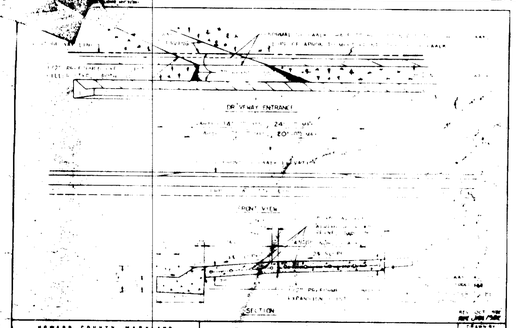
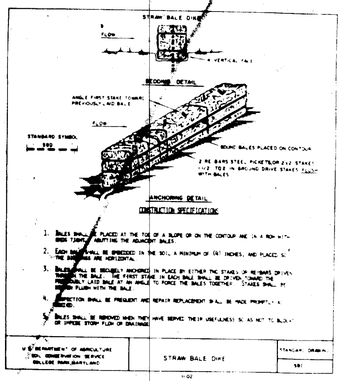


HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: Chief Bureau of Engr. Date

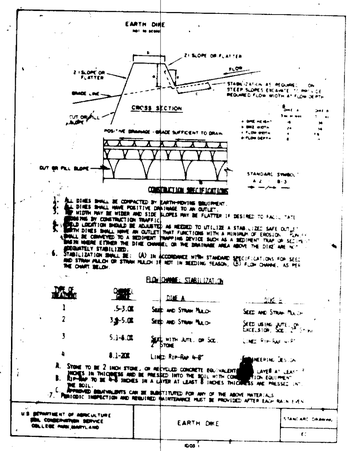
RESIDENTIAL DRIVEWAY ENTRANCE
CLOSED SECTION WITH MODIFIED COMBINATION CURB AND GUTTER AND SIDEWALK



CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR ARC IN A NON-WATER TIGHT FASHION BUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF FOUR INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUS BALE. LAST BALE IN AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR DIVERT STORM FLOW OR DRAINAGE.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND
STRAW BALE DIKE
STANDARD DRAWING
1-82



CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTHMOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. THE WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABLE, SAFE OUTLET. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF ENGULFMENT AND SHALL BE CONNECTED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN. DIKES MAY OUTLET INTO STONE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE ADEQUATELY STABILIZED.
5. STABILIZATION SHALL BE CARRIED OUT IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN GROWING SEASON, OF FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

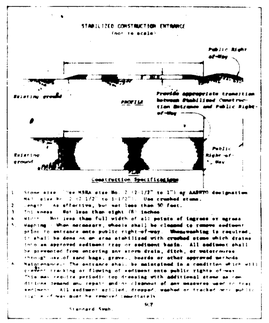
TYPE OF MATERIAL	CHANNEL GRADE	ZONE A	ZONE B
1	0-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.0-5.0%	SEED AND STRAW MULCH	SEED USING APPL. OF EXCELSIOR TYPE
3	5.0-10.0%	SEED WITH APPL. OF SOD STONE	SEED WITH APPL. OF STONE
4	8.0-20%	LINED RIP-RAP 6-8"	LINED RIP-RAP 6-8"

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, LAYER AT LEAST 2 INCHES IN THICKNESS AND MUST BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 6-8 INCHES IN A LAYER AT LEAST 2 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
D. PERIODIC INSPECTION AND REPAIRED MAINTENANCE MUST BE PROVIDED AFTER EACH MAJOR STORM.

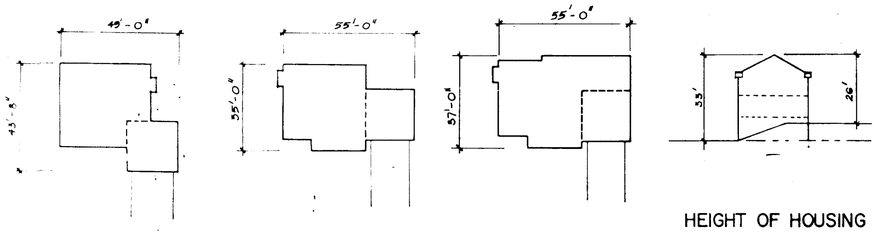
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND
EARTH DIKE
STANDARD DRAWING
6-81

SEDIMENT CONTROL NOTES

1. All erosion and sediment control measures are to be constructed and maintained in accordance with applicable publication Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas.
2. All points of construction ingress and egress will be protected to prevent transfer of mud onto public ways.
3. A grading permit will be obtained from the Department of Public Works prior to start of any earthwork, construction, etc., on dedicated street rights-of-way.
4. Construction or installation of all temporary sediment control measures shall be prior to initial grading.
5. All grading and/or seeding and mulching is to be done concurrently with fine grading and in accordance with "Critical Area Stabilization" Specification (Sees. 51 through 55.01 of Standards and Specifications, etc.
6. Prior to any earthwork, may be made to accomplish intended purpose.
7. All temporary diversion dikes are to be temporarily stabilized as per Page [illegible] Standards and Specifications, etc., immediately after grading.
8. No material to be left on rough piles throughout period of construction and shall be graded prior to fine grading.
9. Continuous inspection and maintenance of all sediment control structures must be provided to insure intended purpose is accomplished. Devices are to remain until drainage area is stabilized permanently.
10. After removal of temporary sediment structures, the disturbed area must be permanently stabilized per Page 51.01 of Standards and Specifications, etc.
11. Sediment traps are to be constructed upon within 30 days following initial grading shall be temporarily stabilized per Page [illegible] of Standards and Specifications
12. Developer shall protect all adjacent property from damage or disturbance.
13. No sediment control structures will be removed without permission from the sediment control inspector from the Prince George's County Department of Licenses and Permits.
14. Seeding Specification for Unseived Areas:
   a. Agricultural limestone spread @ 50# per 1000 s.f.
   b. Commercial fertilizer (10-10-10) spread @ 25# per 1000 s.f. shall be mixed with top 4" of top soil.
   c. Seed shall be 100% Kentucky No. 31 Fescue spread @ 5# per 1000 s.f.
   d. Mulch: straw (2T) be mulched with straw at the rate of 2 tons per acre and tied down with liquid asphalt at the rate of 0.11 gal. per sq. yd.
15. All straw bales used on project shall be baled with non-weathering materials and shall be of the same approximate size: 14" x 18" x 36". Drive stakes flush with bales for safety.
16. No clearing, grubbing or grading shall be done until temporary dams and berms are constructed and stabilized.
17. Spoil to be disposed of in an area approved by the appropriate soil conservation district.
18. Diversion dikes are to be constructed at end of each day's operations in areas specified by the engineer. Diverted runoff will be directed into existing sediment traps around inlets or to outfall chutes when specified on plan.
19. The contractor will provide temporary swales and berms to direct runoff into traps. All sediment devices will become property of contractor at end of project.
20. The developer is responsible for the acquisition of all required easements, rights, and/or rights-of-way pursuant to the discharge from the sediment and erosion control practices, storm water management practices and the discharge of storm water onto or across and grading or other work to be performed on adjacent or downstream properties affected by this plan.
21. All areas shall be permanently stabilized when site development work, grading and/or other related construction-related activities, cease for continuous or ongoing for periods exceeding 45 days. These disturbed areas shall be stabilized in accordance with the Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas. The inplace sediment control measures shall be maintained on a continuing basis until the site is permanently stabilized and all permit requirements are met.
22. Following initial disturbance or stabilization period, permanent or temporary stabilization shall be completed within [illegible] days as per [illegible] Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas. Any slopes greater than 3:1 shall be stabilized with erosion control matting.
23. Excavated cut & fill slopes shall be no steeper than 2:1.



TYPICAL MODELS
SCALE: 1"=50'

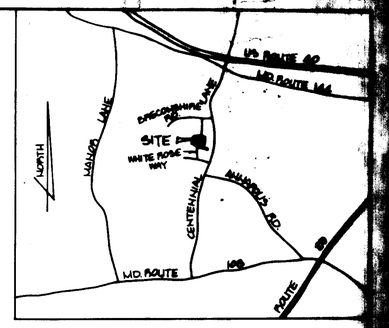


MODEL 504
THE HUNTINGTON

MODEL 505
THE SURREYWOOD

MODEL 505 II

HEIGHT OF HOUSING STRUCTURE for 504, 505 & 505 II

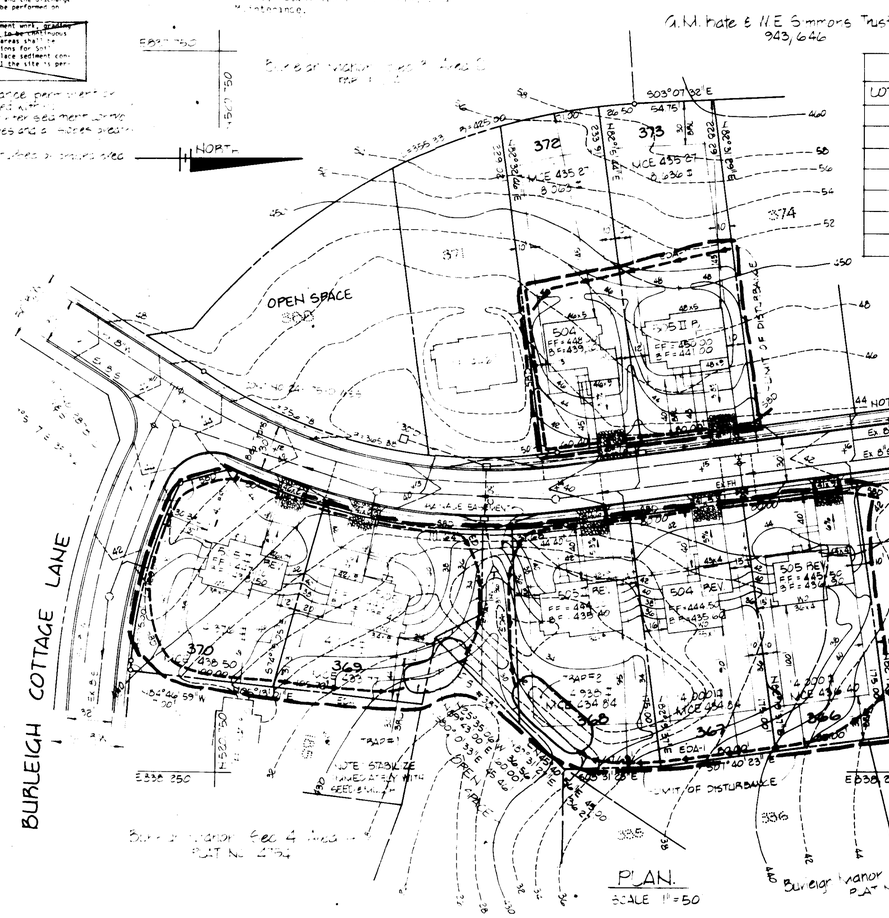


VICINITY MAP
Scale: 1" = 1/2 mile

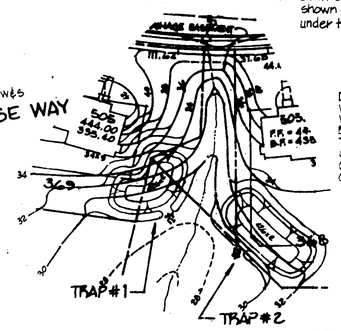
SUBDIVISION NAME			SEC./AREA	LOT/PARCEL #
BURLEIGH MANOR			4/5	366, 367, 368, 369, 370, 372, 373
PLAT # OR L.F.	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
5808 & 5809	13	R-20	24	2ND.	6023.01
WATER CODE		SEWER CODE			
J01		5841600			

General Notes

1. All roadways existing and public.
2. Any damage to county-owned rights of way will be corrected at developer's expense.
3. Legend
   ------444 Existing contour
   ——444 Proposed contour
   x44.2 Spot elevation
   → Direction of drainage
   E.D. Proposed Earth Dike
   S.R.D. Proposed Straw Bale Dike
   S.C.E. Proposed Stabilized Construction Entrance
4. Site Analysis
   Existing Zoning R-20
   No. of lots 7
   Area of lots 108,067 sq. ft. = 2.480 Ac.
   Area to be paved 6,080 sq. ft. = 0.14 Ac.
   Area to be roofed 14,100 sq. ft. = 0.32 Ac.
   Area to be seeded 30,056 sq. ft. = 0.69 Ac.
   Area to be undisturbed 57,998 sq. ft. = 1.15 Ac.
5. Construction Sequence
   a. Obtain grading and building permits.
   b. Install sediment control measures.
   c. Excavate for foundation and rough grade site.
   d. Construct house
   e. Fine grade and stabilize.
   f. Obtain permission for removal of sediment control measures.
6. Tax Map 24
7. Deed Reference: 943/687
8. Erosion and Sediment Control approved and existing under plan - F-84-87
9. Limit of submission shall be the lot lines. All other grading shown as proposed shall be considered completed under the F-84-87 construction plans.



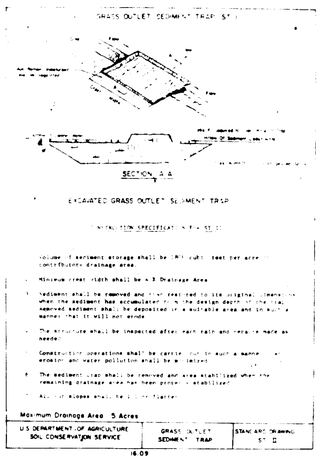
ADDRESS CHART		
LOT NUMBER	STREET ADDRESS	
366	3927	WHITE ROSE WAY
367	3931	" " "
368	3935	" " "
369	3939	" " "
370	3943	" " "
372	3938	" " "
373	3934	" " "



	TRAP #1	TRAP #2
D.A.:	0.61 Ac±	1.00
Vol. Req.:	1099	1800
Vol. Provided:	1800	1875
Bottom Elev.:	426.0	426.0
Top of Crest Elev.:	430.0	430.0
Crest Width:	2.4'	4'
Outlet Elev.:	429.0	429.0
Clean Out Elev.:	427.5	427.5

ADD OUTLET SEDIMENT TRAP PRIOR TO GRADING

OWNER AND DEVELOPER
COSTAIN, INC.
RESIDENTIAL BUILDERS
SUITE 1800
THE EQUITABLE BANK CENTER
COLUMBIA, MD. 21044
(301) 465-0141



EXCAVATED GRASS OUTLET SEDIMENT TRAP

CONSTRUCTION SPECIFICATIONS

Volume of sediment storage shall be [illegible] cubic feet per acre contributing drainage area.

Minimum crest width shall be 4.3 Drainage Area

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

The structure shall be inspected after each rain and repairs made as needed.

Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.

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

Maximum slopes shall be 2:1 (horizontal:1 vertical)

Maximum Drainage Area: 5 Acres

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
GRASS OUTLET SEDIMENT TRAP
STANDARD DRAWING
5-81

APPROVED
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 12-26-84

DESIGNED BLJ	SITE DEVELOPMENT PLAN & SEDIMENT CONTROL	
DRAWN BLJ	LOTS #366, 367, 368, 369, 370, 372, 373	
CHECKED	BURLEIGH MANOR	
	SECTION 4 AREA 5 PLAT # 5808 & 5809	
DATE 11-19-84	HOWARD COUNTY MARYLAND	
	2ND ELECTION DISTRICT	

Approved: For public water and public sewerage systems, Howard County Health Department

Chief, Health Officer — 1-16-85 Date

Approved: Howard County Office Of Planning And Zoning

Planning Director — 1-18-85 Date

Chief, Division Of Land Development And Zoning Administration — 1-18-85 Date

Approved: For public water and public sewerage, storm drainage systems and public roads, Howard County Department Of Public Works

Director — 1-14-85 Date

Chief, Bureau Of Engineering — 1-14-85 Date

Reviewed for Howard S.C.D. and meets technical requirements.

Signature — 1-10-85 Date
U.S. Soil Conservation Service

This development plan is approved for soil erosion and sediment control by The Howard Soil Conservation District.

Approved: Howard S.C.D. — 1/10/85 Date

Engineer's Certificate

I hereby 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.

Rodolph D. May, Jr. — Date

DEVELOPER'S CERTIFICATE

I/We certified that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personel involved in the construction project will have a certificate of attendance at a Dept. Of Natural Resources 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 or their authorized agents, as are deemed necessary

Robert D. Luckett — 11/6/84
Signature Of Developer — Date

EVANS, HAGAN & HOLDEFER, INC.

DATE	REVISION	BY

SURVEYED BY
COMPUTED BY
DRAWN BY
CHECKED BY
Drwg. No.

STATE OF MARYLAND — RODOLPH L. MAY, JR. — No. 8101 — REGISTERED PROFESSIONAL ENGINEER

ENGINEERS, LAND PLANNERS & SURVEYORS
811 GREY STONE RD. SUITE 204, LAUREL
(301) 725-0333
500 POPLAR STREET / BALTIMORE, MD. 21202
111 JONES STREET / BALTIMORE, MD. 21202
2012 MILLER ROAD / DALTONVILLE, VA. 24530

Rodolph May, Jr.
DATE

STANDARD AND SPECIFICATIONS
FOR
VEGETATIVE STABILIZATION
TEMPORARY SEEDING

SPECIFICATIONS

I. Site Preparation

A. Prior to seeding, install needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, and sediment basins.

B. Final grading and shaping has usually not been completed for temporary seedings.

II. Soil Amendments

For temporary seedings, fertilizer shall be applied at the rate of 600 lbs/ac. or 13 lbs/1,000 sq. ft., using 10-10-10 or equivalent. Seeds which are highly acid should be limed.

III. Seedbed Preparation

When the area to be seeded has been recently loosened to the extent that an adequate seedbed exists, no additional treatment is required.

However, when the area to be seeded is packed, crusted, and hard, the top layer of soil shall be loosened by disking, raking or other acceptable means prior to seeding.

IV. Seeding

A. Select a mixture from Table 30-1

B. Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder or hydroseeder (slurry includes seed and fertilizer)

V. Mulching

Some seedings are made in critical areas or under severe soil conditions. Mulch material will be applied immediately after seeding. Seedings made during optimum seeding dates and with favorable soils on very flat areas may not need to be mulched. Mulch materials are listed in order of their effectiveness.

A. Materials and Amounts

1. Mulch mattings - such as jute or excelsior blanket shall be stapled to the surface in waterways and on steep slopes. Lighter materials of paper, plastic and cotton mulch mattings may be used where erosion hazard is not severe. If the area is to be mowed, do not use metal staples.

2. Straw - Material shall be unrotted small grain straw applied at the rate of 1½ to 2 tons per acre, or 70 to 90 (two bales) pounds per 1,000 sq. ft. Mulch materials shall be relatively free of all kinds of weeds and shall be free of prohibited noxious weeds such as: thistles, Johnsongrass and quackgrass.

Spread uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 sq. ft. section and place 70-90 lbs. of mulch in each section.

Wood chips - at the rate of approximately 6 tons per acre or 275 pounds per 1,000 square feet may be used when available and when feasible to use.

4. Wood cellulose fiber - mulch at the rate of 1,500 pounds per acre or 35 pounds per 1,000 sq. ft. may be applied by hydroseeding.

B. Mulch anchoring shall be accomplished immediately after mulch placement 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, erosion hazard, and cost. On sloping land, practice No. 1 below, should be done on the contour wherever possible.

1. Mulch Anchoring Tool and Tracking - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the surface 2 inches of soil. This practice affords maximum erosion control but is limited to flatter slopes where equipment can operate safely. Tracking is primarily used on sloping land. On sloping land, practice No. 1 below, should be done on the contour wherever possible, except "tracking" should be done up and down the slope with 1½ inch cleat marks running across the slope.

2. Mulch Nettings - Staple lightweight biodegradable paper, plastic or cotton nettings over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4-feet wide and up to 300-feet long.

3. Liquid Mulch Binders - Applications of liquid binders should be heavier at edges where wind catches mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance. Caution should be used with asphalt in residential and similar areas.

a. Cutback asphalt - rapid curing (RC-70, RC-250, and RC-800) or medium curing (MC-250 or MC-800). Apply 5 gallons per 1,000 square feet or 200 gallons per acre on flat areas and on slopes less than 8 feet high. On slopes 8 feet or more high, use 8 gallons per 1,000 square feet or 348 gallons per acre.

b. Emulsified asphalt - (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, and CRS-2). Apply 5 gallons per 1,000 square feet or 200 gallons per acre on flat areas and on slopes less than 8 feet high. On slopes 8 feet or more high, use 8 gallons per 1,000 square feet or 348 gallons per acre.

All asphalt designations are from the Asphalt Institute Specifications.

c. Synthetic binders - Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset or Terra Tac II or Terra Tack AF may be used at rates recommended by the manufacturer to anchor mulch material.

4. Wood cellulose fiber - 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.

c. Synthetic binders - Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset or Terra Tack may be used at rates recommended by the manufacturer to anchor mulch material.

- Wood cellulose fiber - 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.

Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products.

TABLE 30-1

Temporary Seedings by Rates, Depths and Dates

Species 1/	Seeding Rate: Per Acre	Seeding Rate: Lbs/1000 (Inches) Sq. Ft.	Plg. Ring Depth 2/	Seeding Dates 3/: COASTAL PLAIN 2/1-4/30	COASTAL PLAIN 5/1-8/14	COASTAL PLAIN 8/15-10/31	PIEDMONT 3/1-4/30	PIEDMONT 5/1-8/14	PIEDMONT 8/15-11/15	MOUNTAINS 3/1-4/30	MOUNTAINS 5/1-8/14	MOUNTAINS 8/15-10/31
Choose one:				5/			5/					
Barley	2½ bu.	2.8	1-2	x	-	By 10/15	x	-	By 10/15	x	-	By 10/1
Oats	3 bu.	3.2	1-2	x	-	-	x	-	-	x	-	-
Rye	2½ bu.	3.2	1-2	x	-	x	x	-	x	x	-	x
Tall or perennial ryegrass 1/	40 lbs.	.92	½-	x	- By 11/1		x	- By 11/1		x	- By 8/15	
Millet	40 lbs.	.92	½-1	-	x	-	-	x	-	-	x	-
Weeping, Boer, or Lehmann's lovegrass	3 lbs.	.07	½-¼	-	x	-	-	x	-	-	x	-
Bufflegrass 1/	40 lbs.	.92	1-2	-	x	-	-	x	-	-	x	-

1/ Use only on areas where seed stalks and volunteer growth are acceptable.
2/ Applicable on slopes 3:1 or less.
3/ Use varieties currently recommended for Maryland. Use certified seed when available.
4/ Use common sudangrass varieties only. Do not use hybrids.
5/ Twenty pounds per acre of annual lespedeza may be added to the seeding rate of any species used for seedings.
6/ Between fall and spring seeding dates, use mulching only or sodding practices.
x Applicable during entire period.
- Not applicable in period.

STANDARD AND SPECIFICATIONS
FOR
VEGETATIVE STABILIZATION
PERMANENT SEEDINGS

SPECIFICATIONS

Vegetation cannot be expected to provide an erosion control cover and prevent soil slippage on a soil that is not stable due to its texture, structure, water movement or exceedingly steep slopes.

Minimum soil conditions needed for the establishment and maintenance of a functional vegetative cover:

A. Enough fine-grained materials (over 30 percent silt plus clay) to provide the capacity to hold at least a moderate amount of available moisture. Noticeable exception was the planting lovegrass and serenia lespedeza which can be planted on a sandy soil.

B. Sufficient pore space to permit adequate root penetration.

C. The soil shall be free from any material harmful to plant growth.

D. If these conditions cannot be met see specification 7-spoiling (57.01).

I. Site Preparation

A. Install needed erosion and sediment control practices such as dikes, contour ripping, erosion stops, channel liners, sediment basins, or other practices.

B. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, anchoring and maintenance.

II. Soil Amendments

Lime and fertilize according to soil tests. Lime and fertilizer needs can be determined by a soil testing laboratory, such as the University of Maryland's Soil Testing Laboratory.

In lieu of soil test results, apply two tons dolomitic limestone per acre and one of the following rates of fertilizer: 1,000 pounds 10-10-10 or equivalent per acre. For a longer lasting fertilizer treatment apply 2000 pounds 10-10-10 or equivalent per acre and disk in and at time of seeding apply an additional 800 pounds of a urea-form fertilizer of a grade of at least 30-0-0 per acre. Apply the lime and fertilizer before tilling and harrow or disk uniformly into the soil to a minimum depth of 3 inches on Whipps fletter than 3:1. On slopes steeper than 3:1 grade, the lime and fertilizer shall be worked the best way possible. On sloping land, the final harrowing or discing operation should be on the contour wherever feasible. No attempt should be made to drag any disked strips to make the soil surface smooth after disking.

Note: The slow release urea-form fertilizer will supply nitrogen over a longer period of time.

IV. Seeding

A. Select a mixture from table 31-1.

B. Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder or hydroseeder (slurry includes seed and fertilizer) on a firm, prior seedbed. Maximum seeding depth should be 1/4 inch on clayey soils and 1/2 inch on sandy soils, when using other than hydroseeder method of application. Note: If hydroseeding is used and the seed and fertilizer is mixed, they will be mixed on site and the seeding shall be immediate without interruption.

V. Mulching

Mulch materials are listed in order of their effectiveness. Mulch mattings are normally only used on critical areas such as waterways or steep slopes.

A. Materials and Amounts

1. Mulch mattings - such as jute or excelsior blanket shall be stapled to the surface in waterways and on steep slopes. Lighter materials of paper, plastic and cotton mulch mattings may be used where erosion hazard is not severe. If the area is to be mowed, do not use metal staples.

2. Straw - Straw shall be unrotted small grain applied at the rate of 1½ to 2 tons per acre, or 70 to 90 (two bales) pounds per 1,000 square feet. Mulch materials shall be relatively free of all kinds of weeds and shall be free of prohibited noxious weeds such as: thistles, Johnsongrass and quackgrass.

Spread uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 square feet section and place 70-90 pounds of mulch in each section.

3. Wood chips - at the rate of approximately 6 tons per acre or 275 pounds per 1,000 square feet may be used when available and when feasible. These are particularly well-suited for utility and road rights-of-way. If wood chips are used, increase the application rate of nitrogen fertilizer by 20 pounds (200 pounds 10-10-10 or 66 pounds 30-0-0).

4. Wood cellulose fiber - mulch at the rate of 1,500 pounds per acre or 35 pounds per 1,000 square feet may be applied by hydroseeding.

B. Mulch anchoring shall be accomplished immediately after mulch placement 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, erosion hazard, and cost. On sloping land, practice No. 1 below, should be done on the contour wherever possible. Contouring of all operations applies to all straw and wood chip practices on more critical sites, except "tracking" should be done up and down the slope with 1½ inch cleat marks running across the slope.

1. Mulch Anchoring Tool and Tracking - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the surface 2 inches of soil. This practice affords maximum erosion control but is limited to flatter slopes where equipment can operate safely. "Tracking" is primarily used on hill or steeper cut and fill slopes to cut the mulch into the soil by the tracks cleats of a bulldozer moving grooves across the slope

2. Mulch Nettings - Staple lightweight biodegradable paper, plastic or cotton nettings over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4-feet wide and up to 300 feet long.

3. Liquid Mulch Binders - Applications of liquid binders should be heavier at edges where wind catches mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance. Caution should be used with asphalt in residential and similar areas.

a. Cutback asphalt - rapid curing (RC-70, RC-250, and RC-800) or medium curing (MC-250 or MC-800). Apply 5 gallons per 1,000 square feet or 200 gallons per acre on flat areas and on slopes less than 8 feet high. On slopes 8 feet or more high, use 8 gallons per 1,000 square feet or 348 gallons per acre.

b. Emulsified asphalt - (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, and CRS-2). Apply 5 gallons per 1,000 square feet or 200 gallons per acre on flat areas and on slopes less than 8 feet high. On slopes 8 feet or more high, use 8 gallons per 1,000 square feet or 348 gallons per acre.

All asphalt designations are from the Asphalt Institute Specifications.

c. Synthetic binders - Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset or Terra Tac II or Terra Tack AF may be used at rates recommended by the manufacturer to anchor mulch material.

4. Wood cellulose fiber - 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.

5. Peg and Twine - Drive 8-to 10-inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross within a square pattern. Secure twine around each peg with two or more complete turns.

Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products.

VI. Irrigation

If soil moisture is deficient, supply new seedings with adequate water for plant growth until they are firmly established, if feasible. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

VII. Maintenance

Maintenance is a vital factor in maintaining an adequate vegetative erosion control cover.

A. Irrigation - If soil moisture becomes deficient, irrigate to prevent loss of stand of protective vegetation, if feasible.

B. Repair - Inspect all seeded areas for failures and make necessary repairs, replacements, and reseedings within the planting season, if possible.

1. If stand is inadequate for erosion control, overseed and fertilize using half of the rates originally applied.

2. If stand is over 40% damaged, reestablish following original lime, fertilizer, seedbed preparation and seeding recommendations.

References:

1. Lawn Care in Maryland, Bulletin 171; Cooperative Extension Service, University of Maryland, College Park, Maryland.

2. Maryland Agronomy Memo #72.

3. Maryland Highway Administration Specifications for Materials.

4. USDA-Soil Conservation Service Field Office Technical Guides.

Note: Maryland Department of Water Resources has developed an audio-visual training program, "Plant Materials and Vegetative Soil Stabilization," which relates to this practice.

Table 31-1
Permanent Seeding and Seeding Dates

Seeding Mixtures	Seeding Rates: Lbs/1000 Acre	Lbs/1000 Sq. Ft.	Seeding Dates: COASTAL PLAIN 2/1-4/30	COASTAL PLAIN 5/1-8/14	COASTAL PLAIN 8/15-10/31	PIEDMONT 3/1-4/30	PIEDMONT 5/1-8/14	PIEDMONT 8/15-11/15	MOUNTAINS 3/1-4/30	MOUNTAINS 5/1-8/14	MOUNTAINS 8/15-10/31
1/ Tall fescue (not to be used with other varieties)	60	1.38	x	x	x	x	x	x	x	x	x
Fescue 31: Tall Fescue*	60	1.38	x	x	x	x	x	x	x	x	x
Kentucky 31: Tall Fescue*	60	1.38									
Fox: Lancaster											
Weeping Lovegrass	2	.05									
2/ Kentucky 31: Tall Fescue*	40	.92	x	x	x	x	x	x	x	x	x
Browse: Ironweed (Vernonia fasciculata)	2	.05									
3/ Kentucky 31: Tall Fescue*	40	.92	x	x	x	x	x	x	x	x	x
Lespedeza (Lespedeza cuneata)	20	.46									
Lespedeza (Lespedeza bicolor)	10	.23									
4/ Kentucky 31: Tall Fescue*	40	.92	x	x	x	x	x	x	x	x	x
Bicolor lespedeza (Lespedeza bicolor)	10	.23									
Serecea lespedeza (Lespedeza cuneata)	10	.23									
Orchardgrass	10	.23									
5/ Kentucky 31: Tall Fescue*	40	.92	x	x	x	x	x	x	x	x	x
Orchardgrass	10	.23									
Ladino clover	2	.05									
6/ Kentucky 31: Tall Fescue*	40	.92	x	x	x	x	x	x	x	x	x
Orchardgrass	10	.23									
Red clover	5	.11									
7/ Weeping lovegrass	2	.05	x	x	x	x	x	x	x	x	x
Browse: Ironweed (Vernonia fasciculata)	2	.05									
Fragile Prairie Grass											
8/ Kentucky 31: Tall Fescue*	40	.92	x	x	x	x	x	x	x	x	x
9/ Wood rye	15	.35									
Wheat											
10/ Kentucky 31: Tall Fescue*	40	1.38	x	x	x	x	x	x	x	x	x
11/ Red Fescue (Jamestown) or Chewings	40	.92	x	x	x	x	x	x	x	x	x
Lawns & High Maintenance Areas											
12/ Fescue: Pixie, Pennlawn, Fawnlawn, Falsdawn, Merion, Delta, Baron; Bluegrass: Adelphi, Merion, Park, Nugreen; Red Fescue: Jamestown or Chewings	50	1.2									
13/ Kentucky 31: Tall Fescue*(1)	140	3.2	x	x	x	x(2)	x	x	x	x(2)	x
	140	3.2	x	x	x	x(2)	x	x	x	x(2)	x

*Non Certified Seed Only
*Mixes three (3) varieties at 35 lbs. each or under the 50 lb. rate

Footnotes - Table 31-1

Permanent Seedings and Seeding Dates (Cont'd)

(a) Use Weeping lovegrass to provide a stand of grass for erosion control during summer.

(b) Use hulless seed.

(c) Preferable to seed in fall with seed from current year's crop.

(d) Mixtures 1,3,4,5,6,7,8,10,11,12,13 and 14 may be seeded during winter months in an emergency if 2 tons per acre of a well-anchored mulch is used.

(e) Approved State Highway Administration Mixtures.

(f) Can be seeded during this period if irrigation water is used. Use 2 tons per acre of well-anchored straw mulch.

(g) Can use 10 percent Kentucky bluegrass. (MD AGRON MEMO #72).

(h) Leguminous Seeds - All leguminous seeds shall be inoculated or treated with unexpired approved culture for the specific legume in the proper proportions as specified on the package label. The inoculant shall be stored at room temperatures, out of direct sunlight and away from heating units. When seeding dry with mechanical seeders, the following method of mixing the inoculant with the seed shall be followed. The culture in powder form is preferred and shall be thoroughly mixed with the seed by using a very small quantity of water; just enough to dampen the seeds before the culture is powdered on. The leguminous seed is then mixed with the other seeds of the formula. Seeds inoculated with the liquid culture shall be sown within 24 hours after treatment. Inoculated seed not sown within these time periods shall be reinoculated. Inoculant and seed treated with inoculant shall not be exposed to sunlight for more than one hour prior to seeding. When seed is applied by hydraulic seeders, 10 times the quantity of inoculant recommended for dry leguminous seed application shall be used. Inoculated seed shall not be held in a slurry with fertilizer for more than one hour, otherwise reinoculation will be required before applying the seed.

Name: (1) Scientific names of these plants are in Appendix B-1.02.

APPROVED: For Public Water and Public Sewerage Systems, Howard County Health Department

Officer, Health Officer — Date 1-18-85

APPROVED: Howard County Department of Planning and Zoning.

Planning Director — Date 1-18-85

Chief, Division of Land Development and Zoning Administration — Date 1-18-85

APPROVED: For Public Water and Public Sewerage, Storm Drainage Systems and Public Roads. Howard County Department of Public Works

Director — Date 1-18-85

Chief, Bureau of Engineering — Date 1-18-85

Reviewed for Howard (Name) S.C.D.

and meets Technical Requirements.

U.S. Soil Conservation Service — 1-10-85 Date

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

Howard S.C.D. — 1/10/85 Date

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project."

Signature of Developer — 11/21/84 Date

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.

Signature of Engineer — 11/21/84 Date

RODOLPH MAY JR.

GENERAL NOTES

1. Grading permits shall be obtained prior to installation of sediment control and grading.

2. All sediment and erosion control measures will be installed and stabilized preceding to any other grading, clearing or disturbance of the existing surface of the site. See note No. 6 for stabilization except that the seed mixture will be annual rye applied at a rate of 1.4 lb./ 1,000 s.f.

3. Notify the Bureau of Inspections and Permits at least 24 hours before starting any work.

4. All sediment control practices to conform to the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" and shall be adjusted to meet actual field conditions.

5. Stabilization of disturbed ground to be done as soon after construction as possible.

6. All structural sediment control measures are to remain in place until permission for there removal has been obtained from the Bureau of Inspections and Permits.

7. On-site inspection and maintenance of all sediment control measures including clean-out of sediment traps and dikes, and proper establishment of all planned vegetative measure will be the responsibility of the developer or his representative on the site, on a continuing day to day basis.

8. It will be the developer's responsibility to provide additional sediment and erosion control devices to protect stabilized areas during construction.

9. The contractor shall keep all public roads free of sediment deposits left from traffic leaving construction site.

~~10. Site Analysis:~~

~~A. Total Area: Acres~~

~~B. Area To Be Paved: Acres~~

~~C. Area To Be Seeded: Acres~~

~~D. Area Undisturbed: Acres~~

11. Any area not actively graded for a period of 30 days shall be stabilized.

APPROVED
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 12-26-84

DESIGNED	DETAIL SHEET
DRAWN	LOTS 9, 144, 145, 146, 270, 271, 272
CHECKED	BURLEIGH MANOR
DATE 11/19/84	HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

EVANS, HAGAN & HOLLEMAN, INC.

DATE	REVISION	BY

SURVEYED BY
COMPUTED BY
DRAWN BY
CHECKED BY

STATE OF MARYLAND — RODOLPH MAY JR. — REGISTERED PROFESSIONAL ENGINEER

ENGINEERS, LAND PLANNERS & SURVEYORS
10100 WEST STREET / LAUREL, MD 20707
(301) 725-0555