

APPENDIX SEC #5

ANNE ARUNDEL SOIL CONSERVATION DISTRICT DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

Unless otherwise noted, following initial soil disturbances or redistribution, permanent or temporary stabilization shall be completed within seven 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 fourteen 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.

b. Occurrence of acid sulfate soils (grayish black color) will require covering with a minimum of 12 inches of clean soil or 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:

- Soil pH shall be between 6.0 and 7.0.
- Soluble salts shall be less than 500 parts per million (ppm).
- 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 fine gravels or serciales (sodpods) to be planted, then a sandy soil (< 30% silt plus clay) would be acceptable.
- Soil shall contain 1.5% minimum organic matter by weight.
- Soil must contain sufficient pore space to permit adequate root penetration.
- If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil or amendments made as recommended by a certified agronomist.

2. Seeded Preparation: Area to be seeded shall be loose and friable to a depth of at least 3 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 time and fertilizer into the soil to a depth of at least 3 inches on slopes flatter than 3:1.

3. 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, outdragger seeder or hydroseeder (slurry includes seeds and fertilizer, recommended on steep slopes only). Maximum seed depth should be 1/2 inch in clayey soils and 1/4 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 25, entitled "Permanent Seeding For Low Maintenance Areas" from the current Standards and Specifications for Soil Erosion and Sediment Control. Mixes under items 1, 3 and 5-7, Mixes 5-7 are suitable in non-mowable situations.

4. Mutching: Mutch shall be applied to all seeded areas immediately after seeding. During this time periods when seeding is not permitted, mutch shall be applied immediately after grading.

Mutch shall be untopped, 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 mutch-anchoring tool is used, apply 2.5 tons per acre. Mutch materials shall be relatively free of all kinds of weeds and shall be completely free of prohibited noxious weeds. Spread mutch uniformly, mechanically or by hand, to a depth of 1-2 inches.

5. Securing Straw Mutch: Straw mutch shall be secured immediately following mutch application to minimize movement by wind or water. The following methods are permitted:

- Use a mutch-anchoring tool which is designed to punch and anchor mutch into the soil surface to a minimum depth of 2 inches. This is the most effective method for securing mutch, however, it is limited to relatively flat areas where equipment can operate safely.
- Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. It mixed with water, use 50 pounds of wood cellulose fiber per 100 gallons of water.
- Liquid binders may be used. Apply at higher rates at the edges where wind catches mutch, such as in valleys and on crests of slopes. The remainder of the area should appear uniform after binder application. Binders listed in the 1994 Standards and Specifications for Soil Erosion and Sediment Control or approved equal shall be applied at rates recommended by the manufacturers.
- Lightweight plastic netting may be used to secure mutch. 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 per 1,000 square feet.

Seed: Perennial ryegrass - 0.92 pounds per 1,000 square feet (February 1 through April 30 or August 15 through November 1).

Millet - 0.92 pounds per 1,000 square feet (May 1 through August 15).

Mutch: Same as 1 D and E above.

3. No fills may be placed on frozen ground. All fill to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8 inches. All fill in roadways and parking areas is to be classified Type 2 as per Anne Arundel County Code - Article 21, Section 2-306, and compacted to 95% density compaction to be determined by ASTM D-1557 (Modified Proctor). Any fill within the building area is to be compacted to a minimum of 95% density as determined by methods previously mentioned. 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. Seeded preparation for sod shall be as noted in section (B) above. Permanent sod is to be laid on the contour with all ends tightly abutting. Sod is to be laid in rows, with rows staggered and rows of same sod to be laid on the contour with 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 transported when moisture content (dry weight) 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:

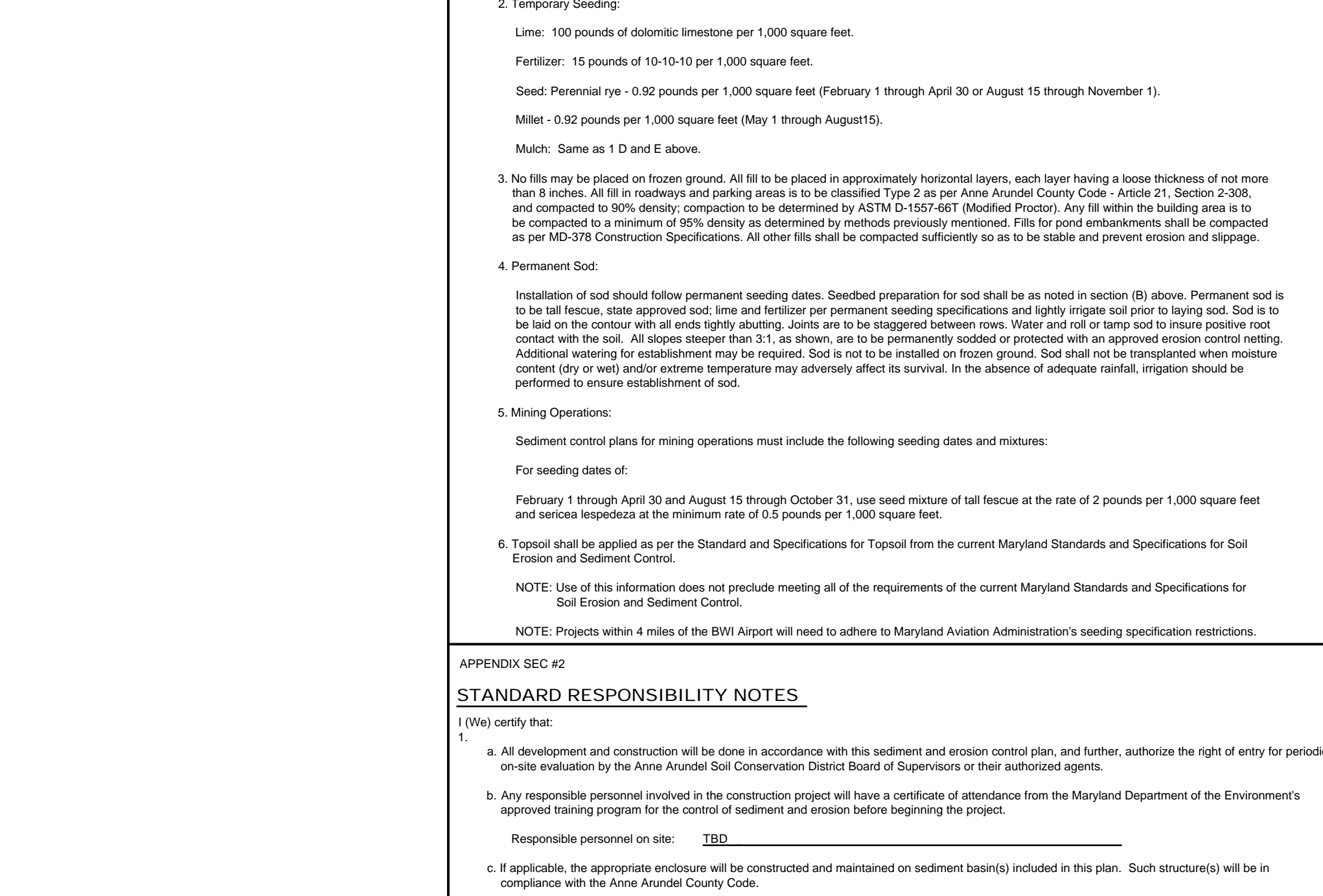
For seeding dates of:

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 serciales (sodpods) 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 Topsoil from the current Maryland Standards and Specifications for Soil Erosion and Sediment Control.

NOTE: Use of this information does not preclude meeting all of the requirements of the current Maryland Standards and Specifications for Soil Erosion and Sediment Control.

NOTE: Projects within 4 miles of the BWI Airport will need to adhere to Maryland Aviation Administration's seeding specification restrictions.



APPENDIX SEC #2

STANDARD STABILIZATION NOTES

Following initial soil disturbance, or redistribution, details of temporary or permanent stabilization shall be completed within seven (7) calendar days on all surfaces of perimeter controls, dikes, swales, ditches, perimeter slopes and all slopes steeper than 3 horizontal to 1 vertical (3:1). Within fourteen days following final grading, all other disturbed or graded areas on the project will be permanently stabilized by seeding or mutch. Permanent mutch can include but is not limited to stone, gravel, blankets, or concrete surfacing. If construction is temporarily stopped on a project for more than fourteen days, all disturbed and graded areas will be stabilized. The requirement of the subcategory do not apply to those areas which are shown on the plan and are currently being used for material storage, or for those areas on which actual construction activities are currently being performed or to interior areas of a surface mine site where stabilization material would constitute the recoverable resource. Maintenance shall be performed as necessary to ensure the stabilized areas continuously meet the appropriate requirements of the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control."

EROSION AND SEDIMENT CONTROL WILL BE STRICTLY ENFORCED

Site Data

Owner / Applicant: Arundel on the Bay Property Owners Association P.O. Box 4665 Annapolis, Maryland 21403 Phone: (410) 279-2451 (Frank Florentine, President)

Engineer: Andrews, Miller & Assoc., Inc. 401 Academy Street Cambridge, MD 21613 Tel: 410-228-7117

Tax Map Ref.: Map 57, Parcel 15 et al Arundel on the Bay

Critical Area: LDA

Zoning: R2

Soil Types: Predominant soil types are Colomantown sandy loam (Ck) and Coastal beaches (Ce), according to the S.C.S Soil Survey of Anne Arundel County, February, 1973.

Flood Zone: According to the National Flood Insurance Program Flood Insurance Rate Map (FIRM) Community Panel Number 240008 0044D (Anne Arundel County, Maryland, Panel 44 of 61), the project site falls within 100-year Flood Zones V10 (Elev. 10), A8 (Elev. 8), B, and C.

Stormwater Management: N/A

Forest Conservation Area: N/A

Standard Erosion and Sediment Control Notes

1) The contractor shall notify the Anne Arundel County Department of Inspections and Permits water management administration (AACO-DIP) at 410-222-7780, 7 days before commencing any land disturbing activity and, unless waived, shall be required to hold a pre-construction meeting between project representatives and a representative of the AACO-DIP.

2) The contractor must notify the AACO-DIP by telephone at the following points:

- The required pre-construction meeting.
- Following installation of sediment control measures.
- During the installation of sediment basins (to be converted into permanent stormwater management structures) at the required inspection points (see Inspection Checklist on plan). Notification prior to commencing construction of each step is mandatory.
- Written biweekly status of the implementation of the approved sediment and erosion control measures.
- Prior to removal or modification of any sediment control structure(s).
- Prior to removal of all sediment control devices.
- Prior to final acceptance.

3) The contractor shall construct all erosion and sediment control measures per the approved plan and construction sequence and, shall have them inspected and approved by the agency inspector prior to beginning any other land disturbances. Minor sediment control device location adjustments may be made in the field with the approval of the inspector. The contractor shall ensure that all runoff from disturbed areas is directed to the sediment control devices, and shall not remove any erosion or sediment control measure without prior permission from agency inspector. The contractor must obtain prior agency and AACO-DIP approval for changes to the Sediment Control Plan and/or Sequence of Construction.

4) The contractor shall protect all points of construction ingress and egress to prevent the depositing of mud or other debris on public roads. All materials deposited onto public roads shall be removed immediately.

5) The contractor shall inspect daily and maintain continuously in an effective operating condition all erosion and sediment control measures until such times as they are removed with prior permission from agency inspector.

6) All sediment basins, trap embankments and slopes, perimeter dikes, swales and all disturbed slopes steeper or equal to 3:1 shall be stabilized with sod or seed and anchored straw mutch, or other approved stabilization measures, as soon as possible but no later than seven (7) calendar days after establishment. All areas disturbed during the performance of sediment control measures shall be minimized. Maintenance must be performed as necessary to ensure continued stabilization. (Requirement for stabilization may be reduced to three (3) days for sensitive areas.)

7) The contractor shall apply sod or seed and anchored straw mutch, or other approved stabilization measures to all disturbed areas and stockpiles within fourteen (14) calendar days after stripping and grading activities have ceased in the area. Maintenance shall be performed as necessary to ensure continued stabilization. (Requirement may be reduced to seven (7) days for sensitive areas.)

8) Prior to removal of sediment control measures, the contractor shall stabilize and establish permanent stabilization for all contractor disturbed areas using sod or an approved permanent seed mixture with required soil amendments and an approved anchored mutch. Wood fiber mutch may only be used in seeding seasons where the slope does not exceed 10% and grading has been done to promote sheet flow drainage. Areas brought to finished grade during the seeding season shall be permanently stabilized as soon as possible, but no later than fourteen (14) calendar days after establishment. When property is brought to finished grade during the months of November through February, and permanent stabilization is found to be impractical, temporary seed and anchored straw mutch shall be applied to disturbed areas. The final permanent stabilization of such property shall be applied by March 15 or earlier if ground and weather conditions allow.

9) The site's approval letter, approved Erosion and Sediment Control Plans, daily log books and test reports shall be available at the site for inspection by duly authorized officials of agency responsible for project.

10) Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or by installing protective devices to lower the water down slope without causing erosion. Dikes shall be installed and maintained at the top of cut or fill slopes until the slope and drainage area to it are fully stabilized, at which time they must be removed and final grading done to promote sheet flow drainage. Protective methods must be provided at points of concentrated flow where erosion is likely to occur.

11) Permanent swales or other points of concentrated water flow shall be stabilized with sod or seed with an approved erosion control matting, riprap or by other approved stabilization measures.

12) Temporary sediment control devices may be removed, with permission of AACO-DIP inspector and agency inspectors, within thirty(30) calendar days following establishment of permanent stabilization in all contributory drainage areas. Stormwater management structures used temporarily for sediment control shall be converted to the permanent configuration within this time period as well.

13) No permanent cut or fill slope with gradient steeper than 3:1 will be permitted in lawn maintenance areas. A slope gradient of 10 to 2:1 will be permitted in non-maintenance areas provided that those areas are indicated on the erosion and sediment control plan with a low-maintenance ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetative stabilization.

14) For finished grading, the contractor shall provide adequate gradients so as to prevent water from standing on the surface more than twenty four (24) hours after the end of a rainfall except in designated drainage courses and swale flow areas which may drain as long as forty-eight (48) hours after the end of a rainfall; areas designed to have standing water shall not be required to meet this requirement.

15) Sediment traps or basins are not permitted within 20 feet of a foundation which is existing or under construction. No structure may be constructed within 20 feet of an active sediment trap or basin.

16) The AACO-DIP inspector has the option of requiring additional safety or sediment control measures, if deemed necessary.

17) All trap depth dimensions are relative to the outlet elevation. All traps must have a stable outlet. All traps and basins shall have stable inlets.

18) Vegetative stabilization shall be performed in accordance with the Standards and Specifications for Soil Erosion and Sediment Control. Refer to appropriate specifications for temporary seeding, permanent seeding, mulching, sodding and ground covers.

19) Temporary sediment trap(s) shall be cleaned out and restored to the original dimensions when sediment has accumulated to a point one half (1/2) the depth between the outlet crest and the bottom of the trap. Sediment basins shall be cleaned out and restored to the original dimensions when sediment has accumulated to one half (1/2) the depth between the dewatering elevation and the bottom of the basin.

20) Sediment removed from traps (and basins) shall be placed and stabilized in approved areas, but not within a flood plain, wetland or tree-savva area. When pumping sediment laden water, the discharge must be directed to a sediment trapping device prior to release from the site.

21) Where deemed appropriate by the engineer or inspector, sediment basins and traps may need to be surrounded with an approved safety fence. The fence must conform to local ordinances and regulations. The developer or owner shall check with local building officials on applicable safety requirements. Where safety fence is deemed appropriate and local ordinances do not specify fencing sizes and types, the following shall be used as a minimum standard: the safety fence must be made of welded wire and be at least 42 inches high, have posts spaced no farther apart than 8 feet, have mesh openings no greater than 2 inches in width and 4 inches in height with a minimum of 14 gauge wire. Safety fence must be maintained and in good condition at all times.

22) Sediment control for utility construction for areas outside of designed controls or as directed by the engineer or inspector.

- Call "Miss Utility" at 1-800-257-7777 48 hours prior to the start of work.
- Excavated trench material shall be placed on the high side of the trench.
- Trenches for utility installation shall be backfilled, compacted and stabilized at the end of each working day. No more trench shall be opened than can be completed the same day, unless:
- Disturbed area intended to remain disturbed for more than one day.

23) Off-site spoil or borrow areas on State or Federal property must have prior approval by AACO-DIP and other applicable State, Federal and local authorities, otherwise approval must be granted by the local authorities. All waste and borrow areas off-site must be protected by sediment control measures and stabilized.

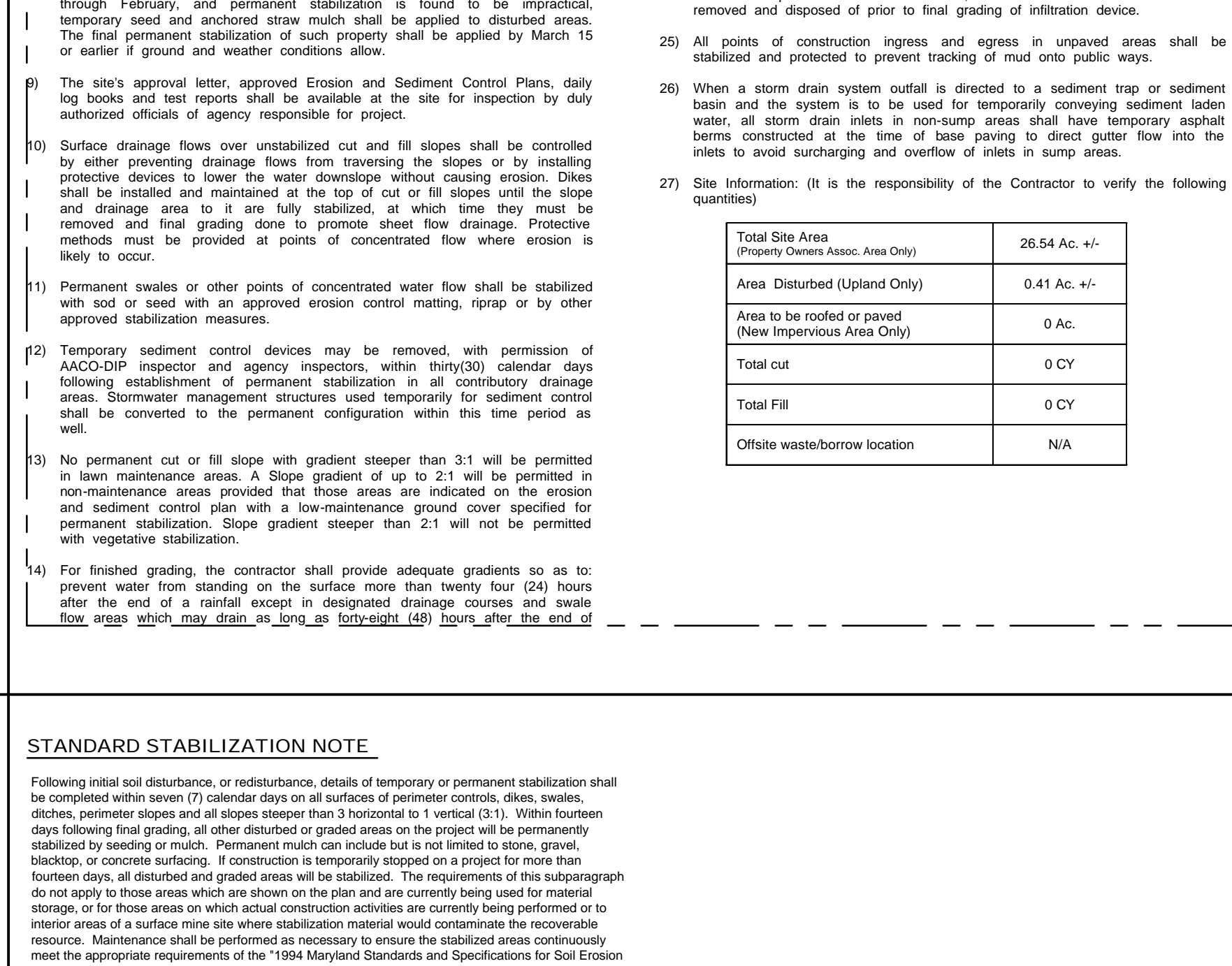
24) Sites where infiltration devices are used for the control of stormwater, extreme care must be taken to prevent runoff from unstabilized areas from entering the structure during construction. Sediment control devices placed in infiltration areas must have bottom elevations at least two (2) feet higher than the finished grade bottom elevation of the infiltration practice. When converting a sediment trap to an infiltration device, all accumulated sediment must be removed and disposed of prior to final grading of infiltration device.

25) All points of construction ingress and egress in unimproved areas shall be stabilized and protected to prevent tracking of mud onto public ways.

26) When a storm drain system outlet is directed to a sediment trap or sediment basin and the system is to be used for temporarily conveying sediment laden water, all storm drain inlets in non-sump areas shall have temporary siphon berms constructed at the time of base paving to direct gutter flow into the inlets to avoid surcharging and overflow of inlets in sump areas.

27) Site Information: (It is the responsibility of the Contractor to verify the following quantities.)

Total Site Area (Property Owners Assoc. Area Only)	26.54 Ac. +/-
Area Disturbed (Upland Only)	0.41 Ac. +/-
Area to be reseeded or paved (New Impervious Area Only)	0 Ac.
Total cut	0 CY
Total fill	0 CY
Offsite waste/borrow location	N/A



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Stormwater Management: N/A

Forest Conservation Area: N/A

PRELIMINARY, NOT APPROVED FOR CONSTRUCTION

REVISIONS

NO.	DATE	ITEM

CONSULTING ENGINEERS AND SURVEYORS

Andrews, Miller & Assoc., Inc.

Western Area Office:
15 Old Shoreline Island Road, Suite 100
Cambridge, Maryland 21613
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Tel: 410-228-7117

SEDIMENT & EROSION CONTROL / STORM DRAIN NOTES AND DETAILS

Property Owners Association of ARUNDEL-ON-THE-BAY

Anne Arundel County, Maryland

DRAWN	DESIGNED	CHECKED

DATE: **March 2007**

SCALE: **None**

JOB NO.: **04014**

SHEET: **C-3**

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