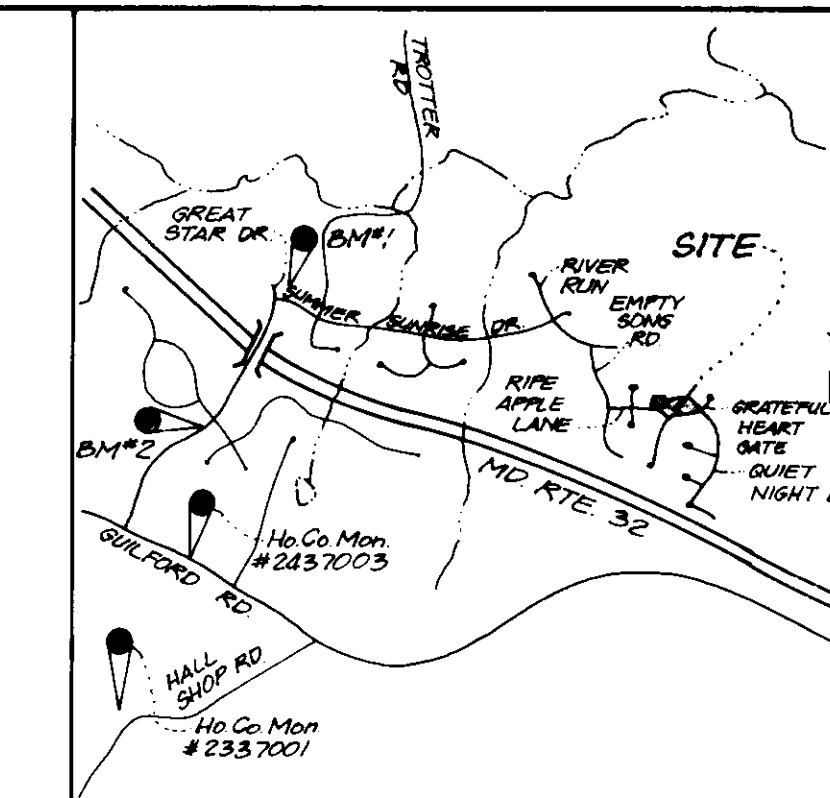


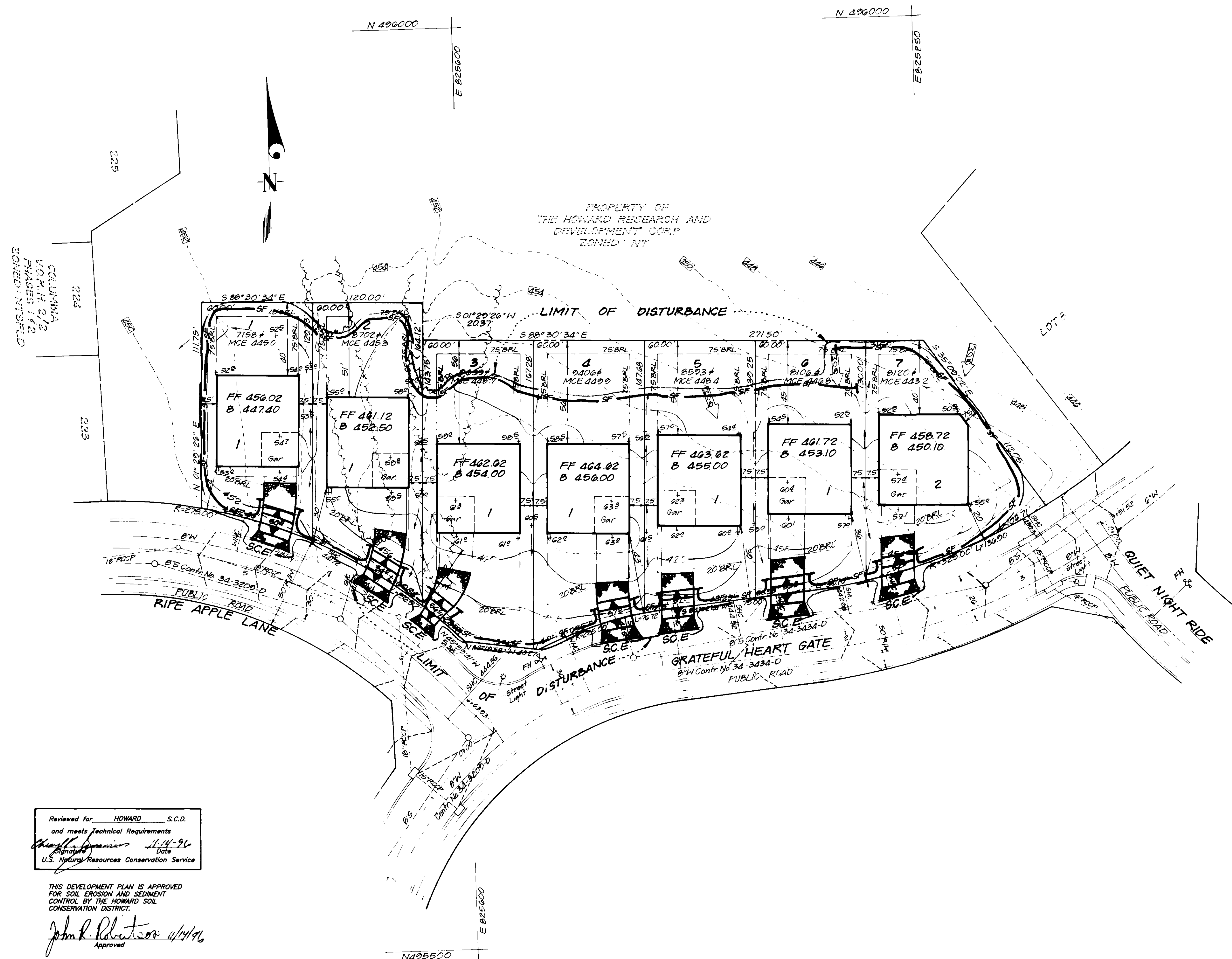


**LEGEND**

- CONTOUR INTERVAL
- EXISTING CONTOUR
- PROPOSED CONTOUR
- DIRECTION OF DRAINAGE
- WALK OUT BASEMENT
- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- EXISTING STORM DRAIN
- STABILIZED CONSTRUCTION ENTRANCE
- SILT FENCE
- LIMIT OF DISTURBED AREA
- TREE PROTECTION FENCE
- EXISTING TREES TO REMAIN



VICINITY MAP  
1" = 2000'



Reviewed for HOWARD S.C.D.  
and meets Technical Requirements  
*[Signature]* 11-14-96  
Date  
U.S. Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED  
FOR SOIL EROSION AND SEDIMENT  
CONTROL BY THE HOWARD SOIL  
CONSERVATION DISTRICT.  
*[Signature]* 11/14/96  
Approved

APPROVED: DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 11/19/96  
DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*[Signature]* 11/20/96  
DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH  
*[Signature]* 11/20/96  
DATE  
DIRECTOR

**DEVELOPER'S/BUILDER'S CERTIFICATE**

"I, We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all 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 or their authorized agents, as are deemed necessary."

*[Signature]* 11-5-96  
NAME DATE

**ENGINEER'S CERTIFICATE**

"I hereby certify that this plan for Sediment and Erosion 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."

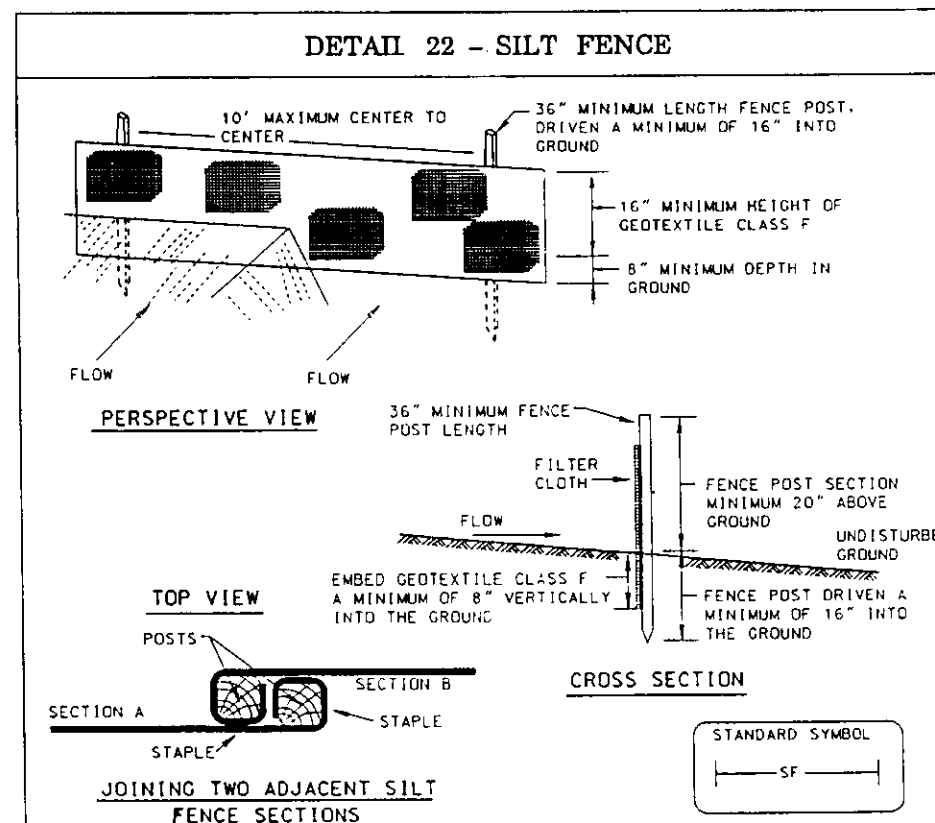
*[Signature]* 11-5-96  
G. NELSON CLARK DATE

SHEET INDEX	
DESCRIPTION	SHEET No.
SITE DEVELOPMENT PLAN	1 of 3
SEDIMENT AND EROSION CONTROL PLAN	2 and 3 of 3

**OWNER / DEVELOPER**  
THE HOWARD RESEARCH AND DEVELOPMENT CORP.  
10275 LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044

<b>CLARK • FINEROCK &amp; SACKETT, INC.</b> ENGINEERS • PLANNERS • SURVEYORS 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 (BALTO) • (301) 621-8100 (WASH)	
DESIGNED KIWM	SEDIMENT AND EROSION CONTROL PLAN LOTS 1 - 7 COLUMBIA VILLAGE OF RIVER HILL SECTION 2, AREA 6, PHASE 1 FIFTH (5th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND FOR: GOODIER BUILDERS, Inc. 5054 Dorsey Hall Drive, Suite 205 Ellicott City, Maryland 21042
DRAWN PS	SCALE 1" = 30' DRAWING 2 of 3
CHECKED 6-28	JOB NO 96-158
DATE 11/20/96	FILE NO 96-158





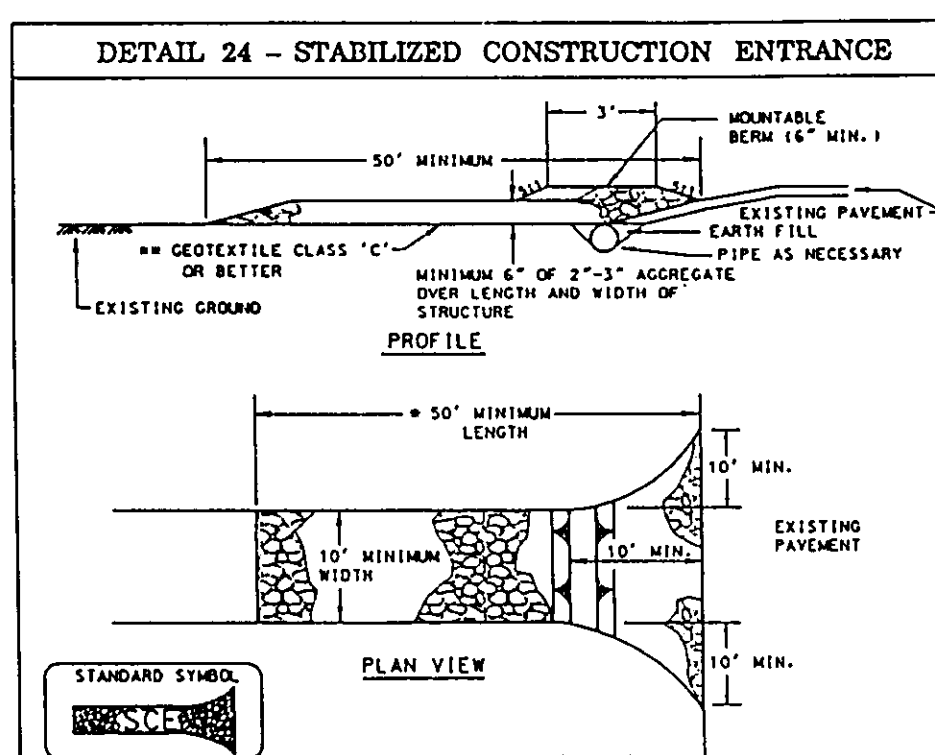
**Construction Specifications**

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum cut) or 1 1/2" diameter (minimum round) and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in. (min.)	Test: MMT 509
Tensile Modulus	20 lbs/in. (min.)	Test: MMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max.)	Test: MMT 322
Filtering Efficiency	75% (min.)	Test: MMT 322

- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when buttes occur or when sediment accumulates on reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT  
SOIL CONSERVATION SERVICE E-18-3 WATER MANAGEMENT ADMINISTRATION



**Construction Specification**

- Length - minimum of 50' x 30' for single residence lot.
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. *Note: The plan approval authority may not require single family residences to use geotextile.*
- Stone - crushed aggregate 1 1/2" to 3/4" or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable curb with 1 1/2" slope and a minimum of 5" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and 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.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT  
SOIL CONSERVATION SERVICE E-18-3 WATER MANAGEMENT ADMINISTRATION

**TEMPORARY SEEDING NOTES**

**SEEDBED PREPARATION:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

**SOIL AMENDMENTS:** Apply 800 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.).

**SEEDING:** For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushel per acre of annual ryegrass (3.2 lbs./1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.7 lbs./1000 sq.ft.). For the period November 1 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./1000 sq.ft.) of unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

**REFER TO THE 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.**

**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 loosened.

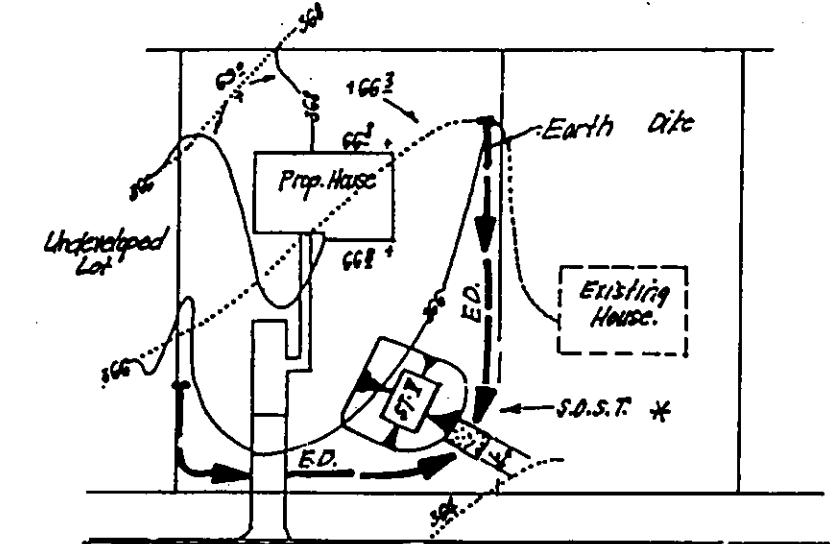
**SOIL AMENDMENTS:** In lieu of soil test recommendations, use one of the following schedules:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs./100 sq.ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (8 lbs./1000 sq.ft.)
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

**SEEDING:** For the periods March 1 thru April 30, and August 1 thru October 15, seed with 80 lbs. per acre (1.4 lbs./1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 80 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.5 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 80 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

**MULCHING:** Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

**MAINTENANCE:** Inspect all seeded areas and make needed repairs, replacements and reseedings.



**\* NOTE: Single lot detail can not be utilized if any two lots sharing common property lines are to be disturbed at the same time or on any lots sharing a sediment trap.**

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT  
SOIL CONSERVATION SERVICE E-18-3 WATER MANAGEMENT ADMINISTRATION

**21.0 STANDARDS AND SPECIFICATIONS**

**FOR TOPSOIL**

**Definition**  
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

**Purpose**  
To provide a suitable soil medium for vegetable growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**Conditions Where Practice Applies**

- This practice is limited to rears having 2:1 or flatter slopes where:
  - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
  - The original soil to be vegetated contains material toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.

**II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization, shown on the plans.**

**Construction and Material Specifications**

- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
  - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or a soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 and 1/2" in diameter.
  - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
  - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

**III. For sites having disturbed areas under 5 acres:**

- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

**V. Topsoil Application**

- When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.

**SEDIMENT AND EROSION CONTROL NOTES**

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1984 MARYLAND STANDARDS AND SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within:
  - 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1
  - 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeters in accordance with Vol. I, Chapter 7, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above, in accordance with the 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings, sod, temporary seeding and mulching (Sec. C). 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:	137.2c
Area Disturbed:	123.2c
Area to be seeded or paved:	0.55c
Area to be vegetatively stabilized:	0.75c
Total Cut:	218.0c
Total Fill:	118.0c
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.
- 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 disturbance or grading. Other building or grading inspection approvals may not be authorized until the initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.
- The total amount of silt fence = 1025 LF

**\* It is the responsibility of the contractor to identify the spoil/borrow site and notify and gain approval from the sediment control inspector of the site and its grading permit number at the time of construction.**

**CONSTRUCTION SEQUENCE:**

	NO. OF DAYS
1. Obtain grading permit.	7
2. Install free protection fence.	N/A
3. Install sediment and erosion control devices and stabilize.	14
4. Excavate for foundations, rough grade and temporarily stabilize.	30
5. Construct structures, sidewalks and driveways.	30
6. Final grade and stabilize in accordance with Specs. and Specs.	12
7. Upon approval of the sediment control inspector, remove sediment and erosion control devices and stabilize.	7

**APPROVED - DEPARTMENT OF PLANNING AND ZONING**

*[Signature]* 11/19/96  
Chief, Development Engineering Division

*[Signature]* 11/20/96  
Chief, Division of Land Development and Research

*[Signature]* 11/20/96  
Director

Reviewed for HOWARD S.C.D. and most Technical Requirements  
*[Signature]* 11/14/96  
Signature Date  
U.S. Natural Resources Conservation Service

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

*[Signature]* 11/14/96  
Approved

**DEVELOPER'S/BUILDER'S CERTIFICATE**

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*[Signature]* 11-5-96  
G. NELSON CLARK DATE



**CLARK • FINEFROCK & SACKETT, INC.**  
ENGINEERS • PLANNERS • SURVEYORS

DESIGNED: MJP  
DRAWN: PS  
CHECKED: JLB  
DATE: 9/26/96

**SEDIMENT AND EROSION CONTROL PLAN**  
LOTS 1 - 7  
**COLUMBIA**  
**VILLAGE OF RIVER HILL**  
SECTION 2, AREA 6, PHASE 1  
FIFTH (5th) ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

FOR: GOODIER BUILDERS, Inc.  
5054 Dorsey Hall Drive, Suite 205  
Ellicott City, Maryland 21042

SCALE: 1"=30'  
DRAWING: 3 of 3  
JOB NO: 96-158  
FILE NO: 96-158