

**ANNE ARUNDEL
SOIL CONSERVATION
DISTRICT**

**PLAN SUBMITTAL
GUIDELINES/CHECKLIST**

April, 2015

Heritage Office Complex
2662 Riva Road, Suite 105
Annapolis, MD 21401
410-571-6757
www.aascd.org

AASCD PROCEDURES

The AASCD is responsible for:

1. Sediment and erosion control plan review and approval for projects located in Anne Arundel County, the City of Annapolis and State Highway projects within the Severn River watershed. All plans must adhere to the current Maryland Department of the Environment's Standard and Specifications for Soil Erosion and Sediment Control (aka 2011 Specs); and
2. Small pond approval for ponds in Anne Arundel County and the City of Annapolis. Pond design must adhere to USDA, NRCS, MD-378.

Anne Arundel County Grading Permits and Revised Grading Permits

1. All submittals must be made directly to the Permit Center (PC). When plans are submitted to the PC, four sets of these plans along with a cover letter, the Engineer's Transmittal Letter and a copy of our checklist must be marked for AASCD.
2. If comments are generated, the design professional will be notified to pick up marked plans and the "R" for "review" will be changed to a "P" for "pending" in the County's Permit Status. Once the design professional has received and addressed all agencies' comments, the resubmitted packages must be sent back through PC with four sets of revised plans marked for AASCD. Please note that the marked plans must be submitted directly back to AASCD.
3. Once the plans have been approved by AASCD, a "C" for "conditional approval" is entered into the County's Permit Status. AASCD will keep one approved set and forward three sets of plans to PC indicating AASCD's approval on each set.
4. The engineer should check the County's Permit Status screen "[click here](#)". Once all agencies have entered an "A" with the exception of Grading and AASCD's approval is a "C", the design professional can contact PC to pick up the approved set of plans.
5. AASCD approval is valid for two years.

Anne Arundel County Capital Projects

Plans for County capital projects will follow the same procedure as mentioned above.

Baltimore Gas and Electric Blanket Approval

The District bi-annually approves a blanket approval of sediment and erosion control for minor BGE projects.

City of Annapolis Projects

1. City of Annapolis projects must be submitted directly to the City. The City will forward four sets of plans to AASCD.
2. If comments are generated, the design professional will be notified. Once the design profession has received and addressed all agencies' comments, the resubmitted packages must be sent back through the City of Annapolis with four sets of corrected plans marked for AASCD. Please note that marked plans must be resubmitted directly back to AASCD.
3. Once the plan is approved, one copy of the plan will stay in the AASCD file and the other three sets will be transmitted to the City of Annapolis.
4. AASCD approval for City of Annapolis Projects is valid for two years.

Forest Harvest (aka Logging Permits)

1. Applicant must follow [Logging Permit Process](#) and execute [Standard Erosion and Sediment Control Plan for Forest Harvest Operations](#).

Mining and Landfill Projects

1. Contact AASCD for the required fee to be submitted with the plans. Submit three sets of plans directly to AASCD.
2. If comments are generated, the design professional will be notified. Once the design professional has received and addressed AASCD's comments, three corrected sets along with the marked plans must be resubmitted back to AASCD.
3. Once the plan is approved, one copy of the plan will stay in the AASCD file and the other two sets will be available for the engineer to pick up and transmit to MDE.
4. AASCD approval for Mining and Landfill projects is valid for five years.

Standard Sediment and Erosion Control Plans

District approval is valid providing that the project meets the conditions of the respective standard plans for sediment and erosion control (i.e. emergency projects, shoreline, slope stabilization and other earth disturbance).

1. **Anne Arundel County** –Appropriate documents can be obtained and approved through PC.
2. **City of Annapolis** –Appropriate documents can be obtained and approved by the City of Annapolis.

State Highway Administration (SHA) Projects within the Severn River Watershed

1. The applicant must contact AASCD for the required fee to be submitted with the plans. The applicant will then submit concurrently one set of plans to both SHA Plan Review Division (PRD) and AASCD.
2. PRD and AASCD will perform parallel reviews. Both agencies will provide each other and the applicant with their comments (applicant, mostly via marked plans; and PRD via email).
3. The applicant will address both sets of comments and resubmit the revised plans to both PRD and AASCD for re-review. AASCD requires one set along with their marked plans; PRD requires one hard copy as well as one electronic set of the entire submission. Repeat aforementioned steps until the erosion and sediment control plan is acceptable.
4. Upon finding the plans to be acceptable, PRD will stamp three sets of plans and issue an approval letter. PRD will then transfer two sets of plans to AASCD for approval. If acceptable, AASCD will then stamp these two sets of the plans and issue an approval letter. Therefore, the two approved plans will now be stamped by both PRD and AASCD.
5. AASCD will keep one approved set in their file and the other plan will be transported from AASCD to SHA applicant for scanning and/or copying. This hard copy will then be transferred from SHA applicant to SHA Compliance for inspection purposes. An electronic link of the approved signed plans by both PRD and AASCD will be shared with PRD, SHA Compliance and SHA applicant.
6. AASCD/PRD approval for SHA projects within the Severn River Watershed are valid for two years.

State and Federal Projects within the Severn River Watershed

State law requires that erosion and sediment control for these projects be approved by both the Maryland Department of the Environment (MDE) and AASCD. Stormwater management is reviewed and approved by MDE.

1. The applicant must contact AASCD for the required fee to be submitted with the plans. The applicant will then submit concurrently one set of plans to both MDE and AASCD.
2. MDE and AASCD will perform parallel reviews. Both agencies will provide each other and the applicant with their comments (applicant, mostly via marked plans; and MDE via email).
3. The applicant will address both sets of comments and resubmit the revised plans to both MDE and AASCD for re-review. AASCD requires three sets of plans as well as the marked plans. MDE requires one set of plans. Repeat aforementioned steps until the erosion and sediment control plan is acceptable.
4. Upon finding the plans to be acceptable, AASCD will contact MDE via email or phone to check on the status of MDE's review. If MDE has no outstanding concerns with the plan, AASCD will stamp three sets of plans and issue an approval letter. AASCD will keep one approved set in their file then transfer two

approved sets of plans to MDE for approval. Assuming MDE is satisfied with the plan, MDE will then stamp the two sets of plans and issue an approval letter. Therefore, the approved plan will be stamped by both AASCD and MDE. One set of plans will be transferred to MDE Compliance for inspection, and the other will be returned to the applicant. MDE will require the applicant to scan the stamped plans and provide MDE with an electronic copy.

5. AASCD/MDE approval for State and Federal projects in the Severn River Watershed are valid for two years.

SEDIMENT AND EROSION CONTROL PLAN SUBMITTAL CHECKLIST

The sediment and erosion control plans must contain the items listed below. Provide the sheet number next to each item on this checklist as to where this information may be found on the plans. Submit this checklist at time of application. Incomplete submissions may be rejected and not reviewed until all necessary information has been provided.

1. Execute the [Engineer's Transmittal Letter](#) to accompany plans for AASCD's file.

Applies to all sheets:

2. Sheets must be the same size (24" x 36") and consecutively numbered (i.e., sheet 1 of 2, 2 of 2, etc.) If there is only one sheet, then it should be numbered 1 of 1.

3. The minimum font size of 10 is required on all plans.

4. Scope of plan and grading permit number must be clearly delineated and noted in title block.

5. The design professional must place his/her seal on each plan sheet. The design professional's signature and date must be across the seal. A design professional may be a professional engineer, professional land surveyor or professional landscape architect licensed in the State of Maryland.

Cover sheet (sheet 1):

6. Vicinity map with scale, north arrow and site location (maximum scale not to exceed 1" = 2000').

7. Executed [Standard Responsibility Notes](#) and [Consultant's Certification](#) must be shown on the cover sheet. If the site lies within the Severn River Watershed, a professional engineer must sign and seal the Consultant's Certification.

8. Provide a 4" x 4" blank space in lower right corner on sheet 1 for approvals.

9. Site analysis (total site area and total disturbed area in acres, volume of cut and fill, and borrow to be removed or placed on site must be shown on cover sheet). Indicate if project is a balanced site.

10. Sequence of construction with time references for each phase must be shown on the cover sheet.

a. If the plan is for a single family dwelling, utilize/modify the [Sequence of Construction for Single Family Dwelling](#).

b. Phasing will be required on large subdivisions or commercial/industrial sites. The sequence of construction and plan views must match and be divided into a minimum of three phases: Phase 1 is for the clearing and grubbing to install sediment control only; Phase 2 will show all sediment controls installed under Phase 1 as existing and will remain for the remainder of clearing/grubbing/mass grading, infrastructure and roads only; Phase 3 will show infrastructure items under Phase 2 as existing and will be for unit/lot development and stormwater management. If you need an example of how to phase your project, we can provide one to you.

c. Place the following note at the beginning of the construction sequence for sites in Anne Arundel County: "Notify the Department of Inspections and Permits (410-222-7780) at least 48 hours before commencing work. Work may not commence until the permittee or the responsible personnel have met on site with the sediment and erosion control inspector to review the approved plans."

For sites in the City of Annapolis: "Notify the Department of Neighborhood and

Environmental Programs (410-263-7946) and the Department of Public Works (410-263-7949) 48 hours before commencing work. Work may not commence until the permittee of the responsible personnel have met on site with the sediment and erosion control inspector to review the approved plans.”

- _____ d. Clear minimum area necessary to install sediment controls and the staging/laydown areas. Mechanical stabilization will be required on the staging/laydown areas and heavy use areas, including travel lanes. Wood chips may be utilized with approval from Inspections and Permits.
- _____ e. The erosion control monitoring device shall be an iron stake embedded at least 2.5 feet into the centerline of the receiving channel with the elevation of the top of the stake recorded on the stake. At least one device shall be provided at each outfall.
- _____ f. Once sediment controls have been installed, contact the inspector for approval of sediment control installation (and if needed monitoring stake installation below the outfalls) prior to commencing work. Inspections and Permits may require that an inspection and certification of the installation of sediment control also be performed by a design professional prior to construction commencing.
- _____ g. Stormwater management facilities can not be installed until the contributing drainage area to the facility has 95% stabilization.
- _____ h. Clearing, grubbing and grading will be limited to 20 acres. Once these 20 acres are temporarily stabilized and with the inspector’s approval, an additional 20 acres may be disturbed.
- _____ i. Individual lot construction may not commence until mechanical stabilization has been installed up to said lot.
- _____ j. Model home or model units construction may commence at the discretion of the inspector but must be located near the entrance or at an existing paved road or cross-street (i.e. not in the back of the site). Specify in the sequence which lot will have the model home.
- _____ k. This note must be placed in the sequence once building construction commences: “Building construction may not proceed past the ground floor until all remaining disturbed areas have been permanently or temporarily stabilized. During building construction beyond the ground floor, all disturbed areas must be stabilized at the end of each business day. A certificate must be provided to the inspector verifying the grades and drainage patterns shown on the approved erosion and sediment control plan have been obtained.”
- _____ l. Special sequencing will be required when crossing a stream. Permanent stream crossings must be installed early on in the sequence to allow construction flow without detriments to the stream.
- _____ m. Specify the conversion of traps or basins to storm water management devices and clearly note what is being done for conversion.
- _____ n. After the site is 95% stabilized, either vegetatively or mechanically, remove the sediment controls with the inspector’s approval.

Plan Views/Remainder of Plans:

- _____ 11. Benchmark description, location and hub elevation noted.
- _____ 12. Scales and north arrow for plans. The acceptable scales are 1' = 40', 1" = 30', 1" = 20', 1" = 10'.
- _____ 13. Legend with each sediment control device symbolized. Utilize the correct symbol listed in the [2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control](#) details.

- 14. Existing and proposed contours must be labeled. Also provide existing contours at least 100' outside the limits of disturbance (use 2' contour intervals). Additional topography may be required at the discretion of the reviewer. Contours must match at match lines between plan sheets.
- 15. Existing and proposed improvements at least 100' outside limit of disturbance (utilities, roads, buildings, etc.). Ghost in any improvements or sediment controls that are from adjacent or existing grading permits.
- 16. A separate schematic for demolition may be required at the discretion of the reviewer to show the limit of disturbance, stabilized construction entrance and sediment controls.
- 17. Sediment and Erosion Control drainage area map on the plans showing:
 - a. All sediment control.
 - b. The delineation of the maximum drainage area (pre, post or largest drainage area possible during construction) which could reach each sediment control.
 - c. Drainage area to be diverted or bypassed.
 - d. All drainage divides must be clear and must be easily understood. The divides must be substantiated by the existing and/or proposed grading.
- 18. Limits of disturbance delineated (must be realistic).
- 19. Staging areas, heavy use areas, travel lanes and laydown areas must be delineated and mechanically stabilized. Wood chips may be utilized in sensitive areas (i.e. stream restoration projects) with Inspections and Permits' approval.
- 20. Ensure adequate stockpile areas which must be designated on the plans:
 - a. Note maximum height (not to exceed 15') and maximum slope (not to exceed 2:1) of stockpiles.
 - b. Include ingress and egress to site.
 - c. Stockpile to be located a minimum of 20' away from trap or basin and shall be wrapped in either reinforced or super silt fence.
 - d. Temporarily stabilize stockpile as per the stabilization specifications or cover the stockpile with plastic tarp and anchor at end of work day.
 - e. Notation for borrow material to be taken off site to a site with an approved sediment and erosion control plan.
- 21. Limit of 100 year floodplain level and location of all streams, wetlands, steep slopes and their respective buffers.
- 22. Vegetative Establishment must be placed on the plans. Sites within a four (4) mile radius of BWI, utilize the [AASCD/MAA Vegetative Establishment Details and Specifications for Projects within 4 miles of the BWI Airport.](#)
- 23. Place Soil Preparation, Topsoiling and Soil Amendments specification from the 2011 Specs on plans.
- 24. For all outfalls, the monitoring device locations must be shown on the plans. The total number and location of the devices shall be determined by AASCD upon the first review.
- 25. Include all storm drain plans and profiles (public and private) that convey runoff to sediment control and/or storm water management devices.
- 26. Show all underdrain systems, details and discharge points.
- 27. Show locations, top and bottom elevations and details of all retaining walls. Contact PC for building permit requirements and certification by a structural engineer.
- 28. Plan match lines must be accurate.
- 29. On larger scale projects, one may want to include a 10' x 10' concrete washout within the limits of disturbance.
- 30. Provide locations, borings, details and construction specifications for all storm water management

devices. The computations booklet must be provided to AASCD. MD-378 ponds require that the pond be designed in accordance to the [AASCD Small Pond Approval Checklist](#).

_____ 31. All sediment and erosion control practices and details must be from the 2011 MD Standards and Specifications for Soil Erosion and Sediment Control. Additional/alternative sediment control practices may be utilized with the approval of AASCD. The most commonly utilized sediment controls are listed below:

- _____ a. **Stabilized Construction Entrance**
 - _____ 1. Location, drawn to scale, with mountable berm.
- _____ b. **Reinforced Silt Fence or Super Silt Fence**
 - _____ 1. Placed on the contour.
 - _____ 2. Only use for sheet flow.
 - _____ 3. Slope length does not exceed allowable length.
- _____ c. **Filter Logs** may be utilized to protect tree root zone on specimen trees. Minimum diameter allowed are 12".
- _____ d. **Earth Dikes/Clearwater Diversion**
 - _____ 1. Positive drainage is maintained through all phases of construction.
 - _____ 2. Earth dikes/Clearwater diversion are directed to a sediment trap or onto a stabilized outfall.
 - _____ 3. Size of dike (A or B) and note type of stabilization. A-1 and B-1 earth dikes are not allowed.
 - _____ 4. Provide mountable berm at vehicular crossing.
 - _____ 5. Maximum drainage area delineated.
- _____ e. **Floating Earth Dikes**
 - _____ 1. Utilize when cut/fill is dynamic.
 - _____ 2. Positive drainage is maintained through all phases of construction.
 - _____ 3. Floating earth dikes are directed to a sediment trap or onto a stabilized outfall.
 - _____ 4. Size of dike (A or B) and note type of stabilization. A-1 and B-1 floating earth dikes are not allowed.
 - _____ 5. Provide mountable berm at vehicular crossing.
 - _____ 6. Maximum drainage area delineated.
- _____ f. **Temporary Swales**
 - _____ 1. Positive drainage is maintained through all phases of construction.
 - _____ 2. Swales are directed to a sediment trap or onto a stabilized outfall.
 - _____ 3. Size of swale (A or B) and note type of stabilization. A-1 and B-1 swales are not allowed.
 - _____ 4. Temporary culverts or bridges may be required at vehicular crossings.
 - _____ 5. Maximum drainage area delineated.
- _____ g. **Perimeter Dike/Swale**
 - _____ 1. Positive drainage is maintained through all phases of construction.
 - _____ 2. Perimeter Dike/Swale is directed to a sediment trap or onto a stabilized outfall.
 - _____ 3. Stabilize flow channel with seed and erosion control matting.
 - _____ 4. Maximum drainage area delineated.
- _____ h. **Sediment Traps**
 - _____ 1. Plan view of trap, showing grades for trap installation. Show close out grades for trap via a separate inset.
 - _____ 2. Add monitoring stakes at outfall per the discretion/location of AASCD.

- _____ 3. Trap sized for largest drainage area (existing, proposed or interim).
 - _____ 4. Drainage area delineated.
 - _____ 5. Located at least 20' from buildings and stockpiles.
 - _____ 6. Show stone protection and details at all inflow and outfall points.
 - _____ 7. Show location and length of baffles in plan view.
 - _____ 8. Execute and place on plans the data sheet for each trap found in the 2011 Maryland Standards and Specifications.
 - _____ 9. Provide dewatering method for sites within a four miles radius of BWI (i.e. Faircloth Skimmer).
 - _____ i. **Sediment Basins:** Note that all sediment basins must be constructed using MD-378 criteria if it is to remain on site longer than 36 months or is being converted to a MD-378 pond for storm water management.
 - _____ 1. Plan view of basin, showing grades for basin installation. Show close out grades for basin via a separate inset.
 - _____ 2. Add monitoring stakes at outfall per the discretion/location of AASCD.
 - _____ 3. Basin sized for largest drainage area (existing, proposed or interim).
 - _____ 4. Drainage area delineated.
 - _____ 5. Located at least 20' from buildings and stockpiles.
 - _____ 6. Show stone protection and details at all inflow and outfall points.
 - _____ 7. Design data sheet executed and placed on plans.
 - _____ 8. Provide and show initial construction access to basin on plans and note in sequence of construction.
 - _____ 9. Provide and show adequate sediment control during basin construction.
 - _____ 10. Bottom dimensions on plan.
 - _____ 11. Show location and length of baffles.
 - _____ 12. Provide either horizontal or vertical drawdown device.
 - _____ 13. Note in the sequence to plug and later unplug low flow openings.
 - _____ 14. Note in the sequence to require spoil material placement to be a 20' minimum from basin.
 - _____ 15. Note in the sequence of construction: "Inspector shall indicate acceptance of basin construction and verify that the next phase of construction may begin."
 - _____ 16. Sequence must specify the conversion from basin to a storm water management facility.
 - _____ 17. Fence shown in plan view (6' high).
 - _____ 18. Provide dewatering method for sites within a four mile radius from BWI (i.e. Faircloth Skimmer).
 - _____ 19. Sediment Basin Construction Specifications must be on plans. Use the MD-378 pond construction specifications if structure is permanent or is to remain for 36 months and greater.
- _____ j. **Inlet Protection** (Typically use standard, at-grade, curb inlet or silt sacks.)
- _____ k. **Dewatering Methods** (Typically use sump pit, portable sediment tank, dewatering bags or Faircloth Skimmer.)
 - _____ l. [Polyacrylamide Detail and Polyacrylamide Guidance](#) for sediment reduction system.
 - _____ m. **Turbidity Curtains** (utilized on shoreline/stone revetment projects).
 - _____ n. [Step Pool Storm Conveyance \(SPSC's\) Guidelines](#).

ENGINEER'S TRANSMITTAL LETTER

ANNE ARUNDEL SOIL CONSERVATION
HERITAGE OFFICE COMPLEX
2662 RIVA ROAD
SUITE 150, MS 7001
ANNAPOLIS, MD 21401

1. Project Name: _____
2. Location: _____

Address	City	State	Zip Code
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3. ADC Map Location: _____ A.A. CO. Tax ID No. _____
4. Name of Subdivision: _____
5. Site analysis:

Total site: _____ acres	Total disturbed: _____ acres
Cut: _____ cubic yards	Fill: _____ cubic yards
Borrow to be removed or placed on site: _____	cubic yards
6. Storm water management method. Provide type and the drainage area to each facility:

7. Other grading permits which are adjacent or affect this site. Provide grading permit number(s) and AASCD#(s):

8. Indicate environmental impacts from construction activity:
Wetlands _____ Streams _____ Floodplain _____ Other _____
9. Developer: _____ Contact Person: _____
Address: _____
Telephone Number: _____
Email Address: _____
10. Engineering Firm: _____ Contact Person: _____
Address: _____
Telephone Number: _____
Email Address: _____

STANDARD RESPONSIBILITY NOTES

1. I (We) certify that:

- a. All development and construction will be done in accordance with this sediment and erosion control plan, and further, authorize the right of entry for periodic on-site evaluation by the Anne Arundel Soil Conservation District (AASCD) Board of Supervisors or their authorized agents.
- b. Any responsible personnel involved in the construction project will have a certificate of attendance from the Maryland Department of the Environment's approved training program for the control of sediment and erosion before beginning the project.

Responsible personnel on site: _____

- c. If applicable, the appropriate enclosure will be constructed and maintained on sediment basin(s) included in this plan. Such structure(s) will be in compliance with the Anne Arundel County Code.

2. The developer is responsible for the acquisition of all easements, right, and/or rights-of-way that may be required for the sediment and erosion control practices, storm water management practices and the discharge of storm water onto or across adjacent or downstream properties included in the plan.
3. For initial soil disturbance or re-disturbance, permanent and/or temporary stabilization per the AASCD Vegetative Establishment shall be completed within three calendar days for the surface of all controls, dikes, swales, ditches, perimeter slopes and all slopes greater than 3 horizontal to 1 vertical (3:1); and seven days for all other disturbed or graded areas on the project site.
4. The grading and sediment control approval on this plan extends only to those areas within the limits of disturbance.
5. The approval of this plan for sediment and erosion control does not relieve the developer/consultant from complying with Federal, State or County requirements pertaining to environmental issues.
6. The developer must request that the sediment and erosion control inspector approve work completed in accordance with the approved erosion and sediment control plan, the grading or building permit, and the ordinance.
7. All material shall be taken to a site with an approved sediment and erosion control plan.
8. First phase inspection and approval of the sediment and erosion control inspector shall be required upon completion of the installation of erosion and sediment controls prior to proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until the initial approval by the sediment and erosion control inspector is given. Inspection and Permits may also require that an inspection and certification of the installation of sediment control also be performed by a design professional prior to construction commencing.
9. Approval from the inspector must be requested on final stabilization of all sites prior to removal of sediment and erosion controls.
10. Existing topography must be field verified by responsible personnel to the satisfaction of the sediment control inspector prior to commencing work.

Signature of Developer/Owner

Date

Print: Name: _____
Title: _____
Affiliation: _____
Address: _____
Telephone Number: _____
Email Address: _____

CONSULTANT'S CERTIFICATION

The Developer's plan to control silt and erosion is adequate to contain the silt and erosion on the property covered by the plan. I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of this site, and was prepared in accordance with the requirements of the AASCD Plan Submittal Guidelines and the current Maryland Standards and Specifications for Soil Erosion and Sediment Control. I have reviewed this erosion and sediment control plan with the owner/developer.

MD P.E. License # _____

SEAL

MD Land Surveyor License # _____

Signature
Date

MD Landscape Architect # _____

Name _____

Firm Name _____

Address _____

City _____ **State** _____ **Zip Code** _____

NOTE: The consultant's certification must be signed and sealed by a professional engineer if the site lies within the Severn River Watershed.

VEGETATIVE ESTABLISHMENT

Following initial soil disturbances or redisturbance, permanent or temporary stabilization shall be completed within three calendar days for the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1) and seven days for all other disturbed or graded areas on the project site.

1. Permanent Seeding:

A. **Soil Tests:** Lime and fertilizer will be applied per soil tests results for sites greater than 5 acres. Soil tests will be done at completion of initial rough grading or as recommended by the sediment control inspector. Rates and analyses will be provided to the grading inspector as well as the contractor.

Occurrence of acid sulfate soils (grayish black color) will require covering with a minimum of 12 inches of clean soil with 6 inches minimum capping of top soil. No stockpiling of material is allowed. If needed, soil tests should be done before and after a 6-week incubation period to allow oxidation of sulfates.

The minimum soil conditions required for permanent vegetative establishment are:

- a. Soil pH shall be between 6.0 and 7.0.
- b. Soluble salts shall be less than 500 parts per million (ppm).
- c. The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedeza is to be planted, then a sandy soil (< 30% silt plus clay) would be acceptable.
- d. Soil shall contain 1.5% minimum organic matter by weight.
- e. Soil must contain sufficient pore space to permit adequate root penetration.
- f. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with the Standard and Specification for Soil Preparation, Topsoiling and Soil Amendments from the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control or amendments made as recommended by a certified agronomist.

B. **Seedbed Preparation:** Area to be seeded shall be loose and friable to a depth of at least 3-5 inches. The top layer shall be loosened by raking, disking or other acceptable means before seeding occurs. For sites less than 5 acres, apply 100 pounds dolomitic limestone and 21 pounds of 10-10-10 fertilizer per 1,000 square feet. Harrow or disk lime and fertilizer into the soil to a depth of at least 3-5 inches on slopes flatter than 3:1.

C. **Seeding:** Apply 5-6 pounds per 1,000 square feet of tall fescue between February 1 and April 30 or between August 15 and October 31. Apply seed uniformly on a moist firm seedbed with a cyclone seeder, cultipacker seeder or hydroseeder (slurry includes seeds and fertilizer, recommended on steep slopes only). Maximum seed depth should be $\frac{1}{4}$ inch in clayey soils and $\frac{1}{2}$ inch in sandy soils when using other than the hydroseeder method. Irrigate where necessary to support adequate growth until vegetation is firmly established. If other seed mixes are to be used, select from Table B3 and B5 of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

D. **Mulching:** Mulch shall be applied to all seeded areas immediately after seeding. During the time periods when seeding is not permitted, mulch shall be applied immediately after grading. Mulch shall be unrotted, unchopped, small grain straw applied at a rate of 2 tons per acre or 90 pounds per 1,000 square feet (2 bales). If a mulch-anchoring tool is used, apply 2.5 tons per acre. Mulch materials shall be relatively free of all kinds of weeds and shall be completely free of prohibited noxious weeds. Spread mulch uniformly, mechanically or by hand, to a depth of 1-2 inches.

E. **Securing Straw Mulch:** Straw mulch shall be secured immediately following mulch application to minimize movement by wind or water. The following methods are permitted:

- i. Use a mulch-anchoring tool which is designed to punch and anchor mulch into the soil surface to a minimum depth of 2 inches. This is the most effective method for securing mulch, however, it is limited to relatively flat areas where equipment can operate safely.
- ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. If mixed with water, use 50 pounds of wood cellulose fiber per 100 gallons of water.
- iii. Liquid binders may be used. Apply at higher rates at the edges where wind catches mulch, such as in valleys and on crests of slopes. The remainder of the area should appear uniform after binder application. Binders listed in the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control or approved equal shall be applied at rates recommended by the manufacturers.
- iv. Lightweight plastic netting may be used to secure mulch. The netting will be stapled to the ground according to manufacturer's recommendations.

2. **Temporary Seeding:**

Lime:	100 pounds of dolomitic limestone per 1,000 square feet.
Fertilizer:	15 pounds of 10-10-10 per 1,000 square feet.
Seed:	Perennial rye – 0.92 pounds per 1,000 square feet (February 1 through April 30 or August 15 through October 31). Millet – 0.92 pounds per 1,000 square feet (May 1 through August 15).
Mulch:	Same as 1 D and E above.

3. No fills may be placed on frozen ground. All fill is to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8 inches. All compaction requirements are in accordance to Anne Arundel County Standard Specifications for Construction as well as the AA County Design Manual and Standard Details. Fills for pond embankments shall be compacted as per MD-378 Construction Specifications. All other fills shall be compacted sufficiently so as to be stable and prevent erosion and slippage.

4. **Permanent Sod:**

Installation of sod should follow permanent seeding dates. Seedbed preparation for sod shall be as noted in section (B) above. Permanent sod is to be tall fescue, state approved sod; lime and fertilizer per permanent

seeding specifications and lightly irrigate soil prior to laying sod. Sod is to be laid on the contour with all ends tightly abutting. Joints are to be staggered between rows. Water and roll or tamp sod to insure positive root contact with the soil. All slopes steeper than 3:1, as shown, are to be permanently sodded or protected with an approved erosion control netting. Additional watering for establishment may be required. Sod is not to be installed on frozen ground. Sod shall not be transplanted when moisture content (dry or wet) and/or extreme temperature may adversely affect its survival. In the absence of adequate rainfall, irrigation should be performed to ensure establishment of sod.

5. Mining Operations:

Sediment control plans for mining operations must include the following seeding dates and mixtures:

For seeding dates of February 1 through April 30 and August 15 through October 31, use seed mixture of tall fescue at the rate of 2 pounds per 1,000 square feet and sericea lespedeza at the minimum rate of 0.5 pounds per 1,000 square feet.

6. Topsoil shall be applied as per the Standard and Specifications for Soil Preparation, Topsoiling, and Soil Amendments from the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.