

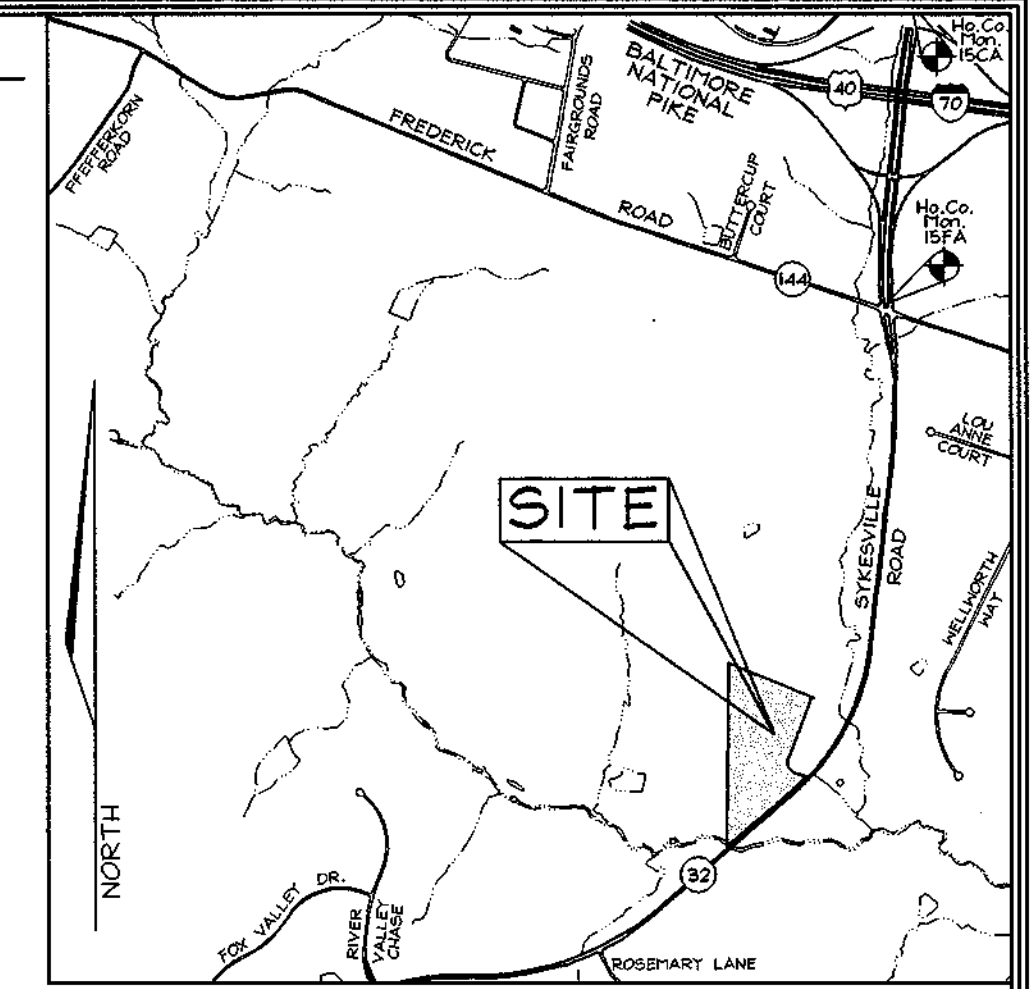
GENERAL NOTES

- Subject property zoned "RC-DEO" per 10/18/93 Comprehensive Zoning Plan.
- Private water and sewer to be utilized.
- Soils map no. 14.
- Gross area of site: 24.645 Ac.±
- Area of proposed public R/W: 2,397 Ac.±
- Number of proposed buildable lots: 12
Area of proposed buildable lots: 12.122 ac.±
- Number of proposed non-buildable preservation parcels: 3
Area of proposed non-buildable preservation parcels: 10.126 ac.±
- Open space requirements:
a.) Minimum open space required = 24.645ac x 5% = 1.24 ac.
b.) Non-buildable preservation parcel 'B' will be owned and maintained by the H.O.A. and will contain the Stormwater Management Facility. This Non-buildable preservation parcel will satisfy the open space requirements; Total area= 2.426 Ac.±.
- Density calculations:
a.) Number of lots based on own density: 24.645ac / 4.25 = 5.8, therefore 5 units
b.) Number of lots based on dev/coo option: 24.645ac / 2 = 12.35, therefore 12 units
c.) Total number of dev/coo units required: 12 - 5 = 7 units
- The contractor shall notify the Department of Public Works/Bureau of Engineering Construction Inspection Division at (410) 313-1880 at least five (5) working days prior the start of work.
- The contractor shall notify Miss Utility at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- 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.
- The lots shown herein comply with the minimum ownership, width and lot area as required by the Maryland State Department of the Environment.
- Topography is based on an Aerial survey prepared by Harford Aerial Surveys in Dec., 2000 and Field Run topography by C.B. Miller & Associates in Aug., 2001.
- A.P.F.O. traffic study prepared by Street Traffic Studies, approved under S-01-02 on 9-20-00.
- Wetlands delineation and report and forest stand delineation prepared by Exploration Research Inc. approved under S-01-02 on 9/20/00.
- The project is not within the metropolitan district.
- Previous Howard County file numbers: S-01-02; P-01-19;
- The project is in conformance with the latest Howard County Standards unless waivers have been approved.
- The coordinates shown herein are based upon the Howard County Geodetic Control which is based on the Maryland State Plane Coordinate system. Howard County monument numbers 15CA and 15FA were used for this project.
- S.H.M. for cpv and way is provided in a pocket pond. The pond will have private ownership and joint maintenance by H.O.A. and Howard County.
- No clearing, grading or construction is permitted within wetlands, streams or their required buffers.
- The floodplain study for this project is based on Fema map number 240044 0015 B, dated December 4, 1986.
- MDE Permit # 200260373 for grading activities in a floodplain.
- The noise study for this project was prepared by Staiano Engineering Inc. on January 19, 2001 and was approved on May 21, 2001.
- The geotechnical report for this project was prepared by Herbst, Benson and Associates dated January 22, 2001 and was approved on May 21, 2001.
- All paving to be Howard County Standard P-2 (unless otherwise noted), see sheet 3 of 13 for detail. SHA paving section for widening of MD Route 32 provided on sheet 9 of 13.
- Financial Surety for the required landscaping shall be posted as part of the Developer's Agreement in the amount of \$29,850.00 for 72 shade trees and 55 evergreen trees.
- All proposed spot elevations are to bottom of curb unless otherwise noted.
- 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.
- All driveway culverts will be 12" circular or equivalent area. Contractor shall determine type of material (HDPE, CMP or Conc.)
- All proposed road open channel ditches shall be lined with erosion control matting.
- This plan shall be subject to compliance with the fourth edition of the Howard County Subdivision and Land Development Regulations and is not subject to the amended zoning regulations per Council Bill 50-2001.
- Environmental Non-Buildable Preservation Parcels 'A' and 'C' are owned and maintained by Howard County Department of Recreation and Parks with the easement holder being H.O.A. Parcel 'A' is 6.115 acres and Parcel 'C' is 1.1595 acres.
- Non-Buildable Preservation Parcel 'B' is H.O.A. owned and maintained with the easement holder being Howard County. The area of Parcel 'B' is 2.426 acres ±.

ROAD CONSTRUCTION PLANS FOX CHASE ESTATES

LEGEND

- Existing Contour
- Proposed Contour
- Existing Spot Elevation
- Proposed Spot Elevation
- Direction of Flow
- Existing Trees to Remain
- 15-24.9% Slopes
- Wetlands
- Access Easement
- Forest Conservation Easement



VICINITY MAP
SCALE: 1"=2000'

BENCHMARKS

Sta. 15CA	N 182,533.6973	E 404,199.9307	El.: 157.3223 (meters)
	N 598,862.638	E 1,325,915.787	El.: 516.148 (feet)
Sta. 15FA	N 181,632.8032	E 404,052.1942	El.: 148.4227 (meters)
	N 595,906.955	E 1,325,627.710	El.: 486.950 (feet)

SHEET INDEX

DESCRIPTION	SHEET No.
Cover Sheet	1 of 13
Road Plan and Profile	2 of 13
Road Plan and Profile	3 of 13
Grading, Sediment and Erosion Control Plan	4 of 13
Traffic Control Plan, Sediment and Erosion Control and Miscellaneous Details	5 of 13
Storm Drain Drainage Area Map	6 of 13
Storm Drain Profiles	7 of 13
Stormwater Management Notes and Details	8 of 13
Entrance Plan and Details	9 of 13
Landscape Plan	10 of 13
Forest Conservation Plan	11 of 13
Forest Conservation Plan	12 of 13
Forest Mitigation Plan	13 of 13

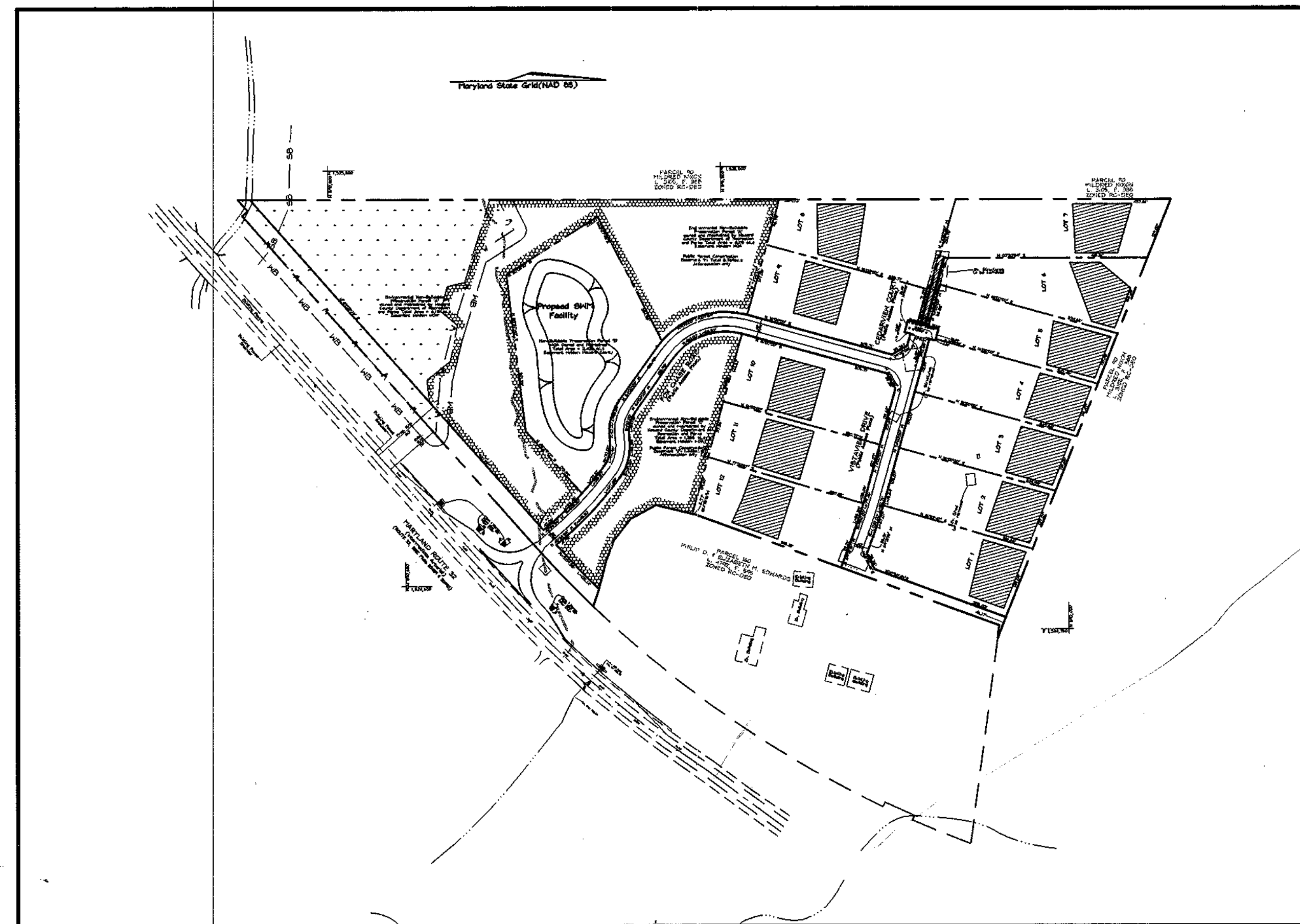
CENTERLINE ROAD CURVE DATA

CURVE #	STATIONS	DELTA	RADIUS	ARC LENGTH
C1-Fox Chase Road	PC-1+90.34; PCC-3+33.46	54°00'00"	628.32'	143.12'
C2-Fox Chase Road	PCC-3+33.46.76; PRC-4+04.15	45°00'00"	90.00'	70.64'
C3-Fox Chase Road	PRC-4+04.15; PT-4+74.84	45°00'00"	90.00'	70.64'
C4-Fox Chase Road	PC-6+08.82; PT-7+92.08	70°00'00"	150.00'	183.26'
C5-Vistaview Drive	PC-2+66.69; PT-3+47.77	04°38'45"	1,000.00'	81.08'

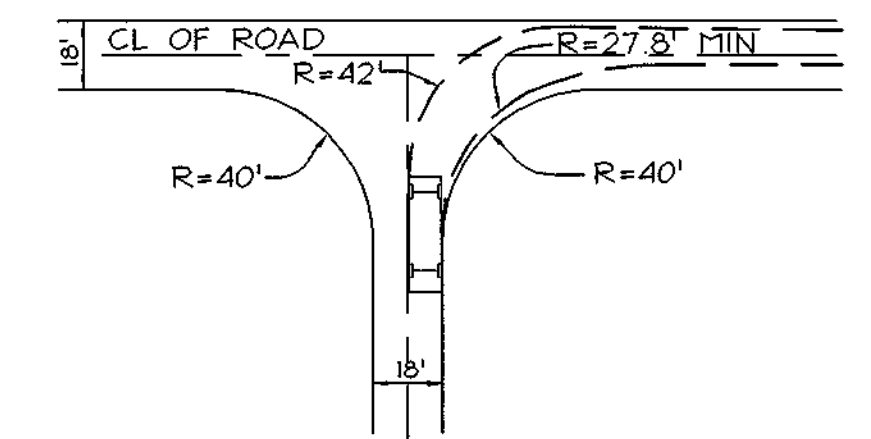
* Curve No.'s 2, 3 & 4 meet the requirements for a speed control device

ROAD CLASSIFICATION

ROAD NAME	CLASSIFICATION	R/W
Fox Chase Road	Public Access Place	40'
Vistaview Drive	Public Access Place	40'
Cedarview Court	Public Access Place	40'



LOCATION MAP
SCALE: 1"=200'



MINIMUM TURNING PATH FOR SU DESIGN VEHICLE
SCALE: 1"=50'

OWNER/DEVELOPER

Williamsburg Group L.L.C.
P.O. Box 1018
Columbia, Maryland 21044

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Kat Shalinski
CHIEF, DIVISION OF LAND DEVELOPMENT

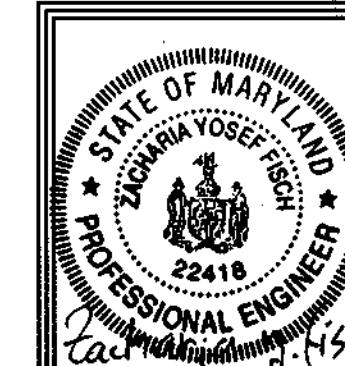
5/31/02
DATE

William M. Dwyer
CHIEF, DEVELOPMENT ENGINEERING DIVISION

5/31/02
DATE

William M. Dwyer
CHIEF, BUREAU OF HIGHWAYS

5-29-02
DATE



FSH Associates

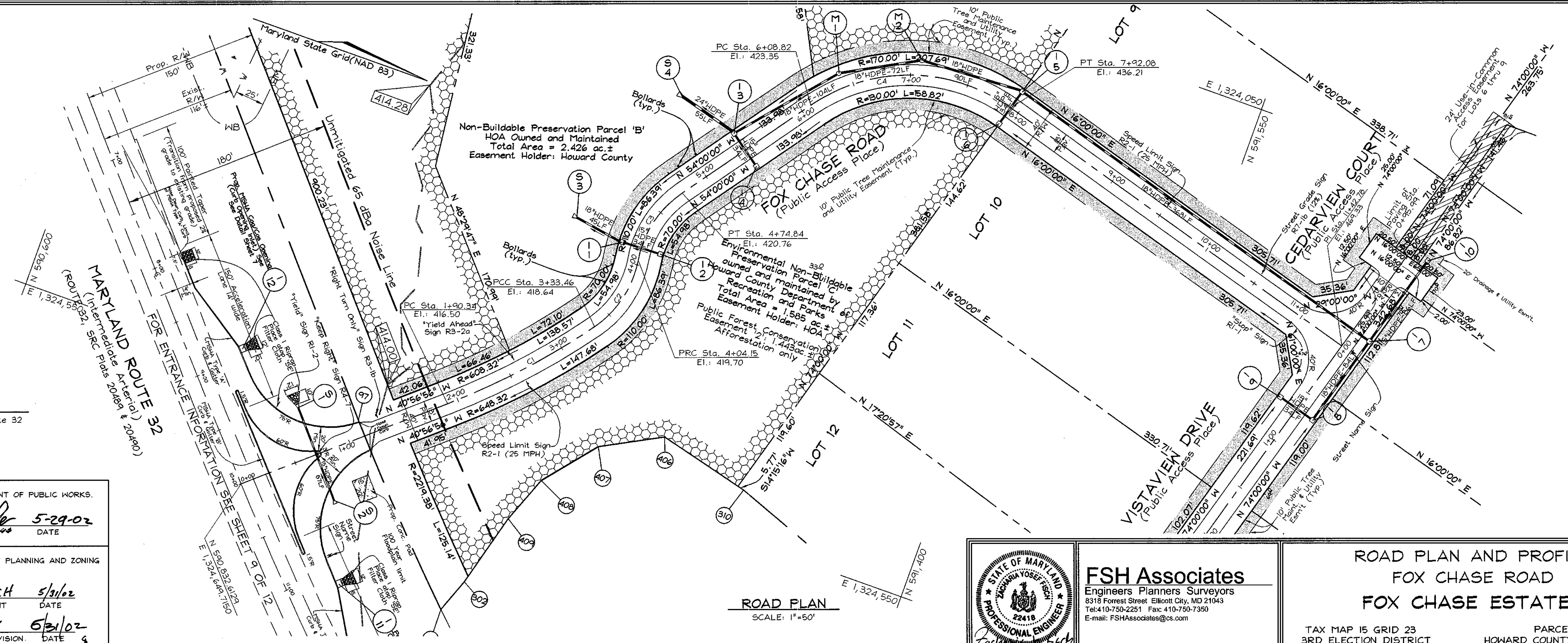
Engineers Planners Surveyors
8318 Forrest Street Elkton City, MD 21043
Tel: 410-750-2251 Fax: 410-750-7350
E-mail: FSHAssociates@cs.com

COVER SHEET
FOX CHASE ESTATES
LOTS 1 THRU 12 AND PRESERVATION PARCELS
'A', 'B' AND 'C'

TAX MAP 15 GRID 23
3RD ELECTION DISTRICT

PARCEL 25
HOWARD COUNTY, MARYLAND

DESIGN BY: PS
DRAWN BY: PS
CHECKED BY: ZTF
SCALE: As Shown
DATE: May 15, 2002
H.O. No.: 3003
SHEET No. 1 OF 13



NOTE:
The centerline stations along Maryland Route 32 are assumed stations.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Richard M. Pender 5-29-02
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Ken Sheehy /for CH 5/31/02
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

W. J. ... 6/2/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

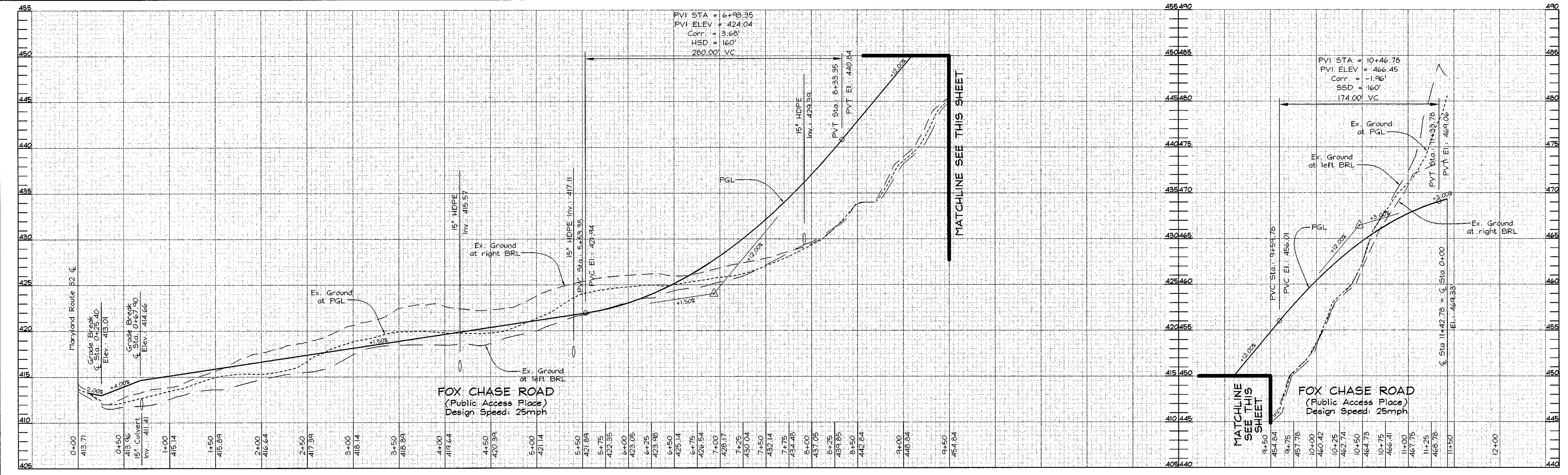
FSH Associates
 Engineers Planners Surveyors
 8318 Forrest Street Ellicott City, MD 21043
 Tel: 410-750-2251 Fax: 410-750-7350
 E-mail: FSHAssociates@cs.com

ROAD PLAN AND PROFILE
FOX CHASE ROAD
FOX CHASE ESTATES

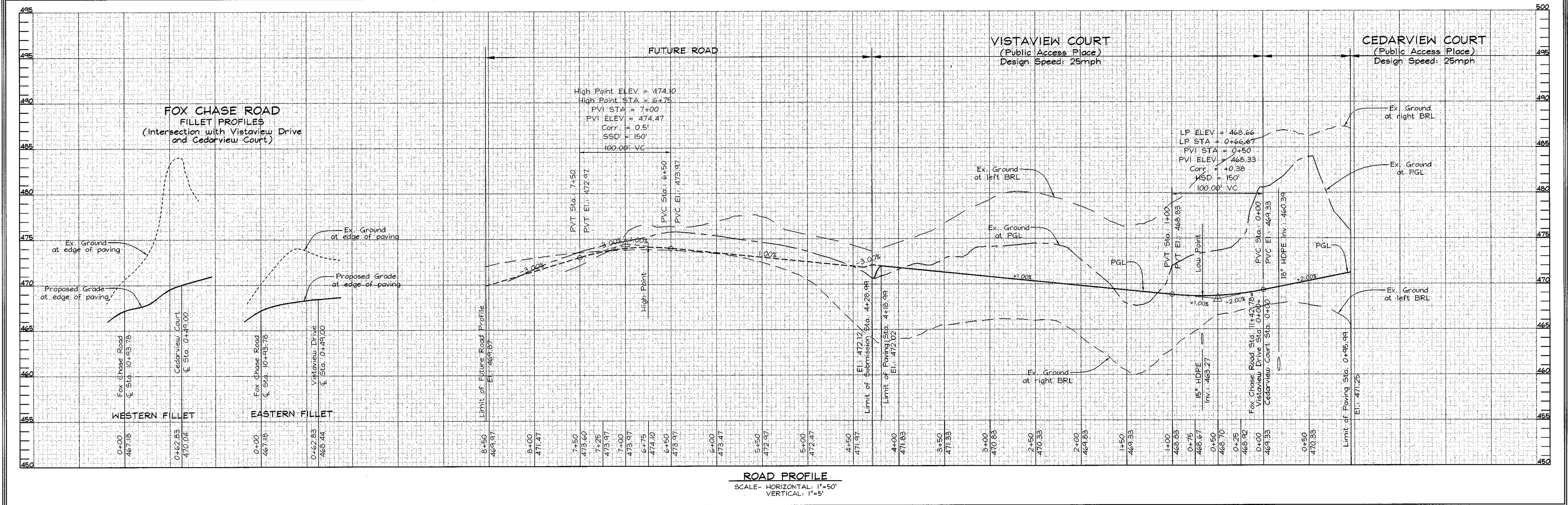
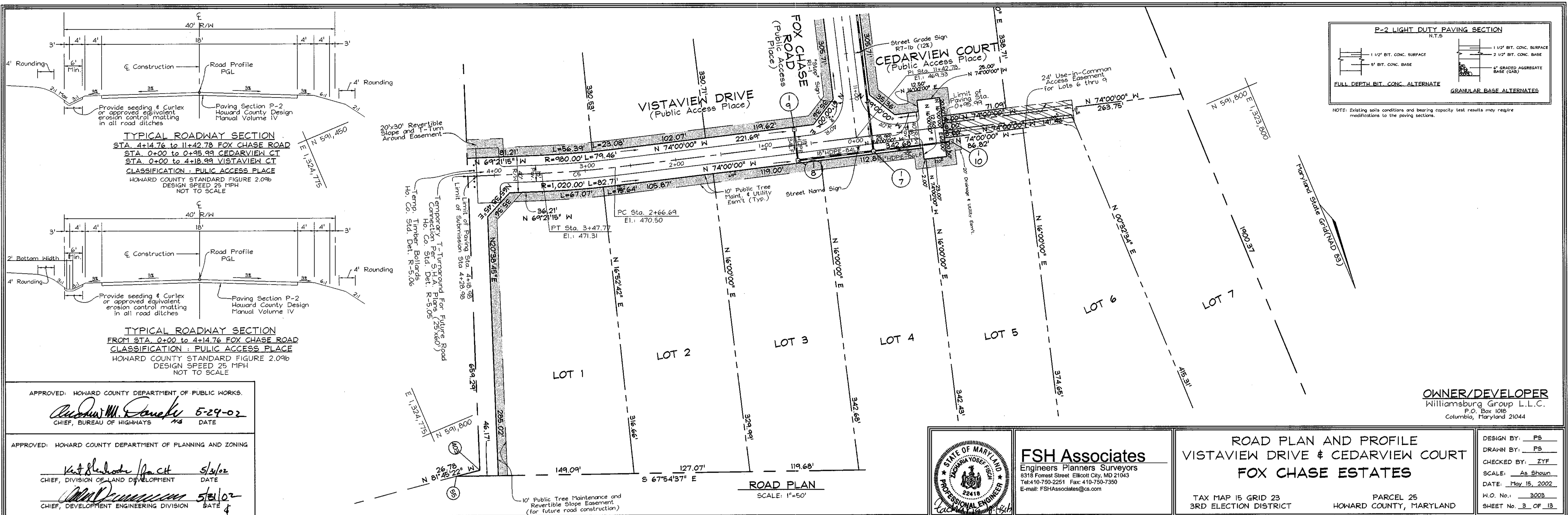
TAX MAP 15 GRID 23 PARCEL 25
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

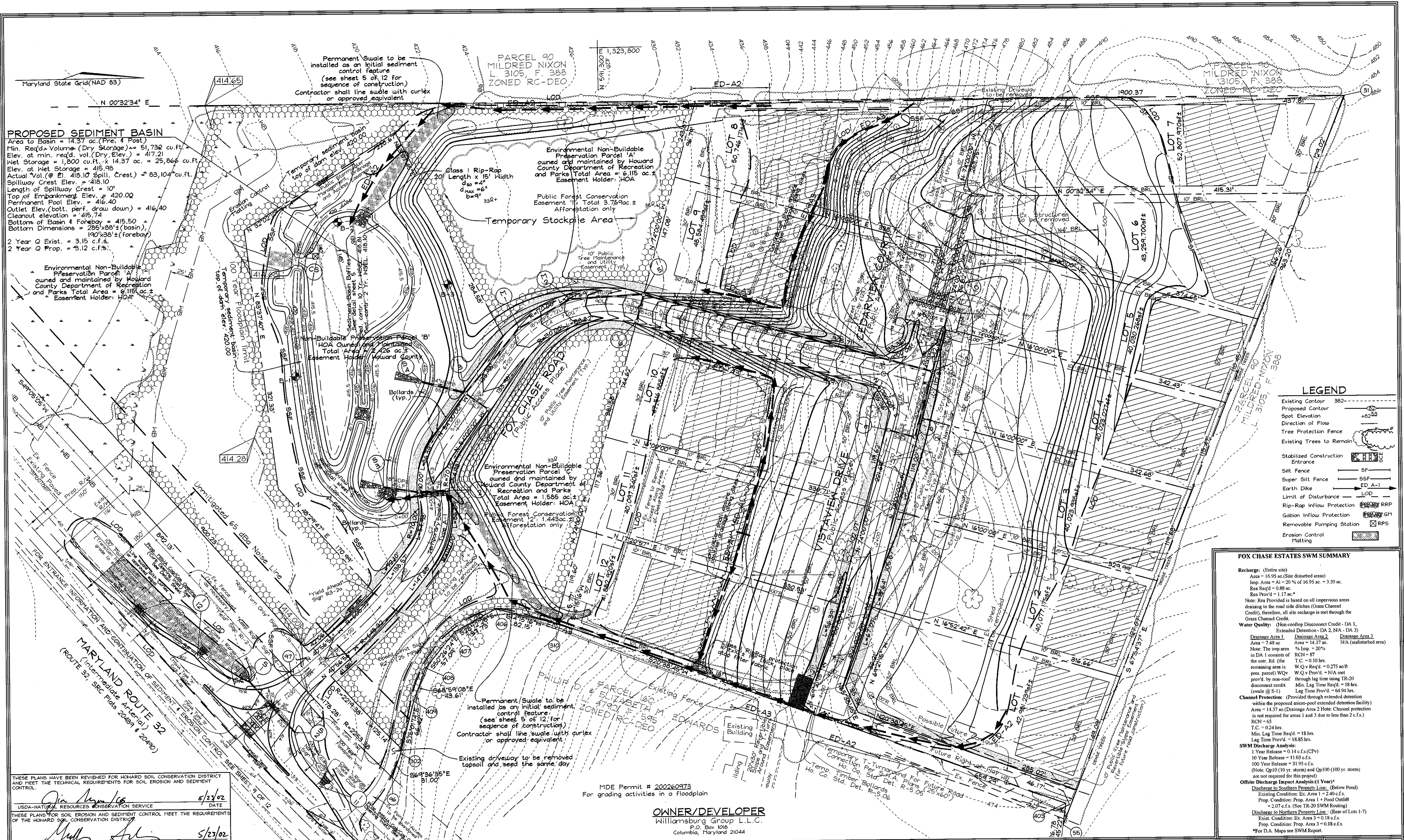
OWNER/DEVELOPER
 Williamsburg Group L.L.C.
 P.O. Box 1018
 Columbia, Maryland 21044

DESIGN BY: PS
 DRAWN BY: PS
 CHECKED BY: ZYF
 SCALE: As Shown
 DATE: May 15, 2002
 W.O. No.: 3003
 SHEET No. 2 OF 13



ROAD PROFILE
 SCALE- HORIZONTAL: 1"=50'
 VERTICAL: 1"=5'





PROPOSED SEDIMENT BASIN
 Area to Basin = 14.37 ac. (Pre. & Post)
 Min. Req'd. Volume (Dry Storage) = 51,732 cu.ft.
 Elev. at min. req'd. vol. (Dry Elev.) = 417.21
 Wet Storage = 1,800 cu.ft. x 14.37 ac. = 25,866 cu.ft.
 Elev. at Wet Storage = 415.98
 Actual Vol. (@ El. 418.10 spill. Crest) = 83,104 cu.ft.
 Spillway Crest Elev. = 418.10
 Length of Spillway Crest = 41'
 Top of Embankment Elev. = 420.00
 Permanent Pool Elev. = 416.40
 Outlet Elev. (bott. perf. draw down) = 416.40
 Cleanout elevation = 415.74
 Bottom of Basin & Forebay = 415.50
 Bottom Dimensions = 295'x88'± (basin),
 190'x38'± (forebay)
 2 Year Q Exist. = 3.15 c.f.s.
 2 Year Q Prop. = 5.12 c.f.s.

Environmental Non-Buildable Preservation Parcel 'A' owned and maintained by Howard County Department of Recreation and Parks Total Area = 6.115 ac. ± Easement Holder: HOA

Environmental Non-Buildable Preservation Parcel 'B' owned and maintained by Howard County Department of Recreation and Parks Total Area = 1.585 ac. ± Easement Holder: HOA

Environmental Non-Buildable Preservation Parcel 'C' owned and maintained by Howard County Department of Recreation and Parks Total Area = 1.585 ac. ± Easement Holder: HOA

Public Forest Conservation Easement: Total 3.789 ac. ± Afforestation only

Class 1 Rip-Rap 20' Length x 15' Width
 $d_{50} = 4"$
 $d_{85} = 9"$
 $b = 9"$

Permanent Swale to be installed as an initial sediment control feature (see sheet 5 of 12 for sequence of construction) Contractor shall line swale with curlex or approved equivalent

Existing driveway to be removed topsoil and seed the same day

Maryland State Grid (NAD 83)
 N 00°32'34" E

Parcel 90 MILDRED NIXON L. 3105 F. 388 ZONED RC-DEO

Parcel 90 MILDRED NIXON L. 3105 F. 388 ZONED RC-DEO

Parcel 90 MILDRED NIXON L. 3105 F. 388 ZONED RC-DEO

Parcel 90 MILDRED NIXON L. 3105 F. 388 ZONED RC-DEO

Parcel 90 MILDRED NIXON L. 3105 F. 388 ZONED RC-DEO

LEGEND

- Existing Contour 382-
- Proposed Contour
- Spot Elevation +82.55
- Direction of Flow
- Tree Protection Fence
- Existing Trees to Remain
- Stabilized Construction Entrance
- Silt Fence SF
- Super Silt Fence SSF
- Earth Dike ED A-1
- Limit of Disturbance LOD
- Rip-Rap Inflow Protection RRP
- Gabion Inflow Protection GI
- Removable Pumping Station RPS
- Erosion Control Matting

FOX CHASE ESTATES SWM SUMMARY

Recharge: (Entire site)
 Area = 16.95 ac. (Site disturbed area)
 Imp. Area = 20% of 16.95 ac. = 3.39 ac.
 Rea Req'd = 0.88 ac.
 Rea Prov'd = 1.17 ac.*
 Note: Rea Provided is based on all impervious areas draining to the road side ditches (Grass Channel Credit), therefore, all site recharge is met through the Grass Channel Credit.

Water Quality: (Non-roofpool Disconnect Credit - DA 1, Extended Detention - DA 2, N/A - DA 3)
 Drainage Area 1: Area = 7.48 ac. Drainage Area 2: Area = 14.37 ac. Drainage Area 3: Area = 14.37 ac. (undisturbed area)
 Note: The imp. area % Imp. = 20%
 in DA 1 consists of RCN = 87
 the entr. Rd. (the T.C. = 0.10 hrs)
 remaining area is W.Q. v. Req'd. = 0.275 ac/ft (pres. parcel) W.Q. v. Prov'd. = N/A met prov'd. by non-roofpool through lag time using TR-20 disconnect credit. Min. Lag Time Req'd. = 18 hrs. (swale @ 5-1) Lag Time Prov'd. = 64.94 hrs.

Channel Protection: (Provided through extended detention within the proposed micro-pool extended detention facility)
 Area = 14.37 ac. (Drainage Area 2 Note: Channel protection is not required for areas 1 and 3 due to less than 2 c.f.s.)
 RCN = 65
 T.C. = 0.24 hrs.
 Min. Lag Time Req'd. = 18 hrs.
 Lag Time Prov'd. = 18.85 hrs.

SWM Discharge Analysis:
 1 Year Release = 0.14 c.f.s. (CPV)
 10 Year Release = 11.03 c.f.s.
 100 Year Release = 31.95 c.f.s.
 (Note: Qp10 (10 yr. storm) and Qp100 (100 yr. storm) are not required for this project)

Office Discharge Impact Analysis (Year*)
 Discharge to Southern Property Line: (Below Pond)
 Existing Condition: Ex. Area 1 = 2.40 c.f.s.
 Prop. Condition: Prop. Area 1 = Pond Outfall = 2.07 c.f.s. (See TR-20 SWM Routing)
 Discharge to Northern Property Line: (Rear of Lots 1-7)
 Exist. Condition: Ex. Area 3 = 0.18 c.f.s.
 Prop. Condition: Prop. Area 3 = 0.18 c.f.s.
 *For D.A. Maps see SWM Report.

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
 DATE: 5/23/02

USDA-NATURAL RESOURCES CONSERVATION SERVICE
 THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 DATE: 5/23/02

HOWARD SOIL CONSERVATION DISTRICT
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 5/23/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 DATE: 5/29/02

DATE: 5/23/02

DATE: 5/23/02

DATE: 5/23/02

DATE: 5/29/02

MDE Permit # 200260973
 For grading activities in a floodplain

OWNER/DEVELOPER
 Williamsburg Group L.L.C.
 P.O. Box 1018
 Columbia, Maryland 21044

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

SIGNATURE OF DEVELOPER: [Signature]
 DATE: 5/16/02

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

SIGNATURE OF ENGINEER: [Signature]
 DATE: 5/16/02

FSH Associates
 Engineers Planners Surveyors
 8518 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
FOX CHASE ESTATES
 LOTS 1 THRU 12 AND PRESERVATION PARCELS 'A', 'B' AND 'C'
 TAX MAP 15 GRID 23 PARCEL 25
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DESIGN BY: PS
 DRAWN BY: PS
 CHECKED BY: ZYF
 SCALE: 1"=50'
 DATE: May 15, 2002
 W.O. No.: 3003
 SHEET No. 4 OF 13

2.0 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 vegetation growth, free of concern from low nutrient content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies
1. 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 vegetation.
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.
e. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications
1. Topsoil applied from the eroding site may be used provided that it meets the standards set forth in these specifications. Topsoil from the eroding site to be salvaged for a given soil type shall be of the same representative soil profile section in the Soil Survey published by USDA in cooperation with Maryland Agricultural Experiment Station.
2. Topsoil Specifications - Soil to be used as topsoil must meet the following:
a. Topsoil shall be a loam, sandy loam, loam, clay loam, silty loam, sandy clay loam, loamy sand. Other soils may be used if recommended by a soil scientist and approved by the appropriate approval authority. Regardless, small shall not be less than 10% of the total soil volume. Topsoil shall contain less than 5% by volume of stones, clumps, roots, or other materials larger than 1 and 1/2" in diameter.
b. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, johnsongrass, nutgrass, poison ivy, etc.
c. Where the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4.0 lbs/1000 sq ft (0.36 lb/100 sq ft) prior to the placement of topsoil. Limestone shall be distributed uniformly over designated areas and mixed into the soil in conjunction with tillage operations as described in the following practices.
d. For sites having disturbed areas under 5 acres:
i. Place topsoil (if required) and apply soil amendments as specified in 2.0.2 Vegetative Stabilization-Section 1 - Vegetative Stabilization Methods and Materials.
ii. On soil meeting the specifications, obtain test results indicating fertilizer and lime amendments required to bring the soil into the following ranges:
a. pH for topsoil shall be between 6.0 and 7.0. If the tested soil pH is 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 be used.
d. No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (2 days) to permit dissipation of phytotoxic materials.
NOTE: Topsoil substitutes or soil sterilants and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
e. Place topsoil (if required) and apply soil amendments as specified in 2.0.2 Vegetative Stabilization-Section 1 - Vegetative Stabilization Methods and Materials.
V. Topsoil Application
1. When topsoiling, minimum dikes, erosion and sediment control practices, such as diversion, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.
2. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" higher in elevation.
3. Topsoil shall be uniformly distributed in a 4" to 6" layer and lightly compacted to a minimum thickness of 4" (the rate of 4.0 lbs/1000 sq ft).
4. Seeding or sowing shall be completed within 30 days of topsoiling or seeding or sowing on areas with a minimum of additional soil stabilization with seed and mulch (3 days).
5. With permission from the Howard County Sediment Control Inspector, remove dikes and install permanent suales. Storm drains to convey runoff to Basin Drain systems. (3 weeks)
6. With Ho. Co. Sediment Control Inspector approval, install permanent suales. Storm drains to convey runoff to Basin Drain systems. (3 weeks)
7. Fine grade site, install topsoil, seed and mulch to disturbed areas. (2 weeks)
8. With Ho. Co. Sediment Control Inspector approval remove dikes and install permanent suales. Stabilize with Curlex or approved equivalent, seed and mulch. (1 week)
9. Remove existing meadow driveway east of entrance road, topsoil and seed and mulch in one (1) day. (1 day)
10. Pave roads and provide final stabilization to disturbed areas (the rate of 4.0 lbs/1000 sq ft). (3 weeks)
11. With permission from the Howard County Sediment Control Inspector, convert Sediment Basin to permanent SHM Pond by removing all temporary blocking to water structure, removing all sediment from basin, grading to final SHM grade and stabilizing with seed and mulch. (3 days)
12. With permission from the Howard County Sediment Control Inspector, remove any remaining sediment controls and stabilize any remaining disturbed areas. (3 days)

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, digging or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following standards:
1) Preferred-Apply 2 tons per acre dolomitic limestone (92 lbs/1000 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 20-20-20 fertilizer (14 lbs/1000 sq ft).
2) Acceptable-Apply 2 tons per acre dolomitic 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 31, seed with 60 lbs per acre (14 lbs/1000 sq ft) Turf Type Tall Fescue. For the period May 1 thru July 31, seed with 40 lbs Turf Type Tall Fescue per acre and 2 lbs per acre (0.5 lbs/1000 sq ft) of urea nitrogen. During the period of October 1 thru February 28, provide site by applying 2 lbs per acre urea nitrogen straw mulch and seed as soon as possible in the spring. (2) Use seed (3) Seed with 40 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 urea nitrogen straw immediately after seeding. Anchor mulch immediately after application using mach anchoring tool or 2 1/2 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 5 feet or higher, use 5/8 gallon per acre (0.9 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, digging or other acceptable means before seeding, if not previously loosened.

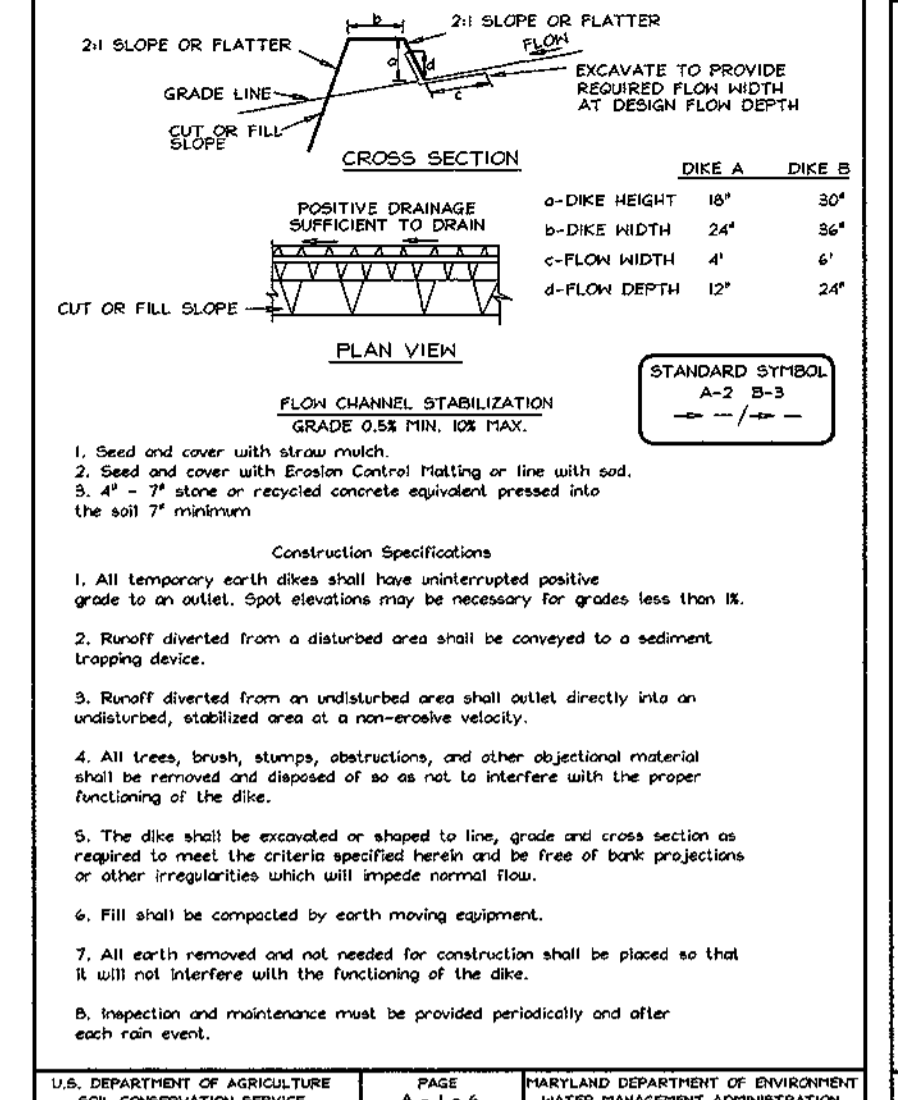
SOIL AMENDMENTS: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).

SEEDING: For the periods March 1 thru April 30 and from August 1 thru November 30, seed with 1/2 bushel per acre of annual Ryegrass (3.2 lbs/1000 sq ft). For the period May 1 thru August 31, seed with 1/2 bushel per acre of annual Ryegrass (3.2 lbs/1000 sq ft) and 1/2 bushel per acre of annual Bromus (3.2 lbs/1000 sq ft). For the period September 1 thru February 28, provide site by applying 2 lbs per acre urea nitrogen straw mulch and seed as soon as possible in the spring, or use seed.

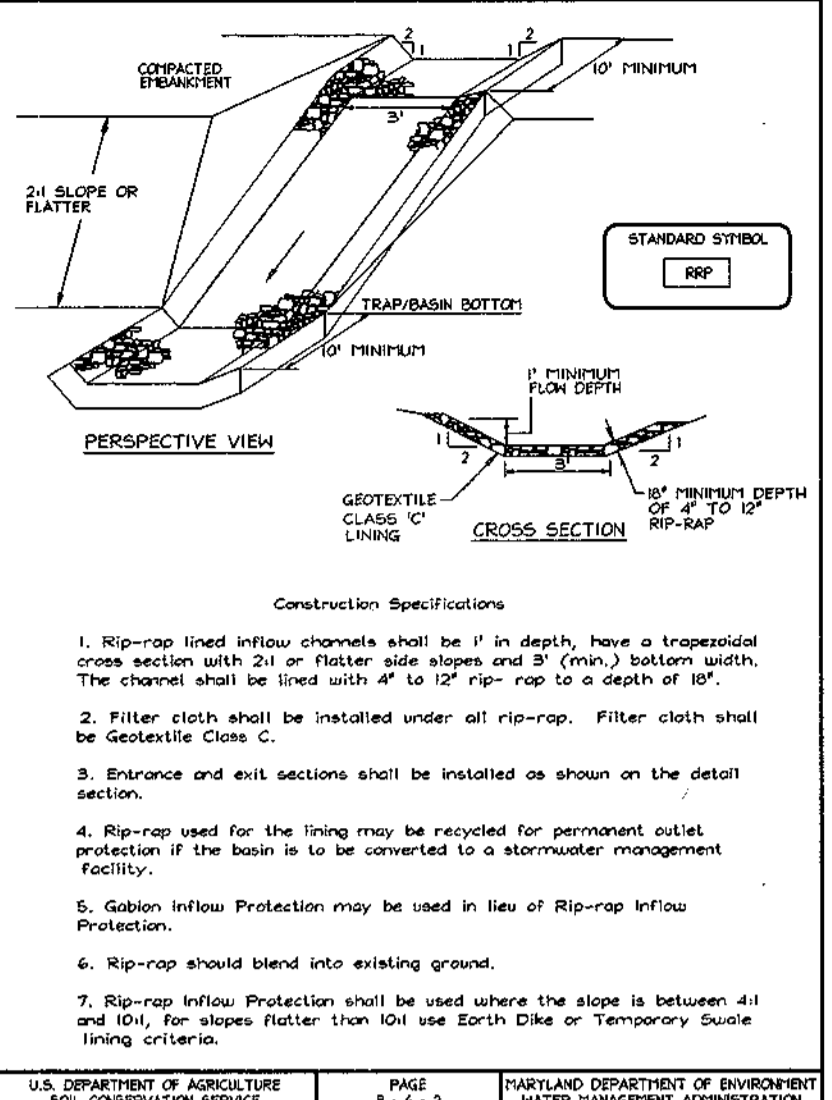
MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of urea nitrogen straw immediately after application using mach anchoring tool or 2 1/2 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 5 feet or higher, use 5/8 gallon per acre (0.9 gal/1000 sq ft) for anchoring.

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

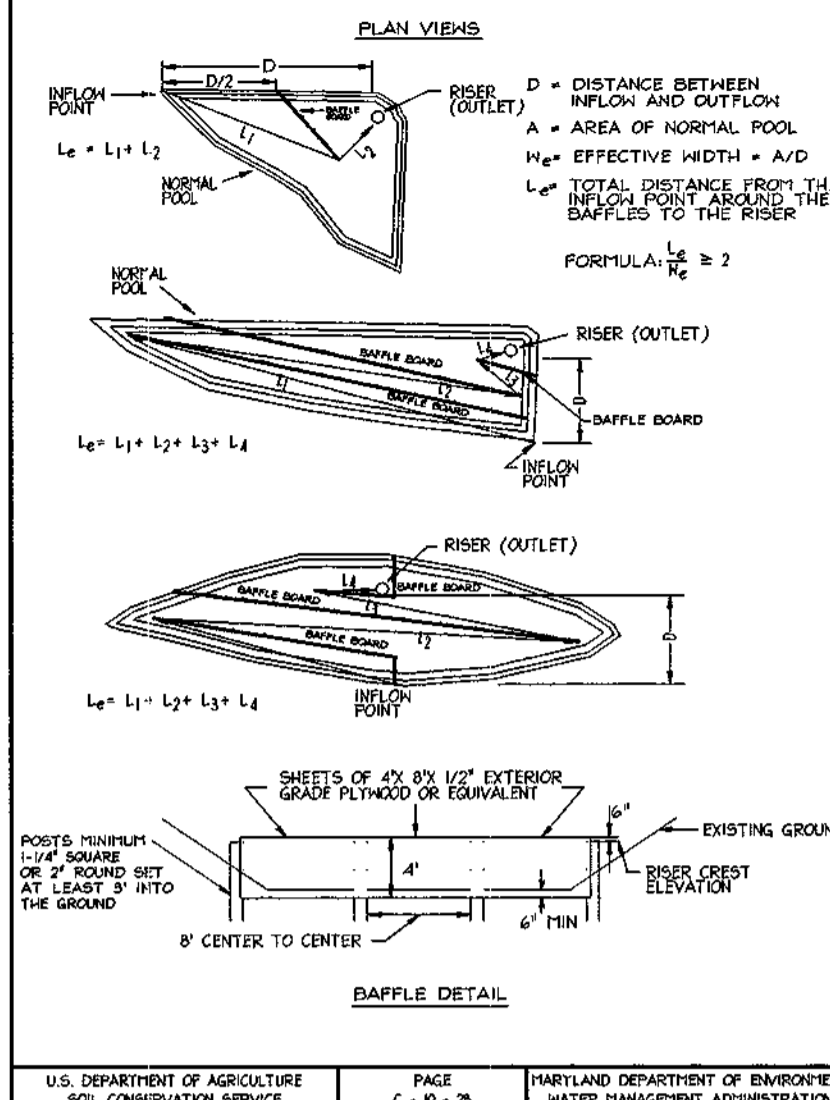
DETAIL 1 - EARTH DIKE



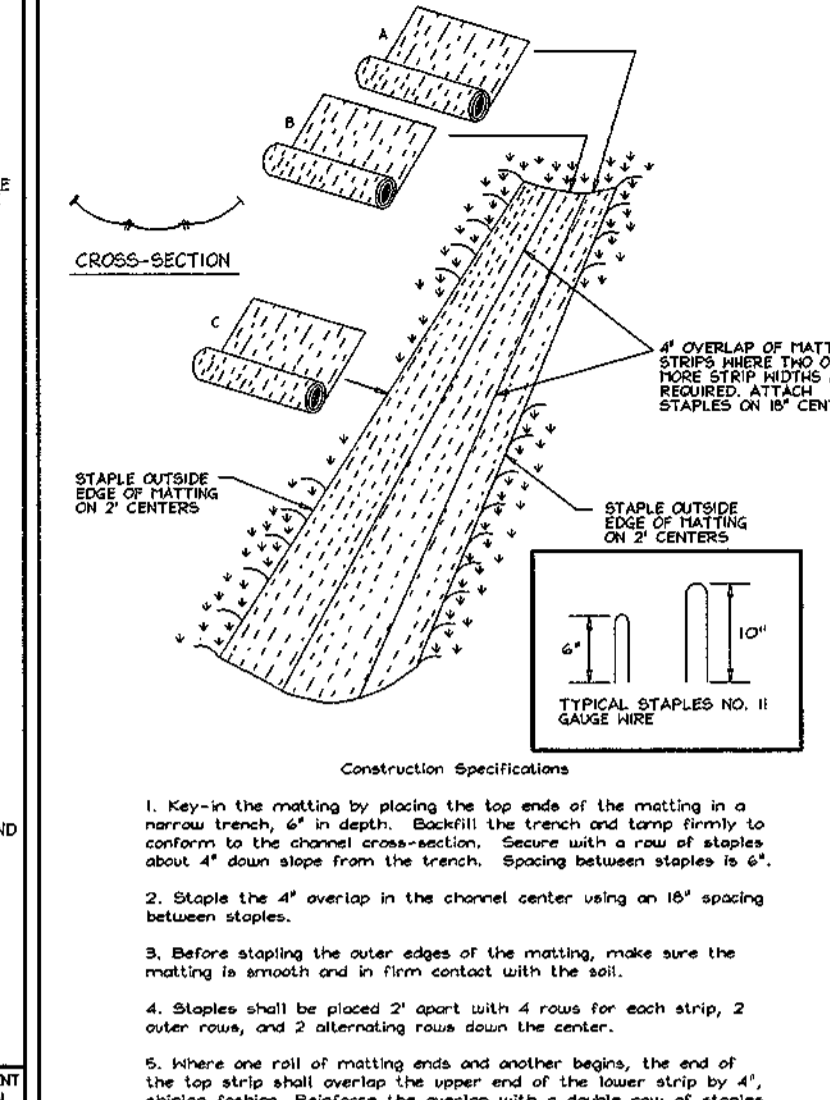
DETAIL 5 - RIP-RAP INFLOW PROTECTION



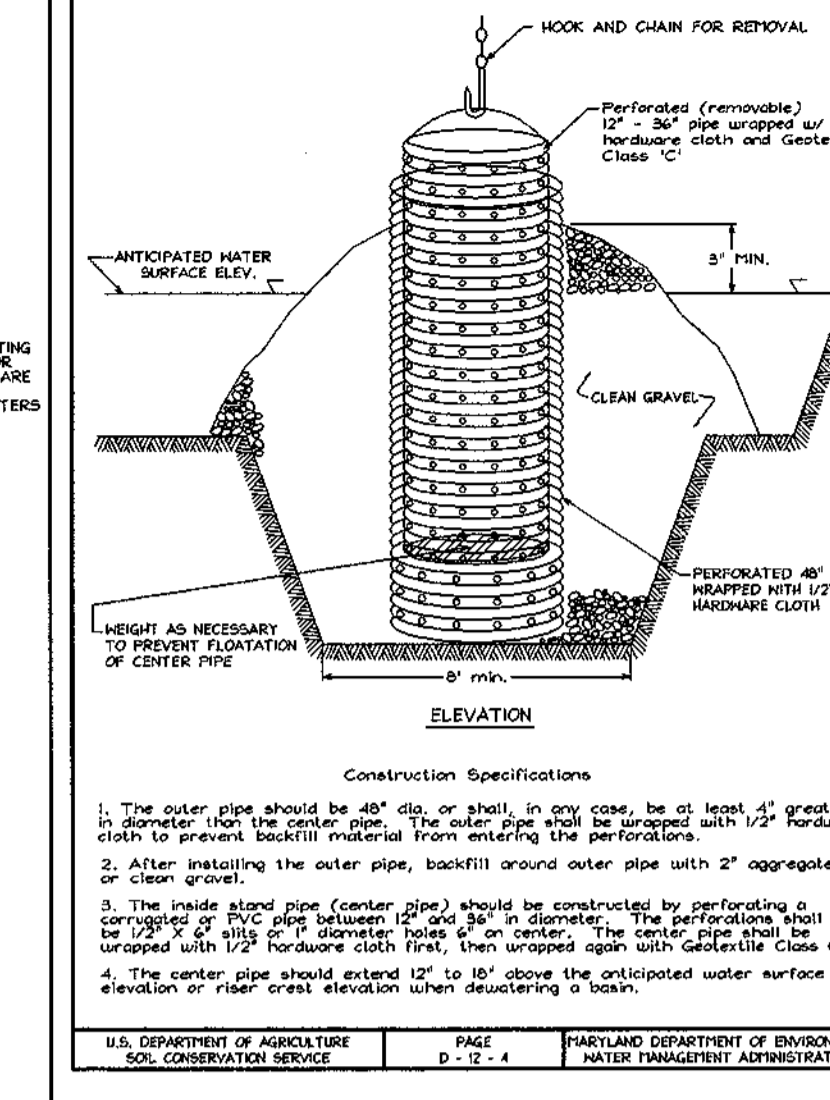
DETAIL 18 - SEDIMENT BASIN BAFFLES



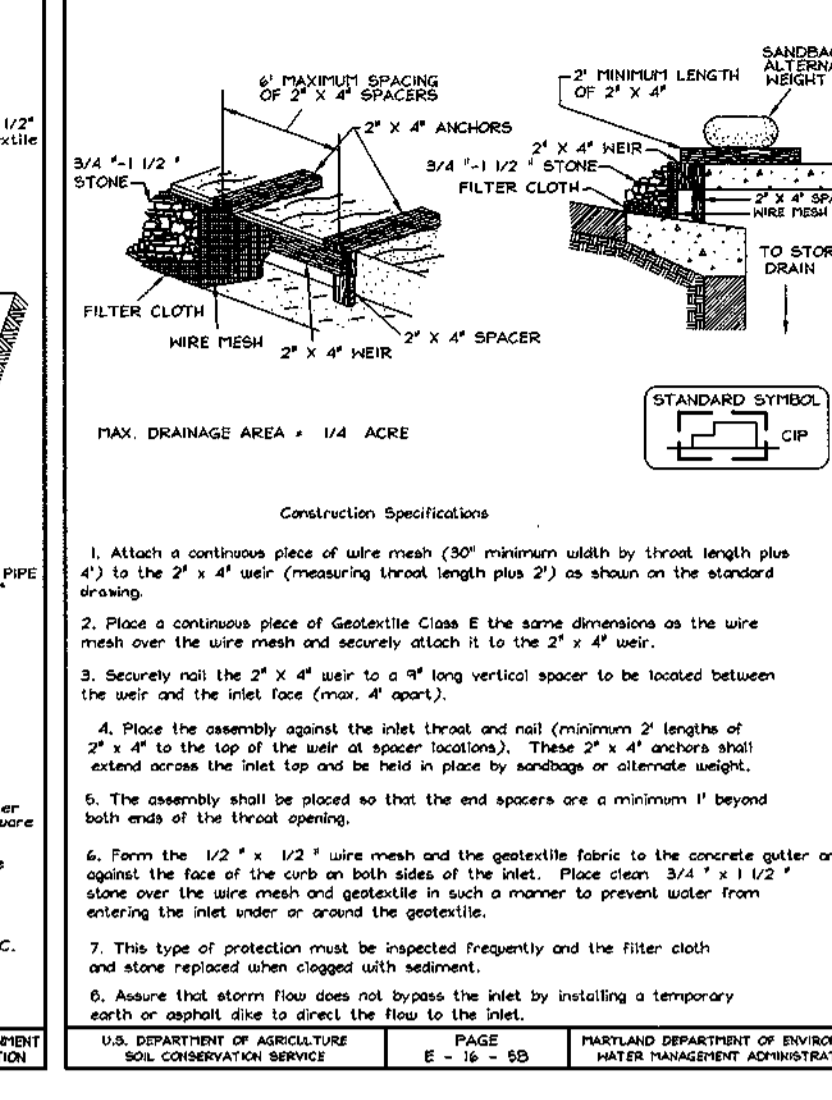
DETAIL 30 - EROSION CONTROL MATTING



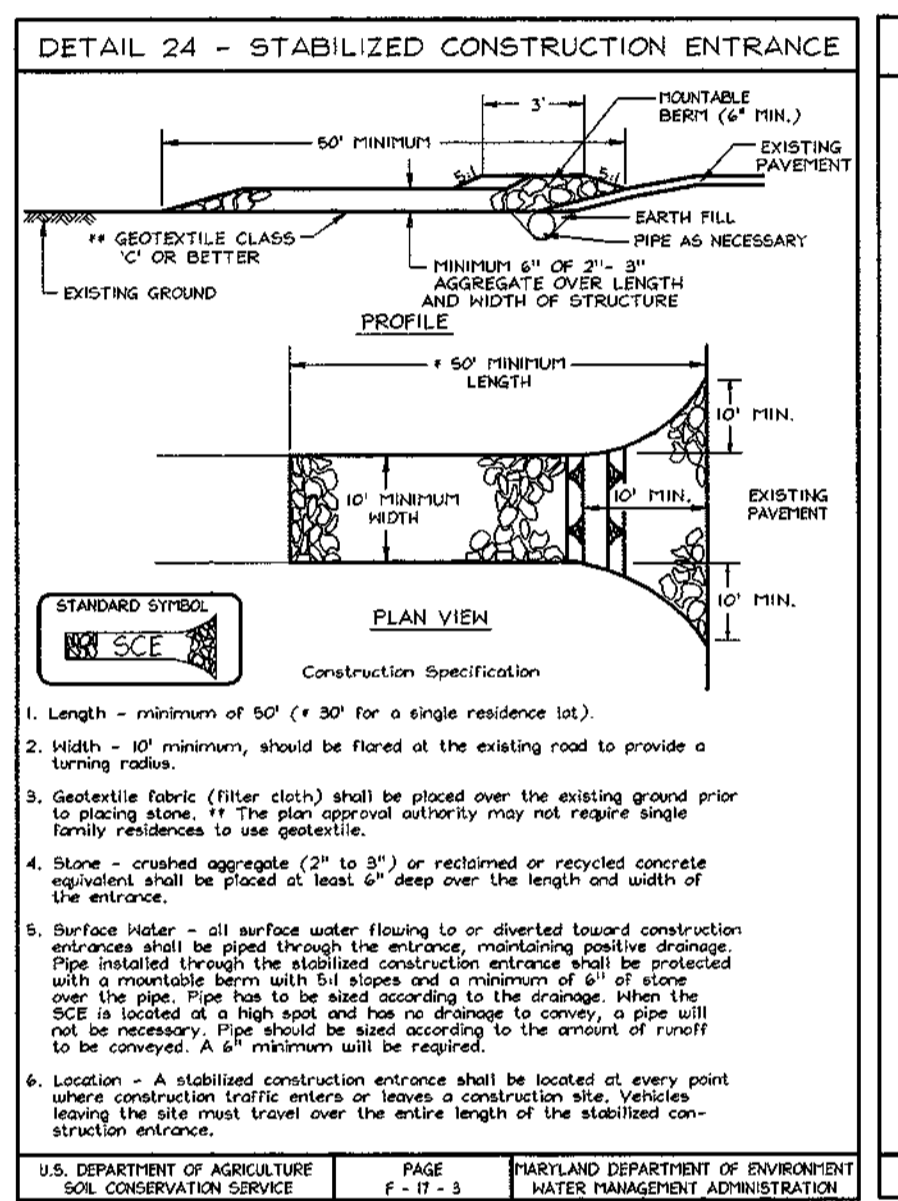
DETAIL 20A - REMOVABLE PUMPING STATION



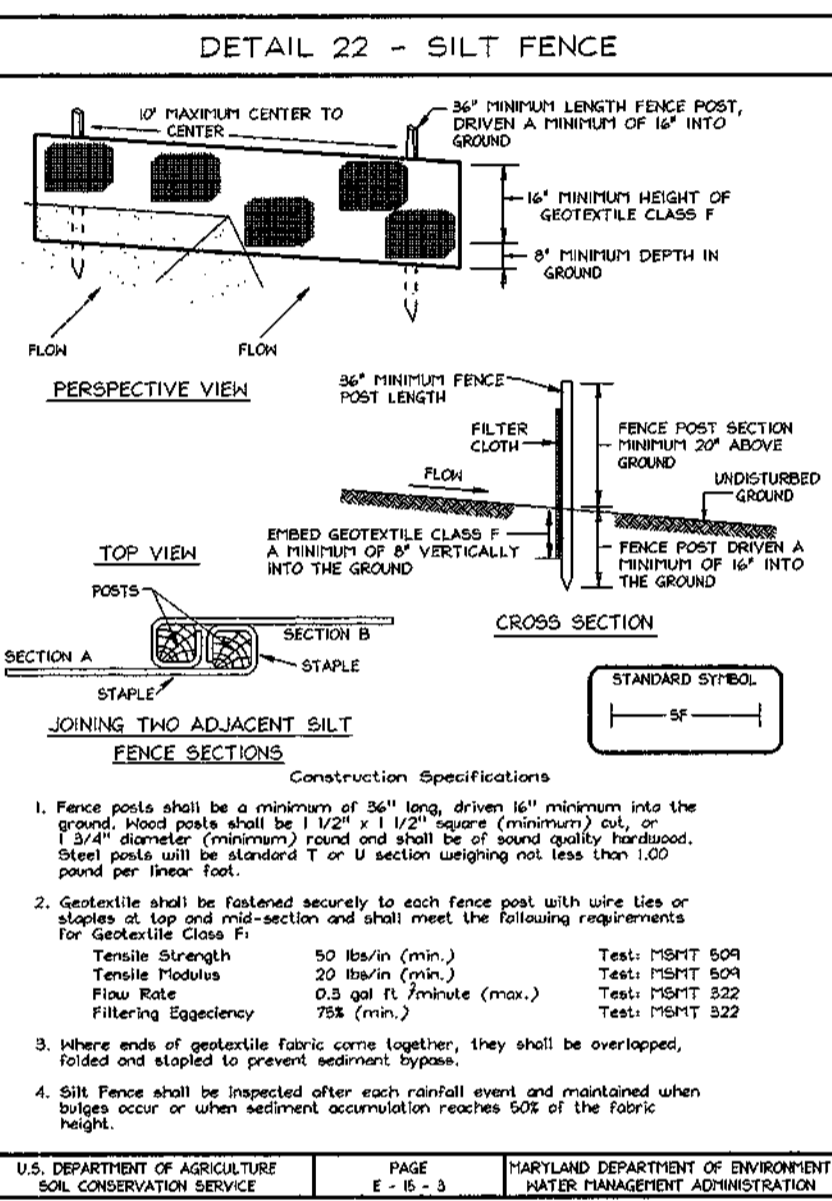
DETAIL 23C - CURB INLET PROTECTION (COG OR COG INLETS)

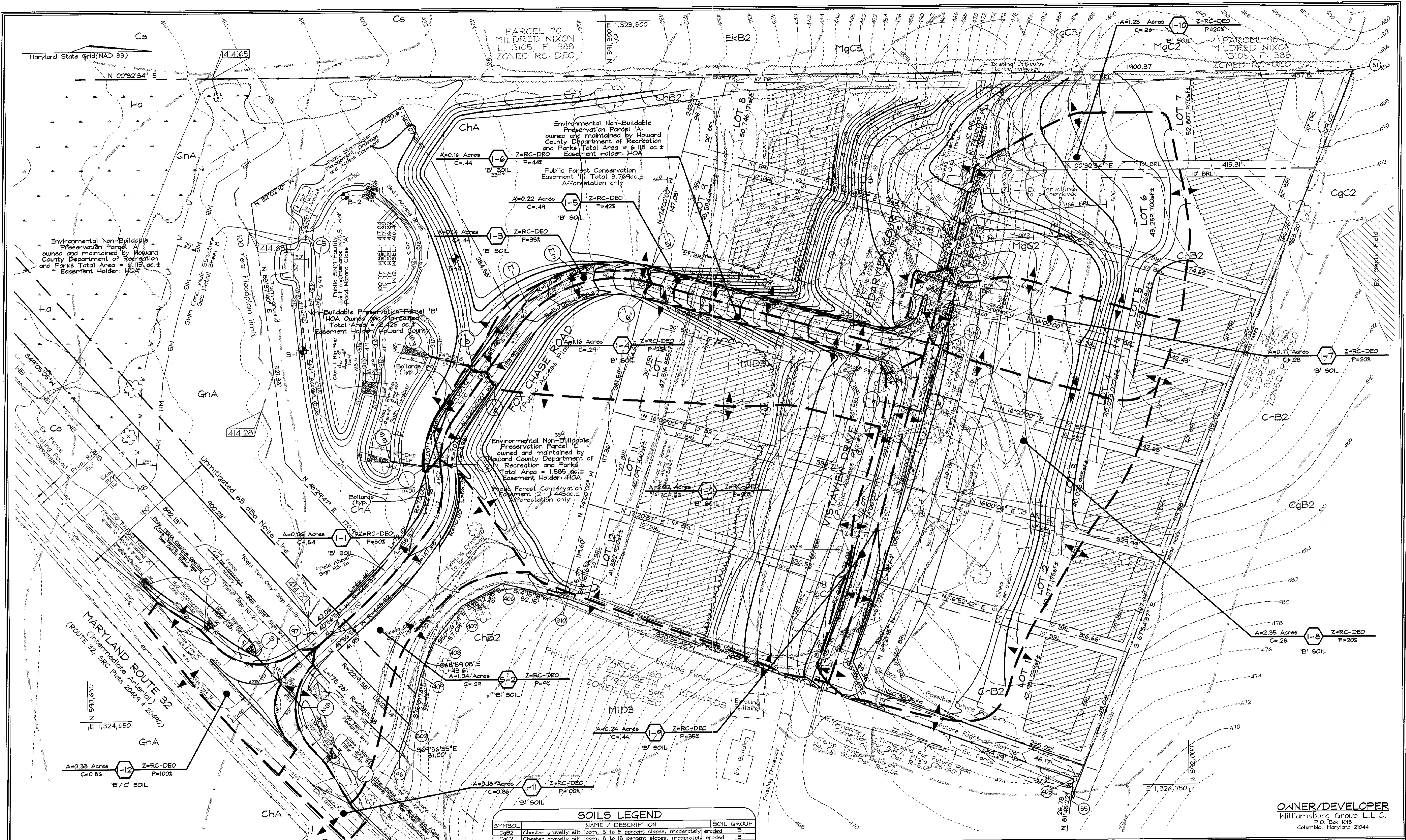


DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



DETAIL 22 - SILT FENCE





Maryland State Grid (NAD 83)
N 00°32'34" E

PARCEL 90
MILDRED NIXON
L. 3105, F. 388
ZONED RC-DEO

PARCEL 90
MILDRED NIXON
L. 3105, F. 388
ZONED RC-DEO

Environmental Non-Buildable
Preservation Parcel 'A'
owned and maintained by Howard
County Department of Recreation
and Parks Total Area = 6.115 ac.±
Easement Holder: HOA

Buildable Preservation Parcel 'B'
HOA Owned and Maintained
Total Area = 2.426 ac.±
Easement Holder: Howard County

Environmental Non-Buildable
Preservation Parcel 'C'
owned and maintained by
Howard County Department of
Recreation and Parks
Total Area = 1.585 ac.±
Easement Holder: HOA

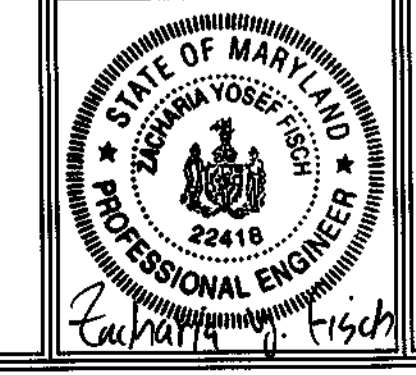
OWNER/DEVELOPER
Williamsburg Group L.L.C.
P.O. Box 1018
Columbia, Maryland 21044

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
CgB2	Chester gravelly silt loam, 3 to 8 percent slopes, moderately eroded	B
CgC2	Chester gravelly silt loam, 8 to 15 percent slopes, moderately eroded	B
ChB2	Chester silt loam, 0 to 3 percent slopes	D
ChB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	D
Cs	Comus silt loam	D
Ekb2	Elloak silt loam, 3 to 8 percent slopes, moderately eroded	D
Ekd2	Elloak silt loam, 15 to 25 percent slopes, moderately eroded	D
GnA	Glenville silt loam, 0 to 3 percent slopes	D
Ha	Hatboro silt loam	D
MgC2	Manor gravelly loam, 8 to 15 percent slopes, moderately eroded	D
MgC3	Manor gravelly loam, 8 to 15 percent slopes, severely eroded	D
MID3	Manor loam, 15 to 25 percent slopes, severely eroded	B

NOTE: This Plan is for Drainage Area and Soil Information purposes only.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kat Shanker 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

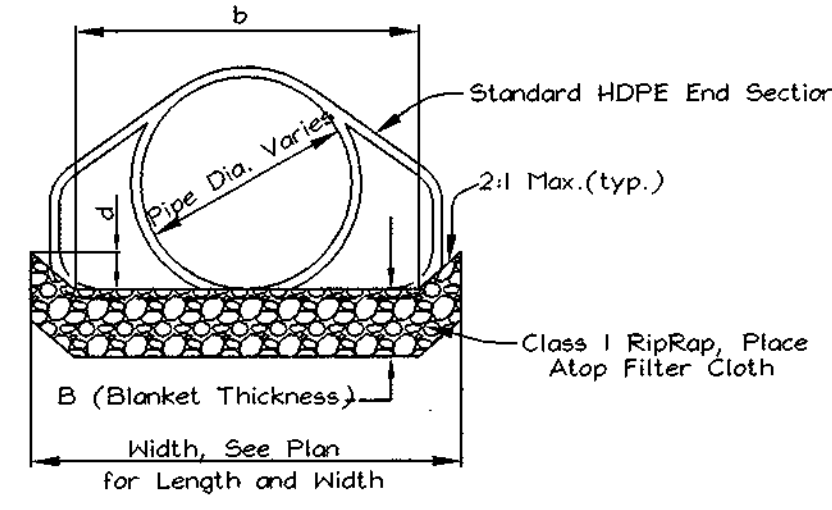
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 5-29-02
CHIEF, BUREAU OF HIGHWAYS DATE



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

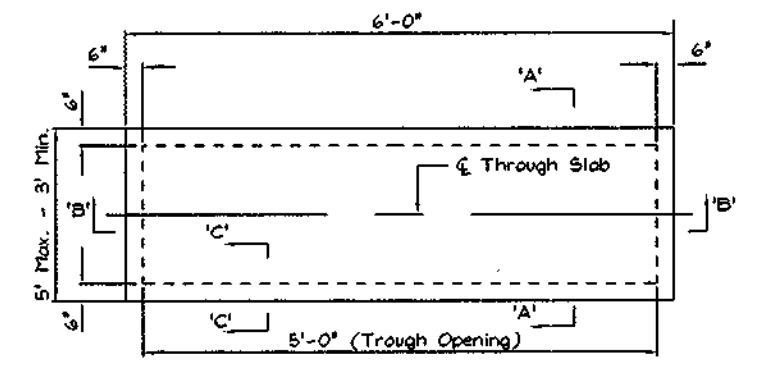
STORM DRAIN DRAINAGE AREA MAP
FOX CHASE ESTATES
LOTS 1 THRU 12 AND PRESERVATION PARCELS
'A', 'B' AND 'C'
TAX MAP 15 GRID 23 PARCEL 25
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DESIGN BY: PS
DRAWN BY: PS
CHECKED BY: ZTF
SCALE: 1"=50'
DATE: May 15, 2002
W.O. No.: 3029
SHEET No. 6 OF 13

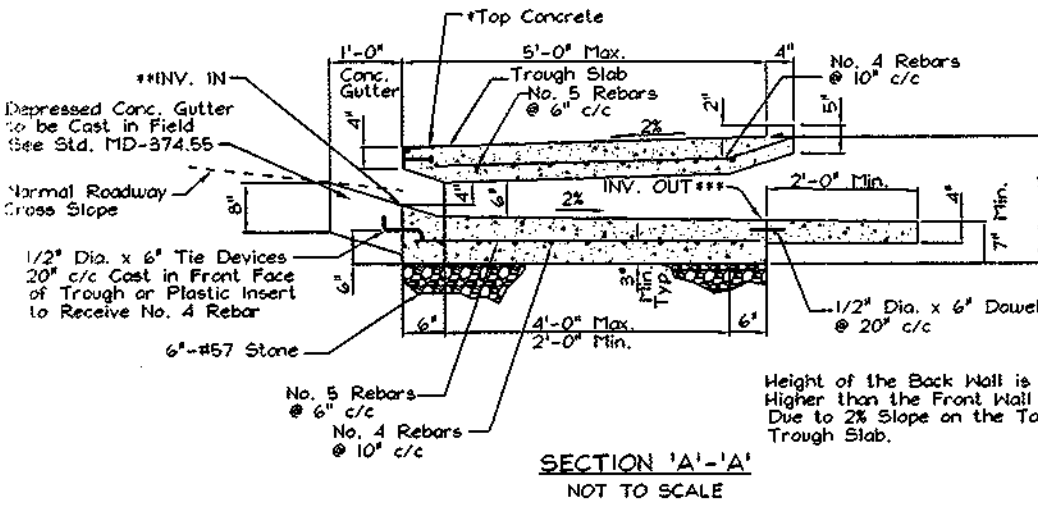


TYP. OUTFALL DETAIL
Not to Scale

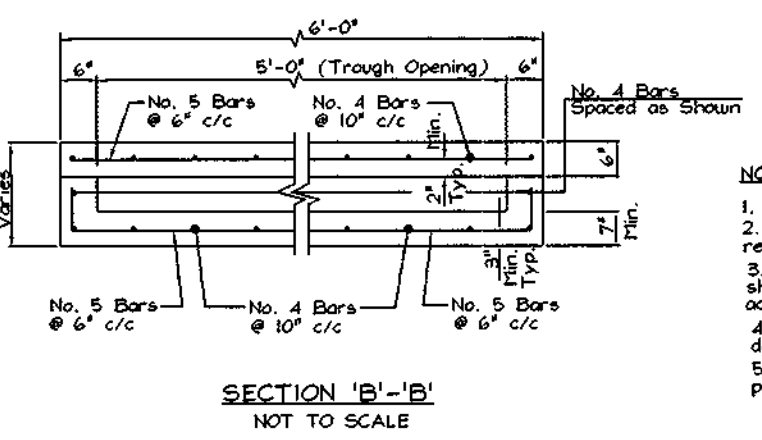
Structure	Q(c.f.s.)	S	n	b	d	d _{max}	d _{min}	B (Blanket Thickness)
S-1	1.99 c.f.s.	0.5%	0.035	3.5'	0.37'	15"	9.5"	19"
S-3	4.99 c.f.s.	0.5%	0.035	4.0'	0.56'	15"	9.5"	19"
S-4	13.10 c.f.s.	0.5%	0.035	5.0'	0.86'	15"	9.5"	19"



PRECAST CONCRETE TROUGH SLAB
NOT TO SCALE



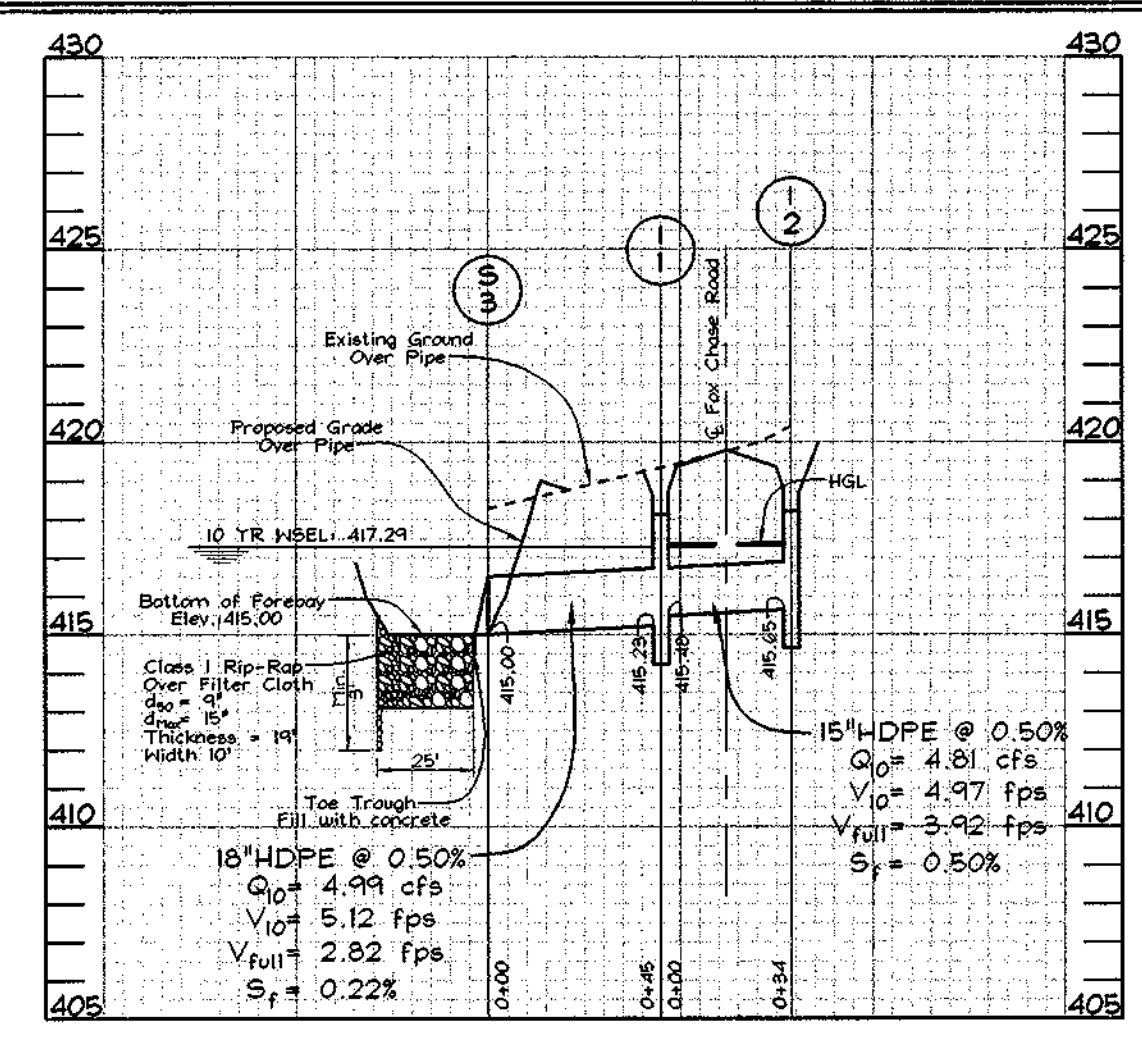
SECTION 'A'-A'
NOT TO SCALE



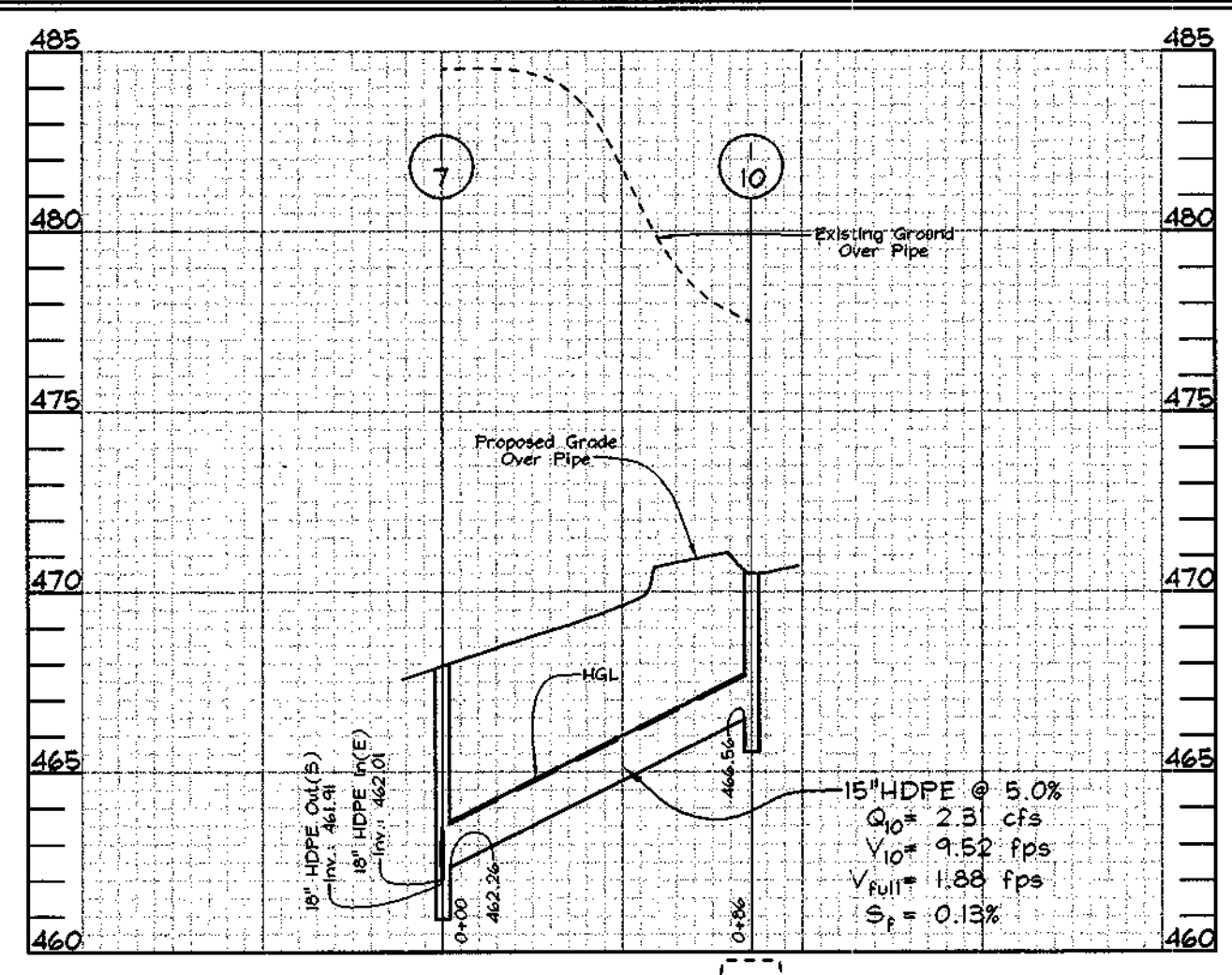
SECTION 'B'-B'
NOT TO SCALE

MSHA COG/COS OPENING INLET (DRAFT)
NOT TO SCALE

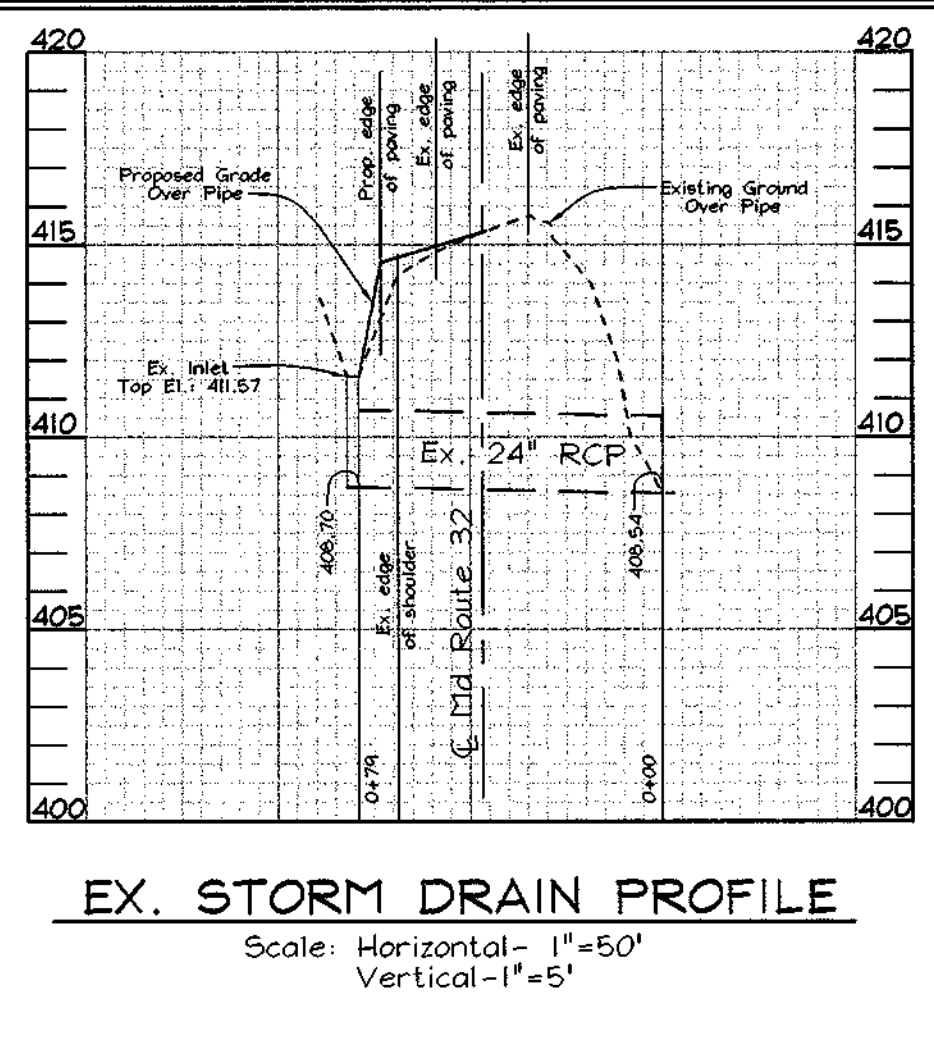
- NOTES:
1. Concrete shall be min. no. 6 (#500 psi)
 2. Reinforcing steel shall meet the requirements of ASTM A618, grade 60.
 3. Angle iron and shear stud connectors shall be galvanized after welding in accordance with ASTM A 123.
 4. See std. MD-374.64 for handling device detail.
 5. See std. MD-374.65 for depressed gutter pan detail.



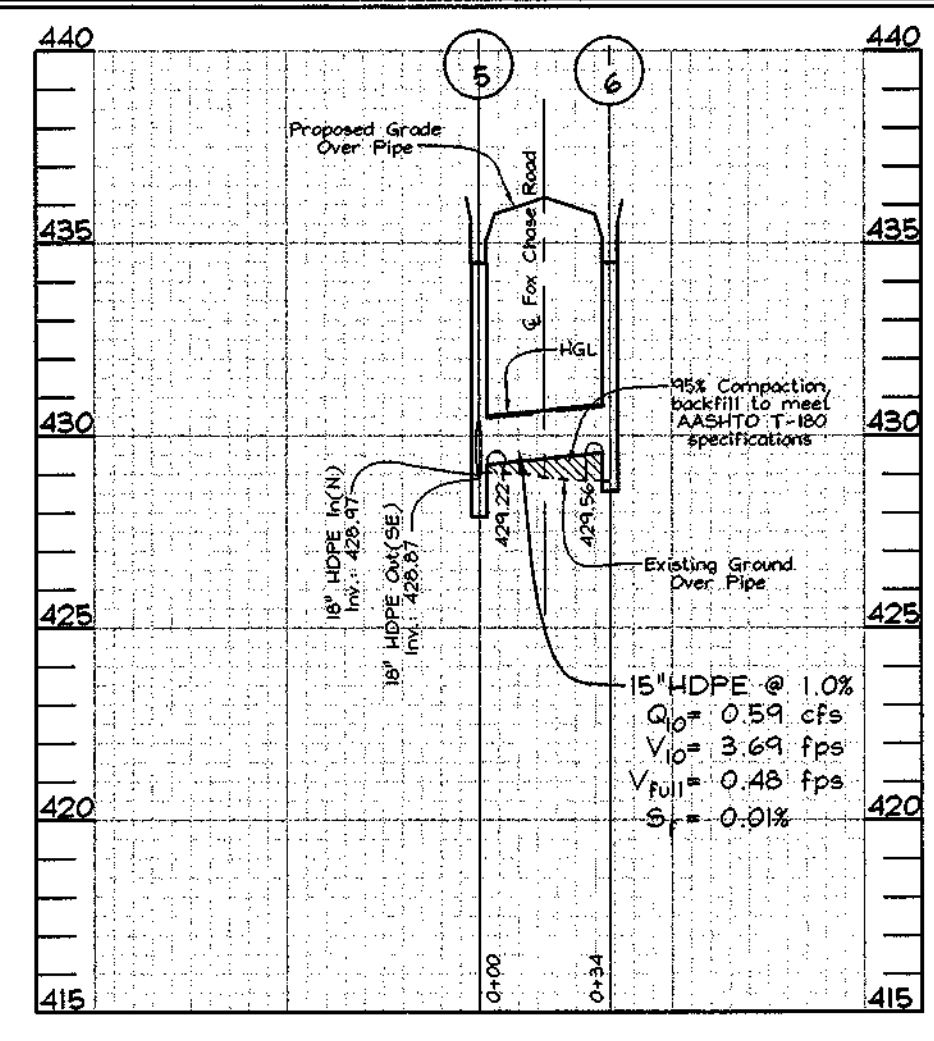
STORM DRAIN PROFILES
Scale: Horizontal- 1"=50'
Vertical-1"=5'



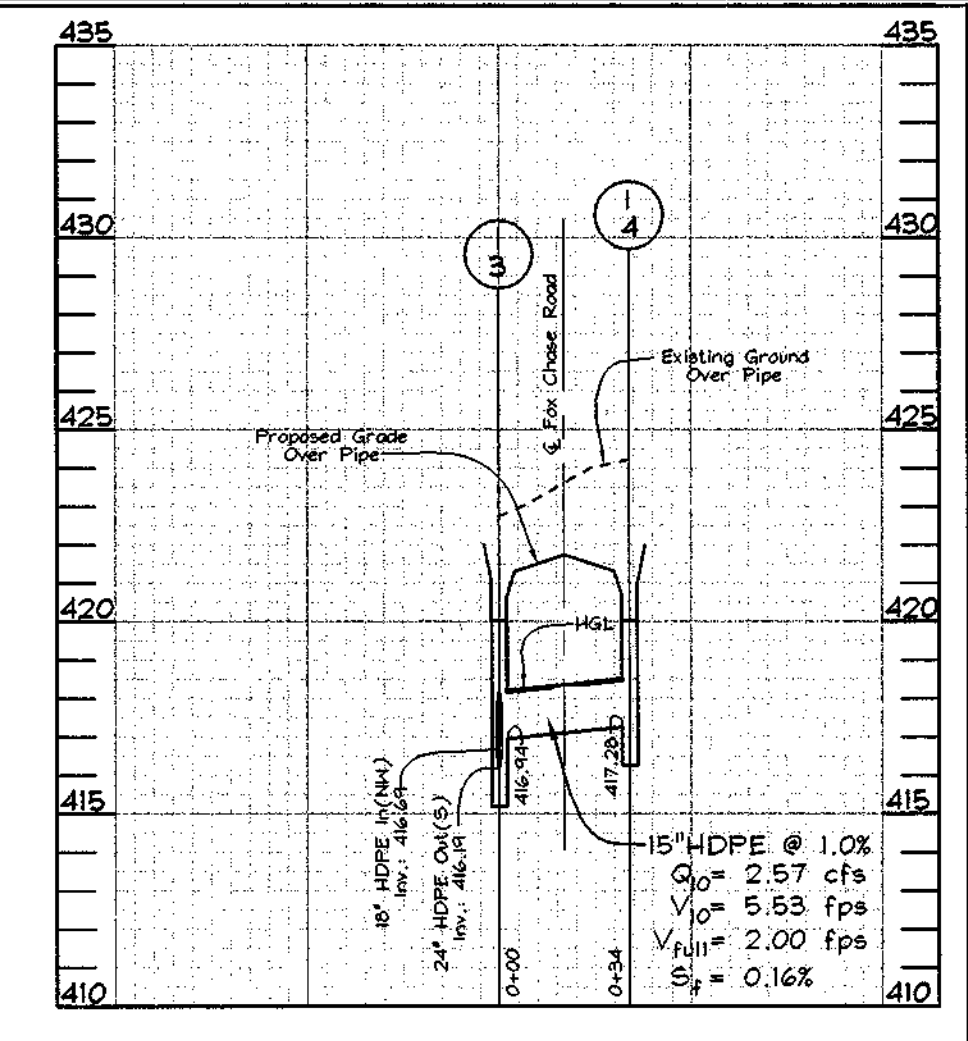
STORM DRAIN PROFILES
Scale: Horizontal- 1"=50'
Vertical-1"=5'



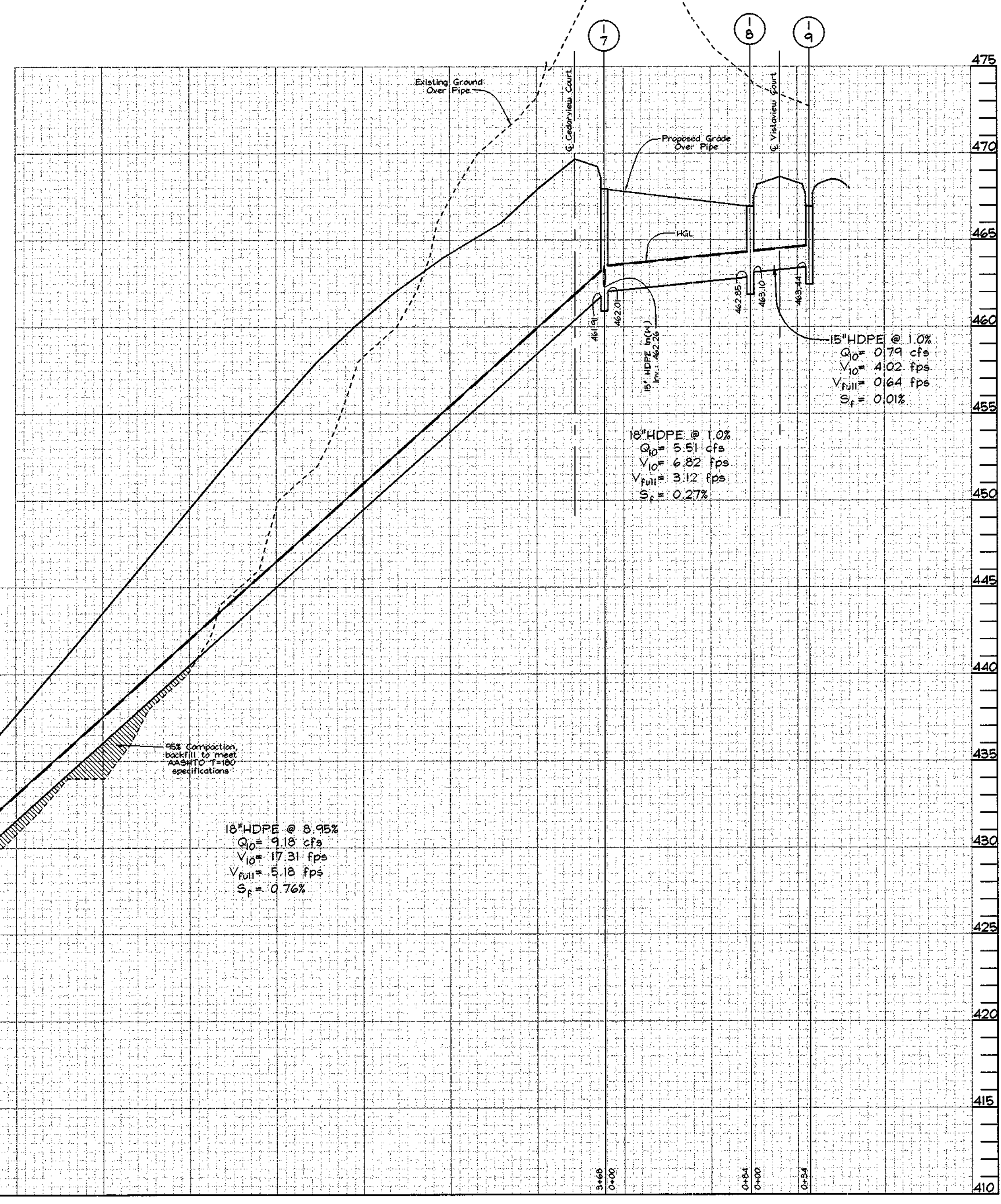
EX. STORM DRAIN PROFILE
Scale: Horizontal- 1"=50'
Vertical-1"=5'



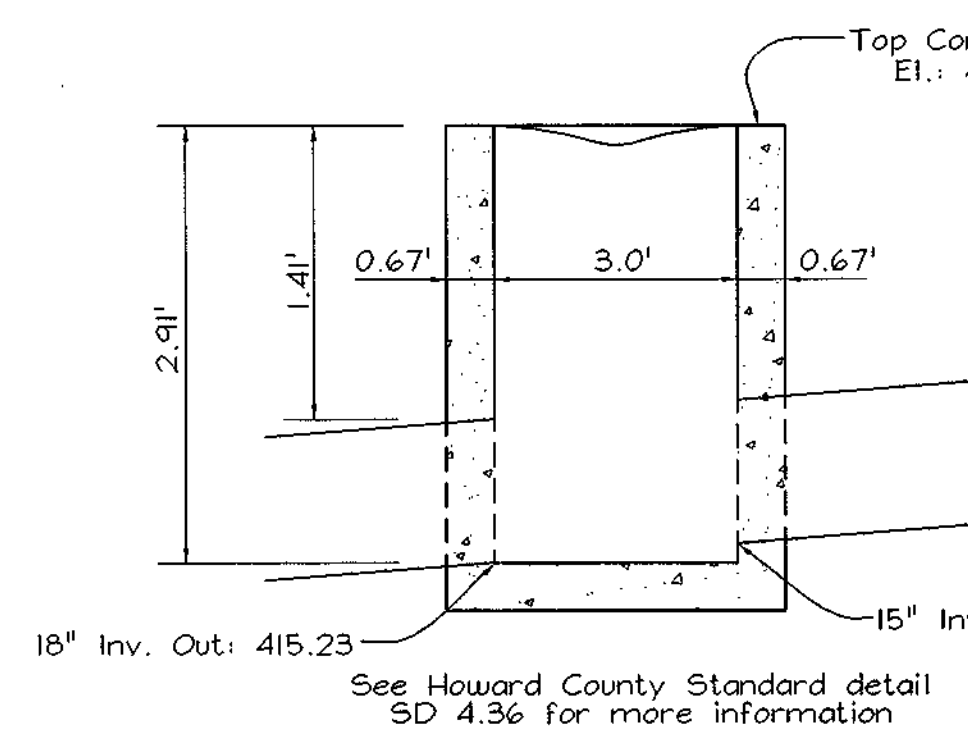
STORM DRAIN PROFILES
Scale: Horizontal- 1"=50'
Vertical-1"=5'



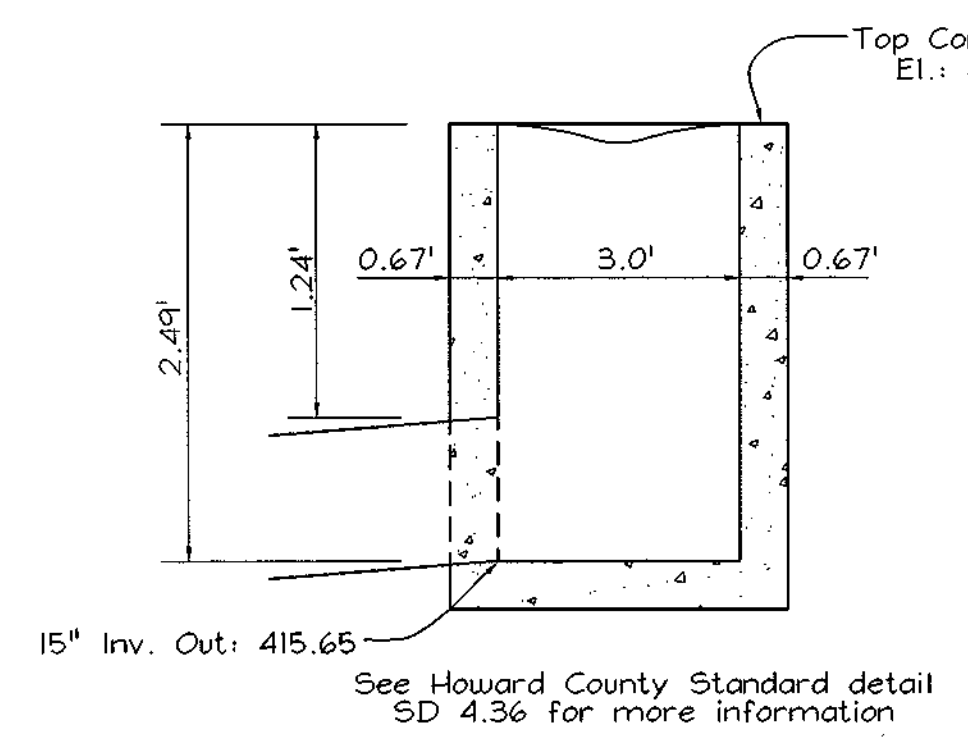
STORM DRAIN PROFILES
Scale: Horizontal- 1"=50'
Vertical-1"=5'



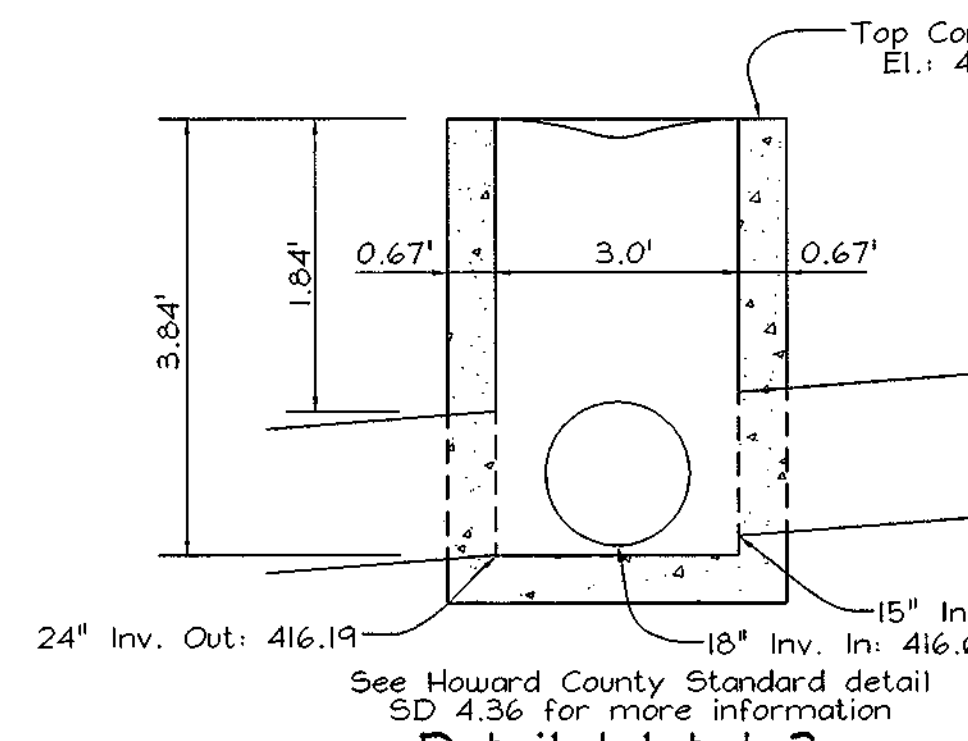
STORM DRAIN PROFILES
Scale: Horizontal- 1"=50'
Vertical-1"=5'



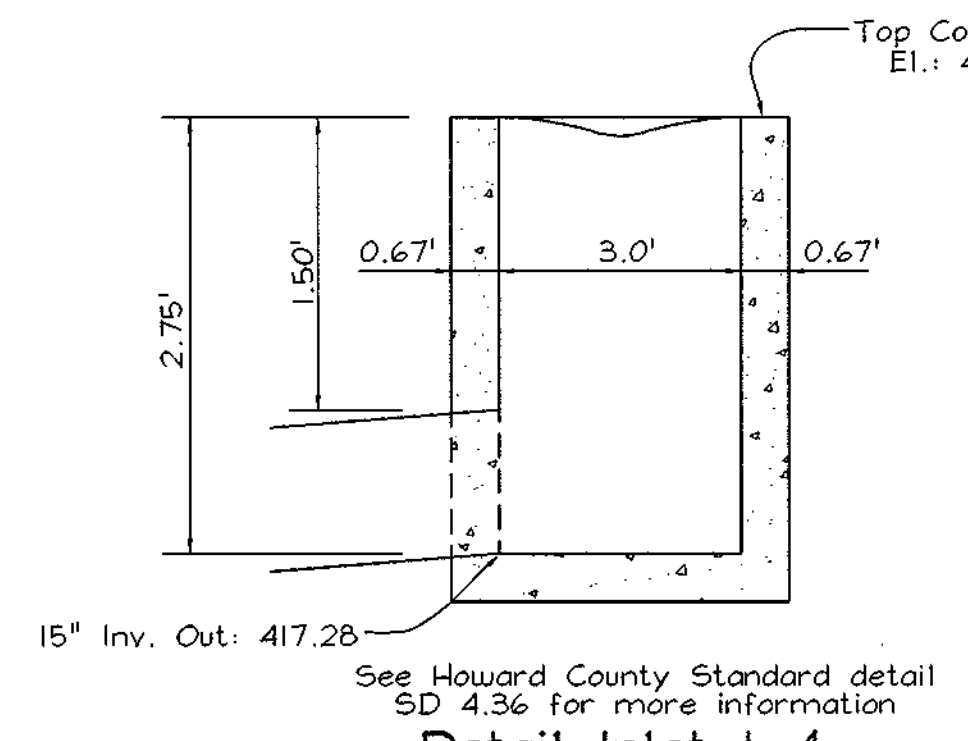
Detail Inlet 1-1
No Scale



Detail Inlet 1-2
No Scale



Detail Inlet 1-3
No Scale



Detail Inlet 1-4
No Scale

NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
I-1	Modified Open End Grate(single opening)	Q Sta. 4+14.76-17.0'Lt.	418.14	415.48	415.23	see detail this sheet
I-2	Modified Open End Grate(double opening)	Q Sta. 4+14.76-17.0'Lt.	418.14	-	415.65	see detail this sheet
I-3	Modified Open End Grate(single opening)	Q Sta. 5+40.55-17.0'Lt.	420.03	416.84	416.19	see detail this sheet
I-4	Modified Open End Grate(single opening)	Q Sta. 5+40.55-17.0'Lt.	420.03	-	417.28	see detail this sheet
I-5	Precast Open End Grate(single opening)	Q Sta. 7+92.07-17.0'Lt.	434.49	429.56	428.87	SD 4.36
I-6	Precast Open End Grate(single opening)	Q Sta. 7+92.07-17.0'Lt.	434.49	-	429.56	SD 4.36
I-7	Precast Open End Grate(single opening)	Q Sta. 0+17.00-17.0'Lt.	467.95	463.26	461.91	SD 4.36
I-8	Precast Open End Grate(double opening)	Q Sta. 0+66.67-17.0'Lt.	466.94	463.10	462.85	SD 4.36
I-9	Precast Open End Grate(double opening)	Q Sta. 0+66.67-17.0'Lt.	466.94	-	463.44	SD 4.36
I-10	Precast Open End Grate(single opening)	N 591,728 E 1,324,124	470.50	-	466.56	SD 4.36
I-11	COG/COS Opening (SHA Draft Detail)	N 590,941 E 1,324,703	413.27*	412.43**	412.17***	see detail this sheet
I-12	COG/COS Opening (SHA Draft Detail)	N 590,794 E 1,324,540	412.02*	411.19**	410.93***	see detail this sheet
M-1	Precast Manhole (4')	Q Sta. 6+41.75-13.0'Lt.	424.34	-	418.77	G 5.12
M-2	Precast Manhole (4')	Q Sta. 7+08.95-13.0'Lt.	428.43	422.57	422.47	G 5.12
S-1	15" Concrete End Section	Q Sta. 0+69.68-44.96'Lt.	411.18	-	409.93	SD 5.5
S-2	15" Concrete End Section	Q Sta. 0+69.29-45.04'Lt.	411.48	-	410.23	SD 5.5
S-3	18" HDPE End Section	N 591,027 E 1,324,336	416.67	415.00	415.00	Manhole or equivalent
S-4	24" HDPE End Section	N 591,077 E 1,324,208	417.17	415.00	415.00	Manhole or equivalent

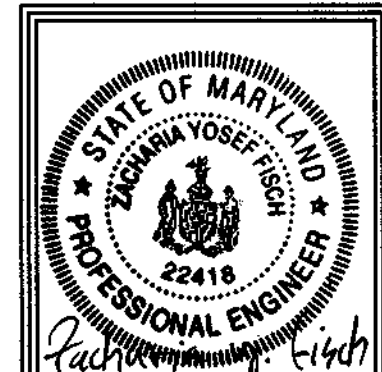
NOTE: 1. Top elevations are to the top of concrete inlet for all inlets, and center top of manhole cover for precast manholes.

OWNER/DEVELOPER
Williamsburg Group L.L.C.
P.O. Box 1018
Columbia, Maryland 21044

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE: 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
DATE: 5-29-02
CHIEF, BUREAU OF HIGHWAYS

SIZE	TYPE	LENGTH
15"	HDPE	299 LF
18"	HDPE	763 LF
24"	HDPE	55 LF



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

STORM DRAIN PROFILES
FOX CHASE ESTATES
LOTS 1 THRU 12 AND PRESERVATION PARCELS
'A', 'B' AND 'C'
TAX MAP 15 GRID 23 3RD ELECTION DISTRICT
PARCEL 25
HOWARD COUNTY, MARYLAND

DESIGN BY: PS
DRAWN BY: PS
CHECKED BY: ZTF
SCALE: 1"=50'
DATE: May 15, 2002
I.W.O. No.: 3009
SHEET No. 7 OF 13

OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT DETENTION FACILITY

STORMWATER MANAGEMENT FACILITY ROUTINE MAINTENANCE BY HOMEOWNER

1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF 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 BY HOWARD CO. DPW

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES 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 RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

FLOW INTO POND	1 YEAR	10 YEAR	100 YEAR	W.Q.	Recharge Obligation
2.99 c.f.s.	26.08 c.f.s.	51.70 c.f.s.	4.57 c.f.s.	Rev Required: 3,119 c.f.s.	
0.14 c.f.s.	11.03 c.f.s.	31.95 c.f.s.	0.03 c.f.s.	Rev Provided: N/A*	
416.82	417.30	417.84	416.40	Rea Required: 0.75 Ac	
0.28 Ac. Ft.	0.64 Ac. Ft.	1.06 Ac. Ft.	0.22 Ac. Ft.	Rea Provided: 1.17 Ac.**	

*Recharge treated through Grass Channel Credit.
**Road paving, Duellings (1 thru 7) and their driveways drain to the road ditches which are used for the Grass Channel Credit for recharge.

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 bends 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 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 (C, CL, CI, or CL) and must have at least 20% 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 for protection 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 roadway 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 track tread of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a pneumatic roller 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 be moist enough so that if formed into a ball it will not crumble, yet not so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall be not 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 the 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 shall be 1 to 1 or flatter. The trench shall be backfilled with compacted 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 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.

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 with 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 operate 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 or structure 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 (hand tamp, etc.) to prevent floating the pipe, when using flowable fill, all metal pipe shall be bituminous coated. Any adjoining 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.

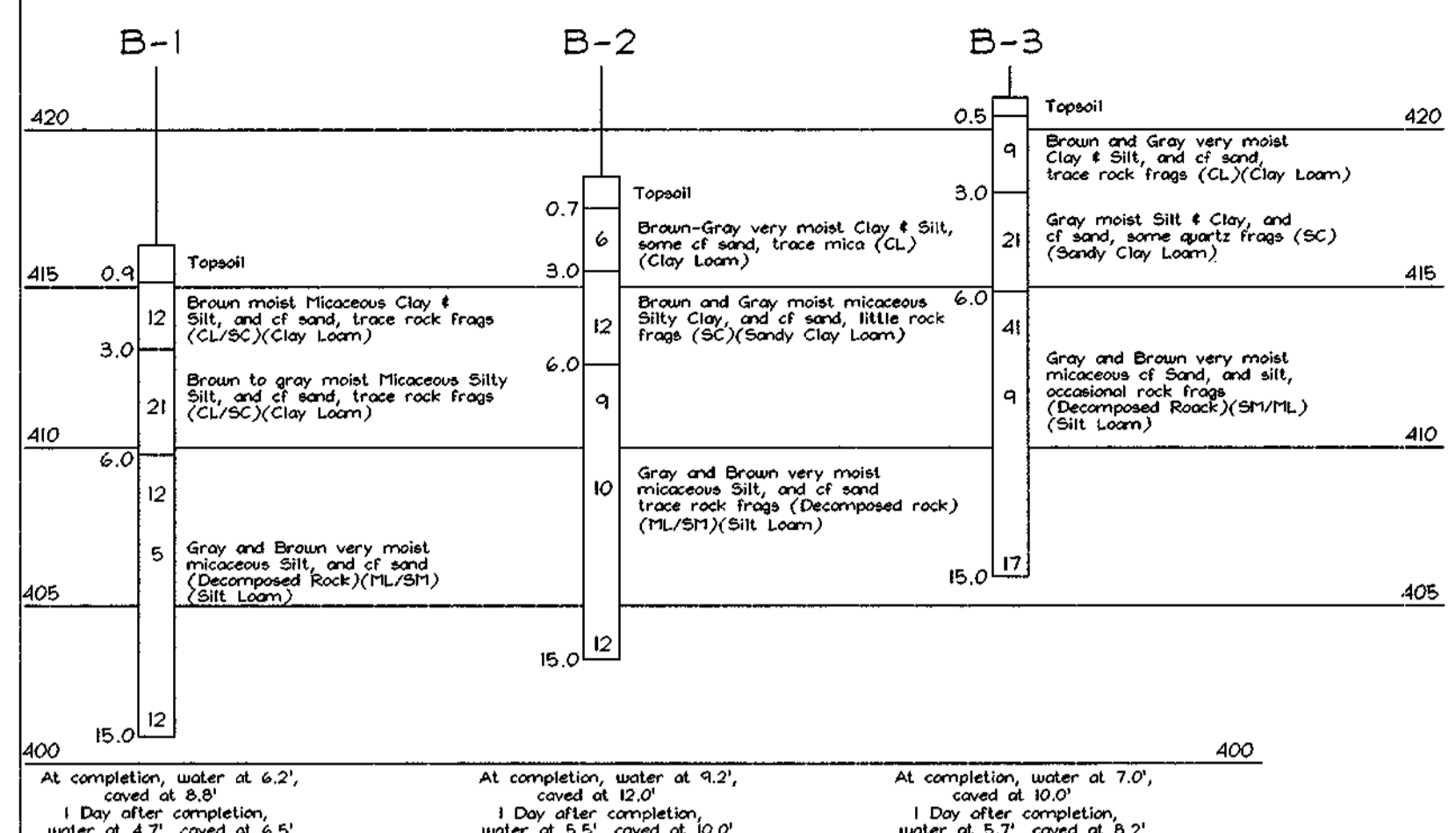
Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:
1. Materials - (Polymer Coated Steel Pipe) - Steel pipes with polymer coating shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe and its appearance shall conform to the requirements of AASHTO Specifications M-205 & M-246 with underseal coating bands or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appearance shall conform to the requirements of AASHTO Specification M-274 with underseal coating 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-110 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.

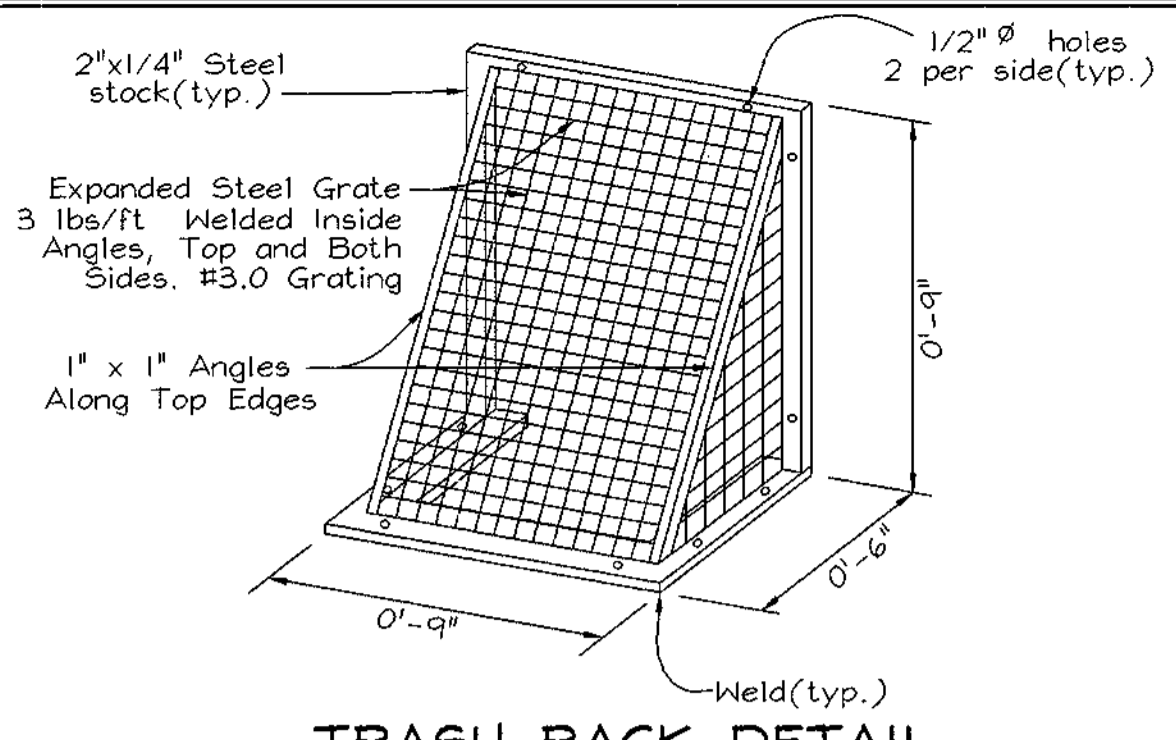
Materials - (Aluminum Pipe) - This pipe and its appearance shall conform to the requirements of AASHTO Specification M-116, or M-211 with underseal coating bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-110 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, and sections, etc., must be composed of the same material and coatings as the pipe. Details must be installed from dissimilar materials with use of rubber or plastic insulating materials of lesser 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 so as to be completely watertight. Dimple bands are not considered to be watertight.

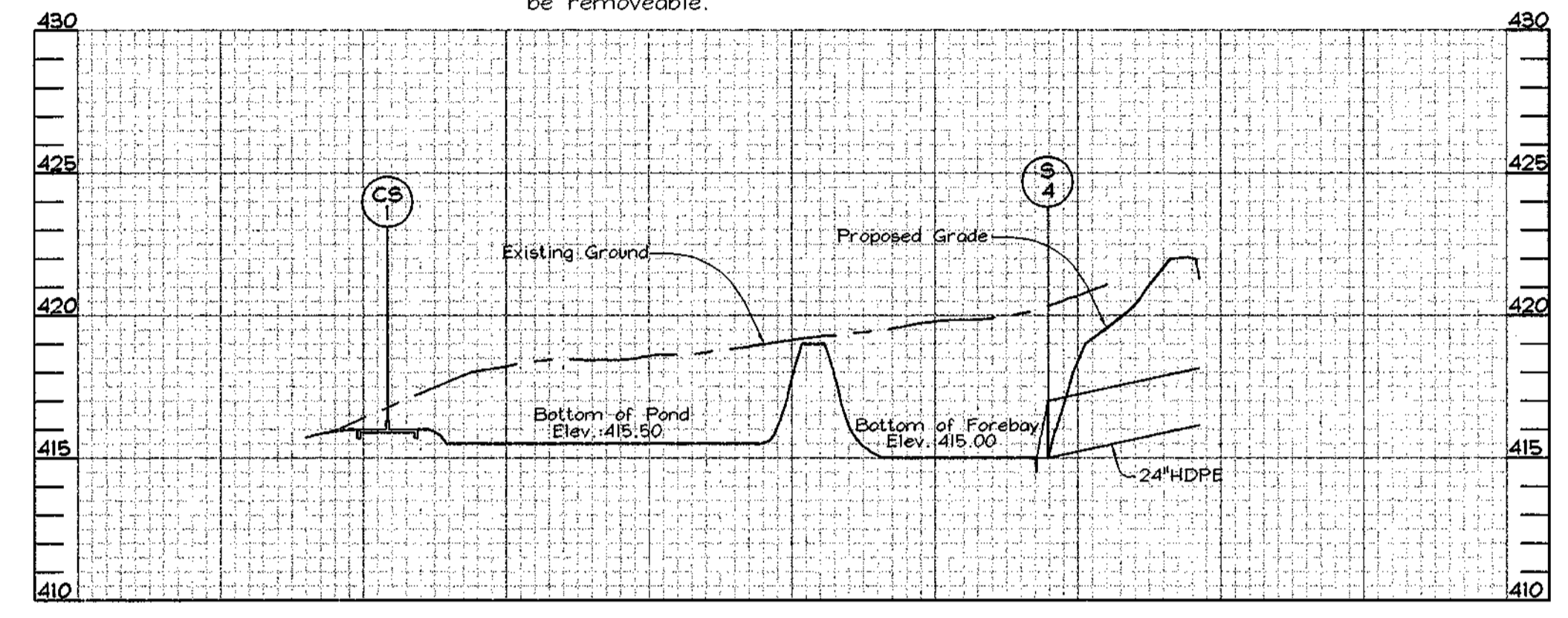


S.W.M. BORING PROFILES
NOT TO SCALE

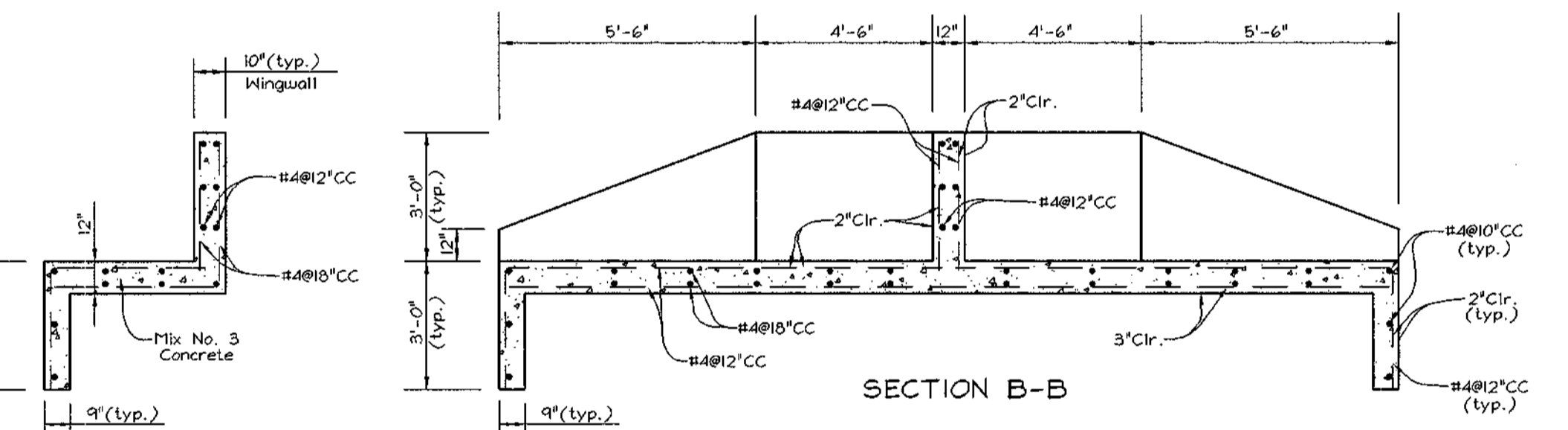


TRASH RACK DETAIL
NOT TO SCALE

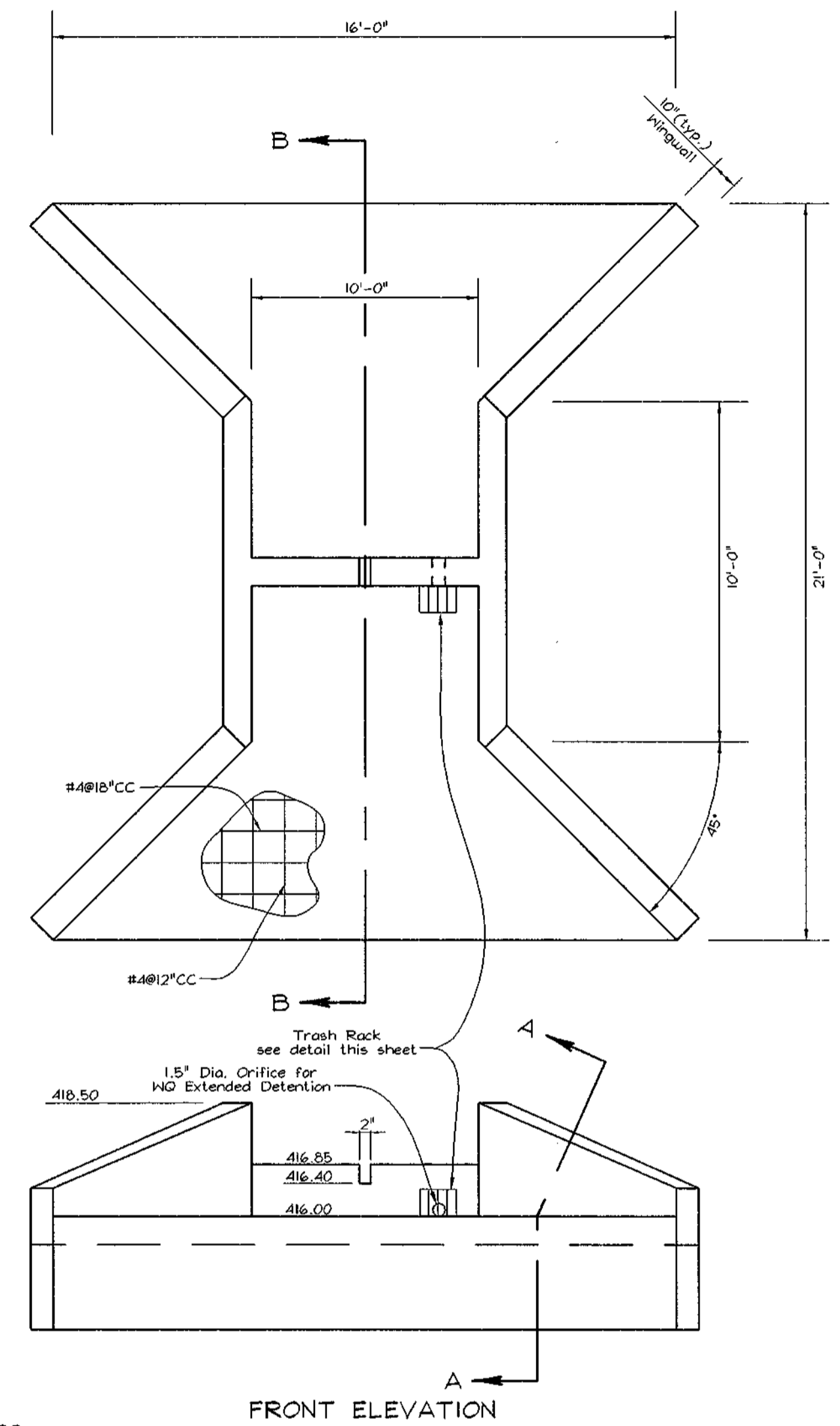
- NOTES:
1. Steel to conform to ASTM A-36.
 2. All surfaces to be coated with ZRC cold galvanizing compound after welding.
 3. Trash rack to be fastened to the concrete with 1/2" masonry anchors. Trash rack to be removable.



SECTION THRU FACILITY
Scale: Horizontal-1"=50'
Vertical-1"=5'

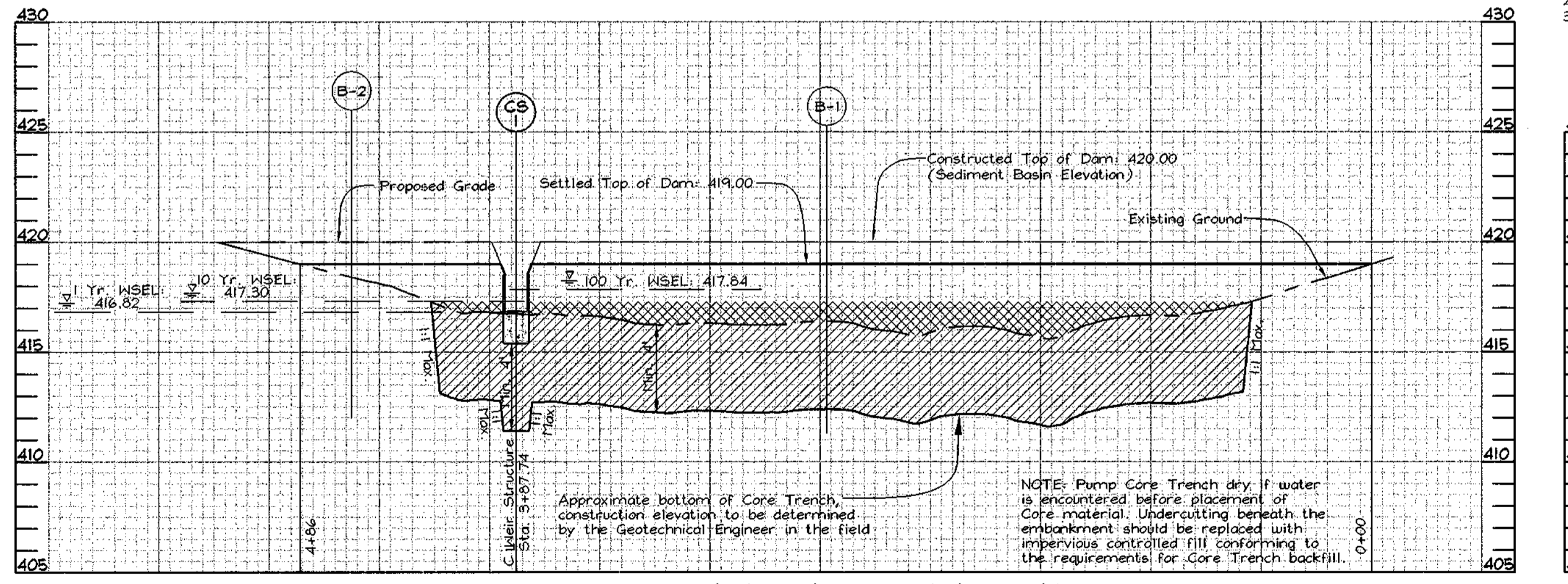


CS-1 WEIR CONTROL STRUCTURE
NOT TO SCALE

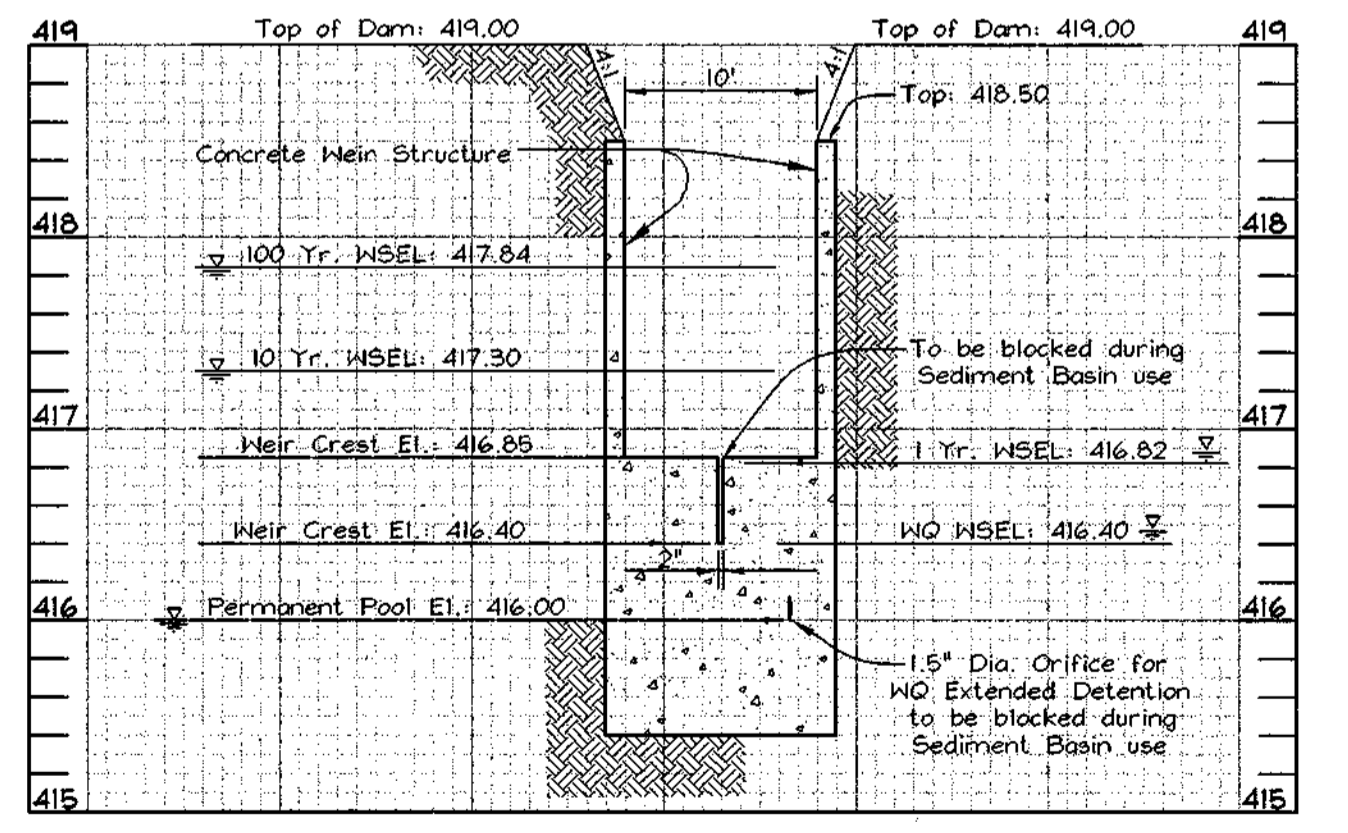


FRONT ELEVATION

- NOTES:
1. All exposed edges to have a 3/4"x3/4" chamfer or as directed.
 2. Concrete shall be S14 mix #3 (f=3500 psi, 28 days).
 3. Reinforcing steel shall be ASTM A-615 grade 60.



SECTION ALONG EMBANKMENT
Scale: Horizontal-1"=50'
Vertical-1"=5'



SECTION THROUGH WEIR STRUCTURE
Scale: Horizontal-1"=10'
Vertical-1"=1'

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER: *[Signature]* DATE: 5/16/02

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."

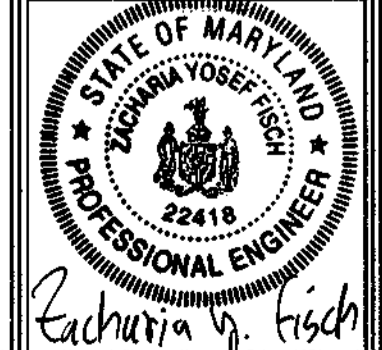
SIGNATURE OF ENGINEER: *[Signature]* DATE: 5/16/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: *[Signature]* DATE: 5/16/02
 Chief, Development Engineering Division: *[Signature]* DATE: 5/16/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 Chief, Bureau of Highways: *[Signature]* DATE: 5-29-02

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
 THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD SOIL CONSERVATION DISTRICT: *[Signature]* DATE: 5/23/02

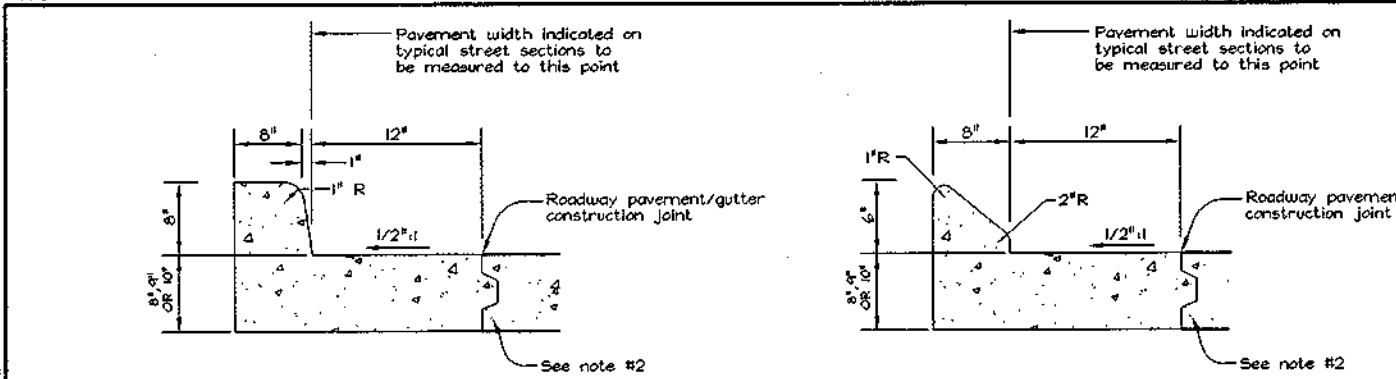
OWNER/DEVELOPER
 Williamsburg Group L.L.C.
 P.O. Box 1018
 Columbia, Maryland 21044



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

STORMWATER MANAGEMENT NOTES AND DETAILS
FOX CHASE ESTATES
 LOTS 1 THRU 12 AND PRESERVATION PARCELS 'A', 'B' AND 'C'
 TAX MAP 15 GRID 23 3RD ELECTION DISTRICT
 PARCEL 25 HOWARD COUNTY, MARYLAND

DESIGN BY: PS
 DRAWN BY: PS
 CHECKED BY: ZYF
 SCALE: As Shown
 DATE: May 15, 2002
 W.O. No.: 3009
 SHEET No. 8 OF 13



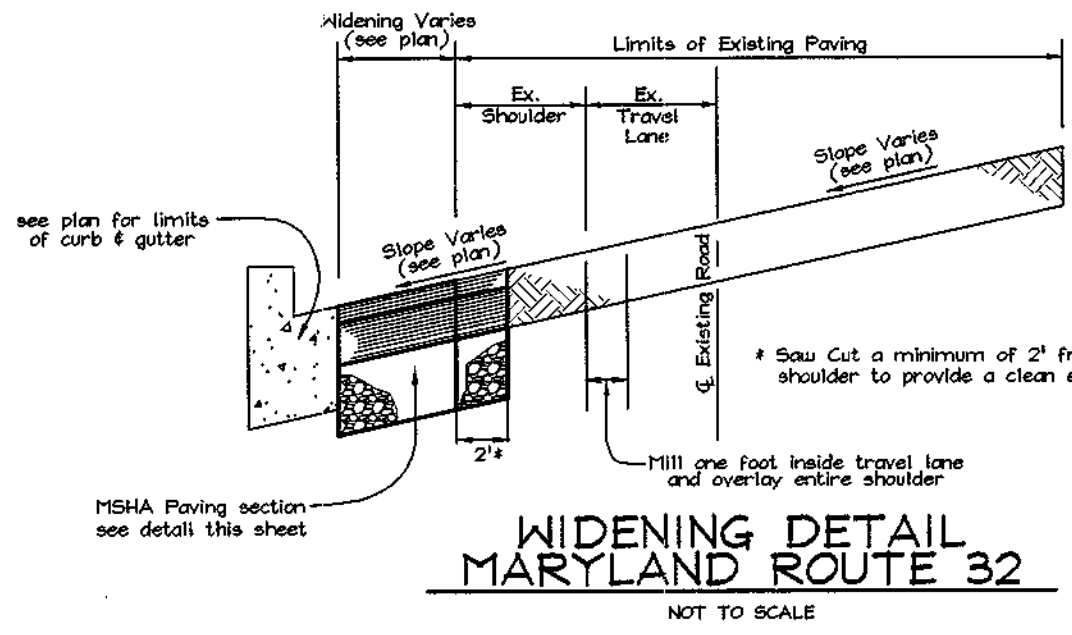
MSHA TYPE 'A' CONCRETE COMBINATION CURB AND GUTTER
 MID. NO. 620.02
 NOT TO SCALE

MSHA TYPE 'B' CONCRETE COMBINATION CURB AND GUTTER
 MID. NO. 620.02
 NOT TO SCALE

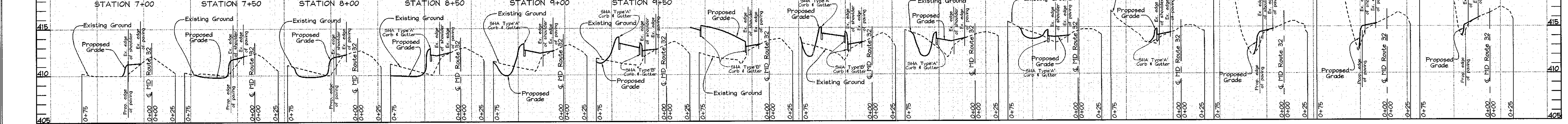
NOTES:
 1. Slope gutter on 1/2" per foot toward flow line on all roadways including super-elevated sections. (Frost) interchange ramps.
 2. Provide key and longitudinal tie bar as required.
 3. Maximum joint spacing for concrete curb and gutter is 10'.

ROUTE 32 WIDENING CORE BORING DATA

Boring Number	Hot Mix Asphalt Thickness (in.)	Crushed Stone Base Thickness (in.)	Soil Subgrade SPT Value	Soil Subgrade Description
C-1	10	4	23	Brown and gray moist micaceous of Sand, and clayey silt, trace rock frags (Fill)
C-2	11	3	27	Brown and gray moist micaceous of Sand, and rock frags, some clayey silt (Fill)
C-3	10	4	66	Brown and gray moist micaceous of Sand, little silt, trace rock frags
C-4	10	4	22	Brown moist micaceous of Sand, and clayey trace rock frags

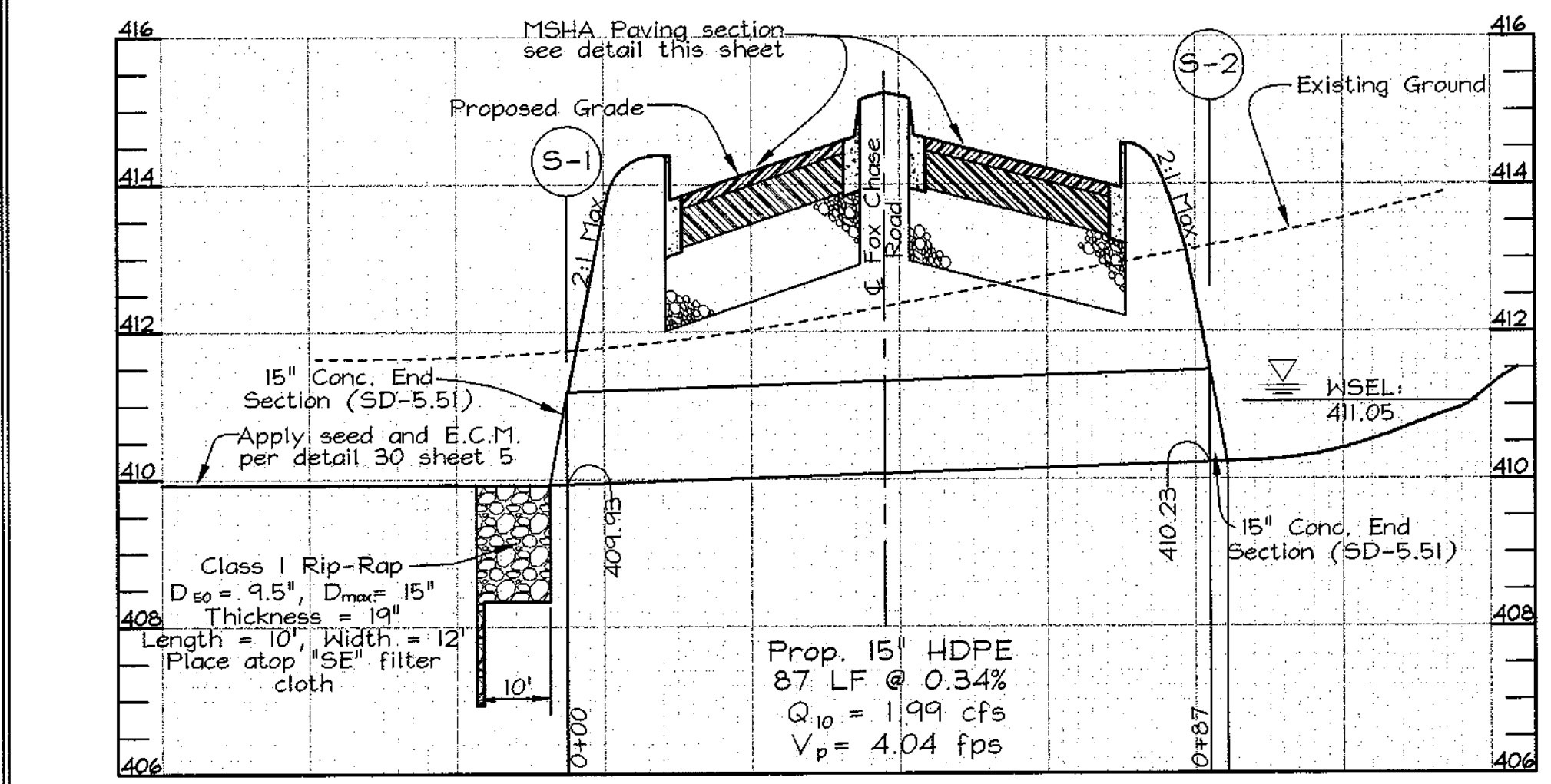


WIDENING DETAIL MARYLAND ROUTE 32
 NOT TO SCALE



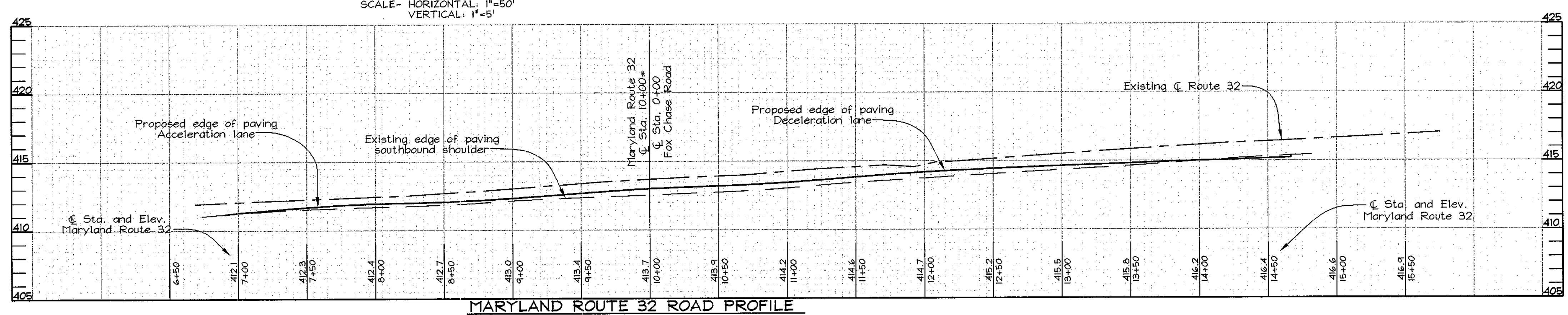
MARYLAND ROUTE 32 CROSS SECTIONS

SCALE- HORIZONTAL: 1"=50'
 VERTICAL: 1"=5'



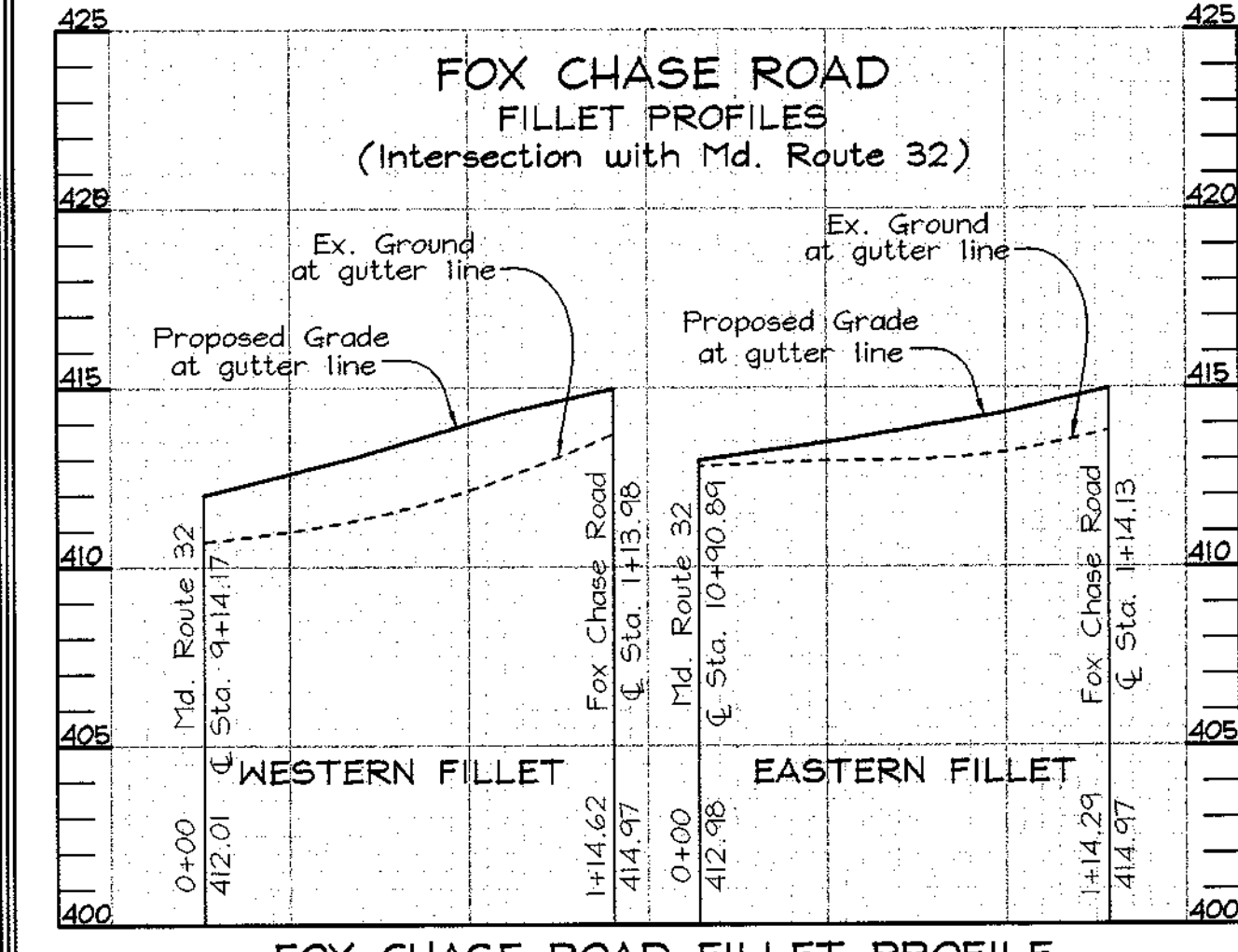
ENTRANCE CULVERT PROFILE

SCALE- HORIZONTAL: 1"=20'
 VERTICAL: 1"=2'



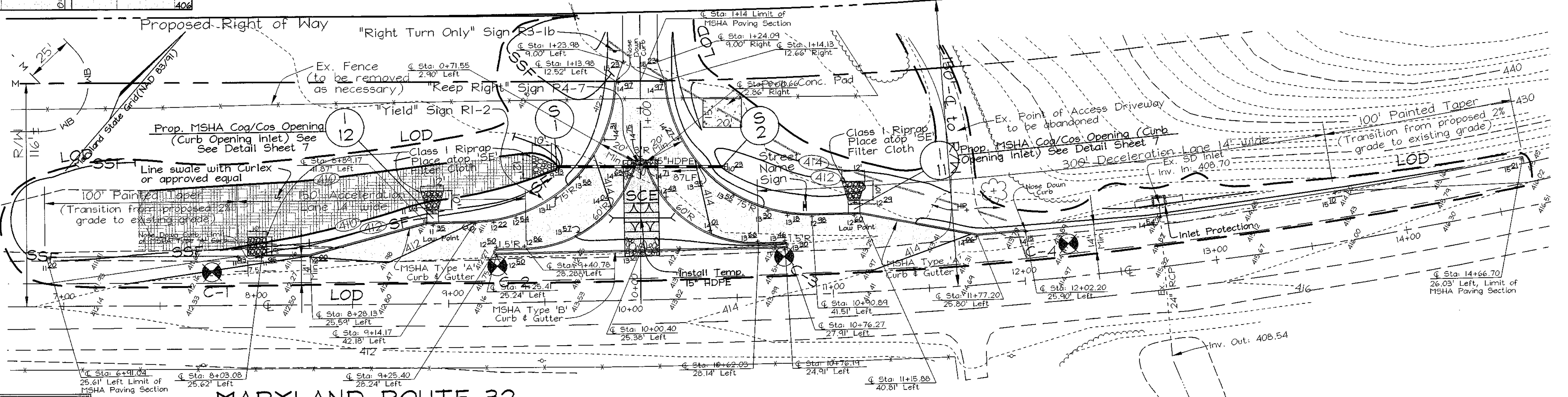
MARYLAND ROUTE 32 ROAD PROFILE

SCALE- HORIZONTAL: 1"=50'
 VERTICAL: 1"=5'



FOX CHASE ROAD FILLET PROFILE

SCALE- HORIZONTAL: 1"=50'
 VERTICAL: 1"=5'



MARYLAND ROUTE 32
 (Intermediate Arterial)
 'ROUTE 32, SRC Plats 20489 & 20490

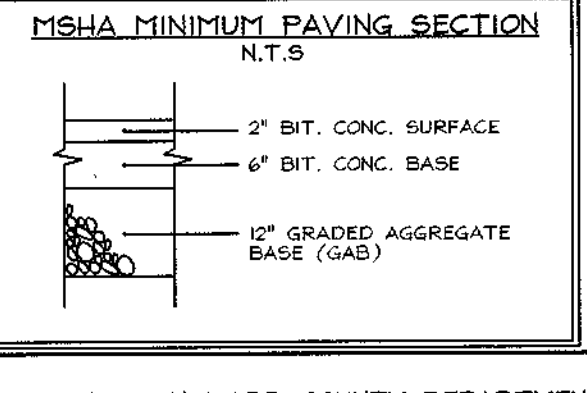
NOTE: Spot Elevations shown along curb line are at bottom of curb.

ENTRANCE DETAIL

Scale: 1"=30'

Denotes MSHA Paving Section

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: 5/23/02
 THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 DATE: 5/23/02



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 5/16/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 DATE: 5-29-02

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: 5/16/02
 DATE

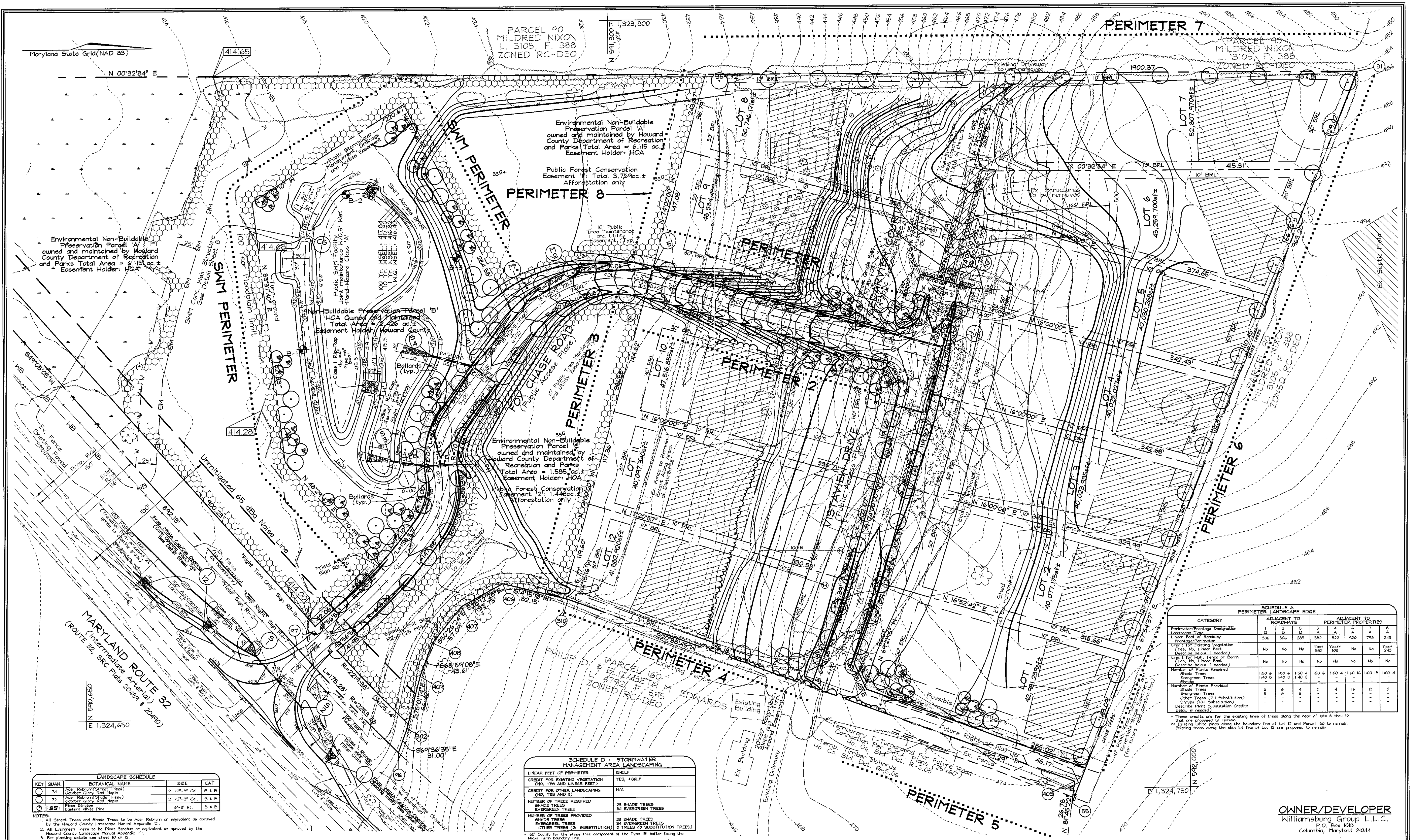
ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 SIGNATURE OF ENGINEER: 5/16/02
 DATE



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

ENTRANCE PLAN AND DETAILS
FOX CHASE ESTATES
 LOTS 1 THRU 12 AND PRESERVATION PARCELS 'A', 'B' AND 'C'
 TAX MAP 15 GRID 23 3RD ELECTION DISTRICT
 PARCEL 25 HOWARD COUNTY, MARYLAND

OWNER/DEVELOPER
 Williamsburg Group L.L.C.
 P.O. Box 1016
 Columbia, Maryland 21044



Maryland State Grid (NAD 83)
 N 00°32'34" E
 E 1,324,650

LANDSCAPE SCHEDULE

KEY QUAN.	BOTANICAL NAME	SIZE	CAT.
○ 74	Acer Rubrum (Sweet Tree)	2 1/2" - 3" Cal.	B 1 B
○ 77	Acer Rubrum (Red Maple)	2 1/2" - 3" Cal.	B 4 B
○ 85	Pine Strobus (Eastern White Pine)	6" - 8" Ht.	B 4 B

NOTES:
 1. All Street Trees and Shade Trees to be Acer Rubrum or equivalent as approved by the Howard County Landscape Manual Appendix "C".
 2. All Evergreen Trees to be Pine Strobus or equivalent as approved by the Howard County Landscape Manual Appendix "C".
 3. For planting details see sheet 10 of 12.

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	1840 LF
CREDIT FOR EXISTING VEGETATION (NO. YES AND LINEAR FEET)	YES, 180 LF
CREDIT FOR OTHER LANDSCAPING (NO. YES AND %)	N/A
NUMBER OF TREES REQUIRED	23 SHADE TREES 34 EVERGREEN TREES
NUMBER OF TREES PROVIDED	23 SHADE TREES 34 EVERGREEN TREES
OTHER TREES (2% SUBSTITUTION)	0 TREES (0 SUBSTITUTION TREES)

SCHEDULE A PERIMETER LANDSCAPE EDGE

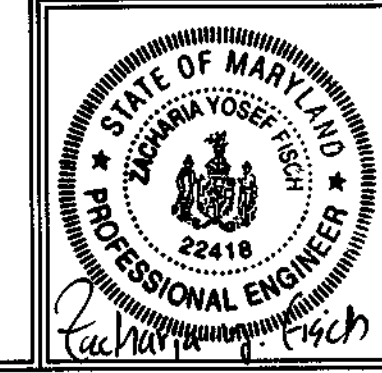
CATEGORY	ADJACENT TO ROADWAYS				ADJACENT TO PERIMETER PROPERTIES			
	B	C	D	E	A	A	A	A
Perimeter/Frontage Designation	506	306	285	352	322	420	788	243
Linear Feet of Roadway Frontage/Perimeter								
Credit for Existing Vegetation (Yes, No, Linear Feet)	No	No	No	Year 108	No	No	Year 243	Year 243
Credit for Other Landscaping (Yes, No, Linear Feet)	No	No	No	No	No	No	No	No
Number of Plants Required	150	6	150	140	140	140	140	140
Number of Plants Provided	140	6	140	140	140	140	140	140
Other Trees (2% Substitution)	0	0	0	0	0	0	0	0
Shrubs (10% Substitution)	0	0	0	0	0	0	0	0
Describe Plant Substitution Credits Below (if needed)								

* These credits are for the existing lines of trees along the rear of lots 8 thru 12 that are proposed to remain.
 ** Existing white pines along the boundary line of Lot 12 and Parcel 160 to remain. Existing trees along the side lot line of Lot 12 are proposed to remain.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kat Scholch 5/31/02
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Sandoz 5-29-02
 CHIEF, BUREAU OF HIGHWAYS DATE

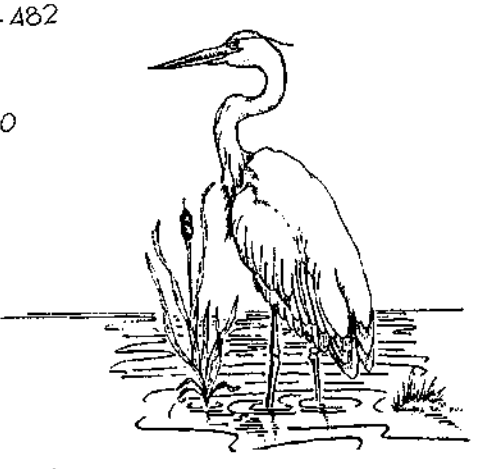
DEVELOPER'S BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE(1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
 SIGNATURE OF DEVELOPER: *[Signature]* DATE: 5/16/02



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

LANDSCAPE PLAN
FOX CHASE ESTATES
 LOTS 1 THRU 12 AND PRESERVATION PARCELS 'A', 'B' AND 'C'
 TAX MAP 15 GRID 23 PARCEL 25
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DESIGN BY: PS
 DRAWN BY: PS
 CHECKED BY: ZYF
 SCALE: 1"=50'
 DATE: May 15, 2002
 W.O. No.: 3003
 SHEET No. 10 OF 13



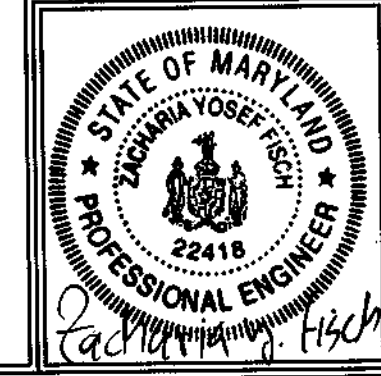
EXPLORATION RESEARCH INC.
ENVIRONMENTAL CONSULTANTS
838 ROBERT STREET
ELICOTT CITY, MARYLAND 21043
TEL: (410) 750-4150 FAX: (410) 750-7350



OWNER/DEVELOPER
Williamsburg Group L.L.C.
P.O. Box 1018
Columbia, Maryland 21044

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kat Shaloud 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Daniels 5-29-02
CHIEF, BUREAU OF HIGHWAYS
DATE



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

FOREST CONSERVATION PLAN
FOX CHASE ESTATES
LOTS 1 THRU 12 AND PRESERVATION PARCELS
'A', 'B' AND 'C'
TAX MAP 15 GRID 23 PARCEL 25
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DESIGN BY: PS
DRAWN BY: PS
CHECKED BY: ZYF
SCALE: 1"=50'
DATE: May 15, 2002
W.O. No.: 3009
SHEET No. 11 OF 13

FOREST CONSERVATION WORKSHEET

Acres (1/100 ac.)	
Net Tract Area	
A. Total Tract Area	24.65
B. Area Within 100 Year Floodplain	3.70
C. Other deductions	2.40
D. Net Tract Area	18.55
Zoning Use Category: Rural Cluster - Med. Density Residential	
Land Use Category	
E. Afforestation Minimum (20% x D)	3.71
F. Conservation Threshold (25% x D)	4.64
Existing Forest Cover	
G. Existing Forest on Net Tract Area	2.02
H. Forest Area Above Conservation Threshold	0
Breakeven Point	
I. Forest Retention Above Threshold with no Mitigation	2.02
J. Clearing Permitted without Mitigation	0
Proposed Forest Clearing	
K. Forest Areas to be Cleared	2.02
L. Forest Areas to be Retained	0
Planting Requirements	
M. Reforestation for Clearing Above Threshold	0
N. Reforestation for Clearing Below the Threshold	4.04
P. Credit for Retention Above Conservation Threshold	0
Q. Total Reforestation Required	4.04
R. Total Afforestation Required	1.69
S. Total Reforestation and Afforestation Requirement	5.73

FOREST CONSERVATION NARRATIVE

This Forest Conservation Plan was prepared in accordance with the Howard County Forest Conservation Manual, Guidelines for Rural Cluster Subdivisions.

Option 'A' for Cluster Subdivisions will be utilized wherein the preservation parcel is excluded from all calculations. The existing site consists of 24.65 acres with approximately 3.70 acres of floodplain. A total of 6.10 acres of preservation parcel, which includes the entire floodplain, is excluded from the calculations. There are 2.02 acres existing forest on net tract area of the site. Most of the forest on site is located within the floodplain. The area of forest has changed from the original Forest Stand Delineation based on surveyed trees and aerial photographs. A revised FSD has been submitted reflecting the changes. The forest mitigation requirement is 5.73 acres. Onsite afforestation proposed is 5.21 acres, to be placed within two Forest Conservation Easements of 3.77 and 1.44 acres. For the remaining 0.52 acres, we will be utilizing an off-site reforestation area in the Friendship Lakes subdivision.

Easement area 1 contains unreforested floodplain and wetlands. The planting would create a forested buffer for the floodplain and wetlands. It will be planted with 350 stems/acre, containerized whip stock.

Easement area 2 is primarily open meadow and will be planted with 350 stems/acre, containerized whip stock.

AFFORESTATION AREA MONITORING NOTES

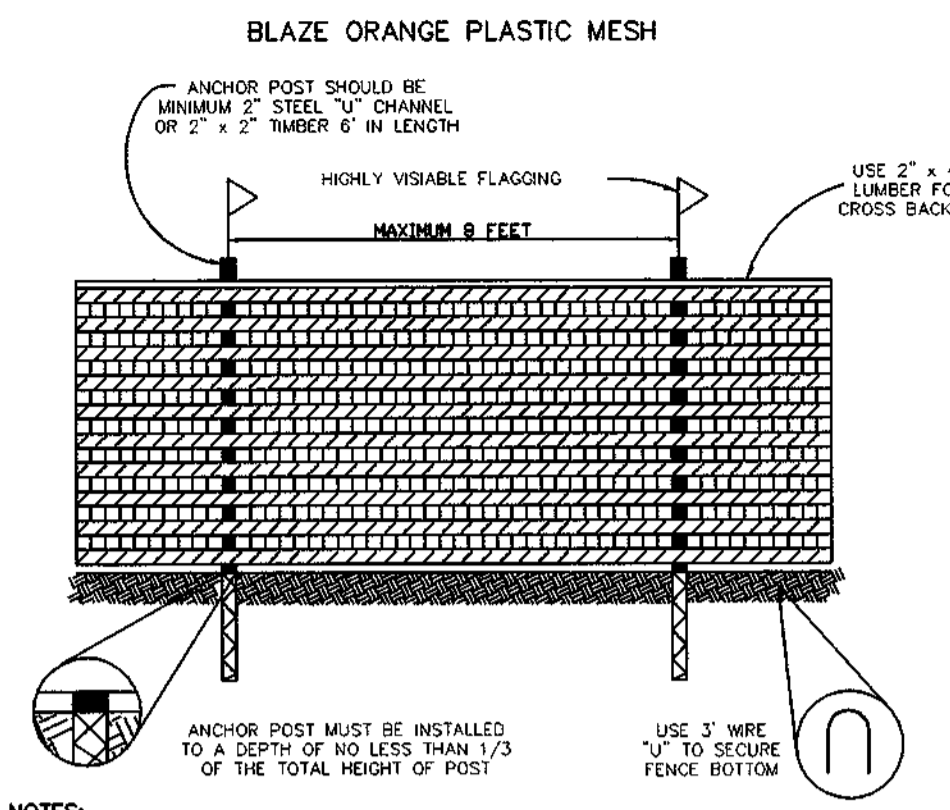
- Monthly visits during the first growing season are to assess the success of the plantings and to determine if supplemental watering, pest control or other actions are necessary. Early spring visits will document winter kill and autumn visits will document summer kill.
- The minimum survival rate shall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

AFFORESTATION PLANTING NOTES

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

Note: 0.52 Ac. of Forest Conservation obligations will be fulfilled by offsite planting in the Friendship Lakes subdivision.

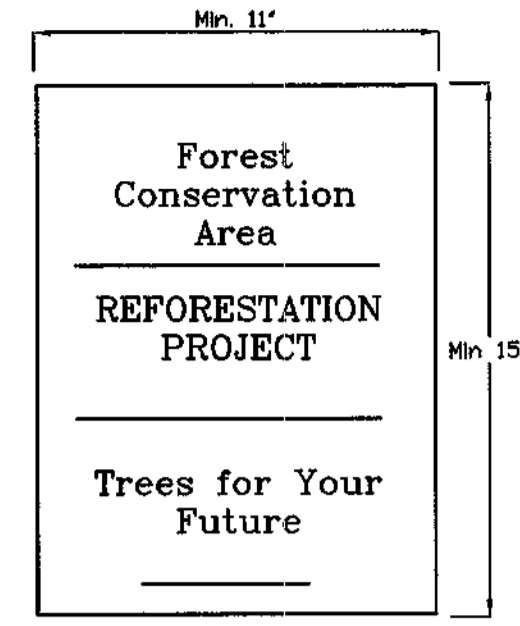
Note: Surety for total planting of 5.73 ac. of whips in the amount of \$0.50 per sq.ft. for a total amount of \$124,799.40.



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

TREE PROTECTION DETAIL
NOT TO SCALE

Reforestation and Afforestation Area Protection Signage



AFFORESTATION AREA 1 3.77 Ac

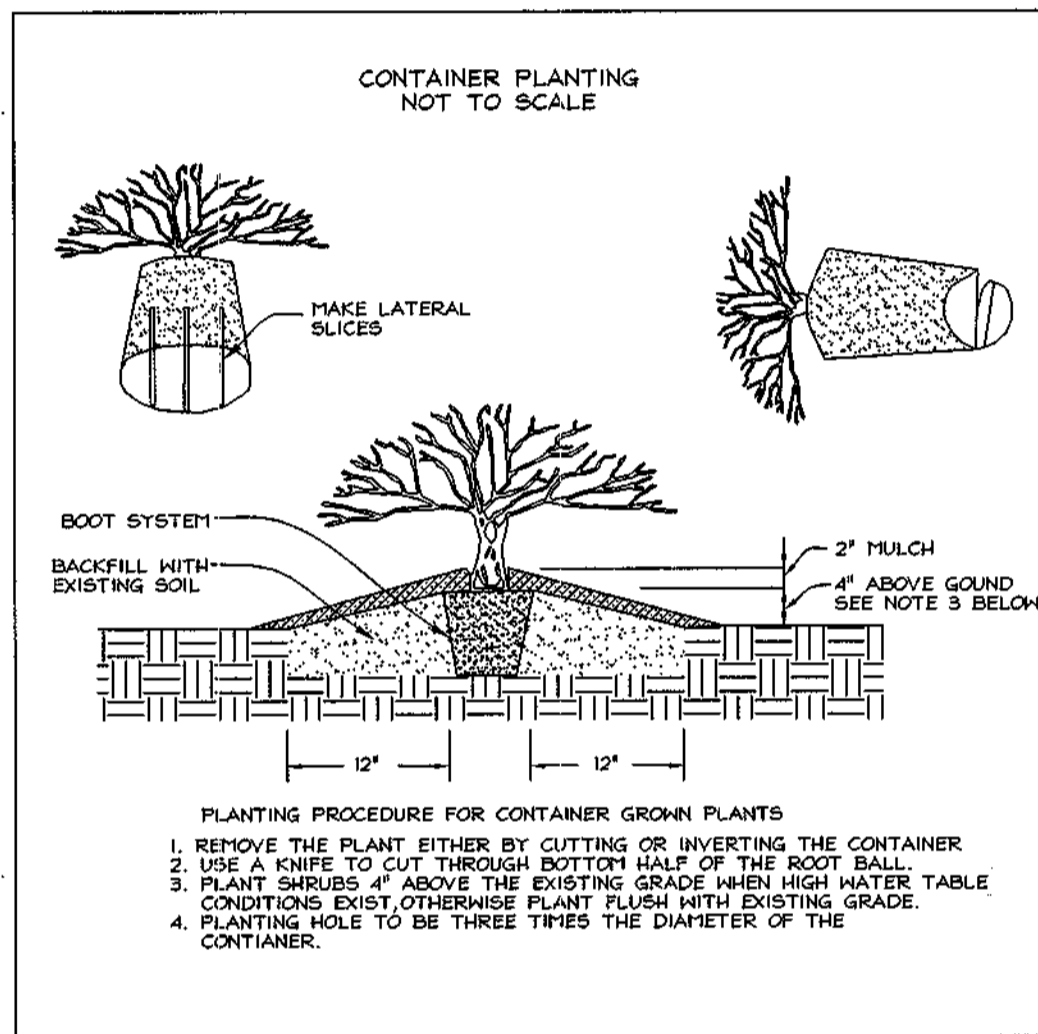
Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
330	Acer rubrum	Red Maple	WHIP 2-3'	11' o.c.	Container
330	Fraxinus pennsylvanica	Green Ash	WHIP 2-3'	11' o.c.	Container
330	Platanus occidentalis	Sycamore	WHIP 2-3'	11' o.c.	Container
330	Quercus palustris	Pin Oak	WHIP 2-3'	11' o.c.	Container

AFFORESTATION AREA 2 1.44 Ac

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
126	Acer rubrum	Red Maple	WHIP 2-3'	11' o.c.	Container
126	Liriodendron tulipifera	Tulip Poplar	WHIP 2-3'	11' o.c.	Container
126	Prunus serotina	Black Cherry	WHIP 2-3'	11' o.c.	Container
126	Quercus rubra	Red Oak	WHIP 2-3'	11' o.c.	Container

FOREST CONSERVATION EASEMENT TABLE

EASEMENT 1	3.77 AC	ALL AFFORESTATION
EASEMENT 2	1.44 AC	ALL AFFORESTATION
TOTAL	5.21 AC	ALL AFFORESTATION



- PLANTING PROCEDURE FOR CONTAINER GROWN PLANTS**
- REMOVE THE PLANT EITHER BY CUTTING OR INVERTING THE CONTAINER.
 - USE A KNIFE TO CUT THROUGH BOTTOM HALF OF THE ROOT BALL.
 - PLANT SHOULD BE ABOVE THE EXISTING GRADE WHEN HIGH WATER TABLE CONDITIONS EXIST, OTHERWISE PLANT FLUSH WITH EXISTING GRADE.
 - PLANTING HOLE TO BE THREE TIMES THE DIAMETER OF THE CONTAINER.

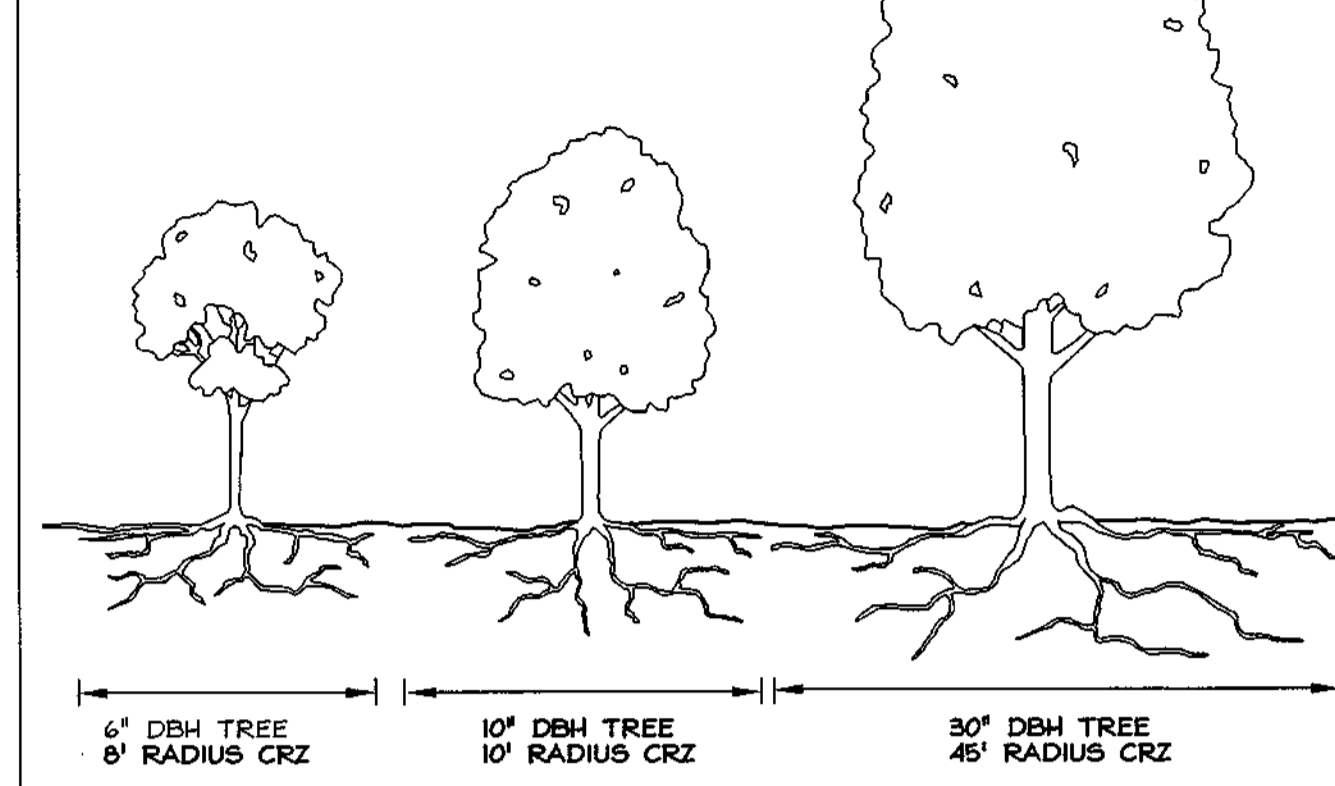
Soil Protection Zone Notes

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

CRITICAL ROOT ZONE

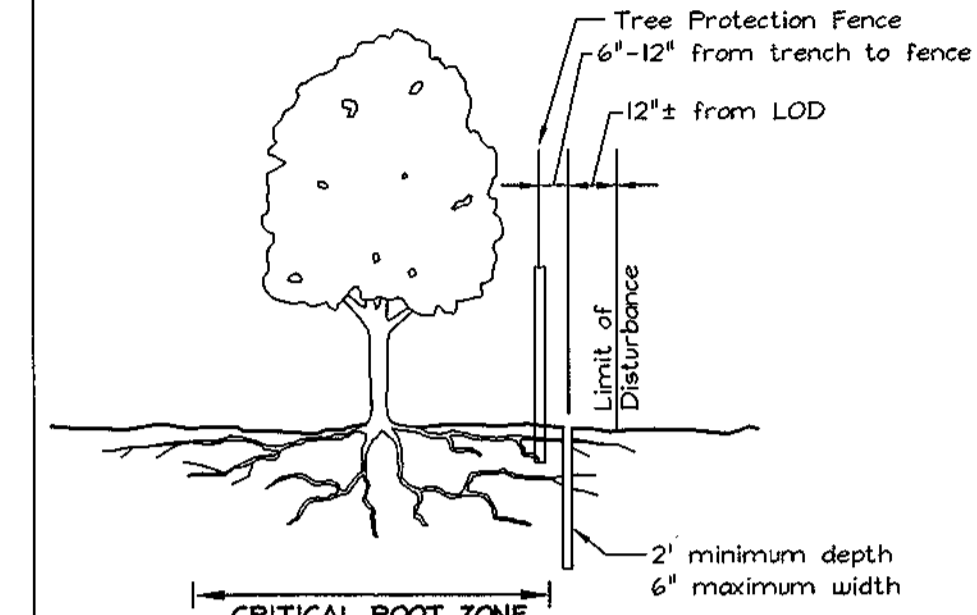
For the edge of large areas, use the greater of the two choices below:
 1" DBH of the tree = 1' radius of the critical root zone or 3 ft radius circle around the trunk of the tree

For isolated specimen trees:
 1" DBH = 1.5' radius of the critical root zone

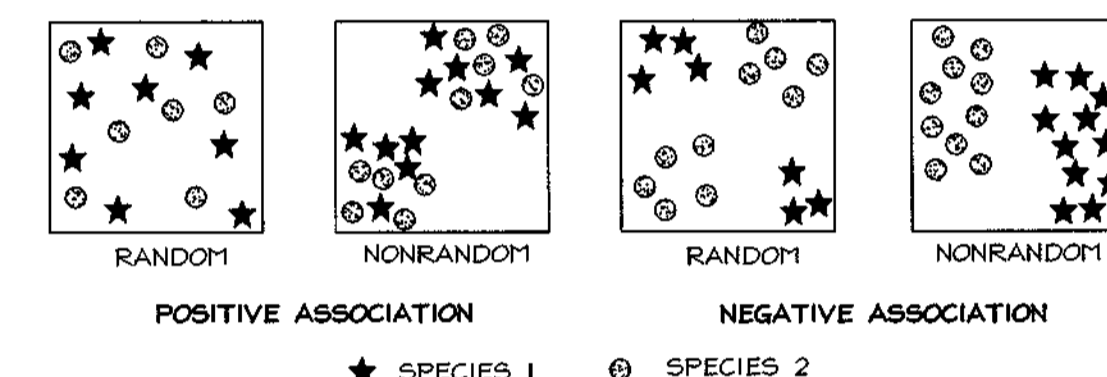


ROOT PRUNING

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

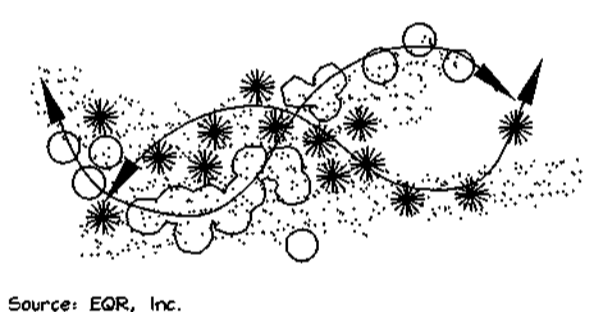


TYPICAL FOREST TREE DISTRIBUTION PATTERNS



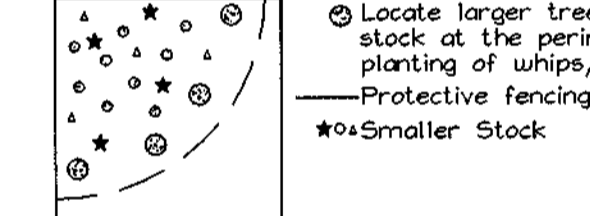
NOTE: Naturally occurring populations of trees tend to be found in informal groupings. A cluster of trees is really a mosaic of different species groups. The objective of an afforestation/ reforestation plan is to select the appropriate species and distribution pattern for a chose site that mimic natural 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 or tear drop shapes.

MIXING TRANSPLANT STOCK

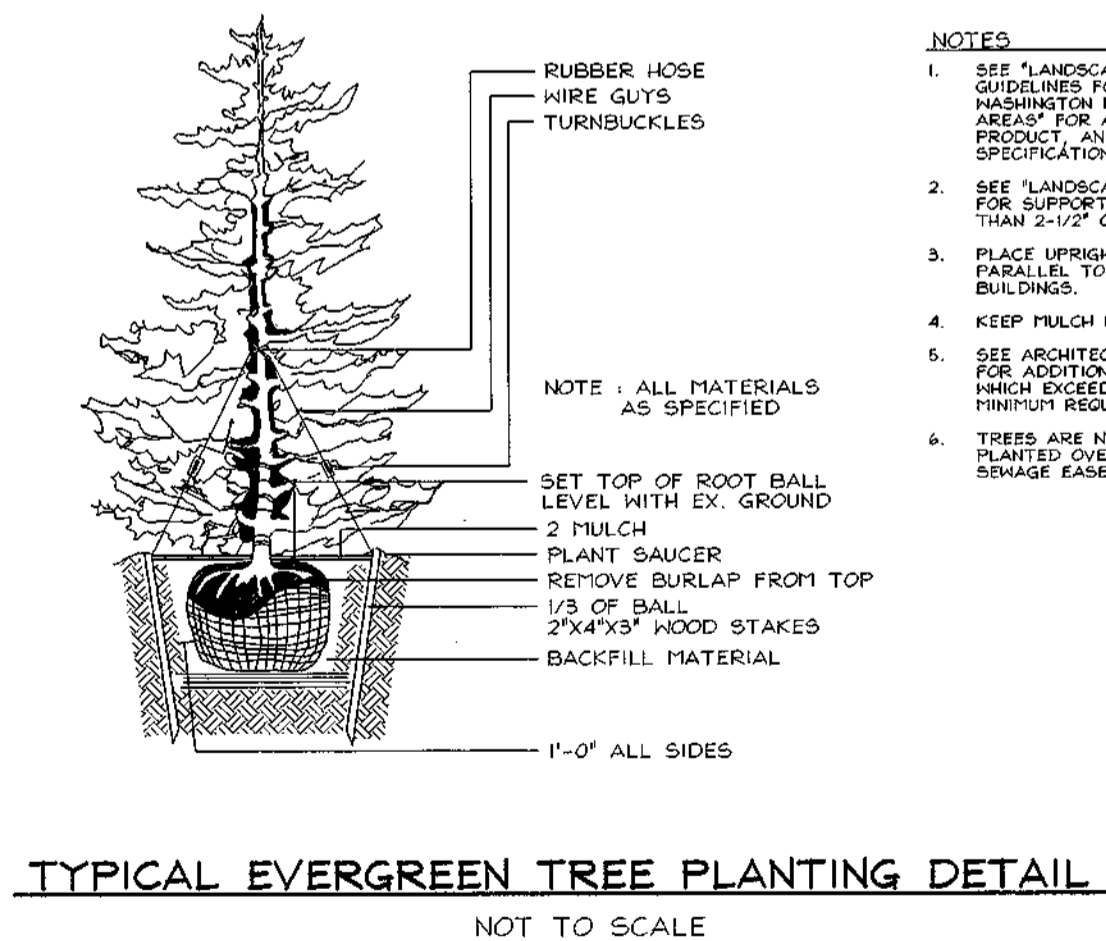


Locate larger trees (BMB or container grown) or transplant stock at the perimeter of reforestation/ afforestation planting of whips, seedling group stock.
 - Protective fencing
 - * Smaller Stock

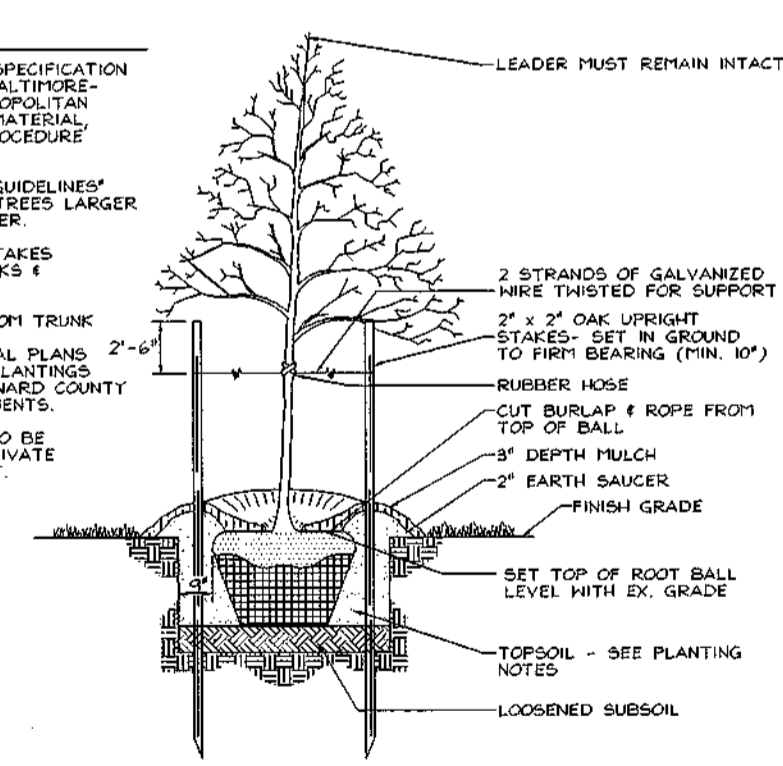
Source: Adapted from Forest Conservation Manual, 1991.

PLANTING DISTRIBUTION PATTERNS

FIGURE 3.8.2

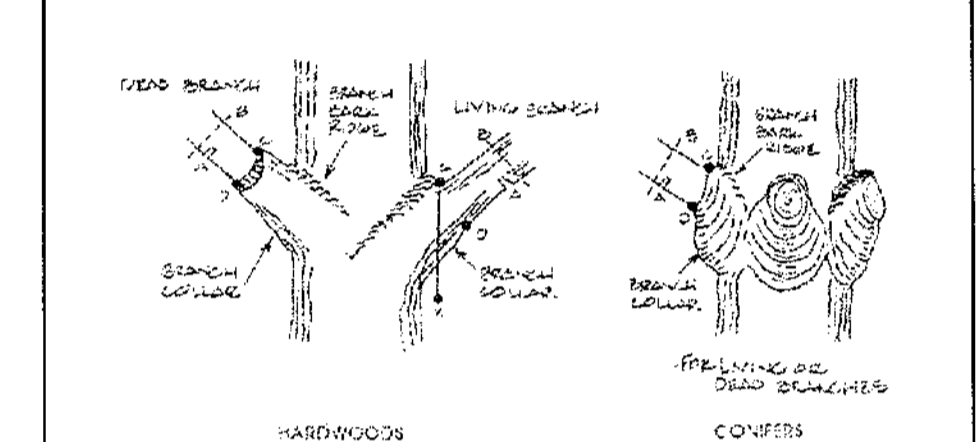


TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

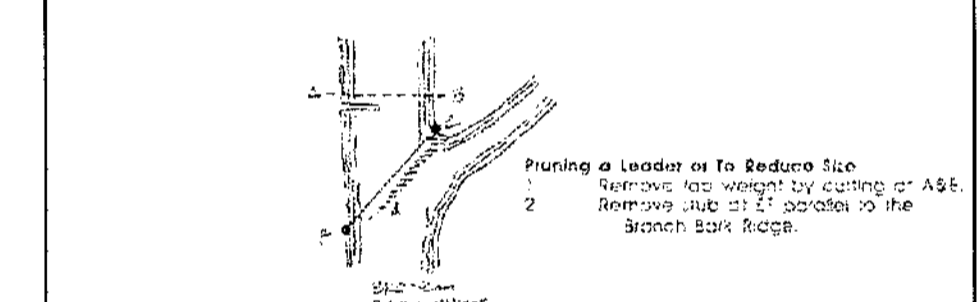


TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2\"/>

Crown Reduction



Pruning a Branch: Remove branch weight by undercutting at A and remove limb by cutting through at B. Remove stub at CD line between branch bark ridge and outer edge of branch collar. 1/3\"/>



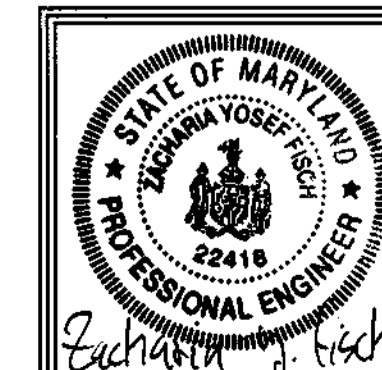
NOTE: 1. Only limbs of specified limit. 2. No more than 30% of crown to be removed at one time.



EXPLORATION RESEARCH INC.
 ENVIRONMENTAL CONSULTANTS
 8318 FOREST STREET
 ELlicOTT CITY, MARYLAND 21043
 TEL: (410) 750-1150 FAX: (410) 750-1350
 STATE OF MARYLAND
 JOHN W. HUGHES
 PROFESSIONAL FORESTER
 No. 288
 5/16/02
OWNER/DEVELOPER
 Williamsburg Group L.L.C.
 P.O. Box 1016
 Columbia, Maryland 21044

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 5/16/02
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 [Signature] 5-19-02
 CHIEF, BUREAU OF HIGHWAYS DATE



FSH Associates
 Engineers Planners Surveyors
 8318 Forrest Street, Ellicott City, MD 21043
 Tel: 410-750-2251 Fax: 410-750-1350
 E-mail: FSHAssociates@cs.com

FOREST CONSERVATION PLAN
FOX CHASE ESTATES
 LOTS 1 THRU 12 AND PRESERVATION PARCELS
 'A', 'B' AND 'C'
 TAX MAP 15 GRID 23 PARCEL 25
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DESIGN BY: AB
 DRAWN BY: AB
 CHECKED BY: SH
 SCALE: 1"=50'
 DATE: May 15, 2002
 W.O. No.: 3003
 SHEET No. 12 OF 13

PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

- PROTECTION FENCING AND SILT FENCES FOR SEDIMENT AND EROSION CONTROL ARE TO BE INSTALLED AS A FIRST ORDER OF BUSINESS, IF NECESSARY.
- DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT, AS SHOWN ON THE DETAIL VIEW. A PLANTING FIELD OF RADIUS = 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
- SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
- SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
- ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT STORAGE AND INSPECTION

- FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
- FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
- PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
- UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL AND MOISTENED ENVIRONMENT.

PLANT INSTALLATION

- THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER, GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
- PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
- CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THRU LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2 INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
- CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENCIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORING DISEASES.
- FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
- FOR TREES PLANTED IN THE AFFORESTATION AREA, CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FOUR (4), PER SPECIES, OVER THE ENTIRE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED ON PLANT LIST.
- AVOID PLANTING IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.

- NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE WELL DRAINED NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

FERTILIZING

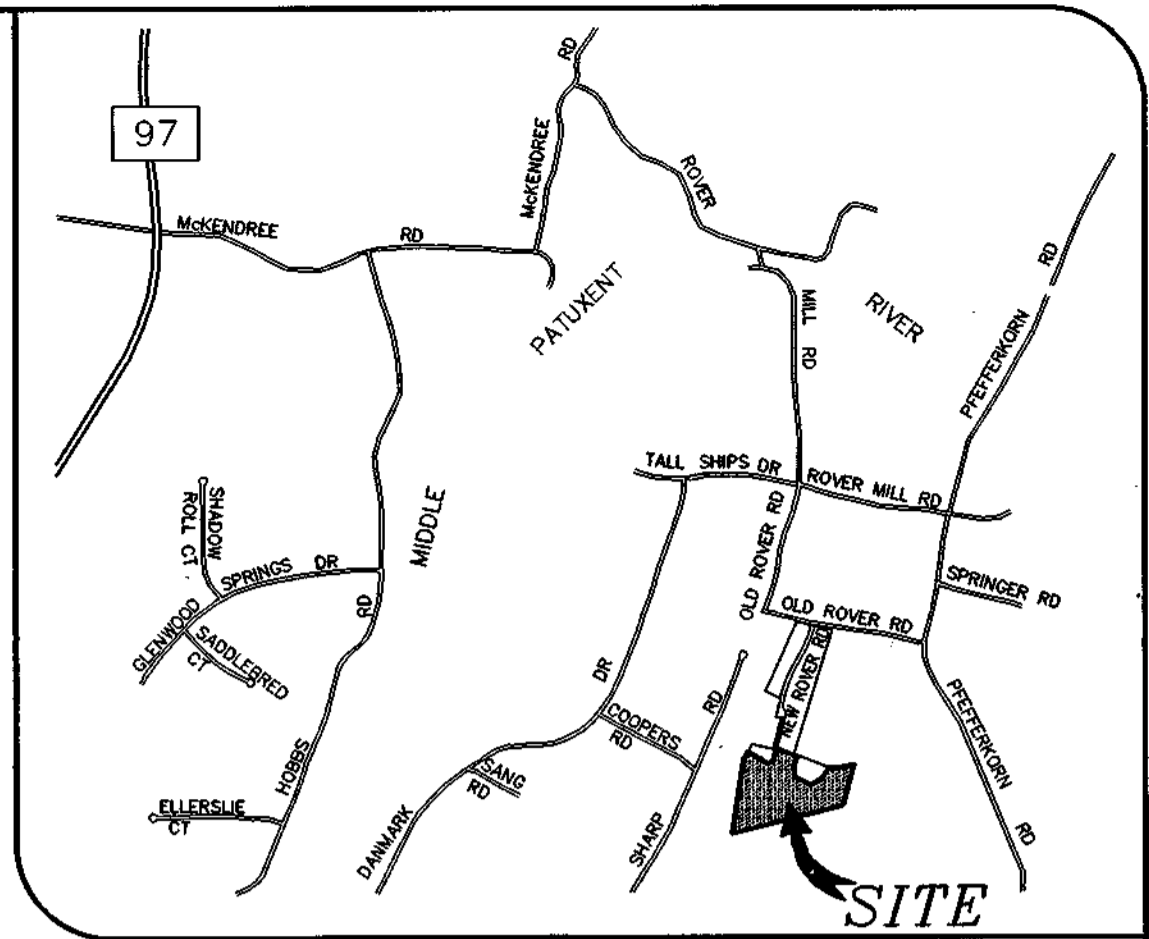
- DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
- NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE ITS NEEDS.
- IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALY AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

MAINTENANCE SCHEDULE

- ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
- ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
- VOLUNTEER SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.

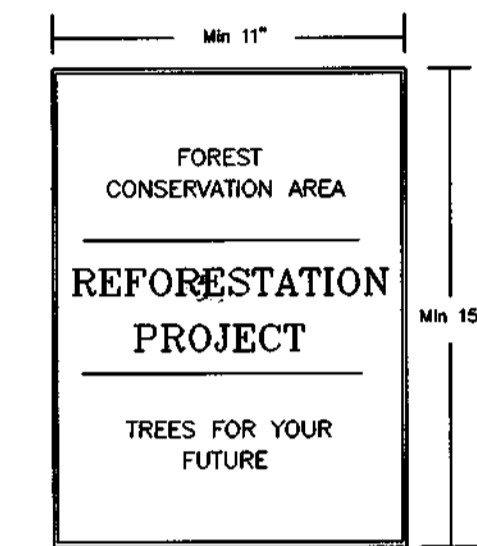
NOTE: THIS PLAN IS TO BE USED FOR FOREST CONSERVATION PURPOSES ONLY.

- THE FOREST CONSERVATION EASEMENT THAT HAS BEEN ESTABLISHED ON THIS PROPERTY CONSTITUTES A "RESTRICTIVE EASEMENT" AS NOTED IN SECTION 106B.1.C OF THE HOWARD COUNTY ZONING REGULATIONS AND LIMITS FURTHER THE DEVELOPMENT OF THE PROPERTY.
- FOREST CONSERVATION EASEMENT B, CONTAINING 0.52 ACRES OF REFORESTATION IS ESTABLISHED TO MEET THE FOREST CONSERVATION OBLIGATIONS FOR FINAL PLAN, F-02-48, FOX CHASE ESTATES, AS AN OFF-SITE EASEMENT AREA. FINANCIAL SURETY IN THE AMOUNT OF \$11,325.60 FOR 0.52 ACRES (22,651.2 SQ. FT.) OF REFORESTATION ON FRIENDSHIP LAKES WAS PROVIDED AS PART OF THE DPW DEVELOPER'S AGREEMENT FOR F-02-48.



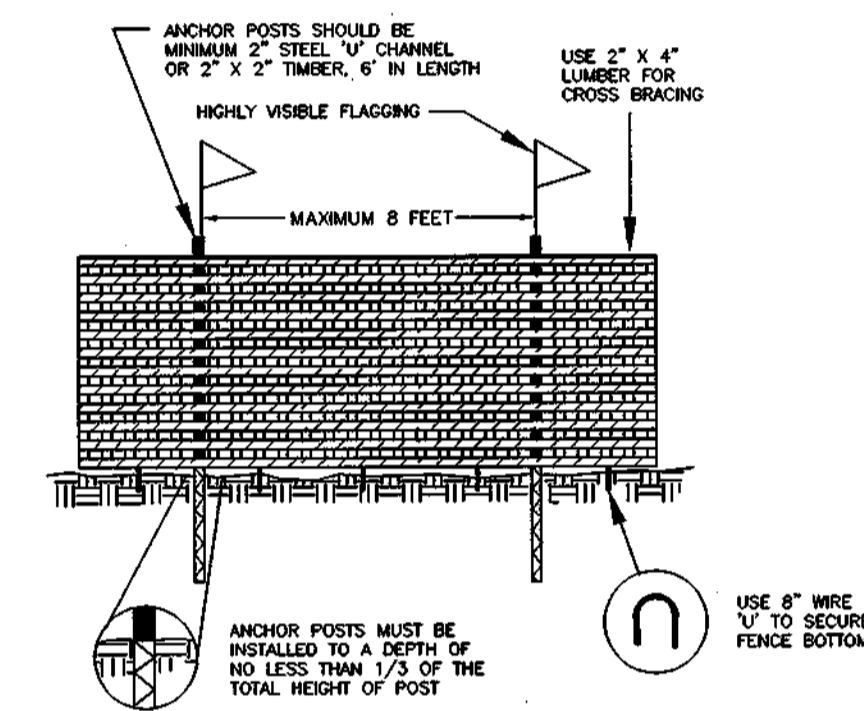
VICINITY MAP

SCALE: 1" = 2000'



SIGNAGE DETAIL

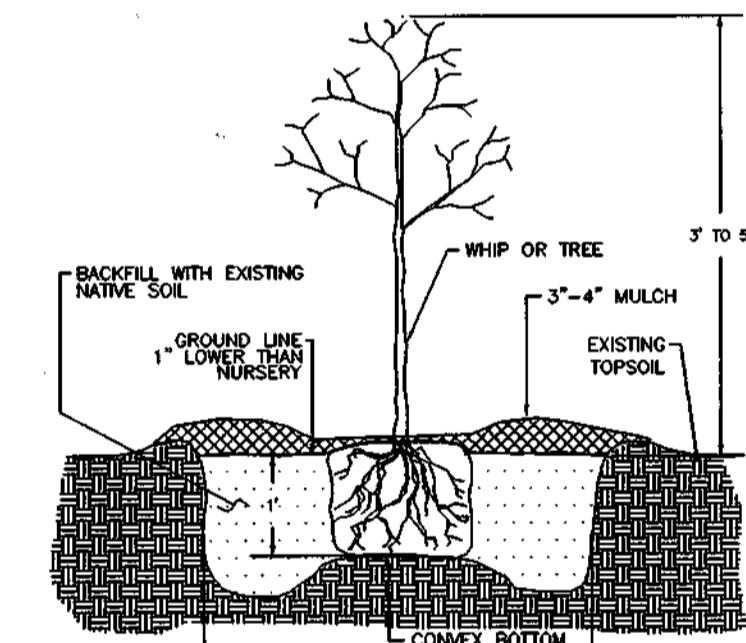
NOT TO SCALE



PROTECTIVE FENCE DETAIL

BLAZE ORANGE PLASTIC MESH

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



TREE PLANTING DETAIL

LEGEND

- EX. TREE PROTECTIVE FENCE
- EX. FOREST CONSERVATION SIGNAGE (REFORESTATION)
- TREE PROTECTIVE FENCE
- FOREST CONSERVATION SIGNAGE
- FOREST CONSERVATION EASEMENT (MITIGATION BANK)
- EX. PUBLIC 100 YEAR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT
- EXISTING SEPTIC AREA.
- PROPOSED SEPTIC EASEMENT.
- PROPOSED 10' PUBLIC TREE MAINTENANCE AND UTILITY EASEMENT.
- WETLANDS
- EXISTING WELL
- PROPOSED WELL

PLANT LIST (ALTERNATIVE 1)

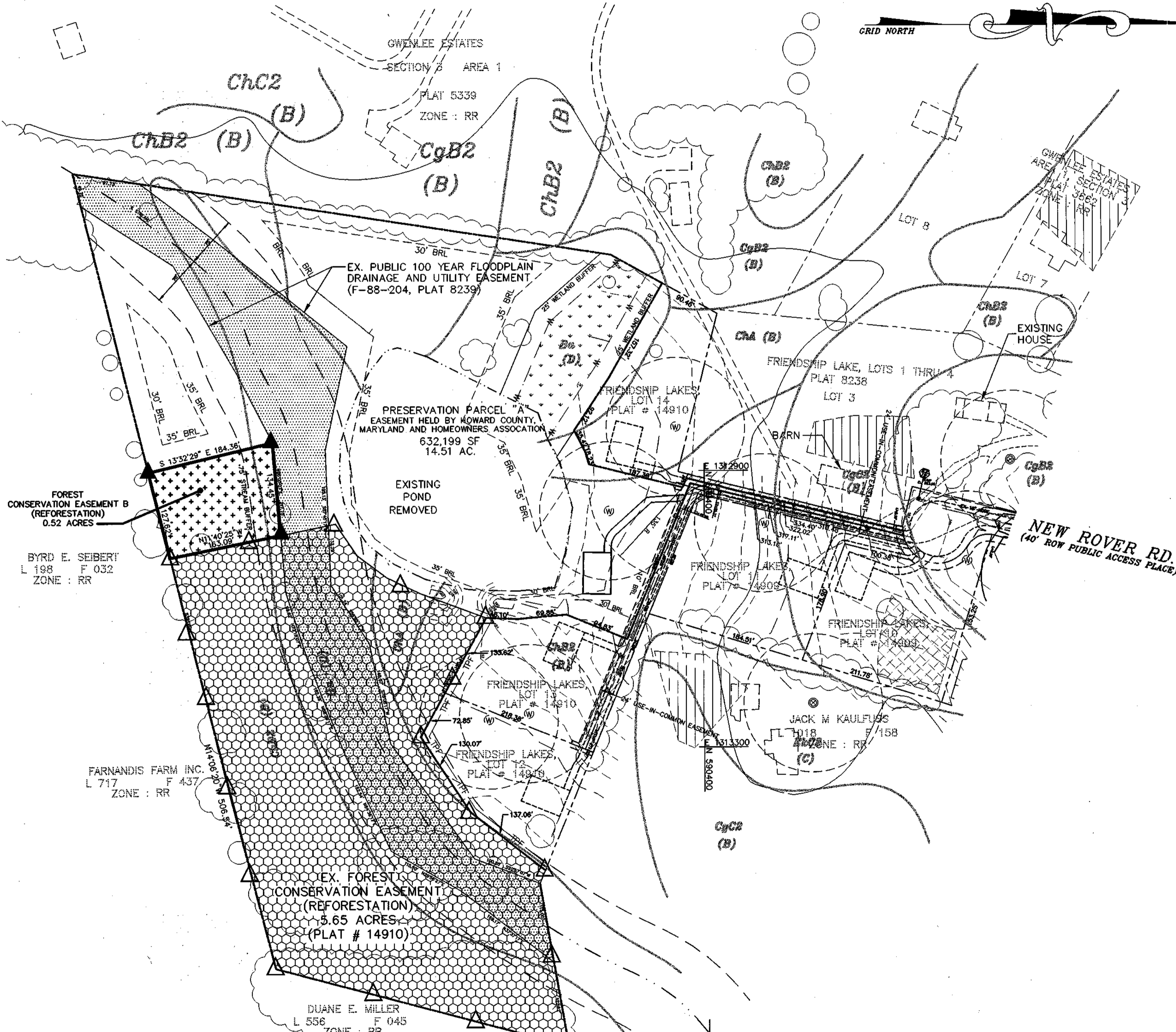
QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C.	SIZE & SPACING	REMARKS
15	Acer rubrum Red Maple	VT	D-W	FAC	15'	CONT/B & B 1" CALIPER	
22	Cornus florida Flowering Dogwood	VT	D-M	FACU-	8'	CONT/B & B 3'-5" HEIGHT	
15	Nyssa sylvatica Black Gum	T	M-W	FAC	11'	CONT/B & B 1" CALIPER	
22	Prunus serotina Wild Black Cherry	I	M	FACU	11'	CONT/B & B 3'-5" HEIGHT	
15	Quercus palustris Pin Oak	I	M-W	FACW	15'	CONT/B & B 1" CALIPER	
15	Quercus rubra Red Oak	MT	D-M	UPL	15'	CONT/B & B 1" CALIPER	
TOTAL							104 TREES

PLANT LIST (ALTERNATIVE 2)

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C.	SIZE & SPACING	REMARKS
53	Acer rubrum Red Maple	VT	D-W	FAC	15'	WHIP OR SEEDLING	
77	Cornus florida Flowering Dogwood	VT	D-M	FACU-	8'	WHIP OR SEEDLING	
53	Nyssa sylvatica Black Gum	T	M-W	FAC	11'	WHIP OR SEEDLING	
77	Prunus serotina Wild Black Cherry	I	M	FACU	11'	WHIP OR SEEDLING	
52	Quercus palustris Pin Oak	I	M-W	FACW	15'	WHIP OR SEEDLING	
52	Quercus rubra Red Oak	MT	D-M	UPL	15'	WHIP OR SEEDLING	
TOTAL							364 WHIPS OR SEEDLINGS

SOIL LEGEND

HSG SYMBOL	NAME
D	Ba BAILE SILT LOAM
B	ChA CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES
B	ChB CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
B	ChC CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
B	CgB CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
B	CgC CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
C	EhB ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
C	EhC ELIOAK SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
C	ElD ELIOAK SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
C	GhB GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
D	Ho HATBORO SILT LOAM
B	Mic2 MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED

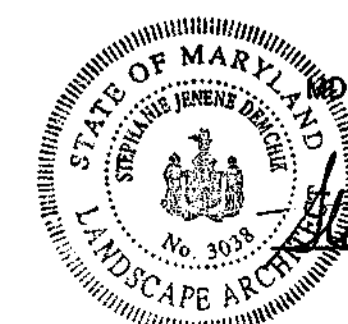


APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 5-29-02
 CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 5/24/02
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 5/31/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

OWNER/DEVELOPER
 ROVER MILL, LLC
 8808 CENTRE PARK DRIVE, SUITE 209
 COLUMBIA, MARYLAND 21045
 (410) 964 5522



Stephanie Demchik 4/16/02
 STEPHANIE DEMCHIK

date	APR 2002
project	2001-019
illustration	engineering
SA/SID	SA/SID
scale	100'
approval	

description	
revisions	
no.	
date	

FOX CHASE ESTATES
 FOREST MITIGATION BANK ON FRIENDSHIP LAKES, PRESERVATION PARCEL "A"
 TAX MAP 15, PARCEL 175
 THIRD ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 FOREST MITIGATION BANK ON FRIENDSHIP LAKES

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
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