

**CONSTRUCTION NOTES**

- No sediment and erosion control devices may be removed without prior approval from the Howard County Inspector.
- Stabilize any disturbed area as soon as possible by permanent or temporary means.
- All temporary stock piles and excess material shall be removed to an approved spoil site. All borrow material shall be obtained from an approved site.
- It shall be the responsibility of the contractor or subcontractor to notify the engineer of any deviation to these plans prior to any change being made. Any change in these plans without the written authorization for said change from the engineer shall be the responsibility of the contractor or subcontractor.
- Utilities shown on these plans are in accordance with the best information available for the contractor. The contractor shall be responsible for locating and protecting all existing services and mains (public or private). The contractor shall obtain the services of a private utility locator to locate all existing private services and mains. The owner and engineer assume no responsibility for accuracy or completeness of the information shown. Existing mains and services shall be carefully protected and any damage to them caused by the work shall be immediately repaired to the satisfaction of the engineer by the contractor at the contractor's expense, using materials of the kind damaged.
- The contractor shall call "MISS UTILITY", 1-800-257-7777, a minimum of 48 hours in advance of any excavation, boring, and/or digging to determine the location of underground utilities.
- The contractor shall grade all areas within the area of construction and shall warp paving as necessary to insure positive drainage.
- The Contractor shall be responsible for coordination of his construction with the construction by other contractors and subcontractors.
- All soil erosion control measures shall be in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Failure to specifically mention items which would normally be required to complete the work and develop this site in accordance with the approved plans shall not relieve the contractor from performing such work. This work shall be part of the contractor's base bid.

**SITE PLAN NOTES**

- All construction shall be in accordance with the latest standards and specifications of Howard County, plus MSHA standards and specifications, as applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "MISS UTILITY" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- The existing topography is taken from a field run topographic survey by Design Tech Associates dated January 2004.
- Traffic control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to any work being done in the public road.
- All plan dimensions are to edge of paving and face of building unless otherwise noted.
- The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County traverse Station nos. 31R1 and 37B4.
- Existing utilities are based on the approved subdivision drawings as supplemented by field surveys.
- Water is public, (contract no. 266-W).
- Sewer is public, (contract 10-1215). The Drainage Area is Little Patuxent.
- Water Quality storm water management for this project is provided by an on-site system. Water Quantity Management was provided by payment of a fee-in-lieu in the amount of \$3,000.00 with the record plat.
- There is no floodplain on this site.
- A noise study is not required for this project.
- The boundary for this project is based on the approved plat 15314 county file reference F-01-080.
- There are no wetlands on this site.
- Contractor is solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs.
- All pipe elevations shown are invert elevations.
- All fill areas within roadway and under structures to be compacted to a minimum of 95% compaction of AASHTO T160.
- No public notice posters are required since no roadway entrances are proposed, and no wetland mitigation areas are proposed.

**GENERAL NOTES**

- THE SUBJECT PROPERTY IS ZONED R-20 & IS SUBJECT TO THE NEW R-20 ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003.
- COORDINATES BASED ON NAD83, THE MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS No.31R1 AND No.37B4.
- B.R.L. DENOTES BUILDING RESTRICTION LINE.
- DEED REFERENCE: LIBER 4786 FOLIO 626 PLAT REFERENCE: No. 15314, COUNTY FILE REFERENCE No.: F-01-080; PLAT NO. 15, 418, COUNTY FILE REFERENCE F01-080.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND THE RIGHT-OF-WAY LINE AND NOT TO THE PIPESTEM LOT DRIVEWAY.
- COVENANTS GOVERNING THE USE-IN-COMMON DRIVEWAY MAINTENANCE RESPONSIBILITIES ARE RECORDED IN THE HOWARD COUNTY LAND RECORDS IN LIBER 6206, FOLIO 0001. THE DRIVEWAY WILL BE PRIVATELY MAINTAINED BY LOTS 1, 3 AND 4.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
  - WIDTH: 12 FT. (14 FT. SERVING MORE THAN ONE RESIDENCE).
  - SURFACE: 6 IN. OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING.
  - GEOMETRY: MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45 FT. TURNING RADIUS.
  - STRUCTURES: (CULVERTS AND BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS-H25 LOADING.
  - DRAINAGE ELEMENTS: CAPABLE OF SAFELY PASSING A 100 YEAR FLOOD-WITH NO MORE THAN ONE FT. DEPTH OVER DRIVEWAY SURFACE.
  - MAINTENANCE: SUFFICIENT TO INSURE ALL WEATHER USE.
- THIS PLAN IS BASED ON A FIELD-RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT JUNE 1999 BY DESIGN TECH ASSOCIATES, INC., AS SUPPLEMENTED IN JAN. 2004 FOR AS-BUILT CONDITIONS.
- THE AREAS SHOWN ON THIS PLAN ARE INDICATED (±) MORE OR LESS.
- WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER PROVISIONS OF SECTION 16.122 B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWAGE ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- PUBLIC WATER SERVICE WILL BE PROVIDED TO THESE LOTS BY HOUSE CONNECTIONS TO CONTRACT No. 266-W. PUBLIC SEWER SERVICE WILL BE PROVIDED TO THESE LOTS BY HOUSE CONNECTIONS TO CONTRACT No. 10-1215.
- WATER AND SEWER CONNECTIONS FOR LOT 4 SHALL BE COMPLETED IN ACCORDANCE WITH THE LAYOUT AS SHOWN ON THE SUPPLEMENTAL PLAN (AS SHOWN HEREON).
- THERE ARE NO WETLANDS ON SITE AND THE PROPERTY IS NOT LOCATED WITHIN THE 100-YEAR FLOODPLAIN.
- A FEE-IN-LIEU OF OPEN SPACE WAS PROVIDED FOR LOT 4 IN THE AMOUNT OF \$1,500.00 UNDER F-01-080.
- A FEE-IN-LIEU OF STORMWATER QUANTITY MANAGEMENT WAS PROVIDED IN THE AMOUNT OF \$ 3,000.00.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED THIRTEEN (13) SHADE TREES AND TWO (2) EVERGREEN TREES IN THE AMOUNT OF \$ 4,200.00 SHALL BE POSTED AS PART OF THE BUILDER'S GRADING PERMIT APPLICATION FOR LOT 4.
- THIS PLAN COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY PAYMENT OF \$ 10,236.60 AS A FEE-IN-LIEU TO THE HOWARD COUNTY FOREST CONSERVATION FUND FOR THE OBLIGATIONS INCURRED BY THIS SUBDIVISION- 20,473.2 SQUARE FEET OF REFORESTATION UNDER F01-080.
- THIS PLAN IS SUBJECT TO THE AMENDED 5TH EDITION OF THE SUBDIVISION & LAND DEVELOPMENT REGULATIONS & THE ZONING REGULATIONS AS AMENDED UNDER COUNCIL BILL # 75-2003.
- IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY REGULATIONS, RAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACKS.
- DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACKS AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.

# SITE DEVELOPMENT PLAN

## FOR

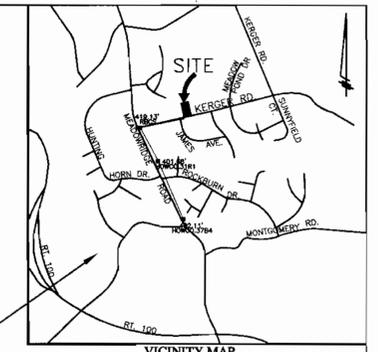
# JAMES HARRIS SUBDIVISION LOT 4

## 5432 KERGER ROAD

## 1st ELECTION DISTRICT

# HOWARD COUNTY, MARYLAND

BENCHMARK LOCATION & ELEVATION. INFO PROVIDED HEREIN & IN SITE PLAN NOTE 7.

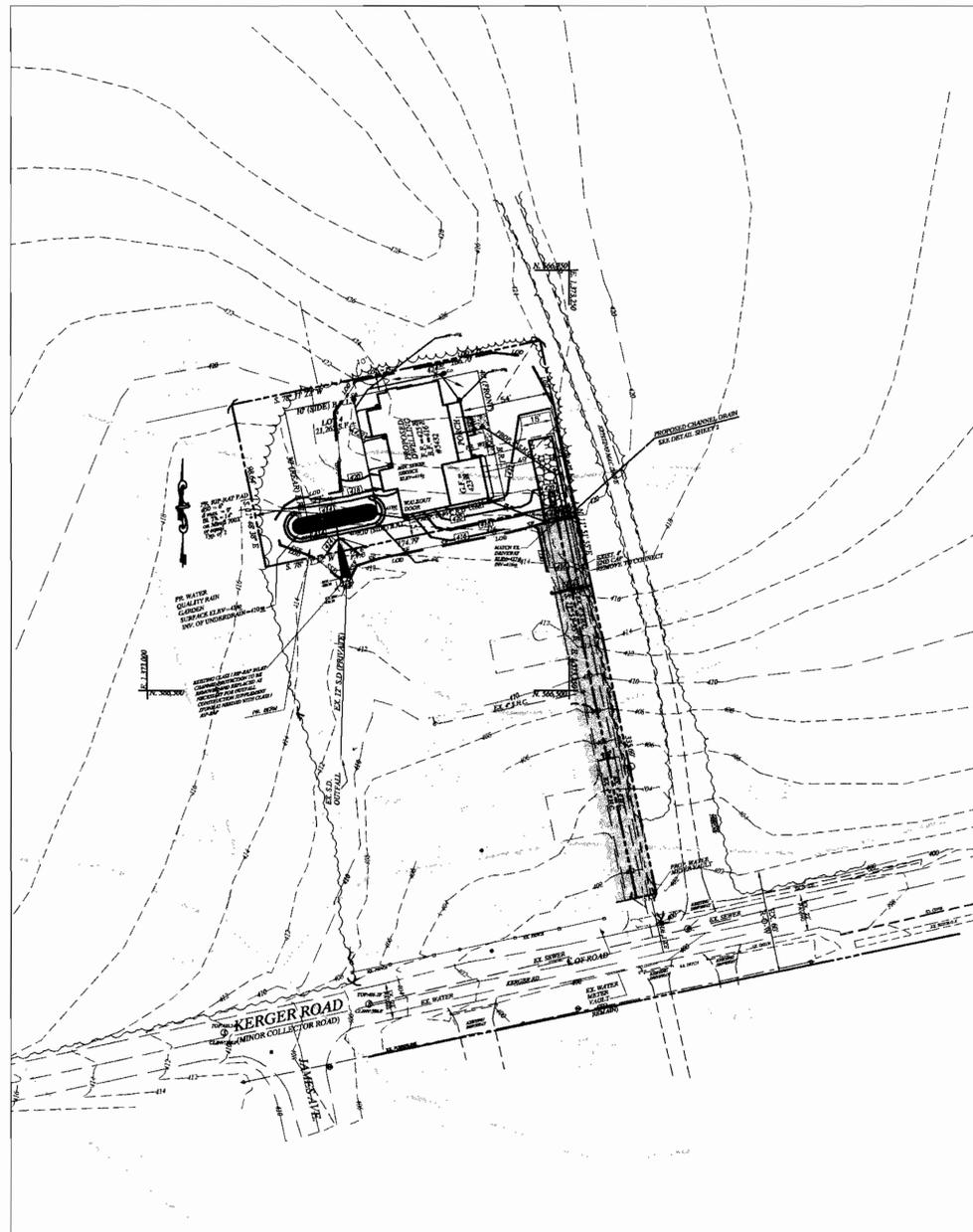


**SITE ANALYSIS DATA CHART**

TOTAL PROJECT AREA: 21,265 SQ. FT. (0.488 AC.)  
 LIMIT OF DISTURBED AREA: 13,364 SQ. FT. (0.307 AC.)  
 PRESENT ZONING DESIGNATION: R-20  
 PROPOSED USE: SINGLE FAMILY DWELLING  
 TOTAL NUMBER OF UNITS ALLOWED: 1  
 TOTAL NUMBER OF UNITS PROPOSED: 1  
 NUMBER OF PARKING SPACES REQUIRED: 2  
 NUMBER OF PARKING SPACES PROVIDED: 2  
 BUILDING COVERAGE OF SITE: 3,722 SQ. FT. (17.5%)  
 SITE PREVIOUSLY RECORDED AS PLAT #15314

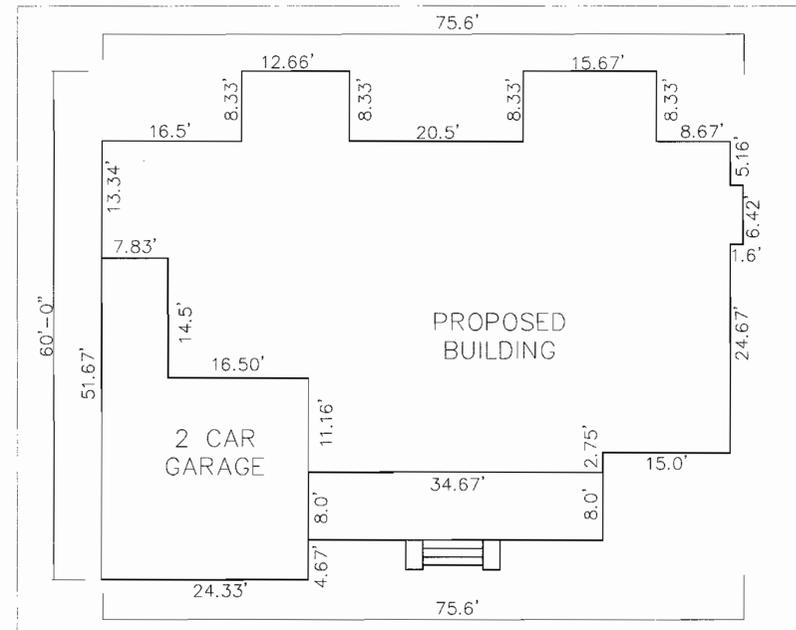
**SHEET INDEX**

- TITLE SHEET
- SITE DEVELOPMENT PLAN
- NOTES & DETAILS
- LANDSCAPE PLAN



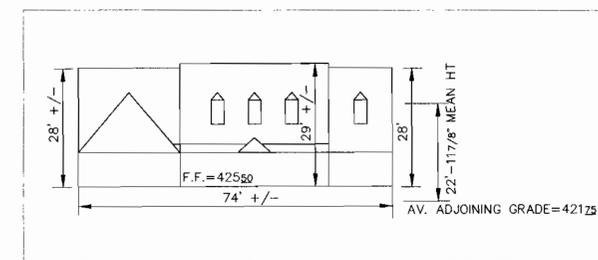
**PLAN VIEW**

SCALE: 1" = 50'



**BUILDING PLAN VIEW**

SCALE: 1" = 10'



**BUILDING ELEVATION**

SCALE: 1" = 20'

**ADDRESS CHART**

PARCEL	STREET ADDRESS
213	5432 KERGER ROAD ELLICOTT CITY, MD 21043

SUBDIVISION NAME - JAMES HARRIS SUBDIVISION		SECT./AREA - N/A	PARCEL - 213
PLAT REF - 15418	BLOCK # - 21	ZONING - R-20	TAX MAP NO. - 31
WATER CODE - DO3		ELECT. DIST. - 1ST	SEWER CODE - 2155000
CENSUS TRACT - 6011.01			

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*David M. Lyle* 2/16/05  
 DIRECTOR DATE

*Chris Harrison* 2/16/05  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chris Harrison* 2/16/05  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER: JAMES E. HARRIS  
 5434 A. KERGER ROAD  
 ELLICOTT CITY, MD. 21042

DEVELOPER: JAMES E. HARRIS  
 5434 A. KERGER ROAD  
 ELLICOTT CITY, MD. 21042

PROJECT: JAMES HARRIS SUBDIVISION LOT 4  
 5432 KERGER ROAD

TAX MAP 31, GRID 21, PARCEL 213, LOT 4  
 1st ELECTION DISTRICT

WATER CODE DO3 SEWER CODE 2155000

TITLE: TITLE SHEET

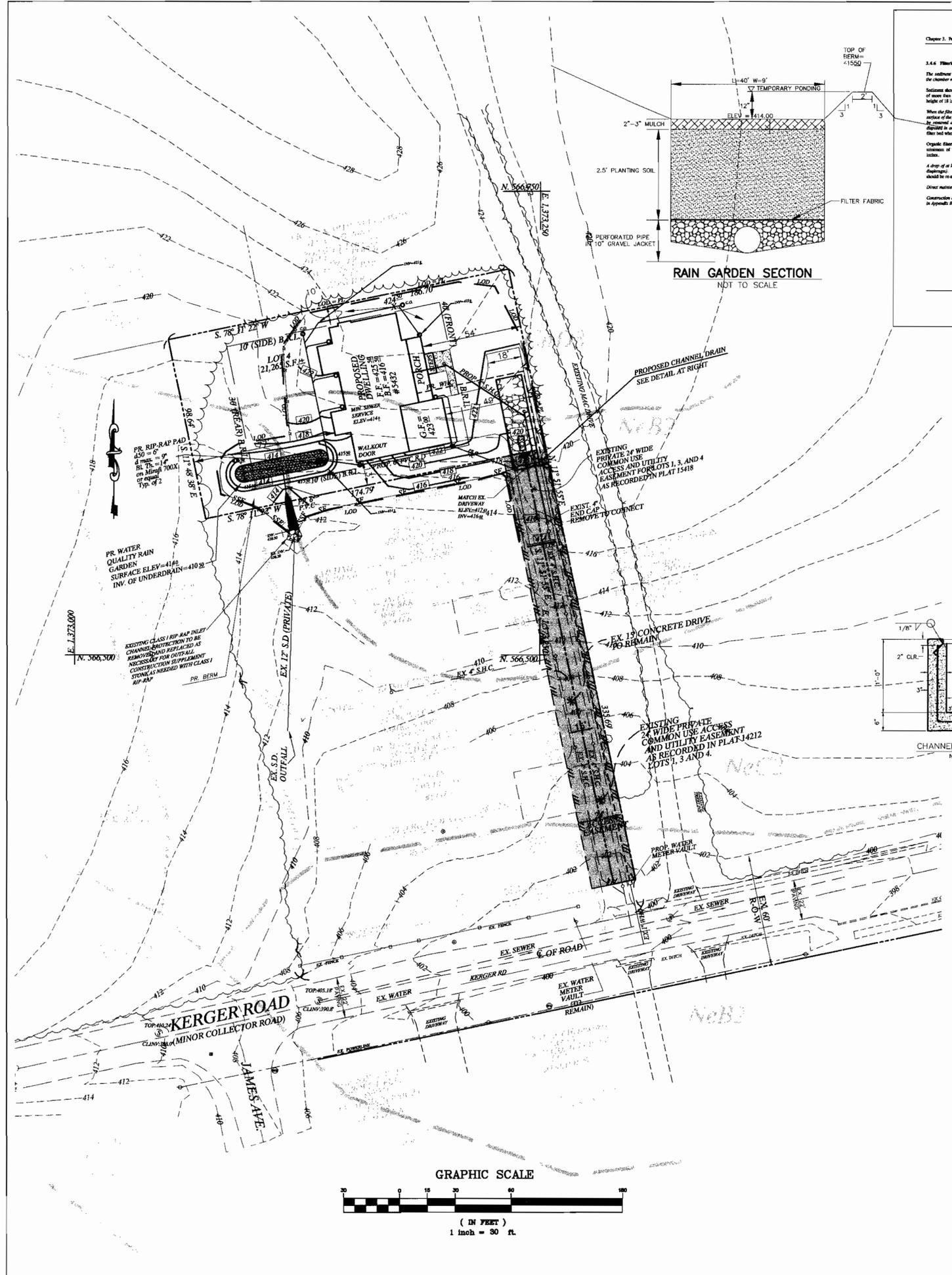
MESSICK & ASSOCIATES  
 CONSULTING ENGINEERS  
 31 OLD SOLOMONS ISLAND RD., SUITE 201  
 ANNAPOLIS, MARYLAND 21401  
 (410) 266-3212 • FAX (410) 266-3502

DATE: 2/16/05

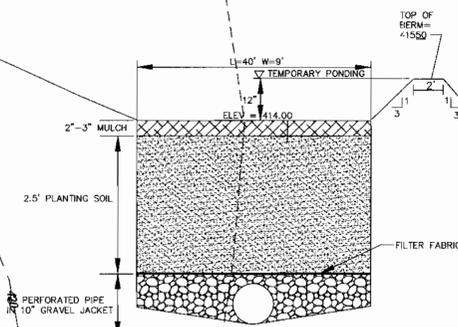
DESIGNED BY: WAN  
 DRAWN BY: BPO  
 PROJECT NO.:  
 DATE: JANUARY, 2004  
 SCALE: AS SHOWN  
 DRAWING NO.: 1 OF 4

WAYNE A. NEWTON #21591

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**RAIN GARDEN SECTION**  
NOT TO SCALE



**Chapter 3. Performance Criteria for Urban BMP Design - Stormwater Filtering Systems**

**3.4.6 Filtering Maintenance Criteria**  
The surface chamber must be inspected when downflow within the chamber exceeds 30 hours. Trickle and debris shall be removed as necessary. Sediment should be cleaned out of the sedimentation chamber when it accumulates to a depth of more than six inches. Vegetation within the sedimentation chamber should be limited to a height of 18 inches.

When the filtering capacity of the filter distribution system is reduced, when more than 75% of the surface of the filter bed for more than 72 hours, the top five inches of the filter bed shall be removed and replaced with fresh material. The removed sediment should be disposed in an acceptable manner in a landfill. Sediment should be removed from the filter bed when the accumulation exceeds one inch.

Organic debris (leaves and stems) that have a green cover should be removed a minimum of 1 time per growing season to maintain maximum grass height less than 12 inches.

A strip of at least six inches shall be provided to the head of bioretention facilities (if it means drainage). Dead or dormant plant material shall be replaced. Areas devoid of mulch shall be re-installed as in the manual.

Direct maintenance access shall be provided to the pretreatment area and the filter bed.

Construction of each filter and bioretention area shall conform to the specifications outlined in Appendix B.3.

**Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels**

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plants shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers, pesticides, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill trees fertilizer at a rate of 2 pounds per 1000 square feet.

**6. Underdrains**  
Underdrains are to be placed on a 3'-0" wide section of filter cloth. Pipe is placed next, followed by the gravel bedding. The ends of underdrain pipes not terminating in an observation well shall be capped.

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

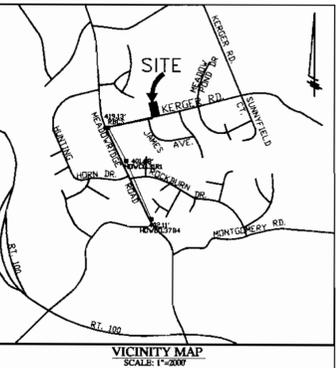
**7. Miscellaneous**  
The bioretention facility may not be constructed until all contributing drainage area has been stabilized.

**SOILS CHART**

TYPE	DESCRIPTION
CnD3	Chillum Fairfax loams, 5 to 15 percent slopes, severely eroded.
NeB2	Neshaminy silt loam, 3 to 8 percent slopes, moderately eroded.
NeC2	Neshaminy silt loam, 3 to 15 percent slopes, moderately eroded.

**LEGEND**

- EX. TREES
- EX. 2' CONTOUR
- EX. 10' CONTOUR
- PROP. 4" S.H.C.
- PROP. SEWER HOUSE CONN.
- SOILS DELINEATION LINE
- PROP. 1" W.H.C.
- PROP. WATER HOUSE CONN.
- PROP. GRADING



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**7. Miscellaneous**  
The bioretention facility may not be constructed until all contributing drainage area has been stabilized.

**Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels**

**B.3.B Specifications for Bioretention**

**1. Material Specifications**  
The allowable materials to be used in bioretention area are detailed in Table B.3.2.

**2. Planting Soil**  
The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the bioretention area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnsongrass, or other noxious weeds as specified under COMAR 15.06.01.05.

The planting soil shall be tested and shall meet the following criteria:

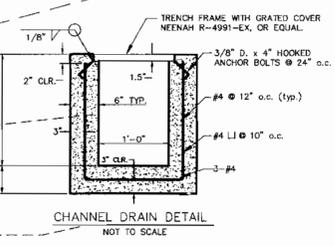
pH range	5.2 - 7.0
organic matter	1.5 - 4% (by weight)
magnesium	15 lb./ac
phosphorus (phosphate - P <sub>2</sub> O <sub>5</sub> )	75 lb./ac
potassium (potash - K <sub>2</sub> O)	85 lb./ac
soluble salts	not to exceed 500 ppm

All bioretention areas shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, phosphorus, and potassium and additional tests of organic matter, and soluble salts. A natural analysis is required from the site stockpiled deposit. If a test is reported, then a retest analysis shall be performed for each location where the top soil was excavated.

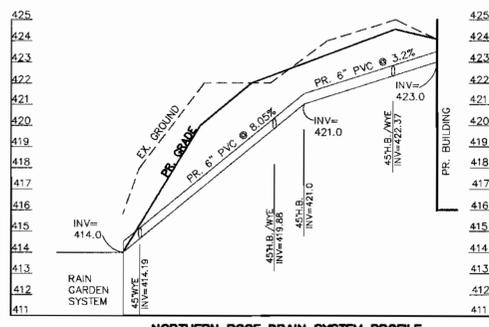
Since different labs calibrate their testing equipment differently, all testing results shall come from the same testing facility.

Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

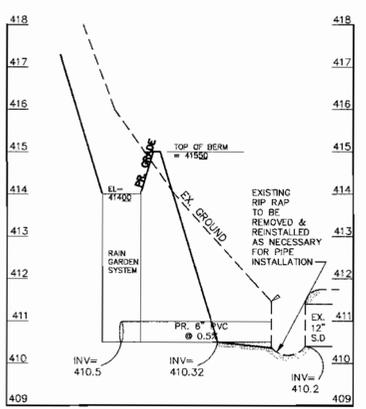
**3. Compaction**  
It is very important to minimize compaction of both the base of the bioretention area and the required backfill. When possible, use excavation to remove eroded soil. If bioretention is required, use the following criteria:



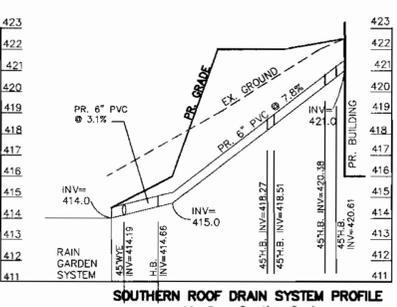
**CHANNEL DRAIN DETAIL**  
NOT TO SCALE



**NORTHERN ROOF DRAIN SYSTEM PROFILE**  
SCALE: H:1"=40' V:1"=4'



**RAIN GARDEN SYSTEM PROFILE**  
SCALE: H:1"=20' V:1"=2'



**SOUTHERN ROOF DRAIN SYSTEM PROFILE**  
SCALE: H:1"=40' V:1"=4'

**Table B.3.2 Materials Specifications for Bioretention**

Material	Specifications	Size	Notes
Planting soil	see Appendix A, Table A.4	1/4"	drainage are site-specific
mulch	shredded landscape pine bark	1/4"	spec 6 months, minimum
geotextile	see Appendix A, Table A.4	1/4"	for use as necessary for stabilization only
underdrain gravel	see Appendix A, Table A.4	1/4"	for use as necessary for stabilization only
underdrain piping	see Appendix A, Table A.4	1/4"	for use as necessary for stabilization only
pour-in-place concrete (if required)	see Appendix A, Table A.4	1/4"	for use as necessary for stabilization only
sand (1' deep)	see Appendix A, Table A.4	1/4"	for use as necessary for stabilization only

BY THE DEVELOPER:

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 THE ENVIRONMENT APPROVED TRAINING BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: *James E. Harris* DATE: 2/25/05

BY THE ENGINEER:

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.

ENGINEER: *Wayne A. Newton* DATE: 2/25/05

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE DATE: 3/7/05

HOWARD SOIL CONSERVATION DISTRICT DATE: 3/7/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR: *Mark A. Vogel* DATE: 3/10/05

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 3/15/05

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 2/2/05

OWNER: JAMES E. HARRIS  
5434 A. KERGER ROAD  
ELLICOTT CITY, MD. 21042

DEVELOPER: JAMES E. HARRIS  
5434 A. KERGER ROAD  
ELLICOTT CITY, MD. 21042

PROJECT: JAMES HARRIS SUBDIVISION LOT 4  
5432 KERGER ROAD

TAX MAP 31, GRID 21, PARCEL 213, LOT 4  
1st ELECTION DISTRICT

WATER CODE DO3 SEWER CODE 2155000

TITLE: **SITE DEVELOPMENT / SEDIMENT & EROSION CONTROL PLAN**

MESSICK & ASSOCIATES  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212 \* FAX (410) 266-3502

DATE: 2/10/05

DESIGNED BY: WAN

DRAWN BY: BPO

PROJECT NO:

DATE: JANUARY, 2004

SCALE: AS SHOWN

DRAWING NO: 2 OF 4

WAYNE A. NEWTON #21591

**TEMPORARY SEEDING NOTES**

Apply to graded or cleared areas 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 lbs. per acre of weeping lovegrass (0.07 lbs. 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 1983 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:

- 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 (25 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 80 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 options:

- 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 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.

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

**21.0 Standard 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 vegetative 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**

- I. This practice is limited to areas having 2:1 or flatter slopes where:
  - a) The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - b) 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.
  - c) The original soil to be vegetated contains material toxic to plant growth.
  - d) 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**

- I. Topsoil salvaged from the existing site may be provided that it meets the standards 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.
- II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

I. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, heavy sand. Other soils may be used if recommended by an agronomist or 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 1-1/2" in diameter.

II. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, johnsongrass, nutgrass, poison ivy, thistle, or others as specified.

III. Where 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:

For sites having disturbed areas under 5 acres:

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

- II. For sites having disturbed areas over 5 acres:
  - I. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
    - a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
    - b. Organic content of topsoil shall be not less than 1.5 percent by weight.
    - c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
    - d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals for weed control until sufficient time has elapsed (14 days minimum) to permit dissipation of phytotoxic materials.

- III. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- IV. Topsoil Application
  - I. 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.
  - II. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, have 4" - 8" higher in elevation.
  - III. 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.
  - IV. 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 seedbed preparation.
  - V. Alternative for permanent seeding - instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
    1. Composted sludge material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements:
      - a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
      - b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
      - c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
      - d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

Note: Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.

- VI. Alternative for permanent seeding - instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

1. Composted sludge material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements:

- a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
- b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
- c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
- d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1973.

**SEDIMENT CONTROL NOTES**

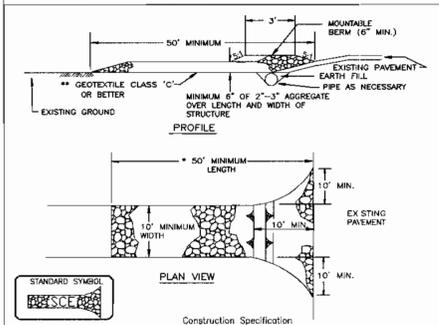
1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES, AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410) 313-1855.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; B) 14 DAYS AS TO OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, 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 AND EROSION CONTROL FOR PERMANENT SEEDINGS (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDINGS (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. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
9. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 AC., 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 THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED BY THE END OF EACH WORKING DAY, WHICHEVER IS SHORTER.

**SITE ANALYSIS**

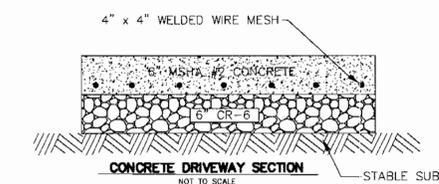
TOTAL SITE AREA	0.49 ACRES
AREA DISTURBED	0.34 ACRES
AREA TO BE ROOFED AND PAVED	0.13 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.21 ACRES
TOTAL CUT	420± CU. YDS.
TOTAL FILL (contractor to check quantities)	100± CU. YDS.
SPOIL SITE = SITE WITH AN ACTIVE GRADING PERMIT.	

**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**

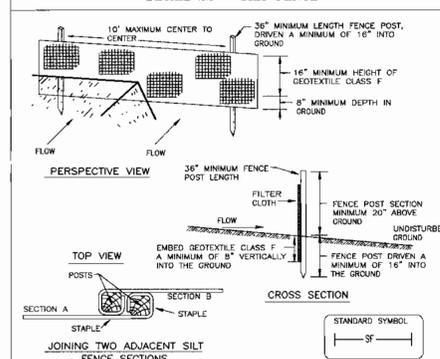


- Construction Specifications**
1. Length - minimum of 50' (\*30' for single residence lot).
  2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
  3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. \*\*The plan approval authority may not require single family residences to use geotextile.
  4. Stone - crushed aggregate (2" to 3") or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
  5. 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 berm with 5:1 slopes and a minimum of 6" 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.
  6. 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 SOIL CONSERVATION SERVICE	PAGE I - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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**DETAIL 22 - SILT FENCE**



- Construction Specifications**
1. 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 1-3/4" 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.
  2. 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: MSMT 509
Tensile Modulus	20 lbs/in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	70% (min.)	Test: MSMT 322
  3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
  4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

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**SEQUENCE OF CONSTRUCTION**

1. Obtain all necessary approvals, permits, and easements. The contractor must notify the Howard County Department of Inspection and Permits, and Mass Utility at least 48 prior to beginning work.
2. The contractor shall schedule a pre-construction meeting with the respective agencies to review the plans and permits. (1 day)
3. Clear only for, grade, and install stabilized construction entrance. (1 day)
4. Clear only for and install perimeter silt fences. (1 day)
5. Clear remaining site area within L.O.D. as shown on approved plans. (1 day)
6. Rough grade site per approved plans. (2 weeks)
7. Install water and sanitary sewer connections. (1 week)
8. Excavate for foundations and construction building. (3 months)
9. Install underground conduits and paving courses. (2 weeks)
10. Fine grade and place 2 inches of topsoil. Stabilize with seed and mulch. (1 week)
11. Once the site is stabilized and with the approval of the Howard County Sediment Control Inspector, remove all sediment control measures. Re-stabilize areas, which were disturbed during removal of the sediment control measures.

\* = Denotes activities that can be done concurrently

**BY THE DEVELOPER :**

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 THE ENVIRONMENT APPROVED TRAINING BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: *James E. Harris* DATE: *10/6/04*

**BY THE ENGINEER :**

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.

ENGINEER: *Jim Myers, Inc.* DATE: *10/6/04*

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL

NATURAL RESOURCES CONSERVATION SERVICE DATE: *3/7/05*

HOWARD SOIL CONSERVATION DISTRICT DATE: *3/7/05*

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR: *Mark A. Legler* DATE: *2/16/05*

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: *2/16/05*

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: *2/17/05*

**OWNER:**

JAMES E. HARRIS  
5434 A. KERGER ROAD  
ELLCOT CITY, MD. 21042

**DEVELOPER:**

JAMES E. HARRIS  
5434 A. KERGER ROAD  
ELLCOT CITY, MD. 21042

**PROJECT**

JAMES HARRIS SUBDIVISION LOT 4  
5432 KERGER ROAD

TAX MAP 31, GRID 21, PARCEL 213, LOT 4

1st ELECTION DISTRICT

WATER CODE D03 SEWER CODE 2155000

**TITLE**

NOTES & DETAILS

MESSICK & ASSOCIATES  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212 \* FAX (410) 266-3502

DESIGNED BY: WAN  
DRAWN BY: BPO  
PROJECT NO:  
DATE: JANUARY, 2004  
SCALE: AS SHOWN  
DRAWING NO.: 3 OF 4

SCHEDULE A PERIMETER LANDSCAPE EDGE		
CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	NONE/B	"A"
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	12 L.F.	N/A
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	0 0 0	14 0 0
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (2:1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	0 0 0 0	13 2* 0

SUBSTITUTIONS \* - SUBSTITUTED 2 EVERGREENS FOR 1 SHADE TREES ALONG PERIMETER EDGE 3.

PERIMETER EDGE SUMMARY					
EDGE NO.	PERIMETER TYPE	PERIMETER LENGTH	PLANTS REQUIRED	CREDIT FOR EX. VEGETATION, ETC.	PLANTS PROVIDED
1	A	98.64 L.F.	2	NO	2
2	A	186.70 L.F.	3	NO	3
3	A	335.69 L.F.	6	NO	6
4	A	174.79 L.F.	3	NO	3

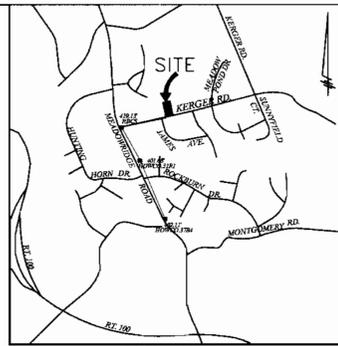


PLAN

SCALE: 1"=30'

PLANTING NOTES:

- All plants shall be nursery grown.
  - All plants shall conform to the standards of AAN. They shall be typical of their species or variety and shall have a normal habit of growth. They shall be sound, healthy and vigorous, well-branched and densely foliated when in leaf. They shall be free of disease and insect pests, eggs, or larvae. They shall have healthy, well-developed root systems.
  - No substitutions shall be made without the approval of the landscape architect.
  - Balled and burlapped plants shall be dug with firm natural balls of earth, of diameter and depth to include most of the fibrous roots. Container grown stock shall have been grown in a container long enough for the root system to be developed sufficiently to hold its soil together firm and whole. No plants shall be loose in the container.
  - Root balls of all plants shall be adequately protected at all times from sun and drying winds or frost.
  - Owner or his representative shall be notified prior to beginning planting operations.
  - All trees shall be wrapped immediately after they are planted.
- Approved tree wrap shall be installed according to accepted industry practice.
- Each tree and shrub shall be pruned in accordance with the American Association of Nurserymen Standards to preserve the natural character of the plant. All dead wood or suckers and all broken or badly bruised branches shall be removed. Cuts over 1" in diameter shall be painted with an approved tree paint.
  - Mulch: immediately after planting operations are completed all trees and shrub planting pits shall be covered with a 2" layer of Shredded Hardwood Bark Mulch or other material approved by the owner or his representative. The limit of this mulch for trees shall be the area of the pit and for shrubs in beds, the entire area of the shrub bed.
  - Trees in leaf when planted shall be treated with anti-desiccant such as Wilt-proof.
  - Conditions detrimental to plants: the contractor shall notify the project representative in writing of all soil or drainage conditions which the contractor considers detrimental to the growth of plants. He shall state the conditions and submit a proposal for correcting the conditions, including any change in cost for review and acceptance by the project representative.
  - Minor adjustments to tree location may be necessary due to field conditions and final grading. The contractor shall notify the owner if major adjustments are required.

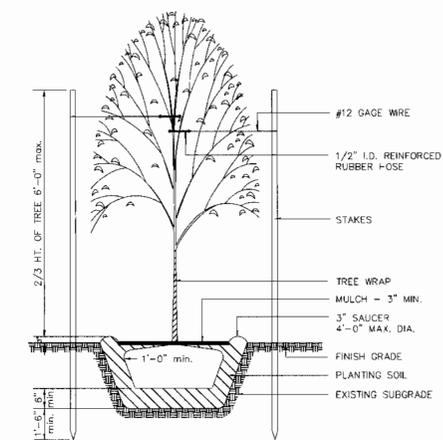


DEVELOPER'S/BUILDER'S CERTIFICATE

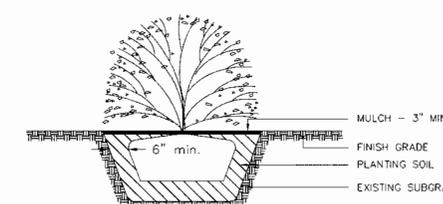
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, LETTER OF NOTICE OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME: James Harris DATE: 2/11/05

THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.



TREE PLANTING DETAIL - LESS THAN 4" CAL.



SHRUB PLANTING DETAIL

PLANT LIST				
SYMBOL	ID	BOTANICAL NAME COMMON NAME	QTY	SIZE SPACING
*	T1	CUPPRESSOCYPARIS LEYLANDI LEYLAND CYPILOS	2	5'-6" HT AS SHOWN
☺	T2	ACER RUBRUM/OCTOBER GLORY OCTOBER GLORY RED MAPLE	8	2 1/2-3" CAL AS SHOWN
☼	T3	ZELKOVA SERRATA GREEN JAPANESE ZELKOVA	5	2 1/2-3" CAL AS SHOWN

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR: Mark A. Lytle DATE: 2/10/05

CHIEF, DEVELOPMENT ENGINEERING DIVISION: John Dammann DATE: 2/10/05

CHIEF, DIVISION OF LAND DEVELOPMENT: Cindy Hamner DATE: 2/10/05

DATE	NO.	REVISION

OWNER: JAMES E. HARRIS  
5434 A. KERGER ROAD  
ELLCOT CITY, MD. 21042

DEVELOPER: JAMES E. HARRIS  
5434 A. KERGER ROAD  
ELLCOT CITY, MD. 21042

PROJECT: JAMES HARRIS SUBDIVISION LOT 4  
5432 KERGER ROAD

TAX MAP 31, GRID 21, PARCEL 213, LOT 4  
1st ELECTION DISTRICT

WATER CODE D03 SEWER CODE 2155000

TITLE  
LANDSCAPE PLAN

MESSICK & ASSOCIATES  
CONSULTING ENGINEERS  
31 OLD SOLDIERS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212 \* FAX (410) 266-3502

DESIGNED BY: WAN

DRAWN BY: BPO

PROJECT NO:

DATE: JANUARY, 2004

SCALE: AS SHOWN

WAYNE A. NEWTON #21591

DRAWING NO.: 4 OF 4

NOTE: LANDSCAPING, NOTES, ETC. AS SHOWN HEREON ARE TAKEN FROM THE APPROVED LANDSCAPE PLAN ON FILE WITH DPZ FOR SUBDIVISION F-01-080.

**CONSTRUCTION NOTES**

- No sediment and erosion control devices may be removed without prior approval from the Howard County Inspector.
- Stabilize any disturbed area as soon as possible by permanent or temporary means.
- All temporary stock piles and excess material shall be removed to an approved spot site. All borrow material shall be obtained from an approved site.
- It shall be the responsibility of the contractor or subcontractor to notify the engineer of any deviation to these plans prior to any change being made. Any change in these plans without the written authorization for said change from the engineer shall be the responsibility of the contractor or subcontractor.
- Utilities shown on these plans are in accordance with the best information available for the contractor. The contractor shall be responsible for locating and protecting all existing services and mains (public or private). The contractor shall obtain the services of a private utility locator to locate all existing private services and mains. The owners and engineer assume no responsibility for accuracy or completeness of the information shown. Existing mains and services shall be carefully protected and any damage to them caused by the work shall be immediately reported to the satisfaction of the engineer by the contractor at the contractor's expense, using materials of the kinds damaged.
- The contractor shall call "MISS UTILITY", 1-800-257-7777, a minimum of 48 hours in advance of any excavation, boring, and/or digging to determine the location of underground utilities.
- The contractor shall grade all areas within the area of construction and shall warp paving as necessary to insure positive drainage.
- The Contractor shall be responsible for coordination of his construction with the construction by other contractors and subcontractors.
- All soil erosion control measures shall be in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Failure to specifically mention items which would normally be required to complete the work and develop this site in accordance with the approved plans, shall not relieve the contractor from performing such work. This work shall be part of the contractor's base bid.

**SITE PLAN NOTES**

- All construction shall be in accordance with the latest standards and specifications of Howard County, plus MSHA standards and specifications, as applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "MISS UTILITY" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- The existing topography is taken from a field run topographic survey by Design Tech Associates dated January 2004.
- Traffic control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to any work being done in the public road.
- All plan dimensions are to edge of paving and face of building unless otherwise noted.
- The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County traverse Station nos. 31R1 and 37B4.
- Existing utilities are based on the approved subdivision drawings as supplemented by field surveys.
- Water is public, (contract no. 266-W).
- Sewer is public, (contract 10-1215). The Drainage Area is Little Patuxent.
- Water Quality storm water management for this project is provided by an on-site system. Water Quantity Management was provided by payment of a fee-in-lieu in the amount of \$3,000.00 with the record plat.
- There is no floodplain on this site.
- A noise study is not required for this project.
- The boundary for this project is based on the approved plat 15314 county file reference F-01-080.
- There are no wetlands on this site.
- Contractor is solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs.
- All pipe elevations shown are invert elevations.
- All fill areas within roadway and under structures to be compacted to a minimum of 95% compaction of AASHTO T180.
- No public notice posters are required since no roadway entrances are proposed, and no wetland mitigation areas are proposed.

**GENERAL NOTES**

- THE SUBJECT PROPERTY IS ZONED R-20 & IS SUBJECT TO THE NEW R-20 ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003
- COORDINATES BASED ON NAD'83, THE MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO.31R1 AND NO.37B4.
- B.R.L. DENOTES BUILDING RESTRICTION LINE.
- DEED REFERENCE: LIBER 4786 FOLIO 626. PLAT REFERENCE: No. 15314, COUNTY FILE REFERENCE No.: F-01-080. PLAT NO. 15,418, COUNTY FILE REFERENCE F01-080.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND THE RIGHT-OF-WAY LINE AND NOT TO THE PIPESTEM LOT DRIVEWAY.
- COVENANTS GOVERNING THE USE-IN-COMMON DRIVEWAY MAINTENANCE RESPONSIBILITIES ARE RECORDED IN THE HOWARD COUNTY LAND RECORDS IN LIBER 6206, FOLIO 0001. THE DRIVEWAY WILL BE PRIVATELY MAINTAINED BY LOTS 1, 3 AND 4.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
  - WIDTH: 12 FT. (14 FT. SERVING MORE THAN ONE RESIDENCE).
  - SURFACE: 8 IN. OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING.
  - GEOMETRY: MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45 FT. TURNING RADIUS.
  - STRUCTURES: (CULVERTS AND BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS-H2S LOADING.
  - DRAINAGE ELEMENTS: CAPABLE OF SAFELY PASSING A 100 YEAR FLOOD-WITH NO MORE THAN ONE FT. DEPTH OVER DRIVEWAY SURFACE.
  - MAINTENANCE: SUFFICIENT TO INSURE ALL WEATHER USE.
- THIS PLAN IS BASED ON A FIELD-RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT JUNE 1999 BY DESIGN TECH ASSOCIATES, INC., AS SUPPLEMENTED IN JAN. 2004 FOR AS-BUILT CONDITIONS.
- THE AREAS SHOWN ON THIS PLAN ARE INDICATED (±) MORE OR LESS.
- WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER PROVISIONS OF SECTION 18.122 B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWAGE ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- PUBLIC WATER SERVICE WILL BE PROVIDED TO THESE LOTS BY HOUSE CONNECTIONS TO CONTRACT NO. 266 W. PUBLIC SEWER SERVICE WILL BE PROVIDED TO THESE LOTS BY HOUSE CONNECTIONS TO CONTRACT NO. 10-1215.
- WATER AND SEWER CONNECTIONS FOR LOT 4 SHALL BE COMPLETED IN ACCORDANCE WITH THE LAYOUT AS SHOWN ON THE SUPPLEMENTAL PLAN (AS SHOWN HEREON).
- THERE ARE NO WETLANDS ON SITE AND THE PROPERTY IS NOT LOCATED WITHIN THE 100-YEAR FLOODPLAIN.
- A FEE-IN-LIEU OF OPEN SPACE WAS PROVIDED FOR LOT 4 IN THE AMOUNT OF \$1,500.00, UNDER F-01-080.
- A FEE-IN-LIEU OF STORMWATER QUANTITY MANAGEMENT WAS PROVIDED IN THE AMOUNT OF \$ 3,000.00.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 18.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED THIRTEEN (13) SHADE TREES AND TWO (2) EVERGREEN TREES IN THE AMOUNT OF \$ 1,200.00 SHALL BE POSTED AS PART OF THE BUILDER'S GRADING PERMIT APPLICATION FOR LOT 4.
- THIS PLAN COMPLES WITH THE REQUIREMENTS OF SECTION 18.120 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY PAYMENT OF \$ 10,236.60 AS A FEE-IN-LIEU TO THE HOWARD COUNTY FOREST CONSERVATION FUND FOR THE OBLIGATIONS INCURRED BY THIS SUBDIVISION- 20,473.2 SQUARE FEET OF REFORESTATION, UNDER F01-080.
- THIS PLAN IS SUBJECT TO THE AMENDED 5TH EDITION OF THE SUBDIVISION & LAND DEVELOPMENT REGULATIONS & THE ZONING REGULATIONS AS AMENDED UNDER COUNCIL BILL # 75-2003.
- IN ACCORDANCE WITH SECTION 12B OF THE HOWARD COUNTY REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 18 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACKS.
- DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACKS AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.

# SITE DEVELOPMENT PLAN

## FOR

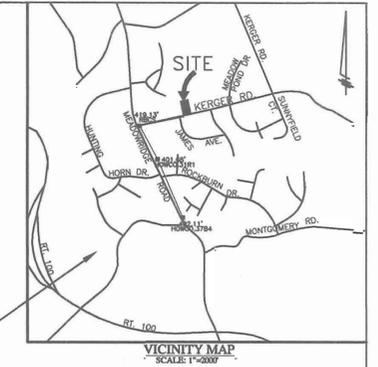
### JAMES HARRIS SUBDIVISION LOT 4

### 5432 KERGER ROAD

### 1st ELECTION DISTRICT

### HOWARD COUNTY, MARYLAND

BENCHMARK LOCATION & ELEVATION. INFO PROVIDED HEREIN & IN SITE PLAN NOTE 7.



**SITE ANALYSIS DATA CHART**

TOTAL PROJECT AREA: 21,265 SQ. FT. (0.488 AC.)  
 LIMIT OF DISTURBED AREA: 13,364 SQ. FT. (0.307 AC.)  
 PRESENT ZONING DESIGNATION: R-20  
 PROPOSED USE: SINGLE FAMILY DWELLING  
 TOTAL NUMBER OF UNITS ALLOWED: 1  
 TOTAL NUMBER OF UNITS PROPOSED: 1  
 NUMBER OF PARKING SPACES REQUIRED: 2  
 NUMBER OF PARKING SPACES PROVIDED: 2  
 BUILDING COVERAGE OF SITE: 3,723 SQ. FT. (17.5%)  
 SITE PREVIOUSLY RECORDED AS PLAT # 15314

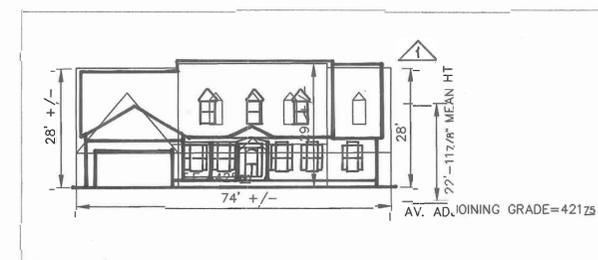
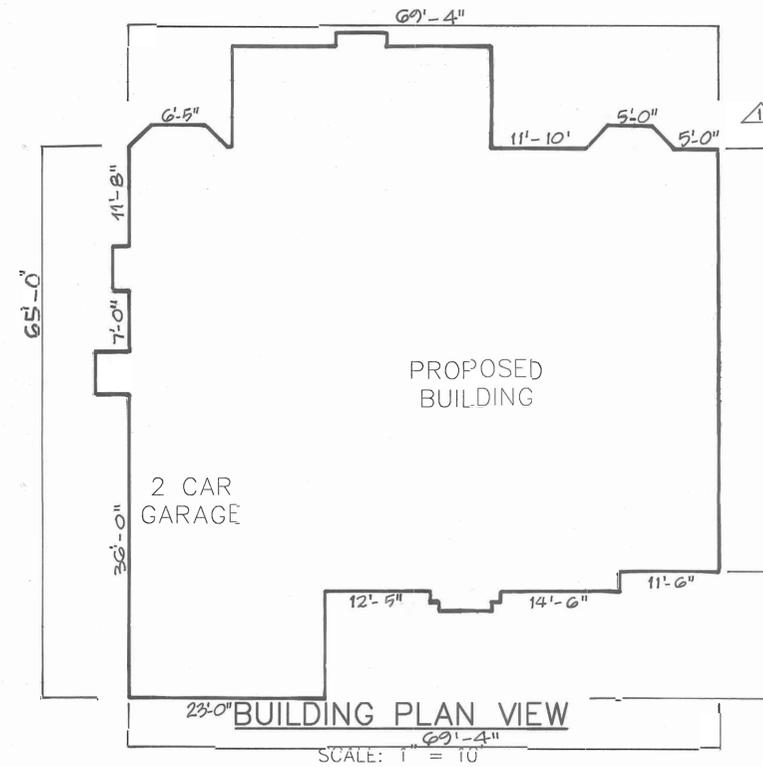
**SHEET INDEX**

- TITLE SHEET
- SITE DEVELOPMENT PLAN
- NOTES & DETAILS
- LANDSCAPE PLAN



**PLAN VIEW**

SCALE: 1" = 50'



**BUILDING ELEVATION**

SCALE: 1" = 20'

**ADDRESS CHART**

PARCEL	STREET ADDRESS
213	5432 KERGER ROAD ELLICOTT CITY, MD 21143

SUBDIVISION NAME - JAMES HARRIS SUBDIVISION		SECT./AREA - N/A		PARCEL - 213	
PLAT REF - 15418	BLOCK # - 21	ZONING - R-20	TAX MAP NO. - 31	ELECT. DIST. - 1ST	CENSUS TRACT - 6011.01
WATER CODE - D03			SEWER CODE - 215500		

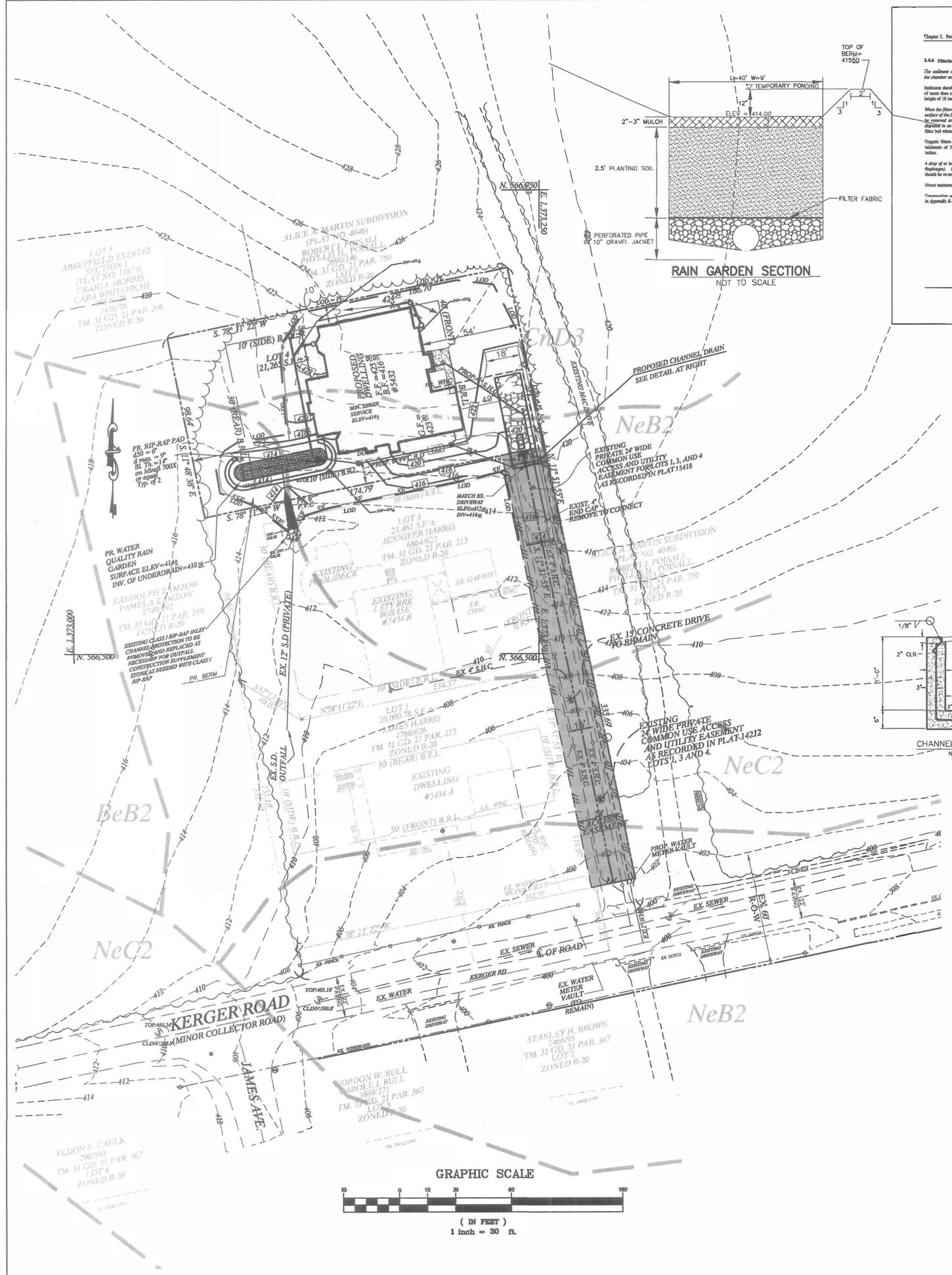
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
<i>Mark DeLoyle</i>	2/10/05
DIRECTOR	DATE
<i>Chris Hamilton</i>	2/10/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>Chris Hamilton</i>	2/10/05
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE

B-05	1	MODIFIED HOUSE FOOTPRINT
DATE	NO.	REVISION
OWNER: JAMES E. HARRIS 5434 A. KERGER ROAD ELLICOTT CITY, MD. 21042		
DEVELOPER: JAMES E. HARRIS 5434 A. KERGER ROAD ELLICOTT CITY, MD. 21042		
PROJECT: JAMES HARRIS SUBDIVISION LOT 4 5432 KERGER ROAD		
TAX MAP 31, GRID 21, PARCEL 213, LOT 4 1st ELECTION DISTRICT		
WATER CODE D03 SEWER CODE 2155000		
TITLE: TITLE SHEET		

MESSICK & ASSOCIATES \*  
 CONSULTING ENGINEERS  
 31 OLD SOLOMONS ISLAND RD., SUITE 201  
 ANNAPOLIS, MARYLAND 21401  
 (410) 266-3212 • FAX (410) 266-3502

DESIGNED BY: WAN
DRAWN BY: BPO
PROJECT NO:
DATE: JANUARY, 2004
SCALE: AS SHOWN
DRAWING NO.: 1 OF 4

WAYNE A. NEWTON #2159t  
 SNP-04-106



**Chapter 3. Performance Criteria for Urban BMP Design** — Stormwater Filtering Systems

**3.4.4 Filtering Maintenance Criteria**

The sediment chamber under filter shall be cleaned/inspected when sediment rises within the chamber to 18 inches. Trash and debris shall be removed as necessary.

Sediment should be removed from the sedimentation chamber when it accumulates to a depth of more than 18 inches. Vegetation within the sedimentation chamber should be limited to a height of 18 inches.

When the filtering capacity of the filter diminishes substantially (e.g., when water ponds on the surface of the filter for more than 72 hours, the top few inches of discolored material shall be removed and shall be replaced with fresh material. The removed sediment shall be disposed in an acceptable manner (e.g., landfill). Sedimentation should be removed from the filter bed when the concentration exceeds one inch.

Organic filter (F-0) or surface sand filter (F-1) that have a gravel cover should be replaced a minimum of 3 times per growing season to maintain maximum grass heights less than 12 inches.

A drop of at least six inches shall be provided at the base of bioretention facilities (F-0) (except for F-1). Dead or dormant plant material shall be replaced. Areas devoid of mulch should be reseeded on an annual basis.

Over-maintenance access shall be provided to the treatment area and the filter bed.

Construction of sand filters and bioretention areas shall conform to the specifications outlined in Appendix B.3.

**Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels**

Areas excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to restructure the soil profile following the 12 inch compaction zone. Subsoiler methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the required sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

**4. Plant Material**

Recommended plant material for bioretention areas can be found in Appendix A, Section A.2.3.

**5. Plant Installation**

Mulch should be placed to a uniform thickness of 2" to 3". Shredded hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Root stock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted to a uniform thickness of 2" to 3". Shredded hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

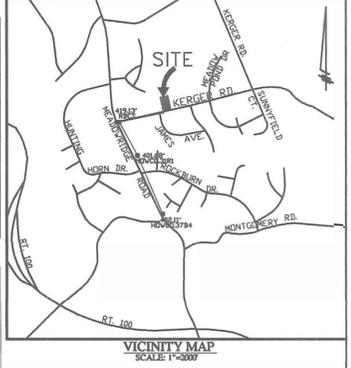
Trunks shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

**SOILS CHART**

TYPE	DESCRIPTION
ChD3	Chillum Fairfax loams, 5 to 15 percent slopes, severely eroded.
NeB2	Neshaminy silt loam, 3 to 8 percent slopes, moderately eroded.
NeC2	Neshaminy silt loam, 3 to 15 percent slopes, moderately eroded.

**LEGEND**

- EX. TREES
- EX. TREES
- EX. 2' CONTOUR
- EX. 10' CONTOUR
- PROP. 4" S.H.C.
- PROP. SEWER HOUSE CONN.
- PR. 1" WHC
- PROP. WATER HOUSE CONN.
- PROP. GRADING



**Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels**

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be placed following the non-grass ground cover planting specifications.

The typical specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers, defers, or a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill tires fertilizer at a rate of 2 pounds per 1000 square feet.

**6. Underdrains**

Underdrains are to be placed on a 3'-0" wide section of filter cloth. Pipe is placed next, followed by the gravel bedding. The ends of underdrain pipes not terminating in an observation well shall be capped.

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

**7. Miscellaneous**

The bioretention facility may not be constructed until all contributing drainage area has been stabilized.

**Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels**

**B.3.B Specifications for Bioretention**

**1. Material Specifications**

The allowable materials to be used in bioretention areas are detailed in Table B.3.2.

**2. Planting Soil**

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the bioretention area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.05.

The planting soil shall be tested and shall meet the following criteria:

pH range	5.2 - 7.0
organic matter	1.5 - 4% (by weight)
nitrogen	35 lb./ac
phosphorus (phosphate - P <sub>2</sub> O <sub>5</sub> )	75 lb./ac
potassium (potash - K <sub>2</sub> O)	85 lb./ac
soluble salts	not to exceed 500 ppm

All bioretention areas shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, phosphorus, and potassium and additional tests of organic matter, and soluble salts. A textual analysis is required from the site sampled topsoil. If ground is imported, then a texture analysis shall be performed for each location where the top soil was excavated.

Since different labs calibrate their testing equipment differently, all testing results shall come from the same testing facility.

Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

**3. Compaction**

It is very important to minimize compaction of both the base of the bioretention area and the required backfill. When possible, use excavation hoses to remove original soil. If bioretention

BY THE DEVELOPER :

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 THE ENVIRONMENT APPROVED TRAINING BEFORE BEGINNING THE PROJECT. ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: *James Harris* DATE: 2/28/05

BY THE ENGINEER :

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.

ENGINEER: *Wayne A. Newton* DATE: 2/28/05

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

*Jim Hines* 3/10/05 DATE

NATURAL RESOURCES CONSERVATION SERVICE

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

*John S. ...* 3/10/05 DATE

HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Mark DeLoyle* 2/24/05 DATE

DIRECTOR

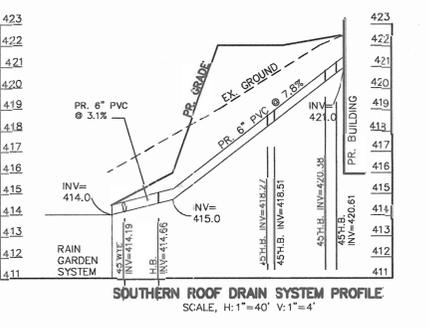
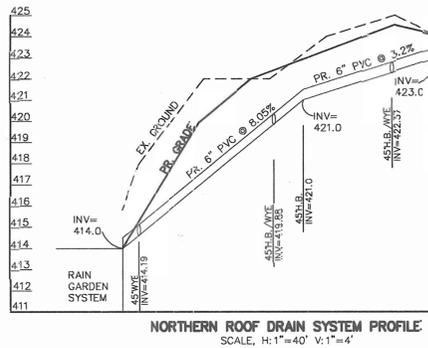
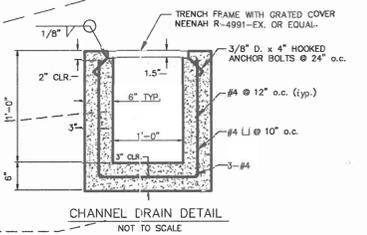
*Chris ...* 3/10/05 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Candy ...* 2/22/05 DATE

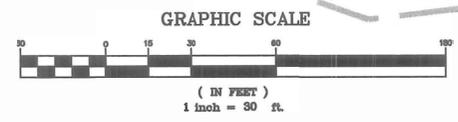
CHIEF, DIVISION OF LAND DEVELOPMENT

DATE NO. REVISION



**Table B.3.2 Materials Specifications for Bioretention**

Material	Specification	Size	Notes
Planting pit	see Appendix A, Table A.4	18"	planting pit site-specific
mulch	shredded hardwood	1/2" - 3/4"	aged 6 months minimum
per gravel discharge and curbside drain	ASTM D-4468	per spec. No. 6	stone 2" to 5"
permeable	see Appendix A, Table A.4	18"	for use as necessary beneath underdrains only
underdrain gravel	ASTM M-43	0.25" to 0.50"	
underdrain stone	ASTM M-43	0.25" to 0.50"	
placed in place concrete (if required)	ASTM C-150	4" or 6" rigid sections	1/2" joint @ 8' on center. 4 holes per row, minimum of 3" of joint end depth, see Appendix A, Table A.4
post-tensioning cables (if required)	ASTM A-421	1/2"	see Appendix A, Table A.4
steel 3" depth	ASTM A-36	3"	see Appendix A, Table A.4



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**TEMPORARY SEEDING NOTES**

Apply to graded or cleared area 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 ryegrass (3.2 lbs. per 1000 sq. ft.) For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. 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 unrattled 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 1983 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:

- 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 (25 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 options:

- 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 unrattled 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.

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

**21.0 Standard 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 vegetative 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**

- I. This practice is limited to areas having 2:1 or flatter slopes where:
  - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - b. 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.
  - c. The original soil to be vegetated contains material toxic to plant growth.
  - d. 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**

- I. 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.
- II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

I. 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 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 1-1/2" in diameter.

II. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

III. Where 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. The same shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures:

For sites having disturbed areas under 5 acres:

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

- III. For sites having disturbed areas over 5 acres:

- I. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
  - a. pH for topsoil shall be between 6.0 and 7.5 if the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
  - b. Organic content of topsoil shall be not less than 1.5 percent by weight.
  - c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
  - d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals for weed control until sufficient time has elapsed (14 days minimum) to permit dissipation of phytotoxic materials.

Note: Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.

- II. 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

- I. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Silt Fences and Sediment Traps and Basins.

- II. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

- III. 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.

- IV. 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 seedbed preparation.

- VI. Alternative for permanent seeding - instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

- a. Composted sludge material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements:
  - i. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
  - ii. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
  - iii. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
  - iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1973.

**SEDIMENT CONTROL NOTES**

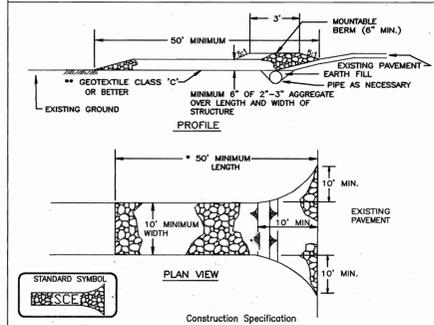
1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES, AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410) 313-1855.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; (B) 14 DAYS AS TO OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, 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 AND EROSION CONTROL FOR PERMANENT SEEDINGS (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDINGS (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.

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. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
11. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 AC., 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 THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
12. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED BY THE END OF EACH WORKING DAY, WHICHEVER IS SHORTER.

**7. SITE ANALYSIS**

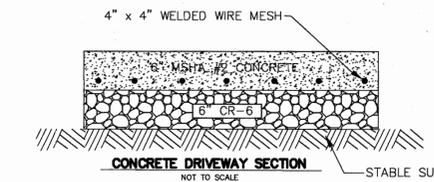
TOTAL SITE AREA	0.49 ACRES
AREA DISTURBED	0.34 ACRES
AREA TO BE ROOFED AND PAVED	0.13 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.21 ACRES
TOTAL CUT	420± CU. YDS.
TOTAL FILL (contractor to check quantities)	100± CU. YDS.
SPOIL SITE = SITE WITH AN ACTIVE GRADING PERMIT.	

**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**

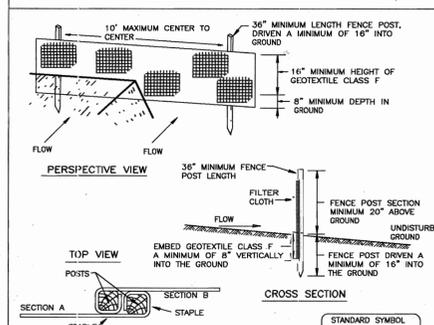


1. Length - minimum of 50' (x30' for single residence lot).
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. \*\*The plan approval authority may not require single family residences to use geotextile.
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equipment shall be placed at least 6" deep over the length and width of the entrance.
5. 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 mounded berm with 5:1 slopes and a minimum of 8" 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.
6. 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 SOIL CONSERVATION SERVICE PAGE 7 - 15 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**DETAIL 22 - SILT FENCE**

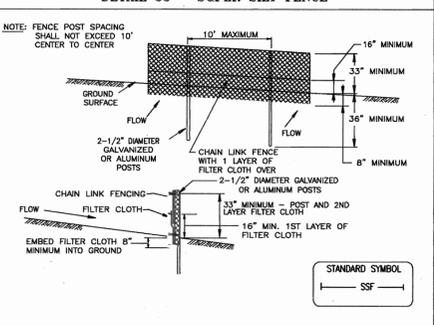


1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1-1/2" x 1-1/2" square (minimum) cut, or 1-3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. 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: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal in <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 8 - 15 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL 33 - SUPER SILT FENCE**



1. The poles do not need to be set in concrete.
2. Chain link fence shall be fastened securely to the fence posts with wire ties or staples.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt bulges removed when "bulges" develop in the silt fence.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 9 - 15 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**SEQUENCE OF CONSTRUCTION**

1. Obtain all necessary approvals, permits, and easements. The contractor must notify the Howard County Department of Inspection and Permits, and Mass Utility at least 48 prior or to beginning work.
2. The contractor shall schedule a pre-construction meeting with the respective agencies to review the plans and permits. (1 day)
3. Clear only for grade, and install stabilized construction entrance. (1 week)
4. Clear only for and install perimeter silt fences. (1 day)
5. Clear remaining site area within L.O.D as shown on approved plans. (1 day)
6. Rough grade site per approved plans. (2 weeks)
7. Install water and sanitary sewer connections. (1 week)
8. Excavate for footings and construction building. (3 months)
9. Install underground conduits and paving courses. (2 weeks)
10. Fine grade and place 2 inches of topsoil. Stabilize with seed and mulch. (1 week)
11. Once the site is stabilized and with the approval of the Howard County Sediment Control Inspector, remove all sediment controls measures. Re-stabilize areas, which were disturbed during removal of the sediment control measures.

\* = Denotes activities that can be done concurrently

**BY THE DEVELOPER :**

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 THE ENVIRONMENT APPROVED TRAINING BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: *James E. Harris* DATE: 1/16/04

**BY THE ENGINEER :**

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.

ENGINEER: *Jim Myers* DATE: 1/16/04

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE DATE: 3/7/05

HOWARD SOIL CONSERVATION DISTRICT DATE: 3/7/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR: *Frank A. Legler* DATE: 1/16/05

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 3/17/05

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 1/16/05

OWNER: JAMES E. HARRIS 5434 A. KERGER ROAD ELLICOTT CITY, MD. 21042

DEVELOPER: JAMES E. HARRIS 5434 A. KERGER ROAD ELLICOTT CITY, MD. 21042

PROJECT: JAMES HARRIS SUBDIVISION LOT 4 5432 KERGER ROAD

TAX MAP 31, GRID 21, PARCEL 213, LOT 4

1st ELECTION DISTRICT

WATER CODE DO3 SEWER CODE 2155000

**NOTES & DETAILS**

MESSICK & ASSOCIATES CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201 ANNAPOLIS, MARYLAND 21401  
(410) 266-3212 \* FAX (410) 266-3502

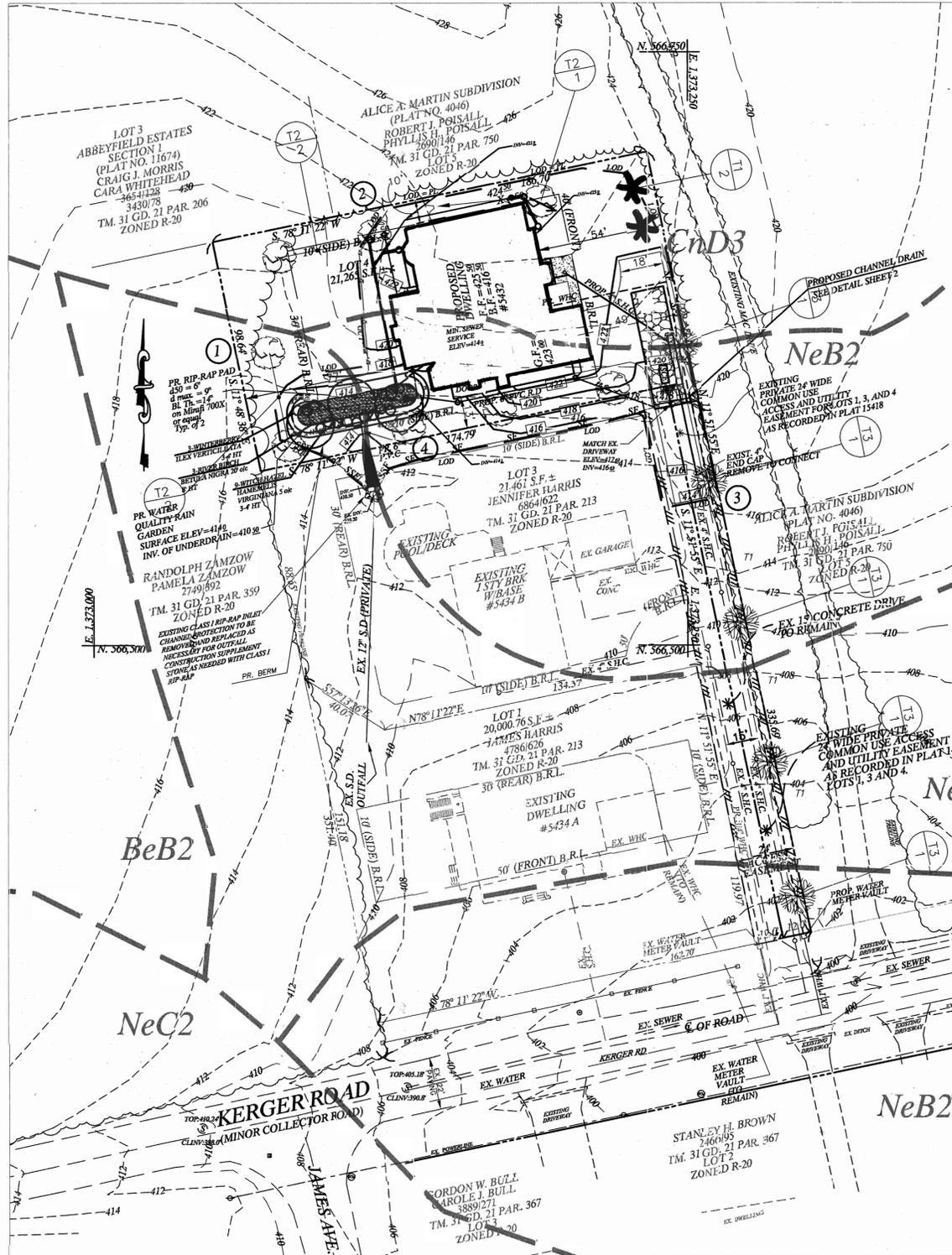
DESIGNED BY: WAN  
DRAWN BY: BPO  
PROJECT NO:  
DATE: JANUARY, 2004  
SCALE: AS SHOWN  
DRAWING NO.: 3 OF 4

WAYNE A. NEWTON #21591

SCHEDULE A PERIMETER LANDSCAPE EDGE		
CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	NONE/B	"A"
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	12 L.F.	N/A
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	0 0 0	14 0 0
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SHRUBS (2:1 SUBSTITUTION) OTHER TREES (2:1 SUBSTITUTION) SHRUBS (2:1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	0 0 0	13 2* 0

SUBSTITUTIONS \* - SUBSTITUTED 2 EVERGREENS FOR 1 SHADE TREES ALONG PERIMETER EDGE 3.

PERIMETER EDGE SUMMARY					
EDGE NO.	PERIMETER TYPE	PERIMETER LENGTH	PLANTS REQUIRED	CREDIT FOR EX. VEGETATION, ETC.	PLANTS PROVIDED
1	A	98.64 L.F.	2	NO	2
2	A	186.70 L.F.	3	NO	3
3	A	335.69 L.F.	6	NO	6
4	A	174.79 L.F.	3	NO	3

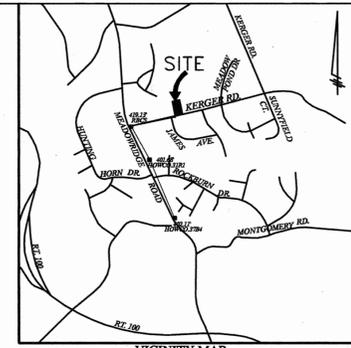


**PLAN**

SCALE: 1"=30'

**PLANTING NOTES:**

- All plants shall be nursery grown.
  - All plants shall conform to the standards of A.A.N. They shall be typical of their species or variety and shall have a normal habit of growth. They shall be sound, healthy and vigorous, well-branched and densely foliated when in leaf. They shall be free of disease and insect pests, eggs, or larvae. They shall have healthy, well-developed root systems.
  - No substitutions shall be made without the approval of the landscape architect.
  - Balled and burlapped plants shall be dug with firm natural balls of earth, of diameter and depth to include most of the fibrous roots. Container grown stock shall have been grown in a container long enough for the root system to be developed sufficiently to hold its soil together firm and whole. No plants shall be loose in the container.
  - Root balls of all plants shall be adequately protected at all times from sun and drying winds or frost.
  - Owner or his representative shall be notified prior to beginning planting operations.
  - All trees shall be wrapped immediately after they are planted.
- Approved tree wrap shall be installed according to accepted industry practice.
- Each tree and shrub shall be pruned in accordance with the American Association of Nurserymen Standards to preserve the natural character of the plant. All dead wood or suckers and all broken or badly bruised branches shall be removed. Cuts over 1" in diameter shall be painted with an approved tree paint.
  - Mulch: immediately after planting operations are completed all trees and shrub planting pits shall be covered with a 2" layer of Shredded Hardwood Bark Mulch or other material approved by the owner or his representative. The limit of this mulch for trees shall be the area of the pit and for shrubs in beds, the entire area of the shrub bed.
  - Trees in leaf when planted shall be treated with anti-desiccant such as Wilt-Proof.
  - Conditions detrimental to plants: the contractor shall notify the project representative in writing of all soil or drainage conditions which the contractor considers detrimental to the growth of plants. He shall state the conditions and submit a proposal for correcting the conditions, including any change in cost for review and acceptance by the project representative.
  - Minor adjustments to tree location may be necessary due to field conditions and final grading. The contractor shall notify the owner if major adjustments are required.

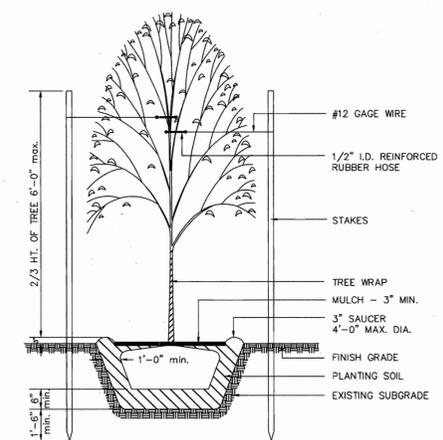


**DEVELOPER'S/BUILDER'S CERTIFICATE**

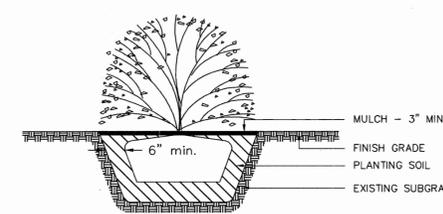
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF NOTICE OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME: *James E. Harris* DATE: 2/15/05

THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.



TREE PLANTING DETAIL - LESS THAN 4" CAL.



SHRUB PLANTING DETAIL

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR: *Mark J. Light* DATE: 2/10/05

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *John Dammann* DATE: 2/10/05

CHIEF, DIVISION OF LAND DEVELOPMENT: *Cindy Hamner* DATE: 2/17/05

DATE	NO.	REVISION

OWNER: JAMES E. HARRIS  
5434 A. KERGER ROAD  
ELLCOT CITY, MD. 21042

DEVELOPER: JAMES E. HARRIS  
5434 A. KERGER ROAD  
ELLCOT CITY, MD. 21042

PROJECT: JAMES HARRIS SUBDIVISION LOT 4  
5432 KERGER ROAD

TAX MAP 31, GRID 21, PARCEL 213, LOT 4  
1st ELECTION DISTRICT

WATER CODE D03 SEWER CODE 2155000

**LANDSCAPE PLAN**

MESSICK & ASSOCIATES \*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212 \* FAX (410) 266-3502

DATE: 2/14/05

DESIGNED BY: WAN

DRAWN BY: BPO

PROJECT NO:

DATE: JANUARY, 2004

SCALE: AS SHOWN

DRAWING NO.: 4 OF 4

WAYNE A. NEWTON #2159T

PLANT LIST					
SYMBOL	ID	BOTANICAL NAME COMMON NAME	QTY	SIZE	SPACING
*	T1	CUPPRESSOCYPARIS LEYLANDI LEYLAND CYPRESS	2	5-6' HT	AS SHOWN
⊗	T2	ACER RUBRUM/OCTOBER GLORY OCTOBER GLORY RED MAPLE	8	2 1/2-3" CAL	AS SHOWN
⊗	T3	ZELKOVA SERRATA GREEN JAPANESE ZELKOVA	5	2 1/2-3" CAL	AS SHOWN

NOTE: LANDSCAPING, NOTES, ETC. AS SHOWN HEREON ARE TAKEN FROM THE APPROVED LANDSCAPE PLAN ON FILE WITH DPZ FOR SUBDIVISION F-01-080.