FINAL ROAD CONSTRUCTION PLANS

SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'
HOWARD COUNTY, MARYLAND

GENERAL NOTES

1. This plan is subject to compliance with the 4th Edition of the Howard County Subdivision Regulations and the amended Howard County Zoning Regulations pursuant to Council Bill 75-2003.
2. Subject property is zoned "RC-DEO" per the 02/02/04 Comprehensive Zoning Plan.
3. Private water and sewer will be used within this site.
4. The project is not within the metropolitan district.
5. Gross area of site: 27.859 ac.±
6. Area of proposed public R/W: 1.8561 ac.±
7. Number of proposed buildable lots: 12
   Area of proposed buildable lots: 13.7949 ac.±
8. Number of Buildable Preservation Parcels: 1
   Area of Buildable Preservation Parcels: 1.6394 ac.±
9. Number of Non-Buildable Preservation Parcels: 5
   Area of Non-Buildable Preservation Parcels = 10.5682 ac.±
10. The project is in conformance with the latest Howard County Standards unless waivers have been approved.
11. The Contractor shall notify the following utility companies or agencies at least five(5) working days before starting work shown on these plans:

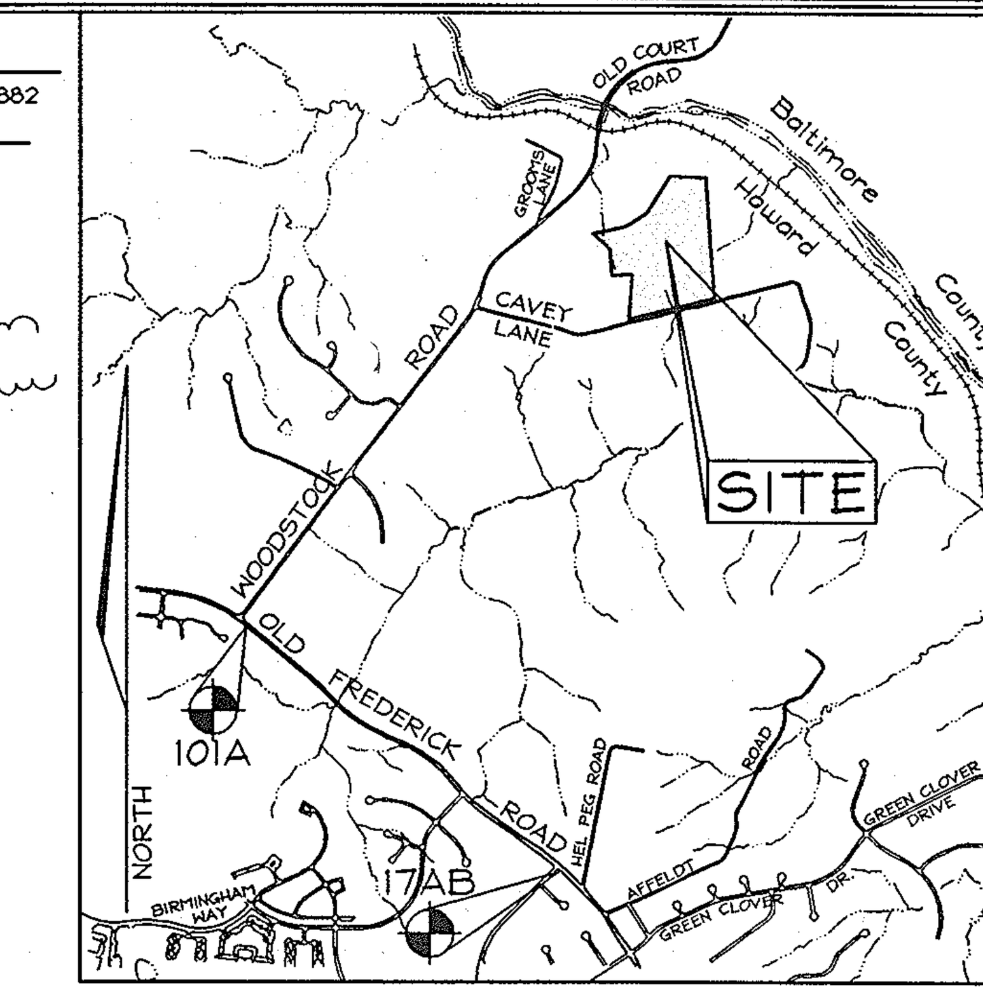
State Highway Administration	410.531.5533
BGE(Contractor Services)	410.850.4620
BGE(Underground Damage Control)	410.787.9068
Miss Utility	1.800.257.7777
Colonial Pipeline Company	410.795.1390
Howard County, Dept. of Public Works, Bureau of Utilities	410.313.4900
Howard County Health Department	410.313.2640
AT&T	1.800.252.1133
Verizon	1.800.743.0033/410.224.9210

12. The contractor shall notify Miss Utility at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
13. 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. All fills for public road surfaces require 95% compaction (AASHTO-T-180).
14. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
15. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
16. The lots shown hereon comply with the minimum ownership, width and lot area as required by the Maryland State Department of the Environment.
17. 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.
18. All wells and septic fields within 100' of property's boundary have been shown.
19. The septic fields are located on soil types BrC2, BrC3, MIB2, MIC2, MIC3, MID2 and MgC2 as per the soil survey of Howard County, Maryland. Soils Map #9.
20. On-site topography based on a Field Run Topographic Survey prepared by FSH Associates in February, 2002 with two foot contours. Off-site and non-critical topography based on Howard County 1993 Aerial Topographic Surveys with five foot contours.
21. All wells to be drilled prior to submittal of record plat for signature. It is the developer's responsibility to schedule the well drilling prior to final plat submission. It will not be considered 'government delay' if the well drilling holds up the Health Department signature of the record plat.
22. Existing septic system on proposed lots 1, 3, & 9 to be properly abandoned per Health Department requirements prior to submittal of record plat for signature.
23. Existing structures on-site to be removed prior to submittal of record plat for signature.
24. Proposed well on lot 9 to be drilled at furthest point from abandoned septic on lot 9.
25. Ground water appropriation permit must be issued prior to record plat submission and/or prior to drilling wells.
26. A.P.F.O. traffic study prepared by Street Traffic Studies, Ltd., October 9, 2002 and approved under SP-03-10.
27. Wetlands delineation and report and Forest Stand Delineation prepared by Exploration Research Inc. approved under SP-03-10.
28. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based on the Maryland State Plane Coordinate system. Howard County monument numbers 101A and 17AB were used for this project.
29. Stormwater Management for Cpv is provided for in a Surface Sand Filter facility and Rev is provided for in grass swales. The Surface Sand Filter facility is privately owned and maintained by the Home Owners Association. WQv for lot 1 is provided for by a dry swale. WQv for lots 6-9 & 11 is provided for by sheet flow to buffer, rooftop disconnects and non-rooftop disconnects. WQv for lots 2-5, 10 & 12 is provided for in a Surface Sand Filter facility
30. No grading, removal of vegetative cover or trees, or placement of new structures is permitted within the limits of wetlands, streams, or their buffers and forest conservation easement areas.
31. The geotechnical report for this project was prepared by Geo-Technology Associates, Inc. dated September 17, 2002.
32. 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.
33. Non Buildable Parcel 'E' is created to provide access to adjacent Parcel 18. Parcel 'E' will be transferred to the owners of Parcel 18 after plat recordation.
34. This project is subject to waiver petition WP-03-148 in which on July 11, 2003 the Planning Director approved a waiver from Section 16.119.(e)(5) to allow the proposed Right of Way of Road 'A' to tie into existing Cavey Lane without the required 25 feet truncations on either side of the Right of Way.
35. This project complies with the requirements of Section 16.1200 of the Howard County Code for Forest Conservation by retaining 0.35 acres of forest Forest Conservation Easement 1, retaining 2.89 acres of forest and planting 0.14 acres within Forest Conservation Easement 2, and retaining 1.47 acres of forest and planting 1.03 acres within Forest Conservation Easement 3. Total retention = 4.71 acres. Total planting provided = 1.17 acres. $66,516.12 surety to be posted with the Developer's Agreement.
36. All sign posts used for traffic control signs installed in the County Right-of-Way shall be mounted on a 2" galvanized steel, perforated, square tube post (14 gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeve (12 gauge) - 3' long. A galvanized steel pole cap shall be mounted on top of each post.
37. A total of six (6) CEO units are transfered to this site from Waterford Farm 'Parcel 7' Tax Map 20, Parcel 134, Grid 12 (2 units), Talley Property 'Parcel 3' Tax Map 8, Parcel 393, Grid 13 (4 units) by RE-05-006. Recorded in Plat Number 17921 and 17922.
38. Level Spreaders located on Lots 6-9 & 11 and the dry swale located on Lot 1 and associated grading are to be constructed at the Plot Plan stage.

Landscape surety = $29,700.00

LEGEND

- Existing Contour
- Proposed Contour
- Direction of Flow
- Existing Spot Elev.
- Proposed Spot Elev.
- Existing Trees
- Proposed Septic Easement
- Existing Septic Easement
- 15-24.99% Slopes
- 25-50% Slopes
- Wetlands
- Use-In-Common Access Easement
- Existing Dry Well
- Natural Conservation Stormwater Credit Easement
- Forest Conservation Easement



VICINITY MAP
SCALE:1=2000'

BENCHMARKS

✓ Sta. 101A — South side of Maryland Route 99, 31.5' north of well pipe, 36.4' east of C&P 142
N 183,183.6767 E 410,060.5747 El.: 134.9374 (meters)
N 600,995.112 E 1,345,340.402 El.: 442.707 (feet)

✓ Sta. 17AB — Southeast of intersection of Maryland Route 99 and Whetherburn Road, 35' northeast of manhole, 18' northwest of brick wall pier
N 182,403.4295 E 411,058.7508 El.: 155.1977 (meters)
N 598,435.251 E 1,348,615.251 El.: 509.178 (feet)

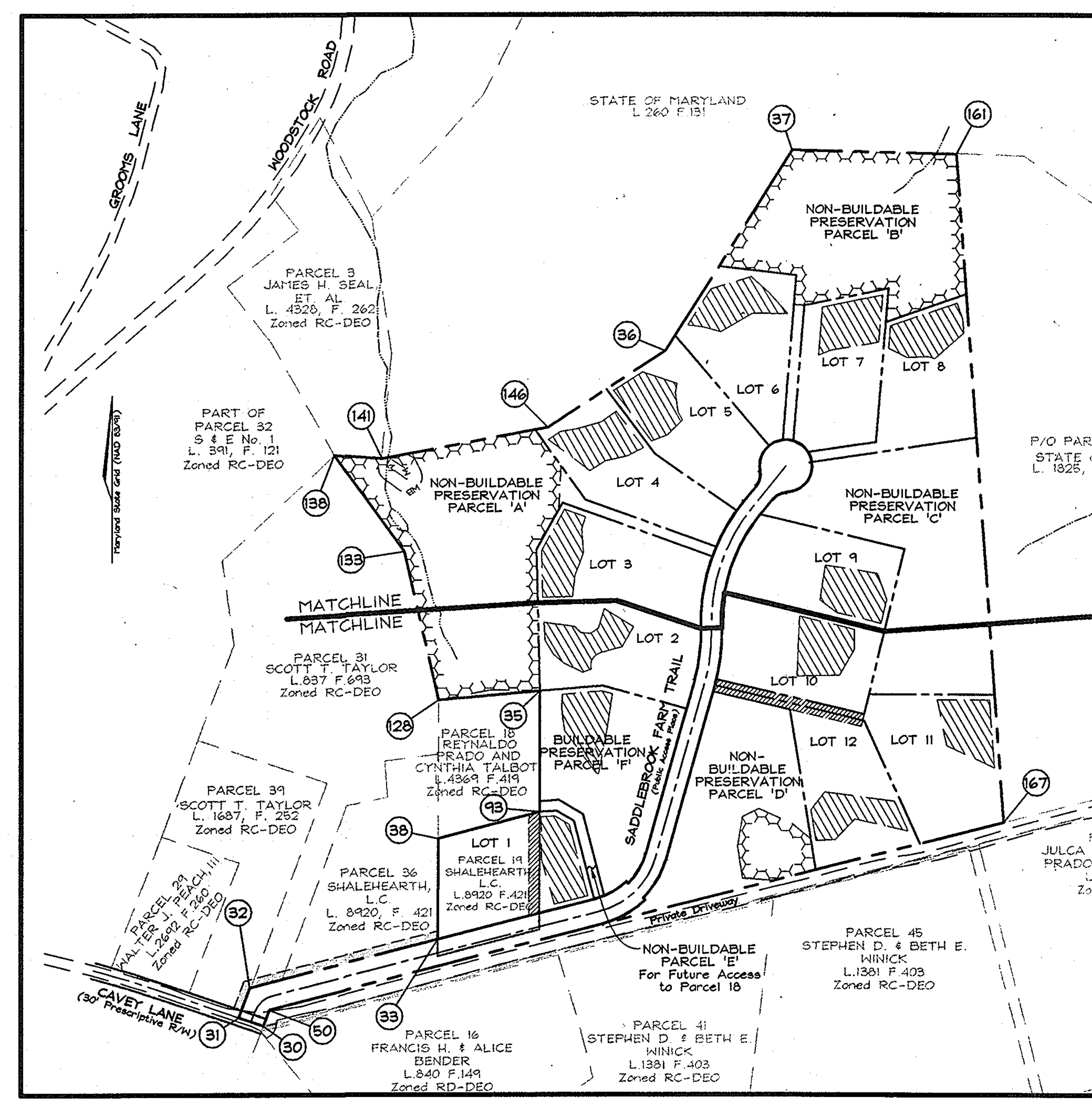
SHEET INDEX

CENTERLINE ROAD CURVE DATA

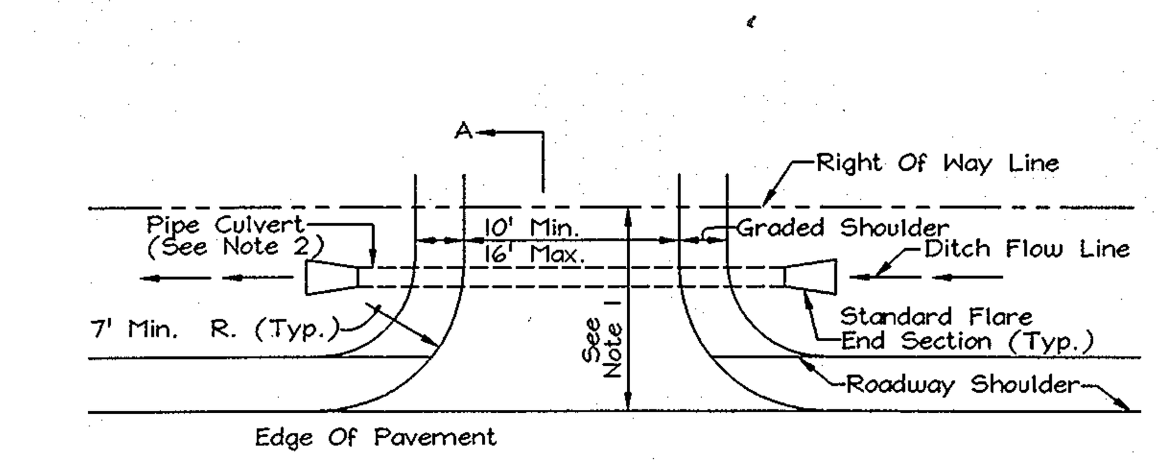
CURVE No.	RADIUS	LENGTH	DELTA	TANGENT	CHORD BEARING	CHORD LENGTH
C1	50.00'	47.78'	54°45'00"	25.89	S 48°12'47.10" W	45.98'
C2	150.00'	157.08'	60°00'00"	86.60	N 45°35'17.10" E	150.00'
C3	350.00'	106.27'	17°23'46"	53.55	N 06°53'24.26" E	105.86'
C4	350.00'	247.23'	40°28'20"	129.03	N 18°25'41.35" E	242.12'

ROAD CLASSIFICATION

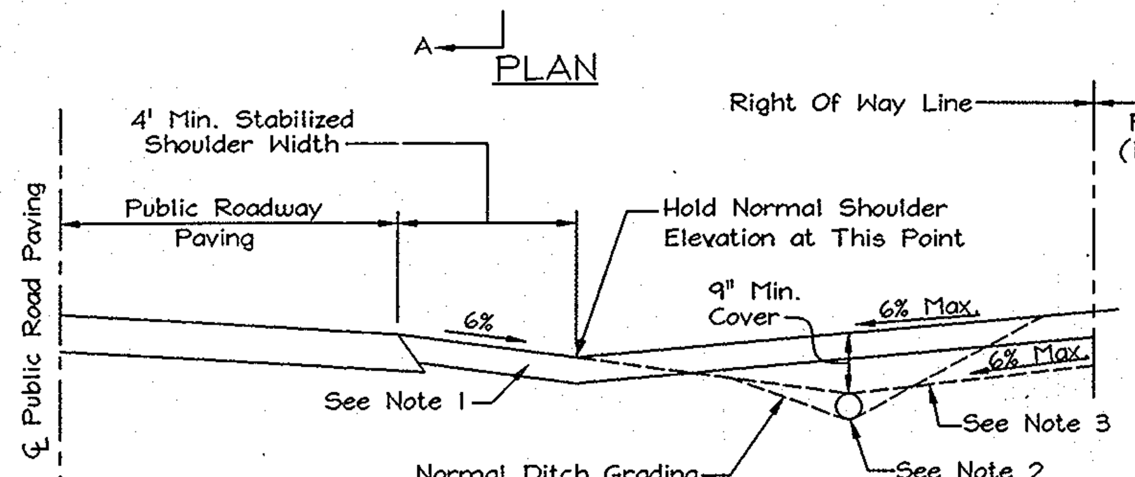
ROAD NAME	CLASSIFICATION	R/W
Saddlebrook Farm Trail	Public Access Place	40' & 50'



LOCATION MAP
SCALE: 1"=200'



PLAN



SECTION A-A
RESIDENTIAL DRIVEWAY ENTRANCE
CONNECTION TO OPEN SECTION ROADWAY
HOWARD COUNTY DETAIL R6.06
NOT TO SCALE

NOTES:

1. Driveway must be paved from edge of public road to right of way line using standard paving section P-1 as shown on standard detail R.2.01 or alternate section equal to or better than P-1, as approved by D.P.W.
2. Drainage culvert shall be sized for a 10 year frequency storm and the minimum size shall be 12" dia. round or 14" x 9" arch pipe if larger pipe is required, ditch invert shall be lowered to provide min. ditch gradient of 0.5% and clearance shown.
3. Swale flow may be provided over driveway located at or near the crest of vertical curves on the public road where quantity of flow is small, as approved by D.P.W.
4. Tie-in grade of private driveway shall not exceed 14%.

DRIVEWAY CULVERT REQUIREMENTS

Lot 1-5, 9-12 and Parcel 'F': 12" CMP or equivalent
Lot 6-8: 15" CMP or equivalent

Denotes typical private driveway culvert see Grading Plans for location.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton 6/21/06
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William L. Malick 6-6-06
CHIEF, BUREAU OF HIGHWAYS — DATE

AS-BUILT

FOR ROADS, STORM DRAINS AND EROSION & SEDIMENT CONTROLS

C. Brooke Miller 12/7/09
C. BROOKE MILLER — DATE
PROF. L.S. #135

FOR STORM WATER MANAGEMENT AND LANDSCAPING

Zacharia Y. Fisch 12/7/09
ZACHARIA Y. FISCH — DATE
P.E. #22418

OWNER/DEVELOPER

Shalehearth, L.C.
6820 Elm Street Suite 200
MC Lean, Virginia 22101
703.734.9730

COVER SHEET
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13
3rd Election District

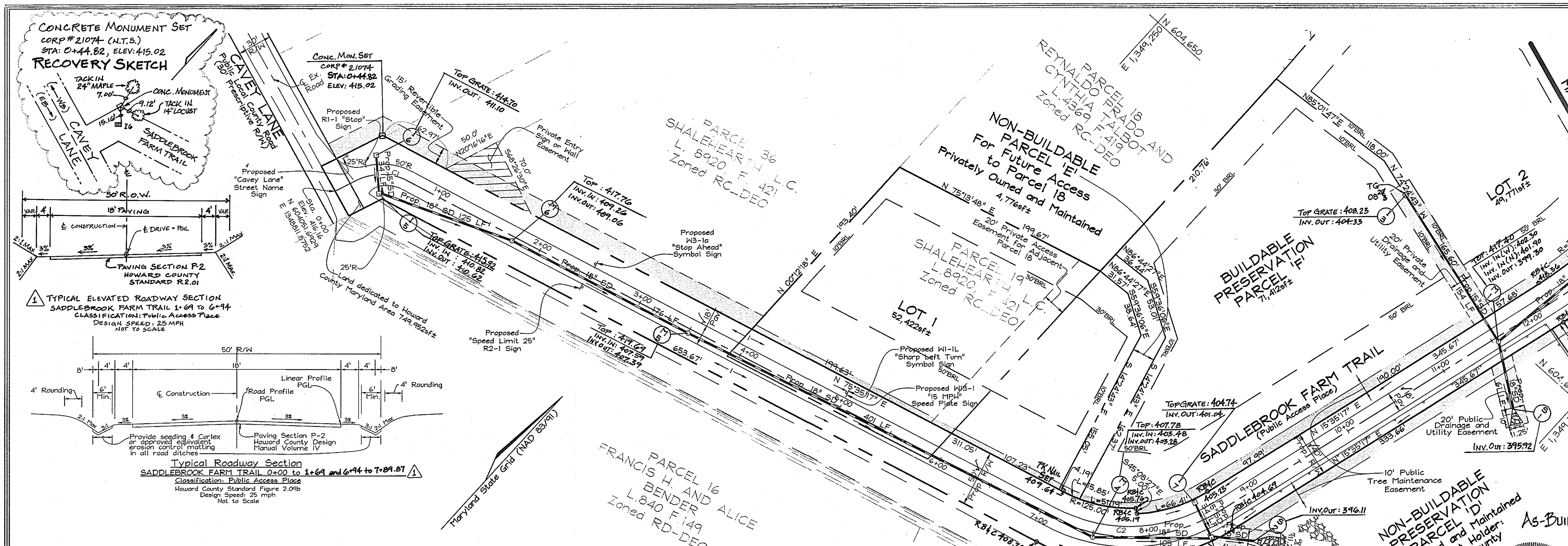
Parcels 19 & 32
Howard County, Maryland

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

DESIGN BY: PS
DRAWN BY: MY
CHECKED BY: ZYF
SCALE: As Shown
DATE: May 17, 2006
W.O. No.: 3312
SHEET No.: 1 OF 16

F-06-042

No.	REVISIONS Description	Date
1	REVISE ROAD CROSS SECTION DETAIL	MAR 07



PLAN VIEW

SCALE: 1"=50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

6/21/06 — CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

10/12/06 — CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

6-6-06 — CHIEF, BUREAU OF HIGHWAYS — DATE

ROAD PLAN AND PROFILE
SADDLEBROOK FARM TRAIL
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13 — Parcels 19 & 32
3rd Election District — Howard County, Maryland

FSH Associates
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8318 Forrest Street Ellicott City, MD 21043
Tel: 410-750-2251 Fax: 410-750-7350
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DESIGN BY:	PS
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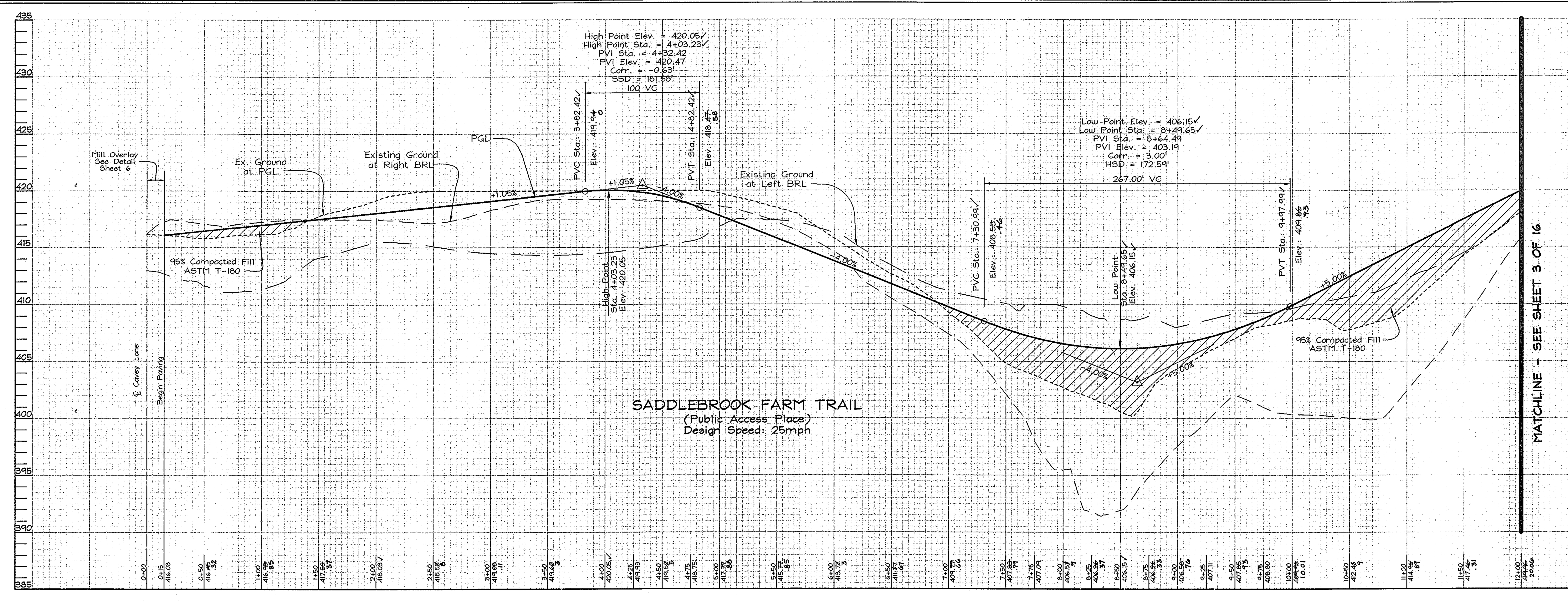
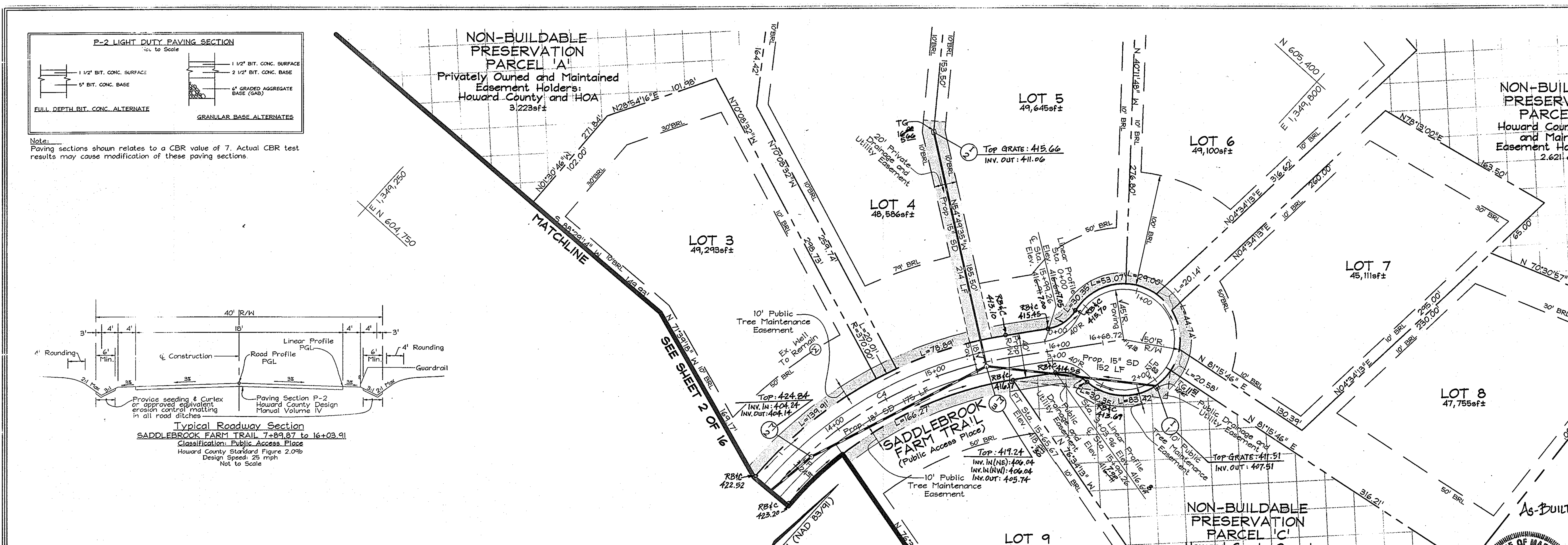
SHEET No.:	2 OF 16



ROAD PROFILE

SCALE: HOR.: 1"=50'
VERT.: 1"=5'

F-06-042



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING		APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
CHIEF, DIVISION OF LAND DEVELOPMENT	6/21/06 DATE	CHIEF, BUREAU OF HIGHWAYS	6-6-06 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	6/12/06 DATE		

OWNER/DEVELOPER
Shalehearth, L.C.
6820 Elm Street Suite 200
MC Lean, Virginia 22101
703.734.9730

ROAD PLAN AND PROFILE SADDLEBROOK FARM TRAIL
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13 — Parcels 19 & 32
3rd Election District — Howard County, Maryland

AS-BUILT

C. BROOKE MILLER
PROF. L.S. #135 — DATE

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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:	May 17, 2006
W.O. No.:	3312
SHEET No.:	3 OF 16

ROAD PROFILE
SCALE: HOR.: 1"=50'
VERT.: 1"=5'

F-06-042

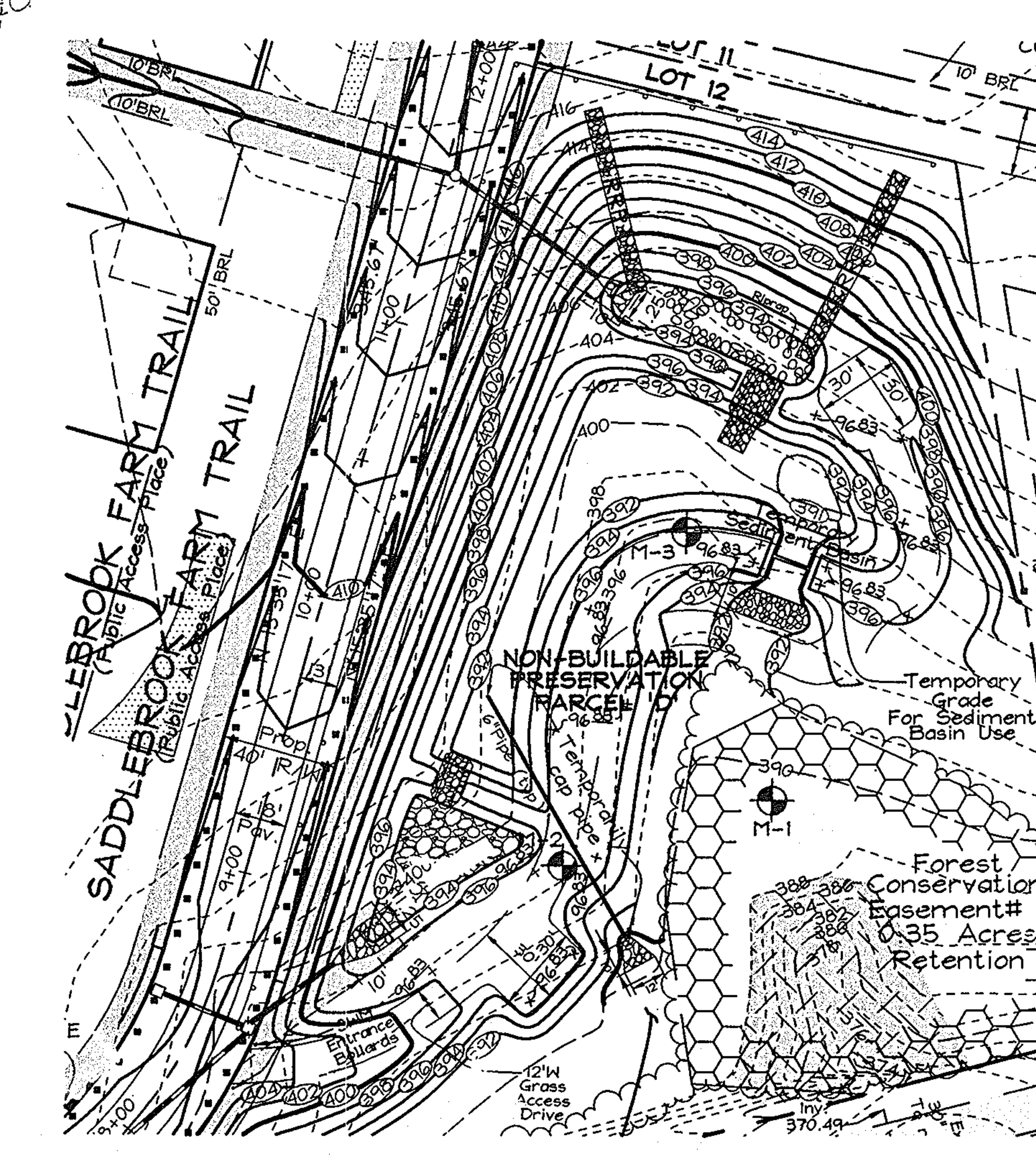
PLAN VIEW

Scale: 1"=50'

Note:
Level Spreaders located on Lot 11 and the dry swale located on Lot 1 and associated grading are to be constructed at the Plot Plan stage.

TEMPORARY SEDIMENT BASIN SCHEDULE	
TRAP NUMBER	1
TYPE	Basin*
D.A.	2.8 Ac.
Storage Required	5040 cfw 5040 cfd
Storage Provided	16858 cfw 8091 cfd
Weir Length	12.0 ft.
Top Embankment Elev.	396.33
Bottom Trap Elev.	391.0
Weir Crest Elev.	395.0
Clean Out Elev.	390.0
1 Yr. WS elev.	394.5
1 Yr. Q out	0.11 cfs
10 Yr. WS elev.	395.26
10 Yr. Q out	9.64 cfs

* Proposed SWM facility is being utilized as a sediment bazin for sediment control.



TEMPORARY SEDIMENT BASIN DETAIL

Scale: 1"=50'

LEGEND

Existing Contour	- - - - - - -382
Proposed Contour	——(82)——
Spot Elevation	+82.53
Direction of Flow	←
Tree Protection Fence	
Existing Trees to Remain	
Stabilized Construction Entrance	SCE
Silt Fence	—SF—SF—
Super Silt Fence	—SSF—SSF—
Earth Dike	ED A-1
Limit of Disturbance	LOD
Erosion Control Matting	ECM
Rip-Rap Inflow Protection	RRP
Proposed Level Spreader	

Note:
Erosion control matting shall be placed in all road side ditches and grass swale.

* AS-BUILT FOR SWM ELEVATIONS SEE SHEET 13 OF 16

STATE OF MARYLAND · ZACHARIA YOSEF FISCH · 22418 · PROFESSIONAL ENGINEER

ZACHARIA Y. FISCH 12/7/09
P.E. # 22418 DATE

OWNER/DEVELOPER

Shalehearth, L.C.
6820 Elm Street Suite 200
MC Lean, Virginia 22101
703.734.9730

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.

Zacharia Y. Fisch 5/19/06
SIGNATURE OF ENGINEER DATE
ZACHARIA Y. FISCH

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

Jim Myers 6/1/06
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John R. Robertson 6/1/06
HOWARD SOIL CONSERVATION DISTRICT DATE

Nº	DESCRIPTION	DATE
1	REVISE ROAD CROSSSECTION AND GRADING	MAR 2007

REVISIONS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

6/21/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

6-6-06
CHIEF, BUREAU OF HIGHWAYS DATE

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.

5/18/06
SIGNATURE OF DEVELOPER DATE

SEDIMENT AND EROSION CONTROL AND GRADING PLAN
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13
3rd Election District

Parcels 19 & 32
Howard County, Maryland

STATE OF MARYLAND · ZACHARIA YOSEF FISCH · 22418 · PROFESSIONAL ENGINEER

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DESIGN BY:	PS
DRAWN BY:	MY
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SCALE:	As shown
DATE:	May 17, 2006
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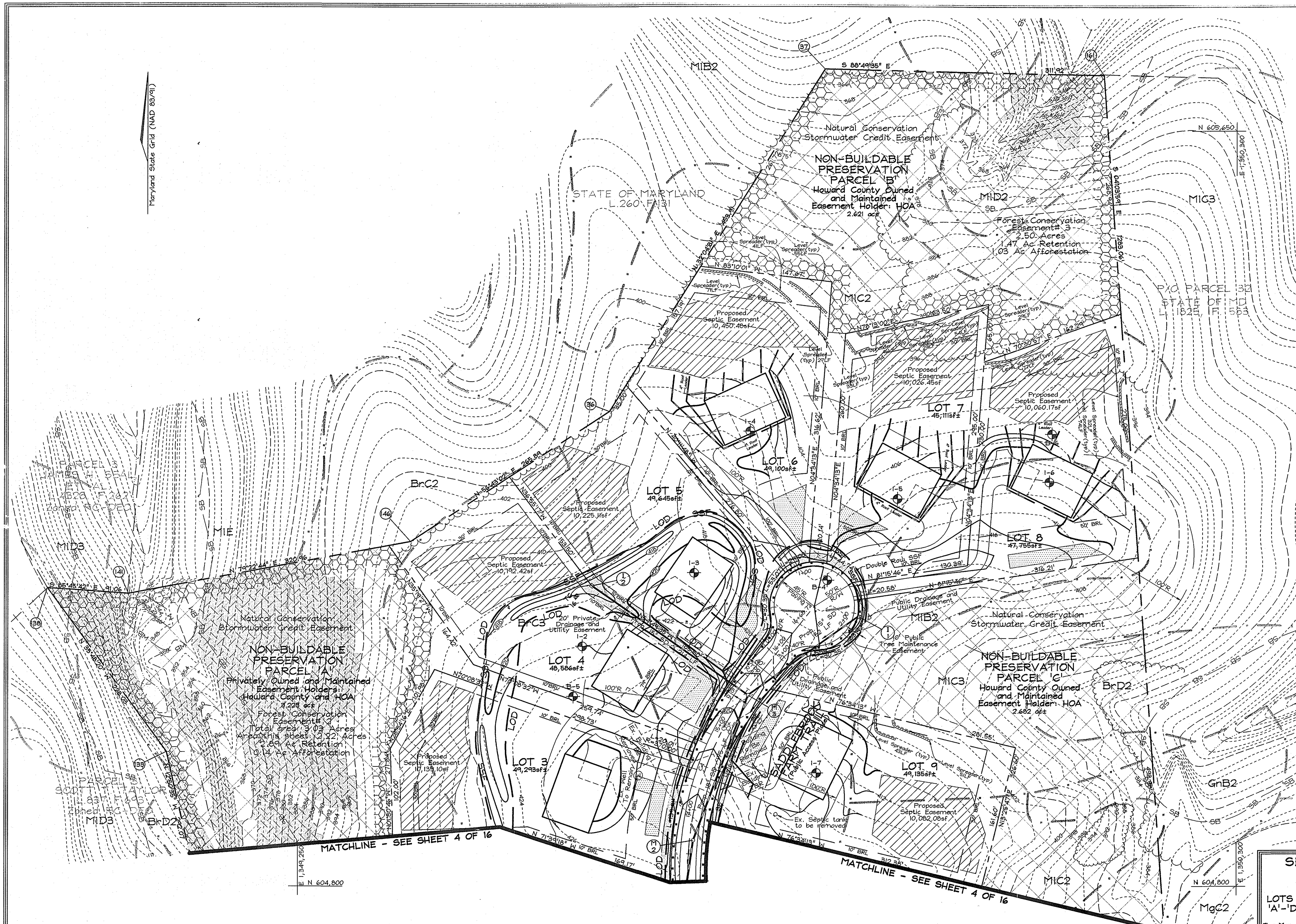
SHEET No.:	4 OF 16

F-06-042



Note:
Level Spreaders located on Lots 6-9 and associated grading are to be constructed at the Plat Plan stage.

OWNER/DEVELOPER

Shalehearth, L.C.
6820 Elm Street Suite 200
MC Lean, Virginia 22101
703.734.9730

SEDIMENT AND EROSION CONTROL AND GRADING PLAN
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

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Parcels 19 & 32
Howard County, Maryland

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton 6/21/06
CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

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5/18/06
SIGNATURE OF DEVELOPER DATE

ENGINEERS CERTIFICATE

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Zacharia Y. Fisch 5/19/06
SIGNATURE OF ENGINEER DATE
ZACHARIA Y. FISCH

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

Jim Myers 6/1/06
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John R. Robertson 6/1/06
HOWARD SOIL CONSERVATION DISTRICT DATE

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER

FSH Associates
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Tel:410-750-2251 Fax: 410-750-7350
E-mail: info@fsha.biz

DESIGN BY: PS
DRAWN BY: MY
CHECKED BY: ZYF
SCALE: 1"=50'
DATE: May 17, 2006
W.O. No.: 3312
SHEET No.: 5 OF 16

F-06-042

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

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

Purpose

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

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

c. The original soil to be vegetated contains material toxic to plant growth.

d. The soil is so acidic that treatment with limestone is not feasible.

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

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

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

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or a soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger that 1 and 1/2" in diameter.

ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:

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

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

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

V. Topsoil Application

i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

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

iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

iv. Topsoil shall not be place while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

PERMANENT SEEDING NOTES

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

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

SOIL AMENDMENTS: In lieu of soil test recommendations, use the following schedule: Apply 2 tons per acre dolomitic limestone(92 lbs/1000 s.f.) And 900 lbs. / acre (20.7 lbs./1000s.f.) of 10-20-20 before seeding. Harrow or disc into upper 3 in. Of soil.

SEEDING: Apply a mixture of Turf Type Tall fescue(80%) and Hard Fescue (20%) in accordance with seeding dates and rates shown in the Permanent Seeding Summary shown on this sheet. For stabilization outside of the seeding dates, apply straw mulch at rates and methods specified below and apply permanent seeding when within proper seeding dates.

MULCHING: Immediately following seeding, apply a uniform 1- 2 in. Deep layer of un-rotted small grain straw at a rate of 2 tons/acre. (Apply 2.5 Tons/acre if a mulch anchoring tool is used).
Straw may be anchored with wood cellulose fiber at a rate of 750 lbs. / acre mixed at a ratio of 50 lbs. Of wood fibre/ 100 gal. of water. Synthetic liquid binders such as Terra Tax II, Acrylic DLR (Agro- Tack), DCA-70, Petroset and other approved equals may be used at rates recommended by the manufacturers.

Permanent Seeding Summary

Seed Mixture (Hardiness Zone 7a and 6b) From Table 25					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
10	Tall Fescue (80%) Hard Fescue (20%)	120 30	3/1-5/15 8/15-11/15	0.5 in.	90lb/ac (2.0lb/ 1000sf)	75lb/ac (4lb/ 1000sf)	75lb/ac (4lb/ 1000sf)	2tons/ac (100lb/ 1000sf)

TEMPORARY SEEDING NOTES

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

SOIL AMENDMENTS: In lieu of soil test recommendations, use the following schedule:
Apply 2 tons per acre dolomitic limestone(92 lbs/1000 s.f.) And 600 lbs. / acre (15 lbs./1000s.f.) of 10-10-10 before seeding. Harrow or disc into upper 3 in. Of soil.

SEEDING: Apply the Maryland State Highway approved seed mixture of Barley or Rye plus Foxtail Millet in accordance with seeding dates and rates shown in the Temporary Seeding Summary shown on this sheet. For stabilization outside of the seeding dates, apply straw mulch at rates and methods specified below.

MULCHING: Immediately following seeding, apply a uniform 1- 2 in. Deep layer of un-rotted small grain straw at a rate of 2 tons/acre. (Apply 2.5 Tons/acre if a mulch anchoring tool is used).
Straw may be anchored with wood cellulose fiber at a rate of 750 lbs. / acre mixed at a ratio of 50 lbs. Of wood fibre/ 100 gal. of water. Synthetic liquid binders such as Terra Tax II, Acrylic DLR (Agro- Tack), DCA-70, Petroset and other approved equals may be used at rates recommended by the manufacturers.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

Temporary Seeding Summary

Seed Mixture (Hardiness Zone 6a and 7a) From Table 26					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
2	Barley or Rye plus Foxtail Millet	150 lbs (3.5lbs/1000saf)	2/1-11/30 (7a) 3/15-10/31 (6a)	1/4 in- 1/2 in	600 lb/ac (15lb/1000sf)	2 tons/ac (100lb/1000sf)

SEDIMENT CONTROL NOTES

1. 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 (313-1855).

2. All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. and revisions thereto.

3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: (a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes, and all slopes greater than 3:1, (b) 14 days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding, and mulching (Sec. G). Temporary stabilization with mulch alone shall be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

7. Site Analysis :

Total Area	27.859 Acres
Area Disturbed	4.899 Acres
Area to be roofed or paved	1.856 Acres
Area to be vegetatively stabilized	3.043 Acres
Total Cut	5,000 CY
Total Fill	5,000 CY
Offsite waste/borrow area location	**

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

10. 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.

11. 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.

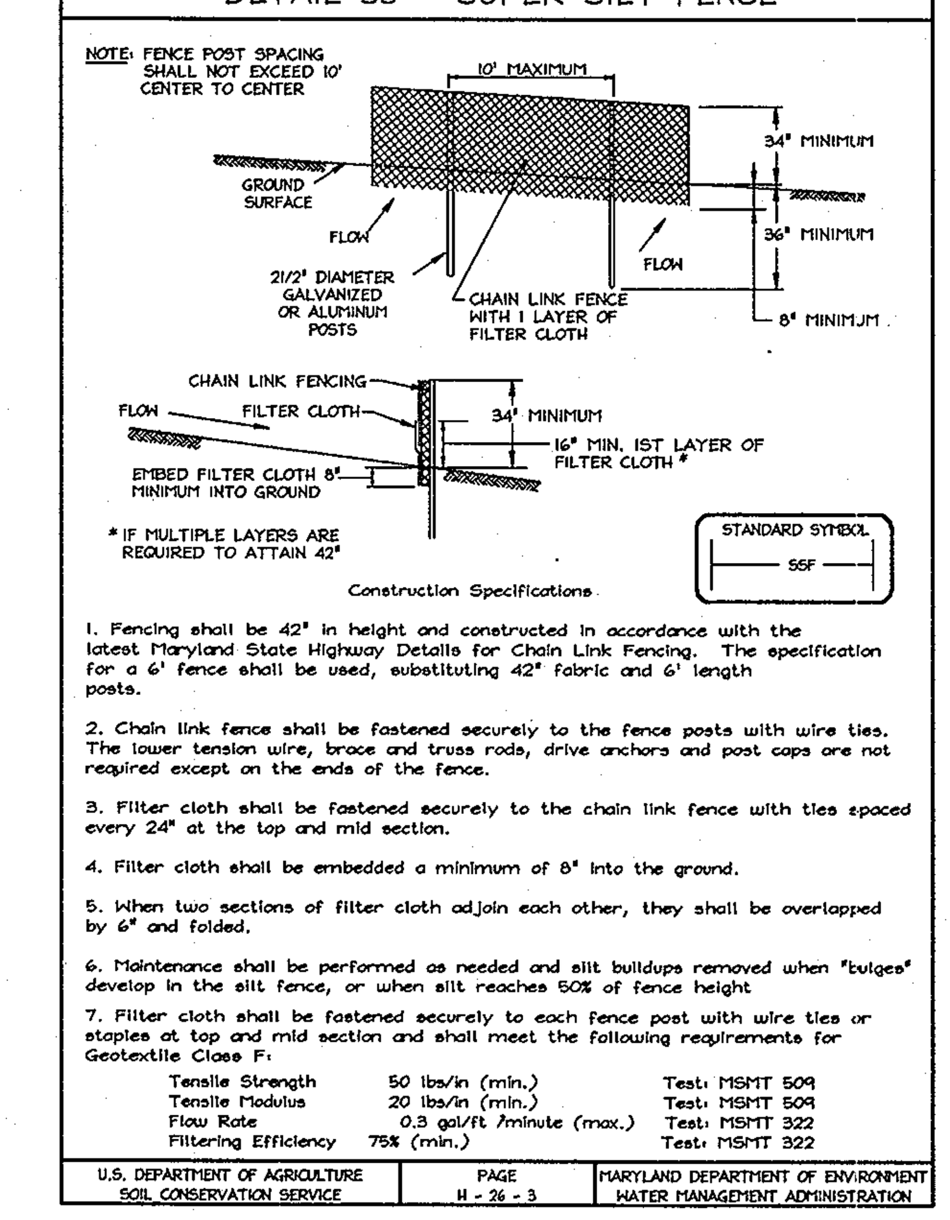
* Earthwork quantities are solely for the purpose of calculating fees. Contractor to verify all quantities prior to the start of construction.

** To be determined by contractor, with pre-approval of the Sediment Control Inspector with an approved and active grading permit

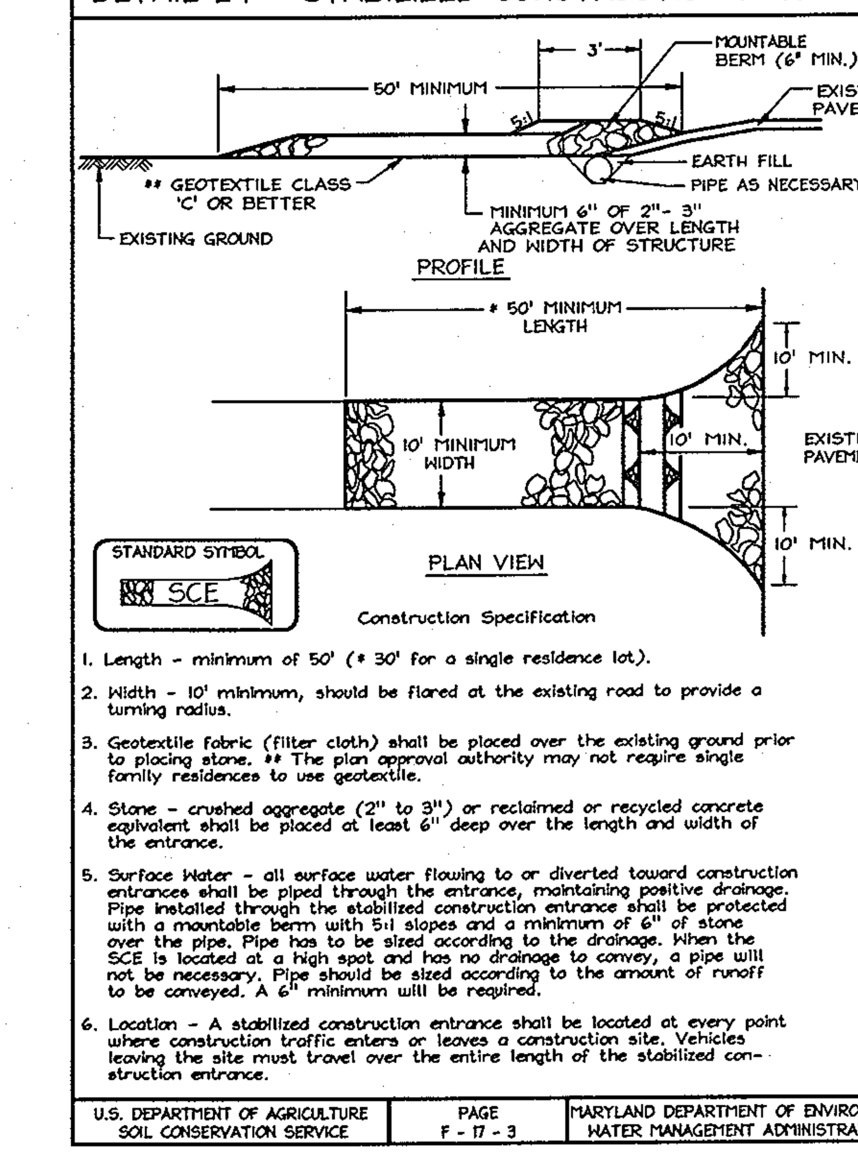
SEQUENCE OF CONSTRUCTION

1. Obtain grading permit and contact Howard County Sediment Control Inspector(SCI) to arrange a pre-construction meeting. (1 day)
2. Install Stabilized Construction Entrance . (1 day)
3. Clear and grub as necessary for installation of silt fence, super silt fence, and sediment basin. (5 days)
4. Install tree protection fence, silt fence/ super silt fence, and install the stormwater management facility to be used as a sediment basin. Do not install the sand filter and drain pipes at this time. Install only the 6" PVC outflow pipe STA 0+14.67, 1+06 and cap both ends. Install forebays and outlet structure with permanent trash rack to be covered with class 'E' filter fabric. (3 weeks)
Note that all level spreaders and grass swale for lot no.1 to be installed under seperate grading permit for lots.
5. With permission of SCI, grade roads to subgrade. (3 weeks)
6. Install storm drain system block I-1, I-2, and I-3. (2 weeks)
7. Fine grade roads and complete paving and final vegetative stabilization. Storm drains to remain open to convey runoff to Sediment/ Stormwater management basins, except inlets I-1, I-2, and I-3 to be blocked. (1 week)
8. With permission of SCI remove all and sediment controls and apply permanent stabilization to those areas. (5 days)
9. With permission of SCI, grade for and immediately stabilize all grass channels with ECM and permanent seeding. (3 days)
10. Flush storm drains of sediment unblock I-1, I-2, and I-3. Convert sediment/stormwater basin to permanent SWM by dewatering, removing accumulated sediment, removing filter fabric on trash rack, grading bottom to permanent elevation shown and applying permanent seeding and mulching to disturbed areas. (1 week).

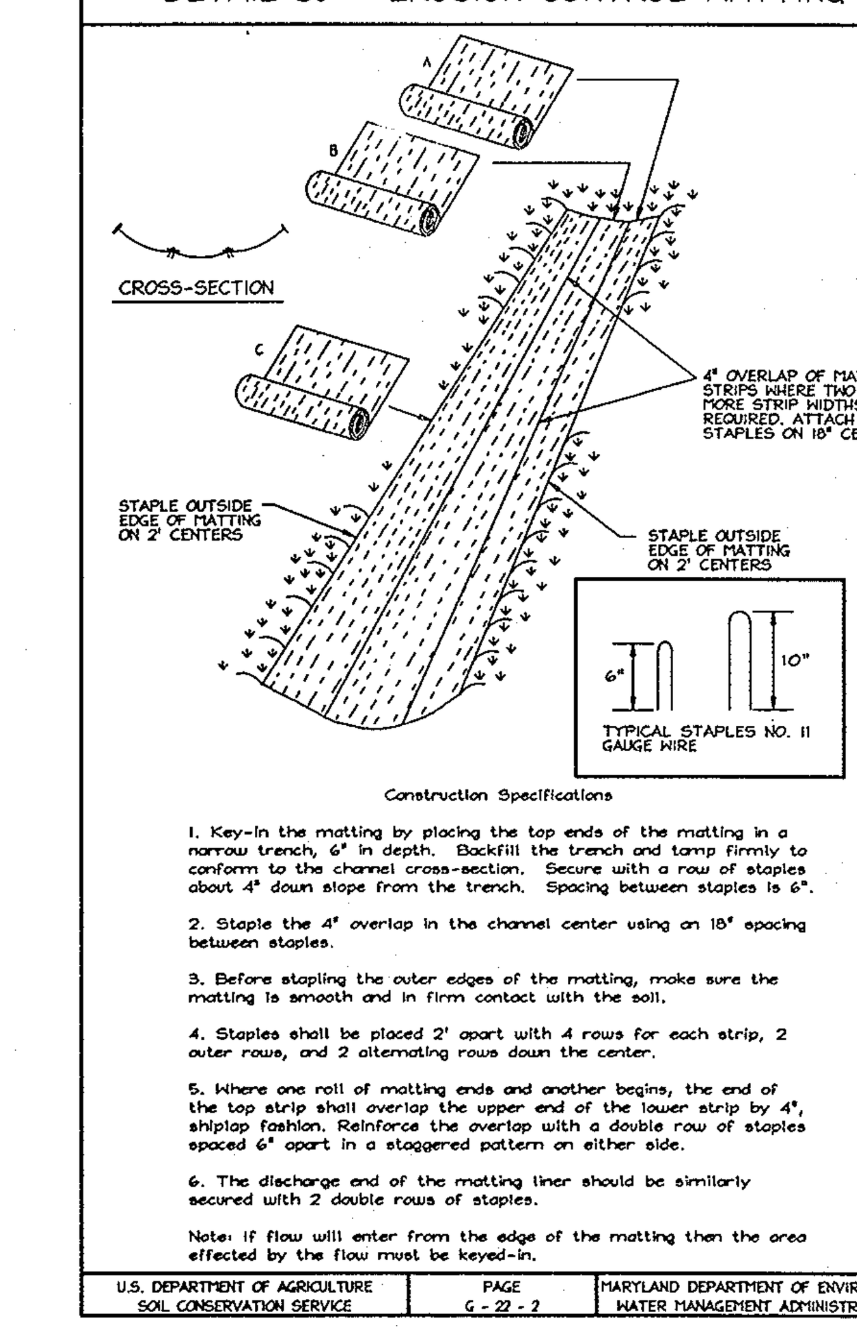
DETAIL 33 - SUPER SILT FENCE



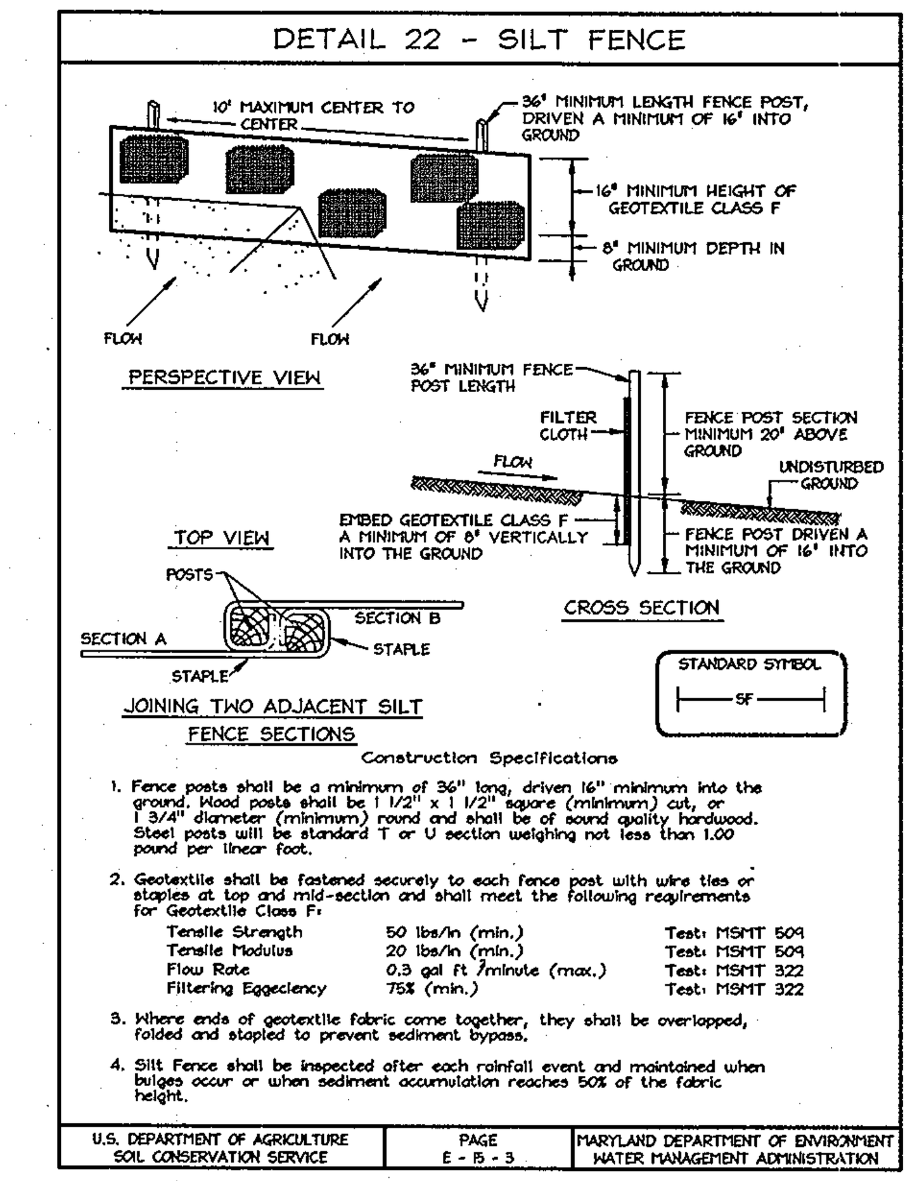
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



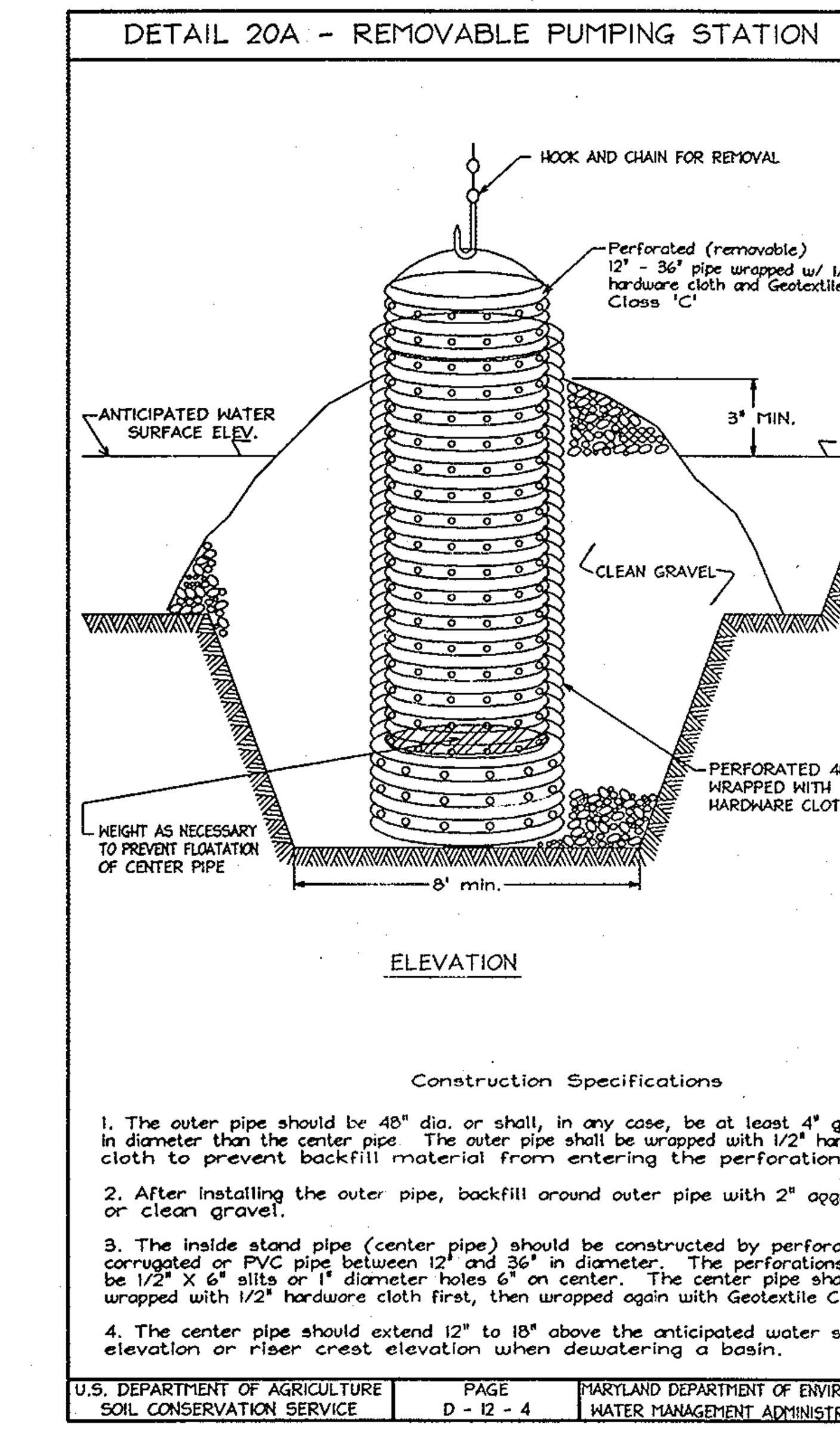
DETAIL 30 - EROSION CONTROL MATTING



DETAIL 22 - SILT FENCE



DETAIL 20A - REMOVABLE PUMPING STATION



OWNER/DEVELOPER
Shalehearth, L.C.
6820 Elm Street Suite 200
MC Lean, Virginia 22101
703.734.9730

SEDIMENT & EROSION CONTROL AND MISCELLANEOUS NOTES & DETAILS
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13
3rd Election District
Parcels 19 & 32
Howard County, Maryland

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

6/21/06
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

6-6-06
CHIEF, BUREAU OF HIGHWAYS — DATE

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.

5/18/06
SIGNATURE OF DEVELOPER — DATE

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.

5/19/06
SIGNATURE OF ENGINEER — DATE
ZACHARIA Y. FISCH

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

6/1/06
USDA-NATURAL RESOURCES CONSERVATION SERVICE — DATE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

6/1/06
HOWARD SOIL CONSERVATION DISTRICT — DATE

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

DESIGN BY:	PS
DRAWN BY:	MY
CHECKED BY:	ZYF
SCALE:	As Shown
DATE:	May 17, 2006
W.O. No.:	3312
SHEET No.:	6 OF 16

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SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
Ba	Baile silt loam	D
BrC2	Brandywine loam, 8 to 15 percent slopes, moderately eroded	C
BrC3	Brandywine loam, 8 to 15 percent slopes, severely eroded	C
BrD2	Brandywine loam, 15 to 25 percent slopes, moderately eroded	C
BrF	Brandywine loam, 25 to 60 percent slopes	C
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
GlC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	B
GlC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	B
GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	C
MgC2	Manor gravely loam, 8 to 15 percent slopes, moderately eroded	B
MgC3	Manor gravely loam, 8 to 15 percent slopes, severely eroded	B
MlB2	Manor loam, 3 to 8 percent slopes, moderately eroded	B
MlC2	Manor loam, 8 to 15 percent slopes, moderately eroded	B
MlC3	Manor loam, 8 to 15 percent slopes, severely eroded	B
MlD2	Manor loam, 15 to 25 percent slopes, moderately eroded	B
MlD3	Manor loam, 15 to 25 percent, slopes, severely eroded	B
MlE	Manor loam, 25 to 45 percent slopes	B

As-Built *
for SWM Pond Elevations
see sheet 13 of 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

6-6-06
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

6/21/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER

12/7/09
ZACHARIA Y. FISCH DATE
P.E. # 22418

Nº	DESCRIPTION	DATE
1	Revise Road Cross-Section and Grading	MAR 2007

REVISION

OWNER/DEVELOPER
Shalehearth, L.C.
6820 Elm Street Suite 200
MC Lean, Virginia 22101
703.734.9730

STORM DRAIN DRAINAGE AREA MAP
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13
3rd Election District

Parcels 19 & 32
Howard County, Maryland

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER

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

DESIGN BY: PS
DRAWN BY: MY
CHECKED BY: ZYF
SCALE: 1"=50'
DATE: May 17, 2006
W.O. No.: 3312
SHEET No.: 7 OF 16

F-06-042

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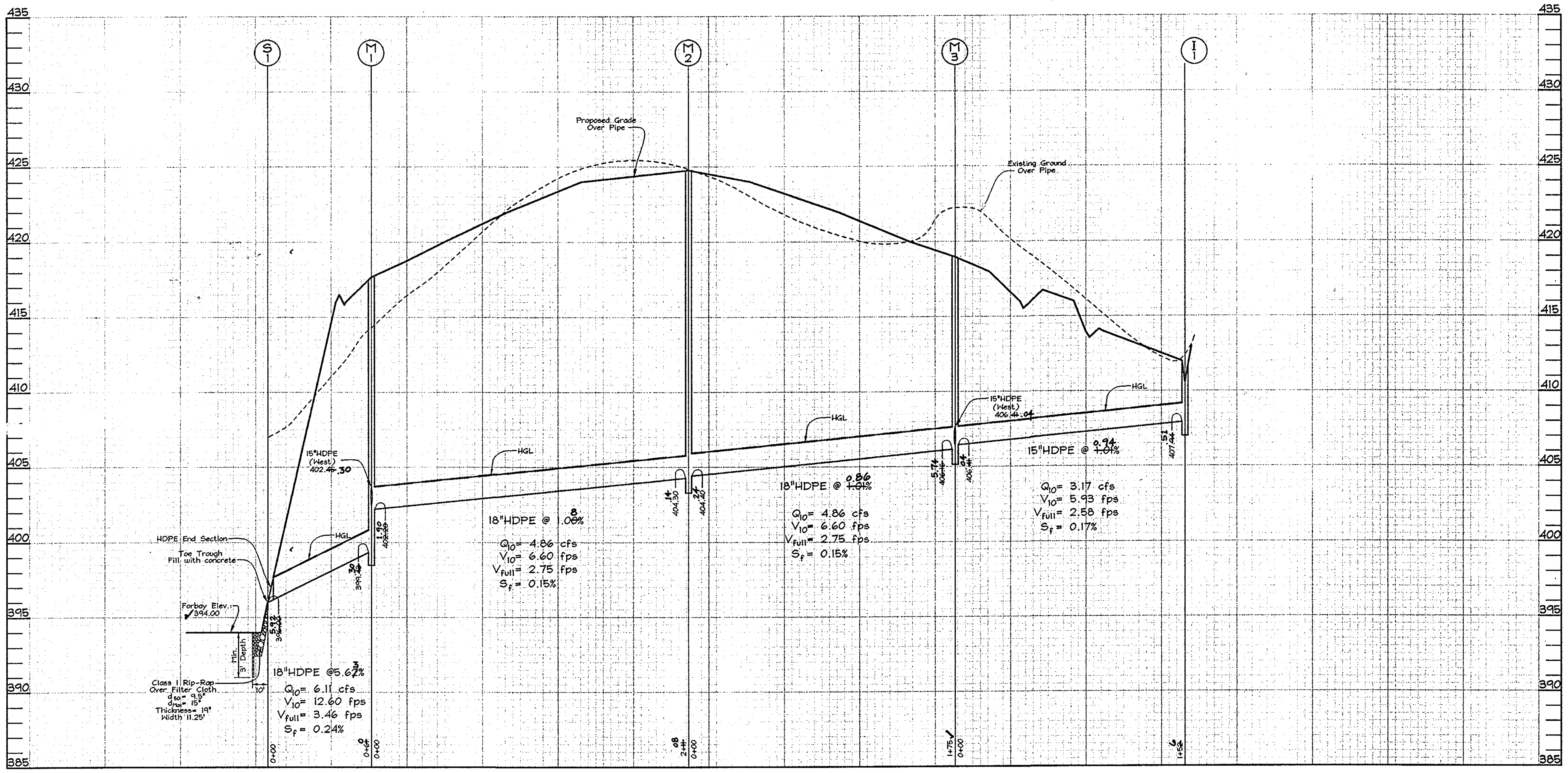
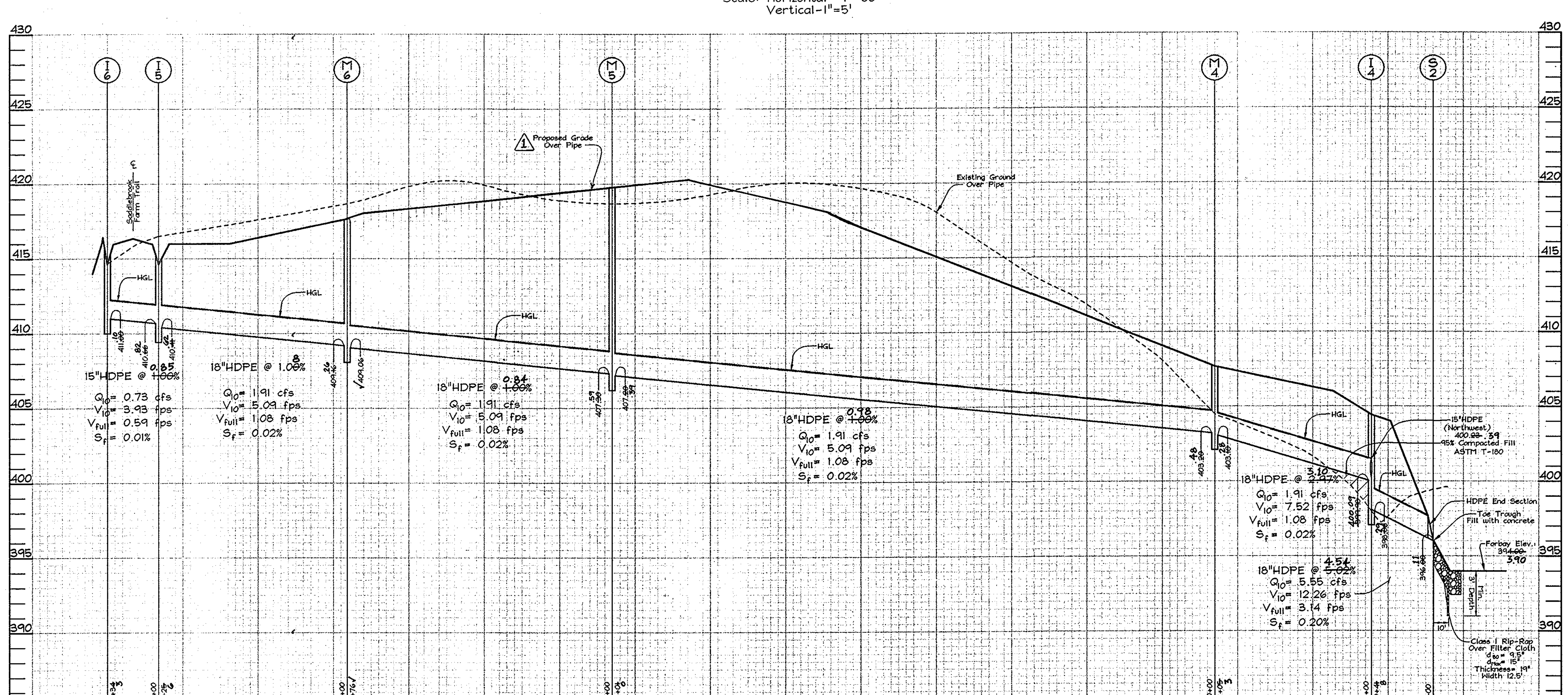


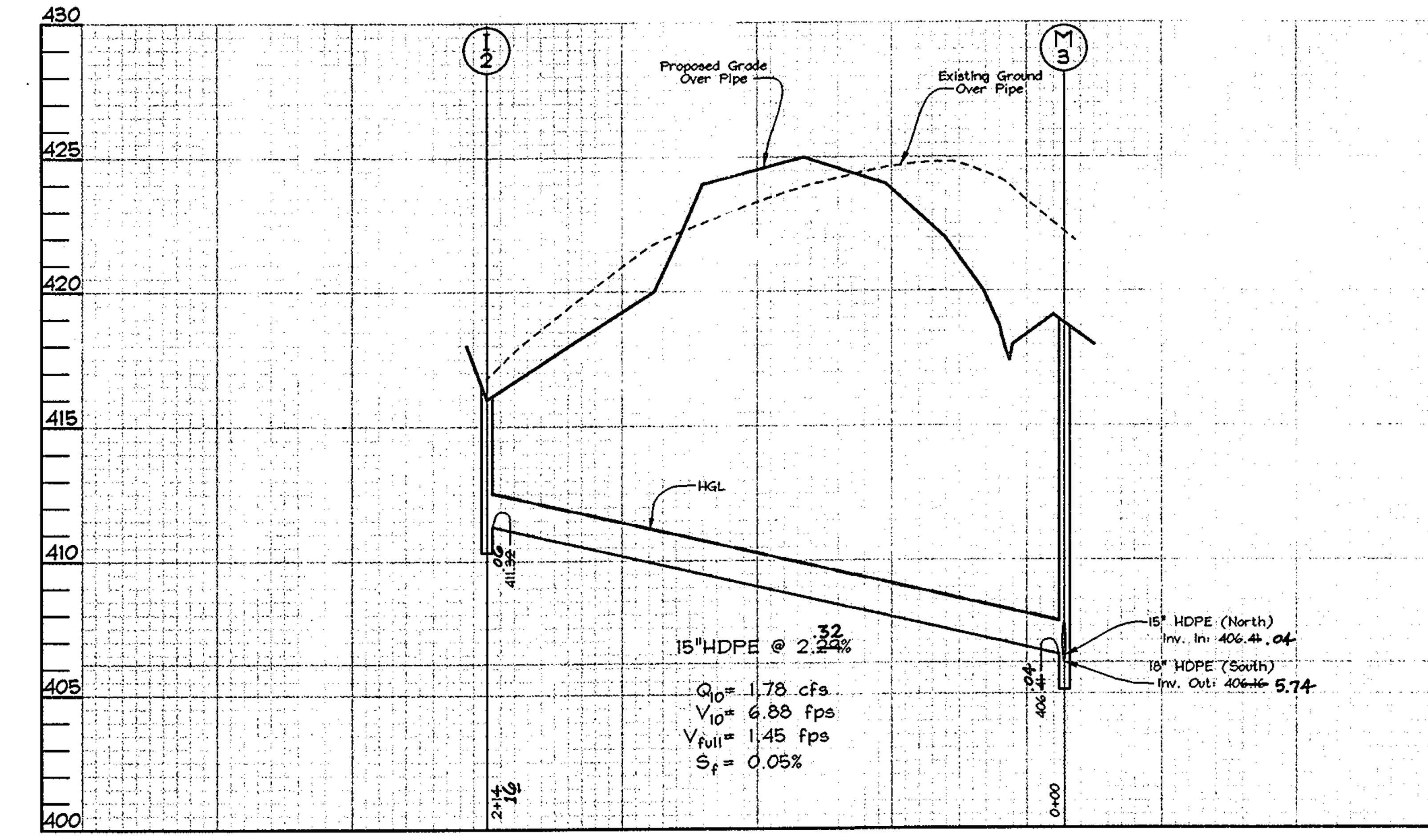
STORM DRAIN PROFILES

Scale: Horizontal- 1"=50'
Vertical-1"=5'



STORM DRAIN PROFILES

Scale: Horizontal- 1"=50'
Vertical-1"=5'



STORM DRAIN PROFILES

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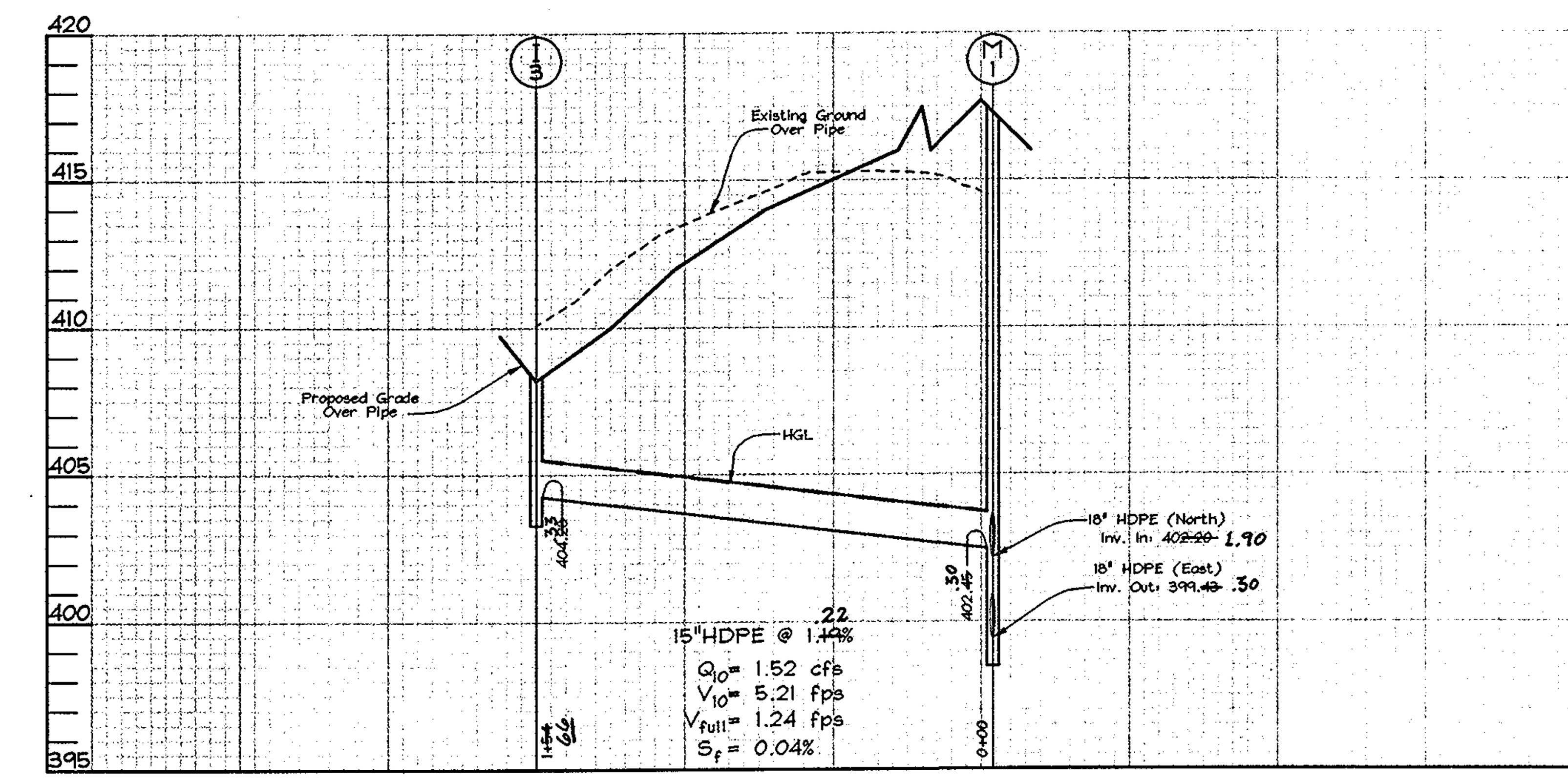
Vertical-1"=5'



STORM DRAIN PROFILES

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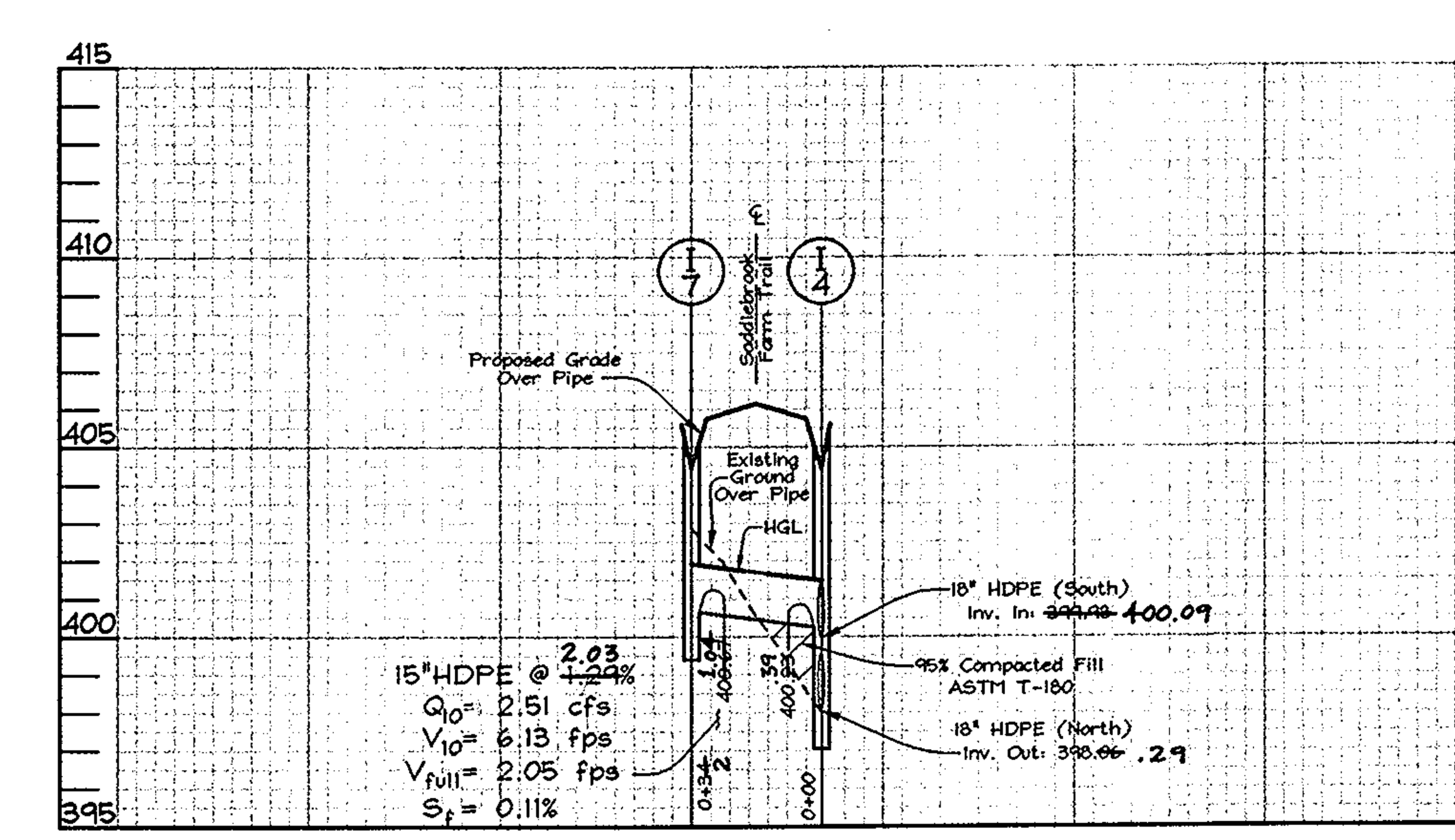
Vertical-1"=5'



STORM DRAIN PROFILES

Scale: Horizontal- 1"=50'
Vertical-1"=5'

OWNER/DEVELOPER

Shalehearth, L.C.
6820 Elm Street Suite 200
MC Lean, Virginia 22101
703.734.9730

As-Built
For Roads, Storm Drains & Erosion and Sediment Controls

C. Brooke Miller 12/7/2009
Prof. L.S. #135 DATE

STORM DRAIN PROFILES
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13 — Parcels 19 & 32
3rd Election District — Howard County, Maryland

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DRAWN BY: MY
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SCALE: As Shown
DATE: May 17, 2006
W.O. No.: 3312
SHEET No.: 8 OF 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

6/21/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

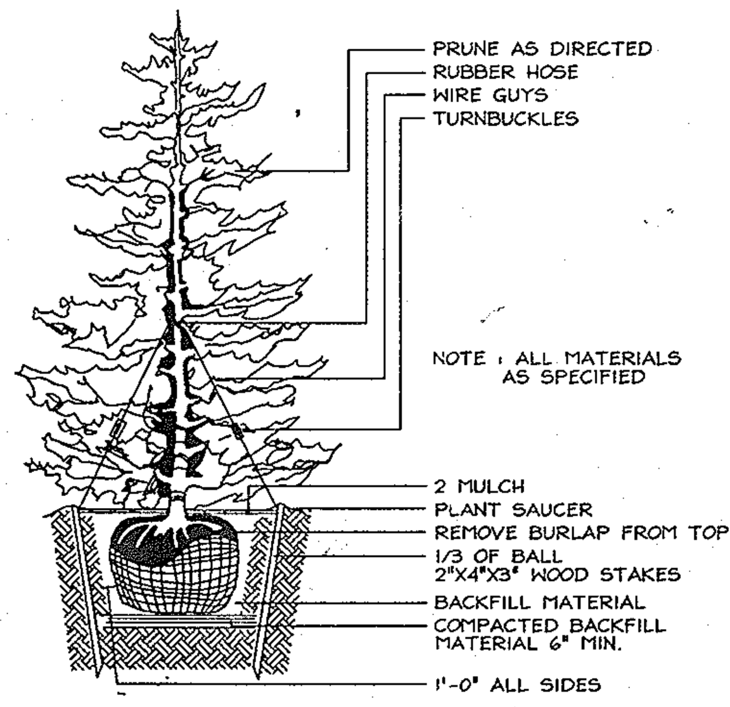
6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

6-6-06
CHIEF, BUREAU OF HIGHWAYS DATE

No	DESCRIPTION	DATE
1	Revise Proposed Grade over S.D. Pipe M6 to M4	MAR07

REVISIONS

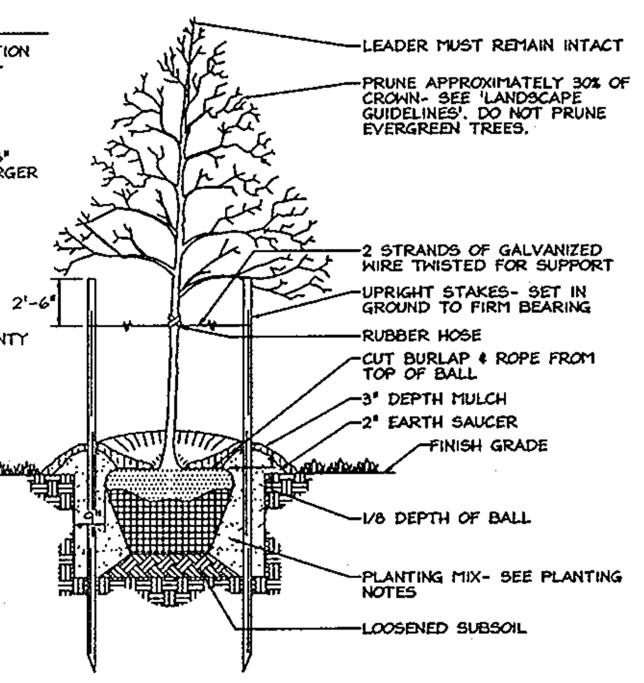


TYPICAL EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

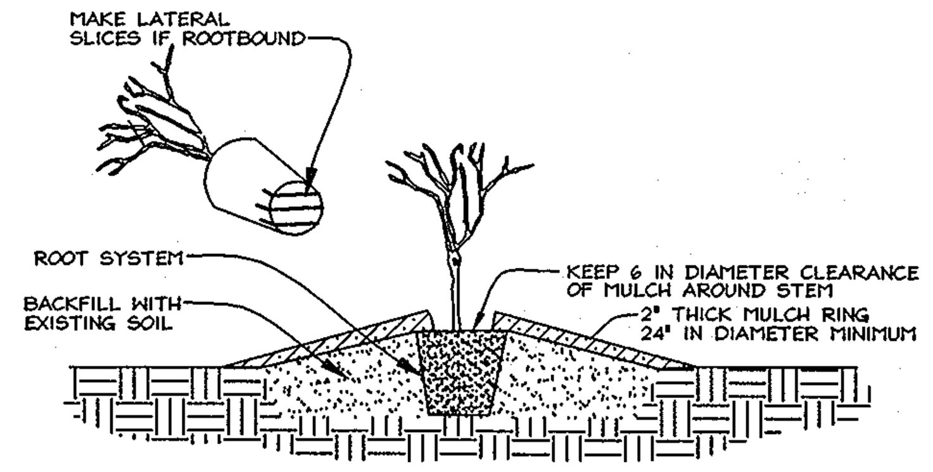
NOTES

1. SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
3. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
4. KEEP MULCH 1" FROM TRUNK
5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



TYPICAL TREE PLANTING AND STAKING

DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE



PLANTING PROCEDURE FOR CONTAINER GROWN PLANTS

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

TYPICAL CONTAINER PLANTING DETAIL

NOT TO SCALE

LEGEND

- Existing Contour — 382
- Proposed Contour — 382
- Existing Spot Elevation — 382.3
- Proposed Spot Elevation — +82.53
- Direction of Flow
- Existing Trees to Remain
- Light Poles
- Street Tree
- Evergreen Tree
- Landscape Perimeter — PERIMETER ONE
- Shade Tree

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeter	1090lf
Credit for Existing Vegetation (No, Yes and Linear Feet) Remaining Perimeter Length	Yes, 250lf* 840lf
Credit for other Landscaping (No, Yes and %)	N/A
Number of Trees Required Shade Trees (1:50) Evergreen Trees (1:40)	17 Shade Trees 27 Evergreen Trees

* Credit is for Shade Tree component only. Evergreen component will be provided for the entire perimeter length (1090lf).

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES				
Perimeter/Frontage Designation Landscape Type	5 B		1 A	2 A	3 A	4 A	6 A
Linear Feet of Roadway Frontage/Perimeter	369		961	1377	1242	1054	226
Credit for Existing Vegetation (Yes, No, Linear Feet) Remaining Perimeter Length	No		Yes* 374 587	Yes** 647 730	Yes* 404 838	Yes* 60 994	No
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) Remaining Perimeter Length	No		No	No	No	No	No
Number of Plants Required Shade Trees Evergreen Trees Shrubs	1:50 7 1:40 9 -		1:60 10 - -	1:60 12 - -	1:60 14 - -	1:60 17 - -	1:60 4 - -

* Existing woods to remain

** We are requesting alternative compliance credit for the noted 647' of Perimeter 2 that is coincident with the forest conservation area on Preservation Parcel 'A' and the adjacent property owned by the State of Maryland. The adjacent property is an undisturbed forest area in a State Park that will not face development or much if any active use. The preservation parcel will contain a forest conservation easement. Buffering with the addition of more trees would appear to be superfluous in this instance.

OWNER/DEVELOPER
Shalehearth, L.C.
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MC Lean, Virginia 22101
703.734.9730

LANDSCAPE PLAN, NOTES AND DETAILS
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13 — Parcels 19 & 32
3rd Election District — Howard County, Maryland

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER

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DESIGN BY: PS
DRAWN BY: AY\MY
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SCALE: 1"=50'
DATE: May 17, 2006
W.O. No.: 3312
SHEET No.: 9 OF 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/21/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6/12/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 6-6-06

DEVELOPER'S BUILDER'S CERTIFICATE

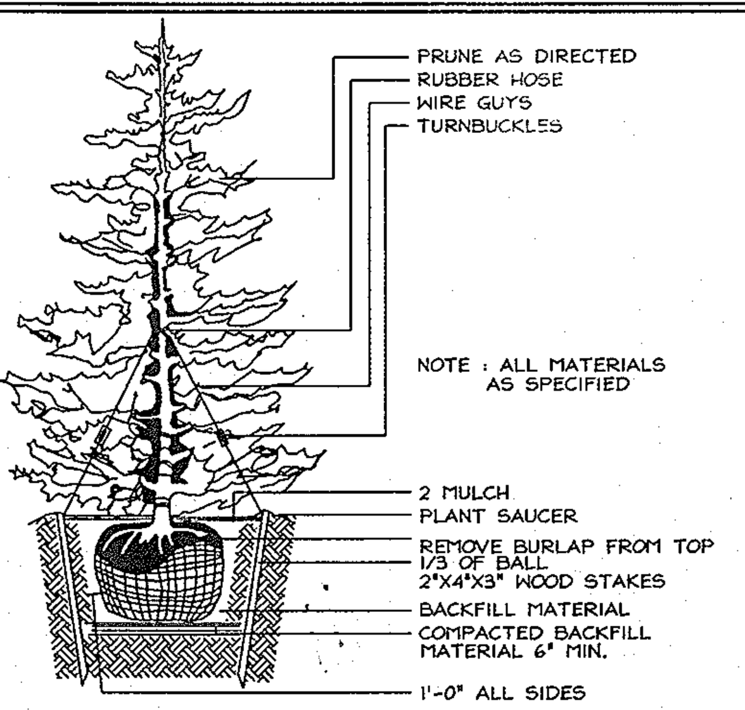
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE(1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER — DATE 5/18/06

NOTES:

1. Erosion Control Matting will be provided in all ditches on property.

F-06-042

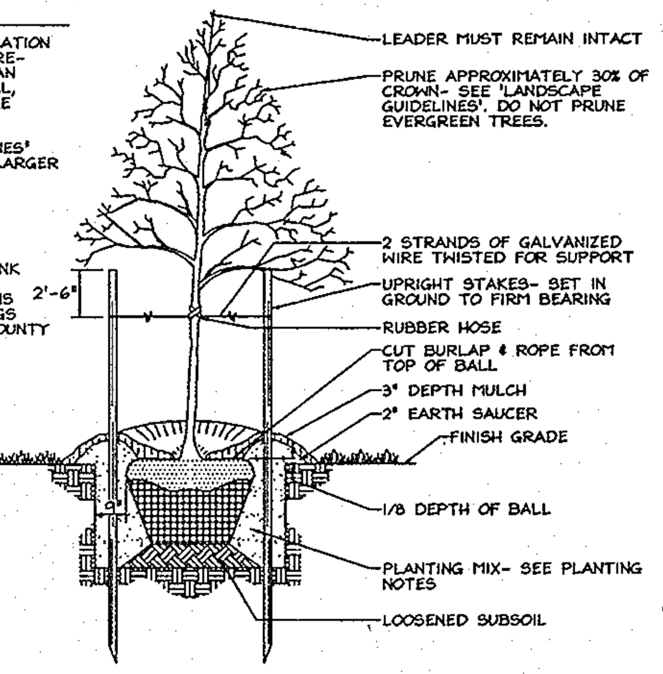


TYPICAL EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

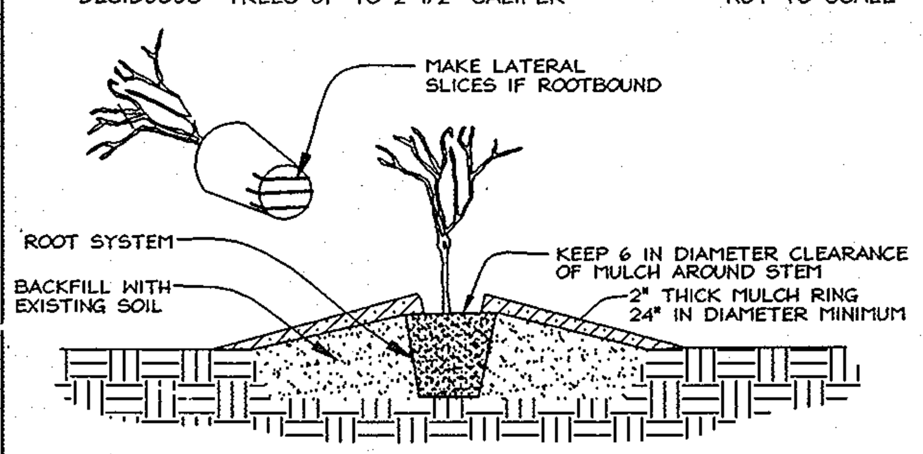
NOTES

1. SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
3. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
4. KEEP MULCH 1" FROM TRUNK.
5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



TYPICAL TREE PLANTING AND STAKING

DECIDUOUS TREES UP TO 2-1/2" CALIPER — NOT TO SCALE



PLANTING PROCEDURE FOR CONTAINER GROWN PLANTS

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

TYPICAL CONTAINER PLANTING DETAIL

NOT TO SCALE

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	NOTE
⊙	84	Acer Rubrum(Street Trees) October Glory Red Maple	2 1/2"-3" Cal.	B & B
⊕	43	Acer Rubrum October Glory Red Maple	2 1/2"-3" Cal.	B & B
⊗	38	Quercus rubra 'Red Oak'	2 1/2"-3" Cal.	B & B
◔	36	Thuja occidentalis 'Eastern Arborvitae'	5'-6' Ht.	B & B

AS-BUILT*
FOR STORMWATER MANAGEMENT (SWM) POND ELEVATIONS (SEE SHEET 13 OF 16)

ZACHARIA Y. FISCH
P.E. # 22418 — 12/7/09 DATE

OWNER/DEVELOPER
Shalehearth, L.C.
6820 Elm Street Suite 200
MC Lean, Virginia 22101
703.734.9730

STREET TREE SCHEDULE

STREET NAME	LF REQUIRED	TREES REQUIRED	TREES PROVIDED
Saddlebrook Farm Trail	3338	84	84

LANDSCAPE NOTES

1. At the time of installment, 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 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.
2. 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.
3. Financial surety for the required landscaping will be posted as part of the Developer Agreement in the amount of $29,700.00 (81 shade trees @ $300.00 each & 36 ever green @ $150.00 each).
4. Perimeter landscaping other than in the Forest Conservation Easement shall be planted at the Site Development plan stage.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/21/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6/12/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 6-6-06

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 — DATE 5/18/06

REVISION

No.	DESCRIPTION	DATE
1	REVISE ROAD CROSSSECTION AND GRADING	MAR2007

LANDSCAPE PLAN, NOTES AND DETAILS
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13 — Parcels 19 & 32
3rd Election District — Howard County, Maryland

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

DESIGN BY: PS
DRAWN BY: AY\MY
CHECKED BY: ZYF
SCALE: 1"=50'
DATE: May 17, 2006
W.O. No.: 3312
SHEET No.: 10 OF 16

F-06-042

MARYLAND 378
STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

CONSTRUCTION SPECIFICATIONS (FOR SWM FACILITIES 1 & 2)

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the tow of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within +\-2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operated closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of the structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill (flowable fill)zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Polymer Coated steel pipe)- Steel pipes with polymeric coating shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling, bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at lease 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches diameter: flanges on both ends of the pipe with a circular 3/8 inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4(four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8"inch closed cell gaskets the full width of the flange is also acceptable.

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill".
6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete PipeAll of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.

Plastic PipeThe following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" -10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction Materials, Section 311.

Geotexile shall be placed under all riprap and shall meet requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEM, STORMWATER MANAGEMENT FACILITY (F-1, F-4, AND F-5)

1. The stormwater facility shall be inspected annually and after major storm. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
2. 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.
3. 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.
4. Debris and litter shall be removed during regular mowing operations and as needed.
5. Visible signs of erosion in the facility shall be repaired as soon as it is noticed.
6. Remove silt when it exceeds four (4) inches deep in the forebay.
7. When water ponds on the surface of the filter bed for more than 72 hours, the top few 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.
8. A log book shall be maintained to determine the rate at which the facility drains.
9. The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
10. 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.

OPERATION AND MAINTENANCE SCHEDULE FOR GRASS SWALE LOT No. 1 (PRIVATLY OWNED AND MAINTAINED) (O-1)

1. Mow grass swale during growing season to maintain vegetation height of 4"-6".
2. Sediment build-up within the bottom of the channel to be removed when sediment has accumulated to 25% of the WQ_v.

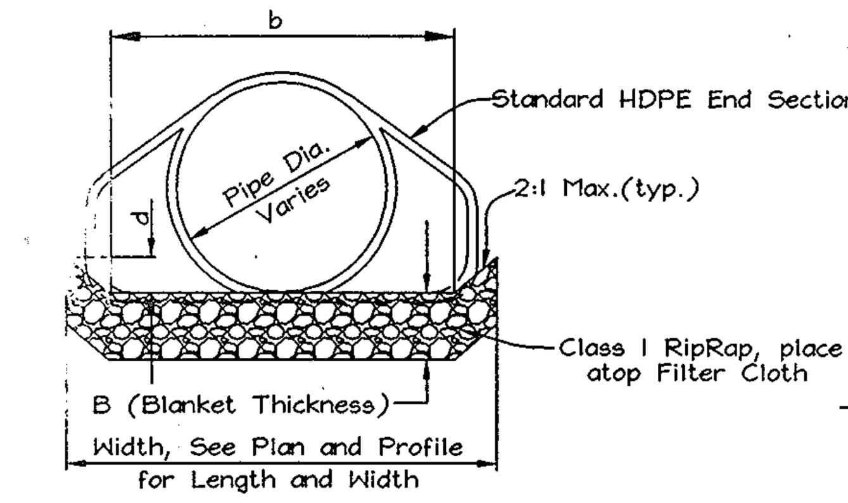
EXTENDED DETENTION - SURFACE SAND FILTER (F-1)

	1YEAR(CPv)	10 YEAR	100 YEAR
Flow Into BMP	4.47 cfs	19.10 cfs	33.47 cfs
Flow Out of BMP	0.10 cfs	13.34 cfs	30.74 cfs
WS Elevation	394.34	395.36	395.83
Storage Volume	0.221 ac.ft		

WATER QUALITY FOR AREA TO SURFACE SAND FILTER (7.16Ac)
WQv Req'd: 6679 cu.ft
WQv Prov'd: 6679 cu.ft

* Recharge is met within the Grass Channels and sheet flow to buffer through the Percent Area Method.
** Assumes clogged Low Flow Orifice.
** Additional WQv provided through credits for areas not entering ponds, see computations.

Recharge Obligation Rev. (Total Site)
Rev Req'd: 0.093 Ac.Ft.
Rea Req'd: 0.90 Ac
Rea Prov'd.: 0.90 Ac.



TYP. OUTFALL DETAIL FOR S-1 & S-2

Not to Scale

Structure	Q(c.f.s.)	S	n	b	d	$d_{max.}$	d_{50}	B(Blanket Thickness)
S-1	6.11 cfs	0.5%	0.06	4.08'	1.0'	15"	9.5"	19"
S-2	5.55 cfs	0.5%	0.06	4.08'	1.0'	15"	9.5"	19"

As-Built
C. BROOKE MILLER
PROF. L.S. # 135
12/7/2009
DATE

STORMWATER MANAGEMENT SUMMARY TABLE

CATEGORY	DA-A (7.16 ac.)	DA-B (1.2 ac.)	DA-C (19.5 ac.)	TOTAL AREA (27.86 ac.)	COMMENTS
CHANNEL PROTECTION VOLUME (Cp_v)	0.221 ac ft.	N/A	N/A	N/A	< 2 cfs See Note No.1
WATER QUALITY VOLUME (WQ_v) Required/Provided	.089 AF/ .089 AF	459 cu. ft./ 459 cu. ft.	Credits Taken	N/A	See Note No.2
RECHARGE VOLUME/AREA (Re_v)/(Re_a) Required/Provided	N/A	N/A	N/A	0.093 AF/ 0.0 Ac. 0.90 Ac./ 0.90 Ac.	See Note No.3
OVERBANK FLOOD STORAGE (Q_p)	N/A	N/A	N/A	N/A	Not Required
EXTREME FLOOD VOLUME (Q_f)	N/A	N/A	N/A	N/A	Not Required

NOTES:

1. Channel Protection volume (Cp_V) is required for Area 1 (7.16 Ac) Only since the developed 1 yr. Runoff exceeds 2 CFS. The post developed runoff is less than 2 cfs within each of six Cpv sub areas.

2. Water Quality Volume (WQ_V) is provided through the use of a Surface Sand Filter (F-1) for sub area A, lots 1 to 5, 10, 12 and Parcel 'F'. Sub Area B (lot 1) contains a grass swale BMP O-1 for treatment. Sub Area C is the remaining property containing lots 6, 7, 8, 9, & 1/2 of lots 2 thru 5, 10, 11, and Non-Buildable Parcel F which is treated through sheet flow to buffer credit. The rear portion of lot 11 and driveways of lots 6, 7, and 8 will be treated by rooftop and non-roof disconnects. Non-Buildable preservation parcels A, B, and C are to remain undisturbed and do not require treatment.

3. Recharge Volume is met through the use of the Recharge area (ReA) method for the entire area of the site whereby the impervious road surface (0.83 Ac) Is treated by grass channels, the remaining 0.07 Ac of impervious area is treated through sheet flow to buffer credit for one lot (Lot 8).

4. Overbank flood storage is not required by Howard County within this watershed.

5. Extreme Flood Volume (Qf) is not required by Howard County within this watershed.

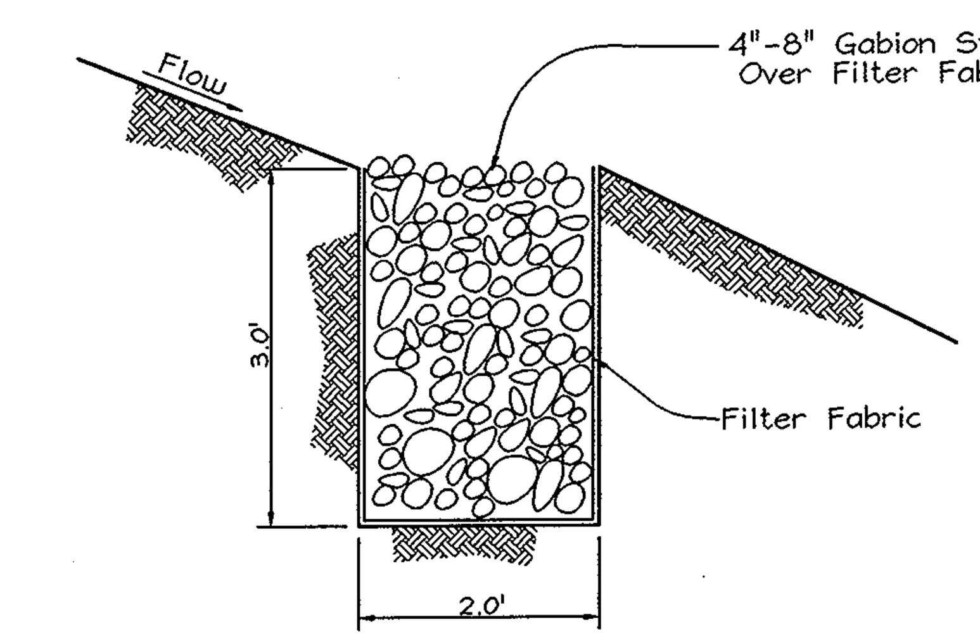
STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
I-1	Precast Open End Grate	N 605,102.51 E 1,349,878.51	416.61 (1.51)	-	407.44 (.51)	SD 4.36
I-2	Precast Open End Grate	N 605,138.02 E 1,349,578.97	416.00 (5.66)	-	411.32 (.06)	SD 4.36
I-3	Precast Open End Grate	N 604,684.04 E 1,349,514.21	408.20 (3)	-	404.28 (.33)	SD 4.36
I-4	Precast Open End Grate	Saddlebrook Farm Trail 8+49.57 17.00' Right	404.43 (.69)	15" 400.23 (.39) 18" 399.98 (400.09)	398.06 (.29)	SD 4.36
I-5	Precast Open End Grate	Saddlebrook Farm Trail Sta. 0+40.67 17.00' Right	414.63 (5.92)	410.66 (.82)	410.41 (.62)	SD 4.36
I-6	Precast Open End Grate	Saddlebrook Farm Trail Sta. 0+40.67 17.00' Left	414.63 (.70)	-	411.00 (1)	SD 4.36
I-7	Precast Open End Grate	Saddlebrook Farm Trail Sta. 8+49.57 17.00' Left	404.43 (.74)	-	400.67 (1.04)	SD 4.36
M-1	Precast Manhole (4')	Saddlebrook Farm Trail Sta. 11+54.49 4.00' Right	417.57 (.40)	15" 402.46 (.30) 18" 402.38 (1.90)	399.43 (.30)	G 5.12
M-2	Precast Manhole (4')	Saddlebrook Farm Trail Sta. 13+65.71 4.00' Right	424.77 (.84)	404.40 (.24)	404.30 (.14)	G 5.12
M-3	Precast Manhole (4')	Saddlebrook Farm Trail Sta. 15+44.34 4.00' Right	418.48 (9.24)	15" 406.41 (.04) 15" 406.41	406.16 (5.74)	G 5.12
M-4	Precast Manhole (4')	Saddlebrook Farm Trail Sta. 7+50.51 4.00' Right	407.69 (.78)	403.20 (.04)	403.10 (.28)	G 5.12
M-5	Precast Manhole (4')	Saddlebrook Farm Trail Sta. 3+50.03 4.00' Right	419.72 (.69)	407.30 (.48)	407.20 (.39)	G 5.12
M-6	Precast Manhole (4')	Saddlebrook Farm Trail Sta. 1+74.36 4.00' Right	417.66 (.76)	409.16 (.59 / .2)	409.06	G 5.12
S-1	18" HDPE End Section	N 604,607.12 E 1,349,712.44	-	396.00 (5.92)	-	Hancor or equivalent
S-2	18" HDPE End Section	N 604,366.89 E 1,349,621.33	-	396.00 (.11)	-	Hancor or equivalent

NOTES : 1. Top elevations are to the center, throat opening at ditch invert for all precast open-ended grate inlets and center top of manhole cover for precast manholes.
2. Top slope of structures to conform to slope of paving or grading.

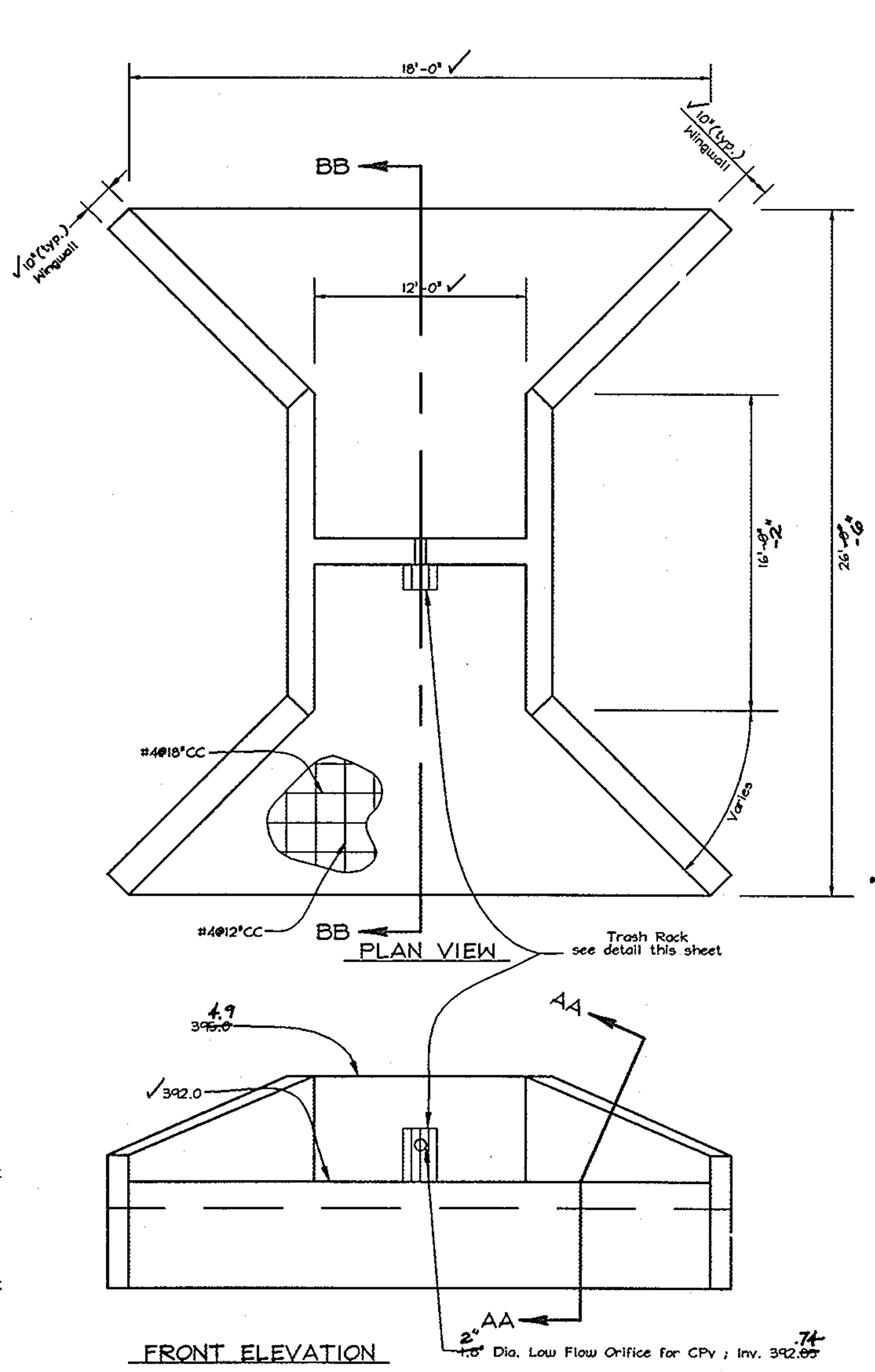
PIPE SCHEDULE

SIZE	TYPE	LENGTH
15"	HDPE	581 LF
18"	HDPE	1,301 LF



TYPICAL LEVEL SPREADER CROSS SECTION

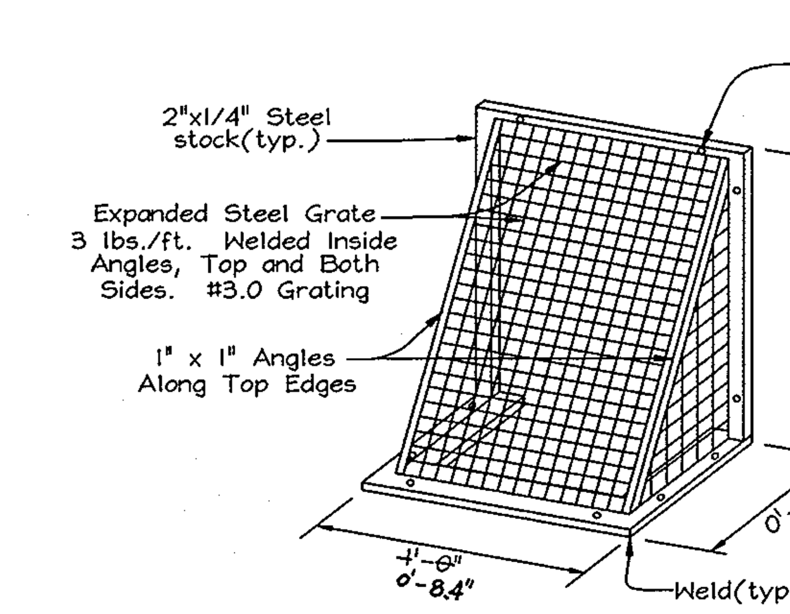
NOT TO SCALE
See plan for level spreader lengths



NOTES:
1. All exposed edges to have a 3/4"x3/4" chamfer or as directed.
2. Concrete shall be SHA mix #3(fc=3500 psi @ 28 days)
3. Reinforcing steel shall be ASTM A-615 grade 60.
4. See section thru weir structure details sheet 17 of 20 for all inverts and elevations of structures

CS-1 CONCRETE WEIR CONTROL STRUCTURE

NOT TO SCALE



TRASH RACK DETAIL

NOT TO SCALE

NOTES:
1. Steel to conform to ASTM A-36.
2. All surfaces to be coated with ZRC cold galvanizing compound after welding.
3. Trash rack to be fastened to the concrete with 1/2" masonry anchors. Trash rack to be removeable.
4. Wrap trash rack with class 'E' filter fabric overlapping frame and secure to weir wall for temporary sediment basin use.

OWNER/DEVELOPER

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703.734.9730

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

6/21/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

6-6-06
CHIEF, BUREAU OF HIGHWAYS DATE

No	DESCRIPTION	DATE
1	REVISE M-5 & M-6 TOP ELEVATIONS	MAR 2007

REVISIONS

As-Built
ZACHARIA Y. FISCH
PE #22418
12/7/09
DATE

STORMWATER MANAGEMENT NOTES, DETAILS, AND STRUCTURE SCHEDULE
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

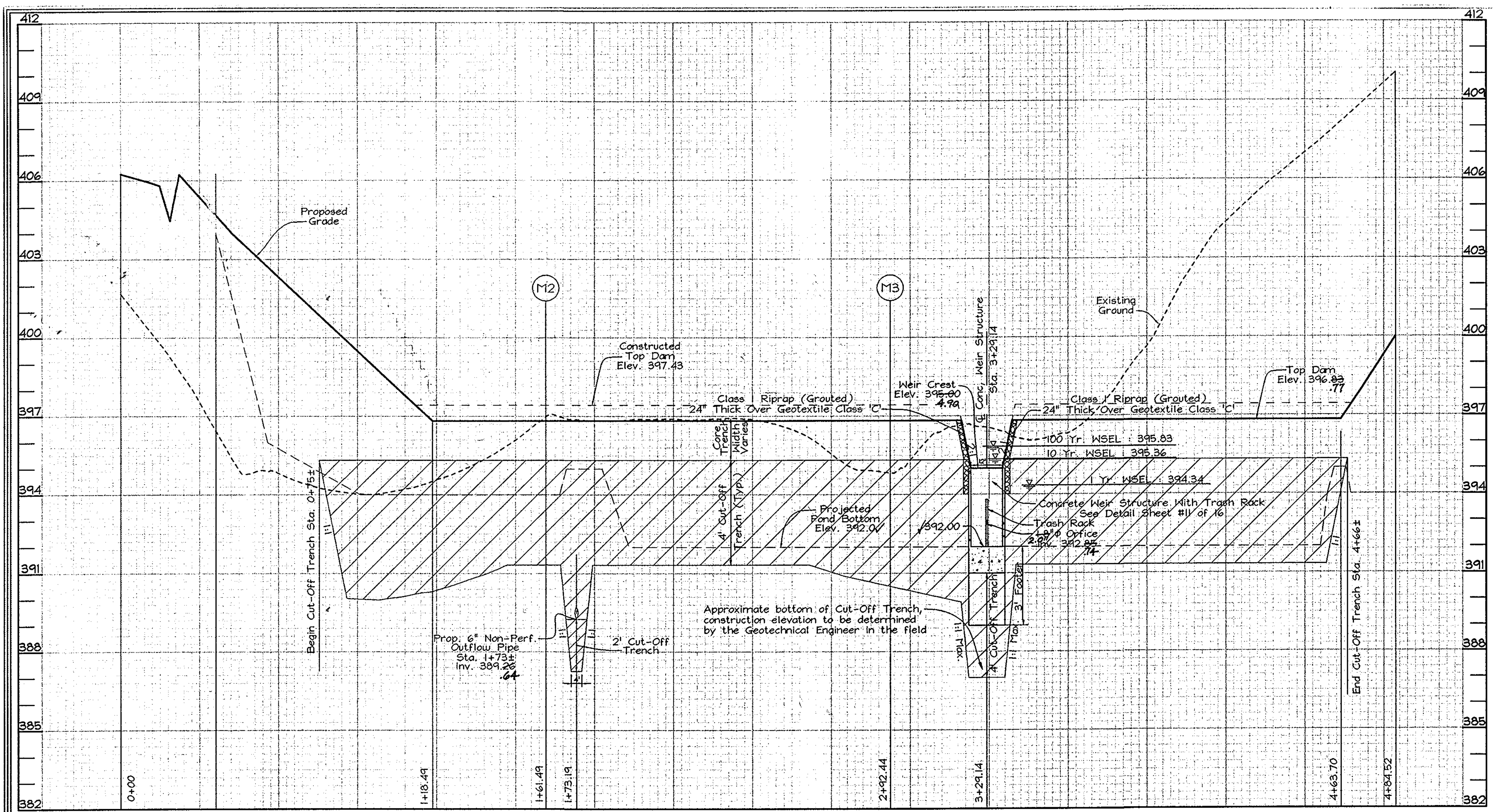
Tax Map 11 Grid 13
3rd Election District

Parcels 19 & 32
Howard County, Maryland

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

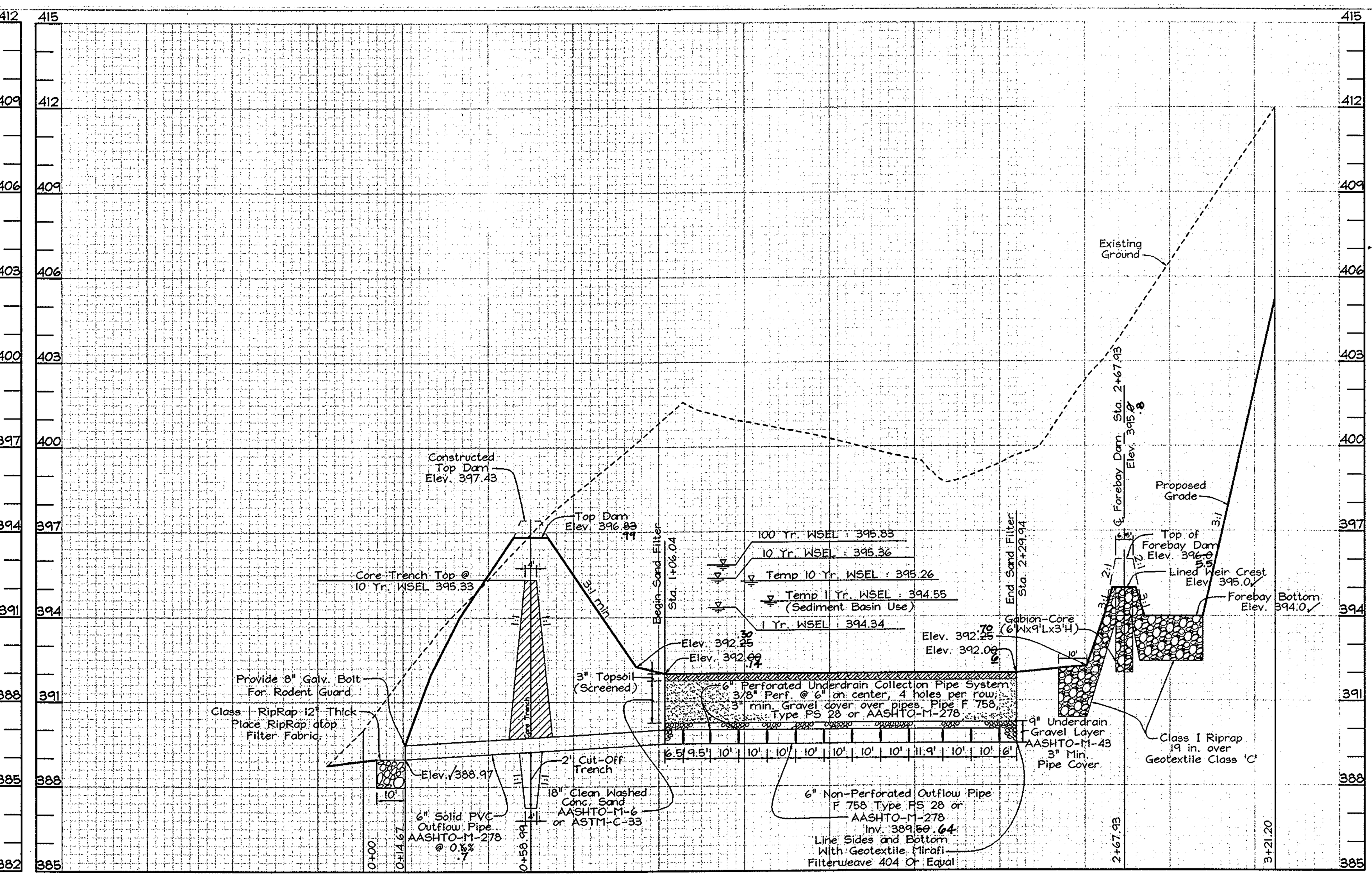
DESIGN BY: PS
DRAWN BY: MY
CHECKED BY: ZYF
SCALE: As Shown
DATE: May 17, 2006
W.O. No.: 3312
SHEET No.: 11 OF 16

F-06-042



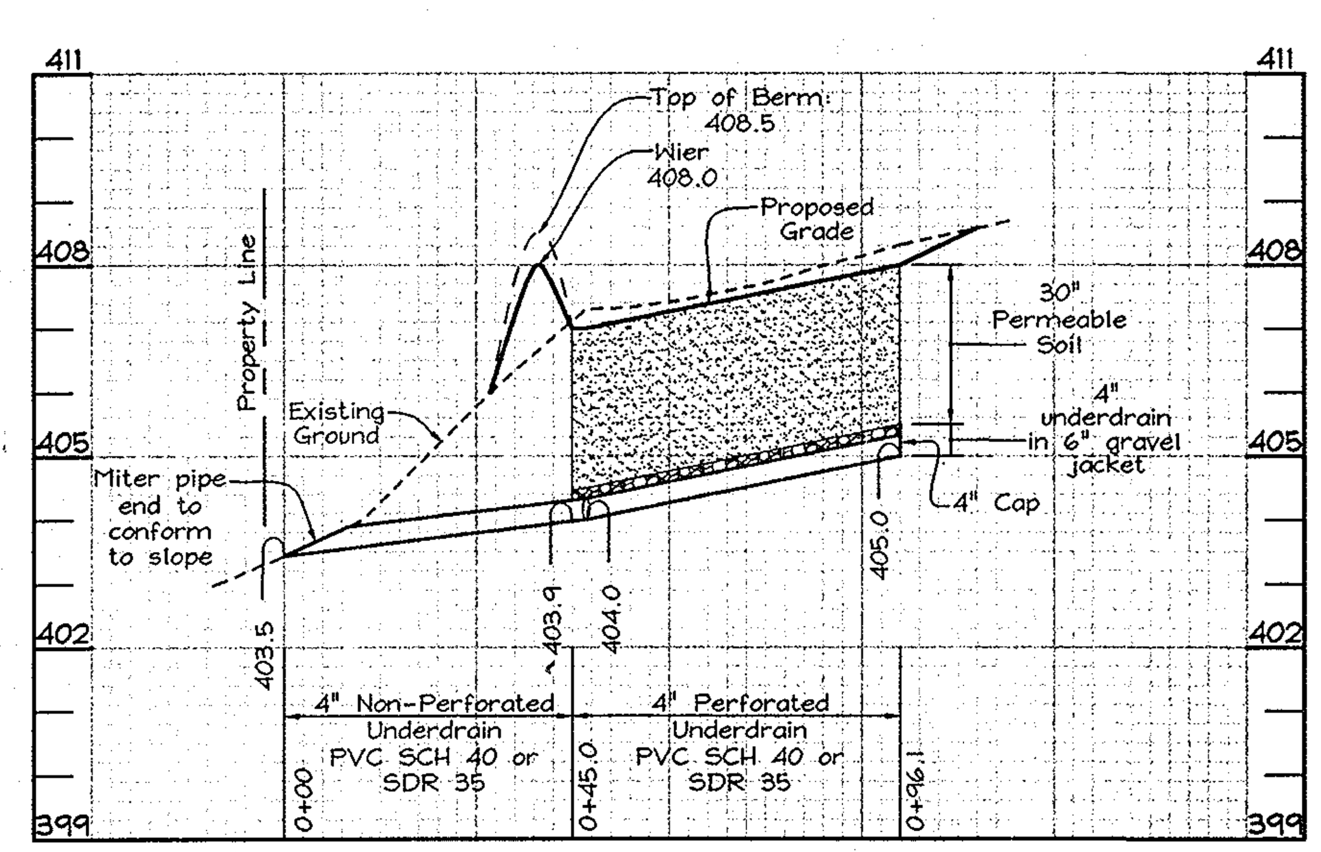
SWM POND
SECTION 'A'-'A' CL EMBANKMENT

Scale: Horizontal- 1"=30'
Vertical-1"=3'



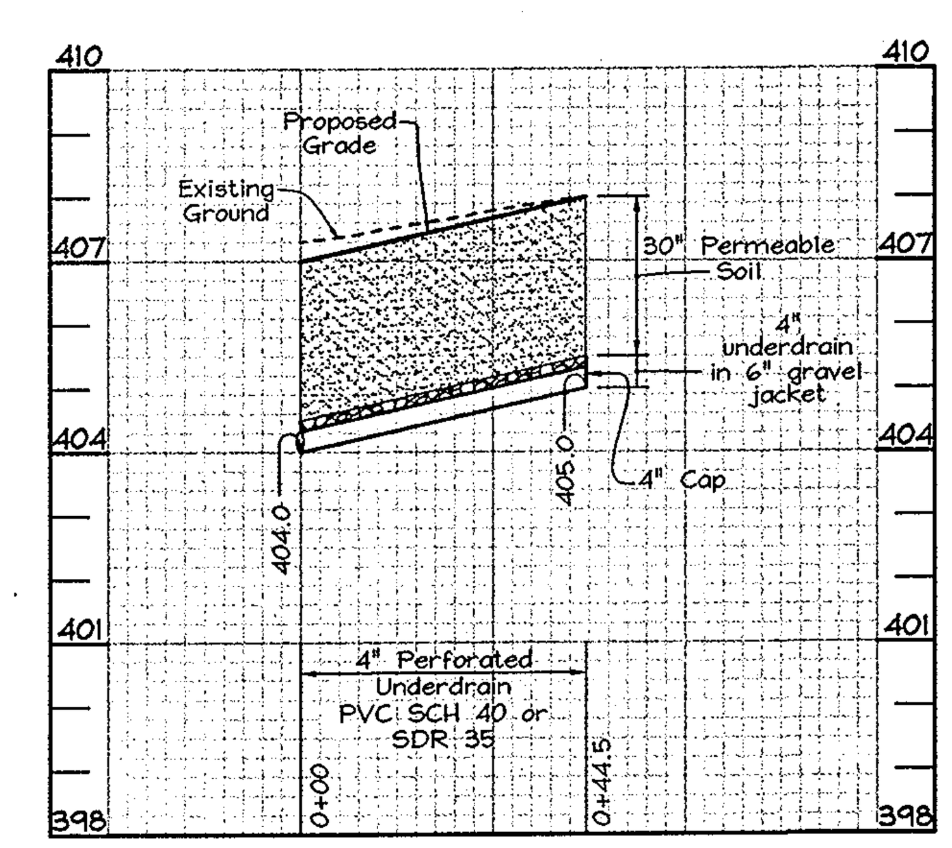
SWM POND
SECTION 'B'-'B' SAND FILTER UNDER DRAIN

Scale: Horizontal- 1"=30'
Vertical-1"=3'



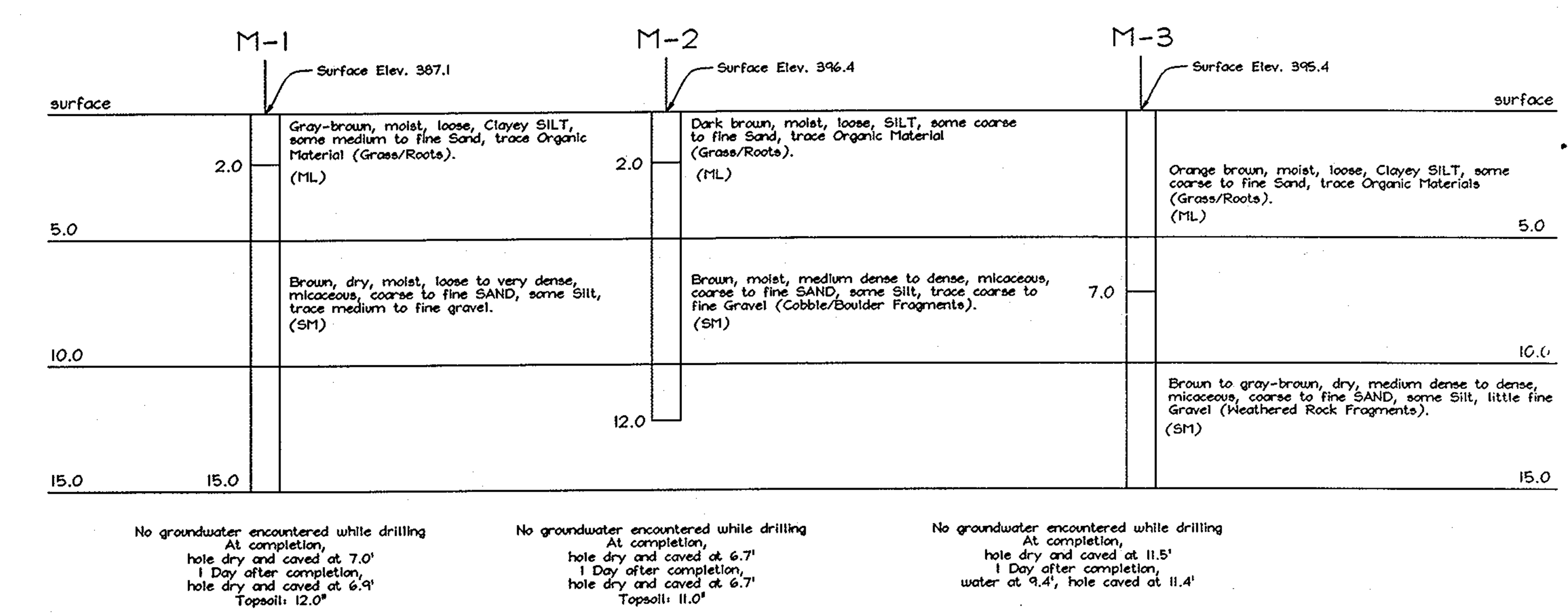
DRY SWALE PROFILE

Scale: Horizontal- 1"=30'
Vertical-1"=3'



DRY SWALE PROFILE

Scale: Horizontal- 1"=30'
Vertical-1"=3'



S.W.M. BORING PROFILES

NOT TO SCALE

OWNER/DEVELOPER

Shalehearth, L.C.
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703.734.9730

STORMWATER MANAGEMENT NOTES AND DETAILS
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13 — Parcels 19 & 32
3rd Election District — Howard County, Maryland

AS-BUILT

ZACHARIA Y. FISCH 12/7/09
P.E. #22418 DATE

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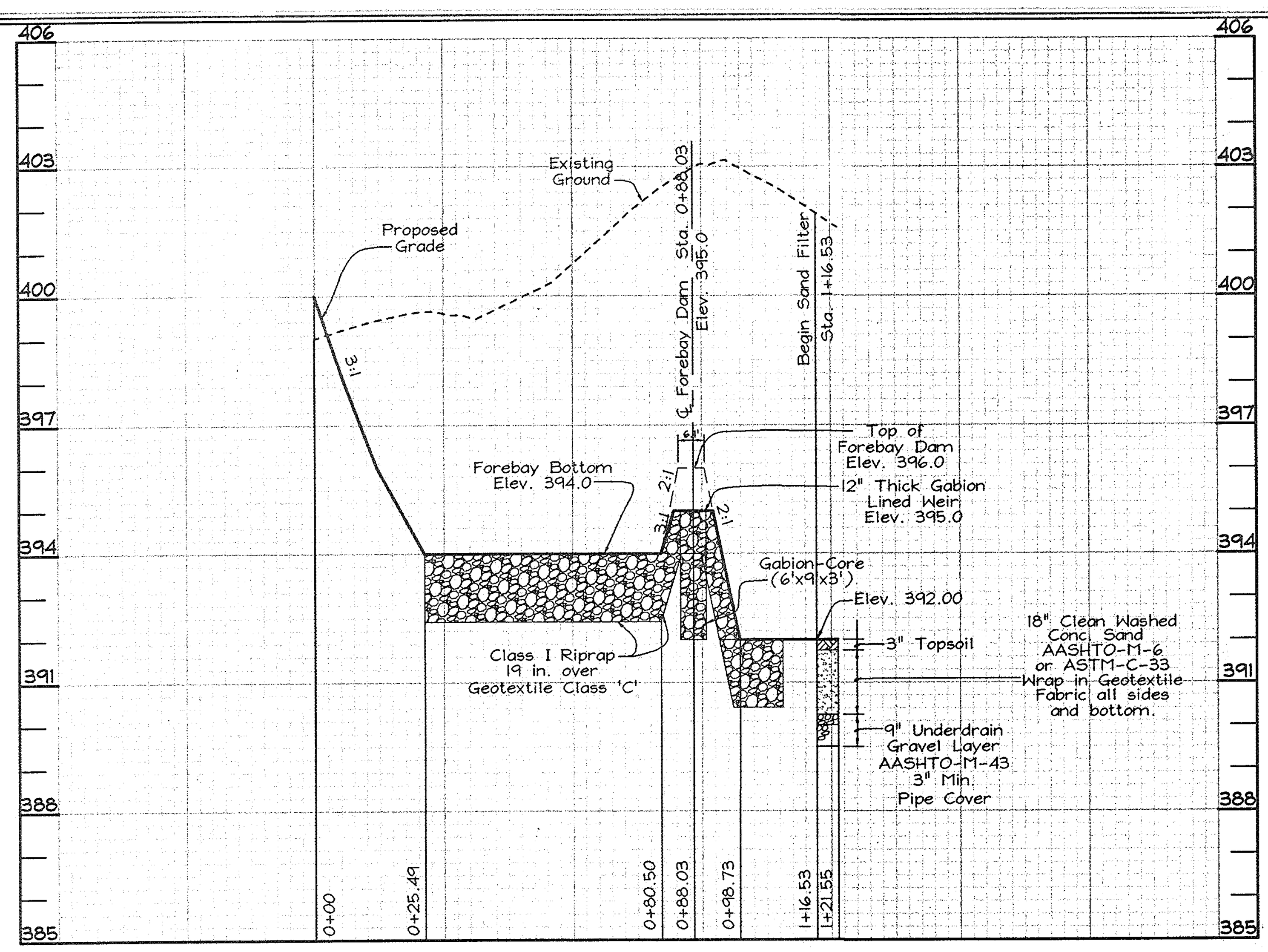
E-mail: info@fsha.biz

DESIGN BY:	PS
DRAWN BY:	MY
CHECKED BY:	ZYF
SCALE:	As Shown
DATE:	May 17, 2006
W.O. No.:	3312
SHEET No.:	12 OF 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/21/06	CHIEF, BUREAU OF HIGHWAYS — DATE 6-6-06
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6/12/06	

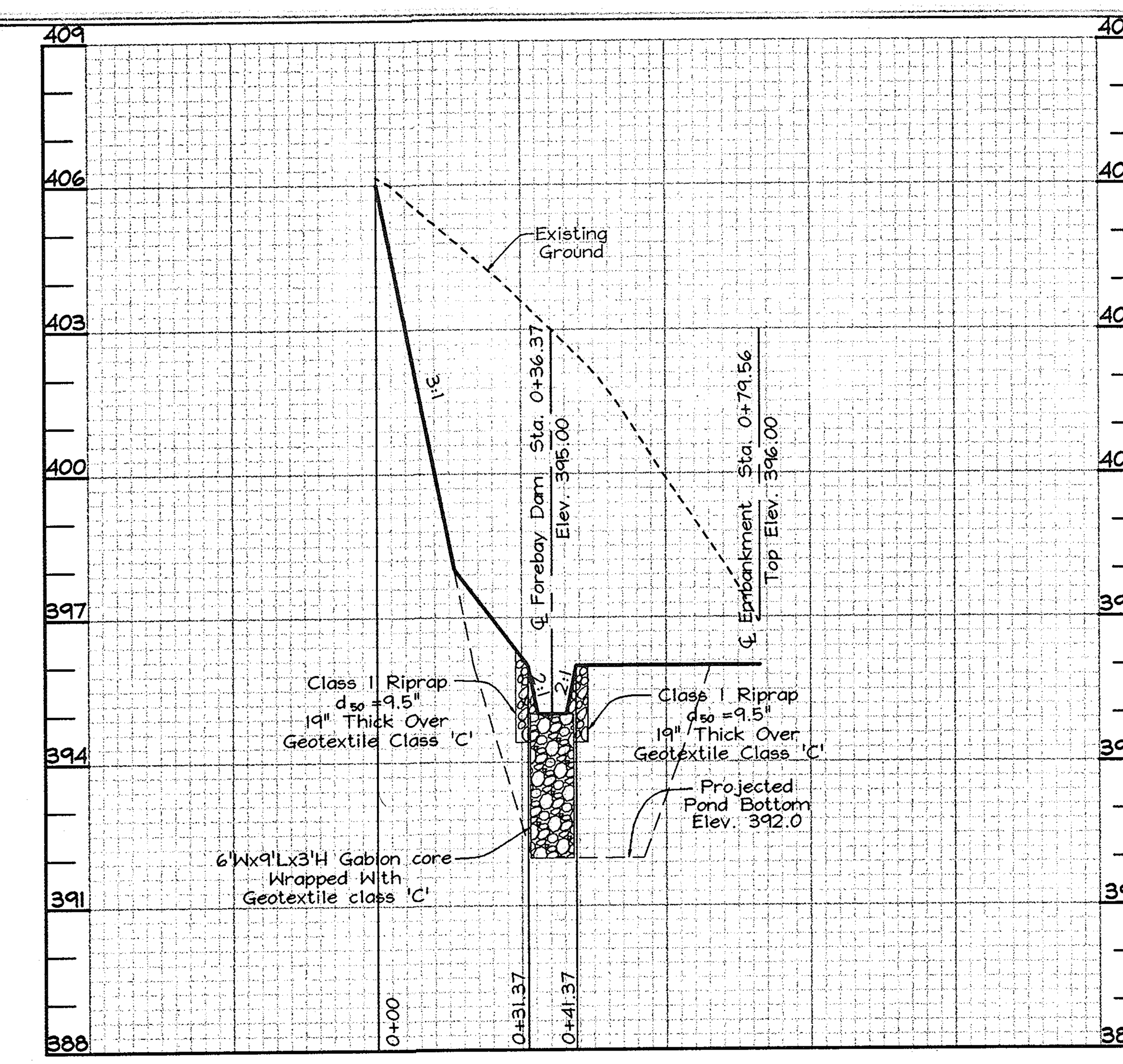
F-06-042



SWM POND

SECTION C-C FOREBAY2 @ S-2

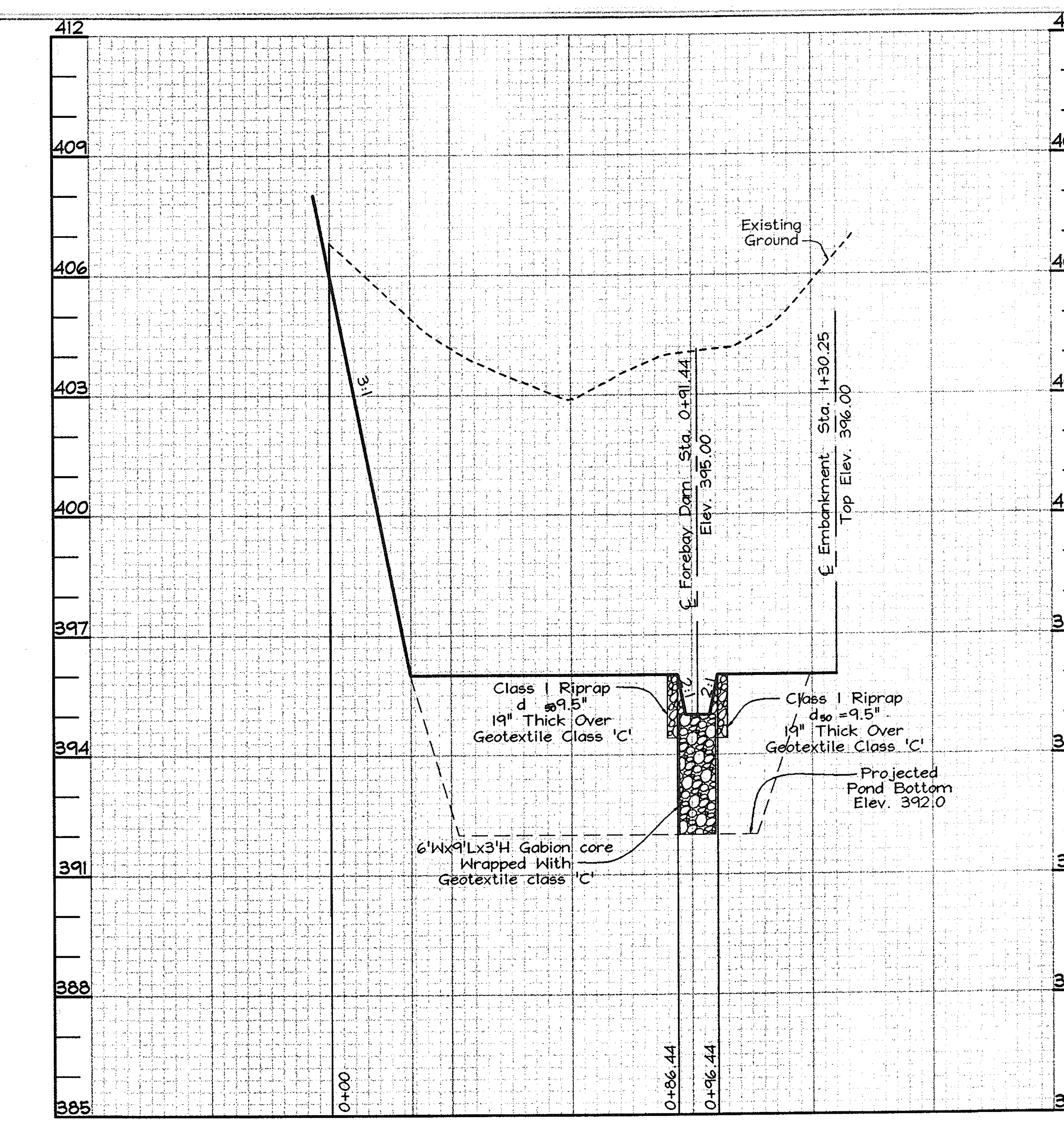
Scale: Horizontal- 1"=30'
Vertical-1"=3'



SWM POND

SECTION D-D FOREBAY2 @ S-2

Scale: Horizontal- 1"=30'
Vertical-1"=3'



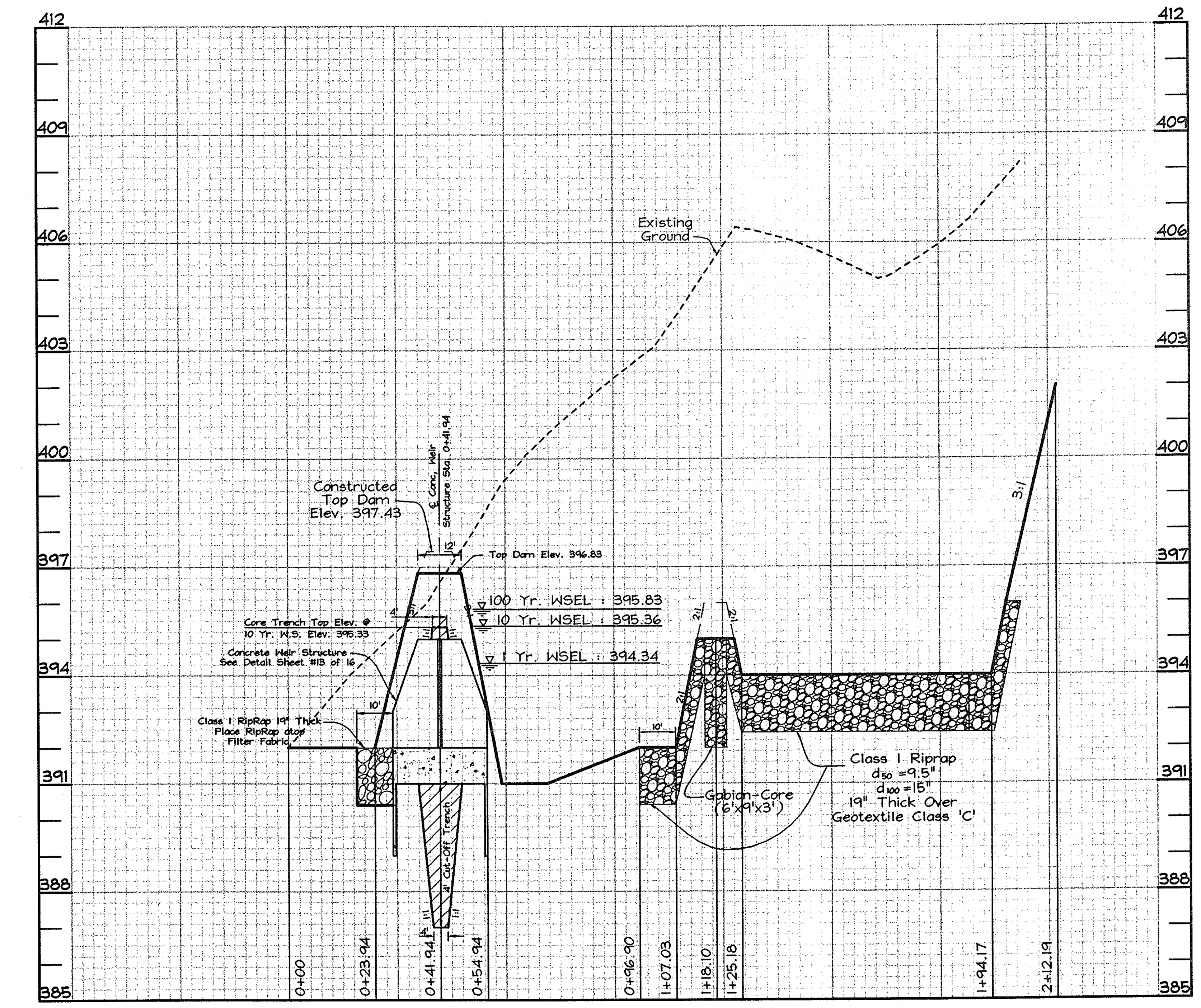
SWM POND

SECTION E-E FOREBAY1 @ S-1

Scale: Horizontal- 1"=30'
Vertical-1"=3'

SWM FACILITY ENLARGEMENT

Scale: 1"=30'



SWM POND

SECTION 'F'-'F' CONCRETE WEIR & FOREBAY1

Scale: Horizontal- 1"=30'
Vertical-1"=3'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 6/21/06
CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

[signature] 6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[signature] 6-6-06
CHIEF, BUREAU OF HIGHWAYS DATE

OWNER/DEVELOPER

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703.734.9730

STORMWATER MANAGEMENT NOTES AND DETAILS
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13
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Parcels 19 & 32
Howard County, Maryland

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER

FSH Associates
Engineers Planners Surveyors
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W.O. No.: 3312
SHEET No.: 13 OF 16

F-06-042

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FOREST CONSERVATION WORKSHEET

	Acres
Net Tract Area	
A. Total Tract Area	27.86
B. Area Within 100 Year Floodplain	--
C. Other deductions	--
D. Net Tract Area	27.86
Land Use Category: RESIDENTIAL-Rural Medium	
Land Use Category	
E. Afforestation Minimum (20 % x D)	5.57
F. Conservation Threshold (25 % x D)	6.97
Existing Forest Cover	
G. Existing Forest on Net Tract Area	5.02
H. Forest Area Above Conservation Threshold	0
Breakeven Point	
I. Forest Retention Above Threshold with no Mitigation	NA
J. Clearing Permitted without Mitigation	0
Proposed Forest Clearing	
K. Forest Areas to be Cleared	0.31
L. Forest Areas to be Retained	4.71
Planting Requirements	
M. Reforestation for Clearing Above Threshold	0
N. Reforestation for Clearing Below the Threshold	0.62
P. Credit for Retention Above Conservation Threshold	0
Q. Total Reforestation Required	0.62
R. Total Afforestation Required	0.55
S. Total Reforestation and Afforestation Requirement	1.17

FOREST CONSERVATION NARRATIVE

This Forest Conservation Plan has been developed in accordance with the Howard County Forest Conservation Manual and the Forest Conservation Act of 1991.

The net tract area of the site is 27.86 acres, with 5.02 acres of existing forest. The existing forest cover on site is less than the afforestation threshold of 5.57 acres. Due to existing forest below the afforestation threshold and 0.31 acres of forest clearing, 1.17 acres of afforestation planting is required, in addition to 4.71 acres of forest retention.

-Forest Conservation Easement 1 is 0.35 acres of retention.

-Forest Conservation Easement 2 is 3.03 acres and contains 2.89 acres of forest retention and 0.14 acres of afforestation planting. Planting is specified at a rate of 200 tpa using 1"cal. stock and is located adjacent to forest retention.

-Forest Conservation Easement 3 is 2.50 acres and contains 1.47 acres of forest retention and 1.03 acres of afforestation planting. Planting is specified at a rate of 350 tpa on the interior planting area, with a 25' wide buffer planting adjacent to lots 7 & 8, planted at a rate of 200 tpa with 1" cal stock. The planting area is located adjacent to forest retention.

The total forest conservation obligation for the site is 5.88 acres, with a total forest conservation surety amount of $66,516.12. (retention: 4.71 acres or 205,167.6 sq. ft. X $ .20 = $41,033.52 and afforestation/reforestation is 1.17 acres or 50,965.2 sq. ft. x $0.50 = $25,482.60).

FOREST CONSERVATION EASEMENT TABLE

EASEMENT	TYPE	AREA (AC.)
1	RETENTION	0.35
2	AFFORESTATION	0.14
	RETENTION	2.89
3	AFFORESTATION	1.03
	RETENTION	1.47
TOTAL		5.88

LEGEND

- Existing Contour
- Proposed Contour
- Existing Trees to Remain
- Silt Fence — SF
- Super Silt Fence — SSF
- Limit of Disturbance — LOD
- Forest Conservation Easement
- Tree Protection Fence — TPF
- Forest Easement Signage
- Forest Retention
- Planting Area
- Forest Clearing*

* Forest Clearing designation on the plan is for computation purposes only and does not represent actual clearing on-site

AS-BUILT *
FOR SWM POND ELEVATIONS SEE SHEET 13 OF 16

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER

ZACHARIA Y. FISCH 12/7/09
P.E.# 22418 DATE

STATE OF MARYLAND — STEPHEN L. HUBER — No. 383 REGISTERED — PROFESSIONAL FORESTER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

6/21/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

No.	DESCRIPTION	DATE
1	REVISE ROAD CROSSECTION AND GRADING	MAR 2007

REVISION

EXPLORATION RESEARCH, INC.
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS
8318 FORREST STREET
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TEL: (410) 750-1150 FAX: (410) 750-7350
EMAIL: EXPLORATIONRES@CS.COM

OWNER/DEVELOPER
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703.734.9730

FOREST CONSERVATION PLAN
SADDLEBROOK FARM
LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13
3rd Election District
Parcels 19 & 32
Howard County, Maryland

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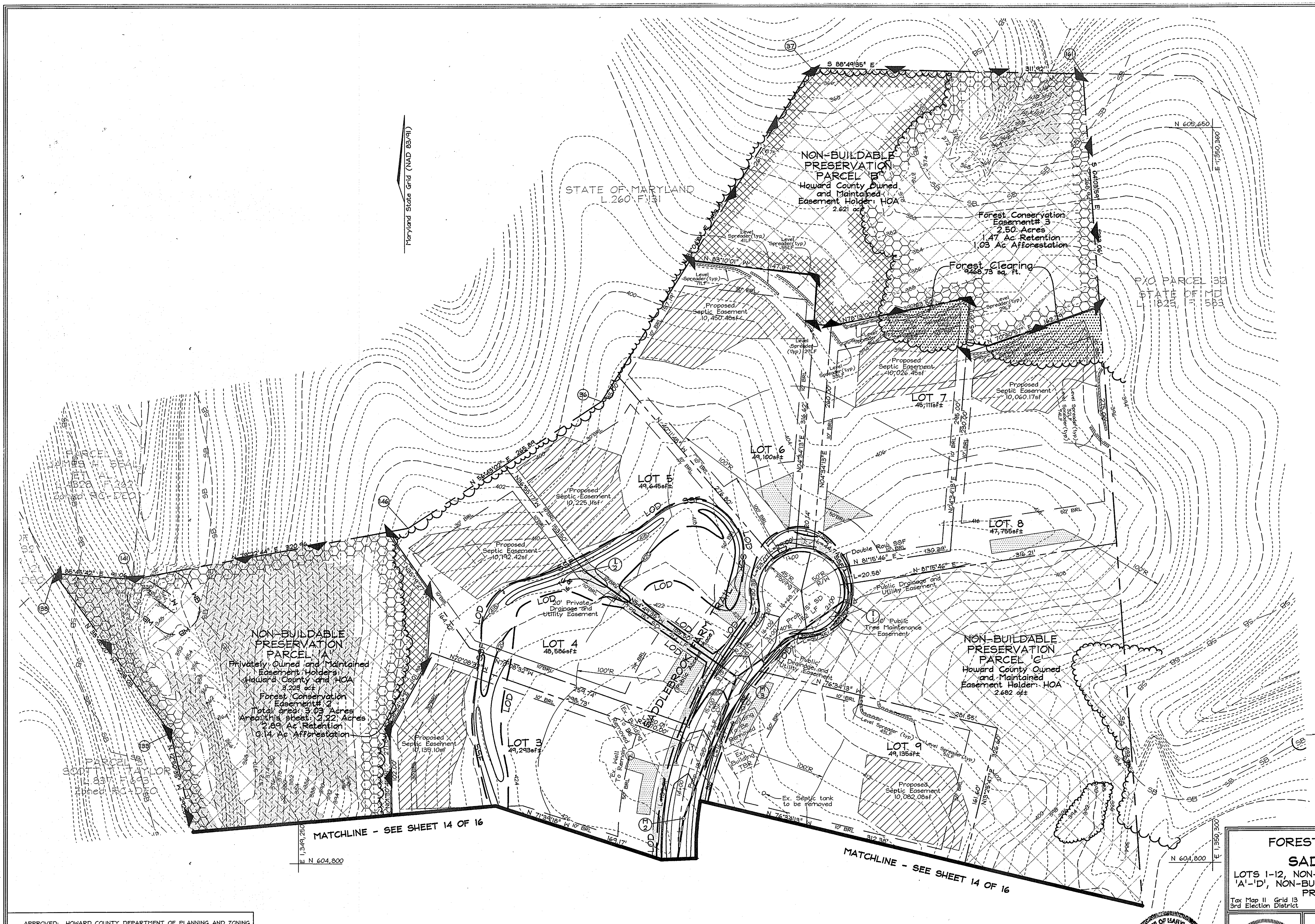
DATE:	May 17, 2006
W.O. No.:	3312
SHEET No.:	14 OF 16

F-06-042



LEGEND

Existing Contour	382
Proposed Contour	382
Existing Trees to Remain	
Silt Fence	SF
Super Silt Fence	SSF
Limit of Disturbance	LOD
Forest Conservation Easement	
Tree Protection Fence	TPF
Forest Easement Signage	
Forest Retention	
Planting Area	
Forest Clearing*	

* Forest Clearing designation on the plan is for computation purposes only and does not represent actual clearing on-site

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FOREST CONSERVATION PLAN

SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

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DESIGN BY:	PS
DRAWN BY:	AB
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SCALE:	1"=50'
DATE:	May 17, 2006
W.O. No.:	3312
SHEET No.:	15 OF 16

STATE OF MARYLAND — STEPHEN L. HURST — REGISTERED No. 363 — PROFESSIONAL FORESTER

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton 6/21/06
CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

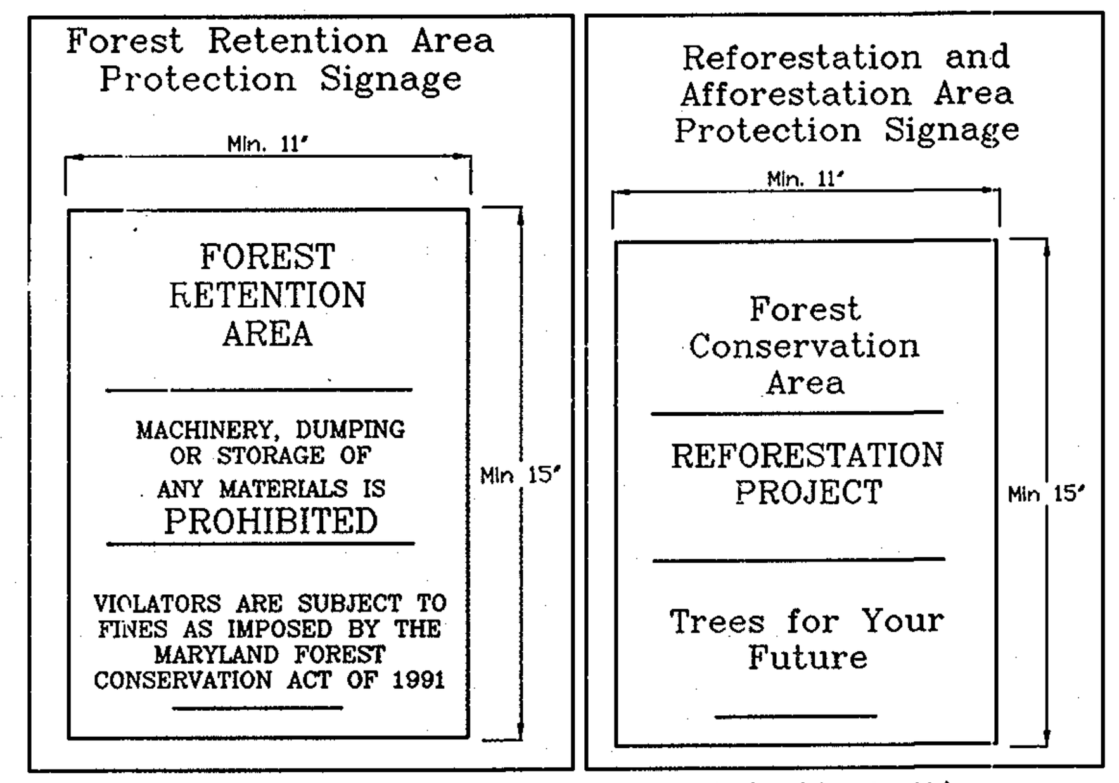
F-06-042

Easement 2: AFFORESTATION PLANTING AREA: 0.14 Ac. (200 TPA)
(0.14 ac x 200 TPA = 28 - 1" cal. trees)

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
4	Acer rubrum	Red Maple	1" Cal	5' o.c.	Container or B & B
5	Liquidambar styraciflua	Sweetgum	1" Cal	15' o.c.	
6	Quercus rubra	Red oak	1" Cal	15' o.c.	
5	Amelanchier canadensis	Service berry	1" Cal	15' o.c.	
4	Cercis canadensis	Red bud	1" Cal	15' o.c.	
4	Quercus alba	White oak	1" Cal	15' o.c.	
28	Total Plantings				

Easement 3: Total Afforestation Planting Area: 1.03 Ac.
-Lot Line Buffer Planting (25' wide) 1" Cal Stock, 200 TPA: 0.16 Ac.
-Whip Planting 2-3', 1-3 Gal. Container Grown, 350 TPA: .87 Ac.
(0.16 ac x 200 TPA = 32 - 1" cal. trees; 0.87 ac x 350 TPA = 305 - whips; Total 337 trees)

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
50	Acer rubrum	Red Maple	WHIP 2-3'	11' o.c.	1-3 Gallon Container Grown
50	Liquidambar styraciflua	Sweetgum	WHIP 2-3'	11' o.c.	
50	Quercus rubra	Red oak	WHIP 2-3'	11' o.c.	
55	Amelanchier canadensis	Service berry	WHIP 2-3'	11' o.c.	
50	Cercis canadensis	Red bud	WHIP 2-3'	11' o.c.	
50	Quercus alba	White oak	WHIP 2-3'	11' o.c.	
10	Acer rubrum	Red Maple	1" Cal.	15' o.c.	Container or B & B
10	Liquidambar styraciflua	Sweetgum	1" Cal.	15' o.c.	
12	Quercus rubra	Red oak	1" Cal.	15' o.c.	
337	Total Plantings				

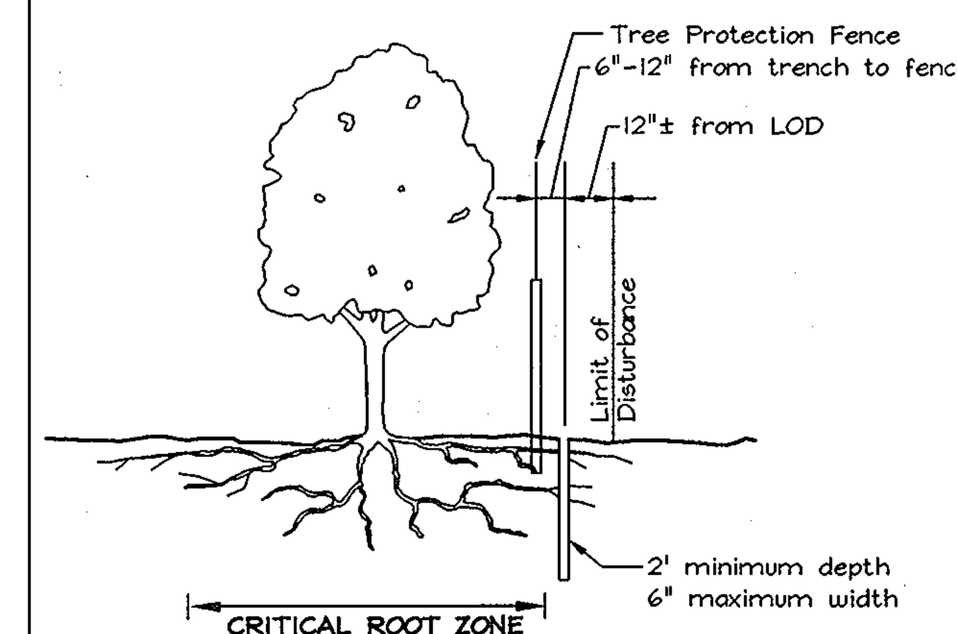


SIGN DETAIL: PERMANENT SIGN

SIGNAGE NOTE: ALL TREE PROTECTION SIGNS SHALL BE PLACED ON METAL 'T' POSTS OR PRESSURE TREATED WOOD POLES. NO ATTACHMENT OF SIGNS TO TREES IS PERMITTED.

ROOT PRUNING

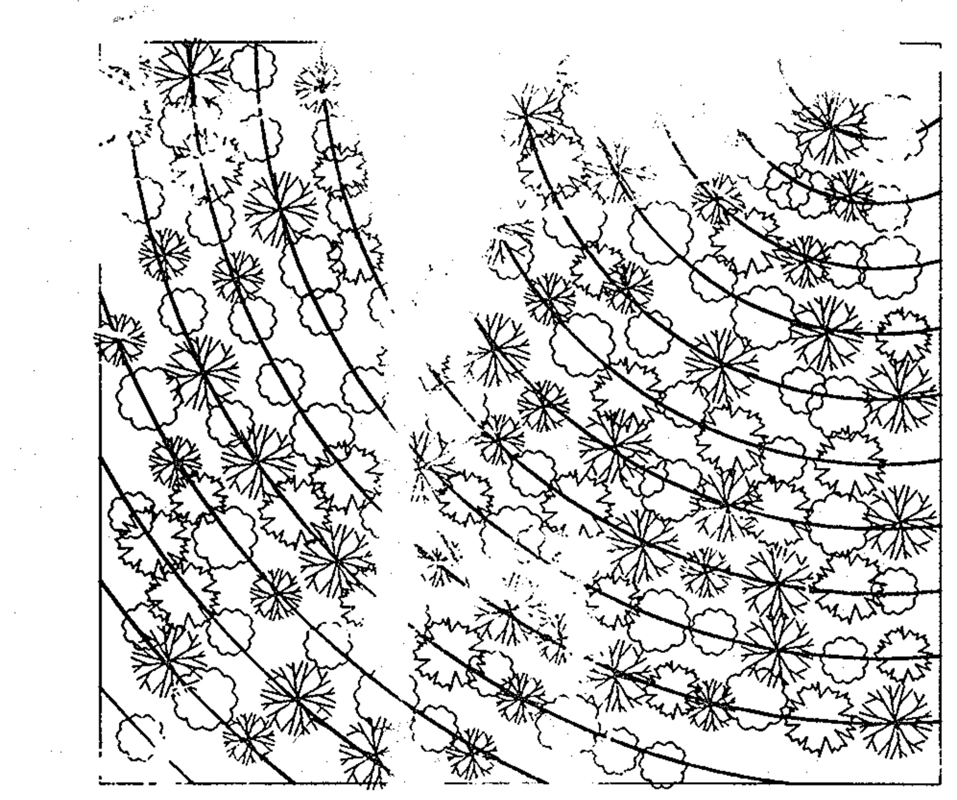
1. Retention areas shall be set prior to construction
2. Boundaries of retention areas shall be flagged, and location of trench shall be specified by ERI Qualified Professional.
3. Roots shall be cut cleanly with root pruning equipment. Where roots >1" are found, trenching shall be done by air spade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



Soil Protection Zone Notes

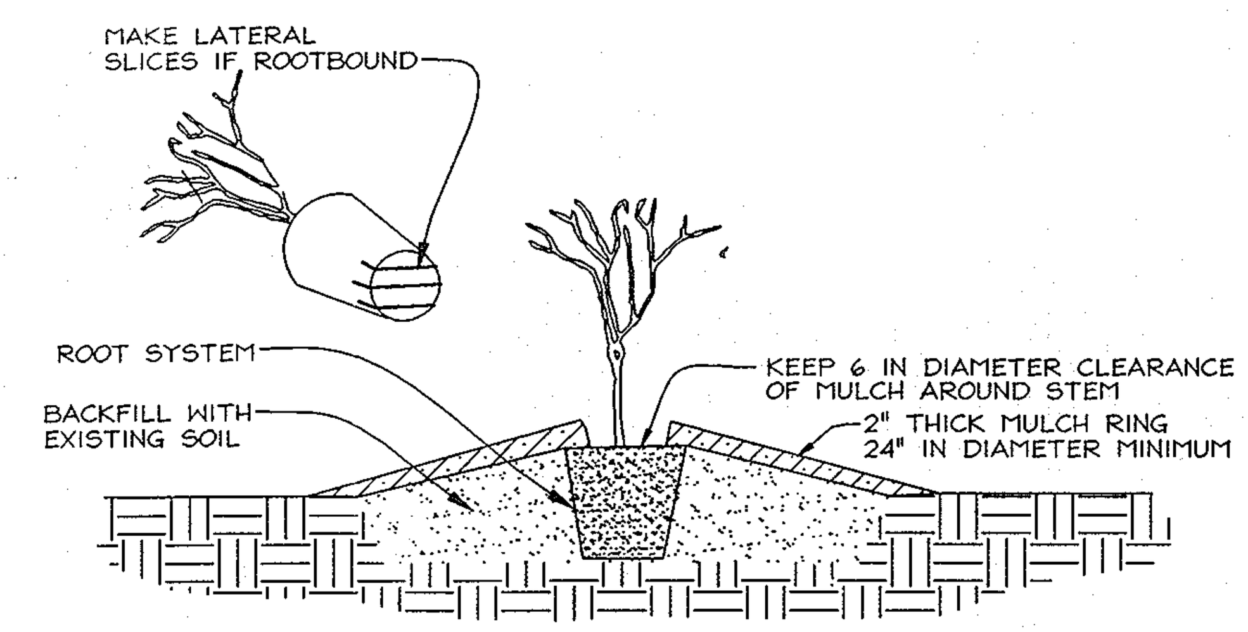
1. The Soil Protection Zone shall include all areas contained inside the Limit of Disturbance.
2. Where possible, the Soil Protection Zone shall extend to the drip line of specimen trees. For other groups of trees, the zone shall be the drip line or 40% of the height of the tree, whichever is greater.
3. No construction activity is permitted within the Soil Protection Zone.
4. 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.
5. Root pruning shall occur prior to the beginning of construction.
6. 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 ERI Forest Conservation Professional.
7. Prior to construction, the Limits of Disturbance shall be marked and the ERI Professional shall determine which trees will need preventative treatment or removal.
8. Tree maintenance and removal shall be undertaken by a qualified MD Tree Expert to ensure damage to surrounding trees is minimized.
9. Brush and limbs removed for construction shall be chipped and spread at the edge of the Soil Protection Zone to a depth to to exceed 6 inches. This shall occur outside the Soil Protection Zone where compaction could impact otherwise unprotected Critical Root Zone.

CURVILINEAR ...IZED PLANTING



PLANT ...ACEMENT DETAIL
NOT TO SCALE

1. MIX TREE AND SHRUB S... IN THE STAGING AREA.
2. SET THE GUIDE CURVILINEA... INE AS CLOSE TO CONTOUR AS POSSIBLE.



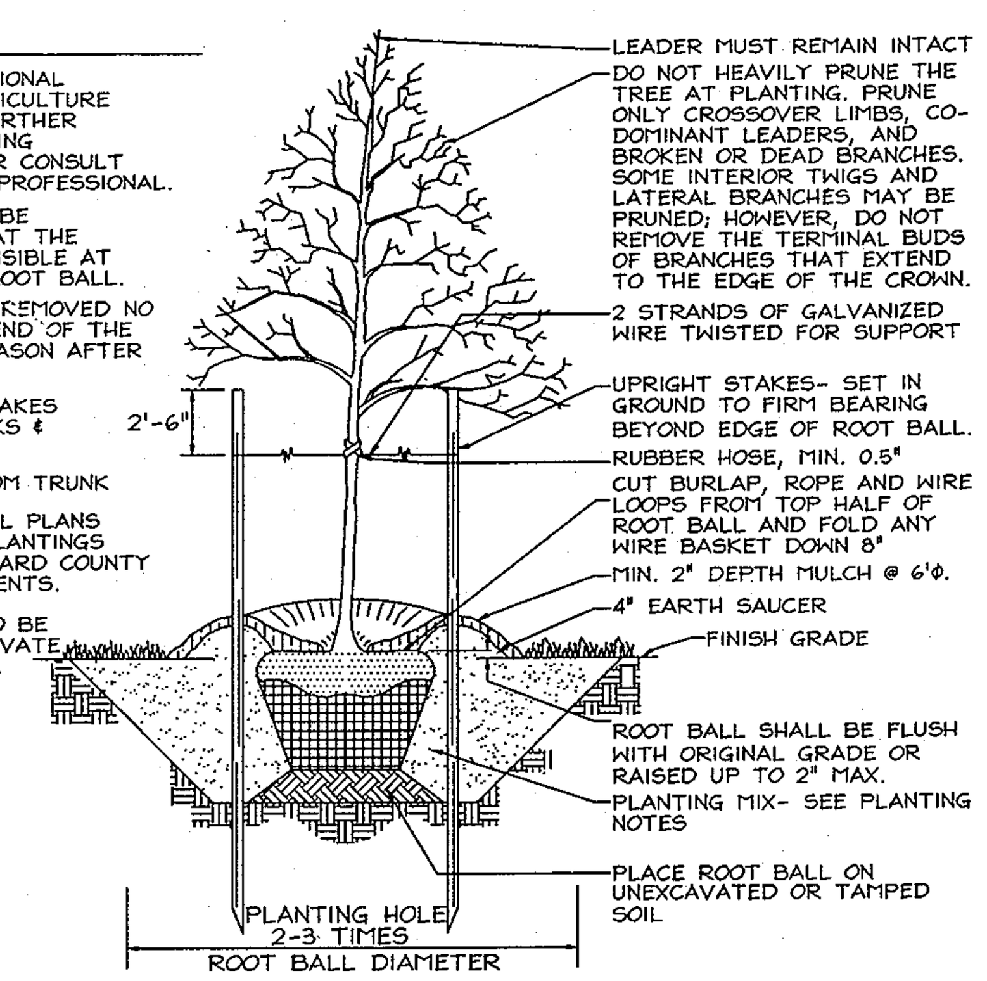
CONTAINER PLANTING
NOT TO SCALE

PLANTING PROCEDURE FOR CONTAINER GROWN PLANTS

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

NOTES

1. CONSULT INTERNATIONAL SOCIETY OF ARBORICULTURE GUIDELINES FOR FURTHER DETAILS OF PLANTING SPECIFICATIONS, OR CONSULT WITH A QUALIFIED PROFESSIONAL.
2. EACH TREE SHALL BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL.
3. STAKES SHALL BE REMOVED NO LATER THAN THE END OF THE FIRST GROWING SEASON AFTER PLANTING.
4. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
5. KEEP MULCH 1" FROM TRUNK
6. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
7. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



TYPICAL TREE PLANTING AND STAKING

DECIDUOUS TREES UP TO 2-1/2" CALIPER — NOT TO SCALE

Forest Tree Protection and Management Notes

1. Tree protection devices shall be installed prior to any grading or land clearing.
2. After the boundaries of the retention areas have been staked and flagged and before any disturbance has taken place a pre-construction meeting with the Howard County Inspector is required.
3. Provide maintenance to tree protection devices and signage to maintain their integrity throughout the duration of the project.
4. Attachment of signs to tree protection devices to maintain their integrity throughout the duration of the project.
5. Any significant changes made to the Forest Conservation Plan shall be made with the prior approval if the Howard County Dept. Of Planning and Zoning.
6. No burial of discarded material is permitted within the Forest Conservation and Planting areas.
7. No open burning within 100 feet of wooded areas is permitted.
8. Post construction phase.
   a. Inspect existing trees around the perimeter of the site for signs of root or trunk damage and excessive soil compaction.
   b. Remove dead or dying trees and evaluate for hazard tree removal.*
   c. All temporary forest protection devices will be removed after construction.
   d. Following completion of construction, prior to use, the county inspector shall inspect the entire site for compliance with this Forest Conservation Plan.

* A licensed Arborist or Forester should be retained for this service as needed.

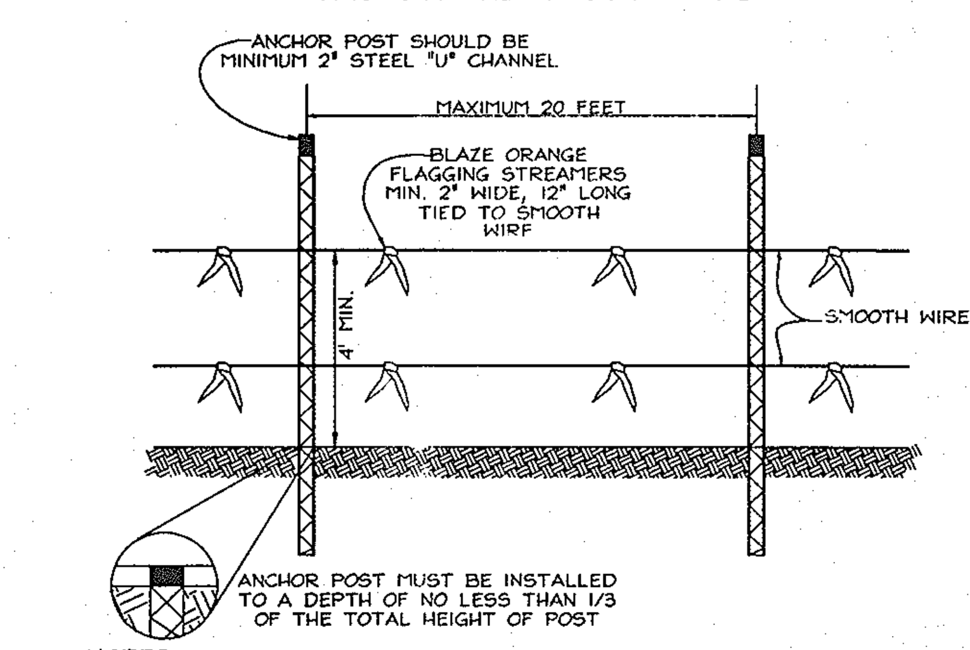
Afforestation Area Planting Notes

1. Initial planting inspection and certification required. Planting contractor to notify ERI qualified professional 24 hours in advance of planting.
2. 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 conditions warrant.
3. 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 Hollins, N.Y. 11423 or approved equal.
4. Plant materials shall be planted in accordance with the planting diagram, planting details and planting schedule.
5. Plant 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.
6. 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.
7. 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 materials.
8. Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.
9. Planting holes should be excavated to a minimum diameter of 2.5 to 3 times the diameter of the root ball or container. Mechanical auguring is preferred with scarification of the sides of each hole.
10. Deer repellents, such as repellex, shall be used or 5' tree shelters must be installed.

Afforestation Area Monitoring Notes

1. 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.
2. 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.
3. 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.
4. Effective monitoring will assess plant survivability during the first growing season and make recommendations for reinforcement planting if required at that time.

TWO STRAND SMOOTH WIRE



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 TO INSTALLING DEVICE.
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

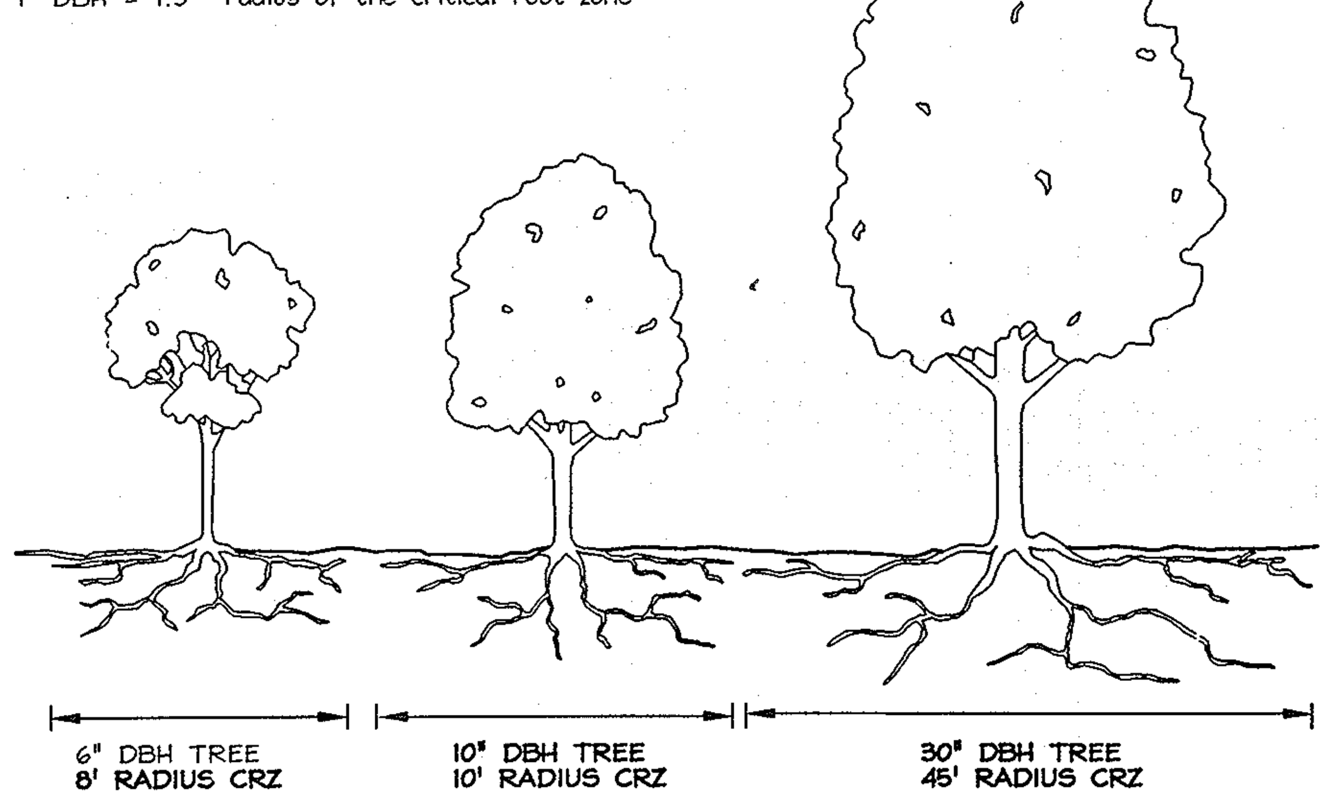
CRITICAL ROOT ZONE

For the edge of large areas, use the greater of the two choices below:

1" DBH of the tree = 1' radius of the critical root zone — or — 8 ft radius circle around the trunk of the tree

For isolated specimen trees:

1" DBH = 1.5 ' radius of the critical root zone



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

6/21/06
DIVISION OF LAND DEVELOPMENT — DATE

6/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

EXPLORATION RESEARCH, INC.
ENVIRONMENTAL CONSULTANTS
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8318 FORREST STREET
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OWNER/DEVELOPER
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6820 Elm Street Suite 200
MC Lean, Virginia 22101
703.734.9730

FOREST CONSERVATION NOTES AND DETAILS
SADDLEBROOK FARM

LOTS 1-12, NON-BUILDABLE PRESERVATION PARCELS 'A'-'D', NON-BUILDABLE PARCEL 'E' AND BUILDABLE PRESERVATION PARCEL 'F'

Tax Map 11 Grid 13
3rd Election District

Parcels 19 & 32
Howard County, Maryland

STATE OF MARYLAND — STEPHEN L. HUBER — No. 363 — REGISTERED PROFESSIONAL FORESTER

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22416 — PROFESSIONAL ENGINEER

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

DESIGN BY:	PS
DRAWN BY	AB
CHECKED BY:	ZYF
SCALE:	As Shown
DATE:	May 17, 2006
W.O. No.:	3312
SHEET No.	16 OF 16

F-06-042