



SOP 07-24

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

having disturbed area over 5 acres.

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration Olup to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins. ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding. iii. Schedule required soil tests to determine soil amendment composition and application rates for sites

B. Soil Amendments (Fertilizer and Lime Specifications) Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.

iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a *100 mesh sieve and 98-100% will pass through a *20

iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means. C. Seedbed Preparation

Temporary Seeding

a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

ii. Permanent Seeding

 a. Minimum soil conditions required for permanent vegetative establishment:
 1. 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 if lovegrass or serecia lespedezas is 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 n accordance with Section 21 Standard and Specification for Topsoil. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil

to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope. Apply soil amendments as per soil test or as included on the plans.

Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving he soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on

newly disturbed areas.

i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job. Note: Seed tags shall be made available to the inspector to verify type and rate of seed used Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of introgen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than

the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective. E. Methods of Seeding Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder. a. If fertilizer is being applied at the time of seeding, the application rates amounts will not

exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous); 200 lbs/ac; K20 (potassium): 200 lbs/ac. b. Lime - use only ground agricultural limestone. (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and

without interruption. ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

F. Mulch Specifications (In order of preference) Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of nóxious weed seeds as specified in the Maryland Seed Law.

Wood Cellulose Fiber Mulch (WCFM)
a. WCFM shall consist of specially prepared wood cellulose processed into a uniform

fibrous physical state. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry. WCFM, including dye, shall contain no germination or growth inhibiting factors. WCFM materials shall be manufactured and processed in such a manner that the

wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.

f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

REVISION

G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tops/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.

iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:

A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. It used on sloping land, this practice should be used on the contour if possible

Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons

iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax Terra Tack AR or other approved equal may be used at rates recommended by the nanufacturer to anchor mulch

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long. I. Incremental Stabilization - Cut Slopes

All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'. ii. Construction sequence (Refer to Figure 3 below):

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation. Perform Phase 1 excavation, dress, and stabilize.

Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as

necessary.

Perform final phase excavation, dress and stabilize. Overseed previously seeded

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions int he operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization. J. Incremental Stabilization of Embankments - Fill Slopes

Embankments shall be constructed in lifts as prescribed on the plans.

Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15", or when the grading operation ceases as prescribed in the plans. iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to

a sediment trapping device. iv. Construction sequence: Refer to Figure 4 (below).

Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area. Place Phase 1 embarkment, dress and stabilize. Place Phase 2 embarkment, dress and stabilize.

Place final phase embankment, dress and stabilize. Overseed previously seeded

Once the placement of fill has begun the operation should be continuous from grubbing through the completion of and placement of topsoil (if required) grading and permanent seed and mulch. any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1055).

2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES. DIKES PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. 4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL.

CHAPTER 12. OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52), TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT

CONTROL INSPECTOR. 7) SITE ANALYSIS: TOTAL AREA OF SITE 1.829 ACRES AREA DISTURBED 1.829 ACRES AREA TO BE ROOFED OR PAVED 0.544 ACRES AREA TO BE VEGETATIVELY STABILIZED 1.566 ACRES TOTAL CUT CU.YD5. TOTAL FILL 0 CULY05.

OFFSITE WASTE/BORROW AREA LOCATION N/A 8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. 10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMEN' CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH

APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. 11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed. Seedbed Preparation: Loosen upper three inches of soil by raking. discing or other acceptable means before seeding, if not previously

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules :

1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs. per 1000 sq.ft.).

2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following

1) 2 tons per acre of well—anchored mulch straw and seed as soon as possible in the spring.

2) Use sod.

3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seedina. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs. replacements and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared greas likely to be redisturbed where a short-term vegetative cover is needed. Seedbed Preparation: Loosen upper three inches of soil by raking. discing or other acceptable means before seeding, if not previously

loosened. Soil Amendments: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.).

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual rye (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 ibs. per acre of weeping lovegrass (0.07 ibs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal, per acre (5 gal, per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT 7 DAYS 2. INSTALL SEDIMENT AND EROSION CONTROL DEVICES AS SHOWN ON PLAN 7 DAYS 3. CLEAR AND GRUB TO LIMITS OF DISTURBANCE 4 DAYS 2 DAYS 4. INSTALL TEMPORARY SEEDING 60 DAYS 5. CONSTRUCT BUILDINGS 6. FINE GRADE SITE AND INSTALL PERMANENT SEEDING AND LANDSCAPE 14 DAYS 7. REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMISSION IS GRANTED BY E/S CONTROL INSPECTOR. 7 DAYS

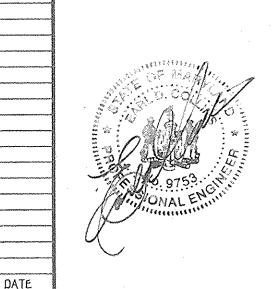
SHALL NOT EXCEED 10' CENTER TO CENTER * MINIMUM 778778778778 GROUND SURFACE 5" MINIMUM ---- MOUNTABLE STANDARD SYMBOL BERM (6" MIN.) FLOW 21/2" DIAMETER - 50' MINIMUM GALVANIZED CHAIN LINK FENCE OR ALUMINUM WITH 1 LAYER OF - 8" MINIMUN EXISTING PAVEMENT FILTER CLOTH ** GEOTEXTILE CLASS 'C' CHAIN LINK FENCING MINIMUM 6" OF 2"-3" AGGREGATE FILTER CLOTH 34" MINIMUM OVER LENGTH AND WIDTH OF - EXISTING GROUND 778.778---STRUCTURE STANDARD SYMBOL - 16" MIN. 1ST LAYER OF FILTER CLOTH PROFILE EMBED FILTER CLOTH 8" TRIBITATION MASCE WAS MINIMUM INTO GROUND * IF MULTIPLE LAYERS ARE * 50' MINIMUM REQUIRED TO ATTAIN 42" LENGTH Construction Specifications 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length 1 EXISTING 10' MINIMUM 2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence 3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section. PLAN VIEW 4. Filter cloth shall be embedded a minimum of 8" into the ground. PLAN/CUT AWAY VIEW Construction Specification 5. When two sections of filter cloth adjoin each other, they shall be overlapped 1. Length - minimum of 50' (*30' for single residence lot). 6. Maintenance shall be performed as needed and silt buildups removed when "bulges" 2. Width - 10' minimum, should be flared at the existing road to provide a turning develop in the silt fence, or when silt reaches 50% of fence height 7. Filter cloth shall be fastened securely to each fence post with wire ties or 3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior staples at top and mid section and shall meet the following requirements for - INLET GRATE to placing stone. **The plan approval authority may not require single family residences to use geotextile. Test: MSMT 509 4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete Tensile Strength 50 lbs/in (min.) -GEOTEXTILE CLASS E Test: MSMT 509 equivalent shall be placed at least 6" deep over the length and width of the Tensile Modulus 20 lbs/in (min.) 0.3 gal/ft /minute (max.) Test: MSMT 322 Flow Rate - WIRE TIES Filtering Efficiency 75% (min.) Test: MSMT 322 5. Surface Water - all surface water flowing to or diverted toward construction -6" OVERLAP STANDARD SYMBOL entrances shall be piped through the entrance, maintaining positive drainage. Pipe Design Criteria installed through the stabilized construction entrance shall be protected with a CROSS SECTION MAX. DRAINAGE AREA = 1/4 ACRE AGIP mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has Silt Fence Lenath Slope Lenath to be sized according to the drainage. When the SCE is located at a high spot and (maximum) (maximum) Construction Specifications has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required 0 - 10% Unlimited 1. Lift grate and wrap with Geotextile Class E to completely cover all openings, 0 - 10:1 Unlimited 10 - 20% 10:1 - 5:1 200 feet 1,500 feet then set grate back in place. 1,000 feet Location - A stabilized construction entrance shall be located at every point 100 feet 20 - 33% 5:1 - 3:1 2. Place 3/4" to 11/2" stone, 4"-6" thick on the grate to secure the fabric and where construction traffic enters or leaves a construction site. Vehicles leaving 500 feet 33 - 50% 3:1 - 2:1 100 feet provide additional filtration. the site must travel over the entire length of the stabilized construction entrance. 250 feet 50% + 2:1 + 50 feet AT GRADE INLET PROTECTION SUPER SILT FENCE STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

NOTE: FENCE POST SPACING

10' MAXIMUM

FISHER, COLLINS & CARTER, INC. TVIL ENGINEERING CONSULTANTS & LAND SURVEYORS ennial squart, office park - 10272 Baltimore national pike FILECOTT CITY, MARYLAND 2104



ENGINEER'S CERTIFICATE "I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

18.7.06 EARL D. COLLINS DEVELOPER'S CERTIFICATE

ROBERT CORBETT

I/We certify that all development and construction will be done according to this plan. for sediment and erosion control and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. 12-7-06

Reviewed for HOWARD SCD and meets Technical Requirements. U.S.D.A.-Natural Resources WM This development plan is approved for soil erosion and sediment control by the HOWARD BOIL GONSERVATION DISTRICT

BUILDER/DEVELOPER OWNER THE HOWARD RESEARCH & DEVELOPMENT CORP. WILLIAMSBURG GROUP, LLC 5485 HARPERS FARM ROAD 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 COLUMBIA, MARYLAND 21044 410-997-8800 410-992-6000

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 1/11/03 went in and rector - Department of Planning and Zoning ROJECT .OTS NO. SECTION : 1-3,6-8 & 17-20 EMERSON PHASE 6B TAX/ZONE | ELEC. DIST. CENSUS TR BLOCK NO. ZONE 7915. 17916 SIXTH 6069.02 PEC-MXD-3 47 17950 WATER CODE SEWER CODE C-02 7390000

SEDIMENT/EROSION CONTROL NOTES & DETAILS

SINGLE FAMILY DETACHED EMERSON

SECTION 2 PHASE 6B LOTS 1-3,6-8 & 17-20

TAX MAP NO.: 47 PARCEL NO.: 837 GRID NO.: 9 & 15 SIXTH ELECTION DISTRICT, HOWARD COUNTY. MARYLAND SCALE: AS SHOWN DATE: SEPTEMBER, 2006 SHEET 4 OF 4

