

LAYOUT _____ INSP 4 _____
INSP 2 _____ INSP 5 _____
INSP 3 _____ INSP 6 _____

ISSUE DATE: 06/19/2006

APPROVAL DATE: 10/20/06

PERMIT

INDEXED

TAX ID #03-291103

P 525112

A 518605

**ON-SITE SEWAGE DISPOSAL SYSTEM
HOWARD COUNTY HEALTH DEPARTMENT
BUREAU OF ENVIRONMENTAL HEALTH**

South Carroll Backhoe, Inc. IS PERMITTED TO INSTALL ALTER

ADDRESS: 4410 Salem Bottom Road, Westminster PHONE NUMBER: 410-875-4197

SUBDIVISION: Greenhenge LOT NUMBER: 25

ADDRESS: 2854 Evergreen Way PROPERTY OWNER: Mueller Homes, Inc.

SEPTIC TANK CAPACITY (GALLONS): 1250 OUTLET BAFFLE FILTER REQUIRED

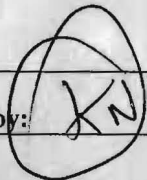
PUMP CHAMBER CAPACITY (GALLONS): n/a COMPARTMENTED TANK REQUIRED

NUMBER OF BEDROOMS: 4

SQUARE FEET PER BEDROOM: 180

LINEAR FEET OF TRENCH REQUIRED: 199 HOUSE SERVED BY PUBLIC WATER

TRENCHES:	Trench to be 3.0 feet wide. Inlet 4.0 feet below original grade. Bottom maximum depth 5.0 feet below original grade. Effective area begins at 4.0 feet below original grade. 1.0 feet of stone below distribution pipe.
LOCATION:	Install the septic system as shown on the approved building permit plan.
NOTES:	Basement service by gravity.

PLANS APPROVED: Sara Fegel Reviewed by:  DATE: 3/13/06

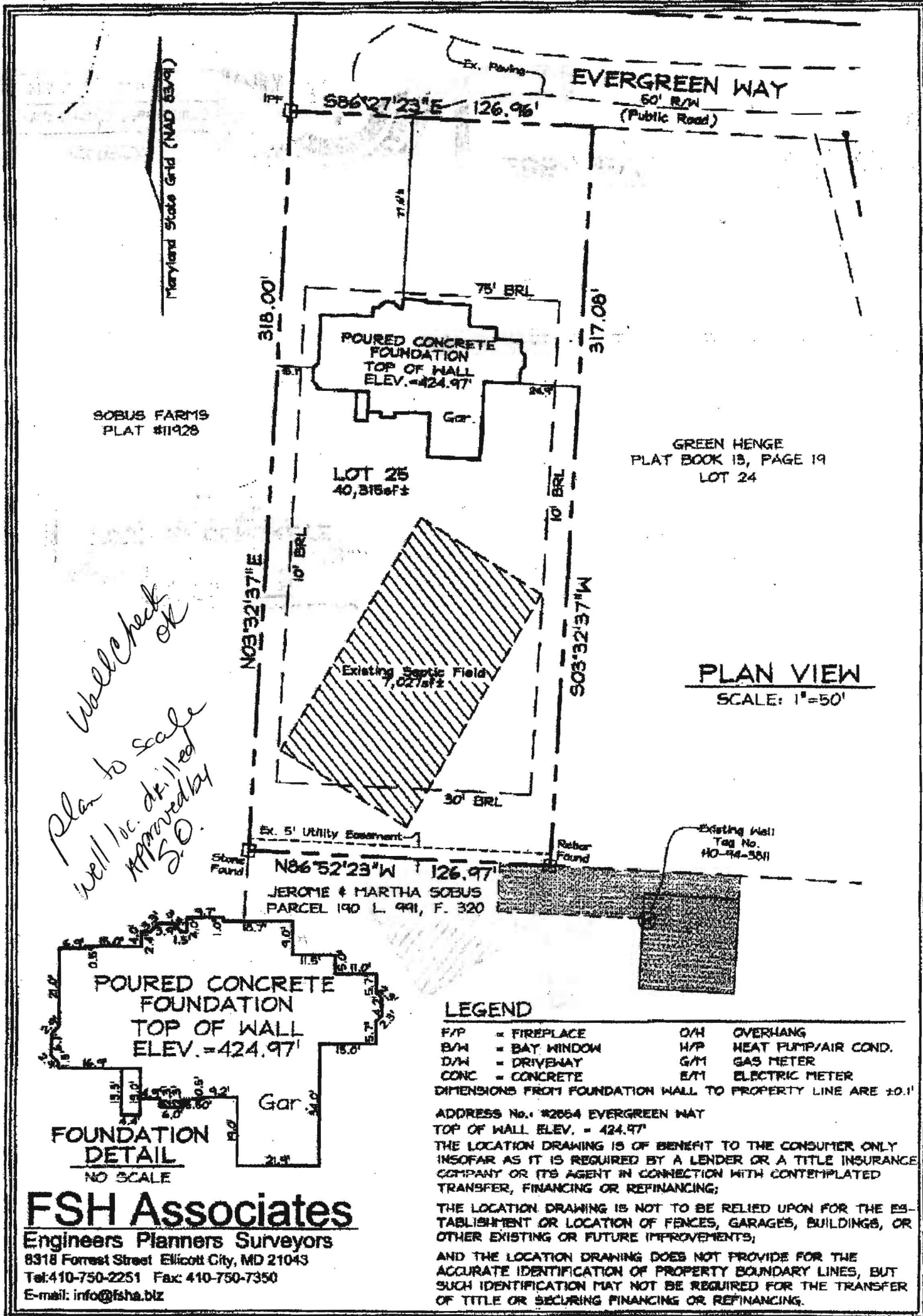
NOTES: PERMIT VOID AFTER 2 YEARS
CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A PRE-CONSTRUCTION INSPECTION FOR ALL INSTALLATIONS
WATERTIGHT SEPTIC TANKS REQUIRED
ALL PARTS OF SEPTIC SYSTEM SHALL BE 100 FEET FROM ANY WATER WELL UNLESS SPECIFICALLY AUTHORIZED
MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS UNLESS SPECIFICALLY AUTHORIZED
CONTRACTOR RESPONSIBLE FOR COMPLIANCE WITH APPLICABLE REGULATIONS, GUIDELINES AND THE TERMS OF THIS PERMIT

**NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS
RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM
PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT
CALL 410-313-1771 FOR INSPECTION OF SEPTIC SYSTEM**

**BUILDING PERMIT SIGNED
AND RETURNED**

6/20/06 30600458 1000 gal LIG Tank

A 518605



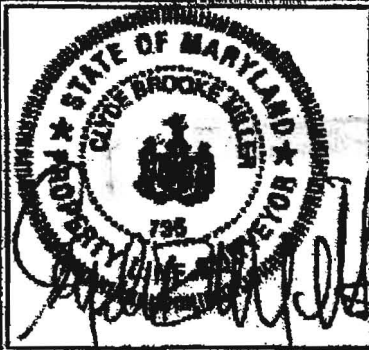
*Wall Check OK
Plan to scale
Well loc. drilled
Approved by
S.O.*

FSH Associates
Engineers Planners Surveyors
8318 Forrest Street Ellicott City, MD 21043
Tel: 410-750-2251 Fax: 410-750-7350
E-mail: info@fsha.biz

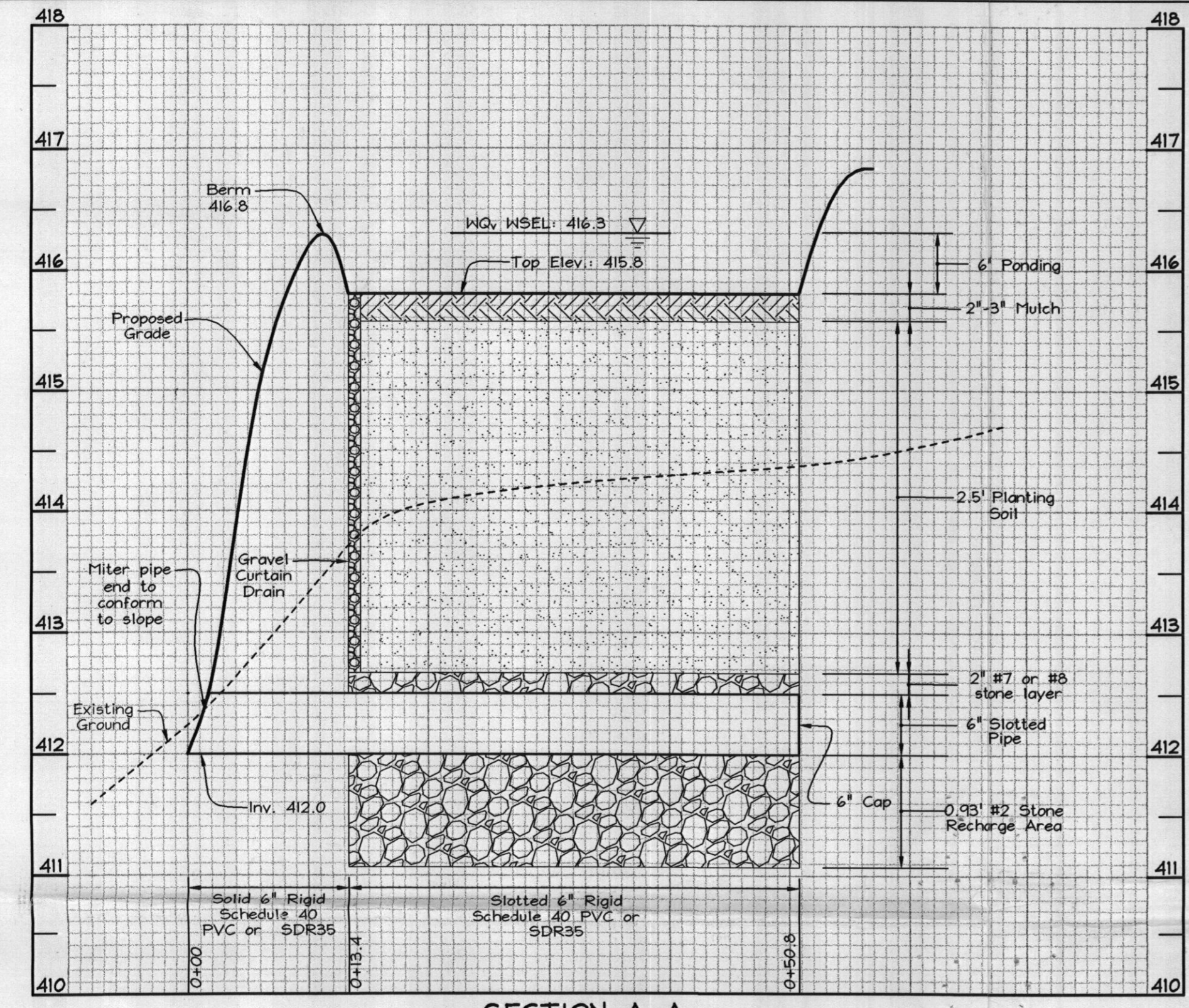
LEGEND

F/P = FIREPLACE O/H OVERHANG
 B/W = BAY WINDOW H/P HEAT PUMP/AIR COND.
 D/W = DRIVENWAY G/M GAS METER
 CONC = CONCRETE E/M ELECTRIC METER
 DIMENSIONS FROM FOUNDATION WALL TO PROPERTY LINE ARE ±0.1'
 ADDRESS No.: 2854 EVERGREEN WAY
 TOP OF WALL ELEV. = 424.97'
 THE LOCATION DRAWING IS OF BENEFIT TO THE CONSUMER ONLY
 INsofar AS IT IS REQUIRED BY A LENDER OR A TITLE INSURANCE
 COMPANY OR ITS AGENT IN CONNECTION WITH CONTEMPLATED
 TRANSFER, FINANCING OR REFINANCING;
 THE LOCATION DRAWING IS NOT TO BE RELIED UPON FOR THE ES-
 TABLISHMENT OR LOCATION OF FENCES, GARAGES, BUILDINGS, OR
 OTHER EXISTING OR FUTURE IMPROVEMENTS;
 AND THE LOCATION DRAWING DOES NOT PROVIDE FOR THE
 ACCURATE IDENTIFICATION OF PROPERTY BOUNDARY LINES, BUT
 SUCH IDENTIFICATION MAY NOT BE REQUIRED FOR THE TRANSFER
 OF TITLE OR SECURING FINANCING OR REFINANCING.

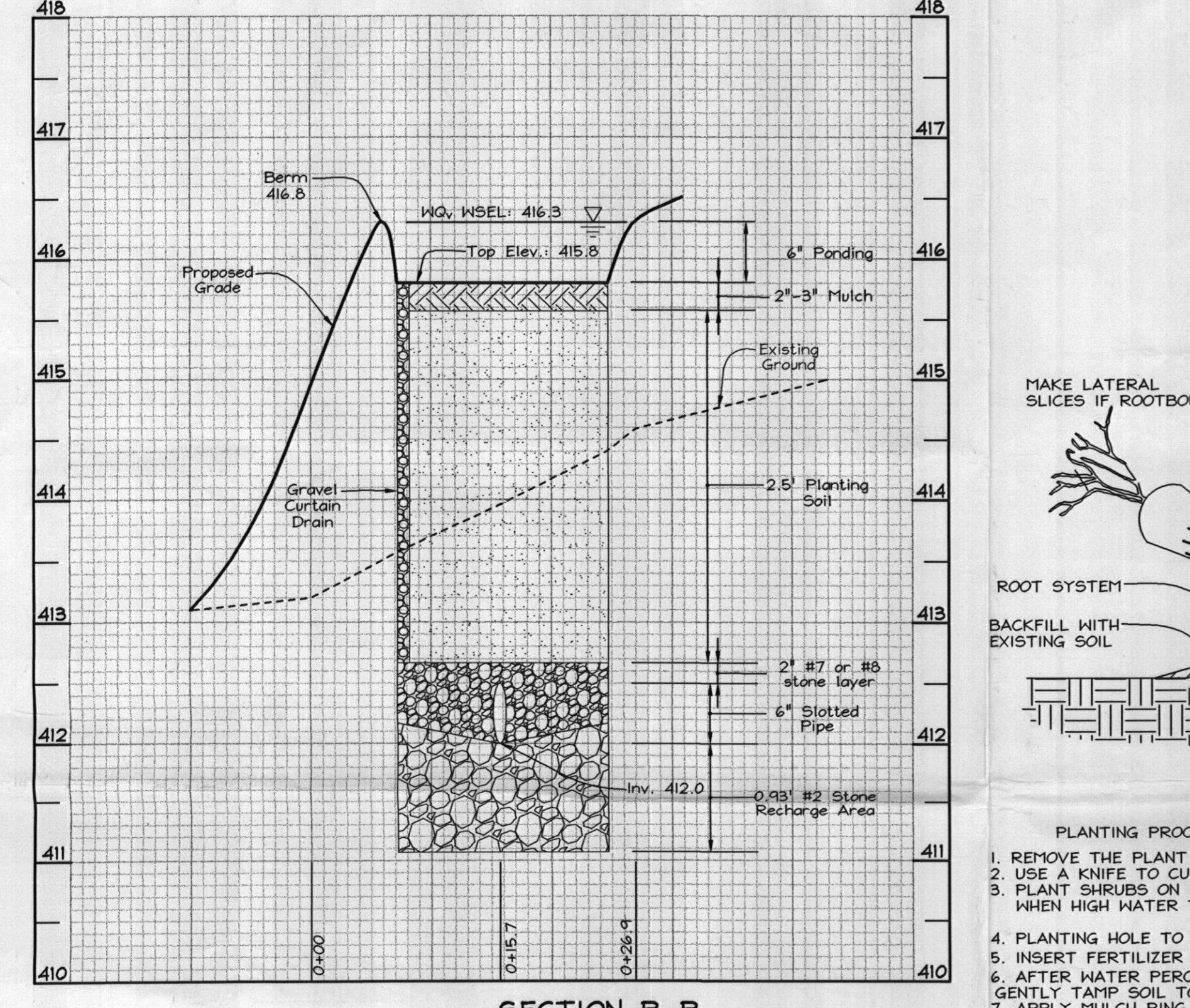
WALL CHECK	
FOUNDATION Update:	5/01/06
FINAL	Date:
DRAWN BY:	MD
SCALE:	As Shown
W.O. No.:	3403



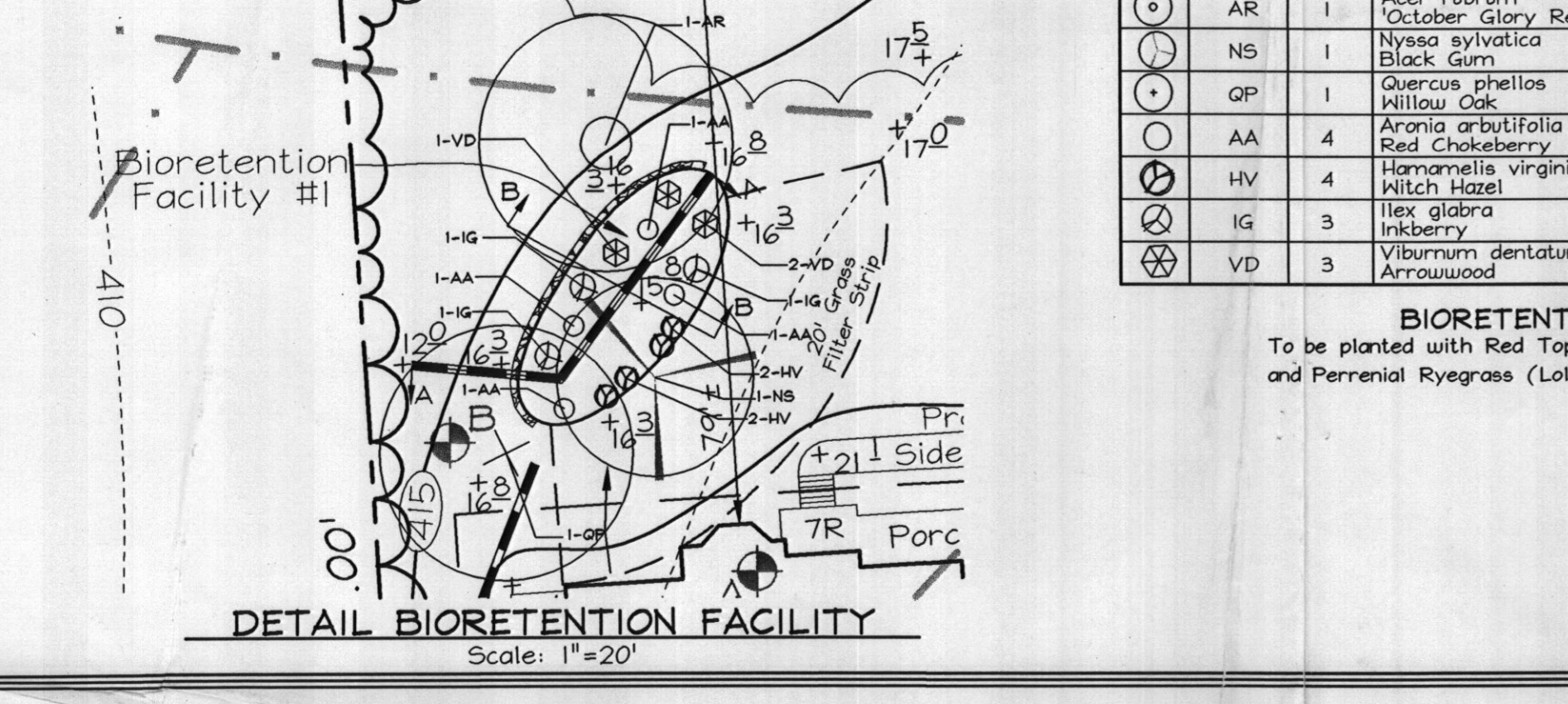
#2854 EVERGREEN WAY
LOT 25
GREEN HENGE
PLAT BOOK 17, PAGE 60
TAX MAP 16 GRID 19 PARCEL 257
3RD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND



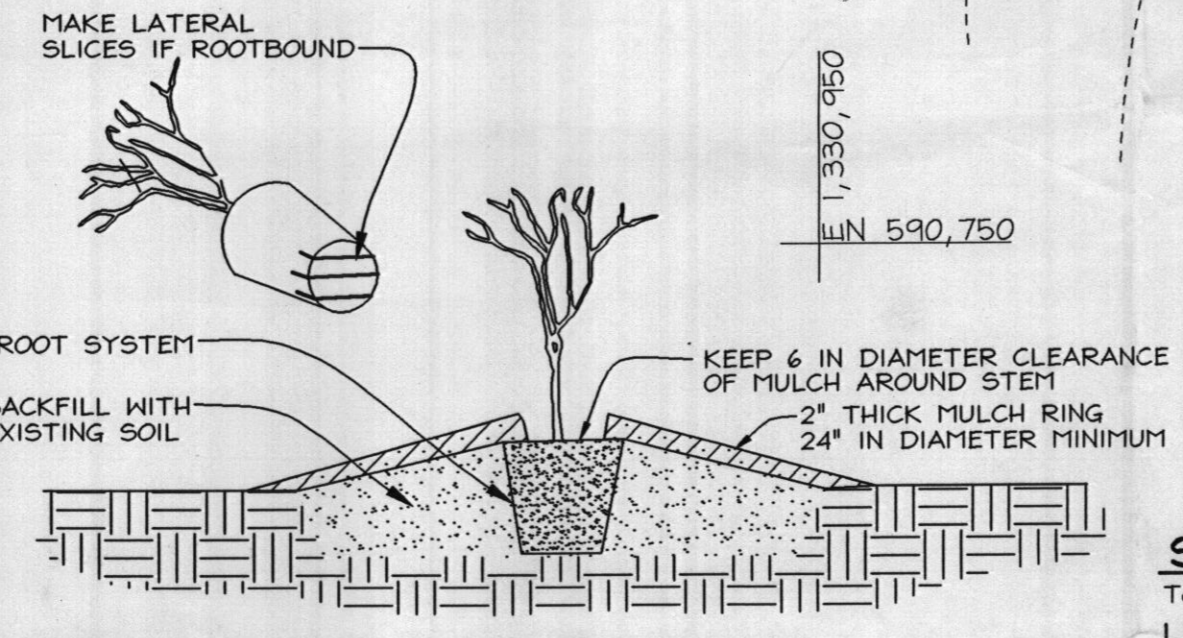
SECTION A-A
Bioretention Facility
Section Along Underdrain
Scale: Hor.: 1"=10'
Vert.: 1"=1'



SECTION B-B
Bioretention Facility
Section Through Facility
Scale: Hor.: 1"=10'
Vert.: 1"=1'



DETAIL BIORETENTION FACILITY
Scale: 1"=20'

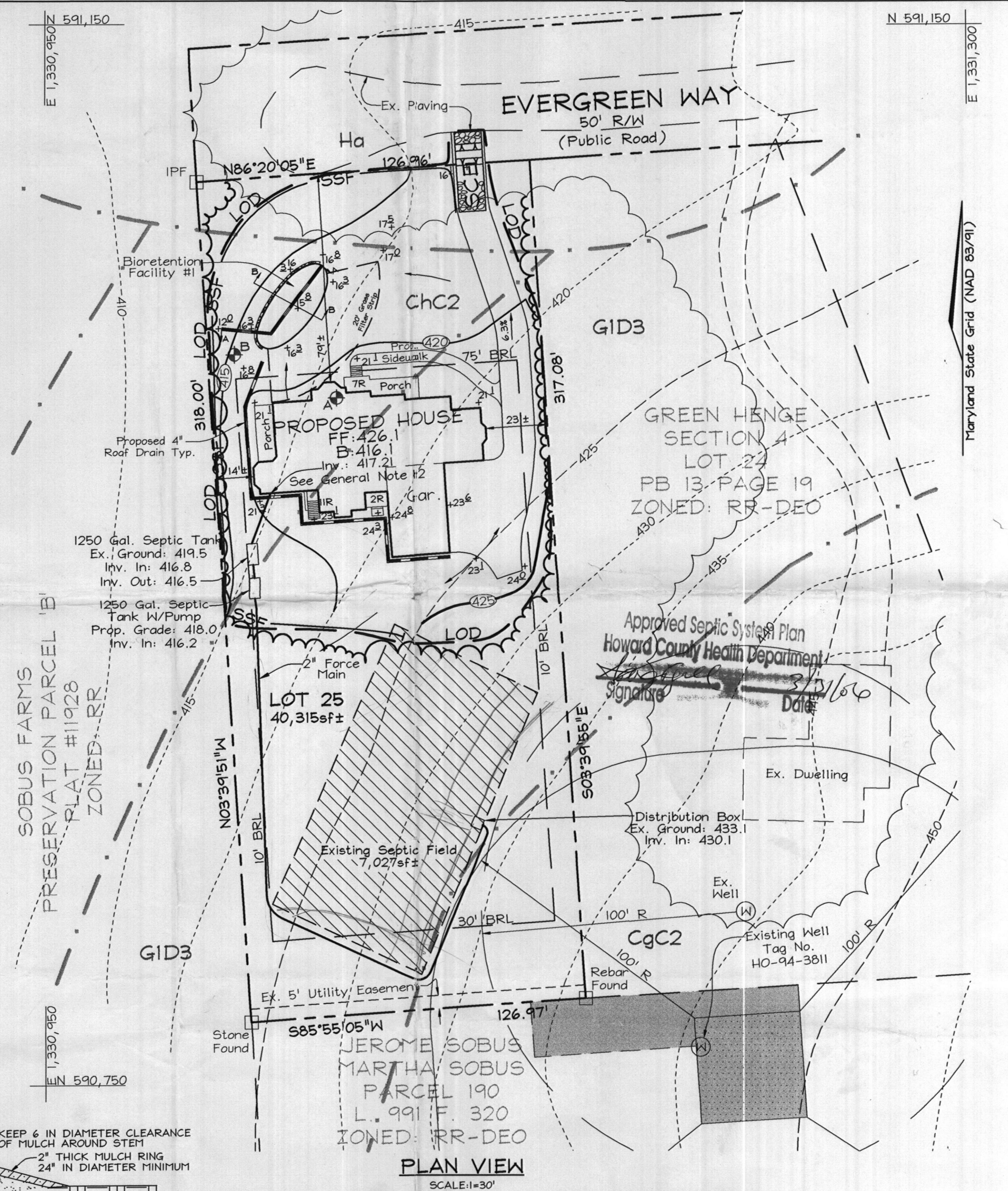


PLANTING PROCEDURE FOR CONTAINER GROWN PLANTS

- REMOVE THE PLANT EITHER BY CUTTING OR INVERTING THE CONTAINER
- USE A KNIFE TO CUT THROUGH BOTTOM HALF OF THE ROOT BALL
- PLANT SHRUBS ON FORMED UP MOUNDS 4" ABOVE THE EXISTING GRADE WHEN HIGH WATER TABLE CONDITIONS EXIST, OTHERWISE PLANT FLUSH
- PLANTING HOLE TO BE 2-3 TIMES THE DIAMETER OF THE CONTAINER.
- INSERT FERTILIZER TABLET, BACKFILL 2/3 OF THE ROOT BALL AND WATER.
- AFTER WATER PERCOLATES, BACKFILL HOLE TO TOP OF ROOT BALL AND GENTLY TAMP SOIL TO FIRM CONTACT WITH PLANT.
- APPLY MULCH RING AROUND PLANT KEEPING A 6" IN CLEARANCE FROM STEM.

KEY	LABE	QUAN.	BOTANICAL NAME	SIZE	NOTE
○	AR	1	Acer rubrum 'October Glory Red Maple'	1 1/2"-2" Cal.	B # B
○	NS	1	Nyssa sylvatica Black Gum	1 1/2"-2" Cal.	B # B
○	QP	1	Quercus phellos Willow Oak	1 1/2"-2" Cal.	B # B
○	AA	4	Aronia arbutifolia Red Chokeberry	2-3'	Cont.
○	HV	4	Hamamelis virginiana Witch Hazel	2-3'	Cont.
○	IG	3	Ilex glabra Inkberry	2-3'	Cont.
○	VD	3	Viburnum dentatum Arrowwood	2-3'	Cont.

BIORETENTION SEEDING
To be planted with Red Top (Agrostis alba) at 5 lbs / 1000 s.f. and Perennial Ryegrass (Lolium perenne) at 10 lbs / 1000 s.f.



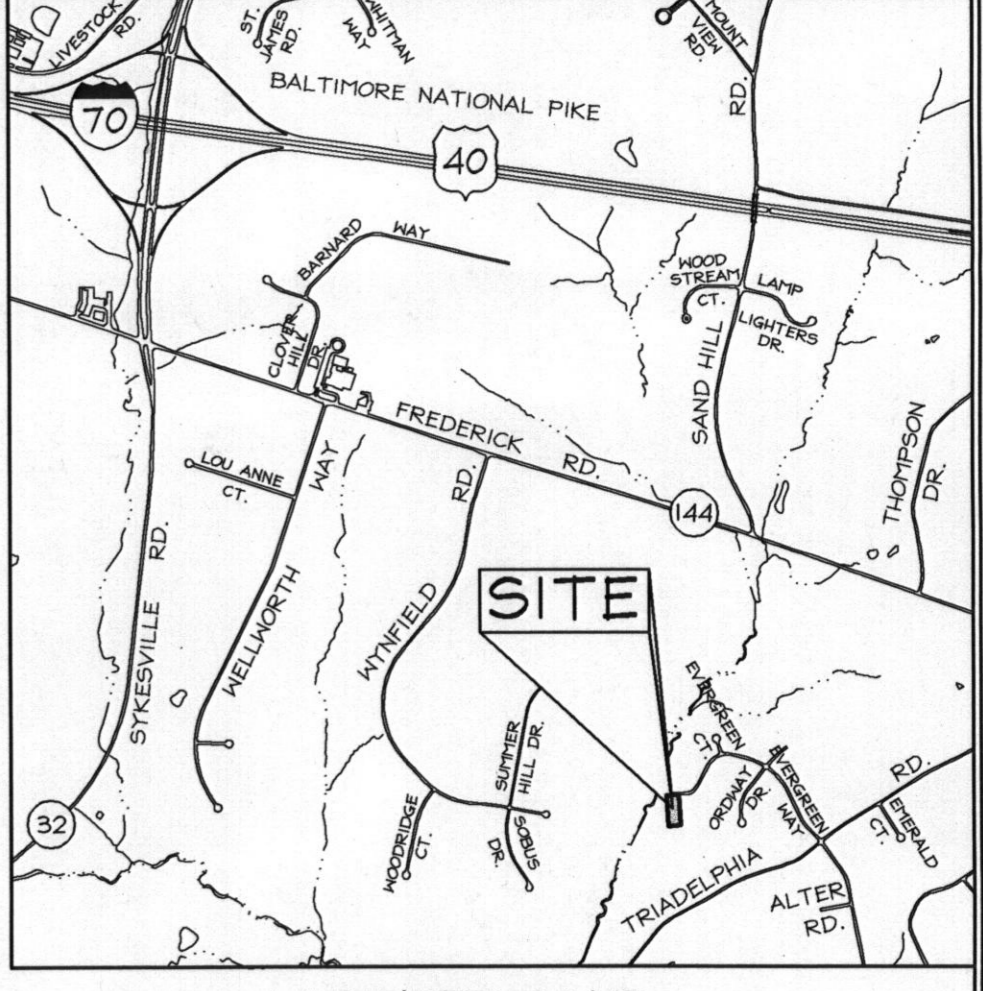
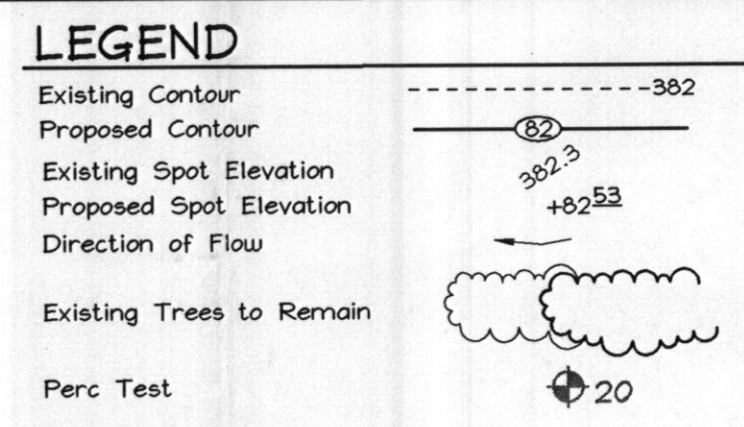
SPECIFICATIONS FOR BIORETENTION

Taken from the Maryland Stormwater Design Manual Volumes I & II, Section B.3.B

- Material Specifications**
The automobile materials to be used in bioretention area are detailed in Table B.3.2 of the 2000 Maryland Storm Water Design Manual, Volumes I & II.
- 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 15.06.01.05.
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: 35 lb./ac.
phosphorus (phosphate - P₂O₅): 75 lb./ac.
potassium (potash - K₂O): 85 lb./ac.
soluble salts: not to exceed 500 ppm
- Plant Material**
Recommended plant material for bioretention areas can be found in Appendix A, Section A.2.3, of the 2000 Maryland Storm Water Design Manual, Volumes I & II.
- 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 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 so 1/3 of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation. Trees 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.
Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs 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. Rotolift urea fertilizer at a rate of 2 pounds per 1000 square feet.
- 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).
- Miscellaneous**
The bioretention facility may not be constructed until all contributing drainage area has been stabilized.

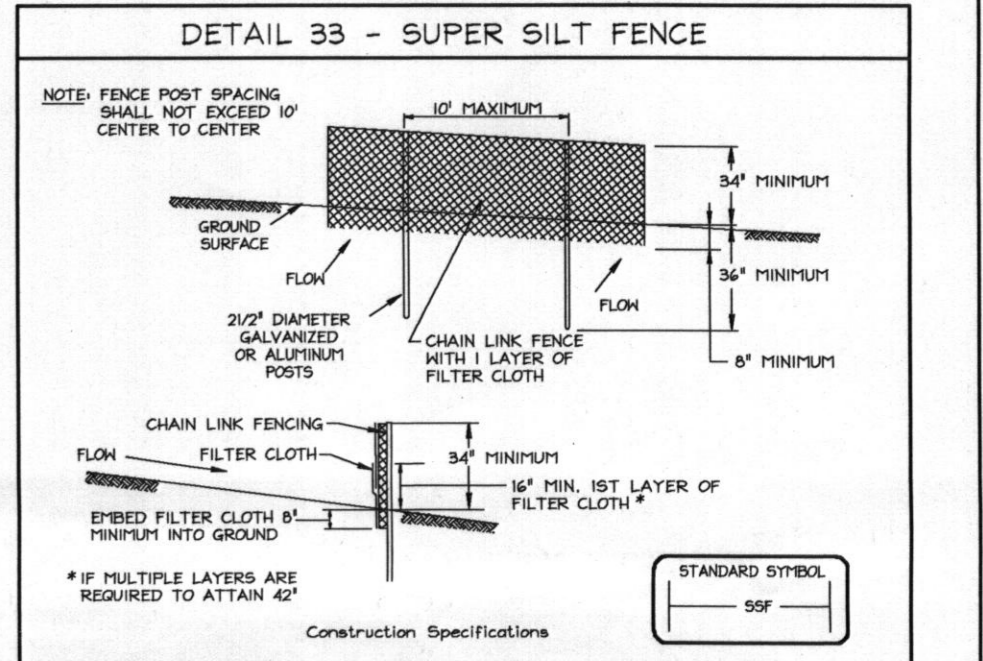
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-6)

- Annual maintenance of plant material, mulch layer and soil layer if required. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning.
- Schedule of plant inspection will be twice a year in spring and fall. This inspection will include removal of dead and diseased vegetation considered beyond treatment, treatment of all diseased trees and shrubs and replacement of all deficient stakes and wires.
- Mulch shall be inspected each spring. Remove previous mulch layer before applying new layer once 2 to 3 years.
- Soil erosion to be addressed on an as needed basis, with a minimum of once per month and after heavy storm events.



GENERAL NOTES
SCALE: 1"=2000'

- Subject property zoned RR-DEO per 10/18/93 Comprehensive Zoning Plan.
- Total area of property = 40,316 sq. ft.
- Private water and sewer will be used within this site.
- This area designates a private sewage easement, of at least 10,000 SF as required by the Maryland State Department of the Environment for individual sewage disposal (COMAR 26.04.03). Improvements of any nature in this area are restricted until public sewerage is available. These easements shall become null and void upon connection to a public sewerage system. The County Health Officer shall have the authority to grant adjustments to the private sewage easement. Recordation of a modified sewage easement shall not be necessary.
- Howard County Soil Map #14.
- Topography is based on Howard County 1993 Aerial Topographic Surveys with five foot contours.
- Reference: Plat Book 17, Page 60.
- All downspouts along the south and west sides of the house are to be tied into a roof drain that outfalls into the Bio-retention facility.
- Stormwater Management for this site is provided as follows:
a. This site is exempt from providing channel protection (Cp_v).
b. Water Quality (WQ_v) and Recharge (R_v) for Lot 25 are provided by one bioretention facility, this facility is privately owned and maintained by lot 25.
- LOD = 20,564 sq. ft.
- The existing well shown on this plan (identified with the attached well tag number: HO-94-3811) has been field located by FSH Associates professional surveyor and is accurately shown.
- Basement will not sewer by gravity.



SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
CgC2	Chester gravelly silt loam, 8 to 15 percent slopes, moderately eroded	B
ChC2	Chester silt loam, 8 to 15 percent slopes, moderately eroded	B
GID3	Glenelg loam, 15 to 25 percent slopes, severely eroded	B
Ha	Hatboro silt loam	D

DEVELOPER/CONTRACT PURCHASER
Mueller Homes, Inc.
12800 Frederick Road
Suite 201
West Friendship, MD 21794
(410) 442-1455

PLOT PLAN
GREEN HENGE
LOT 25

TAX MAP 16 GRID 19
3RD ELECTION DISTRICT

PARCEL 257
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: info@fsha.biz

DESIGN BY: PS
DRAWN BY: HK
CHECKED BY: ZYF
SCALE: As Shown
DATE: March 27, 2006
W.O. No.: 3403
SHEET No.: 1 OF 1