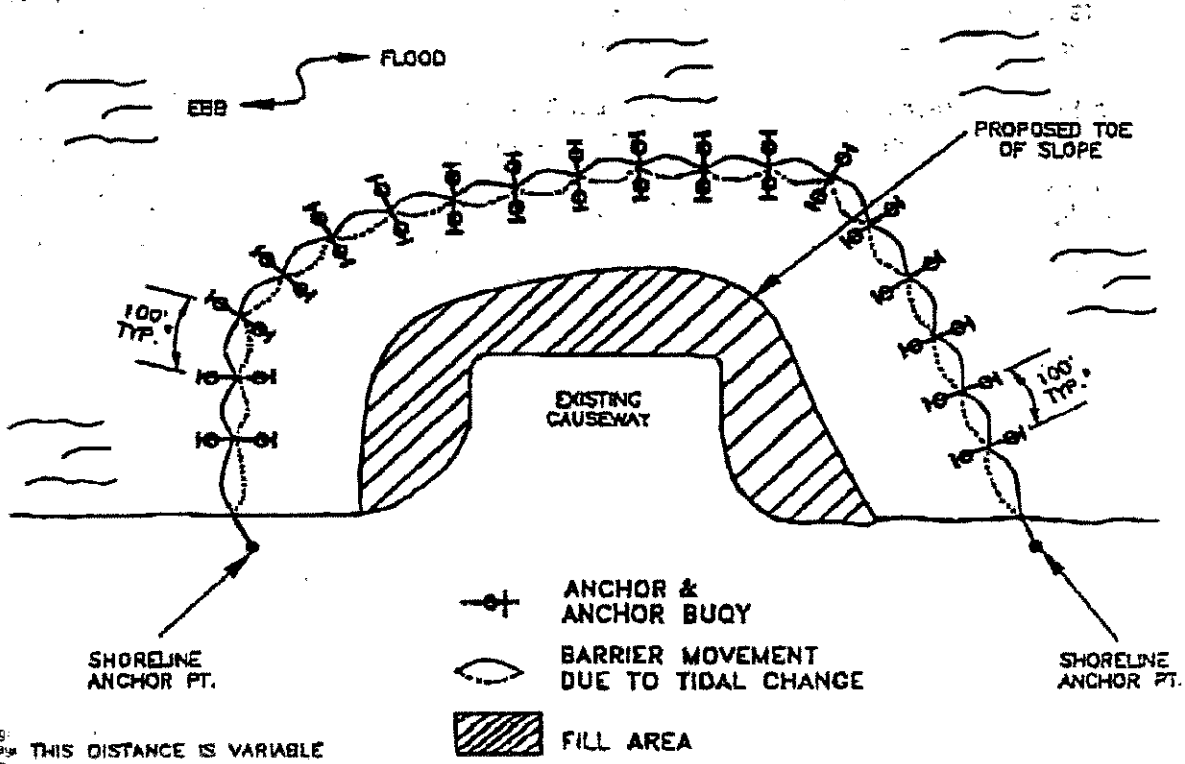
— MAYOR WILLIAM A. BELL, SR. —

Typical Layouts

Streams, Ponds, and Lakes (Protected and Non-Tidal)



Tidal Waters and/or Heavy Wind and Wave Action



City of Birmingham Stormwater Management

Permanent Seeding (PS)

Practice Description

Permanent seeding is the establishment of perennial vegetation on disturbed areas from seed. Permanent vegetation provides economical long-term erosion control and helps prevent sediment from leaving the site. This practice is used when vegetation is desired and appropriate to permanently stabilize the soil.

Planning Considerations

The advantages of seeding over other means of establishing plants include the smaller initial cost, lower labor input, and greater flexibility of method.

Disadvantages of seeding include potential for erosion during the establishment stage, seasonal limitations on suitable seeding dates, and weather-related problems such as droughts.

The probability of successful plant establishment can be maximized through good planning. The selection of plants for permanent vegetation must be site specific. Factors that should be considered are type of soils, climate, establishment rate, and management requirements of the vegetation. Other factors that may be important are wear, mowing tolerance, and salt tolerance of vegetation.

Plant selection for permanent vegetation should be based on plant characteristics, site and soil conditions, time of year of planting, method of planting, and the intended use of the vegetated area. Climate factors can vary widely in Alabama.

Important plant attributes are discussed in Vegetation Establishment for Erosion and Sediment Control in Chapter 2.

Plant selection may include companion plants to provide quick cover on difficult sites, late seedings, or where the desired permanent cover may be slow to establish. Annuals are usually used for companion plants and should be selected carefully to prevent using a species that provide so much competition that it prevents the establishment of the desired species.

Seeding properly carried out within the optimum dates has a higher probability of success. It is also possible to have satisfactory establishment when seeding outside these dates. However, as plantings are deviated from the optimum dates, the probability of failure increases rapidly. Seeding dates should be taken into account in scheduling land-disturbing activities.

Site quality impacts both short-term and long-term plant success. Sites that have compacted soils, soils that are shallow to rock or have textures that are too clayey or too sandy should be modified whenever practical to improve the potential for plant growth and long-term cover success.

The operation of equipment is restricted on slopes steeper than 3:1, severely limiting the quality of the seedbed that can be prepared. Provisions for establishment of vegetation on steep slopes can be made during final grading. In construction of fill slopes, for example, the last 4-6" might not be compacted. A loose, rough seedbed with irregularities that hold seeds and lime and fertilizer is essential for hydroseeding. Cut slopes should be roughened (see Land Grading practice).

Proper mulching is critical to protect against erosion on steep slopes. When using straw, anchor with netting or asphalt. On slopes steeper than 2:1, jute, excelsior, or synthetic matting may be required.

The use of irrigation (temporary or permanent) will greatly improve the success of vegetation establishment.

Design Criteria

Plant Selection

Select plants that can be expected to meet planting objectives. To simplify plant selection, use Figure PS-1 Geographical Areas for Species Adaptation and Seeding Dates and Table PS-1, Commonly Used Plants for Permanent Cover. Mixtures commonly specified by the Alabama Department of Transportation are an appropriate alternative for plantings on rights-of-ways. Additional information related to plants commonly used in Alabama is found in Chapter 2 under the section Vegetation for Erosion and Sediment Control.

The plants used for temporary vegetation may be used for companion plants provided the seeding rate of the annual species is reduced by one half. See the Temporary Seeding practice for additional information on establishing temporary

vegetation. **Ryegrass or other highly competitive plants should not be used as a companion plant.**

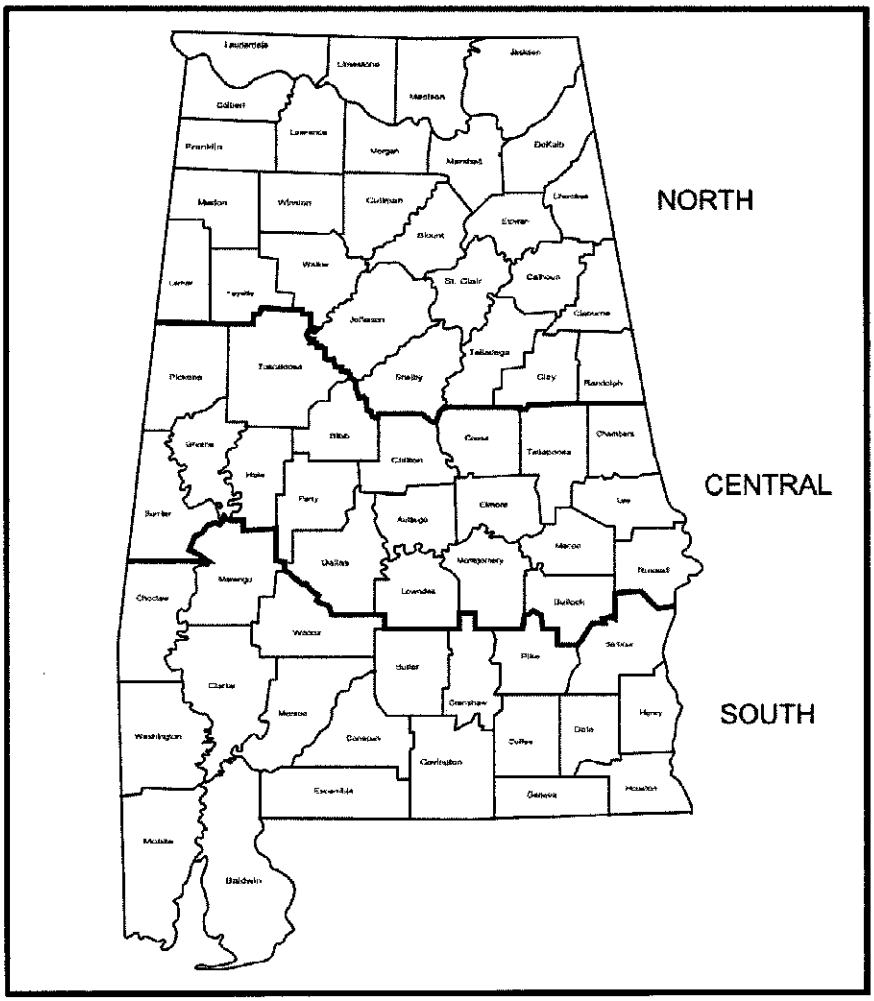


Figure PS-1 Geographical Areas for Species Adaptation and Seeding Dates

Note: Site conditions related to soils and aspect in counties adjacent to or close to county boundaries may justify adjustments in planting dates by qualified design professionals.

Table PS-1 Commonly Used Plants for Permanent Cover with Seeding Rates and Dates

Species	Seeding Rates/Ac PLS	North	Central	South
			Seeding Dates	
Bahiagrass, Pensacola	40 lbs	--	Mar 1-July 1	Feb 1-Nov 1
Bermudagrass, Common	10 lbs	Apr 1-July 1	Mar 15-July 15	Mar 1-July 15
Bahiagrass, Pensacola Bermudagrass, Common	30 lbs 5 lbs	--	Mar 1-July 1	Mar 1-July 15
Bermudagrass, Hybrid (Lawn Types)	Solid Sod	Anytime	Anytime	Anytime
Bermudagrass, Hybrid (Lawn Types)	Sprigs 1/sq ft	Mar 1-Aug 1	Mar 1-Aug 1	Feb 15-Sep 1
Fescue, Tall	40-50 lbs	Sep 1-Nov 1	Sep 1-Nov 1	--
Sericea	40-60 lbs	Mar 15-July 15	Mar 1-July 15	Feb 15-July 15
Sericea & Common Bermudagrass	40lbs 10 lbs	Mar 15-July 15	Mar 1-July 15	Feb 15-July 15
Switchgrass, Alamo	4 Lbs	Apr 1-Jun 15	Mar 15-Jun 15	Mar 15-Jun15

PLS means pure live seed and is used to adjust seeding rates. For example, to plant 10 lbs PLS of a species with germination of 80% and purity of 90%, PLS= 0.8X 0.9 = 72%. 10 lbs PLS = 10/0.72 = 13.9 lbs of the species to be planted.

Seedbed Requirements

Establishment of vegetation should not be attempted on sites that are unsuitable due to compaction or inappropriate soil texture, poor drainage, concentrated overland flow, or steepness of slope until measures have been completed to correct these problems. To maintain a good stand of vegetation, the soil must meet certain minimum requirements as a growth medium. A good growth medium should have these attributes:

- Sufficient pore space to permit root penetration.
- Enough fine-grained soil material (silt and clay) to maintain adequate moisture and nutrient supply.
- Sufficient depth of soil to provide an adequate root zone. The depth to rock or impermeable layers such as hardpans should be 12" or more, except on slopes steeper than 2:1 where topsoiling is not feasible.
- A favorable pH range for plant growth, usually 6.0-6.5.

- Sufficient nutrients (nitrogen, phosphorus and potassium) for initial plant establishment.

- Freedom from large roots, branches, stones, or large clods. Clods and stones may be left on slopes steeper than 3:1 if they are to be hydroseeded.

If any of the above attributes are not met: i.e., if the existing soil is too dense, coarse, shallow or acidic to foster vegetation – chiseling, topsoil, or special amendments should be used to improve soil conditions. The soil conditioners described below may be beneficial or topsoil may be applied (for guidance on topsoiling see Topsoiling practice). These amendments should only be necessary where soils have limitations that make them poor for plant growth or for turf establishment.

- Peat-appropriate types are sphagnum moss peat, reed-sedge peat, or peat humus, all from fresh-water sources. Peat should be shredded and conditioned in storage piles for at least 6 months after excavation.

- Sand-should be clean and free of toxic materials.

- Vermiculite-use horticultural grade.

- Rotted manure-use stable or cattle manure not containing undue amounts of straw or other bedding materials.

- Thoroughly rotted sawdust-should be free of stones and debris. Add 6 lbs of nitrogen to each cubic yard.

Soil Amendments

Liming Materials

Lime (Agricultural limestone) should have a neutralizing value of not less than 90 percent calcium carbonate equivalent and 90 percent will pass through a 10 mesh sieve and 50 percent will pass through a 60 mesh sieve.

Selma chalk should have a neutralizing value of not less than 80 percent calcium carbonate equivalent and 90 percent will pass through a 10 mesh sieve.

Other liming materials that may be selected should be provided in amounts that provide equal value to the criteria listed for agricultural lime or be used in combination with agricultural limestone or Selma chalk to provide equivalent values to agricultural limestone.

Plant Nutrients

Commercial grade fertilizers that comply with current Alabama Fertilizer Laws should be used to supply nutrients required to establish vegetation.

Lime and fertilizer needs should be determined by soil tests. Soil testing is performed by the Auburn University Soil Testing Laboratory and provides recommendations based on field tests on Alabama soils. The local county Cooperative Extension Service can provide information on obtaining soil tests. Commercial laboratories that make recommendations based on soil analysis may be used.

When soil tests are not available, use the following rates for application of soil amendments.

Sandy soils: Use 1 ton/acre (exception on sandy soils – if the cover will be tall fescue and clover) use 2 tons/acre.
Clayey soils: 2 tons/acre.
(Do not apply lime to alkaline soils).

Grasses alone: Use 400 lbs/acre of 8-24-24 or the equivalent. Apply 30 lbs of additional nitrogen when grass has emerged and begun growth (approximately 0.8lbs/1000 ft^2).
Grass-legume mixtures: Use 800 to 1200 lbs/acre of 5-10-10 or the equivalent.
Legumes Alone: Use 400 to 600 lbs/acre of 0-20-20 or the equivalent.

Note: Fertilizer can be blended to meet exact fertilizer recommendations. Take soil test recommendations to local fertilizer dealer for bulk fertilizer blends. This may be more economical than bagged fertilizer.

Application of Soil Amendments

Apply lime and fertilizer evenly and incorporate into the top 6" of soil by disking, chiseling or other suitable means during seedbed preparation. Operate machinery on the contour. On sites too steep for seedbed preparation, fertilizer and lime can be applied with a hydroseeder.

Seedbed Preparation

If needed, grade and shape to provide a surface on which equipment can safely and efficiently be used for seedbed preparation and seeding.

Install necessary sediment control practices before seedbed preparation and complete grading according to the approved plan.

Prepare a friable seedbed with tillage to a depth of at least 6". Break up large clods, alleviate compaction, and smooth and firm the soil into a uniform surface. Fill in or level depressions that can collect water.

Planting Methods

Seeding
Use certified seed for permanent seeding whenever possible. Certified seed is inspected by the Alabama Crop Improvement Association to meet high quality standards and will be tagged with a "Certified Seed" tag. (Note: all seed sold in Alabama is required by law to be tagged to identify seed purity, germination, and

presence of weed seeds. Seed must meet state standards for content of noxious weeds.)

Seeding dates are determined using Figure PS-1 and Table PS-1.

Inoculate legume seed with the Rhizobium bacteria appropriate to the species of legume. Details of legume inoculation are located in Chapter 2 in the part on Vegetation for Erosion and Sediment Control under Inoculation of Legumes.

Plant seed uniformly with a cyclone seeder, a drill seeder, a cultipacker seeder, or by hand on a fresh, firm, friable seedbed. If the seedbed has been sealed by rainfall, it should be disked so the seed will be sown into a freshly prepared seedbed.

When using broadcast-seeding methods, subdivide the area into workable sections and determine the amount of seed needed for each section. Apply one-half the seed while moving back and forth across the area, making a uniform pattern; then apply the second half in the same way, but moving at right angles to the first pass.

Cover broadcast seed by raking or chain dragging; then firm the surface with a roller or cultipacker to provide good seed contact. Small grains should be planted no more than 1" deep and grasses and legume seed no more than ½" deep.

Hydroseeding

Surface roughening is particularly important when hydroseeding, as a roughened slope will provide some natural coverage for lime, fertilizer, and seed. The surface should not be compacted or smooth. Fine seedbed preparation is not necessary for hydroseeding operations; large clods, stones, and irregularities provide cavities in which seeds can lodge.

Mix seed, inoculant if required, and a seed carrier with water and apply as a slurry uniformly over the area to be treated. The seed carrier should be a cellulose fiber, natural wood fiber or other approved fiber mulch material which is dyed an appropriate color to facilitate uniform application of seed. Use the correct legume inoculant at 4 times the recommended rate when adding inoculant to a hydroseeder slurry. The mixture should be applied within one hour after mixing to reduce damage to seed.

Fertilizer should not be mixed with the seed-inoculant mixture because fertilizer salts may damage seed and reduce germination and seedling vigor.

Fertilizer may be applied with a hydroseeder as a separate operation after seedlings are established.

Lime is not normally applied with a hydraulic seeder because it is abrasive but if necessary it can be added to the seed slurry and applied at seeding or it may be applied with the fertilizer mixture. Also lime can be blown onto steeper slopes in dry form.

Sprigging

Hybrid bermudagrass cannot be grown from seed and must be planted vegetatively. Vegetative methods of establishing common and hybrid bermudagrass, centipedegrass and zoysia include sodding, plugging and sprigging (see Sodding practice).

When sprigs are planted with a sprigging machine, furrows should be 4-6" deep and 2 feet apart. Place sprigs no farther than 2 feet apart in the row and so that at least one rooting node is in the furrow.

When broadcasting is used for sprig planting, broadcast sprigs at the specified rate (Table PS-1). Press into the top ½" to 2" of soil with a cultipacker or with a disk set nearly straight so that the sprigs are not brought back to the surface. A mulch tacking machine may be used to press sprigs into the soil.

Mulching

The use of mulch provides instant cover and helps ensure establishment of vegetation under normal conditions and is essential to seeding success under harsh site conditions (see Mulching practice). Harsh site conditions include: slopes steeper than 3:1 and adverse soils (shallow, rocky, or high in clay or sand). Areas with concentrated flow should be treated differently and require sod, a hydromulch formulated for channels or an appropriate erosion control blanket.

Irrigation

Moisture is essential for seed germination and vegetation establishment. Supplemental irrigation can be very helpful in assuring adequate stands in dry seasons or to speed development of full cover. It is a requirement for establishment of vegetation from sod and sprigs and should be used elsewhere when feasible. However, irrigation is rarely critical for low-maintenance vegetation planted at the appropriate time of the year.

Water application rates must be carefully controlled to prevent runoff. Inadequate or excessive amounts of water can be more harmful than no supplemental water.

Maintenance

Generally, a stand of vegetation cannot be determined to be fully established until soil cover has been maintained for 1 full year from planting. Inspect vegetated areas for failure and make necessary repairs and vegetate as soon as possible.

If a stand has inadequate cover, reevaluate choice of plant materials and quantities of lime and fertilizer. Re-establish the stand after seedbed preparation or over-seed the stand. Consider a temporary seeding if the time of year is not appropriate for establishment of permanent vegetation (see Temporary Seeding practice).

If vegetation fails to grow, a soil test should be made to determine if soil acidity or nutrient imbalance is responsible.

To attain complete establishment, fertilization is usually required in the second growing season. Turf grasses require annual maintenance fertilization. Use soil tests if possible or follow the guidelines given for the specific seeding mixtures.

Protect vegetation during its establishing period from traffic that will be harmful. If appropriate, use either temporary fences or barriers to protect areas that may be damaged by excessive traffic.

Temporary Seeding (TS)

Practice Description

Temporary seeding is the establishment of fast-growing annual vegetation from seed on disturbed areas. Temporary vegetation provides economical erosion control for up to a year and reduces the amount of sediment moving off the site.

This practice applies where short-lived vegetation can be established before final grading or in a season not suitable for planting the desired permanent species. It helps prevent costly maintenance operations on other practices such as sediment basins and sediment barriers. In addition, it reduces problems of mud and dust production from bare soil surfaces during construction. Temporary or permanent seeding is necessary to protect earthen structures such as dikes, diversions, grass-lined channels and the banks and dams of sediment basins.

Planning Considerations

Temporary vegetative cover can provide significant short-term erosion and sediment reduction before establishing perennial vegetation.

Temporary vegetation will reduce the amount of maintenance associated with sediment basins.

Temporary vegetation is used to provide cover for no more than 1 year. Permanent vegetation should be established at the proper planting time for permanent vegetative cover.

Certain plants species used for temporary vegetation will produce large quantities of residue which can provide mulch for establishment of the permanent vegetation.

Proper seedbed preparation and selection of appropriate species are important with this practice. Failure to follow establishment guidelines and recommendations carefully may result in an inadequate or short-lived stand of vegetation that will not control erosion.

The selection of plants for temporary vegetation must be site specific. Factors that should be considered are type of soils, climate, establishment rate, and management requirements of the vegetation. Other factors that may be important are wear, mowing tolerance, and salt tolerance of vegetation.

Seeding properly carried out within the optimum dates has a higher probability of success. It is also possible to have satisfactory establishment when seeding outside these dates. However, as plantings are deviated from the optimum dates, the probability of failure increases rapidly. Seeding dates should be taken into account in scheduling land-disturbing activities.

Site quality impacts both short-term and long-term plant success. Sites that have compacted soils should be modified whenever practical to improve the potential for plant growth.

The operation of equipment is restricted on slopes steeper than 3:1, severely limiting the quality of the seedbed that can be prepared. Provisions for establishment of vegetation on steep slopes can be made during final grading. In construction of fill slopes, for example, the last 4-6" might not be compacted. A loose, rough seedbed with irregularities that hold seeds and fertilizer is essential for hydroseeding. Cut slopes should be roughened (see practice Land Grading).

Good mulching practices are critical to protect against erosion on steep slopes. When using straw, anchor with netting or asphalt. On slopes steeper than 2:1, either hydraulic mulch or erosion control blanket is more appropriate than straw to protect the slope.

The use of irrigation (temporary or permanent) will greatly improve the success of vegetation establishment.

Design Criteria

Plant Selection

Select plants that can be expected to meet planting objectives. To simplify plant selection, use Table TS-1, Commonly Used Plants for Temporary Cover and Figure TS-1, Geographical Areas for Species Adaptation and Seeding Dates. Seeding mixtures commonly specified by the Alabama Department of Transportation are an

appropriate alternative for plantings on rights-of-ways. Additional information related to plantings in Alabama is found in Chapter 2 in the section Non-woody Vegetation for Erosion and Sediment Control.

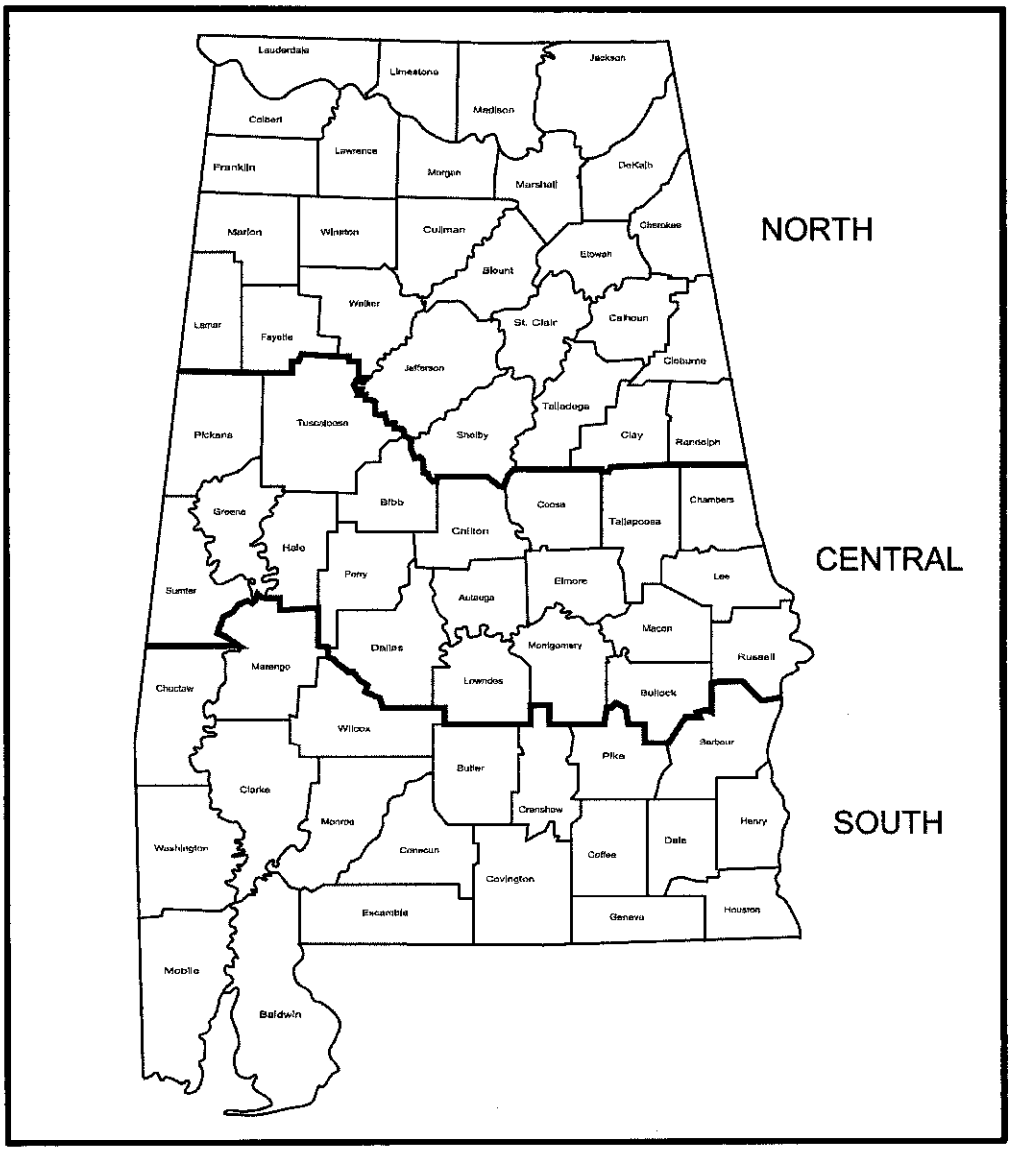


Figure TS-1 Geographical Areas for Species Adaptation and Seeding Dates

Note: Site conditions related to soils and aspect in counties adjacent to or close to county boundaries may justify adjustments in planting dates by qualified design professionals.

Table TS-I Commonly Used Plants for Temporary Cover

Species	Seeding Rate/AC PLS	North	Central	South
			Seeding Dates	
Millet, Browntop or German	40 lbs	Apr1-Aug 1	Apr1- Aug 15	Apr 1-Aug 15
Rye	3 bu	Sep I-Nov 15	Sep 15-Nov 15	Sep 15-Nov 15
Ryegrass	30 lbs	Aug I-Sep 15	Sep I-Oct 15	Sep 1-Oct 15
Sorghum-Sudan Hybrids	40 lbs	May I-Aug 1	Apr 15-Aug 1	Apr I-Aug 15
Sudangrass	40 lbs	May I-Aug I	Apr 15-Aug	Apr I-Aug 15
Wheat	3 bu	Sep I-Nov 1	Sep 15-Nov 15	Sep 15-Nov 15
Common Bermudagrass	10 lbs	Apr 1-July 1	Mar 15-July 15	Mar 1-July 15
Crimson Clover	10lbs	Sept 1-Nov 1	Sept 1-Nov 1	Sept 1-Nov 1

PLS means pure live seed and is used to adjust seeding rates. For example, to plant 10 lbs PLS of a species with germination of 80% and purity of 90%, PLS= 0.8X 0.9 = 72%. 10 lbs PLS = 10/0.72 = 13.9 lbs of the species to be planted.

Site Preparation and Soil Amendments

Complete grading and shaping before applying soil amendments if needed to provide a surface on which equipment can safely and efficiently be used to apply soil amendments and accomplish seedbed preparation and seeding.

Lime

Apply lime according to soil test recommendations. If a soil test is not available, use 1 ton of agricultural limestone or equivalent per acre on coarse textured soils and 2 tons per acre on fine textured soils. Do not apply lime to alkaline soils or to areas which have been limed during the preceding 2 years. Other liming materials that may be selected should be provided in amounts that provide equal value to the criteria listed for agricultural lime or be used in combination with agricultural limestone or Selma chalk to provide equivalent values to agricultural limestone.

Fertilizer

Apply fertilizer according to soil test results. If a soil test is not available, apply 8-24-24 fertilizer.

When vegetation has emerged to a stand and is growing, 30 to 40 lbs/acre (approximately 0.8 lbs/1000 ft^2) of additional nitrogen fertilizer should be applied.

Note: Fertilizer can be blended to meet exact fertilizer recommendations. Take soil test recommendations to local fertilizer dealer for bulk fertilizer blends. This may be more economical than bagged fertilizer.

Application of Soil Amendments

Incorporate lime and fertilizer into the top 6" of soil during seedbed preparation.

Seedbed Preparation

Good seedbed preparation is essential to successful plant establishment. A good seedbed is well pulverized, loose, and smooth. If soils become compacted during grading, loosen them to a depth of 6" to 8" using a ripper or chisel plow.

If rainfall has caused the surface to become sealed or crusted, loosen it just prior to seeding by disking, raking, harrowing, or other suitable methods. When hydroseeding methods are used, the surface should be left with a more irregular surface of clods.

Planting Methods

Seeding
Evenly apply seed using a cyclone seeder (broadcast), drill seeder, cultipacker seeder, or hydroseeder. Broadcast seeding and hydroseeding are appropriate for steep slopes where equipment cannot operate safely. Small grains should be planted no more than 1" deep, and grasses and legumes no more than ½" deep. Seed that are broadcast must be covered by raking or chain dragging, and then lightly firmed with a roller or cultipacker.

Hydroseeding
Surface roughening is particularly important when hydroseeding, as a roughened slope will provide some natural coverage for lime, fertilizer, and seed. The surface should not be compacted or smooth. Fine seedbed preparation is not necessary for hydroseeding operations; large clods, stones, and irregularities provide cavities in which seeds can lodge.

Mix seed, inoculant if required, and a seed carrier with water and apply as slurry uniformly over the area to be treated. The seed carrier should be a cellulose fiber, natural wood fiber or other approved fiber mulch material which is dyed an appropriate color to facilitate uniform application of seed. Use the correct legume inoculant at 4 times the recommended rate when adding inoculant to hydroseeder slurry. The mixture should be applied within one hour after mixing to reduce damage to seed.

Fertilizer should not be mixed with the seed-inoculant mixture because fertilizer salts may damage seed and reduce germination and seedling vigor. Fertilizer may be applied with a hydro seeder as a separate operation after seedlings are established.

Mulching

The use of appropriate mulch provides instant cover and helps ensure establishment of vegetative cover under normal conditions and is essential to seeding success under harsh site conditions (see the Mulching practice for guidance). Harsh site

conditions include the following: slopes steeper than 3:1 and adverse soils (soils that are shallow to rock, rocky, or high in clay or sand). Areas with concentrated flow should be treated differently and require a hydromulch formulated for channels or an appropriate erosion control blanket.

Sodding (SOD)

Practice Description

Sodding is the use of a transplanted vegetative cover to provide immediate erosion control in disturbed areas. Sodding is well suited for stabilizing erodible areas such as grass-lined channels, slopes around storm drain inlets and outlets, diversions, swales, and slopes and filter strips that cannot be established by seed or that need immediate cover.

Planning Considerations

Advantages of sod include immediate erosion control, nearly year-round establishment capability, less chance of failure than with seeding, and rapid stabilization of surfaces for traffic areas, channel linings, or critical areas.

Initially it is more costly to install sod than to plant seed; however, the higher cost may be justified for specific situations where sod performs better than a seeded cover. Sodding may be more cost-efficient in the long term.

Sod can be laid during the times of the year when seeded grasses may fail, provided there is adequate water available for irrigation in the early establishment period. Irrigation is essential, at all times of the year, to ensure establishment of sod.

Sod placed around drop inlets can prevent erosion around the inlet and help maintain the necessary grade around the inlet.

The site to be sodded should be prepared for the sod before it is delivered so that the sod can be installed immediately. Leaving sod stacked or rolled can cause severe damage and loss of plant material.

Failure to remove compaction and to address pH and soil fertility deficiencies will likely cause a sodded stand to perform poorly or fail.

Design Criteria

Sod Selection

The species of sod selected should be adapted to both the site and the intended purpose. Species used in Alabama include bermuda, zoysia, centipede, St. Augustine, tall fescue, and bahiagrass. Tall fescue and bahiagrass are not readily available but can be obtained from some growers. Species selection is primarily determined by region, availability, and intended use. Use Table SOD-1 and Figure SOD-1 for guidance in selecting sod.

Table SOD-1 Grasses Adapted for Sodding in Alabama

Warm Season Grasses		
Species	**Variety** [1]	**Area Adapted**
Bermudagrass	Tifway, TifSport, Celebration, TifGrand, Common	North, Central, South
Bahiagrass	Pensacola	Central, South
Centipede	Common, TifBlair	Central, South
St. Augustine	Common, and a few commercial varieties	South
Zoysia	Any selection available in Alabama, Zenith is seeded	Central, South
Cool Season Grasses		
Tall Fescue	Kentucky 31, Rebel (turf type)	North

[1] Listing of a variety is not an endorsement of a Company product. New and better varieties may become available over time.

Surface Preparation

Prior to laying sod, clear the soil surface of trash, debris, roots, branches, stones, and clods larger than 2" in diameter. Fill or level low spots in order to avoid standing water. Rake or harrow the site to achieve a smooth and mowable final grade. Apply appropriate soil amendments prior to final disking. Complete soil preparation by disking, chiseling or other appropriate means and then rolling or cultipacking to firm the soil. Limit the use of heavy equipment on the area to be sodded, particularly when the soil is wet, as this may cause excessive compaction and make it difficult for the sod to penetrate the soil and develop the root system that it should attain.

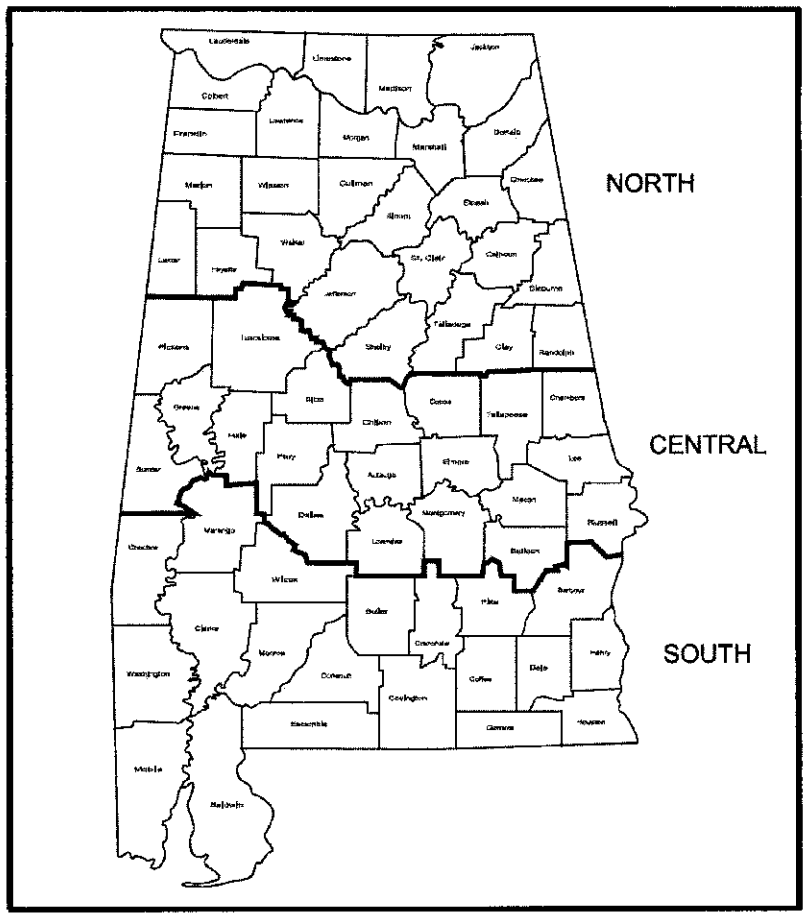


Figure SOD-1 Geographical Areas for Species Adaptation

Soil Amendments

Test soil to determine the requirements for lime and fertilizer. Soil tests may be conducted by Auburn University Soil Testing Laboratory or other laboratories that make recommendations based on soil analysis. When soil test recommendations are unavailable, the following soil amendments may be sufficient:

- Agricultural limestone at a rate of 2 tons per acre (90 lbs per 1000 sq. ft.). Other liming materials that may be selected should be provided in amounts that provide equal value to agricultural lime.
- Fertilizer at a rate of 1000 lbs per acre (25 lbs per 1000 sq. ft.) of 10-10-10.
- Equivalent nutrients may be applied with other fertilizer formulations. The soil amendments should be spread evenly over the treatment area and incorporated into the top 6" of soil by disking, chiseling or other effective, means. If topsoil is applied, follow specifications given in the Topsoiling

practice. Minor surface smoothing may be necessary after incorporation of soil amendments.

Installing the Sod

A step-by-step procedure for installing sod is illustrated in Figure SOD-2 and described below.

Moistening the sod after it is unrolled helps maintain its viability. Store it in the shade during installation.

Rake the soil surface to break the crust just before laying sod. During the summer, lightly irrigate the soil, immediately before laying the sod to cool the soil and reduce root burning and dieback.

Do not lay sod on gravel, frozen soils, or soils that have been recently sterilized or treated with herbicides.

Lay the first row of sod in a straight line with subsequent rows placed parallel to and butting tightly against each other. Stagger strips in a brick-like pattern (see Figure SOD – 2). Be sure that the sod is not stretched or overlapped and that all joints are butted tightly to prevent voids. Use a knife or sharp spade to trim and fit irregularly shaped areas.

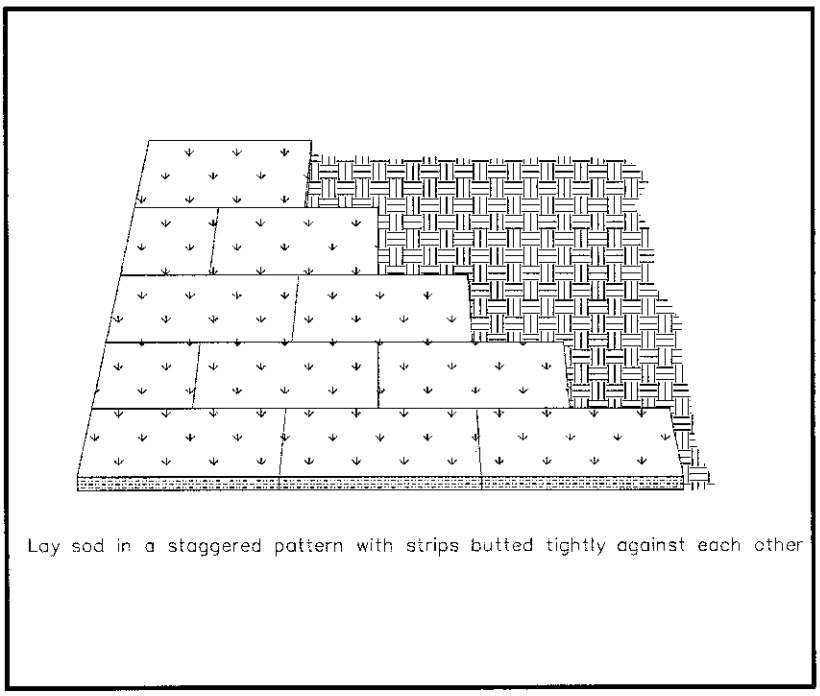


Figure SOD-2 Typical Installation of Grass Sod

Install strips of sod with their longest dimension perpendicular to the slope. On slopes 3:1 or greater, in grass swales or wherever erosion may be a problem, secure

sod with pegs or staples. Jute or other netting material may be pegged over the sod for extra protection on critical areas (see Figure SOD – 3).

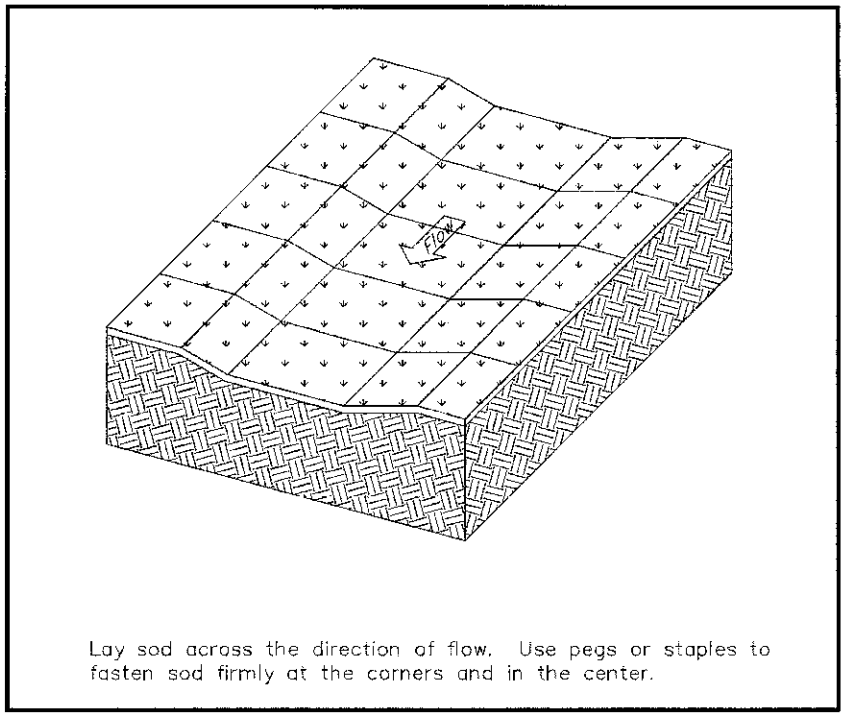


Figure SOD-3 Installation of Sod in Areas with Channel Flows

As sodding of clearly defined areas is completed, use a weighted roller on the sod to provide firm contact between roots and soil.

After rolling, irrigate until the soil is wet at least 6" below the sod.

Keep sodden areas moist to a depth of 4" until the grass takes root. This can be determined by gently tugging on the sod. Resistance indicates that rooting has occurred.

Mowing should not be attempted until the sod is firmly rooted, usually in 2 to 3 weeks.

Block and Gravel Inlet Protection (BIP)

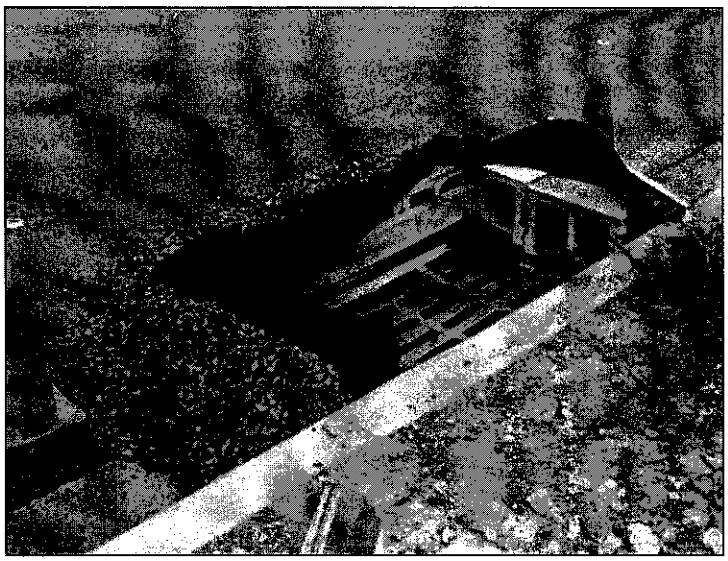


Photo courtesy of EnviroCert International, Inc.

Practice Description

Block and gravel inlet protection is a sediment control barrier formed around a storm drain inlet by the use of standard concrete block and gravel. The purpose is to help minimize sediment entering storm drains during construction. This practice applies where use of the storm drain system is necessary during construction and inlets have a drainage area of 1 acre or less and an approach slope of 1% or less. The practice will pond water causing hazardous conditions to motorists and should only be used when there is no public transportation allowed on the street.

Planning Considerations

Storm sewers which are made operational before their drainage area is stabilized can convey large amounts of sediment to natural drainageways. In case of extreme sediment loading, the storm sewer itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets.

This practice is for drainage areas of less than 1 acre. Runoff from large disturbed areas should be routed through a Sediment Basin. This method is for areas where heavy flows are expected and where overflow capacity is necessary to prevent excessive ponding around the structure.

The best way to prevent sediment from entering the storm sewer system is to minimize erosion by leaving as much of the site undisturbed as possible and

disturbing the site in small increments, if possible. After disturbance, stabilize the site as quickly as possible to prevent erosion and sediment delivery.

Design Criteria

Drainage Area

Drainage area should be less than 1 acre per inlet.

Capacity

The design storm for the inlet should be able to enter the inlet without bypass flow.

Approach

The approach to the block and gravel structure should be less than 1%.

Height

The height of the block structure should be 1 to 2 feet.

Side Slopes

Gravel placed around the concrete block structure should have 2:1 side slopes or flatter.

Dewatering

Place a minimum of 1 block on the bottom row (more as needed) on its side to allow for dewatering the pool.

Block Placement

The foundation for the blocks should be excavated at least 2" below the crest of the storm drain. The bottom row of blocks should be placed against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, lateral support may be given to subsequent rows by placing 2" x 4" wood studs through block openings.

Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, with the ends of adjacent blocks abutting. The height of the barrier can be varied, depending on design needs, by stacking combinations of 4", 8" and 12" wide blocks. The barrier of blocks should be at least 12" high and no greater than 24" high.

The top elevation of the structure must be at least 6" lower than the ground elevation downslope from the inlet. It is important that all storm flows pass over the structure and into the storm drain and not past the structure. Temporary dikes below the structure may be necessary to prevent bypass flow. Material may be excavated from inside the sediment pool for this purpose.

Wire mesh should be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Hardware cloth or comparable wire mesh with ½" openings should be used.

Gravel

Stone should be piled against the wire to the top of the block barrier, as shown in the typical details in Figure BIP-1. Alabama Highway Department No. 57 Coarse Aggregate or similar gradations should be used.

If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned and replaced.

Maintenance

Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to ½ the design depth. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

The sediment trap shall be removed and the area stabilized when the constructed drainage area has been properly stabilized.

Safety

Do not use this practice when there is public transportation allowed on the street. Provide protection to prevent children from entering the area.

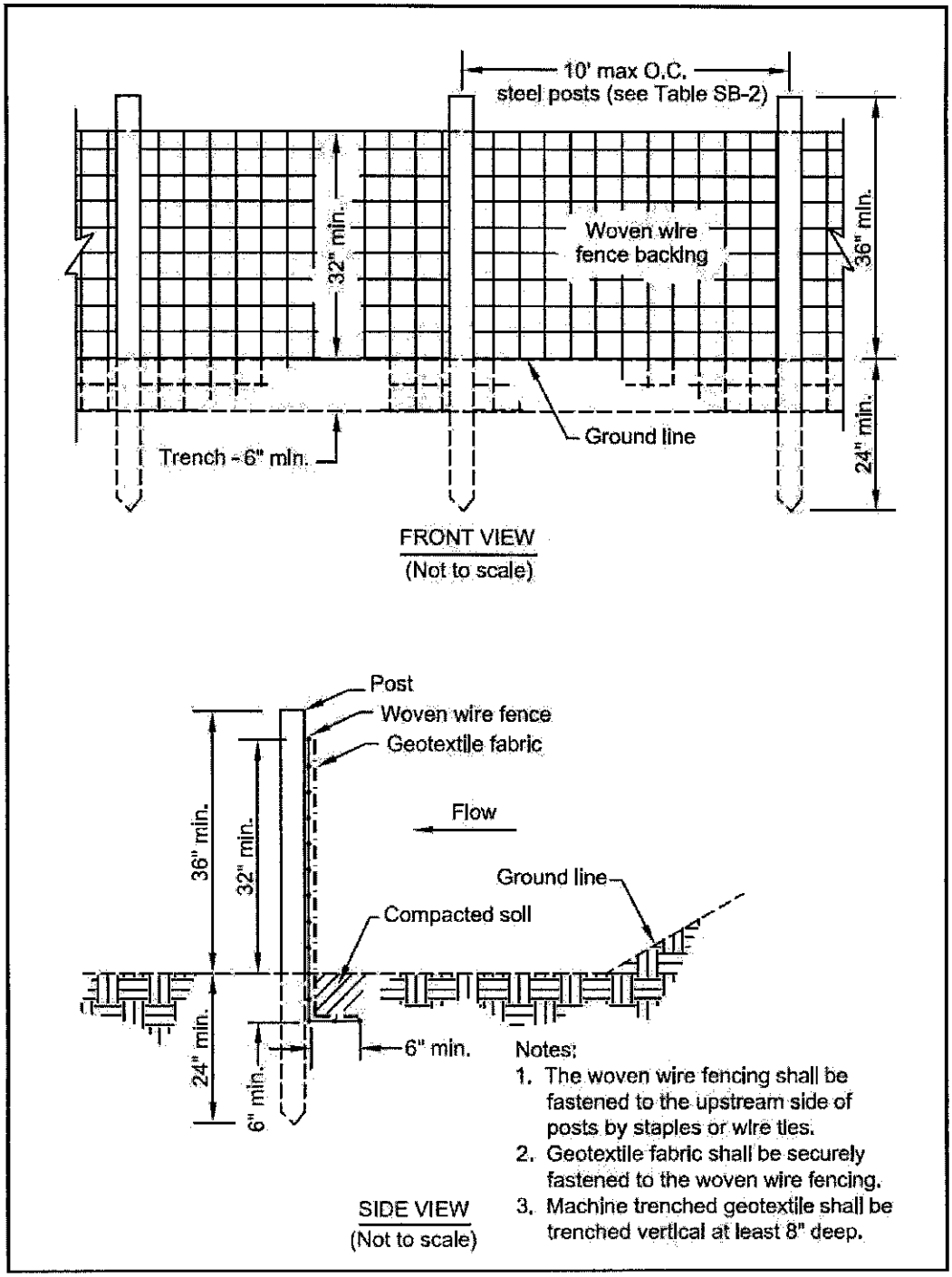


Figure SB-1 Silt Fence-Type A
(For post material requirements see Tables SB-2 and SB-3)

BMP
Mulching

DESCRIPTION

Mulching is the application of straw, wood chips, or other suitable materials on the soil surface applied manually or by machine. This BMP is used to reduce potential for soil becoming water borne or air borne and to reduce water velocity/erosive forces after vegetation establishment.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Reducing erosion by protecting the soil surface from raindrop impact or wind.
- Decreasing surface water or wind velocity impacts.
- Fostering the growth of vegetation by increasing available moisture and providing insulation against extreme heat and cold.

APPLICATIONS

This BMP can be used in areas to provide protection to the soil surface. Areas that have been seeded can be mulched to provide additional protection. This BMP may be used in combination with plantings of trees, shrubs, certain ground covers or in conjunction with seeding.

LIMITATIONS

This BMP should not be used:

- On slopes steeper than 2 horizontal to 1 vertical.
- In watercourses and streams.
- In ditches where water flow is continuous.

CONSTRUCTION GUIDELINES

- When used near watercourses or streams, this BMP must be used in accordance with permit requirements.
- Remove stumps, roots, and other debris from the site before seeding and/or mulching.
- Grade area, if needed, to permit the use of equipment for seeding, mulching, and maintenance.
- Shape area so that it is relatively smooth.
- If seeding, follow seeding specifications and apply mulch immediately after seeding.

- Spread straw uniformly over the area with a power blower, hydroseeder, or by hand at rates recommended for either seeded areas or without seeding.
- When mulching with seeding, 25% to 35% of the ground surface should be visible after mulching is applied.
- Mulch should be applied so that the soil is covered sufficiently enough to allow seeds to germinate, but also protects the soil from erosion.
- When mulching without seeding, 100% of the soil surface should be covered.
- Nets and matting may be used in combination with mulch.
- Various types and sizes of mulch are available.
- If used to stabilize soil from wind forces, the mulch needs to be tilled or incorporated into the soil.
- Apply at the rates shown in the plan or in the table below if there is not a plan.

Mulch Application Plan

Straw (With Seed)	1 ½ - 2 tons (70 lbs – 90 lbs)	Spread by hand or machine; anchor when subject to blowing.
Straw Alone (No Seed)	2 ½ - 3 tons (115 lbs – 140 lbs)	Spread by hand or machine; anchor when subject to blowing.
Wood Chips	5 – 6 tons (230 lbs – 275 lbs)	Treat with 12 lbs. nitrogen/ton.
Bark	35 cubic yards (0.8 cubic yard)	Can apply with mulch blower.
Pine Straw	1 – 2 tons (45 lbs – 90 lbs)	Spread by hand or machine; will not blow like straw.
Peanut Hulls	10 – 20 tons (450 lbs – 900 lbs)	Will wash off slopes. Treat with 12 lbs. nitrogen/ton.

BMP MAINTENANCE

- During construction, inspect BMPs daily during the workweek. Schedule additional inspections during storm events. Make any required repairs.
- Additional mulch should be applied where erosion or scouring occurs.
- If a tear occurs in the cover netting or matting, repair as necessary.
- Continue inspections of seeded areas until vegetation is well established.
- Keep mower height high if plastic netting is used to prevent netting from wrapping around mower blades or shaft.

BMP REMOVAL

BMP removal is not necessary under normal circumstances.

Straw being used to reduce erosion