

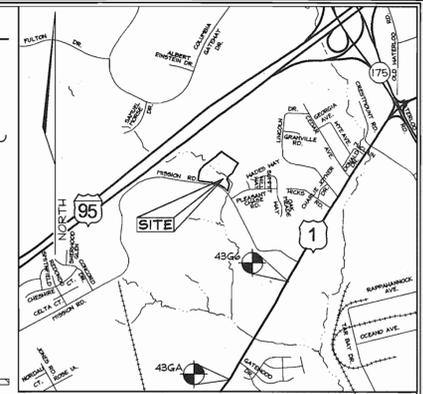
**GENERAL NOTES**

- Property is within the Metropolitan District.
- Public water and sewer will be used within this site.
- 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) 410.787.9068
  - Miss Utility 1.800.257.7777
  - Colonial Pipeline Company 410.795.1390
  - Howard County, Dept. of Public Works, Bureau of Utilities 410.313.4900
  - Howard County Health Department 410.313.2640
  - AT&T 1.800.252.1133
  - Verizon 1.800.743.0033/410.224.9210
- The contractor shall notify Miss Utility at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- 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 the start of work.
- The lot shown herein complies with the minimum ownership, width and lot area as required by the Maryland State Department of the Environment.
- This project is in conformance with the latest Howard County Standards unless waivers have been approved.
- No clearing, grading or construction is permitted within wetlands, forest conservation easements, streams or their required buffers unless waivers have been approved.
- All curb and gutter to be Howard County Standard R-3.01 Curb and Gutter unless otherwise noted. See Detail Sheet 2. Curb to have a 2.0' nose down at all ends.
- All proposed spot elevations along curb and gutter are to the flowline unless otherwise noted.
- This project complies with the requirements of Section 16.1200 of the Howard County Code for Forest Planting by planting 2.0% acres of afforestation and 0.18 acres of retention within the Forest Conservation Easements and by a fee-in-lieu payment in the amount of \$21,562.00 for 0.99 acres of reforestation. Total easement area = 3.85ac., \$47,088.20 surety posted with the Developer's Agreement. (Total area includes 1.58 ac. of uncredited floodplain retention)
- All construction shall be in accordance with the latest standards and specifications of Howard County in addition to MSHA standards and specifications if applicable.
- Contractor is responsible to construct all handicap ramps and handicap access in accordance with current ADA requirements.
- Any damage to public right-of-ways, paving or existing utilities will be corrected at the contractor's expense.
- Existing utilities are located by the use of any or all of the following: Road Construction Plans, Field Surveys, Public Water and Sewer Plans and other available record drawings. Approximate location of existing utilities are shown for the contractor's information. Contractor shall locate existing utilities well in advance of construction activities and take all necessary precautions to protect the existing utilities and to maintain uninterrupted service. Any damage incurred due to the contractor's operation shall be repaired immediately at the contractor's expense.
- All reinforced concrete for storm drain structures shall have a minimum of twenty-eight (28) days strength at 3,500 psi. Any RCP Storm Drain pipe bedding shall be Class 'C'.
- All HDPE pipe specification and installation shall meet AASHTO M-252 Type S, M-294 Type S and ASTM D2521, respectively.
- Soil compaction specifications, requirements, methods and materials are to be in accordance with the recommendations of the project Geotechnical Engineer. Geotechnical Engineer to confirm acceptability of proposed paving section, based on soil test, prior to construction.
- All traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
- Estimates of Earthwork quantities are provided solely for the purpose of calculating fees.
- The coordinates shown herein are based on the Howard County Geodetic Control, which is based upon the Maryland State Plane Coordinate System. Howard County monument numbers 43GA and 43G6 were used for this project.
- Geotechnical reports provided by CNA and dated Feb. 15, 2005, November 17, 2003 and December 18, 2003 are integrated with these plans and should be evaluated together with these plans for bid and construction purposes.
- A noise study is not required for this project due to Non-Residential use.
- There are no known cemeteries or burial grounds located on this site.
- This project is subject to the Amended Fifth Edition of the Subdivision Regulations per Council Bill CB-45-2003 and the Amended Zoning Regulations, per Council Bill CB-75-2003. Stormwater Management Water Quality and Recharge is provided by Dry Swales, a Pocket Sand Filter and 5 Bioretention Facilities. Channel Protection storage requirements are provided within the Bioretention Facilities, the Pocket Sand Filter and Level Spreaders. A Natural Conservation Area Stormwater Management Credit Easement has been added to the plans to encompass the Sheet Flow to Buffer Credit area.
- Prior to issuance of Grading Permit, the existing house on sheet 3 will be removed and any existing well and septic systems will be properly abandoned according to Howard County Health Department regulations.
- Existing topography has been field run by FSH Associates in November, 2004.
- Board of Appeals case number BA-95-58E allows the operation of a quarry on Parcel 234 and part of Parcel 235. Condition of Approval #10 (as stated below) requires the developer of the quarry to develop this facility.
  - DOA Case #95-58E, condition of approval #10:
  - Prior to commencement of quarry operations, the Petitioner shall donate approximately 7 acres of land on Mission Road, as shown on the land Use Plan, to the Ridgely's Run Community Association for use as a community center. The Petitioner will construct on the 7 acres, at its own expense, (i) a community center building of approximately 5,000 square feet with parking, (ii) an exterior all-purpose basketball court, (iii) two tennis courts with nets and fencing, and (iv) grading for a little league baseball diamond and provide a little league baseball backstop. Construction will begin prior to commencement of quarry operations, and the Petitioner will diligently pursue completion of construction.
- This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual.
- Financial surety for the required landscaping will be posted as part of the Developer's Agreement in the amount of \$6,570.00 (10 shade trees @ \$300.00 each, 14 evergreen trees @ \$150.00 each and 49 shrubs @ \$30.00 each).
- As an agreement with the surrounding community, the developer has provided an Environmental Conservation Easement on this site. Overlapping portions of this easement is a Stormwater Management Credit Easement required by the Development Engineering Division for stormwater management purposes.
- All exterior light fixtures shall be oriented to direct light inwards and downwards on-site away from all adjoining residential properties and public roads in accordance with Section 134 of the Howard County Zoning Regulations. See light tables this sheet. See Architectural plans for more details.
- For any proposed improvements or additions to the site a revised stormwater management analysis will have to be reviewed and approved by Howard County.

# SITE DEVELOPMENT PLAN RIDGELYS RUN COMMUNITY CENTER HOWARD COUNTY, MARYLAND

**LEGEND**

- Existing Contour
- Proposed Contour
- Spot Elevation
- Direction of Flow
- Existing Trees to Remain
- Existing Traffic Flow
- Proposed Traffic Flow
- Gutter slope direction
- Face of Curb
- Number of Proposed Parking Spaces
- Proposed Street Lights
- Proposed Parking Lot Lights
- Proposed Wall Packs
- Proposed Level Spreader



**BENCHMARKS**

Howard County Monuments:

Sta. 43G6	N 165,847.3594 E 417,744.7271	El.: 67.0916 (meters)
	N 544,117.545 E 1,370,580.825	El.: 220.116 (feet)
		(Concrete Monument 3.5' Se of paving edge, 68.8' S of Fire Hydrant.)
Sta. 43GA	N 165,140.0744 E 417,320.6477	El.: 73.6496 (met)
	N 541,747.060 E 1,369,159.491	El.: 241.832 (feet)
		(Concrete Monument 4.5' E of paving edge, 72.5' S of P 178)

**SHEET INDEX**

DESCRIPTION	SHEET No.
Cover Sheet	1 of 12
Site Development and Grading Plan	2 of 12
Site Development and Grading Plan	3 of 12
Sediment and Erosion Control and Landscaping Plan	4 of 12
Sediment and Erosion Control and Landscaping Plan and Details	5 of 12
Sediment and Erosion Control Details, Water, Sewer, & Stormdrain Profiles	6 of 12
Bioretention Facility Profiles, Notes & Details	7 of 12
Bioretention Facility Profiles, Notes & Details	8 of 12
Bioretention Facility Profiles & Details	9 of 12
Forest Conservation Plan	10 of 12
Forest Conservation Plan	11 of 12
Forest Conservation Details	12 of 12

**STREET LIGHT TABLE**

FIXTURE TYPE	POLE TYPE	LOCATION
250 watt on 12' arm	30' bronze fiberglass	N 546,463.1 E 1,368,629.6
250 watt on 12' arm	30' bronze fiberglass	N 546,401.0 E 1,368,915.0

Note: Light pole location given at center of base

**PARKING LOT LIGHT TABLE**

FIXTURE TYPE	POLE TYPE	LOCATION
100 watt on Post Top	12' smooth aluminum	
Hanover Lantern, Richmond Series	Hanover Lantern	N 546,522.4 E 1,368,622.6
794-8937-BP-BLK-99-100-277	344-12-BK	
100 watt on Post Top	12' smooth aluminum	
Hanover Lantern, Richmond Series	Hanover Lantern	N 546,595.7 E 1,368,718.3
794-8937-BP-BLK-99-100-277	344-12-BK	
100 watt on Post Top	12' smooth aluminum	
Hanover Lantern, Richmond Series	Hanover Lantern	N 546,525.5 E 1,368,818.5
794-8937-BP-BLK-99-100-277	344-12-BK	
100 watt on Post Top	12' smooth aluminum	
Hanover Lantern, Richmond Series	Hanover Lantern	N 546,400.9 E 1,368,929.9
794-8937-BP-BLK-99-100-277	344-12-BK	

Note: Light pole location given at center of base

**WALLPACK LIGHT TABLE**

FIXTURE TYPE	POLE TYPE	LOCATION
50 watt Metal Halide Wall Pack	Cast Aluminum Housing	#See note
50 watt Metal Halide Wall Pack	Cast Aluminum Housing	#See note
50 watt Metal Halide Wall Pack	Cast Aluminum Housing	#See note
50 watt Metal Halide Wall Pack	Cast Aluminum Housing	#See note
50 watt Metal Halide Wall Pack	Cast Aluminum Housing	#See note

Note: See architectural plans for wall pack location on building

**ADDRESS CHART**

LOT	STREET
1	8400 Mission Road

**SITE ANALYSIS DATA CHART**

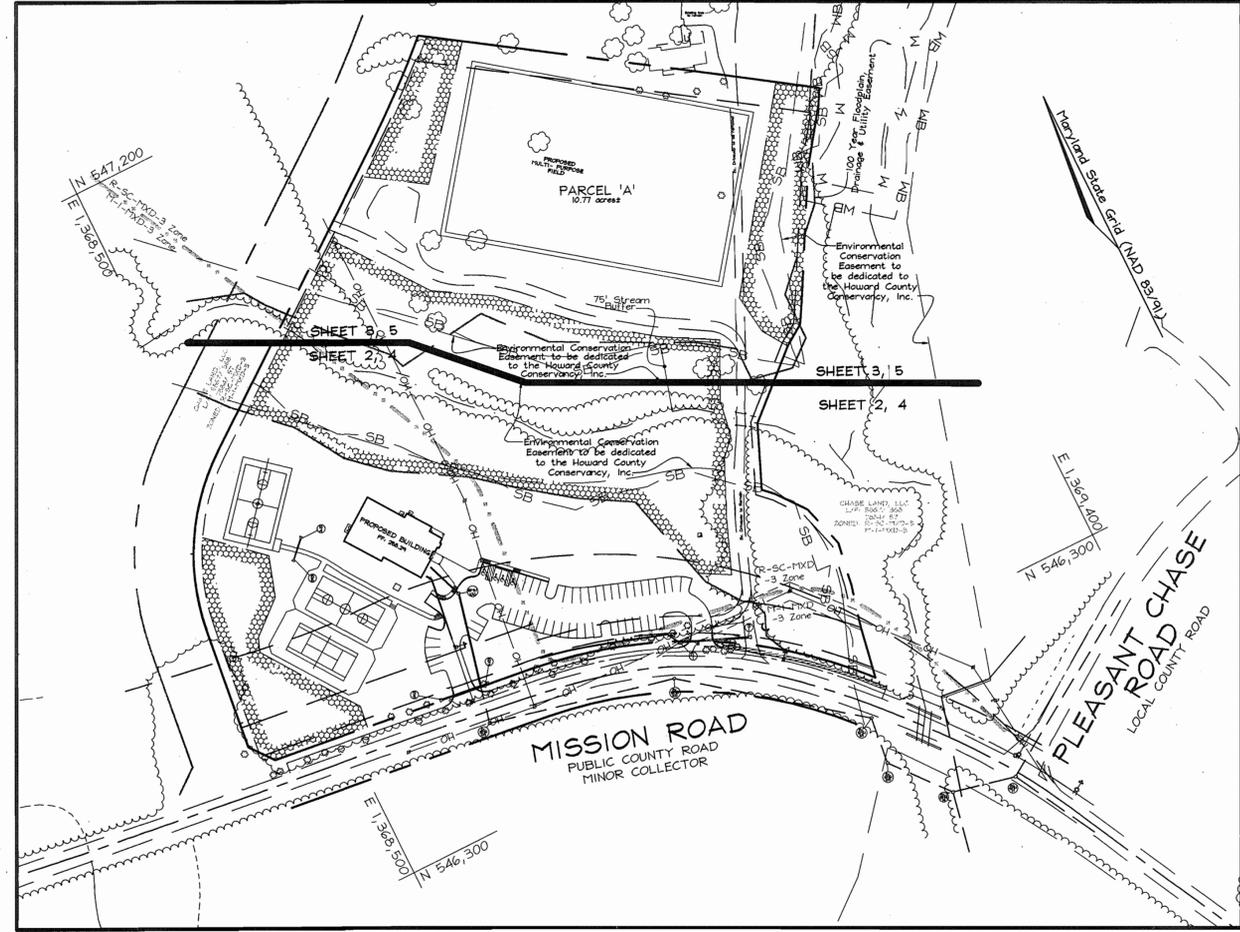
- Total project area: 10.77 Acres
  - Area of plan submission: 11.99 Acres
  - Limit of disturbed area: 8.06 Acres
  - Present zoning: "M-1-MXD-3" and "R-SC-MXD-3" per 02/02/04 Comprehensive Zoning Plan, see plan for limits.
  - Proposed uses for site & structures: Community Center and Athletic Facilities
  - Floor space on each level of building(s) per use: See building footprint this sheet.
  - Building coverage of site: 0.14 Acres and 1.26% of Gross Area.
  - DPZ file references: Contract # 24-3201-D, Contract #20-1230; BA-95-58E; F-06-054; F-06-063
  - Number of parking spaces required: 10 spaces for every 1,000 sf of available to the public. 5000 sf / 1000 sf x 10 = 50 spaces
- (See Parking Tabulation below.)  
 Total number of parking spaces provided: 54  
 Total required Handicap parking spaces: 3 spaces; including  
 1 van accessible spaces  
 Total provided Handicap parking spaces: 4 spaces; including  
 2 van accessible spaces

OWNER	DEVELOPER
Chase Land, LLC P.O. Box 950 Laurel, MD 20725 (410) 792-7234 c/o Hillary Colt Cahon	Chase Mining, LLC P.O. Box 950 Laurel, MD 20725 (410) 792-7234 c/o Tim Schmidt

**COVER SHEET**

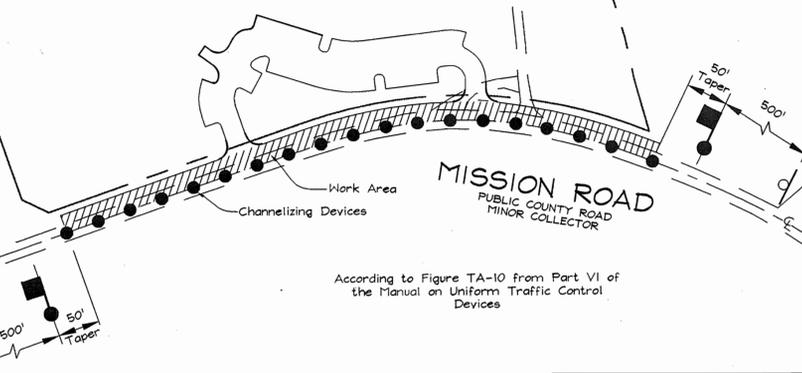
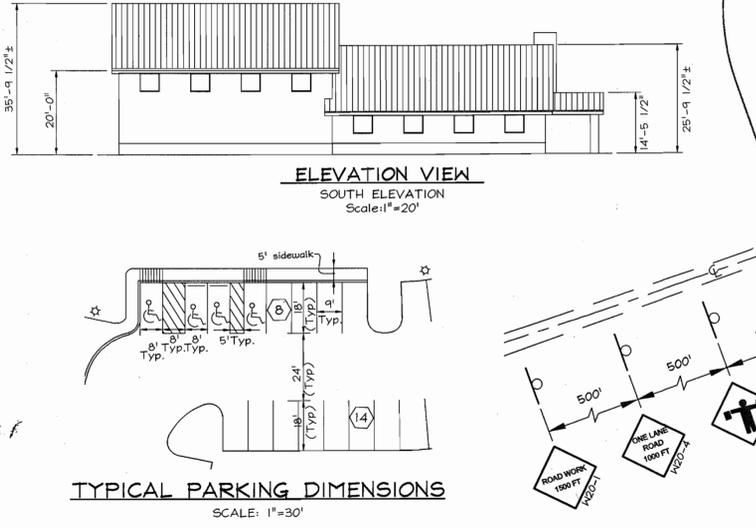
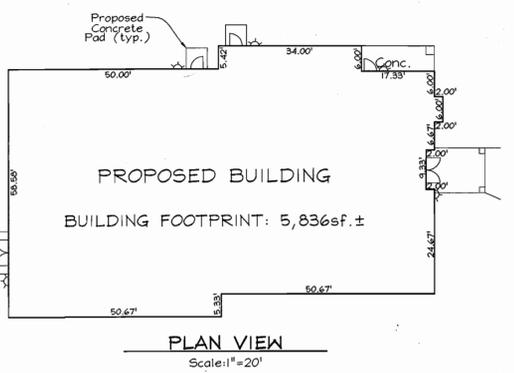
**RIDGELYS RUN  
COMMUNITY CENTER**

TAX MAP 43 GRID 7, 8 & 13 P/O PARCEL 235  
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



**LOCATION MAP**

Scale: 1"=100'



**PERMIT INFORMATION CHART**

Subdivision Name:	Section/Area	Lot/Parcel No.			
Ridgelys Run Community Center	N/A	PARCEL 'A'			
Plot #	Grid	Zoning	Tax Map No.	Elect. District	Census Tract
17927 and 17928	7, 8 & 13	R-SC-MXD-3 M-1-MXD-3	43	6th	6069.01
Water Code	Sewer Code				
B02	3170000				

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

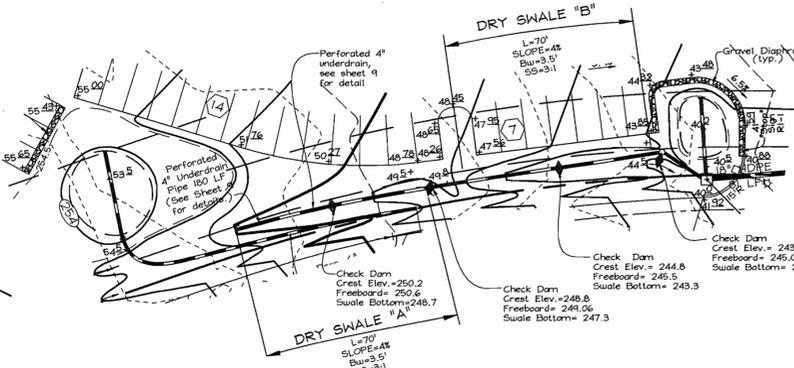
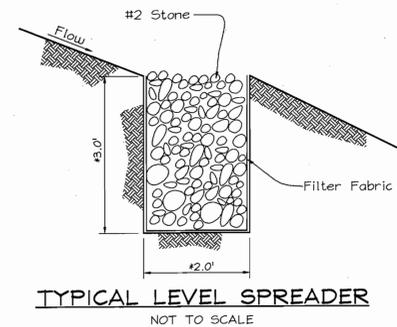
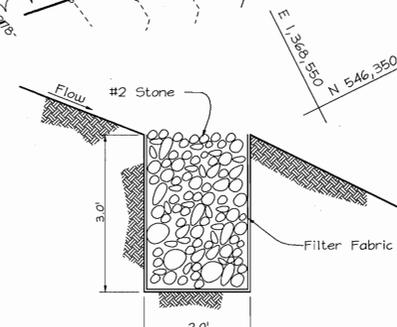
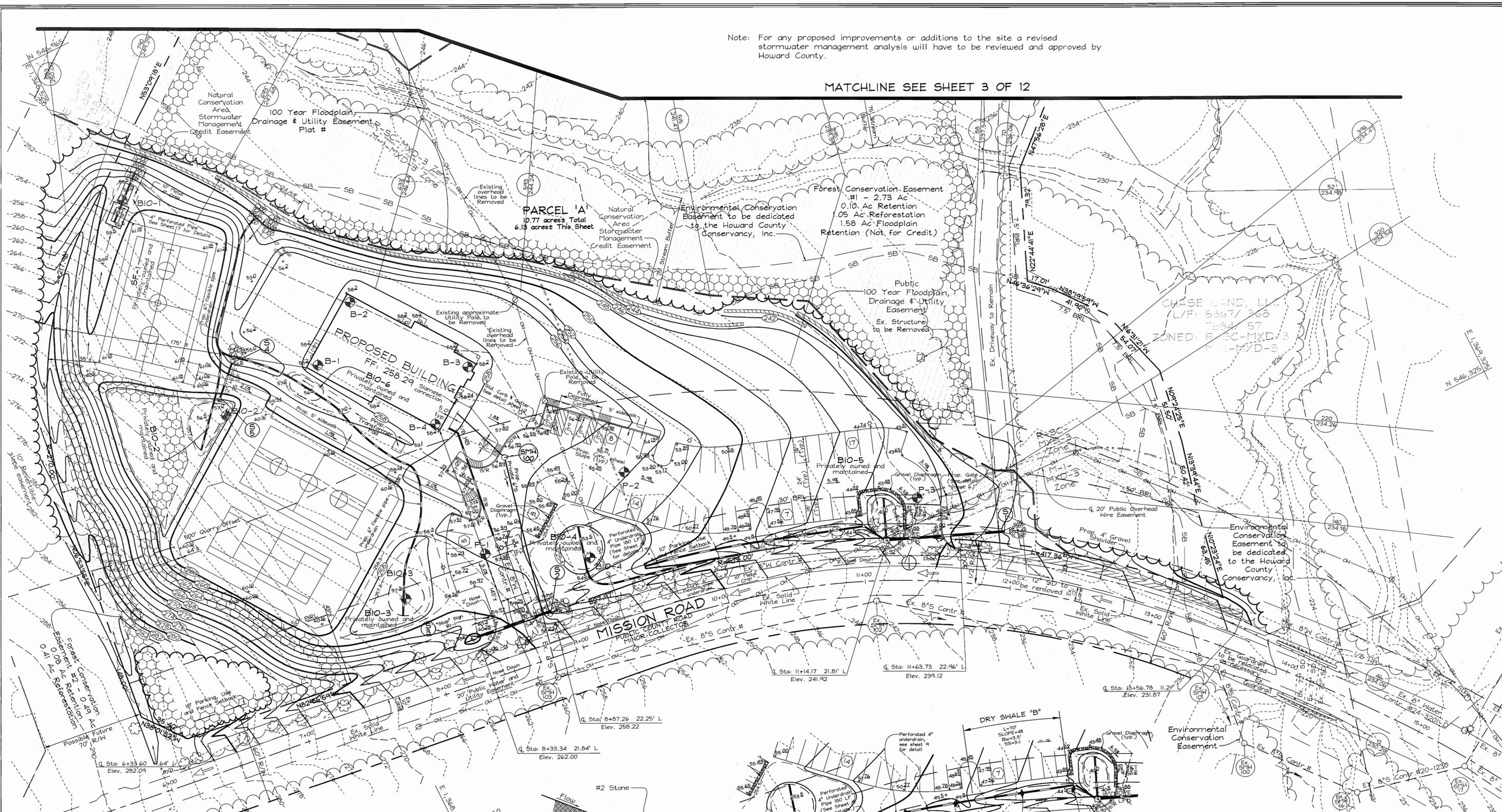
DATE: 4/16/06  
 DATE: 3/1/06  
 DATE: 3/3/06

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

DESIGN BY: PS  
 DRAWN BY: GS  
 CHECKED BY: ZYF  
 SCALE: As Shown  
 DATE: Feb. 2, 2006  
 W.O. No.: 3247  
 SHEET No.: 1 OF 12

Note: For any proposed improvements or additions to the site a revised stormwater management analysis will have to be reviewed and approved by Howard County.

MATCHLINE SEE SHEET 3 OF 12



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ  
 DATE: 3/1/16  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 3/2/16

**OWNER**  
 Chase Land, LLC  
 P.O. Box 950  
 Laurel, MD 20725  
 (410) 792-7234  
 c/o Hillary Colt Cahan

**DEVELOPER**  
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 P.O. Box 950  
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 (410) 792-7234  
 c/o Tim Schmidt

**SITE DEVELOPMENT AND GRADING PLAN**

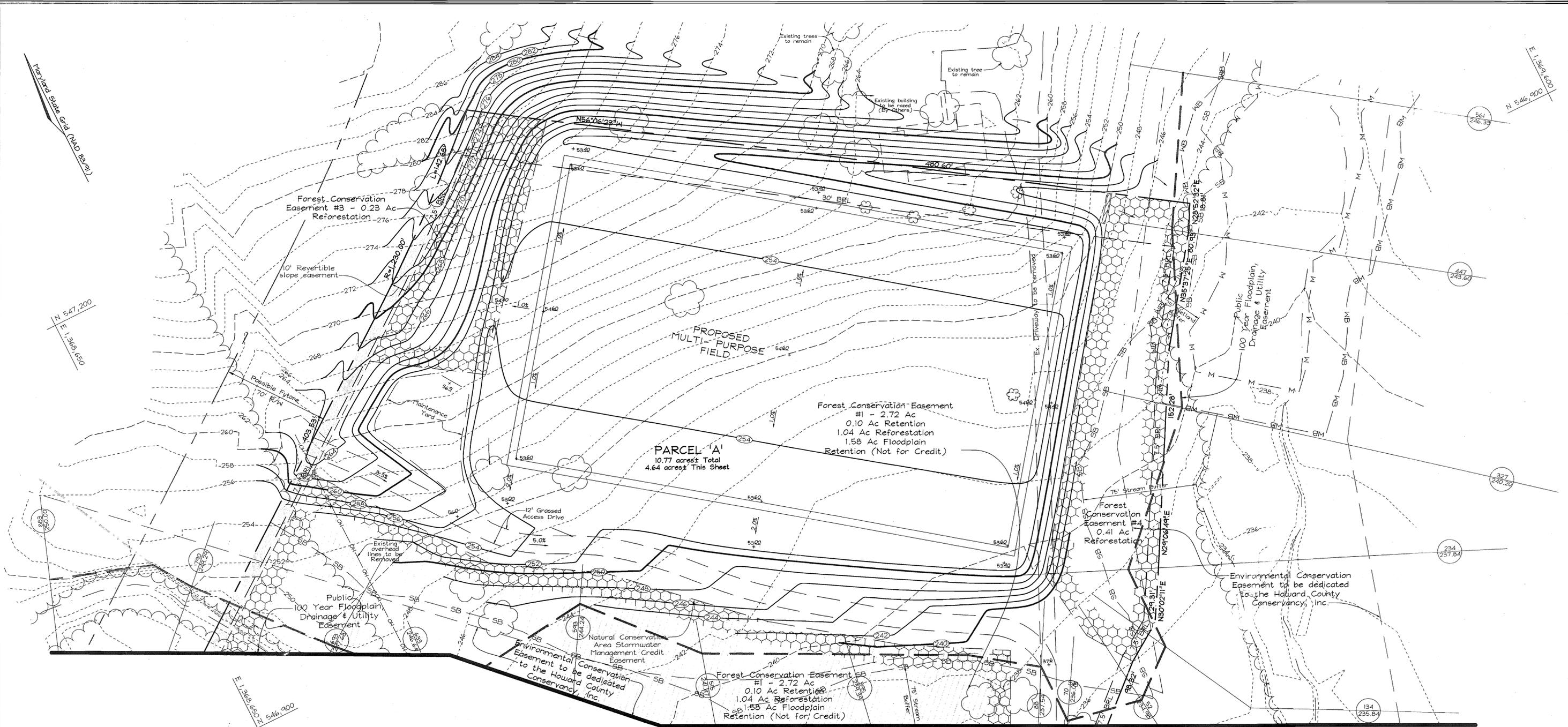
**RIDGELYS RUN COMMUNITY CENTER**

TAX MAP 43 GRID 7, 8 & 13  
 6TH ELECTION DISTRICT

P/O PARCEL 235  
 HOWARD COUNTY, MARYLAND

DESIGN BY: PS  
 DRAWN BY: KSZ  
 CHECKED BY: ZYF  
 SCALE: 1"=30'  
 DATE: Feb. 2, 2006  
 W.O. No.: 3247  
 SHEET No.: 2 OF 12

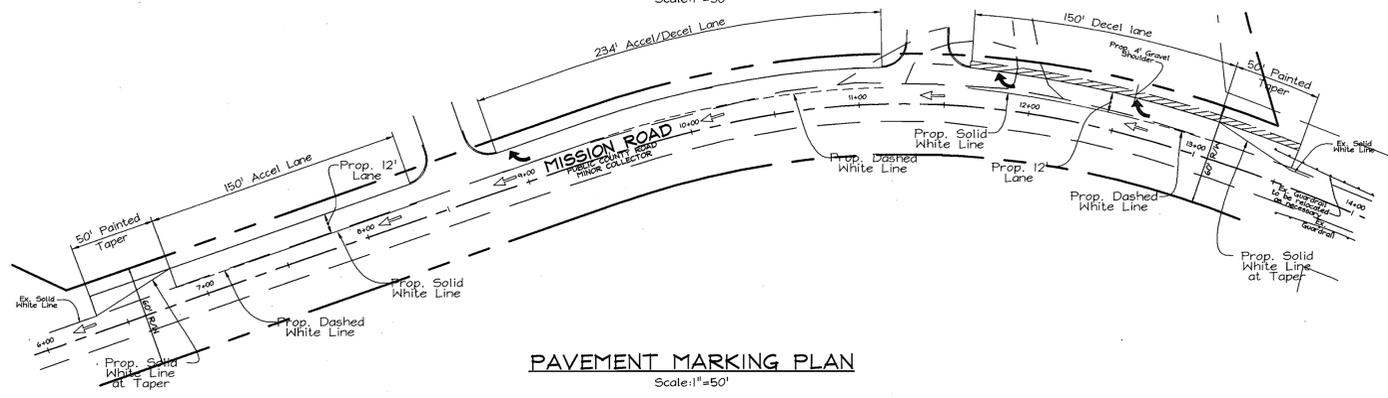
**FSH Associates**  
 Engineers Planners Surveyors  
 8318 Forest Street, Elkton City, MD 21043  
 Tel: 410-750-2251 Fax: 410-750-7350  
 E-mail: info@fsha.biz



MATCHLINE SEE SHEET 2 OF 12

NOTE: There are no proposed impervious areas on this sheet within our project boundaries. (Excluding the Pavement Marking Plan)

PLAN VIEW  
Scale: 1"=30'



PAVEMENT MARKING PLAN  
Scale: 1"=50'

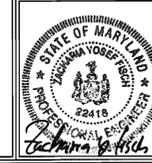
NOTE: See Sheet No. 2 for additional information.

<b>OWNER</b> Chase Land, LLC P.O. Box 850 Laurel, MD 20725 (410) 792-7234 c/o Hillary Colt Cahon	<b>DEVELOPER</b> Chase Mining, LLC P.O. Box 850 Laurel, MD 20725 (410) 792-7234 c/o Tim Schmidt
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**SITE DEVELOPMENT AND GRADING PLAN**

**RIDGELYS RUN COMMUNITY CENTER**

TAX MAP 43 GRID 7, 8 & 13  
6TH ELECTION DISTRICT  
P/O PARCEL 235  
HOWARD COUNTY, MARYLAND



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

DESIGN BY: PS  
DRAWN BY: KSZ  
CHECKED BY: ZYF  
SCALE: As Shown  
DATE: Feb. 2, 2006  
W.O. No.: 3247  
SHEET No.: 3 OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 2/1/06	<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 2/1/06
<i>[Signature]</i> DIRECTOR DATE: 2/1/06	

MATCHLINE SEE SHEET 5 OF 12

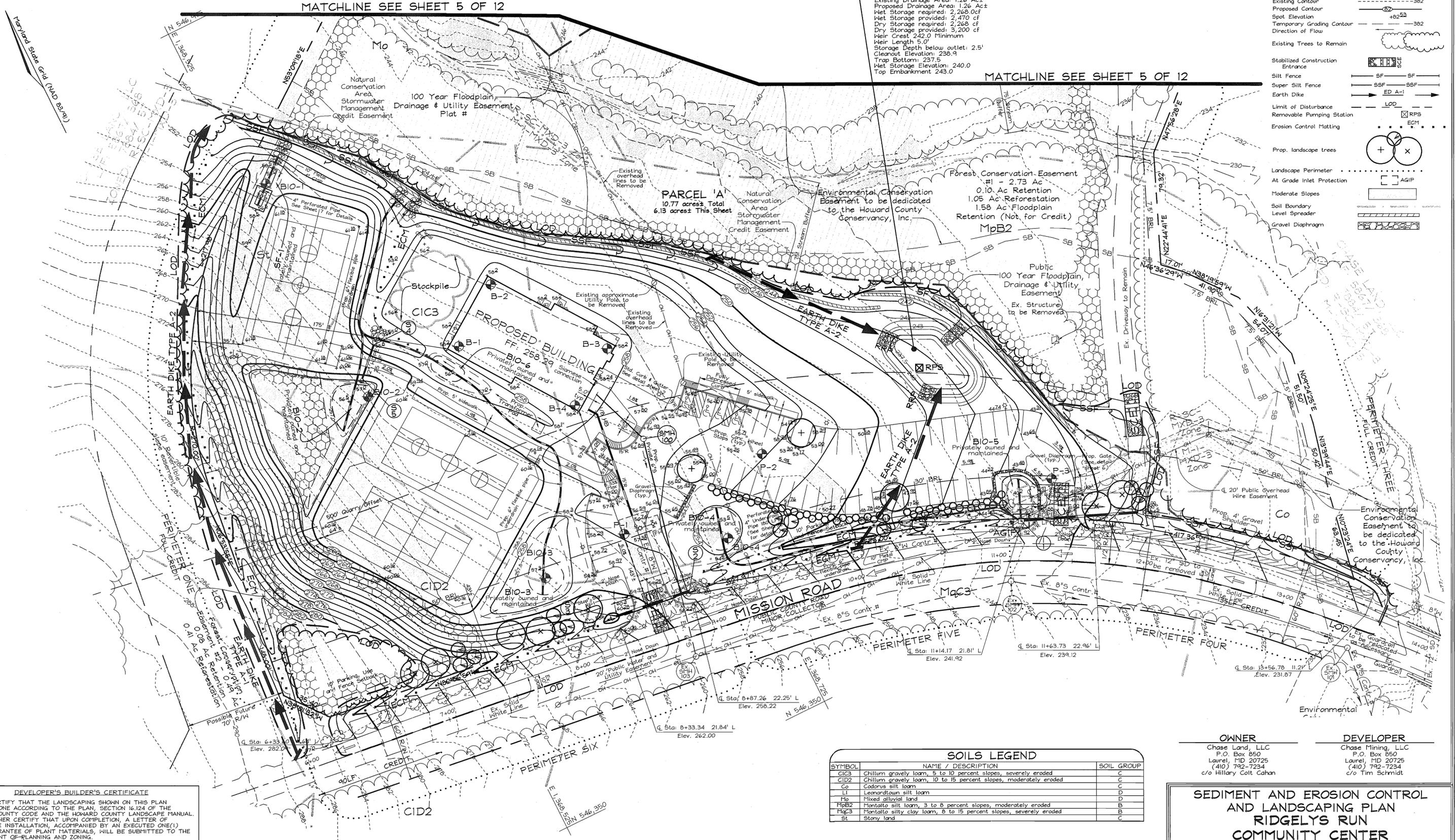
SEDIMENT TRAP #1 (STII TYPE)

Existing Drainage Area: 1.26 Ac  
 Proposed Drainage Area: 1.26 Ac  
 Wet Storage required: 2,260.0cf  
 Wet Storage provided: 2,470 cf  
 Dry Storage required: 2,268 cf  
 Dry Storage provided: 3,200 cf  
 Weir Crest: 242.0 Minimum  
 Weir Length: 5.0'  
 Storage Depth below outlet: 2.5'  
 Cleanout Elevation: 238.9  
 Trap Bottom: 237.5  
 Weir Storage Elevation: 240.0  
 Top Embankment: 243.0

MATCHLINE SEE SHEET 5 OF 12

LEGEND

- Existing Contour 382
- Proposed Contour
- Spot Elevation
- Temporary Grading Contour
- Direction of Flow
- Existing Trees to Remain
- Stabilized Construction Entrance
- Silt Fence
- Super Silt Fence
- Earth Dike
- Limit of Disturbance
- Removable Pumping Station
- Erosion Control Matting
- Prop. landscape trees
- Landscape Perimeter
- At Grade Inlet Protection
- Moderate Slopes
- Soil Boundary Level Spreader
- Gravel Diaphragm



**SOILS LEGEND**

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
CIC3	Chillum gravelly loam, 5 to 10 percent slopes, severely eroded	C
CID2	Chillum gravelly loam, 10 to 15 percent slopes, moderately eroded	C
Co	Codorus silt loam	D
LI	Leonardtown silt loam	D
Mo	Mixed alluvial land	D
MpB2	Montalto silt loam, 3 to 8 percent slopes, moderately eroded	B
MaC3	Montalto silty clay loam, 8 to 15 percent slopes, severely eroded	B
St	Stony land	C

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 (410) 792-7234  
 c/o Tim Schmidt

**SEDIMENT AND EROSION CONTROL AND LANDSCAPING PLAN**  
**RIDGELY'S RUN COMMUNITY CENTER**

TAX MAP 43 GRID 7, 8 & 13  
 6TH ELECTION DISTRICT

P/O PARCEL 235  
 HOWARD COUNTY, MARYLAND

**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]*  
 SIGNATURE OF DEVELOPER

02/02/06  
 DATE

**REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS**

*[Signature]*  
 USDA-NATURAL RESOURCES CONSERVATION SERVICE  
 DATE: 2/10/06

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

*[Signature]*  
 HOWARD SCD  
 DATE: 2/10/06

**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.

*[Signature]*  
 SIGNATURE OF ENGINEER  
 ZACHARIA Y. FISCH  
 DATE: 2/3/06

**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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]*  
 SIGNATURE OF DEVELOPER  
 DATE: 02/02/06

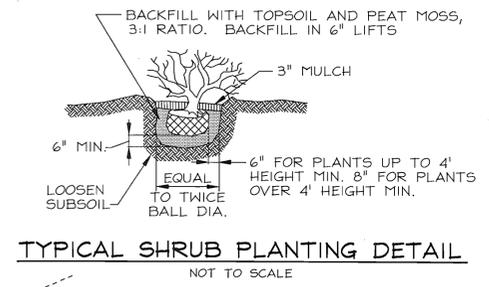
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 Tel: 410-750-2251 Fax: 410-750-7390  
 E-mail: info@fsha.biz

DESIGN BY: PS  
 DRAWN BY: K92  
 CHECKED BY: YTF  
 SCALE: 1"=30'  
 DATE: Feb. 2, 2006  
 H.O. No.: 3247  
 SHEET No.: 4 OF 12

CATEGORY	ADJACENT TO ROADWAYS			ADJACENT TO PERIMETER PROPERTIES		
	A	B	C	D	E	F
Perimeter/Frontage Designation	4	5	6	1	2	3
Landscape Type	1	2	3	4	5	6
Linear Feet of Roadway	246	194	317	548	1109	423
Credit for Existing Vegetation (Yes, No, Linear Feet)	Yes** (111)	No	Yes** (90)	Yes** (227)	-	Yes** (0)
Remaining Perimeter Length	-	-	-	-	-	-
Credit for Wall, Fence or Berm (Yes, No, Linear Feet)	No	No	No	No	Yes** (660)	No
Remaining Perimeter Length	-	-	-	-	-	-
Number of Plants Required	1:50 2 1:40 3	-	1:50 5 1:40 6	1:50 - 1:40 -	*** 1:50 -	1:50 - 1:40 -
Shade Trees	-	-	-	-	-	-
Evergreen Trees	-	-	-	-	-	-
Number of Plants Provided	2 3	0 5	5 6	-	***	-
Shade Trees	-	-	-	-	-	-
Evergreen Trees	-	-	-	-	-	-
Other Trees (2:1 Substitution)	-	-	-	-	-	-
Shrubs (10:1 Substitution)	-	49	-	-	-	-
(Describe Plant Substitution Credits Below if needed)						

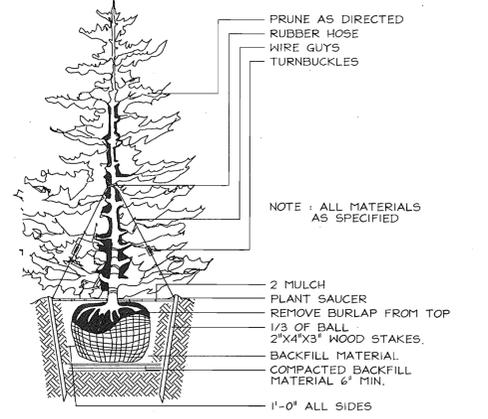
\*\* Existing woods to remain  
 \*\*\* Proposed facility is set a minimum of 10' below perimeter edges, in addition, some existing trees are to remain.  
 \*\*\*\* We are claiming Alternative Compliance for a 6' to 30' height difference between the Multi-Purpose Field and the adjacent land to the north. The remaining perimeter is bordered by Forested Environmental Features, such as Wetlands, Streams and Floodplains. This perimeter is located on the north side of the Floodplain, is separated from the main development of this site, and surrounds an existing field whose proposed conditions will be similar. The owner of this site owns all adjacent properties, and will provide additional landscaping in accordance with the Howard County Code and Landscape Manual at the time of the future development of the adjacent parcels.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
Number of Parking Spaces	85
Number of Trees Required	3
Number of Trees Provided	3
Shade Trees	3
Other Trees (2:1 Substitution)	-

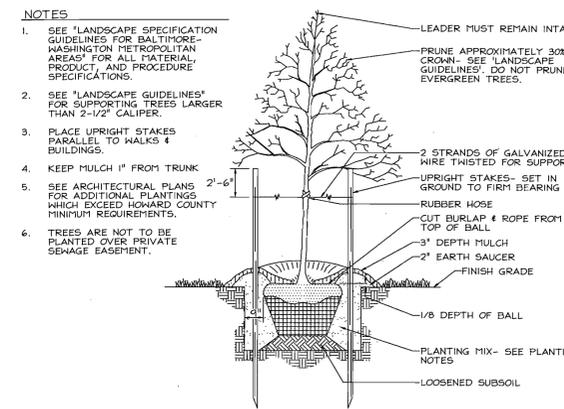


LANDSCAPE SCHEDULE				
KEY	QUAN.	BOTANICAL NAME	SIZE	NOTE
+	3	Acer Rubrum October Glory	2 1/2"-3" Cal.	B # B
+	7	Quercus Rubra Red Oak	2 1/2"-3" Cal.	B # B
+	14	Thuja Occidentalis American Arborvitae	6'-8' Ht.	B # B
+	49	Ilex Verticillata Winterberry	3'-4' Ht.	B # B

- LANDSCAPE NOTES**
- At the time of installation, all shrubs and other plantings herein 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 Landscape 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.
  - 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.
  - Financial surety for the required landscaping will be posted as part of the Developer's Agreement in the amount of \$6,570.00 (10 shade trees @ \$300.00 each, 14 evergreen trees @ \$150.00 each and 49 shrubs @ \$30.00 each).
  - No Perimeter Plantings are required for the Bio Retention Facilities since plantings will be placed in the facility.



**TYPICAL EVERGREEN TREE PLANTING DETAIL**  
NOT TO SCALE



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



**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: 02/02/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division: [Signature] 2/2/06  
 Chief, Division of Land Development: [Signature] 2/1/06  
 Director: [Signature] 2/2/06

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 USDA-NATURAL RESOURCES CONSERVATION SERVICE  
 Signature: [Signature] 2/16/06  
 Date: 2/16/06

**ENGINEERS 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.  
 Signature of Engineer: [Signature] 2/3/06  
 Date: 2/3/06  
 ZACHARIA Y. FISCH

**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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 Signature of Developer: [Signature] 02/02/06  
 Date: 02/02/06

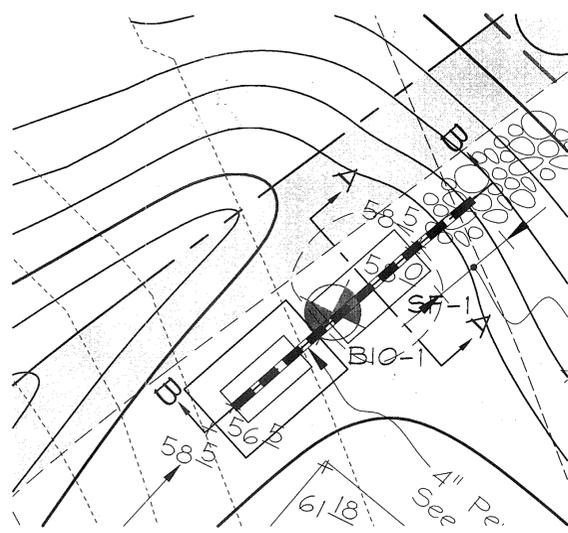
**OWNER**  
 Chase Land, LLC  
 P.O. Box 850  
 Laurel, MD 20725  
 (410) 792-7234  
 c/o Hillary Colt Cahan

**DEVELOPER**  
 Chase Mining, LLC  
 P.O. Box 850  
 Laurel, MD 20725  
 (410) 792-7234  
 c/o Tim Schmidt

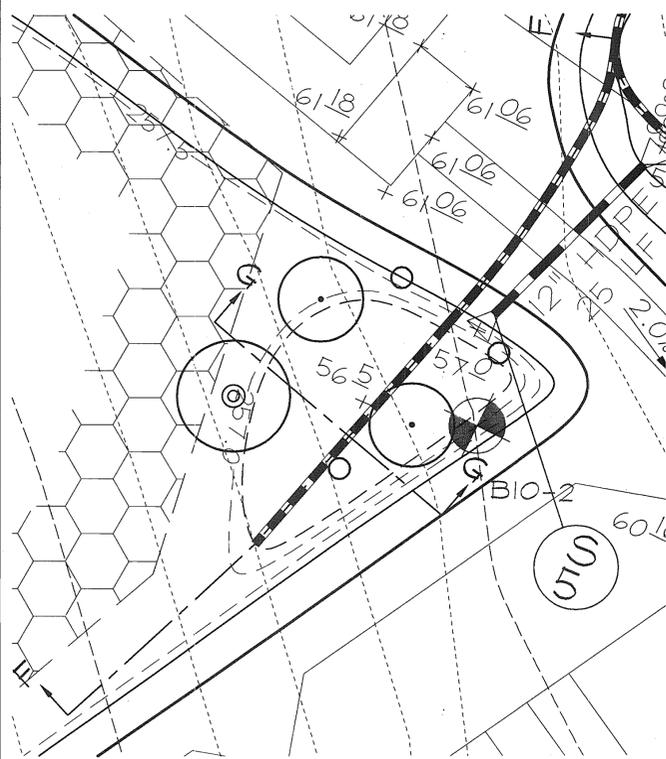
**SEDIMENT AND EROSION CONTROL & LANDSCAPING PLAN & DETAILS**  
**RIDGELY'S RUN COMMUNITY CENTER**  
 TAX MAP 43 GRID 7, 8 & 13  
 6TH ELECTION DISTRICT  
 P/O PARCEL 235  
 HOWARD COUNTY, MARYLAND

DESIGN BY: PS  
 DRAWN BY: KSZ  
 CHECKED BY: ZYF  
 SCALE: 1"=30'  
 DATE: Feb. 2, 2006  
 W.O. No.: 3247  
 SHEET No.: 5 OF 12  
**FSH Associates**  
 Engineers Planners-Surveyors  
 8318 Forest Street, Elliott City, MD 21614  
 Tel: 410-790-2251 Fax: 410-790-7350  
 E-mail: info@fsha.biz





**DETAIL OF POCKET SAND FILTER FACILITY #1**  
Scale: 1"=10'

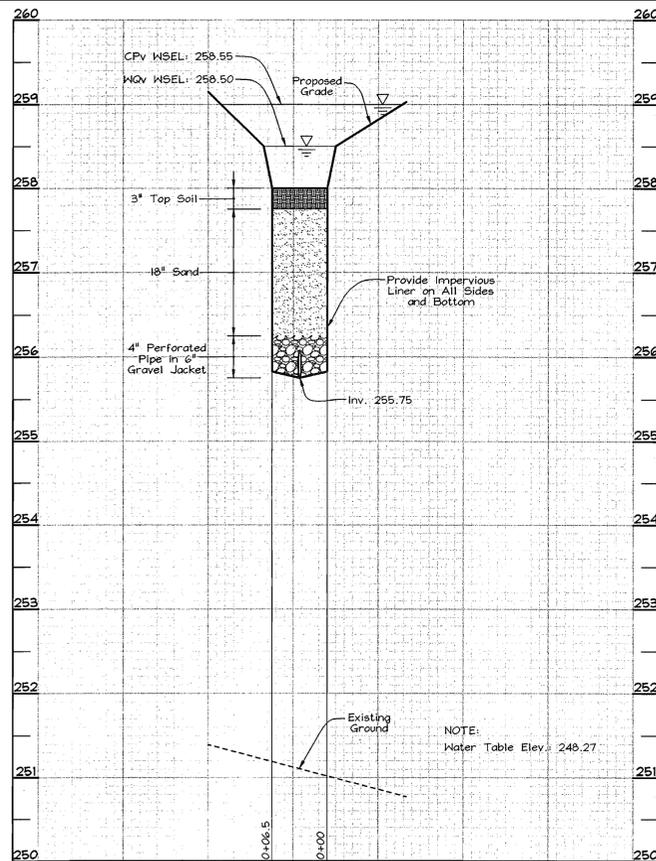


**DETAIL OF BIORETENTION FACILITY #2**  
Scale: 1"=10'

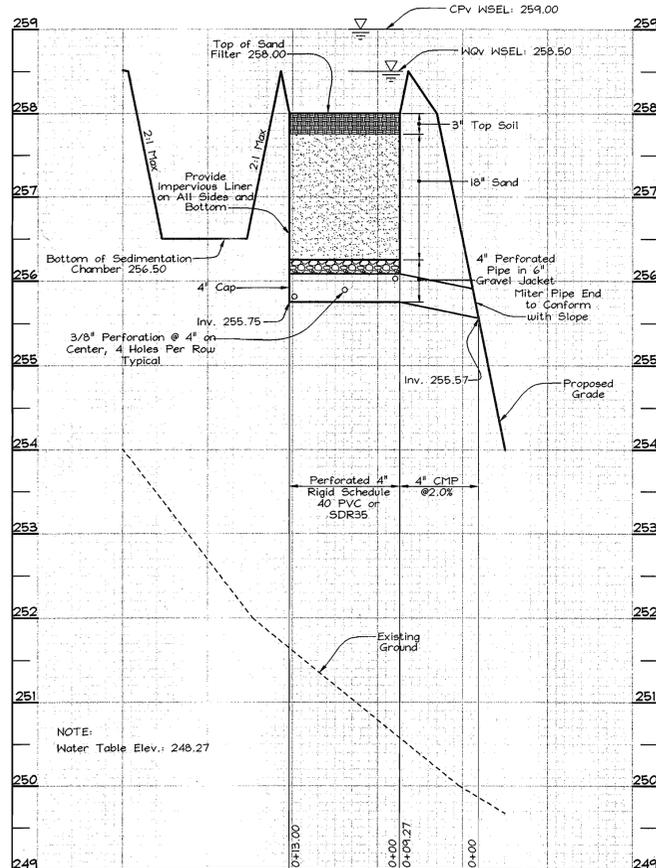
BIORETENTION LANDSCAPE SCHEDULE				
KEY	QUAN.	BOTANICAL NAME	SIZE	NOTE
⊙	5	Platanus Occidentalis 'Sycamore'	2 1/2"-3" Cal.	B & B
○	10	Cornus Sericea 'Redwing Dogwood'	2-3 Gal.	Cont.
○	15	Lindera Benzoin 'Spicebush'	2-3 Gal.	Cont.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

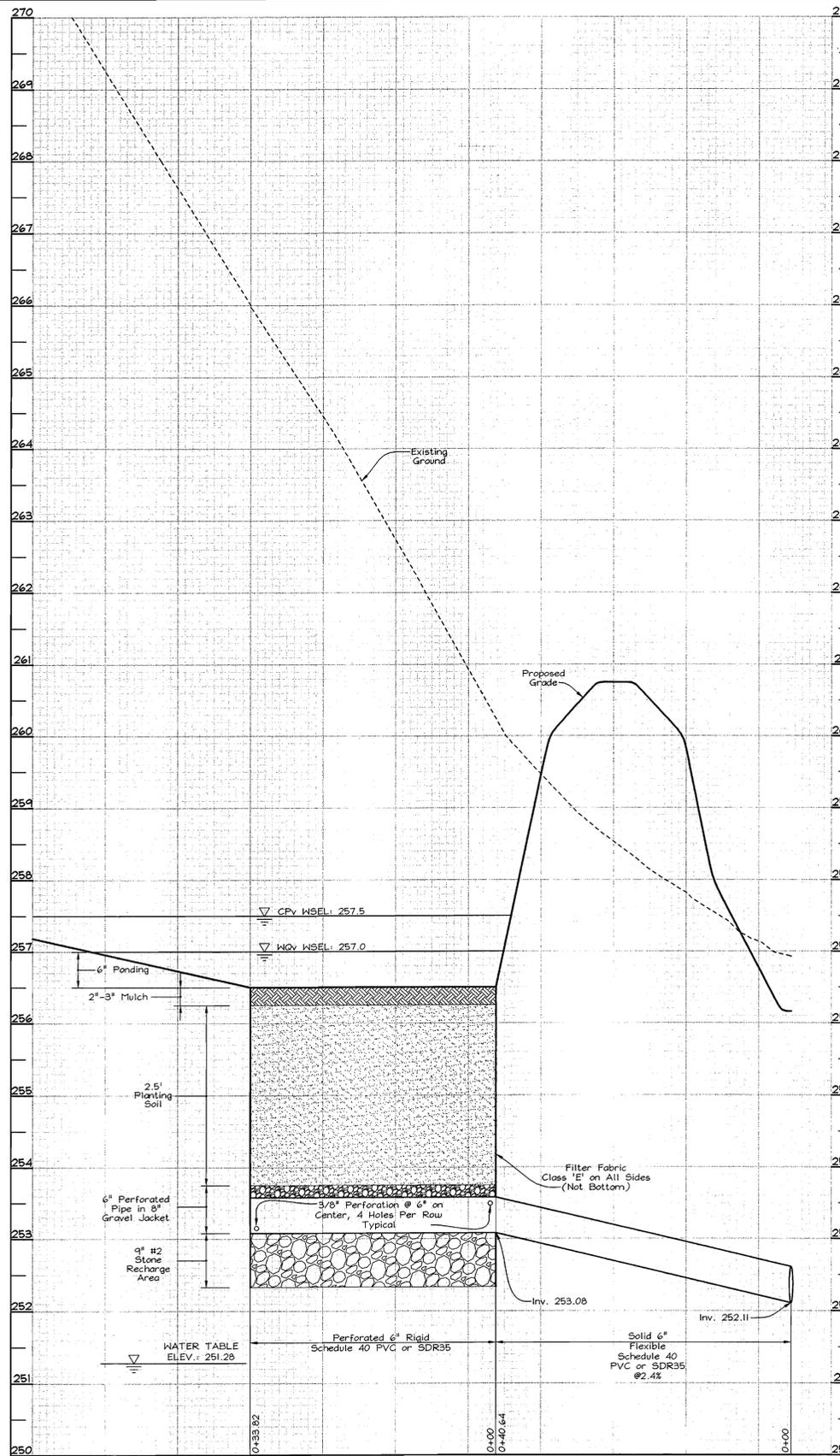
CHIEF, DEVELOPMENT ENGINEERING DIVISION *MM* DATE *3/1/06*  
 CHIEF, DIVISION OF LAND DEVELOPMENT *CH* DATE *3/1/06*  
 DIRECTOR *McLaughlin* DATE *3/1/06*



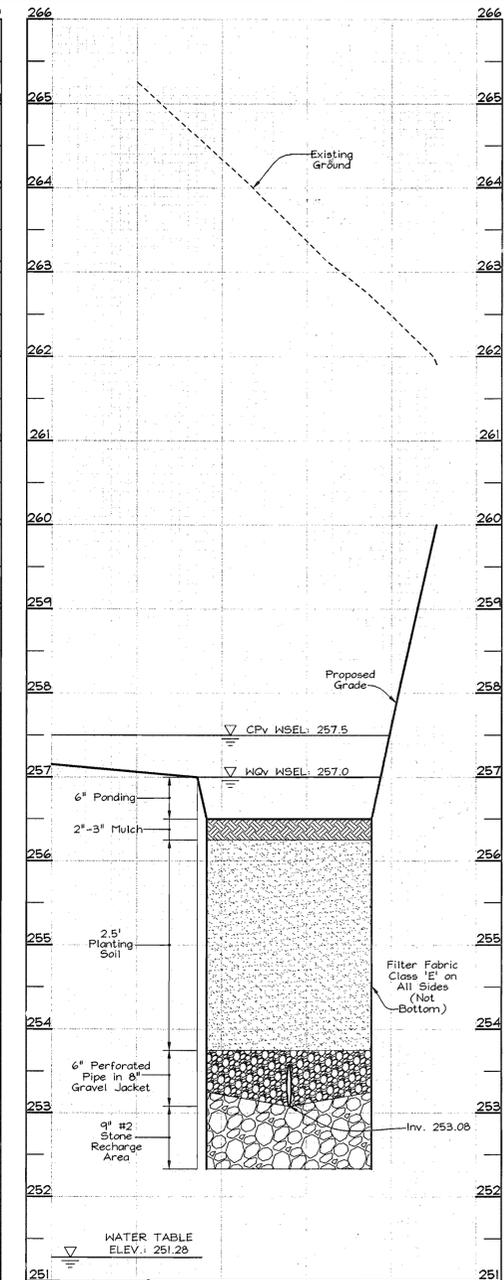
**SECTION A-A**  
Pocket Sand Filter  
Section Through Facility  
Scale: Hor.: 1"=10'  
Vert.: 1"=1'



**SECTION B-B**  
Pocket Sand Filter  
Section along Underdrain  
Scale: Hor.: 1"=10'  
Vert.: 1"=1'



**SECTION F-F**  
Bioretention Facility #2  
Section along Underdrain  
Scale: Hor.: 1"=10'  
Vert.: 1"=1'



**SECTION G-G**  
Bioretention Facility #2  
Section Through Facility  
Scale: Hor.: 1"=10'  
Vert.: 1"=1'

**BIORETENTION LANDSCAPE NOTES**

- Planting soil mix for Bioretention Facility to be screened topsoil (USDA classified silt loam, sandy loam).
- Stabilize Bioretention Storage Areas with Red Top (*Agrostis alba*) at 1 lb./1000sf. as follows:  
 Bio 2 - 257.0  
 Bio 3 - 257.8  
 Bio 4 - 255.0  
 Bio 5 - 240.5  
 Bio 6 - 257.0

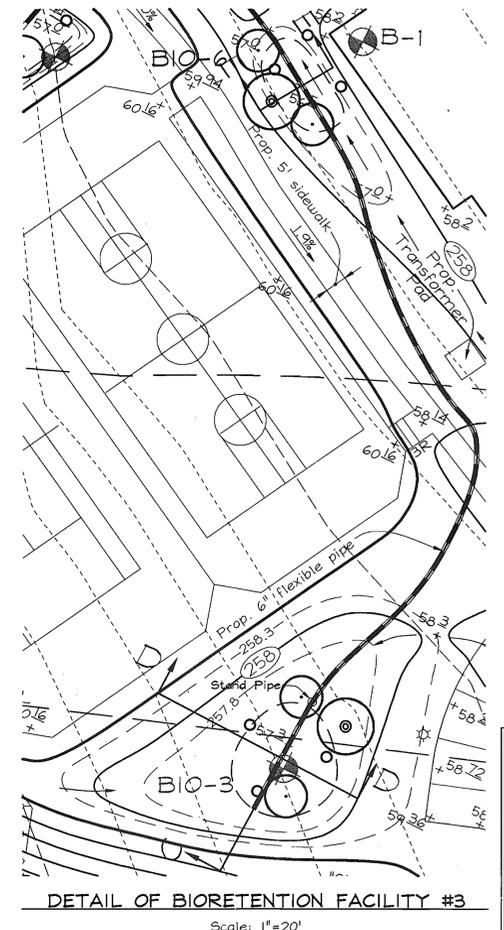
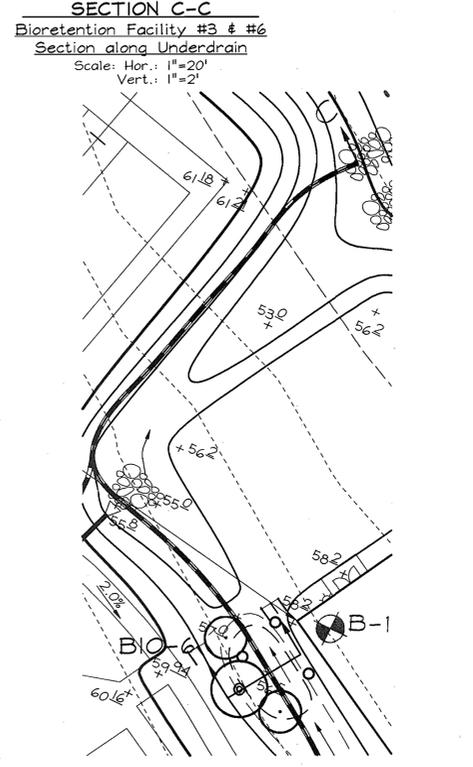
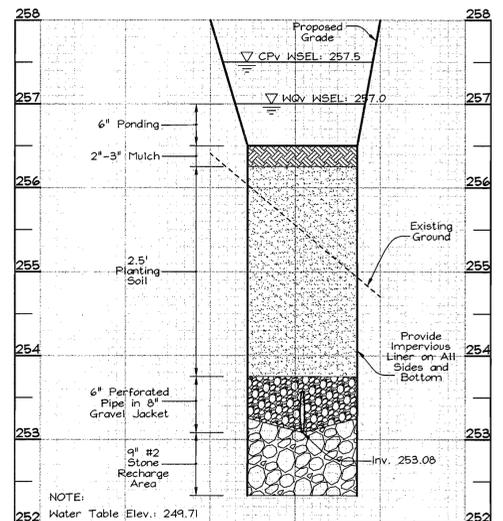
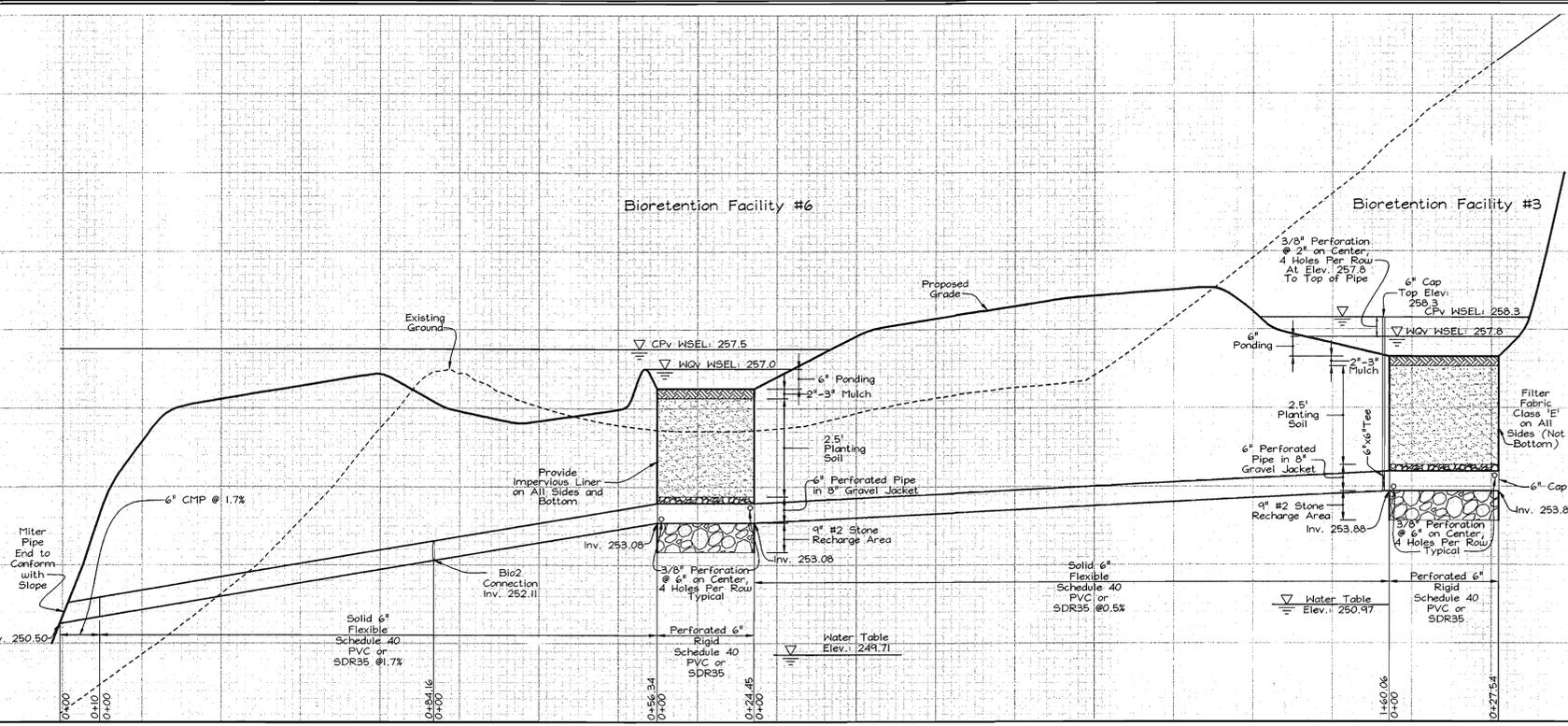
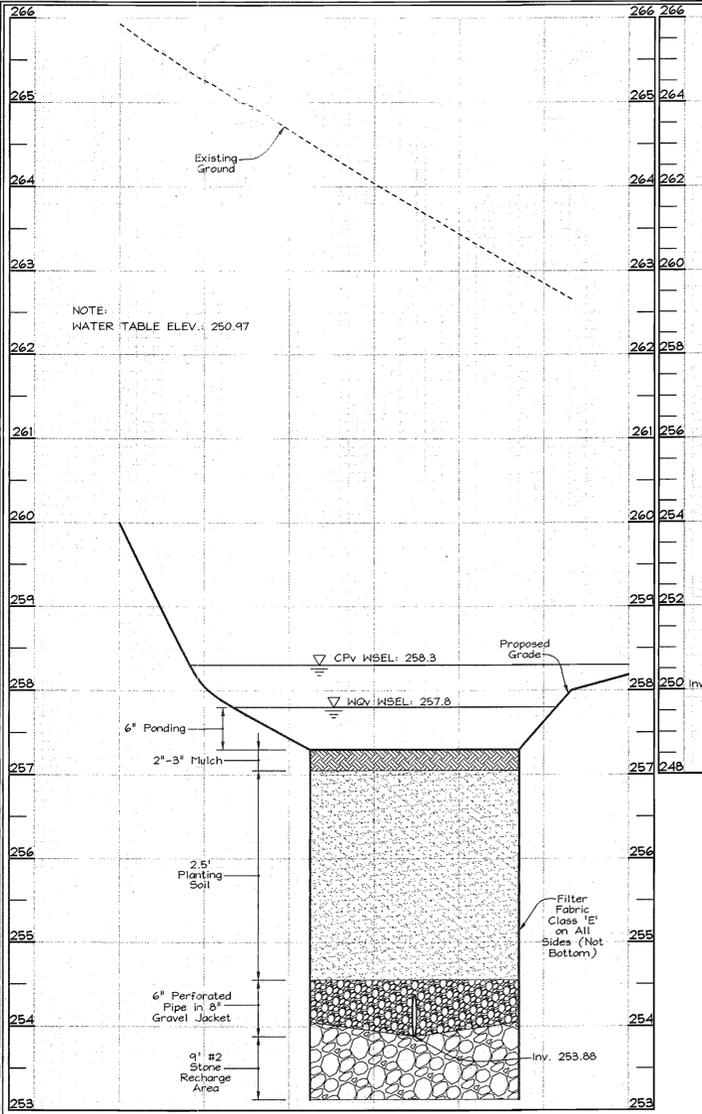
**BIORETENTION FACILITY PROFILES, NOTES & DETAILS**  
**RIDGELY'S RUN COMMUNITY CENTER**  
 TAX MAP 43 GRID 7, B & 13 P/O PARCEL 235  
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**OWNER**  
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**FSH Associates**  
 Engineers Planners Surveyors  
 8318 Forest Street, Elkton, MD 21043  
 Tel: 410-750-2251 Fax: 410-750-7350  
 E-mail: info@fsh.biz

DESIGN BY: *PS*  
 DRAWN BY: *MY*  
 CHECKED BY: *ZYF*  
 SCALE: *As Shown*  
 DATE: *Feb. 2, 2006*  
 P.O. No.: *3247*  
 SHEET No.: *7 OF 12*



**SPECIFICATIONS FOR BIORETENTION**

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

**1. Material Specifications**

The allowable 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.

**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 15.08.01.05.

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 - 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 texture analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

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

Should the pH fall out of 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 areas are 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 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 through the 12 inch compaction zone. Substitute 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, of the 2000 Maryland Storm Water Design Manual, Volumes I & II.

**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 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 1/2" 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, defects, or at a minimum, impedes this goal. Only odd fertilizer if wood chips or mulch are used to amend the soil. Rototill urea 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.

**SPECIFICATIONS FOR SAND FILTERS**

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

**1. Material Specifications for Sand Filters**

The allowable materials for sand filter construction are detailed in Table B.3.1.

**2. Sand Filter Testing Specifications**

Underground sand filters, facilities within sensitive groundwater aquifers, and filters designed to serve urban hot spots are to be tested for water tightness prior to placement of filter media. Entrances and exits should be plugged and the system completely filled with water to demonstrate water tightness. Water tightness means no leakage for a period of 8 hours.

All overflow weirs, multi-orifice and flow distribution slots are to be field-tested to verify adequate distribution of flows.

**3. Sand Filter Construction Specifications**

Provide sufficient maintenance access (i.e., 12-foot-wide road with legally recorded easement). Vegetated access slopes are to be a maximum of 10%; gravel slopes to 15%; paved slopes to 25%.

Absolutely no runoff is to enter the filter until all contributing drainage areas have been stabilized.

Surface of filter bed is to be level.

All underground sand filters should be clearly delineated with signs so that they may be located when maintenance is due.

Surface sand filters may be planted with appropriate grasses; see Appendix A.

"Pocket" sand filters (and residential bioretention facilities treating areas larger than an acre) shall be sized with a stone "window" that covers approximately 10% of the filter area. This "window" shall be filled with pea gravel (3/4 inch stone).

**4. Specifications Pertaining to Underground Sand Filters (F-2)**

Provide manhole and/or grates to all underground and below grade structures. Manholes shall be in compliance with standard specifications for each county but diameters should be 30" minimum (to comply with OSHA confined space requirements). Aluminum and steel lowered doors are also acceptable. Ten inch wide (minimum) manhole steps (12" o.c.) shall be cast in place or drilled and mortared into the walls below each manhole. A 5' minimum height clearance (from the top of the sand layer to the bottom upper/surface slab) is required for all permanent underground structures. Lift rings are to be supplied to remove/replace top slabs on pre-fabricated structures. Manhole covers should allow for proper ventilation.

Underground sand filters should be constructed with a gate valve located just above the top of the filter bed for dewatering in the event that clogging occurs.

Underground sand beds shall be protected from trash accumulation by a wide mesh geotextile screen to be placed on the surface of the sand bed; screen is to be rolled up, removed, cleaned and re-installed during maintenance operations.

CATEGORY	DA-1 (5.92 Ac.)	COMMENTS
Channel Protection Volume (CpV)	4,881 cu.ft.	See Note No.1
Water Quality Volume (WqV) Required / Provided	0.120 AF / 0.105 AF	See Note No. 2
Recharge Volume Area (Rev)/(Rea) Required / Provided	0.02 AF / 0.2 Ac. / 0.02 AF / 0.2 Ac.	See Note No. 3
Overbank Flood Storage (Qp)	N/A	Not required
Extreme Flood Volume (Qf)	N/A	Not required

- Notes:
- Channel Protection volume (CpV) is provided using surface storage of an additional 0.5 ft. over bio retention structures and sand filter, and within the void space of gravel level spreaders.
  - Water Quality Volume (WqV) is provided through the use of a Pocket Sand Filter (F-5) for sub area 1 and Bio-Retention Structures (F-6) to serve sub areas 2 thru 6, dry swale (O-1) design for sub area 7A and B, and sheet flow to buffer for sub area 8. Drainage area 9 is within county road right of way and will be partially treated by open section grass channel.
  - Recharge Volume is met through the use of Bio-retention structures and Dry swales with gravel storage beneath drains, as well area method treatment using sheet flow to buffer.
  - Overbank Flood storage is not required by Howard County within this watershed.
  - Extreme Flood Volume (Qf) is not required by Howard County within this watershed.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1, F-4, AND F-5)**

- The stormwater wetland facility shall be inspected annually and after major storm. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
- The top and side slopes of the embankment shall be mowed a minimum of once per year, when vegetation reaches 18" in height or as needed.
- Filters that have a grass cover shall be mowed a minimum of three (3) times per growing season to maintain a maximum grass height of less than 12 inches.
- Debris and litter shall be removed during regular mowing operations and as needed.
- Visible signs of erosion in the facility shall be repaired as soon as it is noticed.
- Remove silt when it exceeds four (4) inches deep in the forebay.
- When water ponds on the surface of the filter bed for more than 72 hours, the top four inches of discolored material shall be replaced with fresh material. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
- A log book shall be maintained to determine the rate at which the facility drains.
- The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
- Once the performance characteristics of the infiltration system have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 3/1/06

DATE: 3/1/06

**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.

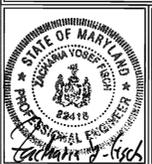
**OWNER**  
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Laurel, MD 20725  
(410) 792-7225  
c/o Hillary Colt Cahon

**DEVELOPER**  
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c/o Tim Schmidt

**BIORETENTION FACILITY PROFILES, NOTES & DETAILS RIDGELY'S RUN COMMUNITY CENTER**

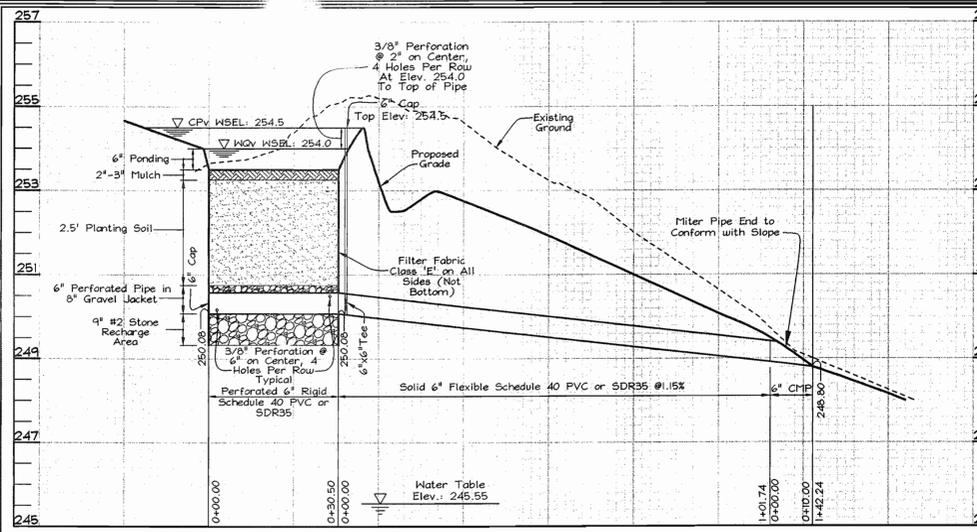
TAX MAP 43 GRID 7, 8 & 13  
6TH ELECTION DISTRICT

P/O PARCEL 235  
HOWARD COUNTY, MARYLAND

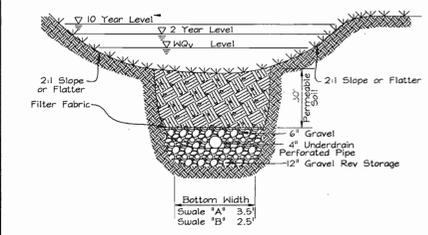


**FSH Associates**  
Engineers Planners Surveyors  
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Tel: 410-750-2251 Fax: 410-750-7350  
E-mail: info@fshaz.com

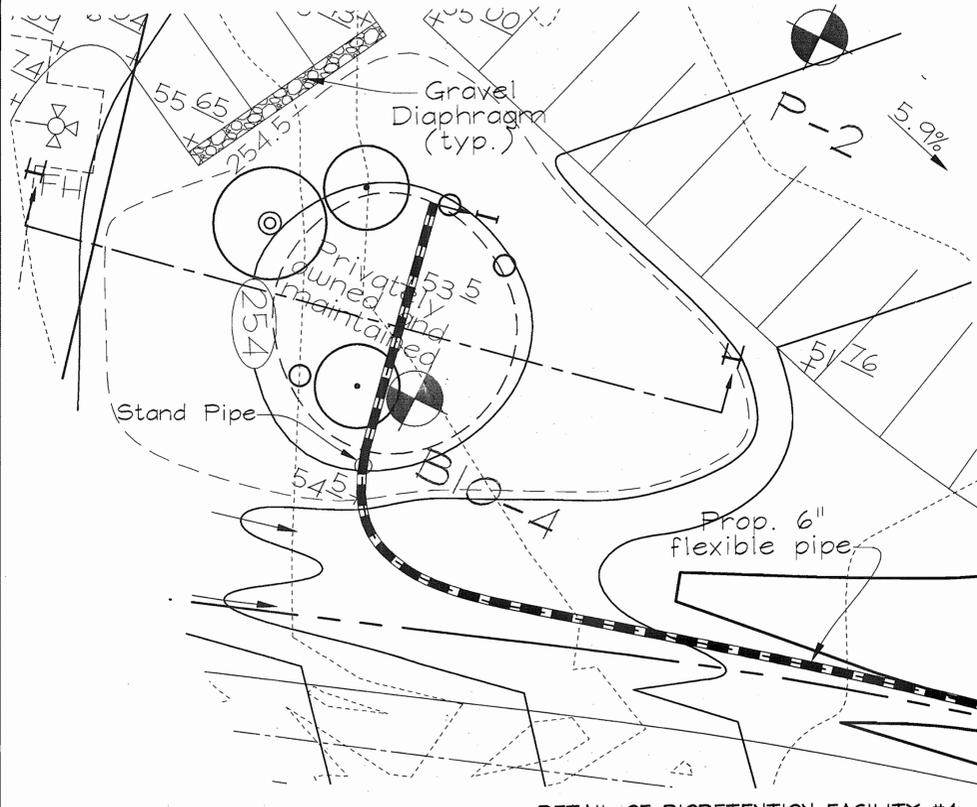
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DATE: Feb. 2, 2006  
W.O. No.: 9247  
SHEET No.: 8 OF 12



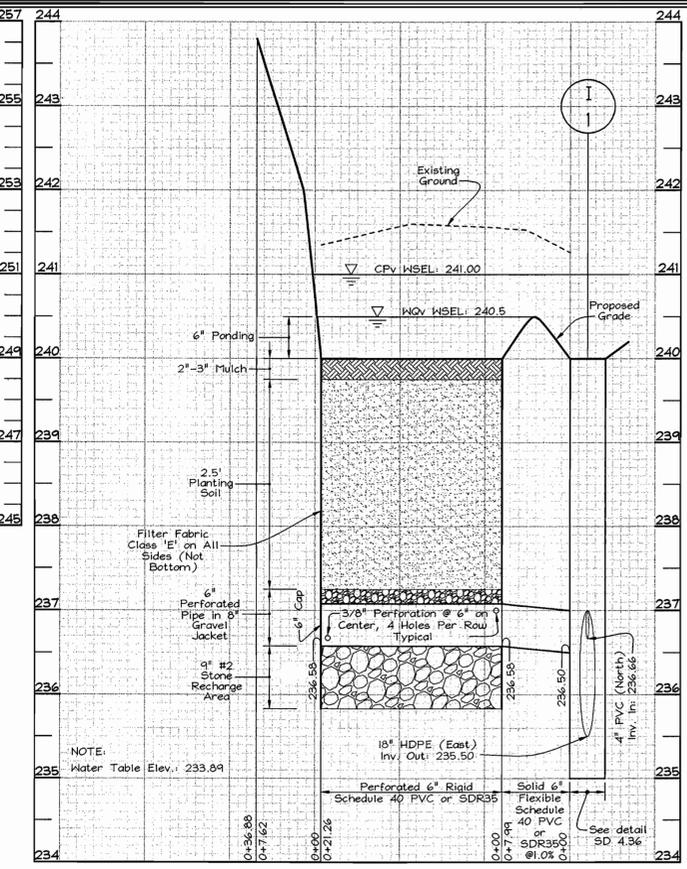
**SECTION I-I**  
Bioretention Facility #4  
Section along Underdrain  
Scale: Hor.: 1"=20'  
Vert.: 1"=2'



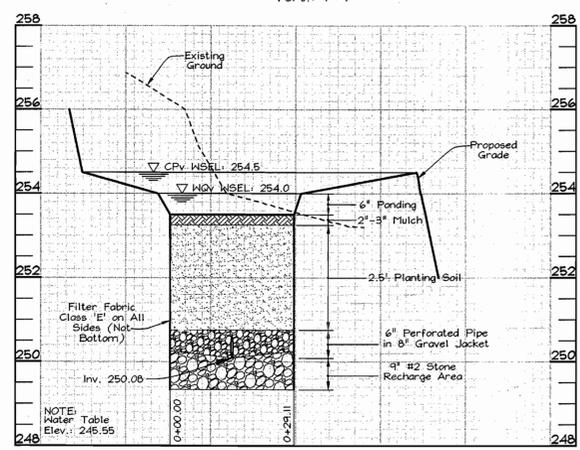
**DRY SWALE CROSS SECTION**  
Not to Scale



**DETAIL OF BIORETENTION FACILITY #4**  
Scale: 1"=10'



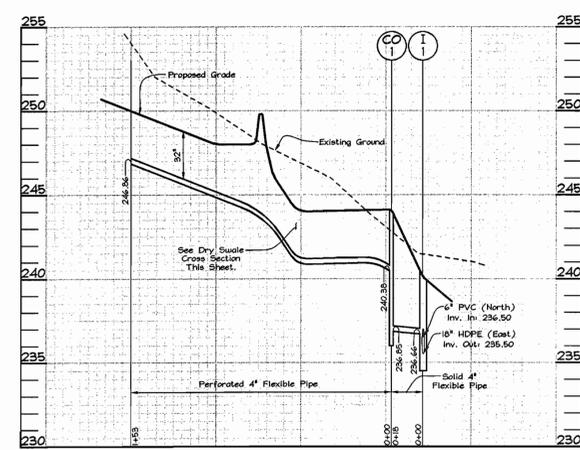
**SECTION K-K**  
Bioretention Facility #5  
Section along Underdrain  
Scale: Hor.: 1"=10'  
Vert.: 1"=1'



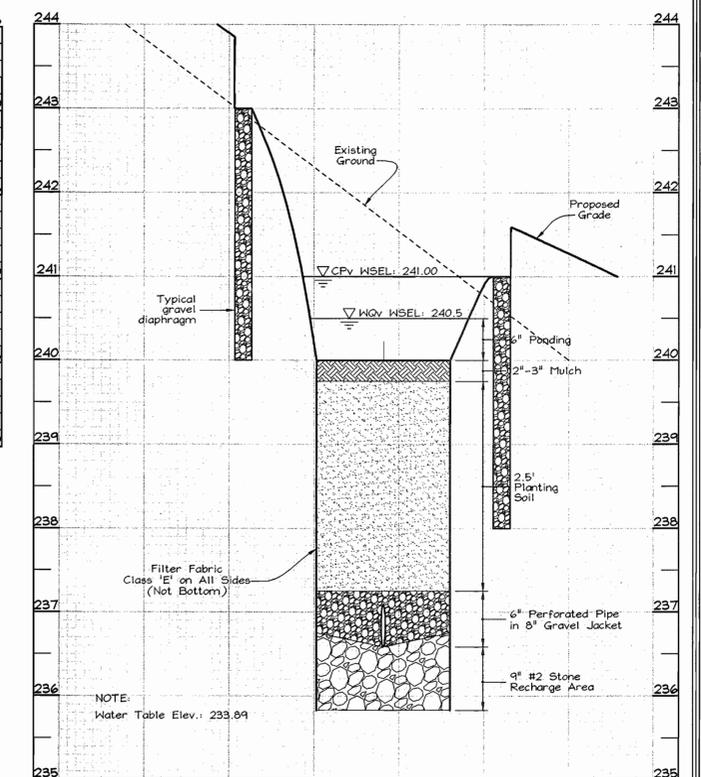
**SECTION H-H**  
Bioretention Facility #4  
Section Through Facility  
Scale: Hor.: 1"=10'  
Vert.: 1"=1'

Surface	B-1	P-3	Bio-1	Bio-2	Bio-3	Bio-4	Surface
2.0	Lean clay, trace sand, moist, orange-brown		Sandy lean clay, trace gravel, moist, reddish-brown	Water 3.3' ∇	Lean clay, trace sand and gravel, moist, reddish-brown	2.0	Lean clay, trace sand and gravel, moist, reddish-brown
5.0	Silt, with sand, moist, brown	Water 4.2' ∇		5.0	Sandy lean clay, trace gravel, moist, reddish-brown	5.0	Sandy lean clay, trace gravel, moist, brown
8.0			Water 6.3' ∇	7.0	Sandy silt, trace clay, with rock fragments, moist, reddish-brown	8.0	Lean clay, trace sand, moist, brown
10.0				10.0	Sandy silt, with rock fragments, moist, olive-green	10.0	Water 8.7' ∇
13.0						13.0	Water 12.4' ∇
15.0						15.0	Sandy lean clay, trace gravel, moist, reddish-brown
18.0						18.0	Sandy silt, trace rock fragments, moist, brown
20.0	Disintegrated rock					20.0	

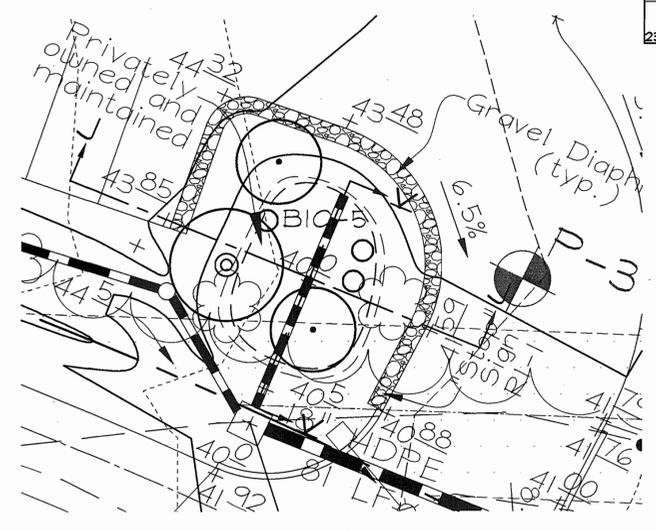
**S.W.M. BORING PROFILES**  
NOT TO SCALE



**DRY SWALE "A" AND "B" UNDERDRAIN PROFILE**  
Scale: Hor.: 1"=50'  
Vert.: 1"=5'



**SECTION J-J**  
Bioretention Facility #5  
Section Through Facility  
Scale: Hor.: 1"=10'  
Vert.: 1"=1'



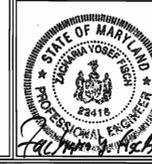
**DETAIL OF BIORETENTION FACILITY #5**  
Scale: 1"=10'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 2/1/06  
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 3/1/06  
 DIRECTOR: *[Signature]* DATE: 3/2/06

**OWNER**  
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c/o Hillary Coit Cahon

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**BIORETENTION FACILITY PROFILES & DETAILS**  
**RIDGELY'S RUN COMMUNITY CENTER**  
TAX MAP 43 GRID 7, 8 & 13 6TH ELECTION DISTRICT P/O PARCEL 235 HOWARD COUNTY, MARYLAND



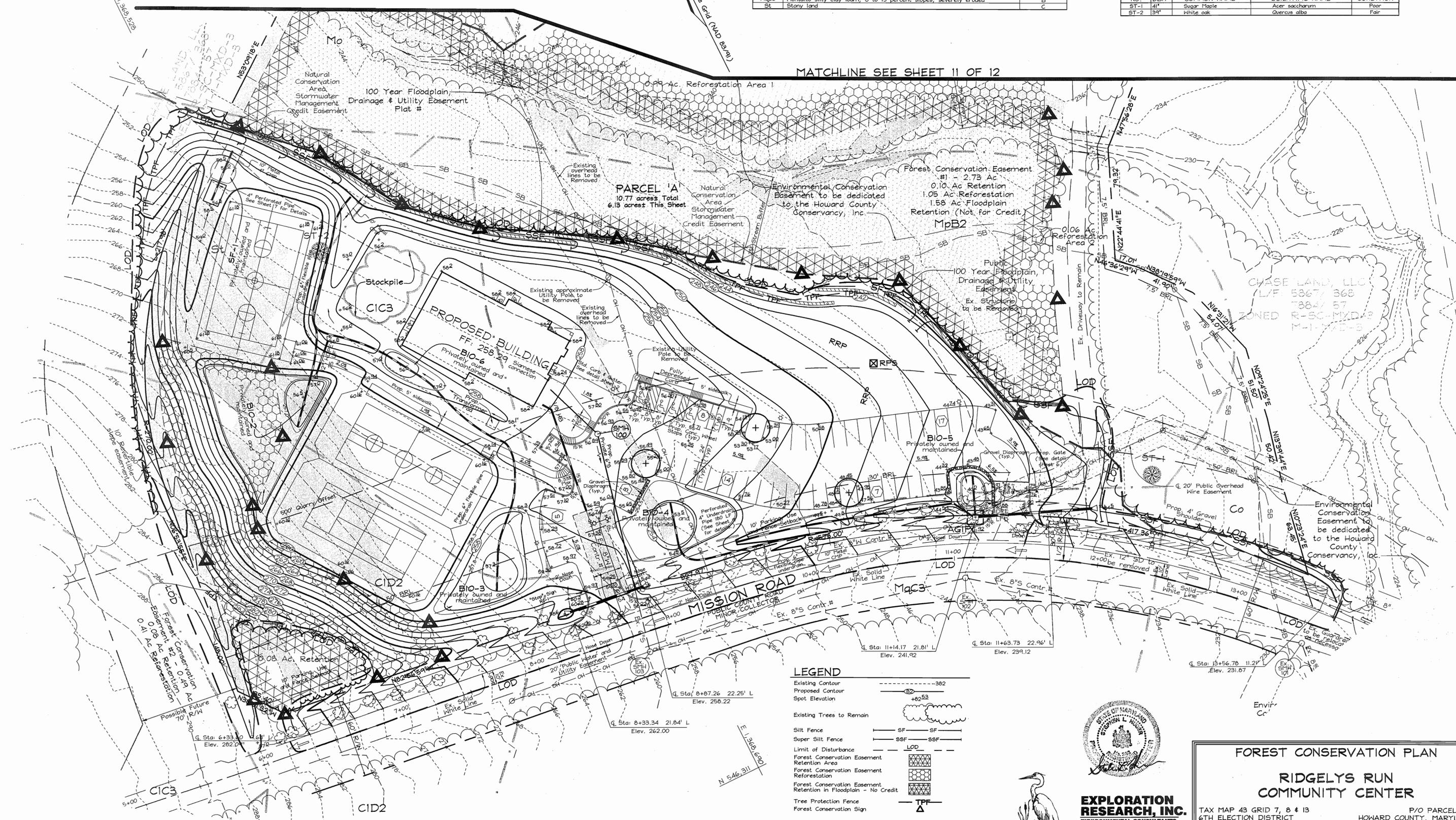
**FSH Associates**  
Engineers Planners Surveyors  
8318 Forest Street Ellicott City, MD 21043  
Tel: 410-750-2251 Fax: 410-750-7350  
E-mail: info@fsha.biz

DESIGN BY: PS  
DRAWN BY: MY  
CHECKED BY: ZYF  
SCALE: As Shown  
DATE: Feb. 2, 2006  
H.O. No.: 3247  
SHEET No.: 9 OF 12

SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	SOIL GROUP
CIC3	Chillum gravelly loam, 5 to 10 percent slopes, severely eroded	C
CID2	Chillum gravelly loam, 10 to 15 percent slopes, moderately eroded	C
Co	Codorus silt loam	C
Mp	Mixed alluvial land	B
MpB2	Montalto silt loam, 3 to 8 percent slopes, moderately eroded	B
MpC3	Montalto silty clay loam, 8 to 15 percent slopes, severely eroded	B
St	Stony land	C

SPECIMEN TREES				
NO.	DBH	COMMON NAME	SCIENTIFIC NAME	CONDITION
ST-1	41"	Sugar Maple	Acer saccharum	Poor
ST-2	34"	White oak	Quercus alba	Fair

MATCHLINE SEE SHEET 11 OF 12



**LEGEND**

- Existing Contour -382
- Proposed Contour -482.53
- Spot Elevation
- Existing Trees to Remain
- Silt Fence SF-SF
- Super Silt Fence SSF-SSF
- Limit of Disturbance LOD
- Forest Conservation Easement Retention Area
- Forest Conservation Easement Reforestation
- Forest Conservation Easement Retention in Floodplain - No Credit
- Tree Protection Fence TPF
- Forest Conservation Sign



**EXPLORATION RESEARCH, INC.**  
 ENVIRONMENTAL CONSULTANTS  
 LANDSCAPE ARCHITECTS  
 818 FOREST STREET  
 BELTSVILLE CITY, MARYLAND 21043  
 TEL: (410) 750-1150 FAX: (410) 750-7300  
 EMAIL: EXPLORATION@EXRCI.COM



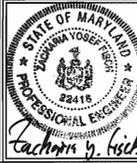
**OWNER**  
 Chase Land, LLC  
 P.O. Box 850  
 Laurel, MD 20725  
 (410) 792-7234  
 c/o Hillary Colt Cahon

**DEVELOPER**  
 Chase Mining, LLC  
 P.O. Box 950  
 Laurel, MD 20725  
 (410) 792-7234  
 c/o Tim Schmidt

**FOREST CONSERVATION PLAN**

**RIDGELYS RUN COMMUNITY CENTER**

TAX MAP 43 GRID 7, 8 & 13 P/O PARCEL 235  
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



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

DESIGN BY: AB  
 DRAWN BY: AB/MA  
 CHECKED BY: ZYF  
 SCALE: 1"=30'  
 DATE: Feb. 2, 2006  
 W.O. No.: 3247  
 SHEET No.: 10 OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION (MAY) DATE 3/1/06  
  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 3/2/06  
 DIRECTOR

SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	SOIL GROUP
CIC3	Chillum gravelly loam, 5 to 10 percent slopes, severely eroded	C
CID2	Chillum gravelly loam, 10 to 15 percent slopes, moderately eroded	C
Co	Codorus silt loam	C
Mo	Mixed alluvial land	D
MpB2	Montalto silt loam, 3 to 8 percent slopes, moderately eroded	B
MqC3	Montalto silty clay loam, 8 to 15 percent slopes, severely eroded	B
St	Stony land	C

LEGEND	
Existing Contour	---382---
Proposed Contour	---+82.53---
Spot Elevation	+82.53
Existing Trees to Remain	
Silt Fence	SF SF
Super Silt Fence	SSF SSF
Limit of Disturbance	LOD
Forest Conservation Easement Retention Area	
Forest Conservation Easement Reforestation	
Forest Conservation Easement Retention in Floodplain - No Credit	
Tree Protection Fence	TPF
Forest Conservation Sign	

**FOREST CONSERVATION NARRATIVE**

This Forest Conservation Plan has been developed in accordance with the Howard County Forest Conservation Act of 1991. The total tract area consists of 11.99 Ac of land, including approximately 1.22 Ac of offsite disturbance, from which 2.37 Ac of floodplain have been deducted for a net tract area of 9.62 Ac. The net tract contains 3.67 Ac of forest cover.

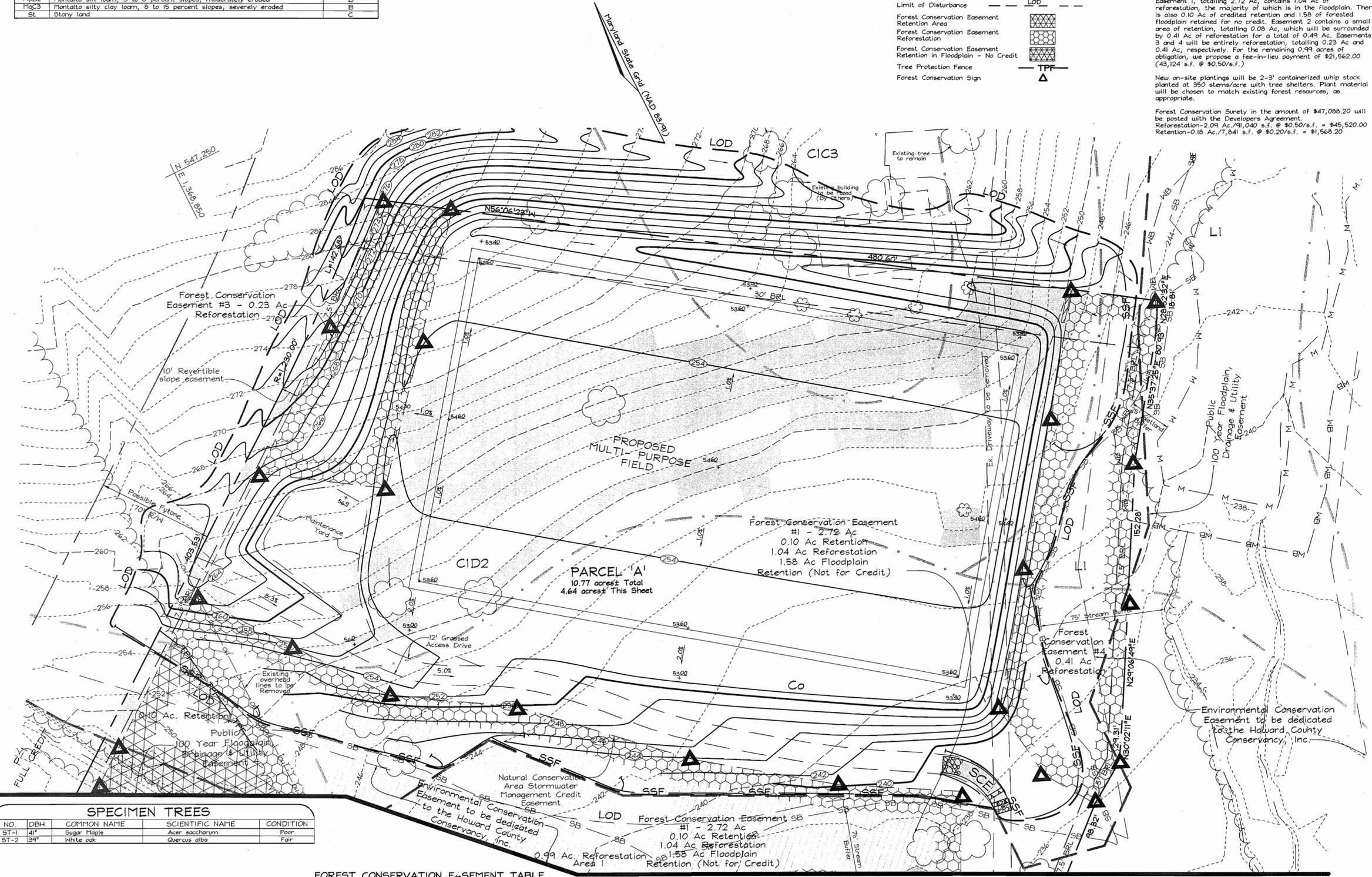
Forest retained in easements will total 0.18 Ac. A total of 2.09 Ac of reforestation planting is proposed. Four forest conservation easements will be established. Total area contained within easements is 3.95 Ac, which includes 1.58 Ac of forested floodplain which is retained for no credit. Easement 1, totalling 2.72 Ac, contains 1.04 Ac of reforestation, the majority of which is in the floodplain. There is also 0.10 Ac of credited retention and 1.58 of forested floodplain retained for no credit. Easement 2 contains a small area of retention, totalling 0.08 Ac, which will be surrounded by 0.41 Ac of reforestation for a total of 0.49 Ac. Easements 3 and 4 will be entirely reforestation, totalling 0.23 Ac and 0.41 Ac, respectively. For the remaining 0.99 acres of obligation, we propose a fee-in-lieu payment of \$21,562.00 (43,124 s.f. @ \$0.50/s.f.)

New on-site plantings will be 2-3' containerized whip stock planted at 350 stems/acre with tree shelters. Plant material will be chosen to match existing forest resources, as appropriate.

Forest Conservation Surety in the amount of \$47,088.20 will be posted with the Developers Agreement.

Reforestation-2.09 Ac./91,040 s.f. @ \$0.50/s.f. = \$45,520.00  
Retention-0.18 Ac./7,841 s.f. @ \$0.20/s.f. = \$1,568.20

FOREST CONSERVATION WORKSHEET	
Net Tract Area	
A. Total Tract Area	11.99
B. Area Within 100 Year Floodplain	2.37
C. Other deductions (Area p/o FCP for F-00-115)	0
D. Net Tract Area	9.62
Zoning Use Category: Institutional	
Land Use Category	
E. Afforestation Minimum (15 % x D)	1.44
F. Conservation Threshold (15 % x D)	1.44
Existing Forest Cover	
G. Existing Forest on Net Tract Area	3.67
H. Forest Area Above Conservation Threshold Breakeven Point	2.23
I. Forest Retention Above Threshold with no Mitigation	1.89
J. Clearing Permitted without Mitigation	1.78
Proposed Forest Clearing	
K. Forest Areas to be Cleared	3.49
L. Forest Areas to be Retained	0.18
Planting Requirements	
M. Reforestation for Clearing Above Threshold	0.56
N. Reforestation for Clearing Below the Threshold	2.52
P. Credit for Retention Above Conservation Threshold	0
Q. Total Reforestation Required	3.08
R. Total Afforestation Required	0
S. Total Reforestation and Afforestation Requirement	3.08



SPECIMEN TREES				
NO.	DBH	COMMON NAME	SCIENTIFIC NAME	CONDITION
ST-1	41"	Sugar Maple	Acer saccharum	Fair
ST-2	39"	White oak	Quercus alba	Fair

FOREST CONSERVATION EASEMENT TABLE		
EASEMENT	TYPE	AREA (ACRES)
1	Reforestation Retention Non-Credited Floodplain Retention	1.04 0.10 1.58
2	Reforestation Retention	0.41 0.08
3	Reforestation	0.23
4	Reforestation	0.41
TOTAL	Overall	3.85
	Reforestation Retention	2.09
	Non-Credited	0.18 1.58

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* DATE *3/1/06*

CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* DATE *3/1/06*

DIRECTOR *[Signature]* DATE *3/1/06*

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**FOREST CONSERVATION PLAN**

**RIDGELYS RUN COMMUNITY CENTER**

TAX MAP 43 GRID 7, 8 & 13  
6TH ELECTION DISTRICT

P/O PARCEL 235  
HOWARD COUNTY, MARYLAND

**EXPLORATION RESEARCH, INC.**  
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5015 FOREST STREET  
ELIJAH CITY, MARYLAND 21048  
TEL: (410) 750-1150 FAX: (410) 750-7550  
EMAIL: EXPLORATION@RCR.COM

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DATE: Feb. 2, 2006  
W.O. No.: 3247  
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**FOREST CONSERVATION EASEMENT #1**  
**Reforestation Area 1: 0.99 Ac. (347 trees @ 350 TPA)**

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
58	Acer rubrum	Red Maple	WHIP 2-3'	11' o.c.	1-3 Gallon Container Grown with tree shelters
58	Liriodendron tulipifera	Tulip Poplar	WHIP 2-3'	11' o.c.	
58	Nyssa sylvatica	Black Gum	WHIP 2-3'	11' o.c.	
58	Quercus rubra	Red Oak	WHIP 2-3'	11' o.c.	
57	Amelanchier canadensis	Serviceberry	WHIP 2-3'	11' o.c.	
58	Carpinus caroliniana	Ironwood	WHIP 2-3'	11' o.c.	

**FOREST CONSERVATION EASEMENT #1**  
**Reforestation Area 2: 0.05 Ac. (18 trees @ 350 TPA)**

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
3	Acer rubrum	Red Maple	WHIP 2-3'	11' o.c.	1-3 Gallon Container Grown with tree shelters
3	Liriodendron tulipifera	Tulip Poplar	WHIP 2-3'	11' o.c.	
3	Nyssa sylvatica	Black Gum	WHIP 2-3'	11' o.c.	
3	Quercus rubra	Red Oak	WHIP 2-3'	11' o.c.	
3	Amelanchier canadensis	Serviceberry	WHIP 2-3'	11' o.c.	
3	Carpinus caroliniana	Ironwood	WHIP 2-3'	11' o.c.	

**FOREST CONSERVATION EASEMENT #2**  
**Reforestation Area: 0.41 Ac. (144 trees @ 350 TPA)**

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
21	Carya glabra	Pignut Hickory	WHIP 2-3'	11' o.c.	1-3 Gallon Container Grown with tree shelters
21	Liriodendron tulipifera	Tulip Poplar	WHIP 2-3'	11' o.c.	
21	Quercus alba	White Oak	WHIP 2-3'	11' o.c.	
21	Quercus rubra	Red Oak	WHIP 2-3'	11' o.c.	
20	Amelanchier canadensis	Serviceberry	WHIP 2-3'	11' o.c.	
20	Cornus florida	Dogwood	WHIP 2-3'	11' o.c.	
20	Juniperus virginiana	Redcedar	WHIP 2-3'	11' o.c.	

**FOREST CONSERVATION EASEMENT #3**  
**Reforestation Area: 0.23 Ac. (81 trees @ 350 TPA)**

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
11	Carya glabra	Pignut Hickory	WHIP 2-3'	11' o.c.	1-3 Gallon Container Grown with tree shelters
11	Liriodendron tulipifera	Tulip Poplar	WHIP 2-3'	11' o.c.	
11	Quercus alba	White Oak	WHIP 2-3'	11' o.c.	
12	Quercus rubra	Red Oak	WHIP 2-3'	11' o.c.	
12	Amelanchier canadensis	Serviceberry	WHIP 2-3'	11' o.c.	
12	Cornus florida	Dogwood	WHIP 2-3'	11' o.c.	
12	Juniperus virginiana	Redcedar	WHIP 2-3'	11' o.c.	

**FOREST CONSERVATION EASEMENT #4**  
**Reforestation Area: 0.41 Ac. (144 trees @ 350 TPA)**

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
21	Carya glabra	Pignut Hickory	WHIP 2-3'	11' o.c.	1-3 Gallon Container Grown with tree shelters
21	Liriodendron tulipifera	Tulip Poplar	WHIP 2-3'	11' o.c.	
21	Quercus alba	White Oak	WHIP 2-3'	11' o.c.	
21	Quercus rubra	Red Oak	WHIP 2-3'	11' o.c.	
20	Amelanchier canadensis	Serviceberry	WHIP 2-3'	11' o.c.	
20	Cornus florida	Dogwood	WHIP 2-3'	11' o.c.	
20	Juniperus virginiana	Redcedar	WHIP 2-3'	11' o.c.	

**Management Notes for Retention Areas**

- All proposed activities shall adhere to the conditions, schedules and terms of an approved sediment control and erosion plan.
- After the boundaries of the retention area have been staked and flagged and before any disturbance has taken place on-site, a preconstruction meeting at the construction site shall take place. The developer, contractor or project manager, and appropriate County inspectors shall attend.
- Tree protection for all retained areas:
  - All retention areas within 50 feet of proposed construction activities shall be protected by highly visible, well anchored temporary protection devices (silt fence or blaze orange plastic mesh).
  - All protection devices shall be in place prior to any grading or land clearing.
  - All protection devices shall be properly maintained and shall remain in place until construction has ceased.
  - Attachment of signs, fencing or other objects to trees is prohibited.
  - No equipment, machinery, vehicles, materials or excessive pedestrian traffic shall be allowed within protected areas.
  - If the critical root zone (see detail) is affected by construction activities such as grade change, digging for foundations and roads or utility installation:
    - Prune roots with a clean cut using proper pruning equipment (see root pruning detail).
    - Water and fertilize as needed.
  - During construction phase, monitor and correct condition of retained trees for: soil compaction, root injury, flood conditions, drought conditions and other stress signs.
  - Post-Construction Phase:
    - Inspect existing trees around the perimeter of disturbed limits for evidence of soil compaction, root injury, limb injury, or other stress signs and correct with proper management techniques such as root or limb pruning, soil aeration, fertilization, crown reduction or watering. Inspection and evaluation shall be performed by a licensed arborist.
    - Inspect for dead or dying trees or limbs which may pose safety hazard and remove.
    - No burial of discarded materials will occur onsite within the conservation areas.
    - No burning within 100 feet of wooded area.
    - All temporary forest protection structures will be removed after construction. Temporary signage shall be replaced with permanent signage on posts in locations shown.
    - Following completion of construction, prior to use, the County inspector shall inspect the entire area.

**Soil Protection Zone Notes**

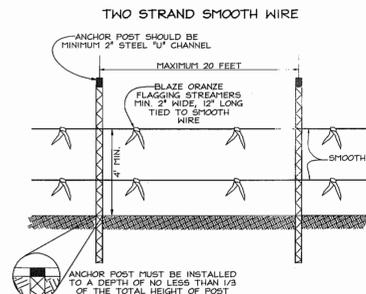
- The Soil Protection Zone shall include all areas contained inside the Limit of Disturbance.
- Where possible, the Soil Protection Zone shall extend to the drip line of specimen trees. For other groups of trees, the zone shall be the drip line or 40% of the height of the tree, whichever is greater.
- No construction activity is permitted within the Soil Protection Zone.
- If soil has been compacted or grading has taken place in the vicinity of the Soil Protection Zone, root pruning shall be implemented per Root Pruning detail, shown on this plan.
- Root pruning shall occur prior to the beginning of construction.
- Where the Soil Protection Zone must encroach inside the Critical Root Zone of a tree, soil disturbance shall be mitigated with vertical mulching, radial trenching, or another method approved by the a Forest Conservation Professional.
- Prior to construction, the Limits of Disturbance shall be marked and a Professional shall determine which trees will need preventative treatment or removal.
- Tree maintenance and removal shall be undertaken by a qualified Tree Expert to ensure damage to surrounding trees is minimized.
- Brush and limbs removed for construction shall be chipped and spread at the edge of the Soil Protection Zone to a depth of 6 inches. This shall occur outside the Soil Protection Zone where compaction could impact otherwise unprotected Critical Root Zone.

**Reforestation Area Monitoring Notes**

- 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.
- Certification at the end of the two-year post construction period must indicate that the survival rates will result in a 100 tree per acre ratio for a forest and the 3 to 4 foot height standard for whips by the end of the two-year growing season post construction period, with at least 50% of those trees having the potential of attaining a 2" caliper DBH within 7 years.
- Survival will be determined by a stratified random sample 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 planting if required at that time.

**Reforestation Area Planting Notes**

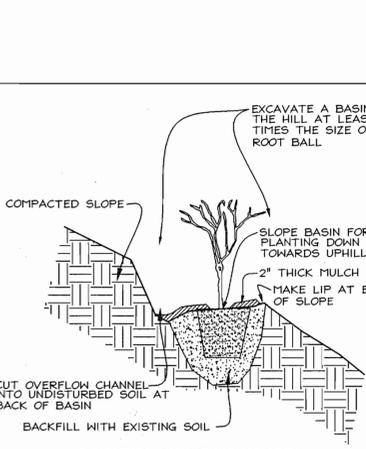
- Initial planting inspection and certification required. Planting contractor to notify county 24 hours in advance of planting.
- Reforestation areas may be planted as soon as reasonable to do so. Late winter-early spring plantings are preferred. Earliest planting dates will vary from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as conditions warrant.
- 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. 11547 approved equal.
- Plant materials shall be planted in accordance with the planting diagram, planting details and planting schedule at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
- Plant stock must be protected from desiccation at all times prior to planting. Materials shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standards for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
- 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 watering operation should allow for watering during installation to completely soak backfill materials.
- Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.
- 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.
- All nursery stock to be sprayed with deer repellent containing Bitrex such as Repellex All nursery stock to be grown with deer repellent tablets in growing medium, such as Repellex Tablets.



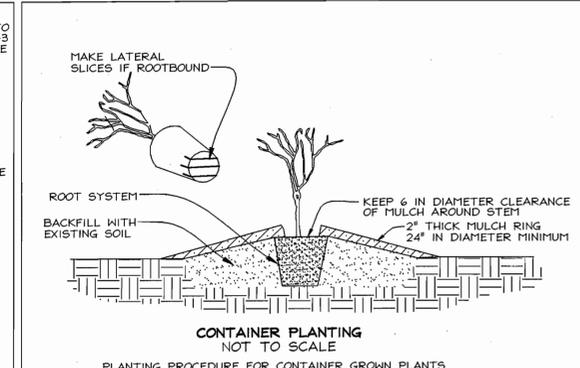
ANCHOR POST SHOULD BE MINIMUM 2" STEEL 1/2" CHANNEL  
 MAXIMUM 20 FEET  
 BLAZE ORANGE FLAGGING STREAMERS MIN. 2" WIDE 12" LONG TIED TO SMOOTH WIRE  
 SMOOTH WIRE  
 ANCHOR POST MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE TOTAL HEIGHT OF POST

- NOTES:  
 1. FOREST PROTECTION DEVICE ONLY.  
 2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.  
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR.  
 4. ROOT DAMAGE SHOULD BE AVOIDED.  
 5. PROTECTIVE SIGNAGE MAY ALSO BE USED.  
 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

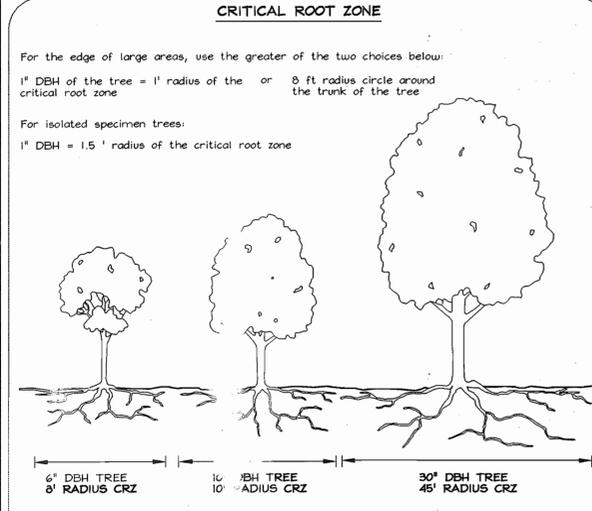
**TREE PROTECTION DETAIL**  
 NOT TO SCALE



- PLANTING ON STEEP SLOPES  
 NOT TO SCALE
- PLANT AS PER CONTAINER PLANTING DETAIL EXCEPT PREP OF PLANTING AREA.
  - A BASIN FOR PLANTING IS CUT INTO THE SLOPE WITH PLANT BEING PLACED NEAR THE DOWNHILL EDGE OF THE BASIN.
  - BASIN SHOULD SLOPE TOWARD UPHILL SIDE TO ALLOW RAIN TO BE CAPTURED AND INFILTRATE.
  - AN OVERFLOW CHANNEL SHALL BE CUT INTO UNDISTURBED SOIL AT THE REAR OF THE BASIN TO ALLOW EXCESS RUNOFF AND SEDIMENT TO ESCAPE WITHOUT DAMAGING THE BASIN.
  - MULCH AROUND PLANT IN BASIN.



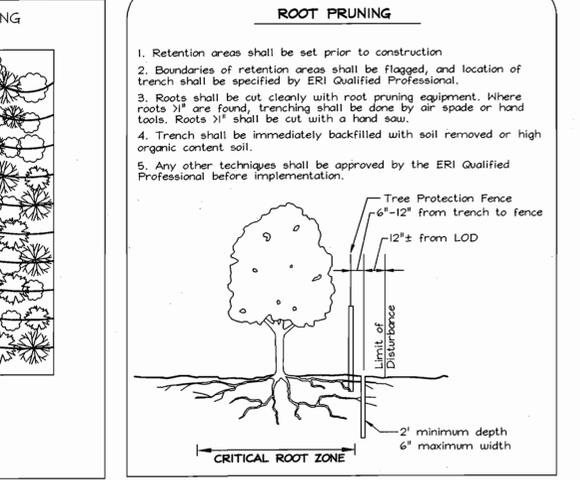
- CONTAINER PLANTING  
 NOT TO SCALE
- PLANTING PROCEDURE FOR CONTAINER GROWN PLANTS
- REMOVE THE PLANT EITHER BY CUTTING OR INVERTING THE CONTAINER
  - USE A KNIFE TO CUT THROUGH BOTTOM HALF OF THE ROOT BALL
  - PLANT SHRUBS ON FORMED UP MOUNDS 4" ABOVE THE EXISTING GRADE WHEN HIGH WATER TABLE CONDITIONS EXIST, OTHERWISE PLANT FLUSH WITH EXISTING GRADE.
  - 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.



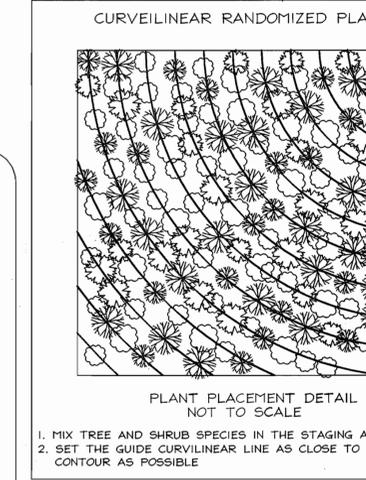
For the edge of large areas, use the greater of the two choices below:  
 1" DBH of the tree = 1' radius of the or 8 ft radius circle around critical root zone  
 For isolated specimen trees:  
 1" DBH = 1.5' radius of the critical root zone

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

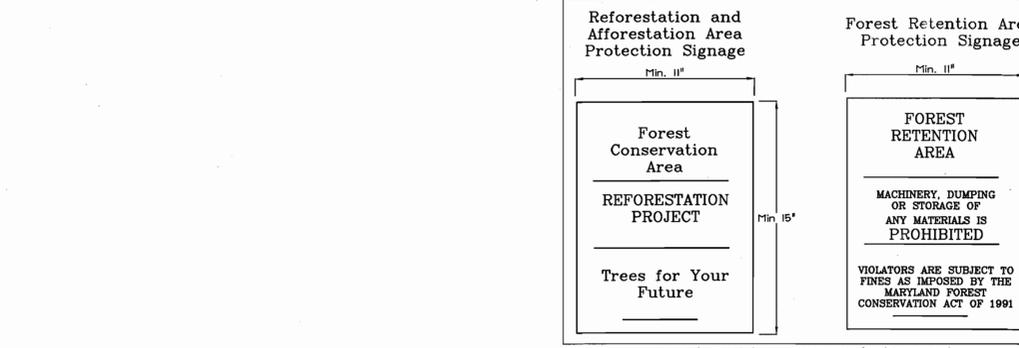
CHIEF, DEVELOPMENT ENGINEERING DIVISION (MJD) DATE 2/11/06  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 2/11/06  
 DIRECTOR DATE 2/20/06



- ROOT PRUNING
- Retention areas shall be set prior to construction
  - Boundaries of retention areas shall be flagged, and location of trench shall be specified by ERI Qualified Professional.
  - Roots shall be cut cleanly with root pruning equipment. Where roots >1" are found, trenching shall be done by air spade or hand tools. Roots >1" shall be cut with a hand saw.
  - Trench shall be immediately backfilled with soil removed or high organic content soil.
  - Any other techniques shall be approved by the ERI Qualified Professional before implementation.



- CURVILINEAR RANDOMIZED PLANTING
- PLANT PLACEMENT DETAIL  
 NOT TO SCALE
- MIX TREE AND SHRUB SPECIES IN THE STAGING AREA.
  - SET THE GUIDE CURVILINEAR LINE AS CLOSE TO CONTOUR AS POSSIBLE



SIGN DETAIL: PERMANENT SIGN  
 SIGNAGE NOTE: ALL TREE PROTECTION SIGNS SHALL BE PLACED ON METAL 1" POSTS OR PRESSURE TREATED WOOD POLES. NO ATTACHMENT OF SIGNS TO TREES IS PERMITTED.

**EXPLORATION RESEARCH, INC.**  
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 ELICOTT CITY, MARYLAND 21043  
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**FOREST CONSERVATION DETAILS**  
**RIDGEL'S RUN COMMUNITY CENTER**

TAX MAP 43 GRID 7, 8 & 13  
 6TH ELECTION DISTRICT

P/O PARCEL 235  
 AD COUNTY, MARYLAND

DESIGN BY: JFB  
 DRAWN BY: AB  
 CHECKED BY: ZYF  
 SCALE: 1"=30'  
 DATE: Feb. 2, 2006  
 S.H.O. No.: 3247  
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SDP-05-107