GENERAL NOTES

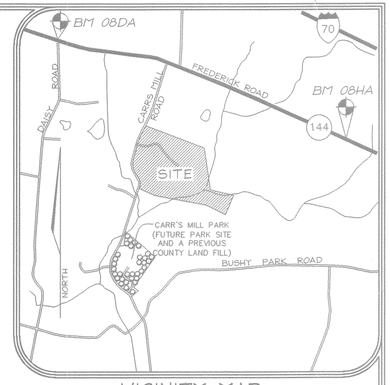
1. Subject property zoned "RC-DEO" per 10/18/93 Comprehensive Zoning Plan.
2. Private water and sewer to be utilized.
3. Soils map no. 6.
4. Gross area of site: 84.665 Ac.±
5. Area of proposed public R/W: 0.965 Ac.±
6. Number of proposed buildable lots: 18
   Area of proposed buildable lots: 17.372 ac.±
7. Number of proposed buildable preservation parcels: 1
   Area of proposed buildable preservation parcels: 18.166 ac.±
8. Number of proposed non-buildable preservation parcels: 3
   Area of proposed non-buildable preservation parcels: 48.162 ac.±
9. Density calculations:
   a.) Number of lots based on own density:
   84.665 ac / 4.25 = 19.92, therefore 19 units
   b.) Number of dwelling units proposed = 19
10. The lots shown hereon comply with the minimum ownership, width and lot area as required by the Maryland State Department of the Environment.
11. Topography shown hereon is based on an aerial survey prepared by Harford Aerial Surveys in Jan., 2001.
12. A.P.F.O. traffic study prepared by The Traffic Group Inc., approved under S-00-06 on 4/3/00.
13. Wetlands delineation and report and forest stand delineation prepared by ECO-Science Professionals, Inc. approved under S-00-06 on 4/3/00.
14. The project is not within the metropolitan district.
15. Previous Howard County file numbers: F-91-72; S-00-06; P-01-05
16. The project is in conformance with the latest Howard County Standards unless waivers have been approved.
17. 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 08DA and 08HA were used for this project.
18. The Micropol Extented Detention S.W.M. facility, shown hereon, is designed to control C.P.v and W.Q.v. The pond will be privately owned and maintained by the Homeowners Association.
19. No clearing, grading or construction is permitted within the wetlands, streams or their required buffers, unless approved by Howard County. In accordance with COMAR Title 01, Subtitle 05, Chapter 04, agricultural activities in the non-abandoned wetlands are exempt from permit requirements, also, a permit from the Army Corps of Engineers is not required for disturbance in the non-abandoned wetlands that are associated with agricultural activities.
20. In accordance with section 16.115.(d) of the subdivision and land development regulations this development has a non-critical floodplain and therefore is exempt from delineating the floodplain on the preservation parcel.
21. The geotechnical report for this project was prepared by Herbst/Benson & Associates.
22. Financial Surety for the required perimeter and SWM landscaping shall be posted as part of the Developer's Agreement in the amount of $37,500.00 for 99 shade trees (81 proposed trees + 11 proposed 2-1/2" cal. trees within forest conservation easement + 7 existing trees) + 52 evergreen trees.
23. Financial surety for the required 48 street trees will be posted as part of the Developer's Agreement.
24. 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.
25. The contractor shall notify Miss Utility at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
26. Traffic control devices, markings and signs 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.
27. ▨ This area designates a private sewage easement of at least 10,000 square feet (or 10,000 square feet per lot for shared drain fields associated with a shared sewage disposal facility) 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 sewage is available. These easements shall become null and void upon connection to a public sewage system. The County Health Officer shall have the authority to grant variances for encroachments into the private sewage easement. Recordation of a modified sewage easement shall not be necessary.
28. All driveway culverts shall be 12" C.M.P. or approved equivalent.
29. If impervious areas are increased above the allowable disconnect area (500 s.f. per disconnect) for lots 7, 8 , 9 & the building on preservation parcel 'A' a new SWM plan will be required for these new impervious areas. The rear half of the proposed buildings on lots 7, 8, & 9 are provided for SWM at 1,500 sq.ft. (3 disconnects x 500 sq.ft. each). The building on preservation parcel 'A' is provided for SWM at 2,500 sq.ft. (5 disconnects x 500 sq.ft. each). If impervious areas are increased above these amounts within these areas SWM for this increase will be required.
30. 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.
31. This subdivision plan is grandfathered to the fourth edition of the subdivision and land development regulations and the October 1993 zoning regulations as revised 7/12/01.
32. The 15' x 20' concrete pad and entrance walls or signs to be owned by the Maple Ridge Farms Homeowners Association.

CENTERLINE ROAD CURVE DATA

CURVE NUMBER	STATIONS	DELTA	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LENGTH	TANGENT
C1-Maple Ridge Dr.	PC 6+65.74 - PT 8+90.20	54°54'57"	230.00'	224.46'	N36°50'04"W	215.66	122.08

ROAD CONSTRUCTION PLANS

MAPLE RIDGE

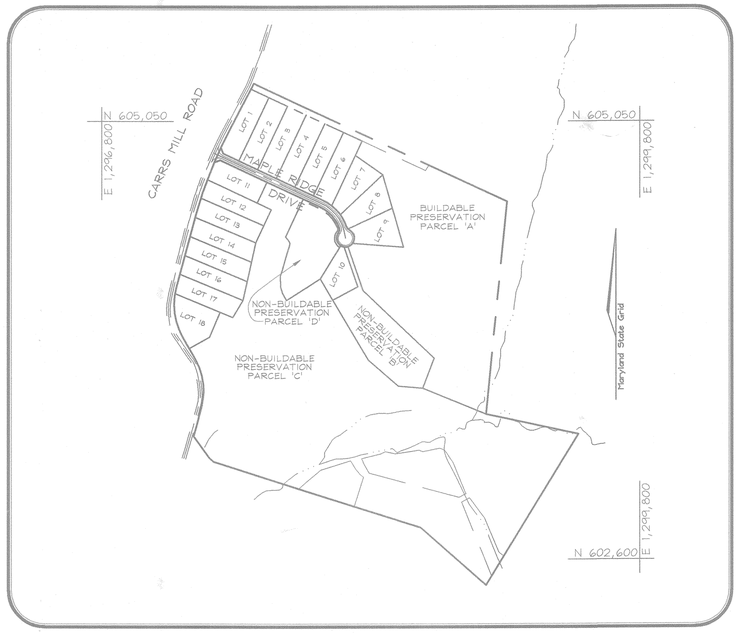


VICINITY MAP

SCALE:1"=2000'

BENCHMARKS

Sta.	08DA	N 606,934.189	E 1,295,730.523	El.: 554.836' (feet)
		N 184,993.911	E 394,939.454	El.: 169.115' (meters)
Sta.	08HA	N 604,764.622	E 1,302,045.261	El.: 621.796' (feet)
		N 184,334.150	E 396,864.196	El.: 189.524 (meters)



LOCATION MAP

SCALE: 1"=400'

LEGEND

Existing Contour	382
Proposed Contour	382
Existing Spot Elevation	382.3
Proposed Spot Elevation	+82.53
Direction of Flow	
Existing Trees	
Existing Trees to Remain	
15-24.99% Slopes	
Wetlands	
Access Easement	
Forest Conservation Easement	
Proposed Grass Swale	

SHEET INDEX

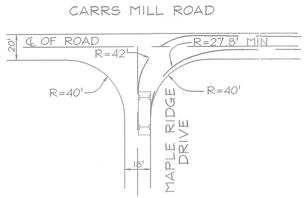
DESCRIPTION	SHEET No.
Cover Sheet	1 of 9
Road Plan and Profile	2 of 9
Grading, Sediment and Erosion Control Plan	3 of 9
Traffic Control Plan, Sediment and Erosion Control and Miscellaneous Details	4 of 9
Storm Drain Drainage Area Map, Profiles and Details	5 of 9
Stormwater Management Notes and Details	6 of 9
Landscape Plan	7 of 9
Forest Conservation Plan	8 of 9
Forest Conservation Plan	9 of 9

ROAD CLASSIFICATION

ROAD NAME	CLASSIFICATION	R/W
Maple Ridge Drive	Public Access Place	40'

STREET LIGHT TABLE

Street Name	Stations	Offset	Fixture
Maple Ridge Drive	℄ Station 0+24	25' Right	150-Watt Premier Colonial Fixture Mounted On A 14-Foot Black Fiberglass Pole



MININUM TURNING PATH FOR SU DESIGN VEHICLE

SCALE 1"=50'

AS-BUILT

FOR ROADS, STORM DRAINS, EROSION & SEDIMENT CONTROL

STATE OF MARYLAND CLYDE BROOKE WALLER 735 PROFESSIONAL ENGINEER

1/19/05

FOR STORMWATER MGMT & LANDSCAPING

STATE OF MARYLAND ZACHARIA YOSEF FISH 22418 PROFESSIONAL ENGINEER

Zacharia Y. Fish

1/18/05 P.E.# 22418

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Harris 8/9/02
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

8/2/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

7-31-02
CHIEF, BUREAU OF HIGHWAYS DATE

OWNER/DEVELOPER
Maple Ridge L.L.P.
c/o James W. Ward, Partner
16307 Carrs Mill Road
Woodbine, Maryland 21797

COVER SHEET
MAPLE RIDGE
LOTS 1 THRU 18 AND PRESERVATION PARCELS 'A', 'B', 'C', AND 'D'

TAX MAP 8 GRID 14 & 20
4th ELECTION DISTRICT

PARCEL 51 & 378
HOWARD COUNTY, MARYLAND

STATE OF MARYLAND ZACHARIA YOSEF FISH 22418 PROFESSIONAL ENGINEER

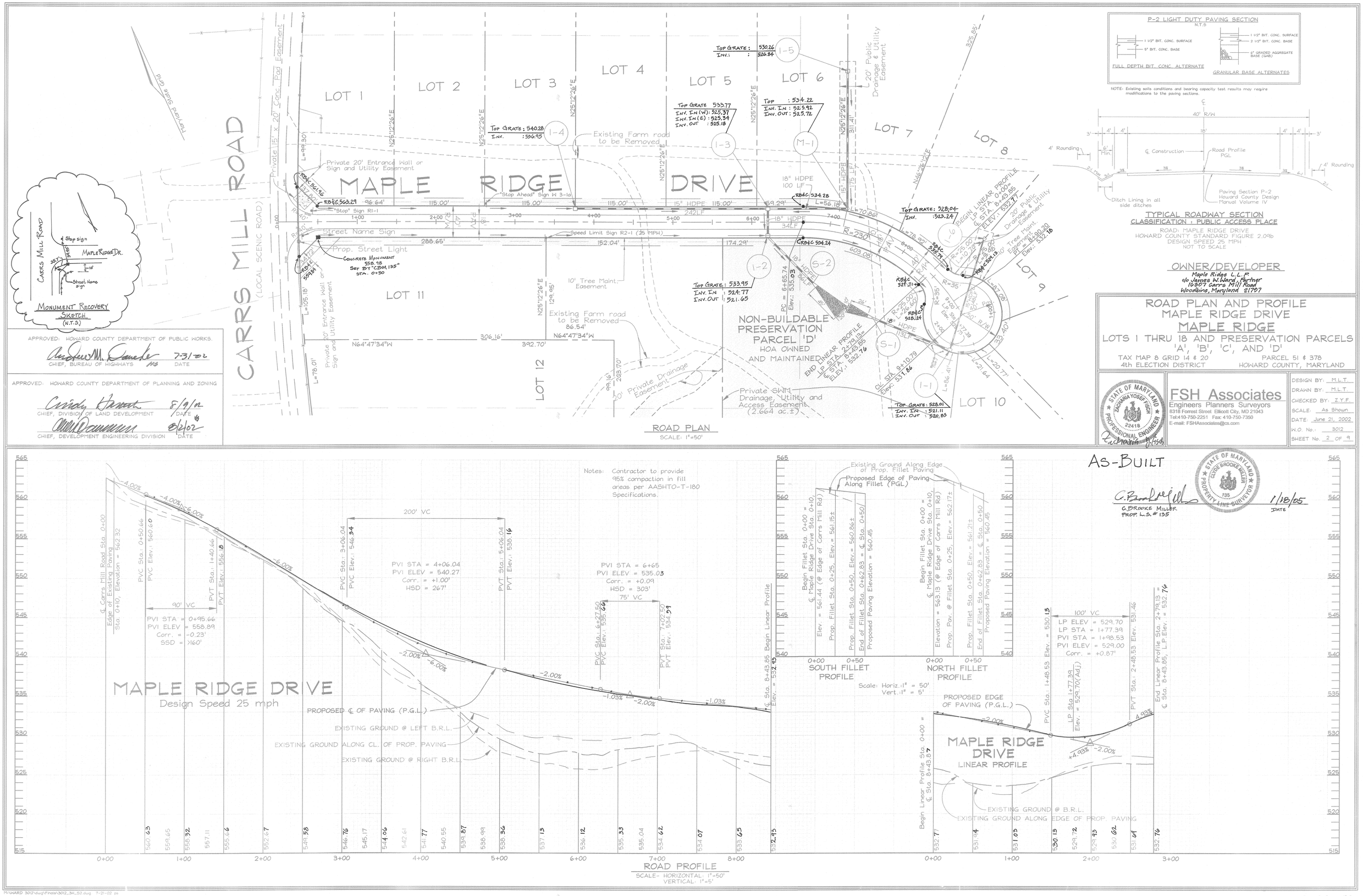
Zacharia Y. Fish

FSH Associates
Engineers Planners Surveyors
8316 Forrest Street Ellicott City, MD 21043
Tel:410-750-2251 Fax: 410-750-7350
E-mail: FSHAssociates@cs.com

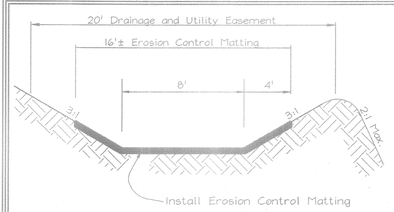
DESIGN BY: MLT
DRAWN BY: MLT
CHECKED BY: ZYF
SCALE: As Shown
DATE: July 21, 2002
W.O. No.: 3012
SHEET No. 1 OF 9

M:\WARD 3012\dwg\Finals\3012_3F_S1.dwg 7-21-02 ps

F-02-73


CARRS MILL ROAD
(LOCAL SCENIC ROAD)
MAPLE RIDGE DRIVE
LOT 1
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12
Existing Farm road to be Removed
Private 20' Entrance Wall or Sign and Utility Easement
Private 15' x 20' Conc. Pad Easement
Private 20' Entrance Wall or Sign and Utility Easement
20' Public Drainage & Utility Easement
10' Tree Maint. Easement
Existing Farm road to be Removed
Private Drainage Easement
Private SWM Drainage, Utility and Access Easement (2.664 ac.±)
NON-BUILDABLE PRESERVATION PARCEL 'D'
HOA OWNED AND MAINTAINED
"Stop Ahead" Sign W 3-1a
"Stop" Sign R1-1
Street Name Sign
Speed Limit Sign R2-1 (25 MPH)
Prop. Street Light
Concrete Monument 558.18 Set by "CDM 135" Sta. 0+50
Top Grate: 540.28 Inv. 536.95
Top Grate: 533.77 Inv. In (W): 525.37 Inv. In (E): 525.54 Inv. Out: 525.18
Top: 534.22 Inv. In: 525.92 Inv. Out: 525.72
Top Grate: 530.26 Inv.: 526.84
Top Grate: 533.95 Inv. In: 524.77 Inv. Out: 521.65
Top Grate: 528.04 Inv.: 523.24
Top Grate: 528.01 Inv. In: 521.11 Inv. Out: 520.85
18" HDPE 100 LF
15" HDPE 175 LF
18" HDPE 34 LF
18" HDPE 15 LF
Begin Linear Profile Sta. 0+00 = ℄ Sta. 8+43.85 Elev.: 532.93
End Linear Profile Sta. 9+10.79 = ℄ Sta. 9+43.85 Elev.: 532.76
ROAD PLAN
SCALE: 1"=50'
Carrs Mill Road
Stop sign
Maple Ridge Dr.
Street Name sign
MONUMENT RECOVERY SKETCH
(N.T.S.)
P-2 LIGHT DUTY PAVING SECTION
N.T.S.
1 1/2" BIT. CONC. SURFACE
5" BIT. CONC. BASE
FULL DEPTH BIT. CONC. ALTERNATE
1 1/2" BIT. CONC. SURFACE
2 1/2" BIT. CONC. BASE
6" GRADED AGGREGATE BASE (GAB)
GRANULAR BASE ALTERNATES
NOTE: Existing soils conditions and bearing capacity test results may require modifications to the paving sections.
40' R/W
4' Rounding
Construction
Road Profile PGL
Ditch Lining in all side ditches
Paving Section P-2 Howard County Design Manual Volume IV
TYPICAL ROADWAY SECTION
CLASSIFICATION : PUBLIC ACCESS PLACE
ROAD: MAPLE RIDGE DRIVE
HOWARD COUNTY STANDARD FIGURE 2.09b
DESIGN SPEED 25 MPH
NOT TO SCALE
OWNER/DEVELOPER
Maple Ridge L.L.P.
c/o Thomas W. Ward, Partner
16307 Carrs Mill Road
Woodbine, Maryland 21797
ROAD PLAN AND PROFILE
MAPLE RIDGE DRIVE
MAPLE RIDGE
LOTS 1 THRU 18 AND PRESERVATION PARCELS 'A', 'B', 'C', AND 'D'
TAX MAP 8 GRID 14 & 20
4th ELECTION DISTRICT
PARCEL 51 & 378
HOWARD COUNTY, MARYLAND
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
CHIEF, BUREAU OF HIGHWAYS
DATE 7-31-02
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE 8/9/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE 8/12/02
STATE OF MARYLAND ZACHARY 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: FSHAssociates@cs.com
DESIGN BY: M.L.T.
DRAWN BY: M.L.T.
CHECKED BY: Z.Y.F.
SCALE: As Shown
DATE: June 21, 2002
W.O. No.: 3012
SHEET No. 2 OF 9
AS-BUILT
STATE OF MARYLAND CLYDE BROOKE MILLER 135 PROPERTY LINE SURVEYOR
C. BROOKE MILLER
PROP. L.S. # 135
1/18/05
DATE
Notes: Contractor to provide 95% compaction in fill areas per AASHTO-T-180 Specifications.
℄ Carrs Mill Road Sta. 0+00 Edge of Existing Paving Sta. 0+10, Elevation = 562.32
PVC Sta.: 0+50.66 PVC Elev.: 560.60
PVT Sta.: 1+40.66 PVT Elev.: 556.18
90' VC
PVI STA = 0+95.66
PVI ELEV = 558.89
Corr. = -0.23'
SSD = >160'
200' VC
PVC Sta.: 3+06.04 PVC Elev.: 546.94
PVT Sta.: 5+06.04 PVT Elev.: 538.16
PVI STA = 4+06.04
PVI ELEV = 540.27
Corr. = +1.00'
HSD = 267'
PVI STA = 6+65
PVI ELEV = 535.03
Corr. = +0.09
HSD = 303'
75' VC
PVC Sta.: 6+27.50 PVC Elev.: 535.66
PVT Sta.: 7+02.50 PVT Elev.: 534.59
MAPLE RIDGE DRIVE
Design Speed 25 mph
PROPOSED ℄ OF PAVING (P.G.L.)
EXISTING GROUND @ LEFT B.R.L.
EXISTING GROUND ALONG CL. OF PROP. PAVING
EXISTING GROUND @ RIGHT B.R.L.
ROAD PROFILE
SCALE- HORIZONTAL: 1"=50'
VERTICAL: 1"=5'
Existing Ground Along Edge of Prop. Fillet Paving
Proposed Edge of Paving Along Fillet (PGL)
Begin Fillet Sta. 0+00 = ℄ Maple Ridge Drive Sta. 0+10, Elev. = 561.44 (@ Edge of Carrs Mill Rd.)
Prop. Fillet Sta. 0+25, Elev. = 561.15±
Prop. Fillet Sta. 0+50, Elev. = 560.86±
End of Fillet Sta. 0+62.83 = ℄ Sta. 0+50/ Proposed Paving Elevation = 560.45
SOUTH FILLET PROFILE
Begin Fillet Sta. 0+00 = ℄ Maple Ridge Drive Sta. 0+10, Elevation = 563.13 (@ Edge of Carrs Mill Rd.)
Prop. Fav. @ Fillet Sta. 0+25, Elev. = 562.17±
Prop. Fillet Sta. 0+50, Elev. = 561.21±
End of Fillet Sta. 0+62.83 = ℄ Sta. 0+50 Proposed Paving Elevation = 560.45
NORTH FILLET PROFILE
Scale: Horiz.: 1" = 50' Vert.: 1" = 5'
100' VC
LP ELEV = 529.70
LP STA = 1+77.39
PVI STA = 1+98.53
PVI ELEV = 529.00
Corr. = +0.87'
PVC Sta.: 1+48.53 Elev. = 530.13
PVT Sta.: 2+48.53 Elev. 531.46
LP Sta 1+77.39 Elev. = 529.70 (Adj.)
End Linear Profile Sta. 2+79.13 = ℄ Sta. 8+43.85, L.P. Elev. = 532.76
PROPOSED EDGE OF PAVING (P.G.L.)
MAPLE RIDGE DRIVE
LINEAR PROFILE
Begin Linear Profile Sta. 0+00 = ℄ Sta. 8+43.87
EXISTING GROUND @ B.R.L.
EXISTING GROUND ALONG EDGE OF PROP. PAVING

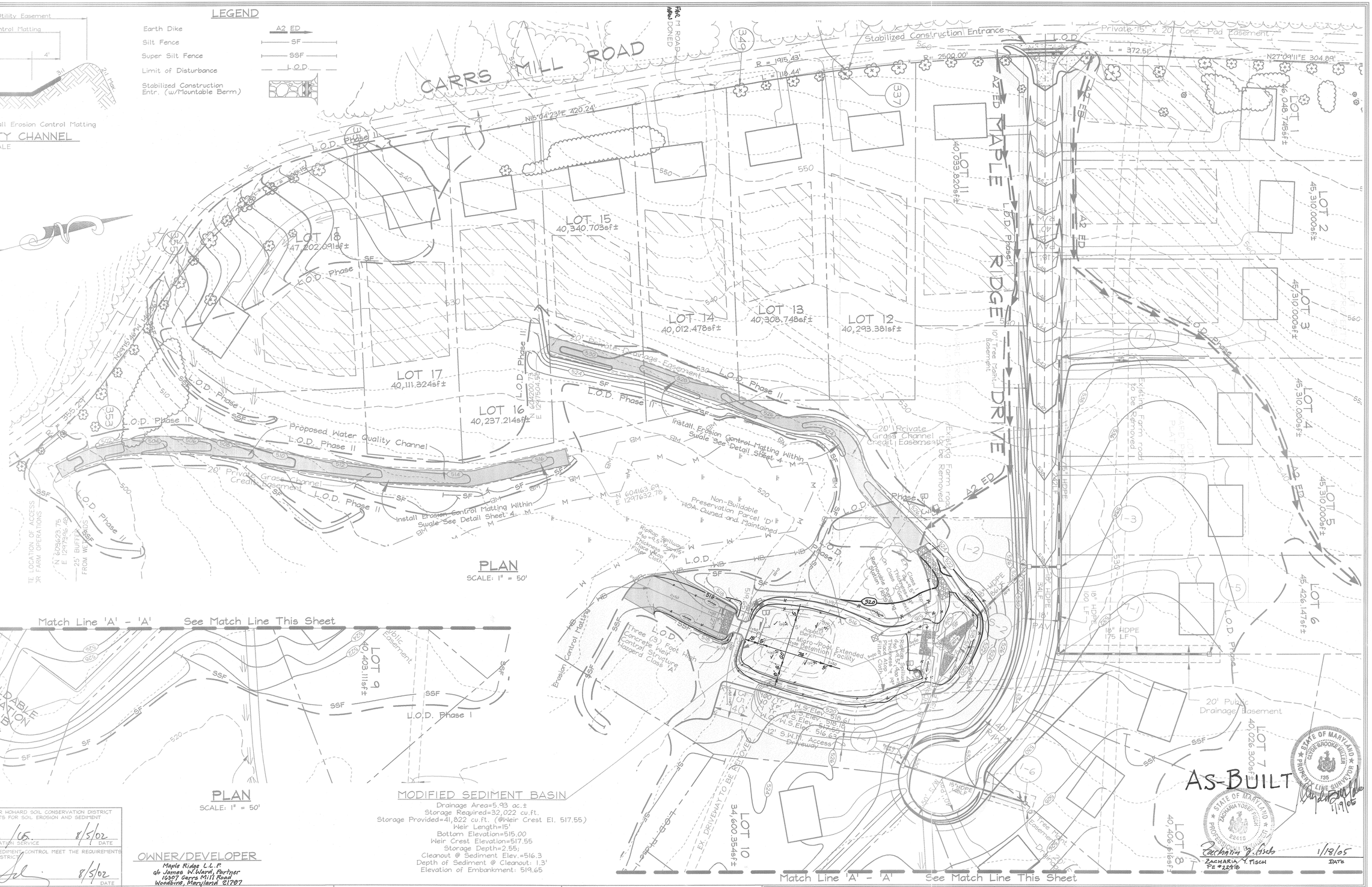
F-02-73



WATER QUALITY CHANNEL
NO SCALE

LEGEND

Earth Dike	A2 ED
Silt Fence	SF
Super Silt Fence	SSF
Limit of Disturbance	L.O.D.
Stabilized Construction Entr. (w/Mountable Berm)	



PLAN
SCALE: 1" = 50'

PLAN
SCALE: 1" = 50'

MODIFIED SEDIMENT BASIN
Drainage Area=5.93 ac.±
Storage Required=32,022 cu.ft.
Storage Provided=41,822 cu.ft. (@Weir Crest El. 517.55)
Weir Length=15'
Bottom Elevation=515.00
Weir Crest Elevation=517.55
Storage Depth=2.55;
Cleanout @ Sediment Elev.=516.3
Depth of Sediment @ Cleanout: 1.3'
Elevation of Embankment: 519.65

AS-BUILT
1/19/05
Zacharia Y. Fisch
ZACHARIA Y. FISCH
PE #22415
1/18/05
DATE

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
USDA-NATURAL RESOURCES CONSERVATION SERVICE — DATE 8/5/02

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SOIL CONSERVATION DISTRICT — DATE 8/5/02

OWNER/DEVELOPER
Maple Ridge L.L.P.
c/o James W. Ward, Partner
10307 Carrs Mill Road
Woodbine, Maryland 21797

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/1/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/2/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
CHIEF, BUREAU OF HIGHWAYS — DATE 7-31-02

DEVELOPER'S CERTIFICATE
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
SIGNATURE OF DEVELOPER — DATE 7/22/02

ENGINEERS CERTIFICATE
"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
SIGNATURE OF ENGINEER — DATE 7/22/02
ZACHARIA Y. FISCH

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22415 — PROFESSIONAL ENGINEER

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

GRADING, SEDIMENT AND EROSION CONTROL PLAN
MAPLE RIDGE
LOTS 1 THRU 18 AND PRESERVATION PARCELS 'A', 'B', 'C', AND 'D'
TAX MAP 8 GRID 14 & 20 — PARCEL 51 & 378
4th ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

DESIGN BY:	MLT
DRAWN BY:	MLT
CHECKED BY:	ZYF
SCALE:	1"=50'
DATE:	June 21, 2002
W.O. No.:	3012
SHEET No.	3 OF 9

F-02-73

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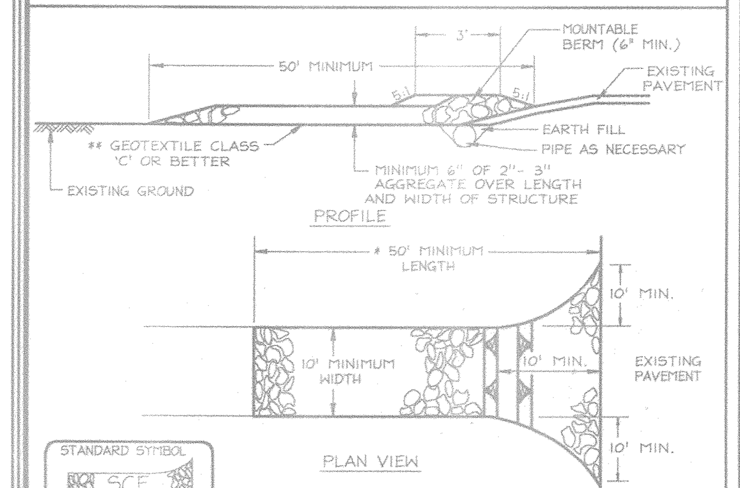
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

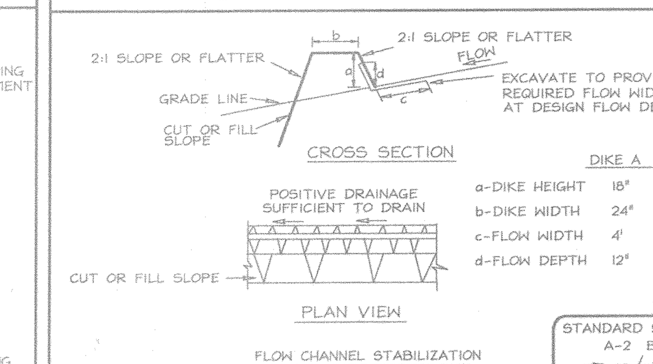


Construction Specification

1. Length - minimum of 50' (* 30' for a single residence lot).
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. ** The plan approval authority may not require single family residences to use geotextile.
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey, a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1 - EARTH DIKE



	DIKE A	DIKE B
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

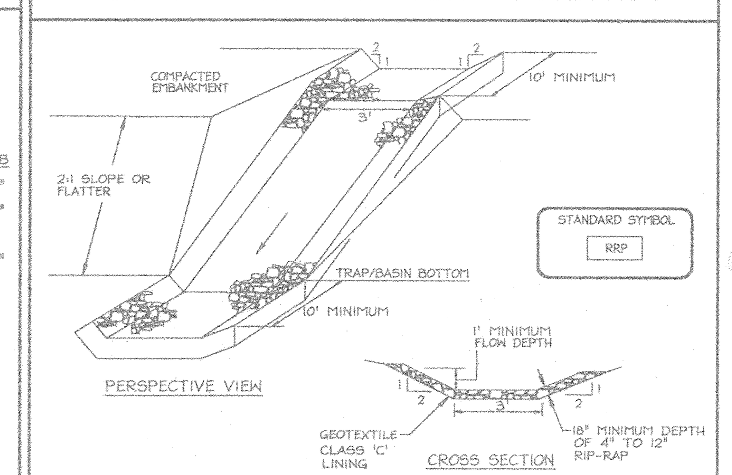
6. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A - 1 - 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 5 - RIP-RAP INFLOW PROTECTION



Construction Specifications

1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip- rap to a depth of 18".

2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.

3. Entrance and exit sections shall be installed as shown on the detail section.

4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.

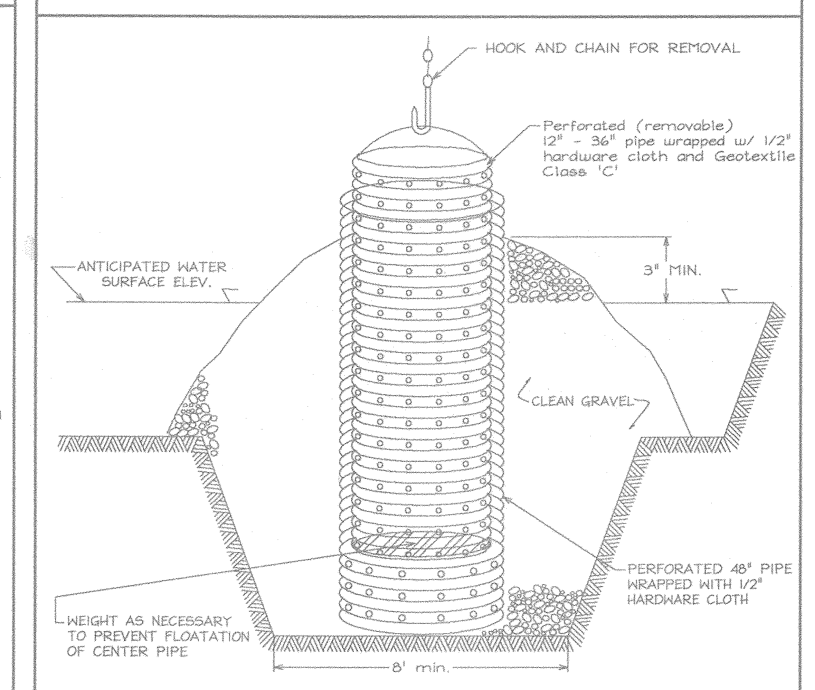
5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.

6. Rip-rap should blend into existing ground.

7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B - 6 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20A - REMOVABLE PUMPING STATION



Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.

2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.

3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.

4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

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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 one of the following schedules:

1) Preferred-Apply 2 tons per acre dolomitic limestone (92 lbs/100 sq.ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq.ft.)

2) Acceptable-Apply 2 tons per acre dolomatic limestone (92 lbs/1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10- fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

SEEDING: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs/1000 sq.ft.) of Turf Type Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Turf Type Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

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

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

SEEDING: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushel per acre of annual rye (3.2 lbs./1000 sq.ft.) For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

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

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 :

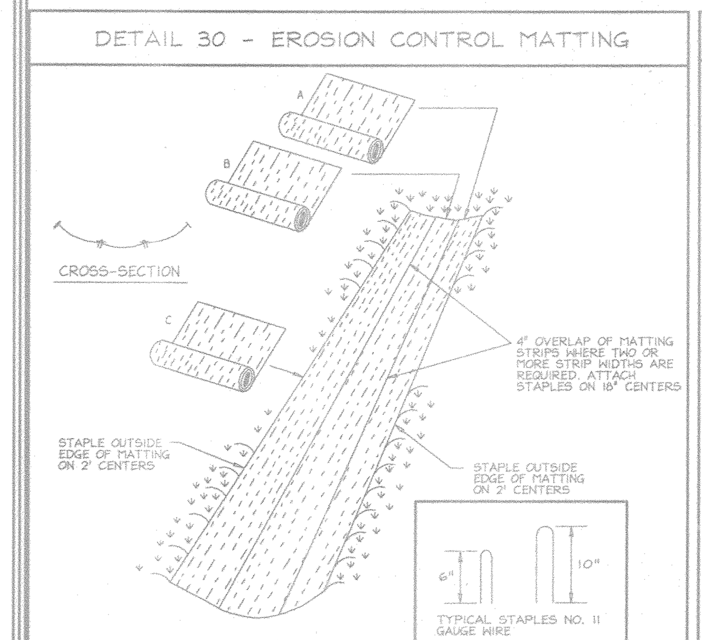
Total Area	84.665 ac.
Area Disturbed	12.19 ac.
Area to be roofed or paved	0.47 ac.
Area to be vegetatively stabilized	11.72 ac.
Total Cut	11,000 CY **
Total Fill	11,000 CY **
Offsite waste/borrow area location	*

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.

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

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

DETAIL 30 - EROSION CONTROL MATTING



Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using an 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

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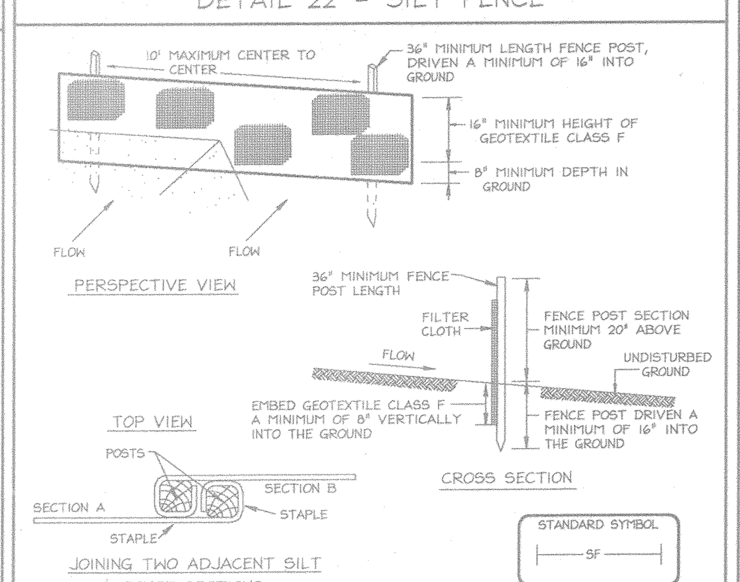
DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long, driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.

2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft ²/minute (max.)	Test: MSMT 322
Filtering Eggeciency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.

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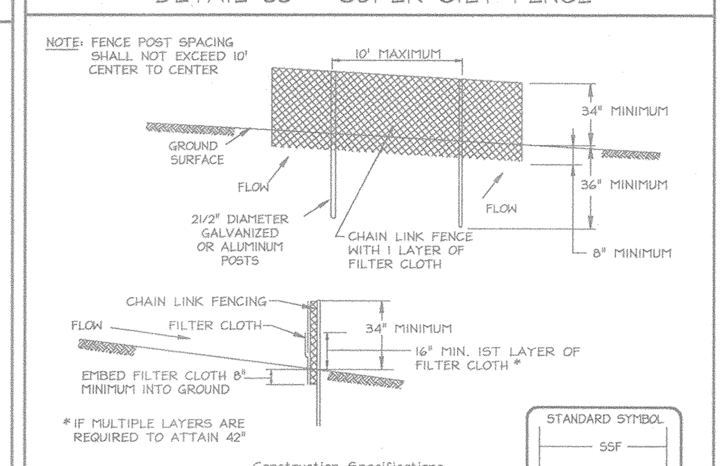
DETAIL 33 - SUPER SILT FENCE



Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ²/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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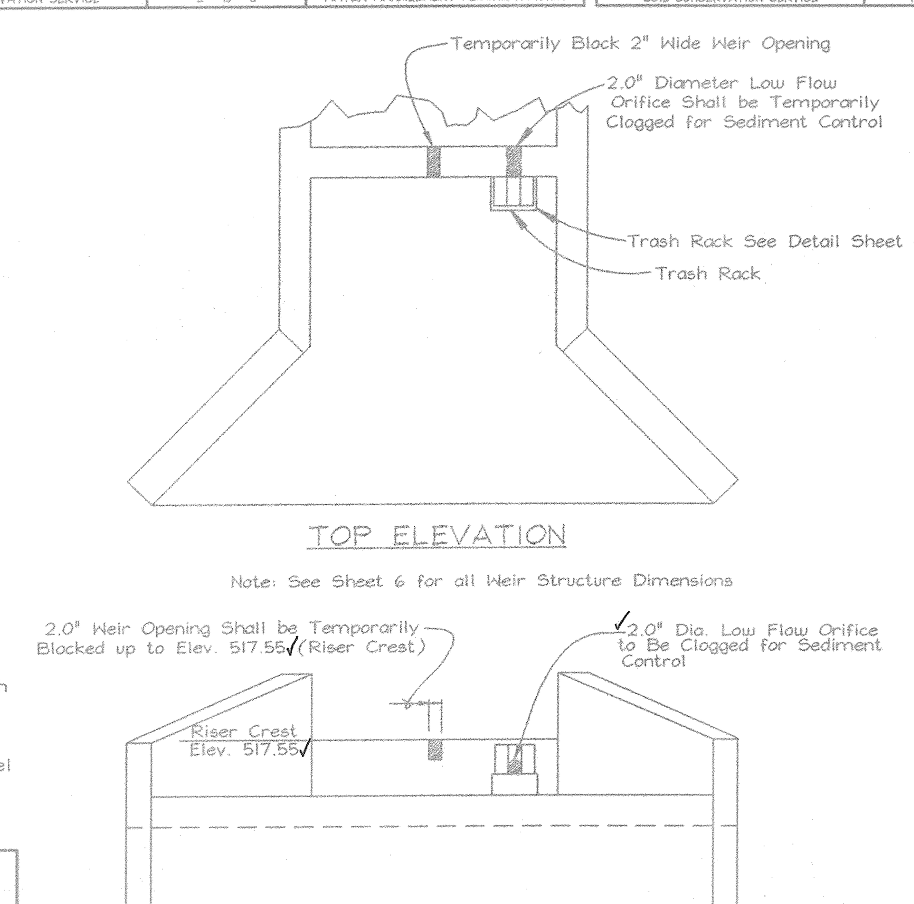
SEQUENCE OF CONSTRUCTION

1. Obtain Grading permit.
2. Clear for and install all sediment controls within Phase I limit of disturbance (LOD). Install SWM Pond for sediment basin, install removable pumping station, baffles, erosion control matting at the weir structure outfall and install all temporary modifications to weir structure as shown on this plan. Stabilize sediment basin and all disturbances with seed and mulch immediately following construction. (2 weeks)
4. With permission of the sediment control inspector, grade roads to subgrade and install storm drains. (3 weeks)
5. Fine grade and seed and mulch all areas within Phase I limit of disturbance (LOD). (2 weeks)
6. Pave roads, provide final stabilization to all disturbed areas and flush storm drain system. (3 weeks)
7. With permission from the Howard County Sediment Control Inspector remove all sediment controls within Phase I limit of disturbance (LOD) (except sediment basin) and seed and mulch all disturbances. (1 week)
8. Clear for and install all sediment controls within Phase II Limit of disturbance (LOD). (1 week)
9. Fine grade and immediately stabilize with seed and mulch the area along the front of lots 16 thru 18 and Carrs Mill Road. (1 week)
10. Begin construction of the swales at the rear of lots 11 thru 18. Contractor shall fine grade and install erosion control matting, from downstream to upstream, into segments that can be completed in one (1) working day. Permanetly stabilize each segment with seed and mulch at the end of each each day. (2 weeks)
11. Upon completion of the swales and with the sediment control inspectors approval remove all sediment controls from Phase II limit of disturbance (LOD). Convert sediment basin to permanent SWM pond by removing gravel around trash rack, removing sediment, grading bottom to final grade and stabilizing with seed and mulch. Stabilize all remaining distubed areas with seed and mulch. (2 weeks)



TEMPORARY MODIFICATIONS TO WEIR STRUCTURE FOR SEDIMENT CONTROL
Not To Scale

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

Jim Myers / CS. 8/5/02
USDA-NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

[signature] 8/5/02
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton 8/9/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 8/2/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Andrew M. [signature] 7-31-02
CHIEF, BUREAU OF HIGHWAYS — DATE

OWNER/DEVELOPER

Maple Ridge L.L.P.
c/o James W. Ward, Partner
16307 Carrs Mill Road
Woodbine, Maryland 21797

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."

James W. Ward, Partner 7/22/02
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.

Zacharia Y. Fisch 7/22/02
SIGNATURE OF ENGINEER — DATE
ZACHARIA Y. FISCH

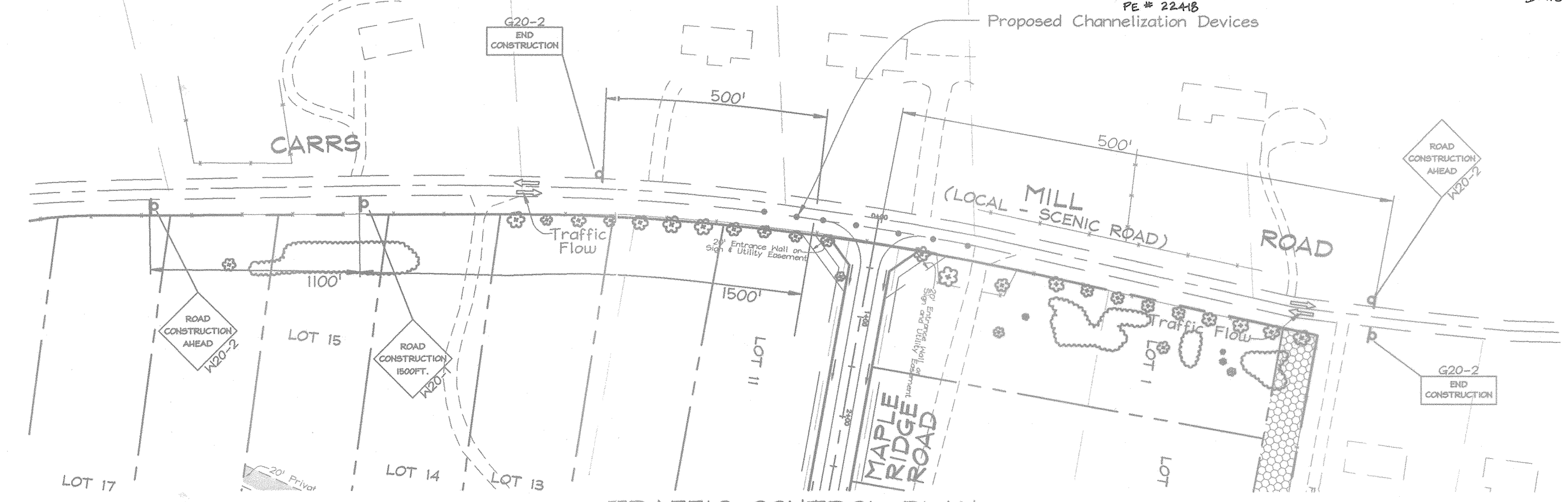
STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER

STATE OF MARYLAND — CLYDE BROOKE MILLER — 135 — PROPERTY LINE SURVEYOR

C. Brooke Miller 1/19/05
C.BROOKE MILLER
Prop. L.S. # 135 — DATE

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

Zacharia Y. Fisch 1/18/05
ZACHARIA Y. FISCH
PE # 22418 — DATE



TRAFFIC CONTROL PLAN
NOT TO SCALE

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

TRAFFIC CONTROL PLAN, SEDIMENT AND EROSION CONTROL AND MISCELLANEOUS DETAILS
MAPLE RIDGE
LOTS 1 THRU 18 AND PRESERVATION PARCELS 'A', 'B' AND 'C'
TAX MAP 8 GRID 14 & 20 — PARCEL 51 & 378
4th ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

DESIGN BY:	MLT
DRAWN BY:	MLT
CHECKED BY:	ZYF
SCALE:	As Shown
DATE:	June 21, 2002
W.O. No.:	3012
SHEET No.	4 OF 9

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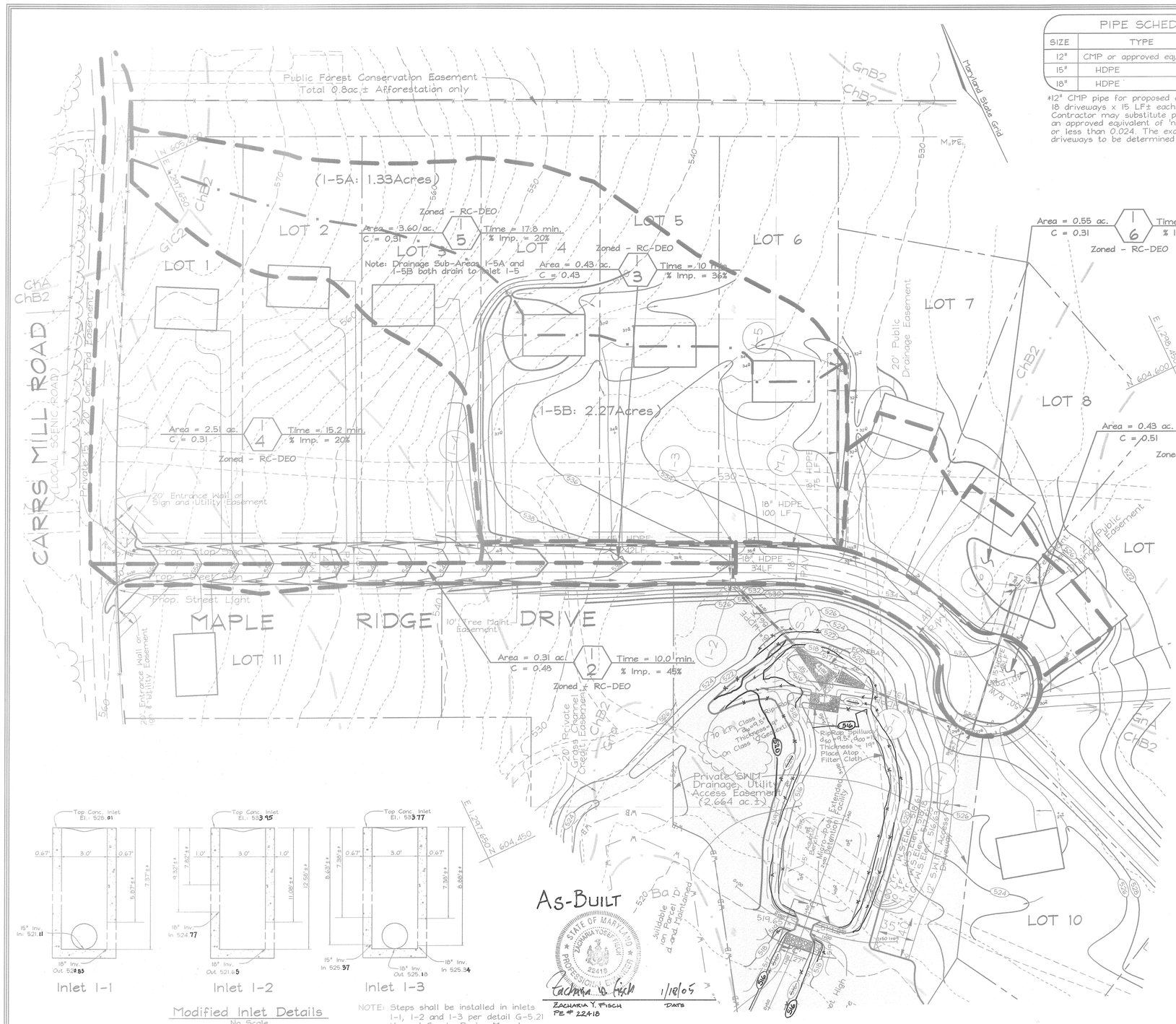
F-02-73



PLAN

Scale: 1"=50'

PIPE SCHEDULE

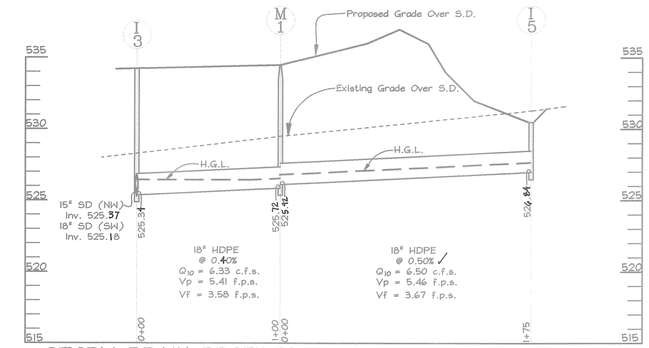
SIZE	TYPE	LENGTH
12"	CMP or approved equivalent	*270 LF±
15"	HDPE	392 LF
18"	HDPE	508 LF

*12" CMP pipe for proposed driveway culverts. 18 driveways x 15 LF± each = 270 LF± Contractor may substitute pipe material with an approved equivalent of 'n' value equal to or less than 0.024. The exact location of driveways to be determined at site plan.

STRUCTURE SCHEDULE

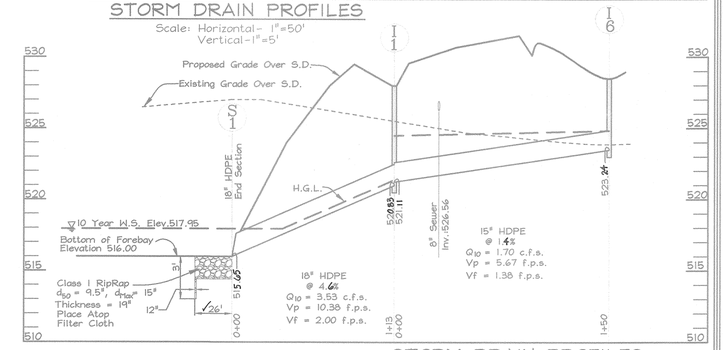
NO.	TYPE	STATION AND OFFSET	TOP ELEV.***	INV. IN	INV. OUT	REMARKS
I-1	Modified Open End Grate(double opening)	L.P. ℄ Sta. 1+77.39, 4'Lt.*	528.01	521.11	520.83	S.D. 4.36**
I-2	Modified Open End Grate(single opening)	℄ Sta. 6+20.59, 17'Rt.	533.95	524.77	521.65	S.D. 4.36**
I-3	Modified Open End Grate(single opening)	℄ Sta. 6+20.59, 17'Lt.	533.77	525.37 526.34	525.18	S.D. 4.36**
I-4	Precast Open End Grate(single opening)	℄ Sta. 3+76.45, 17'Lt.	540.28	-	536.95	S.D. 4.36**
I-5	Precast Open End Grate(single opening)	N604,739.70 E1,298,158.08	530.26	-	526.84	S.D. 4.36**
I-6	Precast Open End Grate(single opening)	N604,472.49 E1,298,224.43	528.04	-	523.24	S.D. 4.36**
S-1	18" HDPE End Section	N604,446.72 E1,298,048.57	N/A	-	515.65	Use HDPE
S-2	18" HDPE End Section	N604,508.39 E1,298,005.96	N/A	-	515.97	Use HDPE
M-1	Standard 4.0' Manhole	℄ Sta. 7+16.77, 23'Lt.	534.22	529.92	525.72	G 5.01

* Linear Profile (L.P.) Station Offset Distances (4' Lt.) Are Measured From The Edge of Paving.
** Contractor Shall Determine The Exact HDPE Pipe Diameter Necessary For Opening At Inlet.
*** Inlet Top Elevations are to the Top of Concrete Inlet.



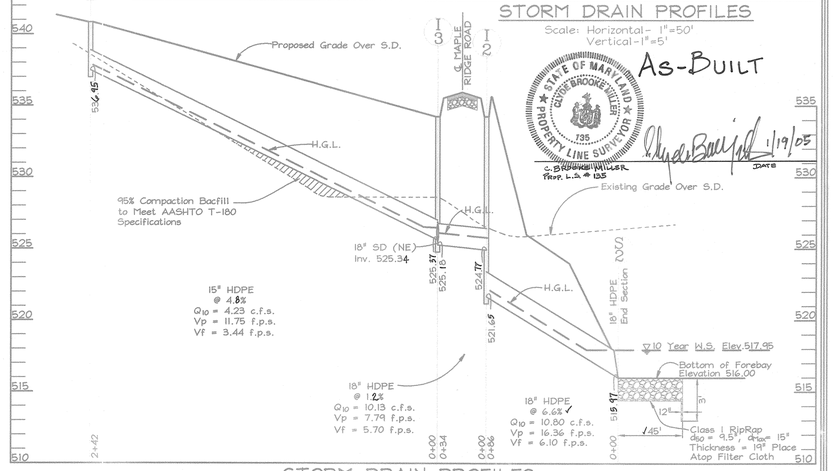
STORM DRAIN PROFILES

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



STORM DRAIN PROFILES

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



STORM DRAIN PROFILES

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

Modified Inlet Details

No Scale

(Modified Inlet SD 4.36, See Standard Detail For More Dimensions.)

* All Dimensions Are To The Inside Of Pipe. Contractor Shall Determine The Exact Pipe Thickness Necessary For Pre-Casting Inlet.

NOTE: Steps shall be installed in inlets I-1, I-2 and I-3 per detail G-5.21 Howard County Design Manual Volume IV

SOILS LEGEND

SOIL	NAME	CLASS
Ba	Baile silt loam	D
ChA	Chester silt loam, 0 to 3 percent slopes	B
ChB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	B
GlC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	B
GnA	Glenville silt loam, 0 to 3 percent slopes	C

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Harris 8/9/02
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

8/2/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

7-31-02
CHIEF, BUREAU OF HIGHWAYS DATE

OWNER/DEVELOPER
Maple Ridge L.L.P.
c/o James W. Ward, Partner
16307 Carrs Mill Road
Woodbine, Maryland 21797

STATE OF MARYLAND ZACHARIA YOSEF FISCH 22418 PROFESSIONAL ENGINEER
Zacharia Y. Fisch

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

STORM DRAIN DRAINAGE AREA MAP
STORM DRAIN PROFILES AND DETAILS
MAPLE RIDGE
LOTS 1 THRU 18 AND PRESERVATION PARCELS 'A', 'B', 'C' AND 'D'
TAX MAP 8 GRID 14 & 20 PARCEL 51 & 378
4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DESIGN BY:	MLT
DRAWN BY:	MLT
CHECKED BY:	ZYF
SCALE:	As Shown
DATE:	June 21, 2002
W.O. No.:	3012
SHEET No.	5 OF 9

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F-02-73

OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT DETENTION FACILITY

STORMWATER MANAGEMENT FACILITY

ROUTINE MAINTENANCE

1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
3. DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM AND THE CONCRETE WEIR SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERE WITH THE FUNCTION OF THE WEIR, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
3. SEDIMENT REMOVAL IN THE FOREBAY SHALL OCCUR WHEN 50% OF THE TOTAL FOREBAY CAPACITY HAS BEEN LOST.

POND SUMMARY

	1 YEAR	10 YEAR	100 YEAR	W.Q.	Recharge Obligation
FLOW INTO POND	6.00 c.f.s.	37.73 c.f.s.	71.18 c.f.s.	5.69 c.f.s.	Rea Required: N/A*
FLOW OUT OF POND	0.41 c.f.s.	26.56 c.f.s.	55.86 c.f.s.	0.08 c.f.s.	Rea Required: 1.13 Ac
W.S. ELEVATION	517.55	518.85	518.61	516.85	Rea Provided: 1.46 Ac.
STORAGE VOLUME	0.73 Ac. Ft**	0.73 Ac. Ft.	1.01 Ac. Ft	0.731 Ac.Ft***	

*Recharge is met through Grass Channel and Through the Percent Area Method.

**CPv volume includes WQv volume

***WQv volume is to the weir crest elev. 516.85 (the point were CPv volume begins).

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

MARYLAND 378 STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

CONSTRUCTION SPECIFICATIONS

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 toe 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 SC, 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 +1-2% 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 equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

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 4" (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 repaired 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 '
6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Structure Backfill'

Reinforced Concrete Pipe All 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 Structure Backfill
5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.

Plastic Pipe The 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 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.

Geotextile 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

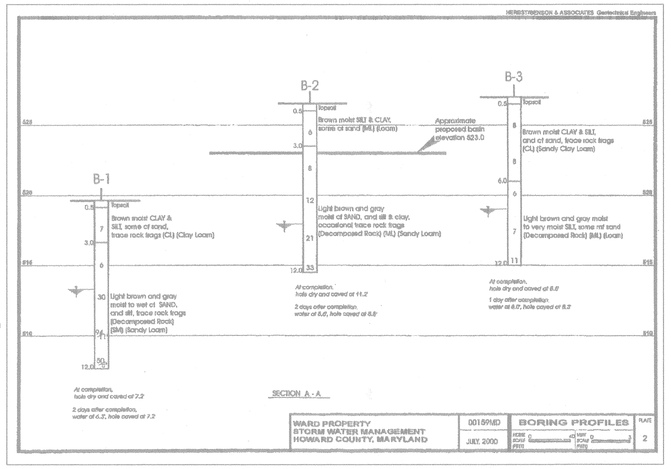
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect to be accepted by the permanent works. The contractor shall also furnish, 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, lining, 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.

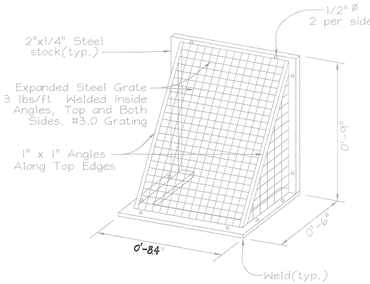
Erosion and Sediment Control

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.



S.W.M. BORING PROFILES

NOT TO SCALE

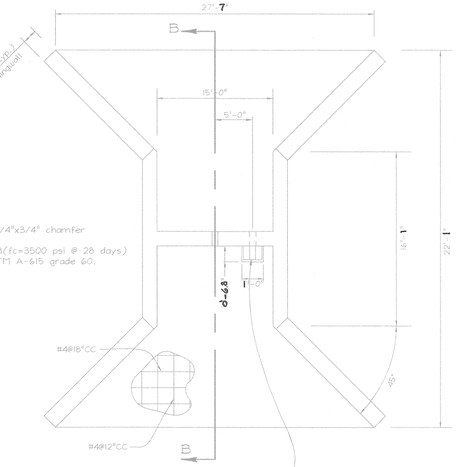


TRASH RACK DETAIL

NOT TO SCALE

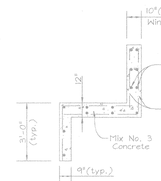
NOTES:

1. Steel to conform to ASTM A-36.
2. All surfaces to be coated with ZRC cold galvanizing compound after welding.
4. Trash rack to be fastened to the concrete with 1/2" masonry anchors. Trash rack to be removeable.

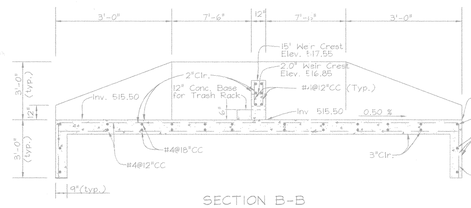


NOTES:

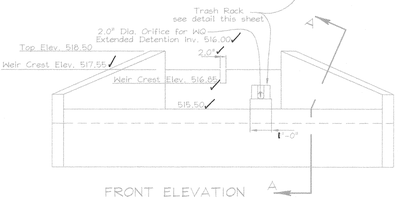
1. All exposed edges to have a 3/4"x3/4" chamfer or as directed.
2. Concrete shall be SHA mix #3(fc=3500 psi @ 28 days)
3. Reinforcing steel shall be ASTM A-615 grade 60.



SECTION A-A



SECTION B-B



FRONT ELEVATION

CONCRETE WEIR STRUCTURE DETAIL

NOT TO SCALE

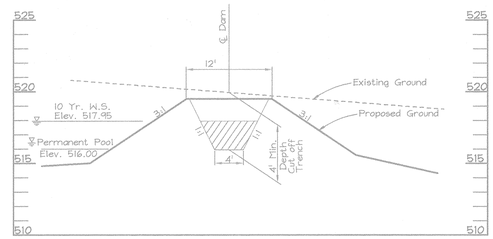
As-Built

STATE OF MARYLAND ZACHARIA YOSEF FISCH 22418 PROFESSIONAL ENGINEER

Zacharia Y. Fisch 1/19/05

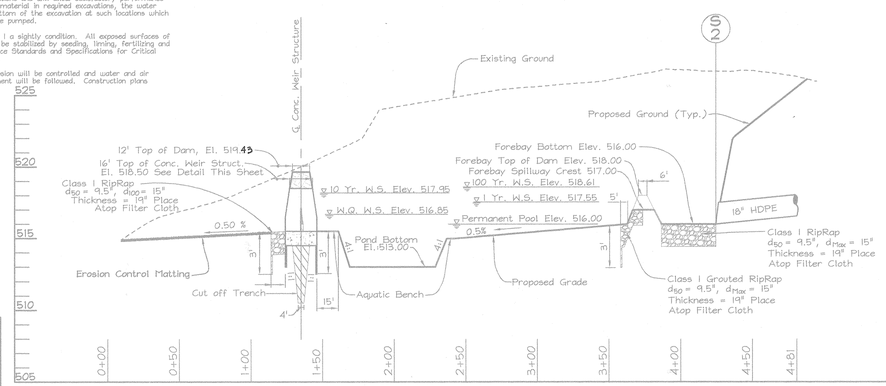
ZACHARIA Y. FISCH DATE

Pe #22418



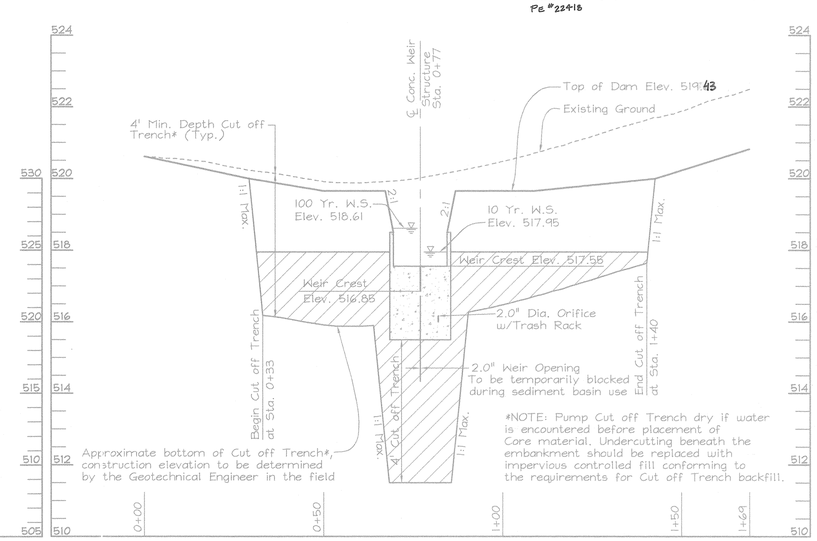
SECTION 'C'-'C'

Scale: Horizontal- 1"=10'
Vertical-1"=5'



SECTION THROUGH S.W.M. FACILITY

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



SECTION ALONG EMBANKMENT

Scale: Horizontal- 1"=20'
Vertical-1"=2'

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER — DATE 7/22/02

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 — 7/22/02

SIGNATURE OF ENGINEER — DATE

ZACHARIA Y. FISCH

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/9/02

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/2/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-31-02

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

USDA-NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

OWNER/DEVELOPER

MAPLE RIDGE L.L.P.
c/o James W. Ward Jr., Partner
16307 Carrs Mill Road
Woodbine, Maryland 21797

STATE OF MARYLAND ZACHARIA YOSEF FISCH 22418 PROFESSIONAL ENGINEER

Zacharia Y. Fisch

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

STORMWATER MANAGEMENT PROFILES NOTES AND DETAILS

MAPLE RIDGE

LOTS 1 THRU 18 AND PRESERVATION PARCELS 'A', 'B', 'C' AND 'D'

TAX MAP 8 GRID 14 & 20 — PARCEL 51 & 378

4th ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

DESIGN BY:	MLT
DRAWN BY:	MLT
CHECKED BY:	ZYF
SCALE:	As Shown
DATE:	July 21, 2002
W.O. No.:	3012
SHEET No.	6 OF 9

F-02-73

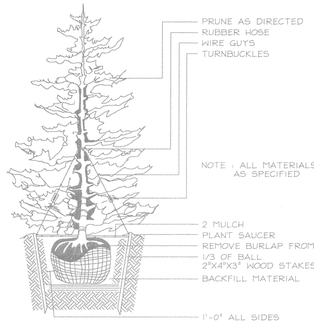
M:\HOWARD 3012\dwg\Finals\3012_30_56.dwg 7-21-02 ps

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	NOTE
	48	Acer Rubrum(Street Trees) October Glory Red Maple	2 1/2"-3" Cal.	B & B
	74	Acer Rubrum(Shade Trees) October Glory Red Maple	2 1/2"-3" Cal.	B & B
	7	Quercus Bicolor(Stormwater Management Pond) Swamp White Oak	2 1/2"-3" Cal.	B & B
	32	Pinus Strobus Eastern White Pine	6'-8' Ht.	B & B
	20	Pinus Taeda(Stormwater Management Pond) Loblolly Pine	6'-8' Ht.	B & B

NOTES:

1. All Street Trees and Shade Trees to be as specified or equivalent as aproved by the Howard County Landscape Manual Appendix 'C'.
2. All Evergreen Trees to be as specified or equivalent as aproved by the Howard County Landscape Manual Appendix 'C'.
3. For planting details see sheet 5 of 9.
4. Financial surety for the required 48 street trees will be posted as part of the Developer's Agreement.
5. Financial surety for the required perimeter and SWM landscaping will be provided as part of the Developer's Agreement for 99 shade trees (81 proposed trees +11 proposed 2-1/2 cal. trees within forest conservation easement + 7 existing trees) + 52 evergreens in the amount of $37,500.

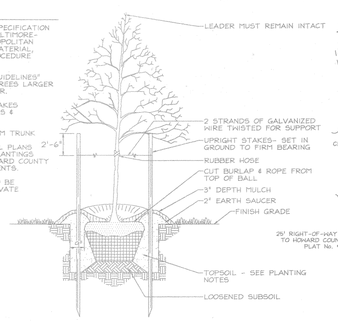


TYPICAL EVERGREEN TREE PLANTING DETAIL

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.



TREE PLANTING AND STAKING

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

STREET TREE REQUIREMENTS

As outlined in the Howard County Landscape Manual medium or large street trees are to planted 40 feet apart along the proposed right of way perimeter.

Length of proposed right of way perimeter = 1900' (800' x 2 + 300' (cul-de-sac))
Number of street trees required: 1900' / 40 = 47.5 trees
Number of street trees proposed = 48 trees

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES						
Perimeter/Frontage Designation Landscape Type	1 B	8 B	2 A	3 A	4 A	5 A	6 A	7 A	9 A
Linear Feet of Roadway Frontage/Perimeter	370	289	685	697	284	233	159	137	1220
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	**Yes 370'	No	*Yes 685	No	No	No	No	No	No
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	No	No
Number of Plants Required Shade Trees	1:50 7	1:50 6	11	1:60 12	1:60 5	1:60 4	1:60 3	1:60 2	1:60 20
Evergreen Trees	1:40 9	1:40 7	-	-	-	-	-	-	-
Shrubs	-	-	-	-	-	-	-	-	-
Number of Plants Provided Shade Trees	0**	6	0*	12	5	4	3	2	20
Evergreen Trees	9	7	-	-	-	-	-	-	-
Other Trees (2:1 Substitution)	-	-	-	-	-	-	-	-	-
Shrubs (10:1 Substitution) (Describe Plant Substitution Credits Below if needed)	-	-	-	-	-	-	-	-	-

* Forest Conservation Planting in this Area is 2.5" Caliper Trees Therfore Credit is Allowable. ** Credit for shade tree component only.

SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeter	1,428lf
Credit for Existing Vegetation (No, Yes and Linear Feet)	No
Credit for other Landscaping (No, Yes and %)	No
Number of Trees Required Shade Trees	29 Shade Trees
Evergreen Trees	36 Evergreen Trees
Number of Trees Provided Shade Trees	29 Shade Trees
Evergreen Trees	36 Evergreen Trees
Other Trees(2:1 Substitution)	0 Trees(0 Substition Trees)

As-Built

STATE OF MARYLAND ZACHARIA YOSEF FISCH 22418 PROFESSIONAL ENGINEER

Zacharia Y. Fisch — 1/18/05

ZACHARIA Y. FISCH PE#22418 — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/9/02

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/6/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-31-02

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 CERTIFICATION 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 7/22/02

OWNER/DEVELOPER

Maple Ridge L.L.P.
c/o James W. Ward, Partner
10307 Carrs Mill Road
Woodbine, Maryland 21797

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: FSHAssociates@cs.com

LANDSCAPE PLAN
MAPLE RIDGE

LOTS 1 THRU 18 AND PRESERVATION PARCELS 'A', 'B', 'C', AND 'D'

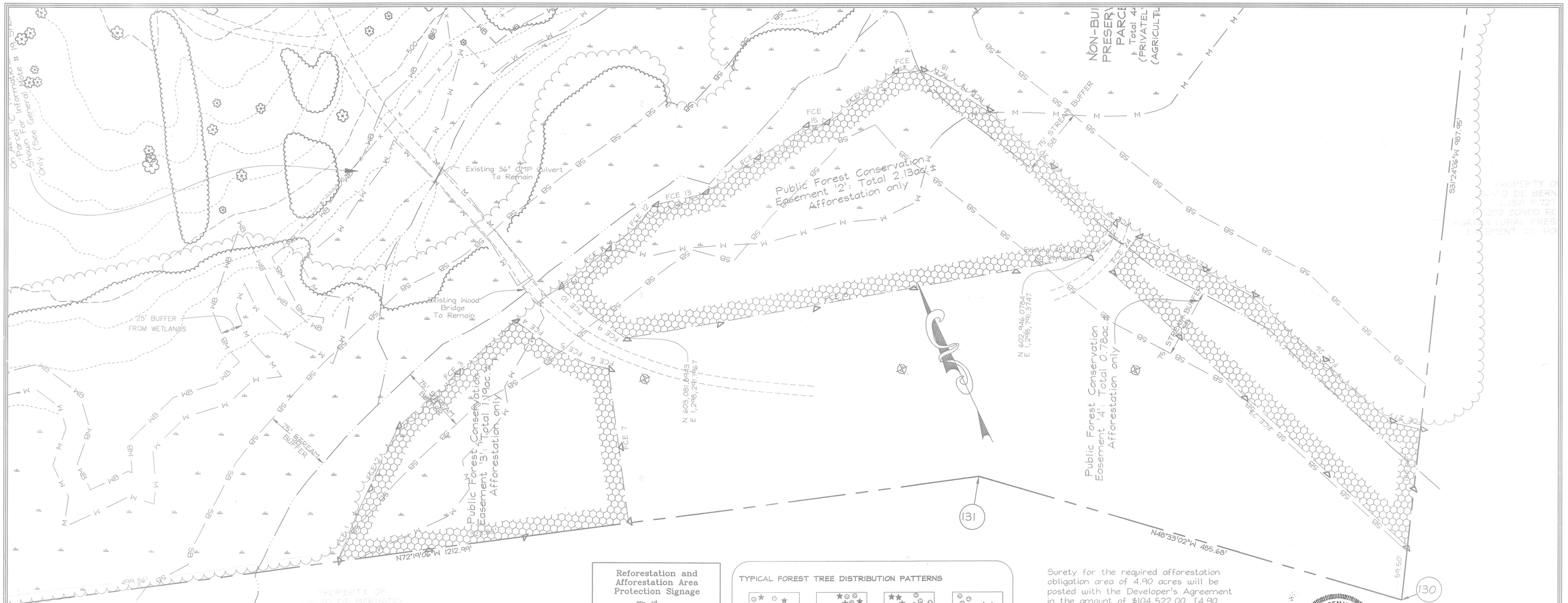
TAX MAP 8 GRID 14 & 20, 4th ELECTION DISTRICT

PARCEL 51 & 378, HOWARD COUNTY, MARYLAND

DESIGN BY: MLT
DRAWN BY: MLT
CHECKED BY: ZYF
SCALE: 1"=100'
DATE: June 21, 2002
W.O. No.: 3012
SHEET No. 7 OF 9

F-02-73

M:\WARD 3012\dwg\Finals\3012_3M_S7.dwg 7-21-02 ps



Surety for the required afforestation obligation area of 4.90 acres will be posted with the Developer's Agreement in the amount of $104,522.00. [4.90 acres=213,444 sq. ft. - 4400 sq. ft. (landscape credit of 11 shade trees x 400 sq. ft.) = 209,044 sq. ft.]

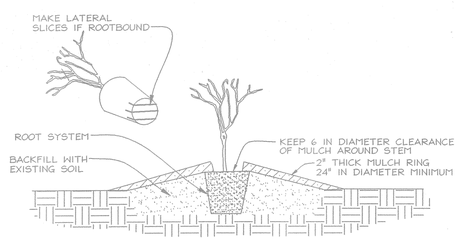
AFFORESTATION AREA MONITORING NOTES

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 sampling of the plantings. The species composition of the sample population should be proportionate to the amount of each species in the entire planting to be sampled.

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

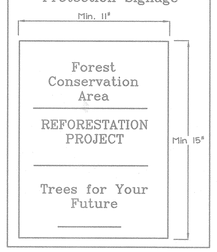


CONTAINER PLANTING
NOT TO SCALE

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.

Reforestation and Afforestation Area Protection Signage



EXPLORATION RESEARCH, INC.
ENVIRONMENTAL CONSULTANTS
8318 FORREST STREET
ELLICOTT CITY, MARYLAND 21043
TEL: (410) 750-1150 FAX:(410) 750-7350

TYPICAL FOREST TREE DISTRIBUTION PATTERNS

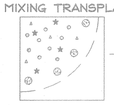
NOTE:
Naturally occurring populations of trees tend to be found in informal groupings. A cluster of trees is really a mosaic of different species groups. The objective of an afforestation/ reforestation plan is to select the appropriate species and distribution pattern for a chose site that mimic natural patterns.
source: prince Georges County woodland Conservation Manual.

AGGREGATE DISTRIBUTION DRIFT

NOTE:
When used, plant cluster type groupings that taper or feather out along the edges. Clusters often appear as elongated of tear drop shapes.

Source: EOR, Inc.

MIXING TRANSPLANT STOCK



Locate larger trees (B&B or container grown) or transplant stock at the perimeter of reforestation/ afforestation planting of whips, seedling grown stock.
Protective fencing
Smaller Stock

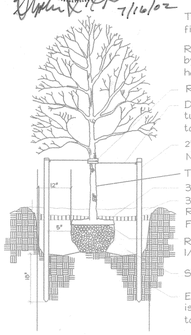
Source: Adapted from Forest Conservation Manual, 1991.

PLANTING DISTRIBUTION PATTERNS | FIGURE 3.8.2

AFFORESTATION PLANTING NOTES

1. Afforestation areas shall be planted between March 15th and April 30th or September 15th and November 15th. Earliest planting dates will vary from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as condition warrants.
2. 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.
3. Plant materials will be planted in accordance with the Planting Distribution Diagram, Planting Details and plant schedule.
4. Plant material shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standard for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
5. Planting stock must be protected from desiccation at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
6. Newly planted trees may require watering at least once per week during the first growing season depending on rainfall in order to get established. The initial planting operation should allow for watering during installation to completely soak backfill material.
7. Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.
8. All nursery stock to be sprayed with deer repellent containing Bitrex such as Repellex All nursery stock to be grown with deer repellent tablets in growing medium, such as Repellex Tablets.

STATE OF MARYLAND STEPHEN L. HUBER No. 363 REGISTERED PROFESSIONAL FORESTER
7/16/02



TREE PLANTING DETAIL
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/9/02

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/2/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-31-02

LEGEND

Forest Conservation Signage
Forest Conservation Easement

OWNER/DEVELOPER

Maple Ridge L.L.P.
c/o James W. Ward, Partner
16307 Carrs Mill Road
Woodbine, Maryland 21797

STATE OF MARYLAND ROGER YOSEF FISCH No. 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: FSHAssociates@cs.com

FOREST CONSERVATION PLAN
MAPLE RIDGE
LOTS 1 THRU 18 AND PRESERVATION PARCELS 'A', 'B', 'C' AND 'D'

TAX MAP 8 GRID 14 & 20
4th ELECTION DISTRICT

PARCEL 51 & 378
HOWARD COUNTY, MARYLAND

DESIGN BY: MLT
DRAWN BY: RAB
CHECKED BY: SLH
SCALE: 1"=50'
DATE: July 16, 2002
W.O. No.: 3012
SHEET No. 9 OF 9

F-02-73

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