

U.S. EQUIVALENT COORDINATE TABLE

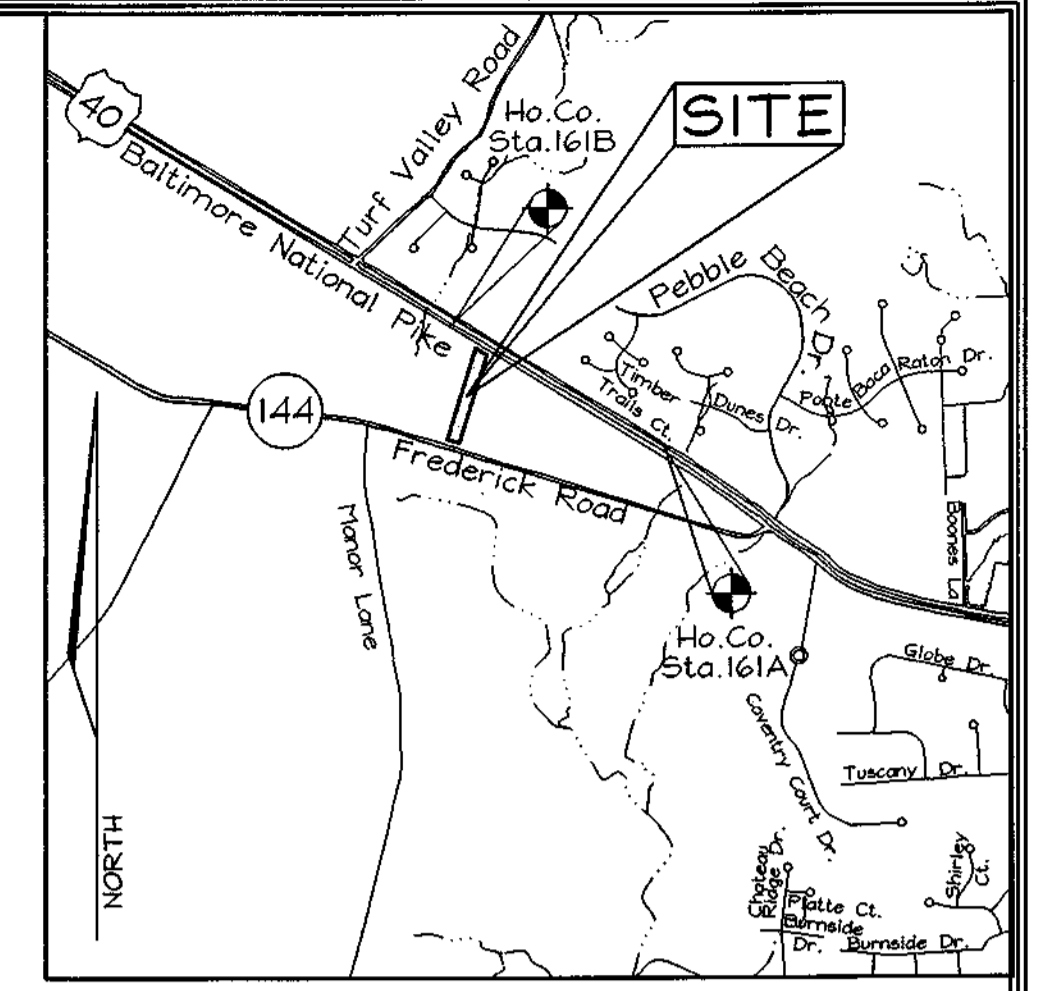
POINT	NORTHING	EASTING
30	589,226.4720	1,344,717.4561
31	590,187.8785	1,345,014.6601
32	589,187.2986	1,344,844.5563
33	590,116.6811	1,345,131.8707

MINIMUM LOT SIZE CHART

LOT NUMBER	GROSS AREA (sf)	PIPESTEM AREA (sf)	MINIMUM LOT SIZE
2	23,586±	1,831±	21,755±
3	25,193±	3,318±	21,875±
4	26,213±	4,718±	21,495±

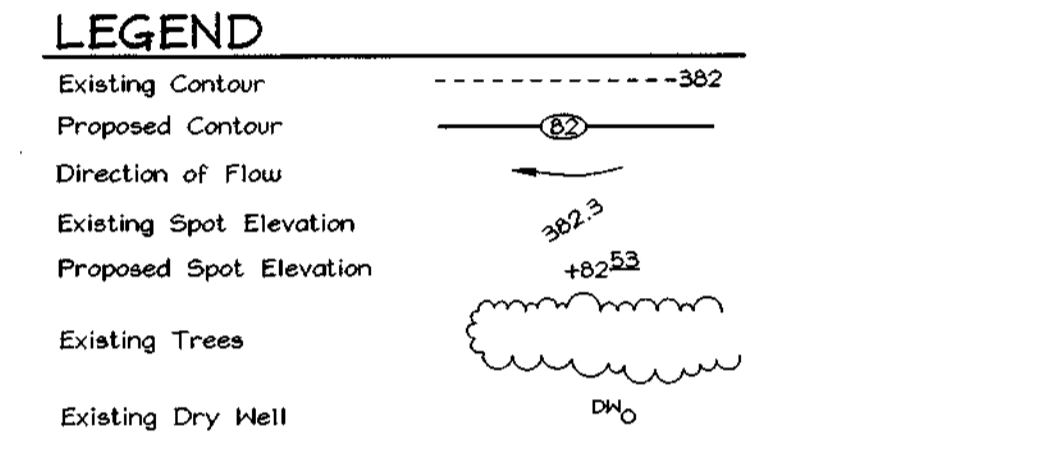
BENCHMARKS

Sta. 161A	N 179,682.8211	E 410,366.3677	El.: 141.3280 (meters)
	N 589,509.3888	E 1,346,343.6588	El.: 463.674 (feet)
Sta. 161B	N 179,977.2258	E 409,861.8290	El.: 148.4819 (meters)
	N 590,475.2811	E 1,344,753.7677	El.: 470.576 (feet)

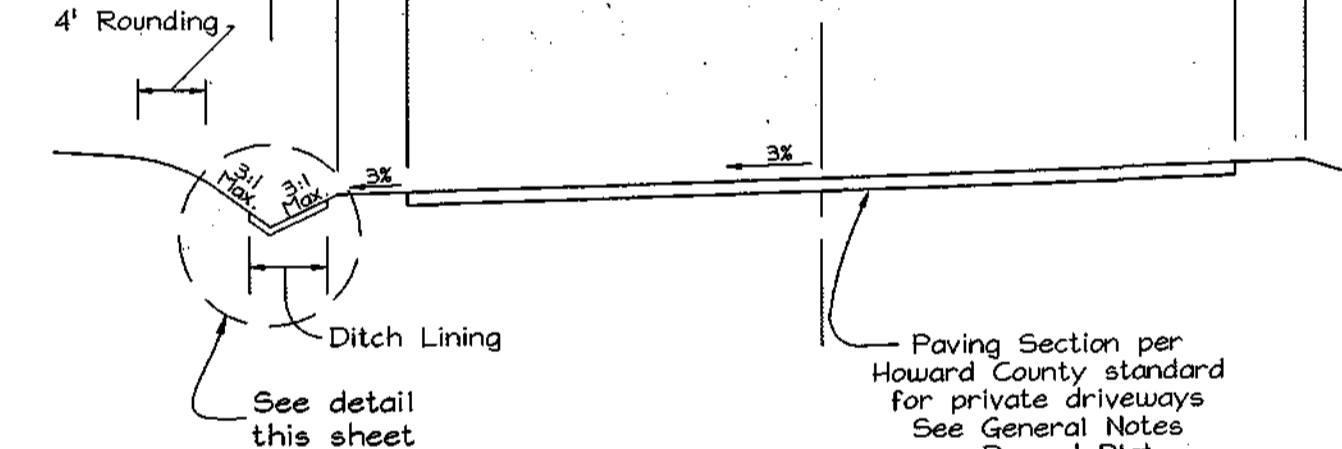
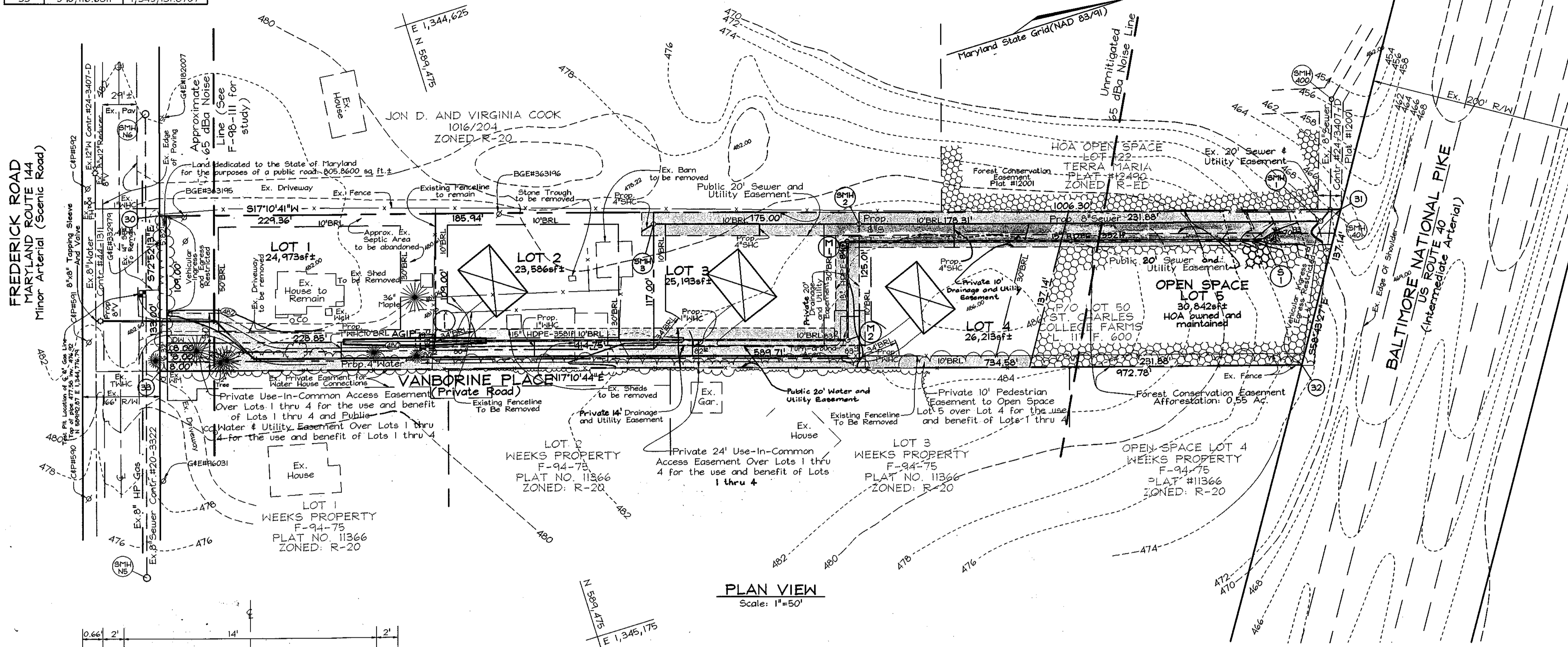


SHEET INDEX

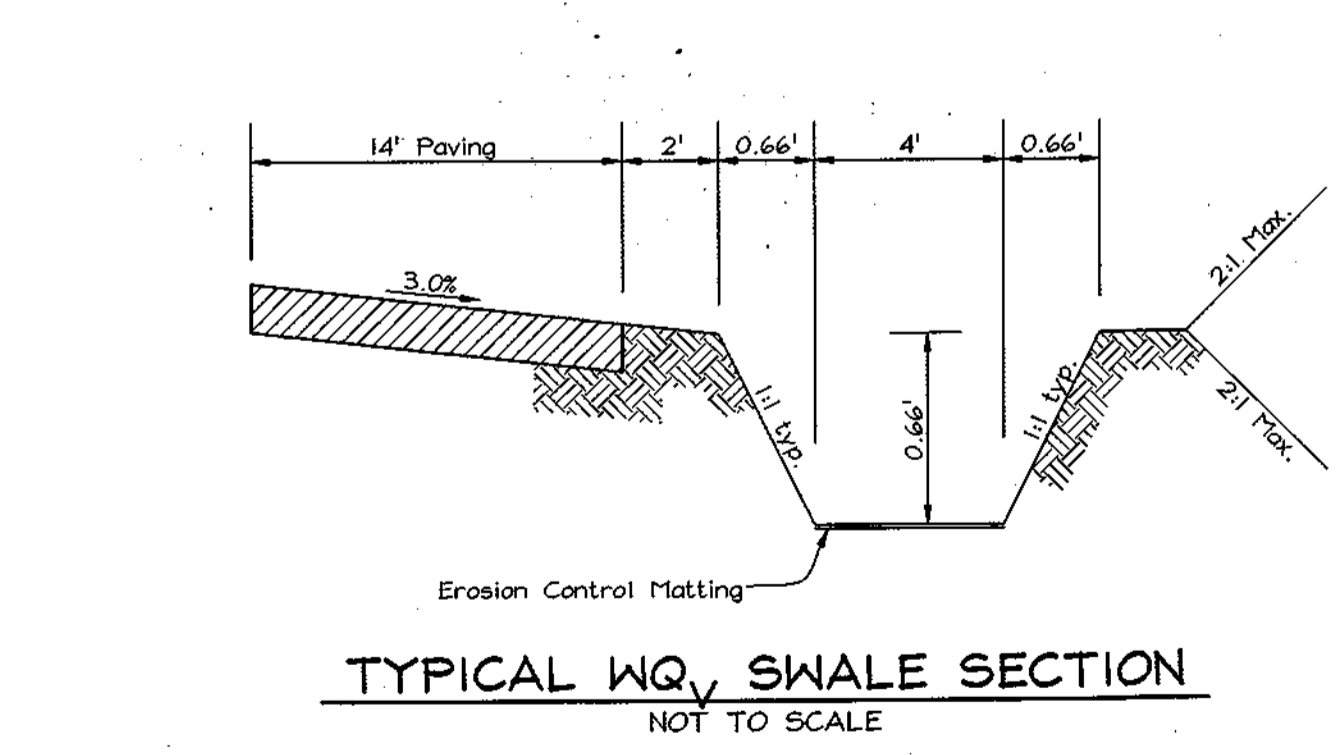
DESCRIPTION	SHEET No.
Grading and Layout Plan	1 of 4
Sediment and Erosion Control Plan and Details	2 of 4
Storm Drain Drainage Area Map, Landscaping and Soils Plan	3 of 4
Final Forest Conservation Plan	4 of 4



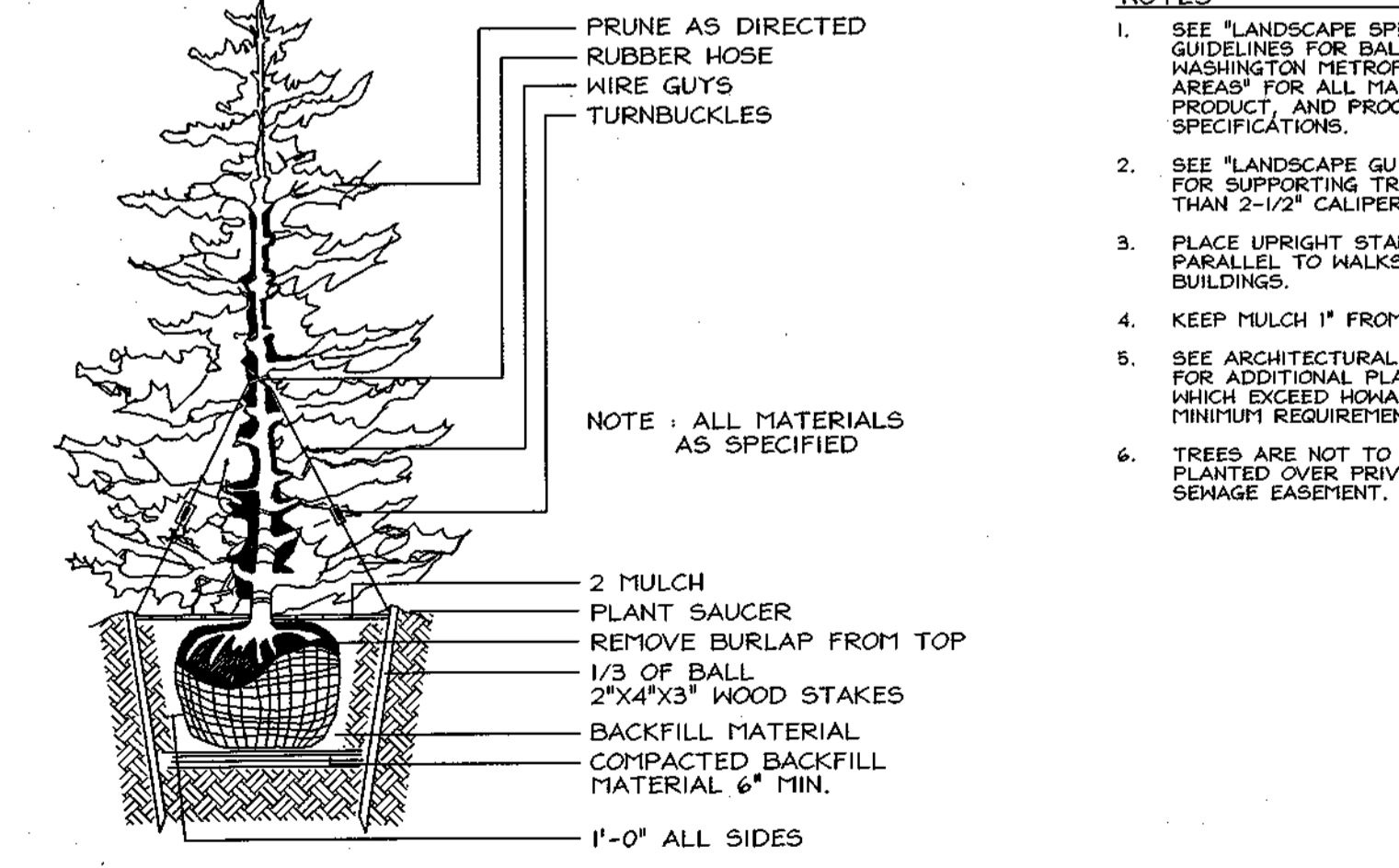
- GENERAL NOTES**
- Subject property zoned "R-20" per 9/18/93 Comprehensive Zoning Plan.
 - Public water and sewer will be used within this site.
 - Total area of property = 3.02 ac.±
 - Area of proposed public R/W: 0.02 ac.±
 - Number of proposed buildable lots: 4
Area of proposed buildable lots: 2.29 ac.±
 - Number of proposed open space lots: 1
Area of proposed open space lots: 0.71 ac.±
 - Open space requirements:
 - Open space required (6%): 3.02 ac. x 0.06 = 0.18 ac.
 - Open space provided: 0.71 ac.±
 - On April 10, 2001 the planning director approved waiver petition WP-01-89 from section 16.121.E.(1) to allow open space Lot 5 to have zero (0) feet frontage on a public road subject to:
 - Providing a 24' wide shared access easement to lots 1-4 and;
 - Open space Lot 5 shall be dedicated to the homeowners association.
 - The lots shown hereon comply with the minimum ownership, width and lot area as required by the Maryland State Department of the Environment.
 - Topography based on a Field Run Topographic Survey prepared by C.B. Miller & Associates in December, 2001 with two foot contours.
 - Existing house on Lot 1 to remain.
 - Existing well and septic system on Lot 1 to be properly abandoned and replaced prior to submittal of record plat for signature.
 - Howard County Soils Map #15.
 - Howard County Geodetic Control Stations: 161A and 161B
 - The project is within the metropolitan district.
 - Previous Howard County file numbers: S-01-22; WP-01-089; P-02-019.
 - The project is in conformance with the latest Howard County Standards unless waivers have been approved.
 - There are no floodplains on-site.
 - There are no wetlands on-site.
 - The noise study for a portion of this project that fronts on MD. RT. 144 was taken from neighboring study F-98-111, and a noise study was prepared on October 2, 2002 by The Willson T. Ballard Co. for the portion of the property that fronts on RT. 40.
 - For flag or pipestem lots, refuse collection, snow removal and road maintenance are provided to the junction of the flag or pipestem and road right-of-way line and not to the pipestem lot driveway.
 - Forest Stand Delineation and Conservation plans prepared by Exploration Research Inc. and approved under S-01-22 and F-02-19.
 - Existing Dry Well to be abandoned.
 - Stormwater Management requirements:
 - SM11 for Channel Protection (Cp) is not required for this site.
 - Water Quality (Wq) for lots 2 thru 4 and the driveway is provided by disconnecting roofs and driveways.
 - Recharge (Re) for lots 2 thru 4 and the driveway is provided by disconnecting the roofs and driveways utilizing the Area Equivalent Credit.
 - This plan shall be subject to compliance with the fourth edition of the Howard County Subdivision and Land Development Regulations.
- General Notes Continued See This Sheet



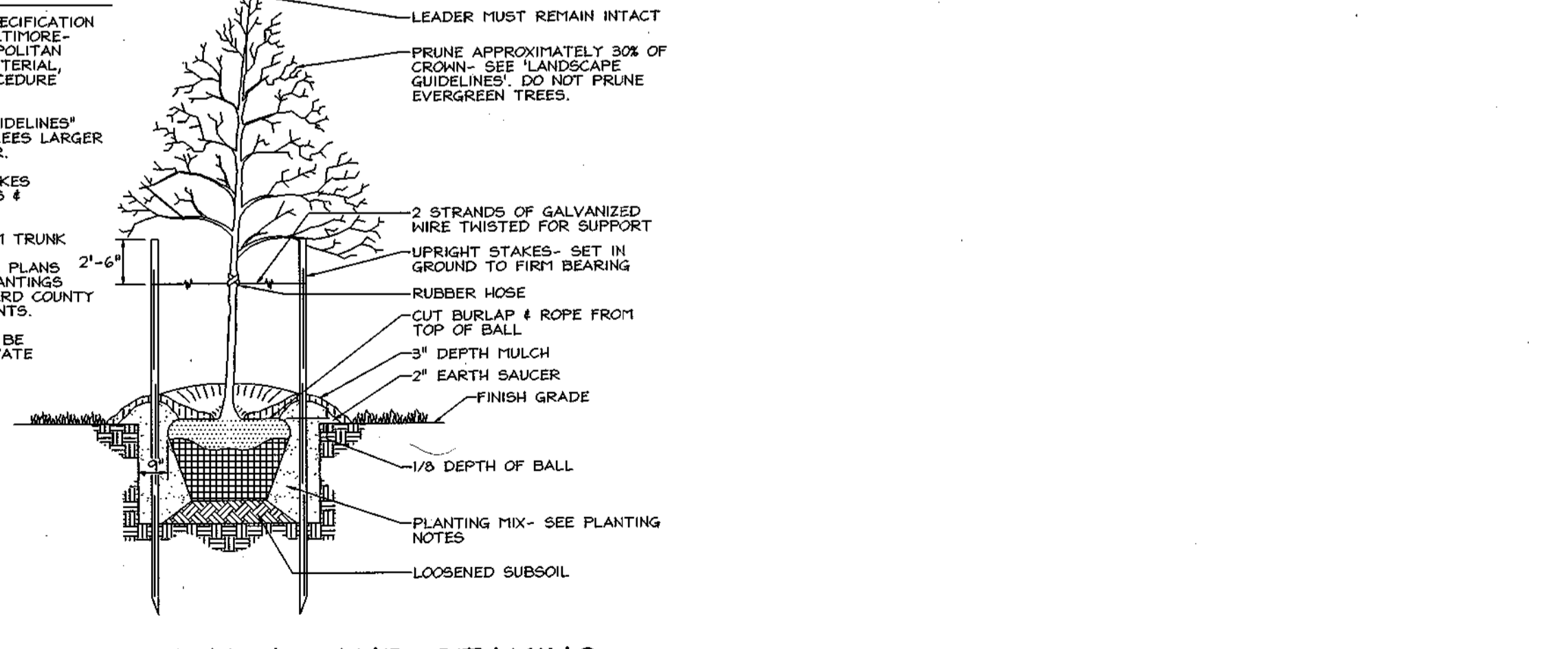
TYPICAL ROADWAY SECTION
CLASSIFICATION: USE-IN-COMMON
NOT TO SCALE



TYPICAL WQ SWALE SECTION
NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



TYPICAL TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* DATE *4/25/03*

CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* DATE *4/25/03*

- NOTES**
- SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
 - SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
 - PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
 - KEEP MULCH 1" FROM TRUNK.
 - SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
 - TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWER EASEMENT.
- Continuation of General Notes**
- Lots 2, 3 and 4 are subject to submission and approval of a site development plan in accordance with section 16.155 of the Subdivision and Land Development Regulations.
 - 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 the following utility companies or agencies at least five (5) working days before starting work shown on these plans:

State Highway Administration	410.531.5533
BGE (Contractor Services)	410.850.4620
BGE (Underground Damage Control)	410.291.4607
Mts Utility	1.800.257.7777
Colonial Pipeline Company	410.549.4120
Howard County, Dept. of Public Works, Bureau of Utilities	410.313.4900
Howard County Health Department	410.313.2640
Bureau of Utilities	410.313.4900
Verizon	1.800.743.0033 / 410.224.9210
 - Financial surety for the required landscaping must be posted as part of the Developers agreement in the amount of \$10,650.00 (25 shade trees @ \$300.00 each, 12 ornamentals @ \$150.00 each and 3 evergreens @ \$150.00 each).

OWNER
Paul D. and Dolores E. Henderson
10772 Frederick Road
Ellicott City, Md. 21042

DEVELOPER
Knauff Development LLC.
4979 Buckskin Lake Drive
Ellicott City, Md. 21042
(410) 977-4945

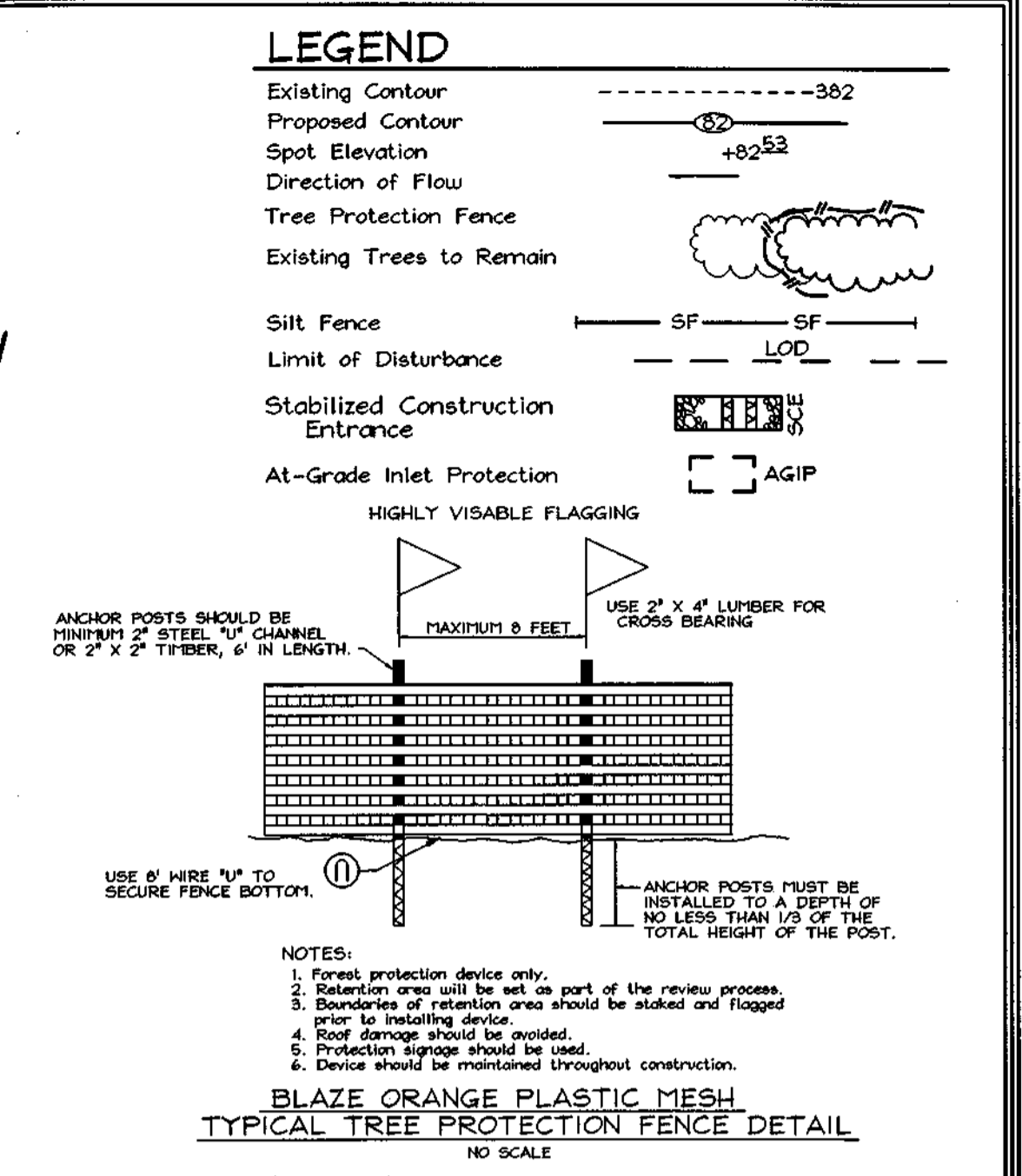
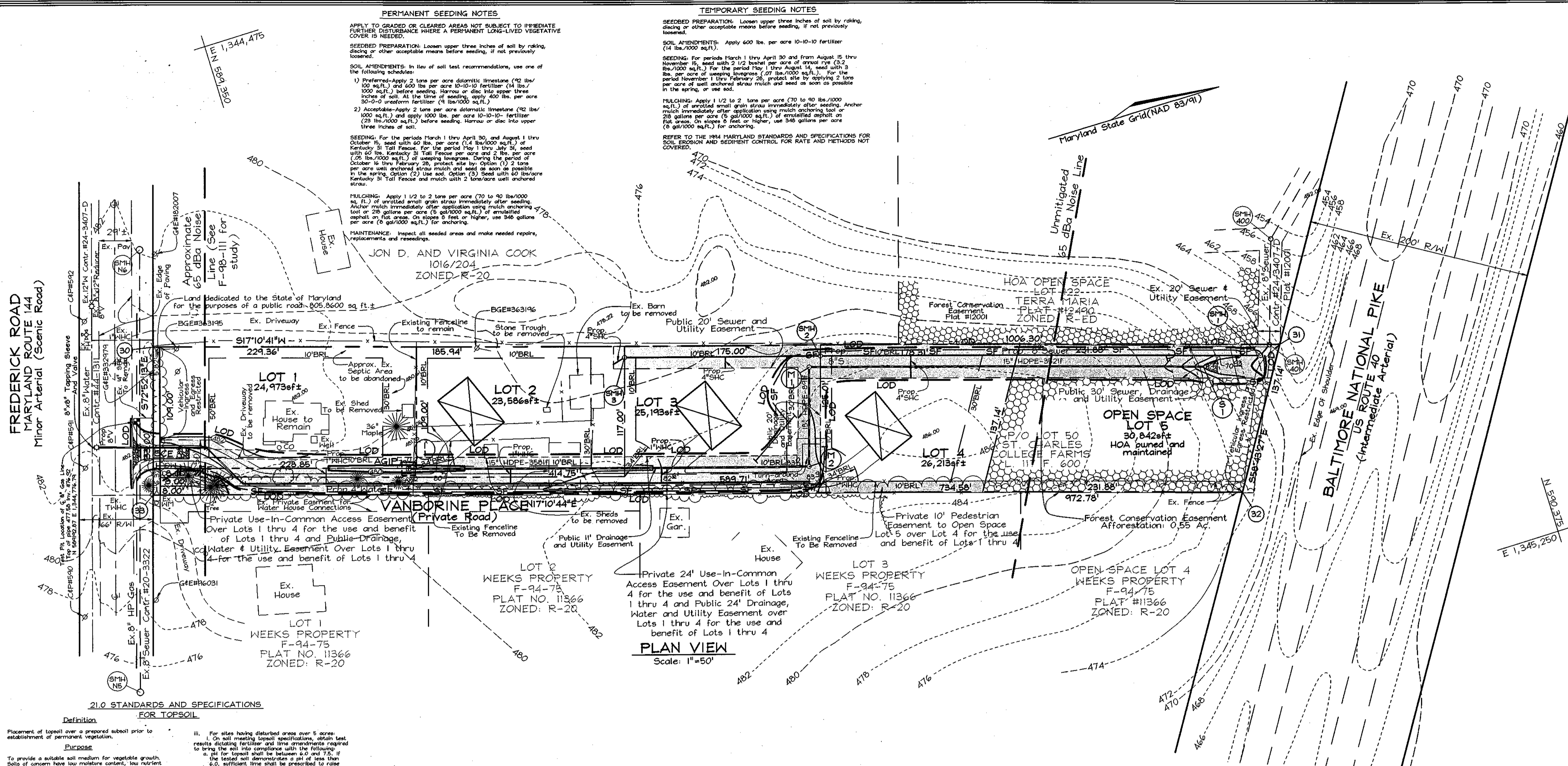
GRADING AND LAYOUT PLAN
VANBORINE PLACE
A resubdivision P/O Lot 50, St. Charles College Farms, L117 F.600, dated May 23, 1923
LOTS 1 THRU 4 AND OPEN SPACE LOT 5

TAX MAP 16 GRID 24
2ND ELECTION DISTRICT

PARCEL 12
HOWARD COUNTY, MARYLAND

FSH Associates
Engineers Planners Surveyors
3318 Forest Street, Ellicott City, MD 21043
Tel: 410-750-2251 Fax: 410-750-7350
E-mail: FSHassociates@cs.com

DESIGN BY: PS
DRAWN BY: M2
CHECKED BY: ZYF
SCALE: As Shown
DATE: Mar. 5, 2003
P.O. No.: 3014
SHEET No. 1 OF 4



SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division prior to the start of any construction. (311-2665)
- All vegetation and structural practices are to be installed according to the provisions of this plan and in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and remains thereto.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within 72 hours of the start of disturbance. Sediment control structures, dikes, perimeter slopes, and all slopes greater than 3:1, (8) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above. Stabilization shall be completed within 72 hours of the start of disturbance. EROSION AND SEDIMENT CONTROL for permanent seeding, soil, temporary seeding, and mulching (Sec. 6). Temporary stabilization with mulch alone shall be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and one to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

Total Area	3.02 Acres
Area Disturbed	0.84 Acres
Area to be roofed or paved	0.21 Acres
Area to be vegetatively stabilized	0.63 Acres
Total Cut	126 CY
Offsite waste/borrow area location	
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.
- Earthwork quantities are solely for the purpose of calculating fees. Contractor to verify all quantities prior to the start of construction.
- To be determined by contractor, with pre-approval of the Sediment Control Inspector with an approved and active grading permit.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

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

SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 Fertilizer (14 lbs./1000 sq.ft.)

SEEDING: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushels per acre of annual ryegrass (3.2 lbs./1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of annual ryegrass (3.6 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by applying 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring, or use sod.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of certified annual grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 25 gallons per acre (5 lbs./1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 3 feet or higher, use 346 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

SEEDING: For the periods March 1 thru April 30 and August 1 thru October 15, seed with 40 lbs. per acre (14 lbs./1000 sq.ft.) Kentucky Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs./1000 sq.ft. of urea treated fescue. During the period October 1 thru February 28, protect site by Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring, Option (2) Use sod, Option (3) Seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of certified annual grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 25 gallons per acre (5 lbs./1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 3 feet or higher, use 346 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

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

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition: Topsoil is a layer of soil that is rich in organic matter and is the most fertile layer of soil. It is the layer of soil that is most susceptible to erosion and is the layer of soil that is most important for plant growth.

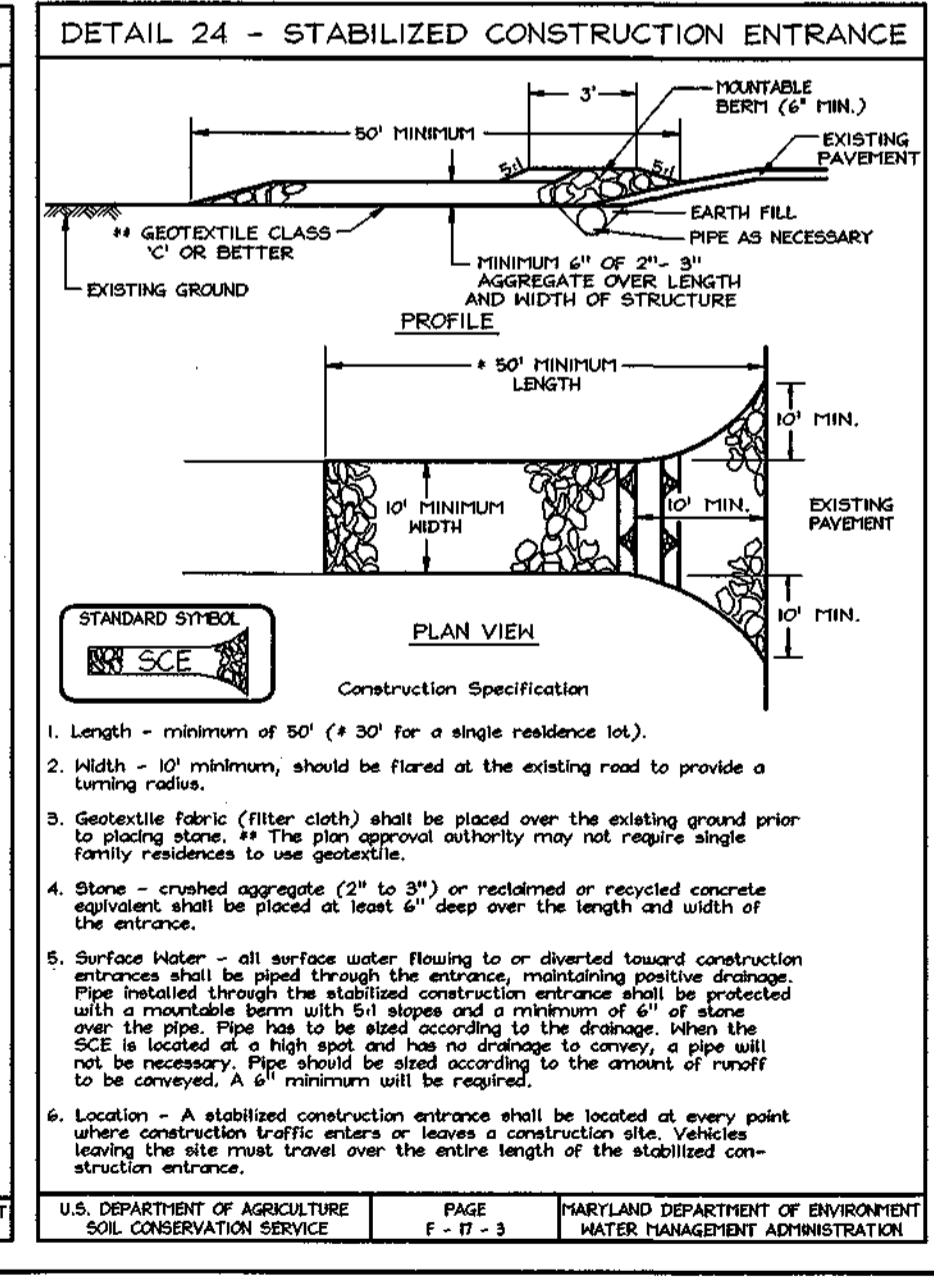
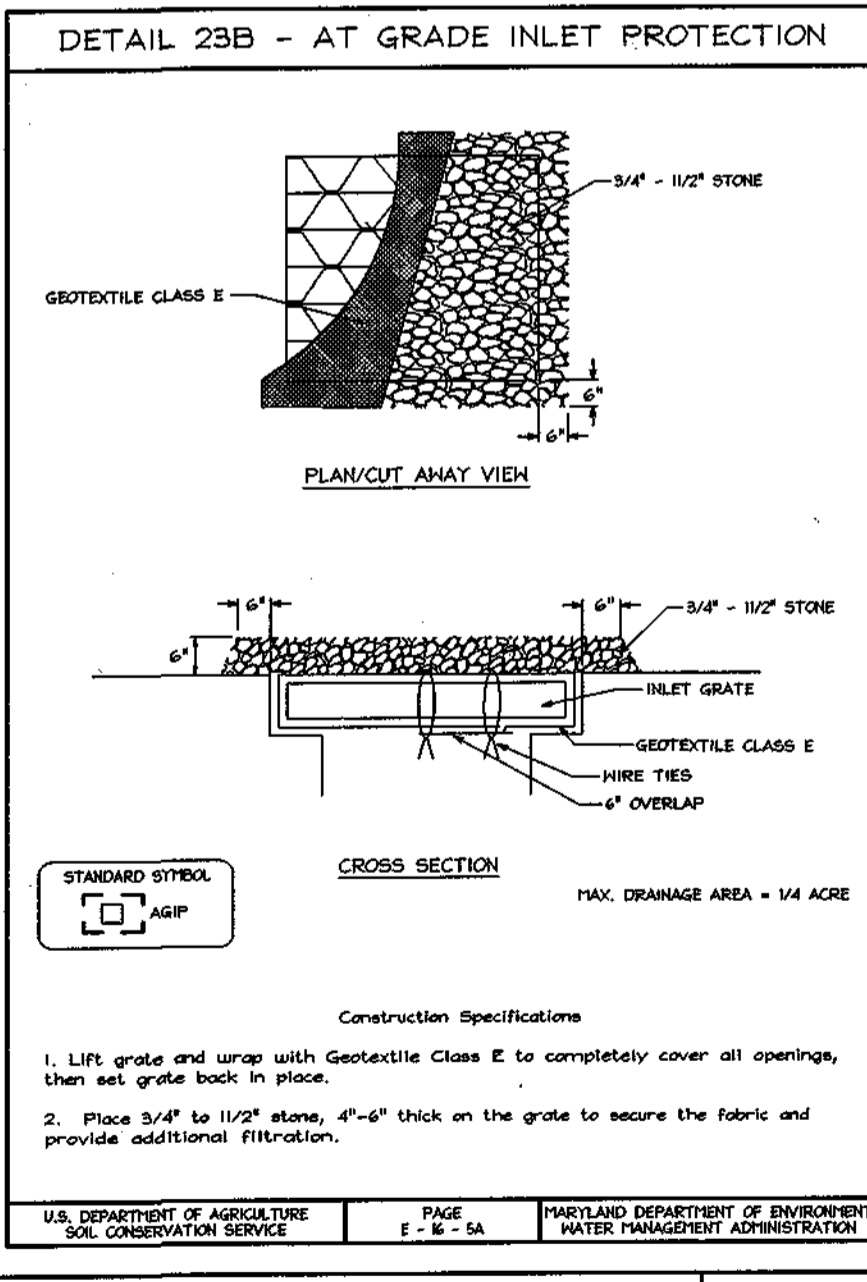
Purpose: To provide a suitable soil medium for vegetation growth. Soils of concern have low moisture content, low nutrient levels, low pH, moderate to high salinity, and unacceptable soil gradation.

Conditions Where Practice Applies:

- This practice is limited to areas having 21' or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications:

- Topsoil salvaged from the existing site may be used provided that it meets the standards set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or a soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall be a mixture of contrasting textures and subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, rocks, roots, trash, or other materials larger than 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4-8 lbs/1000 sq. ft. (200-400 lbs/acre) (max. 50 lbs/1000 sq. ft.) prior to the placement of topsoil. Lime shall be applied uniformly and designed to be worked into the soil in conjunction with tillage operations as described in the following procedure:
 - For sites having disturbed areas under 5 acres:
 - Place topsoil (if required) and apply soil amendments as specified in 21.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
 - For sites having disturbed areas over 5 acres:
 - For sites having disturbed areas over 5 acres, on soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - All topsoil shall be between 4.0 and 7.5. If the tested soil demonstrates a pH of less than 4.0, sufficient lime shall be prescribed to raise the pH to 4.0 or higher.
 - Organic content of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having acidic salt content greater than 500 parts per million shall not be used.
 - No soil or sand shall be placed on soil which has been treated with soil sterilants or chemicals used for pest control until sufficient time has elapsed (14 days min.) to permit dissipation of toxic materials.
 - NOTE: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of control topsoil.
 - Place topsoil (if required) and apply soil amendments as specified in 21.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
 - Topsoil Application
 - When applying, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
 - Grades on the areas to be topsoiled, which have been previously stabilized, shall be maintained, albeit 4" - 6" higher in elevation.
 - Topsoil shall be uniformly distributed in a 4" - 6" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can be performed immediately after topsoil preparation and tillage. Any irregularities in the surface resulting from topsoiling operations shall be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and needed preparation.
- Lift grade and urea with Geotextile Class E to completely cover all openings, then set grate back in place.
- Place 5/4" to 1 1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.



SEQUENCE OF CONSTRUCTION

- Obtain grading permit.
- Notify Howard County Department of Inspections, License and Permits at (410) 313-1800 at least 24 hours before starting any work.
- Install stabilized construction entrance, tree protection fence and silt fence. (1 week)
- Construct storm drain, storm drain outfall, and install inlet protection. (3 weeks)
- Construct proposed driveway and install grass channel along driveway. (1 week)
- Final grade site. (1 week)
- Install arborvitae plantings (landscaping trees to be planted at site development stage. (1 week))
- During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the sediment control measures on this plan.
- Following initial soil disturbance or any redistributions, permanent or temporary stabilization shall be completed within:
 - 7 calendar days for all perimeter sediment control structures, dikes, swales and all slopes greater than 3:1.
 - 14 calendar days for all other disturbed areas.
- Upon stabilization of all disturbed areas and with the permission of the sediment control inspector, remove all sediment control measures and stabilize any remaining disturbed area. (1 week)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 3/27/03

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 3/27/03

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

JIM MYERS 3/27/03

USDA-NATURAL RESOURCE CONSERVATION SERVICE DATE

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

JOHN R. PHILLIPS 3/27/03

HOWARD SCD DATE

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

ZACHARIA Y. FISCH 3-19-03

SIGNATURE OF ENGINEER DATE

ZACHARIA Y. FISCH DATE 3/19/03

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

PAUL D. AND DOLORES E. HENDERSON 3/19/03

SIGNATURE OF DEVELOPER DATE

OWNER

Paul D. and Dolores E. Henderson
10772 Frederick Road
Ellicott City, Md. 21042

DEVELOPER

Knuff Development LLC.
4479 Buckskin Lake Drive
Ellicott City, Md. 21042

SEDIMENT AND EROSION CONTROL PLAN AND DETAILS VANBORINE PLACE

A resubdivision P/O Lot 50, St. Charles College Farms, L117 F.600, dated May 23, 1923 LOTS 1 THRU 4 AND OPEN SPACE LOT 5

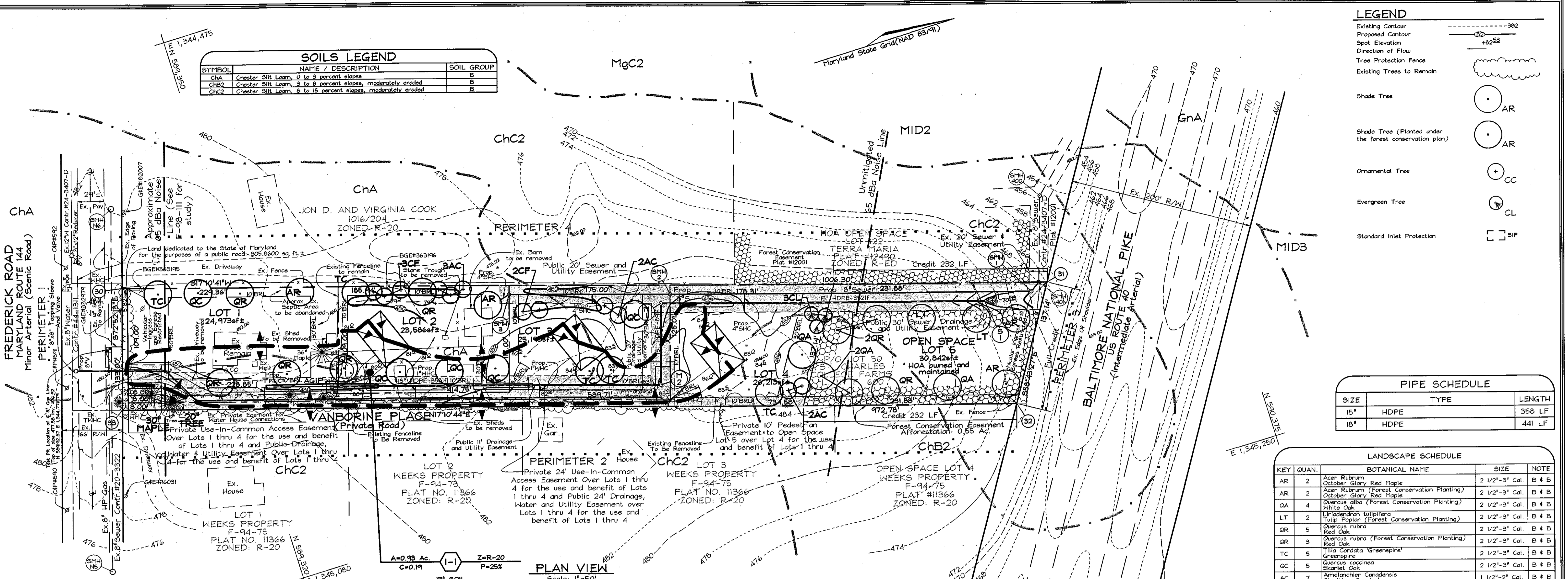
TAX MAP 16 GRID 24 PARCEL 12
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FSH Associates
Engineers Planners Surveyors
8318 Forest Street Ellicott City, MD 21043
Tel: 410-750-2251 Fax: 410-750-7350
E-mail: FSHAssociates@cs.com

DESIGN BY: PS
DRAWN BY: M2
CHECKED BY: ZYF
SCALE: 1"=50'
DATE: Mar. 5, 2003
I.O. No.: 3014
SHEET No. 2 OF 4

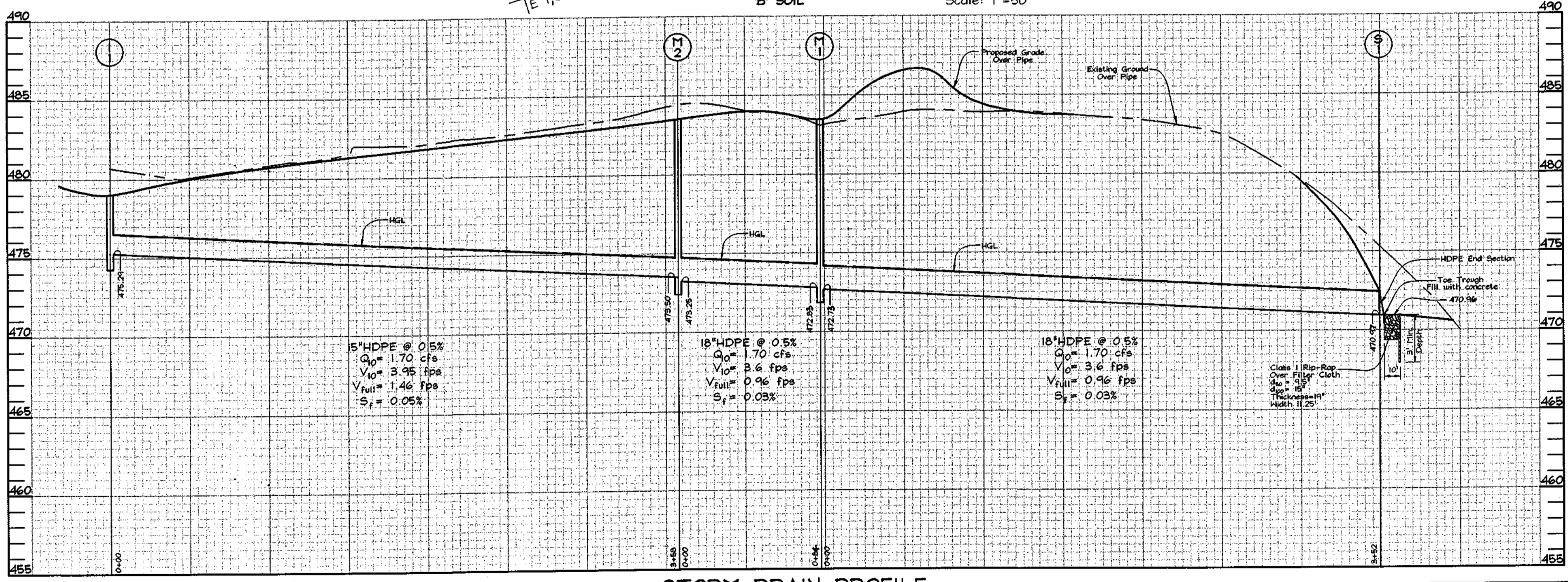
SYMBOL	NAME / DESCRIPTION	SOIL GROUP
ChA	Chester Silt Loam, 0 to 3 percent slopes	B
ChB2	Chester Silt Loam, 3 to 8 percent slopes, moderately eroded	B
ChC2	Chester Silt Loam, 8 to 15 percent slopes, moderately eroded	B

LEGEND	
Existing Contour	---382
Proposed Contour	---382
Spot Elevation	+82.53
Direction of Flow	→
Tree Protection Fence	⊘
Existing Trees to Remain	⊘
Shade Tree	⊘ AR
Shade Tree (Planted under the forest conservation plan)	⊘ AR
Ornamental Tree	⊘ CC
Evergreen Tree	⊘ CL
Standard Inlet Protection	⊘ SIP



SIZE	TYPE	LENGTH
15"	HDPE	358 LF
18"	HDPE	441 LF

KEY	QUAN.	BOTANICAL NAME	SIZE	NOTE
AR	2	Acer Rubrum	2 1/2"-3" Cal.	B # B
AR	2	Acer Rubrum (Forest Conservation Planting)	2 1/2"-3" Cal.	B # B
QA	4	Quercus alba (Forest Conservation Planting)	2 1/2"-3" Cal.	B # B
QT	4	Quercus tinctoria (Forest Conservation Planting)	2 1/2"-3" Cal.	B # B
QR	5	Quercus rubra	2 1/2"-3" Cal.	B # B
QR	3	Quercus rubra (Forest Conservation Planting)	2 1/2"-3" Cal.	B # B
TC	5	Tilia Cordata 'Greenspire'	2 1/2"-3" Cal.	B # B
QC	5	Quercus cocinea	2 1/2"-3" Cal.	B # B
AC	7	Amelanchier Canadensis	1 1/2"-2" Cal.	B # B
CF	5	Cornus Florida Rubra	1 1/2"-2" Cal.	B # B
CL	3	Cupressocyparis Leylandi	5'-6" HT	B # B



GENERAL NOTES

- At the time of installation, all shrubs and other plantings herewith listed and approved for this site, shall be of the proper height requirements in accordance with the Howard County Landscaping Manual. In addition, no substitutions or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from this approved Landscaping Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to applicable plans and certificates.
- Financial surety for the required landscaping must be posted as part of the Developers agreement in the amount of \$10,650.00 (28 shade trees @ \$300.00 each, 12 ornamentals @ \$150.00 each and 3 evergreens @ \$150.00 each).
- Perimeter landscaping other than in the Forest Conservation Easement shall be planted at the Site Development plan stage.
- The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and 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.
- See Typical tree planting details on sheet 1.

CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES	
	1 None Required (Front)	3 B 137	2 A 973	4 A 1006
Linear Feet of Roadway Frontage/Perimeter (Yes, No, Linear Feet)	135 (note 1)	137	973	1006
Credit for Existing Vegetation (Yes, No, Linear Feet)	No	(note 4)	Yes (note 344)	Yes (note 4)
Remaining Perimeter Length	No	0	741	774
Credit for Wall, Fence or Berm (Yes, No, Linear Feet)	No	No	No	No
Number of Plants Required				
Shade Trees	N/A (note 1)	150 3	160 12	160 13
Evergreen Trees	-	140 3	-	-
Number of Plants Provided				
Shade Trees	-	(note 244)	9 (note 344)	8 (note 4)
Evergreen Trees	-	3 (note 2)	-	-
Other Trees (2:1 Substitution)	-	-	2	10
Shrubs (10:1 Substitution)	-	-	-	-
Credits Below if needed				

NOTES:

- No landscaping required since house fronts on road.
- The required landscape trees are to be placed along the boundary of Lot 4 and Open Space Lot 5.
- Two existing trees at the front of the property are being saved.
- Credit is allowable in these areas because Forest Conservation Planting is 2.0" Caliper or larger.

STORM DRAIN DRAINAGE AREA MAP LANDSCAPING AND SOILS PLAN VANBORINE PLACE
 A resubdivision P/O Lot 50, St. Charles College Farms, L117 F.600, dated May 23, 1923
LOTS 1 THRU 4 AND OPEN SPACE LOT 5
 TAX MAP 16 GRID 24 PARCEL 12
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4/28/03

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 CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE(1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
 SIGNATURE OF DEVELOPER: [Signature]
 DATE: 3/19/03

NO.	TYPE	LOCATION	TOP ELEV.	INV. IN.	INV. OUT.	REMARKS
I-1	Type 'S' Inlet	N 589,412.2 E 1,344,889.3	479.00	-	475.29	SD 4.22
M-1	Standard Precast Manhole (4')	N 589,780.5 E 1,344,909.7	483.50	472.83	472.73	G 5.12
M-2	Standard Precast Manhole (4')	N 589,754.1 E 1,344,995.0	483.50	473.50	473.25	G 5.12
S-1	15" HDPE End Section	N 590,116.8 E 1,345,013.6	472.44	470.97	470.96	Horror or equivalent

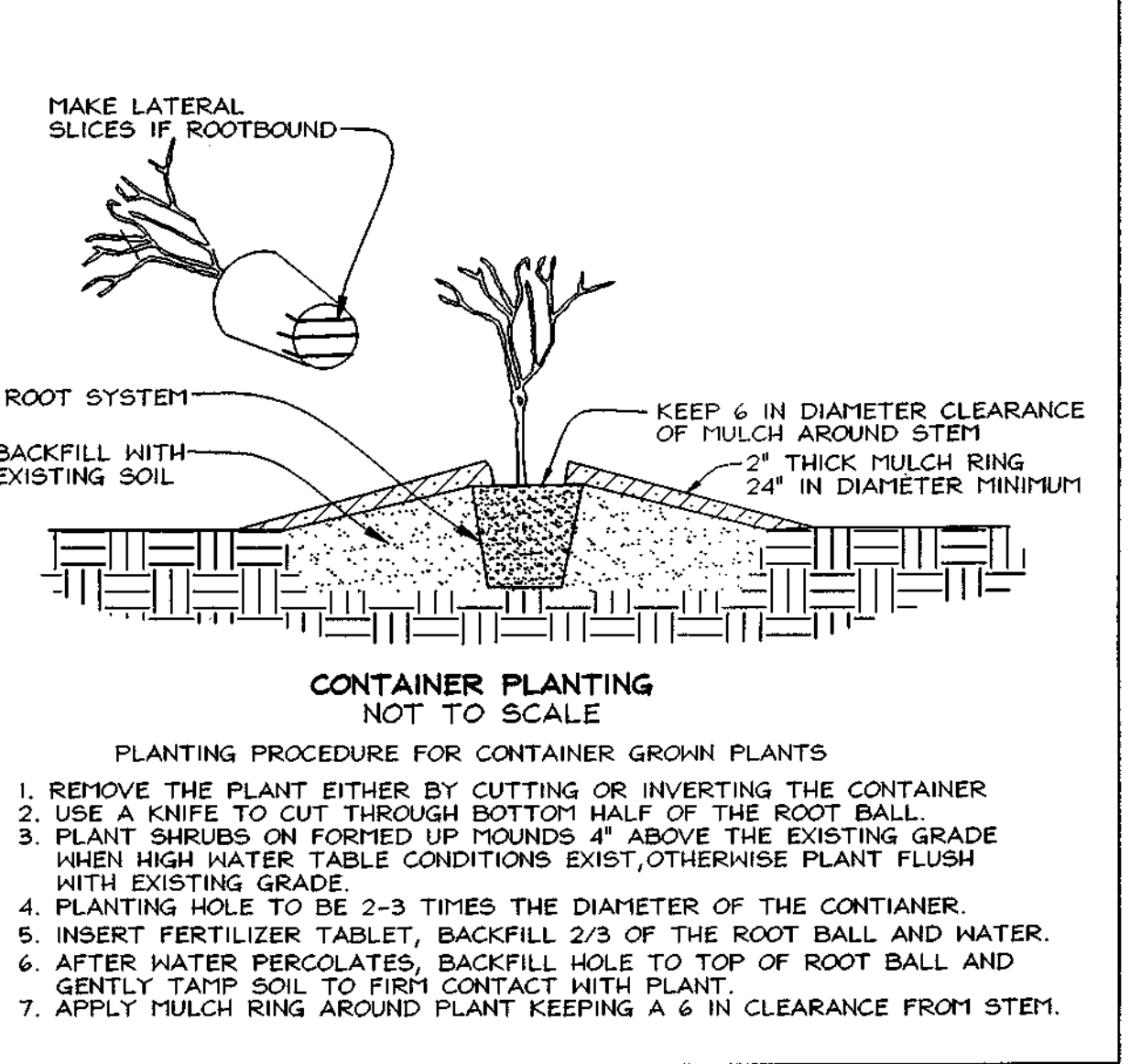
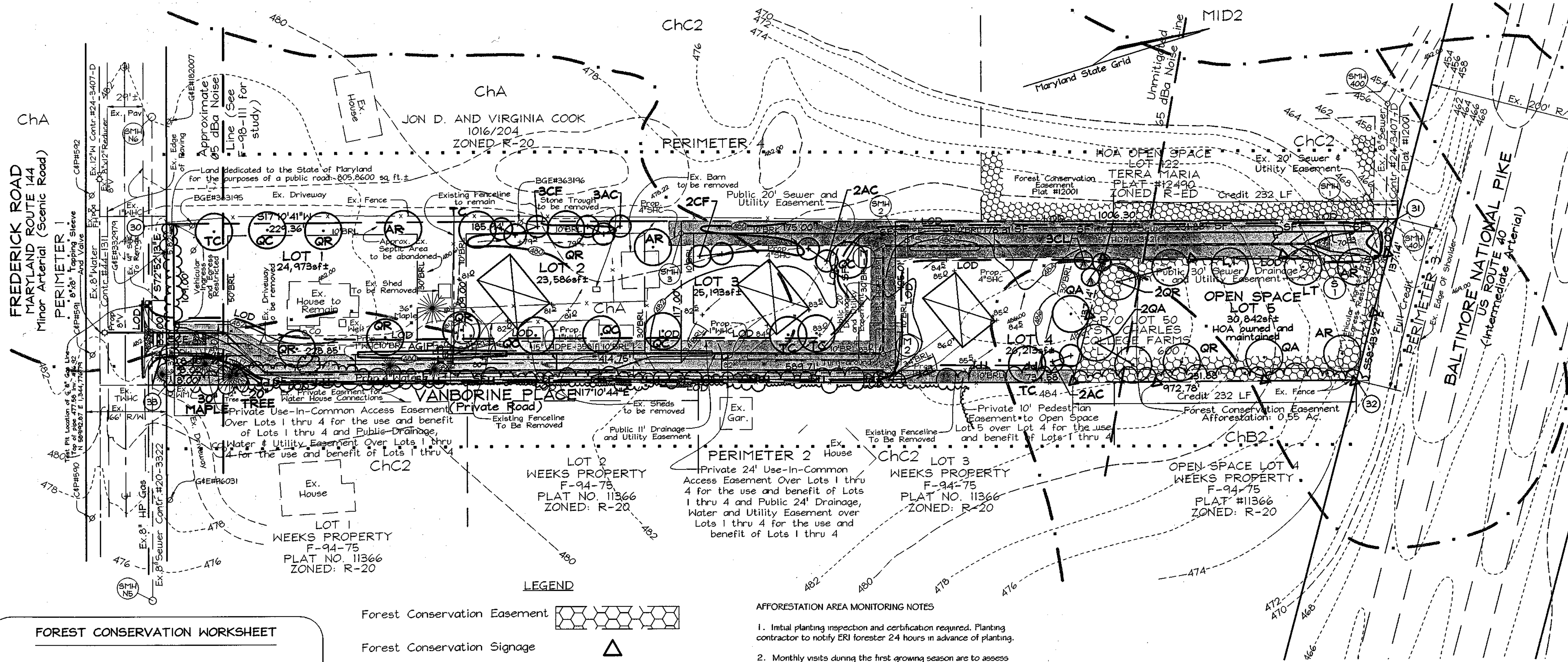
NOTES: 1. Top elevations for Precast Manholes are to the center top of manhole cover.
 2. Top elevation for inlet is to the top of concrete.

OWNER
 Paul D. and Dolores E. Henderson
 10772 Frederick Road
 Ellicott City, Md. 21042

DEVELOPER
 Knauff Development LLC.
 4479 Buckskin Lake Drive
 Ellicott City, Md. 21043
 (410) 477-4945

FSH Associates
 Engineers Planners Surveyors
 8318 Forest Street Ellicott City, MD 21043
 Tel: 410-750-2251 Fax: 410-750-7350
 E-mail: FSHAssociates@cs.com

DESIGN BY: PS
 DRAWN BY: M2
 CHECKED BY: ZTF
 SCALE: 1"=50'
 DATE: Mar. 5, 2003
 H.O. No.: 3014
 SHEET No. 3 OF 4

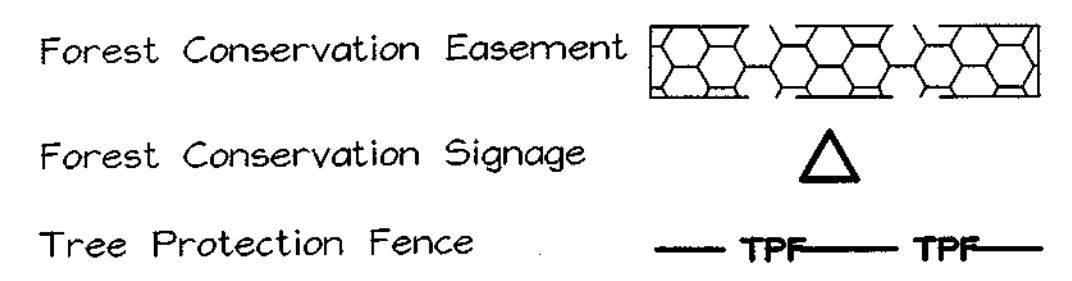


AFFORESTATION PLANTING NOTES

- Afforestation areas may be planted as soon as reasonable to do so. Late winter-early spring plantings are preferred. Earliest planting dates will vary from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as condition warrants.
- Soil amendments and fertilization recommendations will be made based upon the results of soil analysis for nitrogen, phosphorus, potassium, organic matter content and pH. If required, fertilizer will be provided using a slow release, soluble 16-8-16 analysis designed to last 5-8 years contained in polyethylene perforated bags such as manufactured by ADCO Works, P.O. Box 310 Hollis, N.Y. 11423 or approved equal.
- Plant materials will be planted in accordance with the Planting Distribution Diagram, Planting Details and plant schedule.
- Plant material shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standard for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
- Planting stock must be protected from desiccation at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
- Newly planted trees may require watering at least once per week during the first growing season depending on rainfall in order to get established. The initial planting operation should allow for watering during installation to completely soak backfill material.
- Planting holes should be excavated to a minimum diameter of 2.5 to 3 times the diameter of the root ball or container. Mechanical angling is preferred with scarification of the sides of each hole.
- Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.

FOREST CONSERVATION WORKSHEET

Net Tract Area	Acres
A. Total Tract Area	3.00
B. Area Within 100 Year Floodplain	--
C. Other deductions	--
D. Net Tract Area	3.00
Zoning Use Category: RESIDENTIAL-SUBURBAN	
Land Use Category	
E. Afforestation Minimum (15 % x D)	0.45
F. Conservation Threshold (20 % x D)	0.60
Existing Forest Cover	
G. Existing Forest on Net Tract Area	0
H. Forest Area Above Conservation Threshold	0
Break-even Point	
I. Forest Retention Above Threshold with no Mitigation	N/A
J. Clearing Permitted without Mitigation	N/A
Proposed Forest Clearing	
K. Forest Areas to be Cleared	0
L. Forest Areas to be Retained	0
Planting Requirements	
M. Reforestation for Clearing Above Threshold	0
N. Reforestation for Clearing Below the Threshold	0
P. Credit for Retention Above Conservation Threshold	0
Q. Total Reforestation Required	0
R. Total Afforestation Required	0.45
S. Total Reforestation and Afforestation Requirement	0.45



This Forest Conservation Plan was prepared in accordance with the Howard County Forest Conservation Manual and the Forest Conservation Act of 1991.

The site consists of 3.00 acres, none of which is forested. There is a specimen tree, but it is located near the existing structure which will not be impacted. Afforestation obligation totals 0.45 acres, and it will be met onsite. A forest conservation easement of 0.55 acres will be established on Open Space Lot 5. There will be 0.45 ac. of mixed planting using 2-2.5" cal. trees at 100 trees/acre and 2-3' container grown whips, at 350 trees/acre.

The 2-2.5" cal. trees, planted for afforestation, are also being utilized to fulfill landscape buffer requirements for Perimeters 2, 3, & 4. These plants meet size, location and surety requirements, and so qualify for landscaping credit while also fulfilling afforestation requirements.

AFFORESTATION AREA MONITORING NOTES

- Initial planting inspection and certification required. Planting contractor to notify ERI forester 24 hours in advance of planting.
- Monthly visits during the first growing season are to assess the success of the plantings and to determine if supplemental watering, pest control or other actions are necessary. Early spring visits will document winter kill and autumn visits will document summer kill.
- The minimum survival rate shall be 75 % of the total number of trees planted per acre at the end of the two year maintenance period. Wild tree seedlings from natural regeneration on the planting site may be counted up to 50 % toward the total survival number if they are healthy native species at least 12 inches tall.
- Survival will be determined by a stratified random sampling of the plantings. The species composition of the sample population should be proportionate to the amount of each species in the entire planting to be sampled.
- Effective monitoring will assess plant survivability during the first growing season and make recommendations for reinforcement plantings if required at that time.
- A final inspection and certification by the ERI forester is required after the second growing season.

FOREST CONSERVATION EASEMENT TABLE

EASEMENT 1	0.55 AC
0.45 AC AFFORESTATION	
AFFORESTATION	
TOTAL	0.45 AC

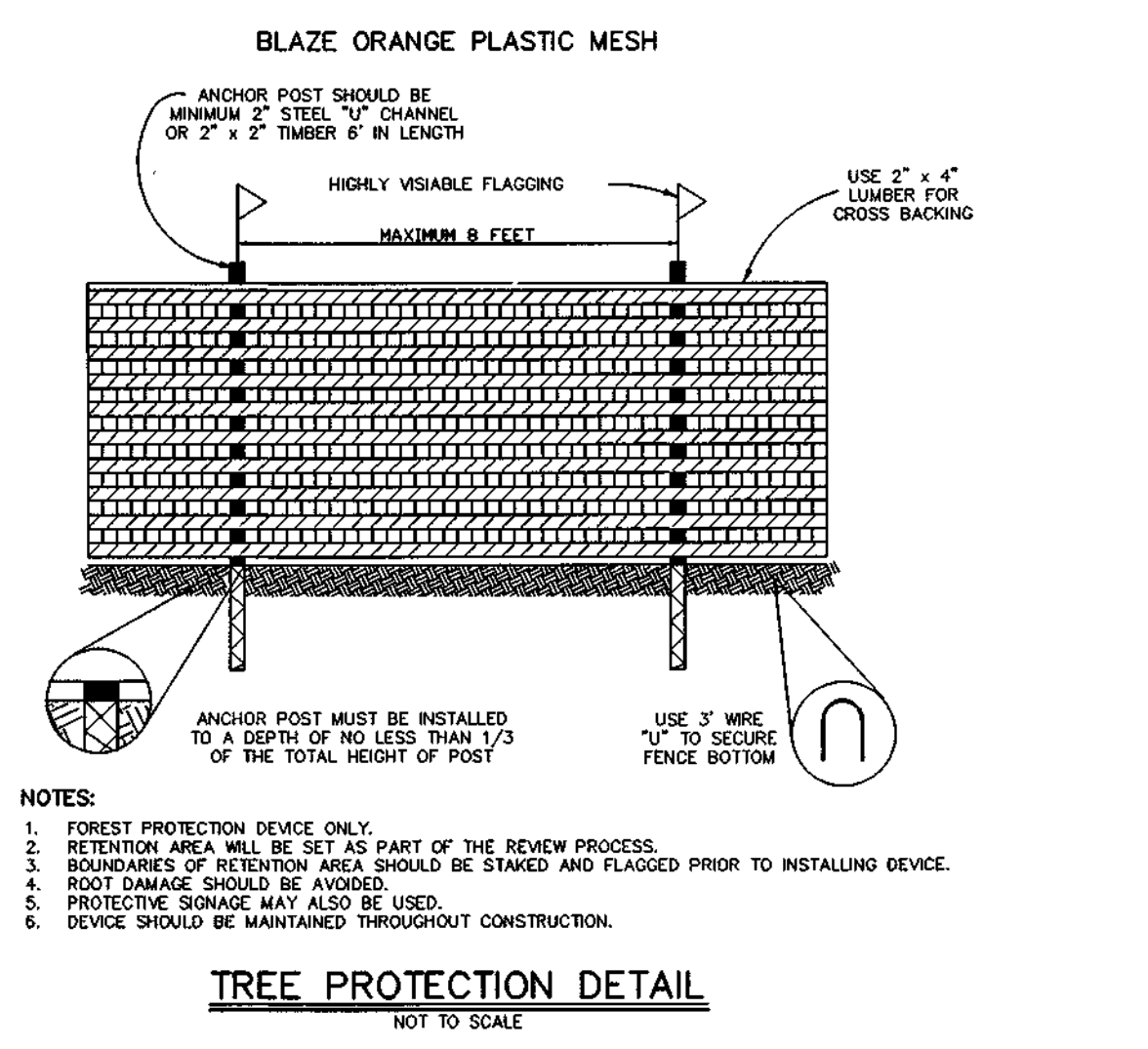
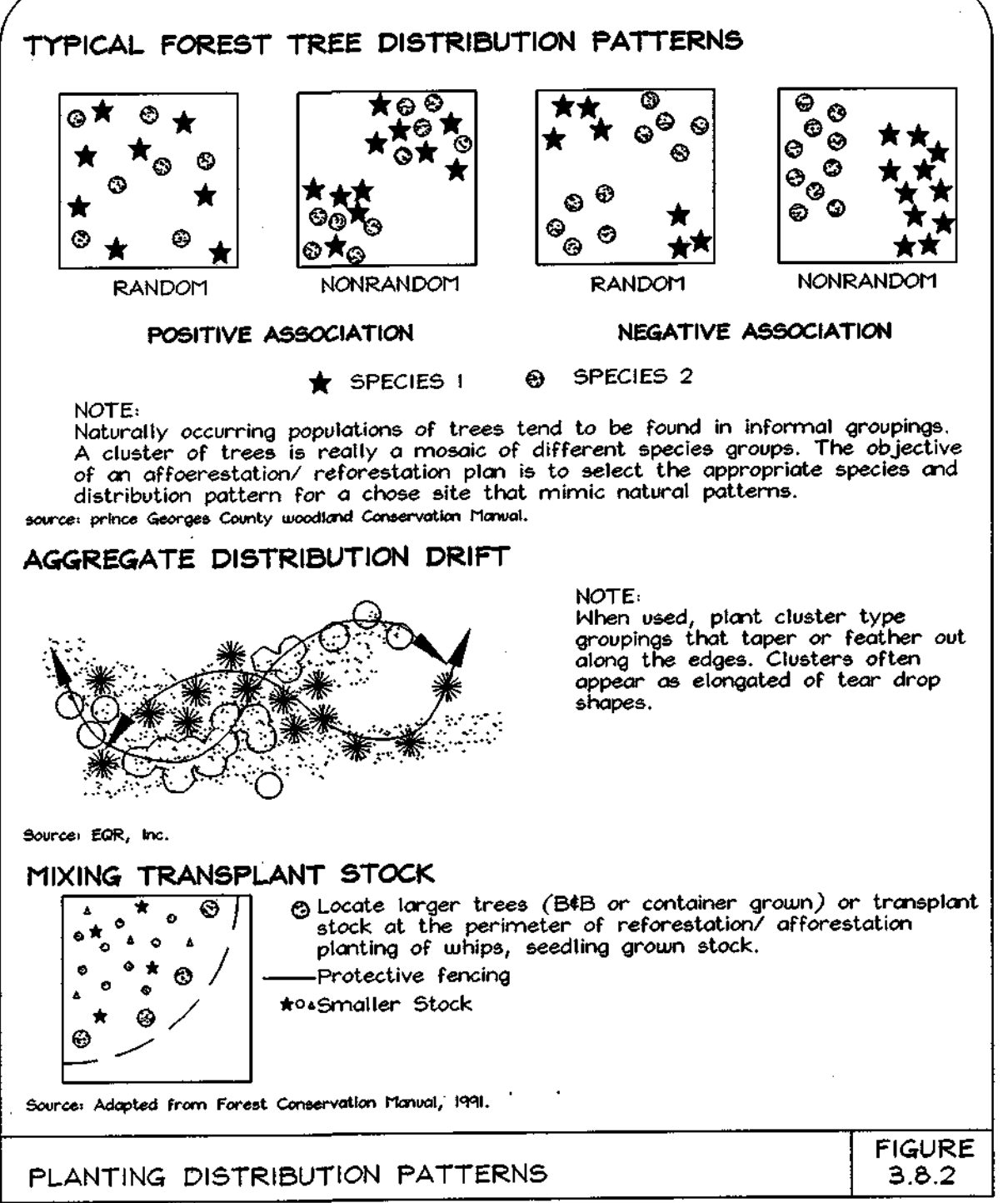
Surety in the amount of \$7,801.00 will be posted as part of the Developers Agreement.

0.45 Ac/19,602 s.f. less 0.09 Ac/4000 s.f. (10/2" cal. trees @ 400 s.f./tree) = 0.36 Ac/15,602 s.f. @ \$0.50 / s.f. = \$7801.00
 The 0.09 Ac (20%) reduction is due to the larger stock trees being bonded under the landscape surety.

FOREST CONSERVATION EASEMENT 0.45 AC AFFORESTATION

0.36 Ac. container grown hardwood seedlings or whips @ 350/acre (11"x11" spacing) = 126 total
 0.09 Ac. 2"+ caliper trees @ 100/acre (20"x20" spacing) = 10 total
 2-2.5" cal. tree = 400 sq. ft. X 10 trees = 4000 sq. ft. = 0.09 ac.

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes	Plant Key
26	Acer rubrum	Red Maple	WHIP 2-3'	11' o.c.	1-3 gal. Container	Not Applicable
23	Quercus alba	White Oak	WHIP 2-3'	11' o.c.	1-3 gal. Container	Not Applicable
26	Liriodendron tulipifera	Tulip Poplar	WHIP 2-3'	11' o.c.	1-3 gal. Container	Not Applicable
24	Quercus rubra	Red Oak	WHIP 2-3'	11' o.c.	1-3 gal. Container	Not Applicable
31	Amelanchier arborea	Serviceberry	WHIP 2-3'	11' o.c.	1-3 gal. Container	Not Applicable
31	Cercis canadensis	Redbud	WHIP 2-3'	11' o.c.	1-3 gal. Container	Not Applicable
2	Acer rubrum	Red Maple	2-2.5" cal.	20' o.c.	B&B	AR
4	Quercus alba	White Oak	2-2.5" cal.	20' o.c.	B&B	QA
2	Liriodendron tulipifera	Tulip Poplar	2-2.5" cal.	20' o.c.	B&B	LT
2	Quercus rubra	Red Oak	2-2.5" cal.	20' o.c.	B&B	QR



OWNER
 Paul D. and Dolores E. Henderson
 10772 Frederick Road
 Ellicott City, Md. 21042

DEVELOPER
 Knauff Development LLC.
 4979 Buckskin Lake Drive
 Ellicott City, Md. 21042
 (410) 977-4945

FINAL FOREST CONSERVATION PLAN VANBORINE PLACE

A resubdivision P/O Lot 50, St. Charles College Farms, L117 F.600, dated May 23, 1923
LOTS 1 THRU 4 AND OPEN SPACE LOT 5

TAX MAP 16 GRID 24
 2ND ELECTION DISTRICT

PARCEL 12
 HOWARD COUNTY, MARYLAND

FSH Associates
 Engineers Planners Surveyors
 8318 Forest Street Ellicott City, MD 21043
 Tel: (410) 750-2251 Fax: (410) 750-7350
 E-mail: FSHAssociates@cs.com

DESIGN BY: AB
 DRAWN BY: AB
 CHECKED BY: SLH
 SCALE: 1"=50'
 DATE: Mar. 5, 2003
 M.O. No.: 3014
 SHEET No. 4 OF 4

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4/25/03

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE:

