

RESIDENTIAL DRIVEWAY ENTRANCE CLOSED SECTION W/STD. 7" COMB. CURB AND GUTTER AND SIDEWALK SET BACK FROM CURB NO SCALE

SEDIMENT CONTROL NOTES

- D A MINIMUM OF 40 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 (313-1855).

 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 DAY: AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 4) ALL SEDDMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE 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.
- 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.
 SITE ANALYSIS:
 TOTAL AREA OF SITE 2.627 ACRES AREA TO BE ROOFED OR PAVED AREA TO BE VEGETATIVELY STABILIZED 0.9609 ACRES 0.0981 ACRES 1000 CU.YDS.
- OFFSITE WASTE/BORROW AREA LOCATION CU.YDS.

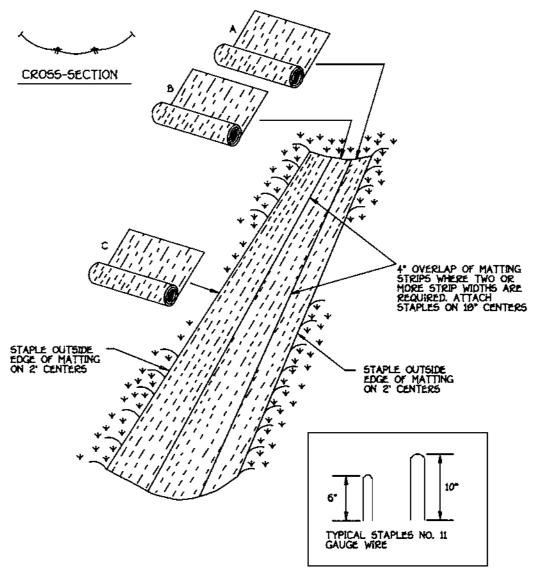
 ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING
 ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE
- ACTIVITY FOR PLACEMENT OF UTILLITIES MUST BE REPAIRED ON THE
 SAME DAY OF DISTURBANCE.

 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 SEDIMENT
 CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH

 OF TIGHT AND AS COLOURS.
- DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. ID 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.

EROSION CONTROL MATTING



Construction Specifications

- Key-in the matting by placing the top ends of the matting in a narrow trench, 5" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
- Staple the 4" overlap in the channel center using an 18" spacing between staples.
- Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
- Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
- where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4".
- shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side. The discharge and of the matting liner should be similarly
- secured with 2 double rows of staples. Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT (10 DAYS)
2. REGRADE EXISTING SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON PLAN. AND INSTALL NEW E/S CONTROL DEVICES. INSTALL TEMPORARY SEEDING.

3. MASS GRADE TO LIMITS OF DISTURBANCE. (10 DAYS).
4. CONSTRUCT BUILDINGS (1 YEAR).
5. FINE GRADE SITE AND INSTALL PERMANENT SEEDING AND LANDSCAPING. (10 DAYS) 6. REMOVE E & 5 CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMISSION IS GRANTED BY E & 5 CONTROL INSPECTOR. (4 DAYS)

WATER CODE

H-03

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

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

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 erook 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 Oup 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 or 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 defermine soil amendment composition and application rates for sites
- having disturbed area over 5 acres.

 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 iii. Lime materials shall be ground limestone thydrated 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 sleve and 98–100% will pass through a *20 mesh sieve. Incorporate lime and fertilizer into the top 3-5° of soil by disking or other suitable means.
- Seedbed Preparation
 i. 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
- 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 3D 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:
 L. Soil pit shall be between 6.0 and 7.0.
 2. Soluble salts shall be less than 500 parts per million (nom).
 - Soluble ealts shall be less than 500 parts per million (ppm). The soil shall contain less than 40% clay, but enough fine grained material (>30% sift 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
- serecia jespedezas is to be planted, then a sandy soil (30% silt plus clay) would be acceptable.

 4. Soil shall contain 1.5% minimum organic matter by weight.

 5. Soil must contain sufficient pore space to permit adequate root penetration.

 6. If these conditions cannot be met by soils on site, adding topsoil is required in 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 lossened to a depth of 3-5° to permit bonding of the tensil to the surface area and to create being attention of the tensil to the surface area and to create being attention of the tensil to the surface area and to create being attention of the tensil to the surface area and to create the province of the tensil to the surface area.
- topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil the surface area and to create horizontal erosion check slots to prevent topsoil from
- to the surface area and to create horizontal erosion check stops 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 sultable 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 the 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.

 ii. Inoculant The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-tixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add tresh 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.

 Methods of Seeding
 i. Hydroseeding: Apply seed uniformly with hydroseeder (skury 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: nitrogers maximum of 100 lbs. per acre total of soluble nitrogers. P205 (phosphorous): 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.

 c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

- c. 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.

 a. 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 confact.

 b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

 iii. Orill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

 a. 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.

 b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

 Much Specifications (In order of preference)
- Mulch Specifications (In order of preference) Straw shall consist of thoroughly threshed wheat, ree or oat straw, reasonable bright in color, and shall not be musty, molor, caked, decayed, or excessively dusty and shall be free of noxious 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 surry. The much material shall form a blotter-like ground cover, on application, having
- 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 seedings.

 e. 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., idiameter approximately 1 mm., pit 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. Mulching Seeded Areas Mulch shall be applied to all seeded areas immediately after seeding.

 i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in 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 tons/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.

 Securing Straw 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 much anchoring tool is a tractor drawn implement designed to punch and anchor much 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 comfour 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 comfain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
- of water.

 Application of liquid binders should be heavier at the edges where wind catches much, 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 II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor much.
- Lightweight plastic netting may be stapled over the mulch according to manufacturer's recom-mendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.





APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

APPLY 800 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./

FOR THE PERIODS MARCH I THROUGH APRIL 30, AND AUGUST

APPLY 1 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.)

REVISIONS

OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 210 GALLONS PER ACRE (5 GALL)000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES ON SLOPES & FLET OR HIGHER, USE 340 GALLONS PER ACRE (6 GAL./1,000 SQ.FT.) FOR

REFER TO THE 1966 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT

15 THROUGH NOVEMBER 15, SEED WITH 1 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./ACRE OF WEEPING LOVEGRASS (.07 LBS./1,000 SQ.FT. FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY

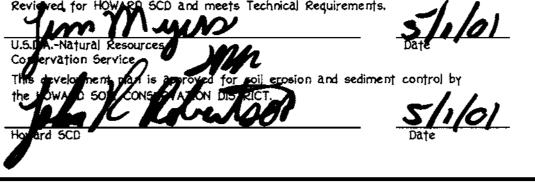
28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE

LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY

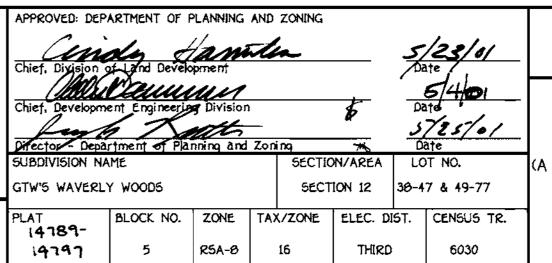
ENGINEER'S CERTIFICATE "I certify that this plan for erosion and sediment control represents a practical and workabl plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District." 4-18-01 fure of Engineer EARL D COLLINS

DEVELOPER'S CERTIFICATE *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." Michael

mearer. 4/18/01 Signature of Developer MICHAEL SHEARER



BUILDER/CONTRACT PURCHASER <u>OWNER/DEVELOPER</u> WAVERLY WOODS DEVELOPMENT CORP. RYAN HOMES C/O LAND DESIGN AND DEVELOPMENT CORP. 11460 CRONRIDGE DRIVE 8000 MAIN STREET SUITE 128 OWINGS MILL, MD 21117 ELLICOTT CITY, MD 21043



SEWER CODE

5993000

SEDIMENT EROSION CONTROL PLAN

GTW'S WAVERLY WOODS SECTION 12

LOTS 30 THRU 47 AND 49 THRU 77

A SUBDIVISION OF PART OF THE PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36) ZONED: R-SA-8

TAX MAP No: 16 PART OF PARCEL: 20 THIRD ELECTION DISTRICT. HOWARD COUNTY, MARYLAND DATE: SEPTEMBER, 2000 SCALE: NO SCALE SHEET 3 OF 3