SHEET INDEX	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	SOFIA COURT PLAN AND PROFILE
3	LEONDINA DRIVE PLAN AND PROFILE
4	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
5	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
6	GRADING AND SEDIMENT CONTROL PLAN
7	STORM DRAIN PROFILES
8	DRAINAGE AREA MAP
9	LANDSCAPE PLAN
10	S.W.M. NOTES AND DETAILS
11	SEDIMENT CONTROL NOTES AND DETAILS
12	FOREST CONSERVATION PLAN
13	S.W.M NOTES AND DETAILS

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS MS — DATE 9-27-00

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT JM — DATE 1/24/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 11/3/00

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLANS

VINEYARDS AT CATTAIL CREEK

Lots 11 Thru 28, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'

(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)

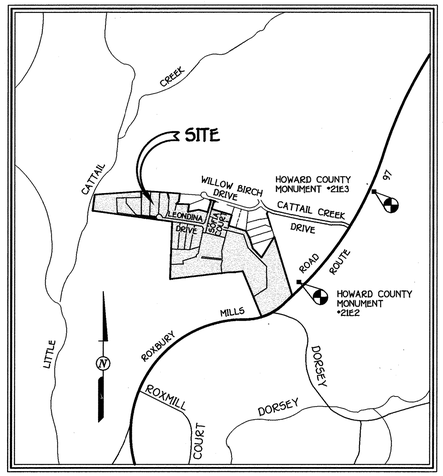
ZONED: RC-DEO

TAX MAP. NO. : 21 PART OF PARCEL NO. 225 GRID NO. : 8

FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

ROAD CLASSIFICATION		
ROAD NAME	CLASSIFICATION	R/W
SOFIA COURT	LOCAL ROAD	50'
LEONDINA DRIVE	LOCAL ROAD	50'

TRAFFIC CONTROL SIGNS				
STREET NAME	C.L. STATION	OFFSET	POSTED SIGN	SIGN CODE
SOFIA COURT	0+26	14.5'L	STOP	R1-1
SOFIA COURT	2+34	12'R	SPEED LIMIT 25	R2-1
LEONDINA DRIVE	0+26	14.5'L	STOP	R1-1
LEONDINA DRIVE	2+00	12'R	SPEED LIMIT 25	R2-1



VICINITY MAP

SCALE: 1" = 1200'

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
5. 2 FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS BASED ON AERIAL TOPOGRAPHIC SURVEY PREPARED BY AERIAL MAPPING CO., INC. , FLOWN IN 1996 AND FIELD SURVEY BY FISHER, COLLINS & CARTER, INC. ON JULY 1999.
6. THE COORDINATES SHOWN HEREON ARE BASED UPON HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT Nos. 21E2 AND 21E3 WERE USED FOR THIS PROJECT.

21E2	N 583,065.3000 E 1,300,868.4336	21E3	N 584,559.4765 E 1,302,074.5340

7. WATER IS PRIVATE.
8. SEWER IS PRIVATE.
9. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, INC. (APPROVED UNDER SP96-11).
10. BACKGROUND INFORMATION:
    - A. SUBDIVISION NAME: VINEYARDS AT CATTAIL CREEK
    - B. TAX MAP NO.: 21
    - C. PARCEL NO.: PART OF 225
    - D. ZONING RC-DEO
    - E. ELECTION DISTRICT: FOURTH
    - F. TOTAL TRACT AREA: 57.017 AC. ±
    - G. NO. OF BUILDABLE LOTS: 15
    - H. NO. OF PARCELS: 2
    - I. NO. OF OPEN SPACE LOTS: 3
    - J. PRELIMINARY EQUIVALENT SKETCH PLAN APPROVAL DATE: 4/10/96
    - K. PREVIOUS FILE Nos. : SP96-11, 594-43, F95-139, F91-171 AND WP95-96.
    - L. TOTAL AREA OF OPEN SPACE PROVIDED: (LOT 19 + LOT 24 + LOT 26 = 17.218 AC.±)
11. REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE TO BE PROVIDED AT THE JUNCTION OF THE PIPE / FLAG STEM AND THE ROAD R/W AND NOT ONTO THE PIPE / FLAG STEM DRIVEWAY.
12. NO CEMETERIES EXIST ON THE PROPERTY.
13. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF ASTM T-180.
14. THE WETLAND AND FOREST STAND DELINEATION WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. AND APPROVED UNDER SP96-11.
15. THE FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
16. STORMWATER MANAGEMENT FACILITY:
    - TYPE - RETENTION FACILITY
    - OWNER - HOWARD COUNTY (PUBLIC)
    - MAINTENANCE - HOMEOWNER'S ASSOCIATION AND HOWARD COUNTY
17. THIS FINAL PLAN IS PREPARED IN ACCORDANCE WITH THE APPROVED ZONING, SUBDIVISION AND DESIGN MANUAL GUIDELINES AS EXISTED AT THE TIME OF THE PRELIMINARY EQUIVALENT SKETCH PLAN SIGNATURE ON APRIL 4, 1996.
18. WETLAND DISTURBANCE FOR THE PURPOSE OF STORMWATER MANAGEMENT POND RECONSTRUCTION APPROVED UNDER PERMIT NO.
19. THREE (3) FOREST CONSERVATION EASEMENTS, FOR AFFORESTATION, ARE PROPOSED FOR THIS PROJECT TOTALING 11.4 AC.±. TOTAL AMOUNT OF SURETY IS $148,975.00.
20. LANDSCAPE SURETY AMOUNT IS $38,700.00.
21. **PROJECT IS SUBJECT TO THE NON-TIDAL WETLANDS TRACKING NUMBER 00-NT-0113/200062933 AND ALL OF IT'S CONDITIONS OF APPROVAL.**

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F.C.C. *30321/TRAILS/SECTION2/TITLESHEET.DWG

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — NO. 20748 — REGISTERED PROFESSIONAL ENGINEER

Aldo M. Vitucci 7-27-00

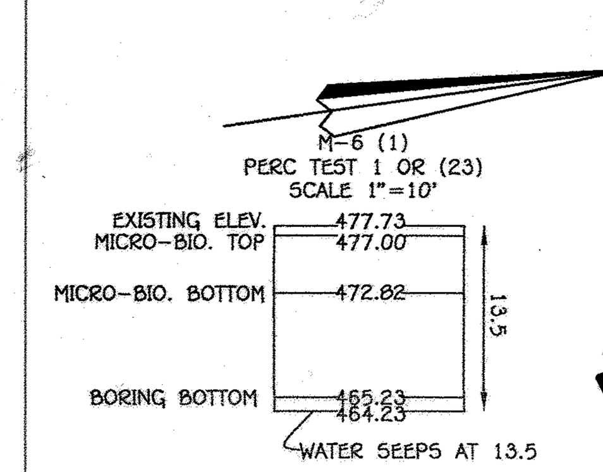
OWNER & DEVELOPER

MARIO F. MANNARELLI, SR.
MARIO F. MANNARELLI, JR.
2929 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

VINEYARDS AT CATTAIL CREEK
Lots 11 Thru 28, Buildable Preservation
Parcel 'C' and Bulk Parcel 'D'
(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)
ZONED -RC-DEO
TAX MAP NO. : 21 PART OF PARCEL NO. 225 GRID NO. : 8
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

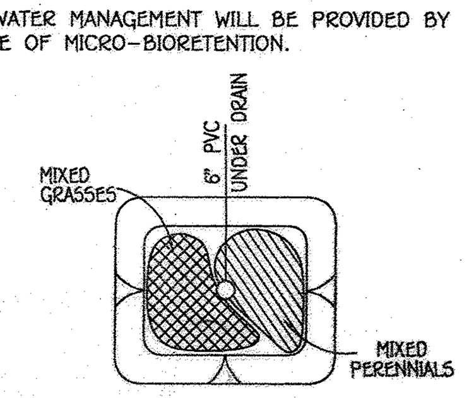
DATE: AUGUST 28, 2000
SHEET 1 OF 13

F00-68



STORMWATER MANAGEMENT NOTES

1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
2. STORMWATER MANAGEMENT WILL BE PROVIDED BY THE USE OF MICRO-BIORETENTION.



MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE

MIXED PERENNIALS*: CARDINAL FLOWER, TRADUSCANT ASTER, CUT-LEAF CONEFLOWER

SHRUBS* / MIXED GRASSES*: INK BERRY, BAYBERRY, ARROWWOOD / LITTLE BLUESTEM, PENDULOUS SEDGE, VIRGINIA SWITCHGRASS

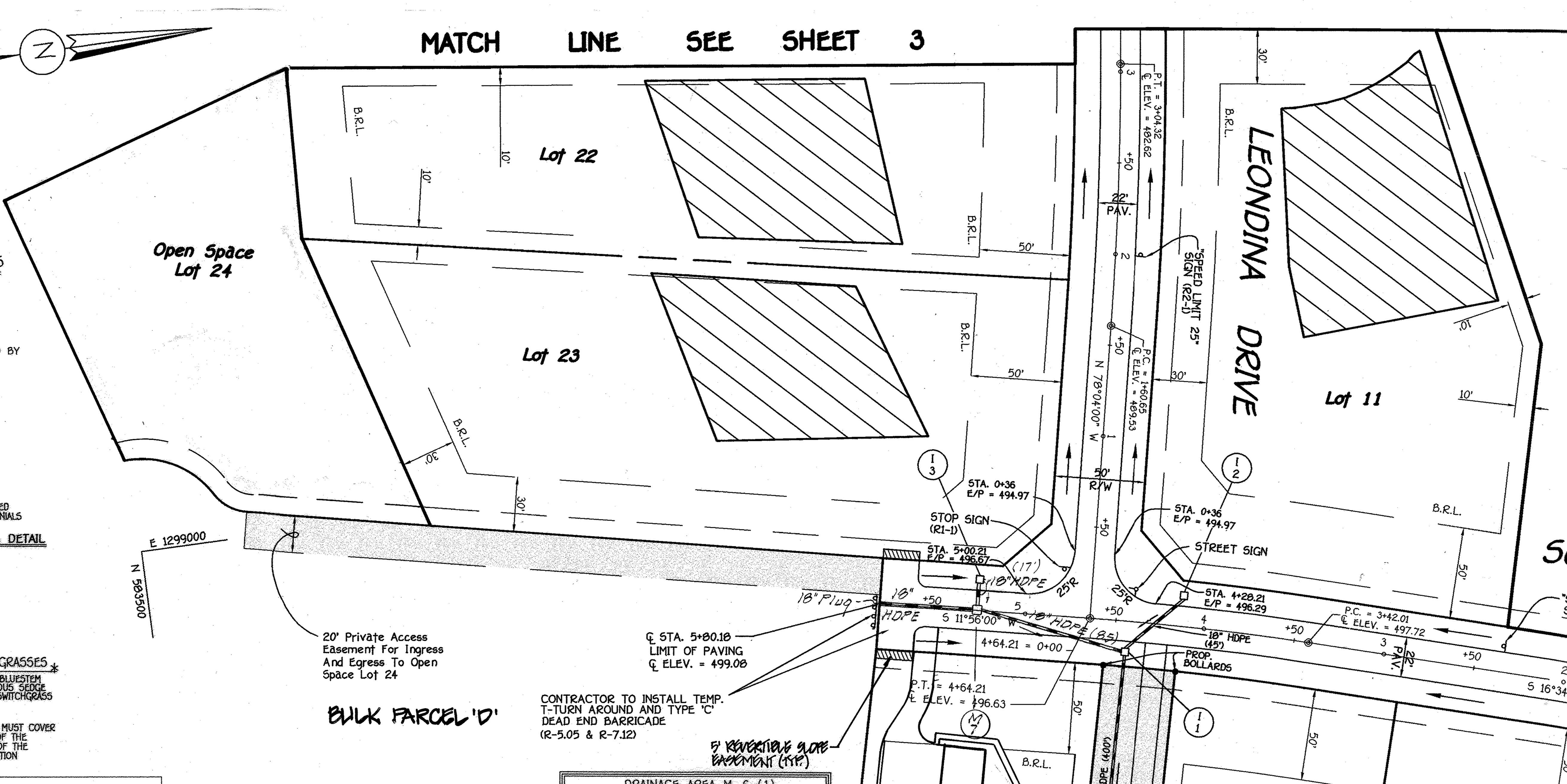
SEE PLANT MATERIAL CHARTS FOR QUANTITIES AND SPACING

NOTE:
PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION

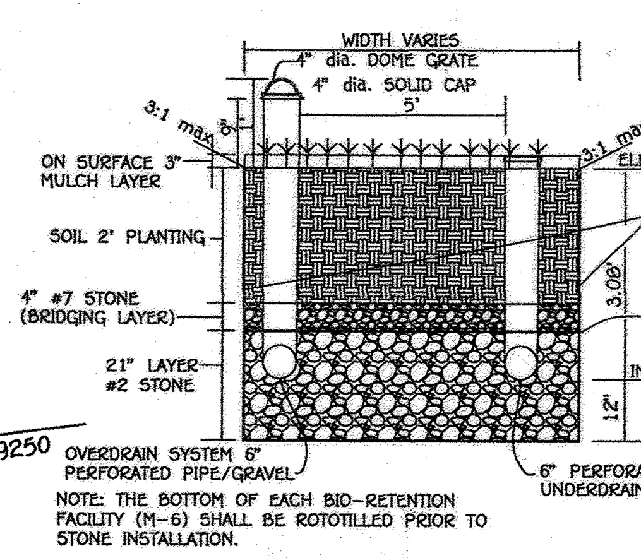
APPROVED
DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/24/01

APPROVED
DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/3/00

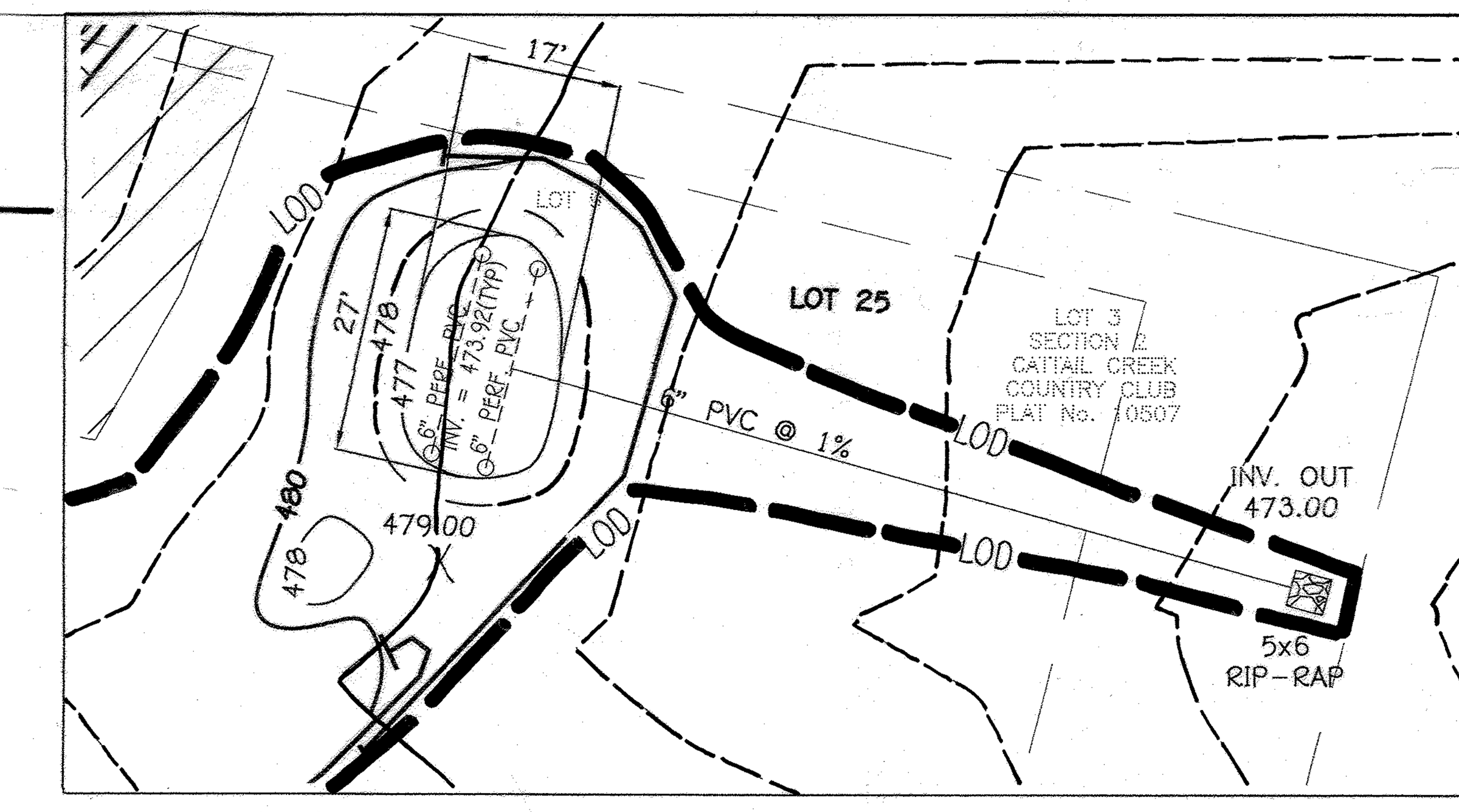
APPROVED
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 9-27-00


MATCH LINE SEE SHEET 3
Lot 22
Lot 23
Open Space Lot 24
LEONDINA DRIVE
Lot 11
SOFIA COURT
BULK PARCEL 'D'
LOT 25
Lot 27
Lot 28
Open Space Lot 26
WILLOW BIRCH DRIVE
20' Private Access Easement For Ingress And Egress To Open Space Lot 24
STOP SIGN (R1-1)
STREET SIGN
"SPEED LIMIT 25" SIGN (R2-1)
EXISTING 10' OFF-SITE TREE MAINTENANCE EASEMENT
℄ STA. 5+80.18 LIMIT OF PAVING ℄ ELEV. = 499.08
CONTRACTOR TO INSTALL TEMP. T-TURN AROUND AND TYPE 'C' DEAD END BARRICADE (R-5.05 & R-7.12)
5' REVERTIBLE SLOPE EASEMENT (TYP.)
12' S.W.M. ACCESS
LOT 1 VINEYARDS AT CATTAIL CREEK PLAT No. 11776
CATTAIL CREEK COUNTRY CLUB SECTION 2 PLAT No. 11050
N 584,457.40
E 1,299,234.76
PLAN
SCALE: 1" = 50'

DRAINAGE AREA M-6 (1) BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
48	MIXED PERENNIALS	1 FT.
24	SHRUBS / MIXED GRASSES	2 FT.


WIDTH VARIES
4" dia. DOME GRATE
4" dia. SOLID CAP
3:1 max.
ELEV. = 477.00
ON SURFACE 3" MULCH LAYER
SOIL 2' PLANTING
PROVIDE GEOTEXTILE ON ALL SIDES
(NOTE: NO GEOTEXTILE WILL BE PROVIDED UNDER THE STONE.)
PROVIDE 1/4" MESH (4X4) OR SMALLER GALVANIZED HARDWARE CLOTH
INV. = 473.92
4" #7 STONE (BRIDGING LAYER)
21" LAYER #2 STONE
OVERDRAIN SYSTEM 6" PERFORATED PIPE/GRAVEL
6" PERFORATED PIPE/GRAVEL UNDERDRAIN SYSTEM
NOTE: THE BOTTOM OF EACH BIO-RETENTION FACILITY (M-6) SHALL BE ROTOTILLED PRIOR TO STONE INSTALLATION.

TYPICAL SECTION - BIO-RETENTION FACILITY
NO SCALE



PLAN VIEW - MICRO BIO-RETENTION FACILITY
1"=20'

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6)

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS. WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

℄ CURVE DATA
SOFIA COURT
STA. 3+42.01 TO STA. 4+64.21
RADIUS = 1510.00'
LENGTH = 122.20'
Δ = 04°38'12"
TANGENT = 61.13'
CHORD. = S 14°15'06" W, 122.16'

℄ CURVE DATA
LEONDINA DRIVE
STA. 1+60.65 TO STA. 3+04.32
RADIUS = 2000.00'
LENGTH = 143.67'
Δ = 04°06'57"
TANGENT = 71.87'
CHORD. = N 80°07'29" W, 143.64'

NO.	DATE	DESCRIPTION
2	5/16/18	ADDED HOUSE, SEPTIC AREAS, LOT 25, & ADDED BIO-RETENTION NOTES & DETAILS & PLAN VIEW BIO
1	1-6-03	REVISE STORM DRAIN I-3 TO S-1
	REVISIONS	

VINEYARDS AT CATTAIL CREEK
Lots 11 Thru 28, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'

(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)

ZONED RC-DEO

FOURTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SOFIA COURT PLAN AND PROFILE — **LEONDINA DRIVE** PLAN

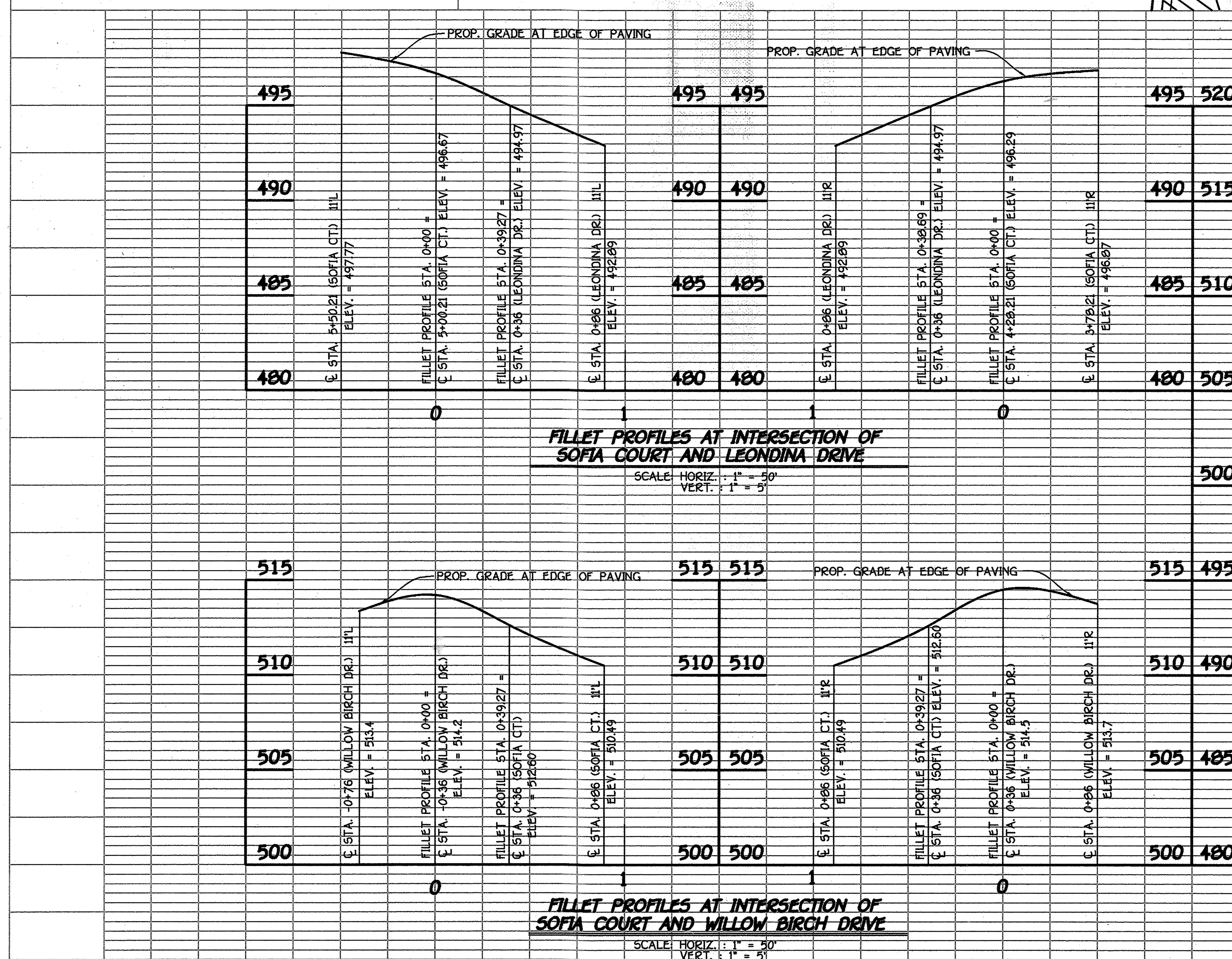
OWNER & DEVELOPER
MARIO F. MANNARELLI, SR.
MARIO F. MANNARELLI, JR.
2929 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

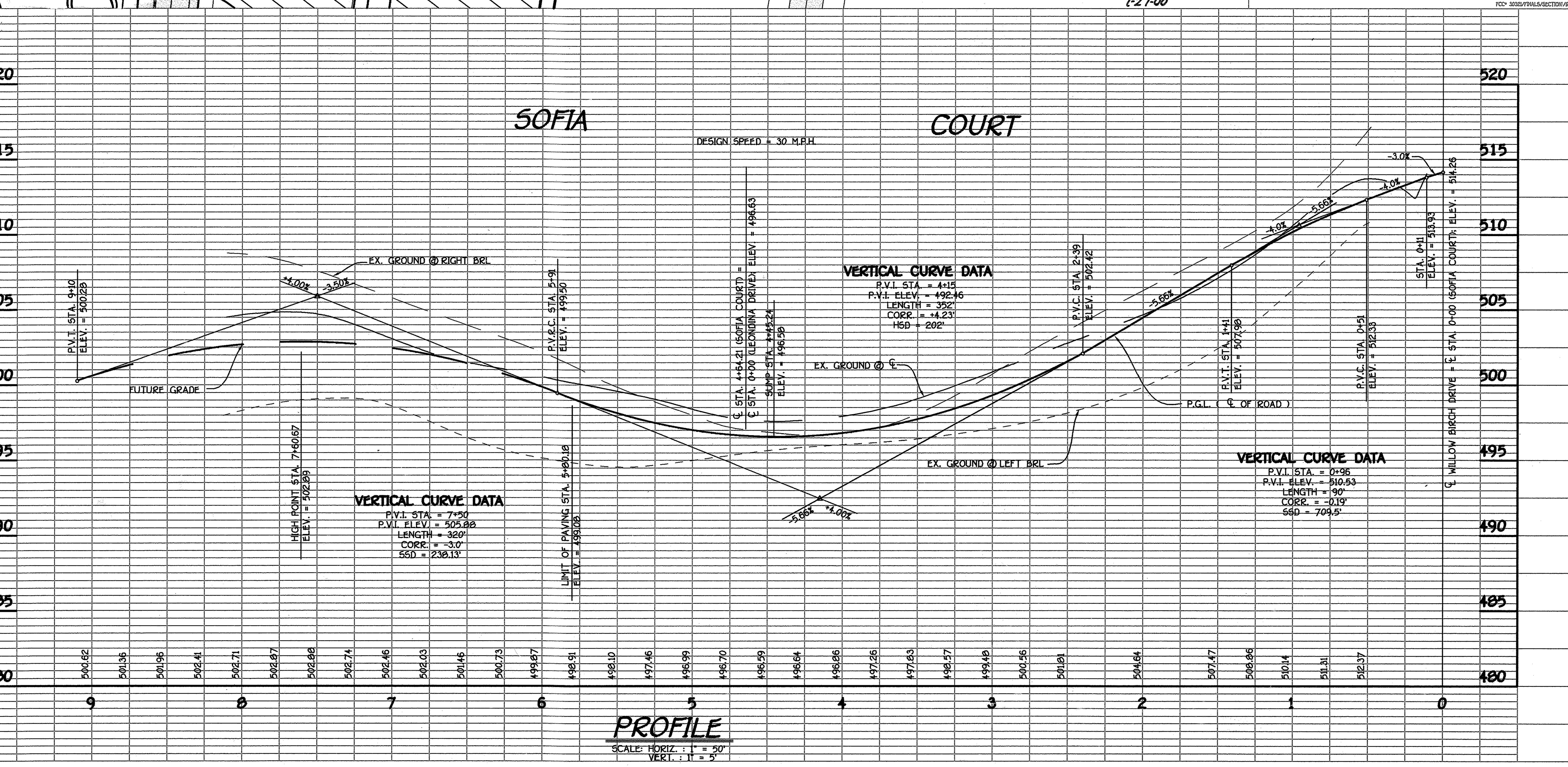
SCALE: AS SHOWN	DATE: AUGUST 28, 2000	DWG. NO. 2 OF 13
DES. Z.Y.F.	DRN. J.C.L.	CHK. Z.Y.F.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

FCC* 30321/FINALS/SECTION1/ROAD1.DWG

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — 7-27-00




SOFIA COURT
DESIGN SPEED = 30 M.P.H.
EX. GROUND @ RIGHT BRL
FUTURE GRADE
VERTICAL CURVE DATA
P.V.I. STA. = 7+50
P.V.I. ELEV. = 505.88
LENGTH = 320'
CORR. = -3.0'
SSD = 238.13'
VERTICAL CURVE DATA
P.V.I. STA. = 4+15
P.V.I. ELEV. = 492.46
LENGTH = 352'
CORR. = +4.23'
HSD = 202'
EX. GROUND @ ℄
EX. GROUND @ LEFT BRL
P.G.L. (℄ OF ROAD)
VERTICAL CURVE DATA
P.V.I. STA. = 0+96
P.V.I. ELEV. = 510.53
LENGTH = 90'
CORR. = -0.19'
SSD = 709.5'
PROFILE
SCALE: HORIZ.: 1" = 50' VERT.: 1" = 5'

PARCEL "B"
CATTAIL CREEK COUNTRY CLUB
SECTION 2
PLAT No. 11051

FOREST CONSERVATION EASEMENT NO. 3 (AFFORESTATION) 0.868 AC.±

PART OF EXISTING FOREST CONSERVATION EASEMENT (TO REMAIN) (TO BE PLANTED)

Open Space Lot 19

PART OF EXISTING FOREST CONSERVATION EASEMENT PLAT NO. 12646 (TO REMAIN) (RETENTION) 1.918 AC.±

WATER QUALITY, DRAINAGE AND UTILITY EASEMENT

6' x 6' RIP-RAP APRON

RIP-RAP APRON

9" PVC SCH 40

18" HDPE (140')

18" HDPE (298')

18" HDPE (400')

18" HDPE (150')

24' WATER QUALITY ACCESS, DRAINAGE AND UTILITY EASEMENT

Lot 17

Lot 16

Lot 15

Lot 14

Lot 13

Lot 12

Lot 18

Bulk Parcel "B"
MANNARELLI PROPERTY
PLAT Nos. 12645 and 12646

LEONDINA DRIVE

LP STA 1+48.01 — P.R.C. STA. 2+49.29
E/P ELEV. = 466.60

TRANSITION FLOW TOWARD INLET OPENING

℄ STA. 7+20.32 =
L.P. STA. 2+94.34
E/P ELEV. = 468.22

RAD. PT.± 7+97.89

P.T. = 7+87.32

P.C. = 7+20.32

610'R

N 82°10'57" W

℄ STA. 4+30
BEGIN TRANSITION

10' TREE MAINTENANCE EASEMENT

P.R.C. STA. 0+67.71
E/P ELEV. = 465.93

LP STA. 0+70

℄ STA. 7+20.32 =
L.P. STA. 0+00
E/P ELEV. = 468.22

N 584500
E 1298500

N 584000
E 1298000

B.R.L.

PROPERTY OF
J. GARRETT REILLY
LIBER 257, FOLIO 518

Private 26' Use-In-Common Access Easement Across Lots 16, 17 and 18 For The Use And Benefit Of Lots 16, 17 and 18. Maintenance Agreement Recorded In The Land Records Of Howard County, Maryland.

MATCH LINE SEE SHEET 2

PLAN
SCALE: 1" = 50'

EXISTING GROUND

2:1 SLOPE (MAX.)

PROPERTY OF
J. GARRETT REILLY
LIBER 257, FOLIO 518

E.P. 465.8T

PAVING

CROSS - SECTION AT LINEAR PROFILE STA. 0+70 ⚠
N.T.S.

NO.	DATE	REVISIONS
⚠	11/17/00	REVISE TYP. ROAD SECTION FROM 4+30 TO LP. 1+48.01

APPROVED
DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/9/00

APPROVED
DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/3/00

APPROVED
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 9-27-00

℄ CURVE DATA
LEONDINA DRIVE
STA. 7+20.32 TO STA. 7+87.32
RADIUS = 113.95'
LENGTH = 67.00'
Δ = 33°41'24"
TANGENT = 34.50'
CHORD. = N 65°20'15" W, 66.04'

STATE OF MARYLAND
ALDO MICHAEL VITUCCI
NO. 20745
REGISTERED
PROFESSIONAL ENGINEER
9-27-00

VINEYARDS AT CATTAIL CREEK
Lots 11 Thru 20, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'

(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)

ZONED RC-DEO

FOURTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

LEONDINA DRIVE
PLAN AND PROFILE

OWNER & DEVELOPER
MARIO F. MANNARELLI, SR.
MARIO F. MANNARELLI, JR.
2929 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

SCALE: AS SHOWN	DATE: AUGUST 28, 2000	DWG. NO. 3 OF 13
DES. Z.Y.F.	DRN. J.C.L.	CHK. Z.Y.F.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

FCC\ 2000\1944\5\SECTION\ROADS.DWG

LEONDINA DRIVE

VERTICAL CURVE DATA
P.V.I. STA. = 1+50
P.V.I. ELEV. = 463.04
LENGTH = 200'
CORR. = +1.76'

P.V.T. STA. 1+50
ELEV. = 465.63

SWMF STA. 1+49.01
ELEV. = 461.75

P.V.T. STA. 0+50
ELEV. = 466.48

℄ STA. 7+20.32 = L.P. STA. 2+94.34 ℄ ELEV. = 468.22 L/P ELEV. = 468.22

℄ STA. 7+20.32 = L.P. STA. 0+00 ℄ ELEV. = 468.22 E/P ELEV. = 468.22

EX. GROUND @ E/P

EX. GROUND @ BRL

P.G.L. (EDGE OF PAVING)

-3.59%
-3.45%
+3.59%
-3.45%

466.63 | 465.64 | 465.27 | 464.93 | 464.80 | 464.89 | 465.20 | 465.74 | 466.49

LINEAR PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'

LEONDINA DRIVE
DESIGN SPEED = 30 M.P.H.

VERTICAL CURVE DATA
P.V.I. STA. = 5+00
P.V.I. ELEV. = 473.01
LENGTH = 100'
CORR. = +0.29'
HSD = 492.30'

EX. GROUND @ LEFT BRL

EX. GROUND @ ℄

EX. GROUND @ RIGHT BRL

P.G.L. (℄ OF ROAD)

P.V.T. STA. 5+50
ELEV. = 472.30

P.V.C. STA. 4+50
ELEV. = 474.82

P.V.C. STA. 2+50
ELEV. = 469.72

P.V.T. STA. 2+50
ELEV. = 469.14

P.V.C. STA. 1+50
ELEV. = 493.16

STA. 0+11
ELEV. = 496.30

P.V.C. STA. 0+50
ELEV. = 494.72

℄ STA. 4+44.21 (GAFFA COURT) = ℄ STA. 0+00 (LEONDINA DRIVE), ELEV. = 496.63

-2.20%
-4.80%
-2.25%
+4.00%
-5.27%
+4.00%
-3.00%

VERTICAL CURVE DATA
P.V.I. STA. = 2+00
P.V.I. ELEV. = 487.47
LENGTH = 100'
CORR. = +0.07'
HSD = 210'

VERTICAL CURVE DATA
P.V.I. STA. = 1+00
P.V.I. ELEV. = 492.74
LENGTH = 100'
CORR. = -0.16'
SSD = 390.24'

469.00 | 470.13 | 471.25 | 473.01 | 473.60 | 474.74 | 478.16 | 480.49 | 482.82 | 486.33 | 487.45 | 486.81 | 491.38 | 492.98 | 493.70

PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'

F 00-68

STREET TREE SCHEDULE

SYMBOL	QUANTITY	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
◯	16	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2-3" CAL.	40' APART ON PUBLIC R/W
◯	29 THIS SHEET 35 TOTAL	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2 1/2-3" CAL.	40' APART ON PUBLIC R/W

STREET TREE TYPE MAY BE SUBSTITUTED WITH AN EQUIVALENT FROM THE APPROVED LIST OF STREET TREES IN THE HOWARD COUNTY LANDSCAPE MANUAL.
FINANCIAL SURETY FOR THE 51 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF (51) x $ 300) = $ 15,300.00

NOTE:
EROSION CONTROL MATTING TO BE INSTALLED IN ALL ROADSIDE DITCHES AND CHANNEL FROM S-1 TO S.W.M. POND, SEE DETAIL, SHEET 5

NO.	DATE	REVISION
4	9/26/01	REVISE LOT 28 & ADD LOT 29, ADD BASIC AREAS, LOD &
3	11/15/01	REVISE GRADING ASSOCIATED WITH TYPICAL ROAD SECTION
2	1/16/01	REVISE STORM DRAIN I-3 TO S-1
1	6/10/01	REVISE LOT 6 GRAD, LOT 13, LOT & 2 BIO RETENTION

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any 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 Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer — Date: 10/29/99

MARIO MANNARELLI JR.
Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — Date: 8-29-00

ALDO M. VITUCCI
Printed Name Of Engineer

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — NO. 20745 — REGISTERED PROFESSIONAL ENGINEER

These Plans Have Been Reviewed And Approved By The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA Natural Resources Conservation Service — Date: 11/2/01

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — Date: 11/28/01

Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 9-27-00

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 1/24/01

Chief, Development Engineering Division — Date: 11/3/00

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature — P.E. No. — Date:

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'

EX. GROUND; PROP. GRADE; ℄ STA. 5+31 (LEONDINA DRIVE); TEMP. 18" FLEXIBLE PIPE; 4730; 458.0; 0+00; 1+87; 480 / 475 / 470 / 465 / 460

LEGEND

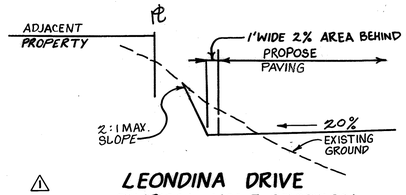
- SSF — SSF — SSF — SUPER-SILT FENCE
- SF — SF — SF — SILT FENCE
- X — X — X — TREE PROTECTION FENCE
- I.P. — INLET PROTECTION
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE
- LIMIT OF DISTURBANCE

PLAN
SCALE: 1" = 50'

EXISTING PUBLIC DRAINAGE AND UTILITY EASEMENT PLAT No. 10524; EX. PEDEST. LIGHT (TYP.); S05° 16'24"E 263.71'; N 84°05'45"W 134.00'; LOT 13 59,786 SQ.FT.; SEE SHEET 5; MATCH LINE SEE SHEET 6; LEONDINA DRIVE; 10' B.R.L.; 30' B.R.L.; 10' B.R.L.; 10' TREE MAINTENANCE EASEMENT; 10' B.R.L.; 30' B.R.L.; 10' B.R.L.; 10' B.R.L.; 30' B.R.L.; 10' B.R.L.; 30' B.R.L.; 10' B.R.L.; 30

STREET TREE SCHEDULE

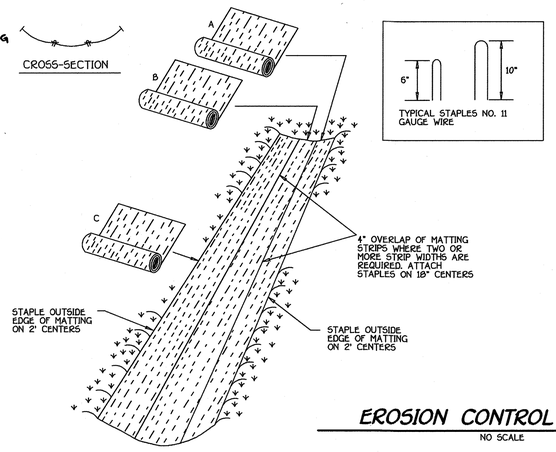
SYMBOL	QUANTITY	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
○	6 THIS SHEET 35 TOTAL	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2 1/2-3" CAL.	40' APART ON PUBLIC R/W



CROSS-SECTION

⚠

LEONDINA DRIVE
TYPICAL HALF SECTION
FROM ℄ STA. 4+30 TO L.P. STA. 1+48.01
NOT TO SCALE



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.

EROSION CONTROL MATTING
NO SCALE

PLAN
SCALE: 1" = 50'

No.	DATE	DESCRIPTION
⚠	11/9/12	REVISE GRADING ASSOCIATED WITH TYPICAL ROAD SECTION
		REVISIONS

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855
F.C.C.*10321 GRADING PLAN 2.DWG

OWNER & DEVELOPER
MARIO F. MANNARELLI SR.
MARIO F. MANNARELLI JR.
2929 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any 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 Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer — 7/27/00 Date

Mario Mannarelli
Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — 7-27-00 Date

Printed Name Of Engineer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — 1/18/01 Date

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — 1/18/01 Date

Approved: Department Of Public Works

Chief Bureau Of Highways MS — 9-27-00 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development JA — 1/24/01 Date

Chief, Development Engineering Division MK — 11/3/00 Date

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature — P.E. No.

Date:

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

LEGEND

SSF SSF SSF	SUPER-SILT FENCE
SF SF SF	SILT FENCE
X X X	TREE PROTECTION FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
	EARTH DIKE
	LIMIT OF DISTURBANCE

NOTE:
EROSION CONTROL MATTING TO BE INSTALLED IN ALL ROADSIDE DITCHES AND CHANNEL FROM S-1 TO S.W.M. POND, SEE DETAIL, THIS SHEET.

STREET TREE, GRADING AND SEDIMENT CONTROL PLAN

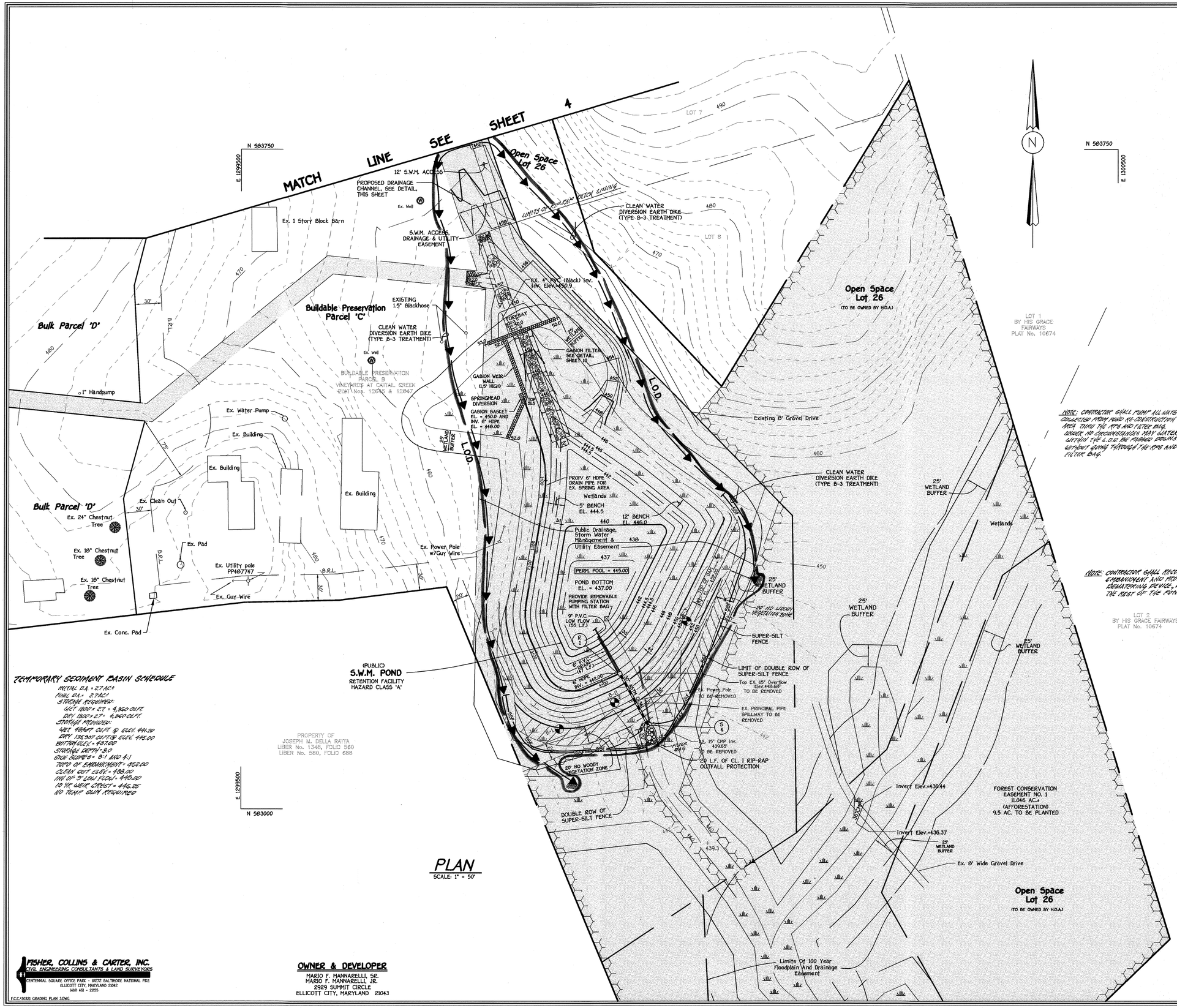
VINEYARDS AT CATTAIL CREEK

Lots 11 Thru 28, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'

(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)

ZONED RC-DEO
TAX MAP NO. 21 PART OF PARCEL NO. 225 GRID NO. 8
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: AUGUST 28, 2000
SHEET 5 OF 13

F00-68



NOTE: CONTRACTOR SHALL PUMP ALL WATER COLLECTED FROM POND RE-CONSTRUCTION AREA THRU THE APS AND FILTER BAG. UNDER NO CIRCUMSTANCES MAY WATER WITHIN THE L.O.D. BE PASSED DOWNSTREAM WITHOUT GOING THROUGH THE APS AND FILTER BAG.

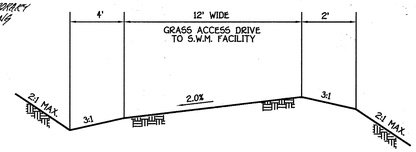
NOTE: CONTRACTOR SHALL RECONSTRUCT THE EMBANKMENT AND PROVIDE THE TEMPORARY DEWATERING DEVICE, BEFORE DRAINING THE REST OF THE POND.

TEMPORARY SEDIMENT BASIN SCHEDULE

INITIAL D.A. = 2.7 AC.±
FINAL D.A. = 2.7AC.±
STORAGE REQUIRED:
WET 1800 x 2.7 = 4,860 CU.FT.
DRY 1800 x 2.7 = 4,860 CU.FT.
STORAGE PROVIDED:
WET 9,884 CU.FT. @ ELEV. 441.30
DRY 10,200 CU.FT. @ ELEV. 445.00
BOTTOM ELEV.= 437.00
STORAGE DEPTH = 8.0
SIDE SLOPES = 8:1 AND 4:1
TOP OF EMBANKMENT = 452.00
CREST WET ELEV. = 438.00
INV. OF 3" LOW FLOW = 445.00
10 YR WEIR CREST = 446.25
NO TEMP. SUMP REQUIRED

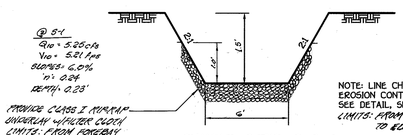
PLAN

SCALE: 1" = 50'



TYPICAL SECTION – S.W.M. ACCESS DRIVEWAY

NO SCALE



CHANNEL DETAIL @ S-1

NO SCALE

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any 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 Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer — 8-29-00 Date

Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — 8-29-00 Date

ALDO M. VITUCCI
Printed Name Of Engineer

NO. 20748 REGISTERED PROFESSIONAL ENGINEER

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — 1/18/01 Date

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — 1/18/01 Date

Approved: Department Of Public Works

Chief Bureau Of Highways — 9-27-00 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 11/21/01 Date

Chief, Development Engineering Division — 11/2/00 Date

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature — P.E. No.

Date:

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F.C.C.-10323 GRADING PLAN 3.DWG

OWNER & DEVELOPER
MARIO F. MANNARELLI, SR.
MARIO F. MANNARELLI, JR.
2929 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

GRADING AND SEDIMENT CONTROL PLAN

VINEYARDS AT CATTAIL CREEK

Lots 11 Thru 28, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'

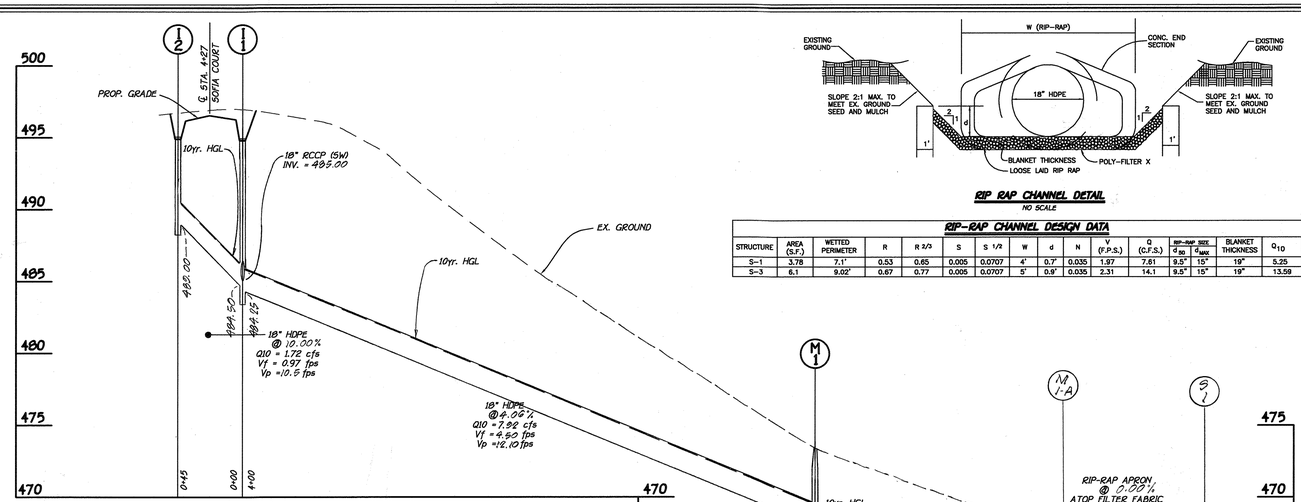
(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)

ZONED RC-DEO
TAX MAP NO. 21 PART OF PARCEL NO. 225 GRID NO. 8
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: AUGUST 28, 2000
SHEET 6 OF 13

F 00-68

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	494.86	484.50 485.00	484.25	SOFIA COURT	C.L. STA. 1+45.24	17' L	OPEN END GRATE	S.D. 4.36 w/ S.D. 4.13
I-2	495.01	-----	488.00	SOFIA COURT	C.L. STA. 1+13	17' R	OPEN END GRATE	S.D. 4.36 w/ S.D. 4.13
I-3	495.76	-----	493.00	SOFIA COURT	C.L. STA. 5+26	17' R	OPEN END GRATE	S.D. 4.36 w/ S.D. 4.13
I-5	463.12	-----	460.50	LEONDINA DRIVE	L.P. STA. 1+48.01	6'	OPEN END GRATE	S.D. 4.36 w/ S.D. 4.13
I-6	475.03	-----	470.25	LEONDINA DRIVE	C.L. STA. 4+30	17' L	OPEN END GRATE	S.D. 4.36 w/ S.D. 4.13
I-7	475.03	469.75	469.50	LEONDINA DRIVE	C.L. STA. 4+30	17' R	OPEN END GRATE	S.D. 4.36 w/ S.D. 4.13
M-1	473.50	468.00	467.75	----------	N 583,932 E 1,299,517	------	STD. MANHOLE	G - 5.01
M-1A	467.50			----------	N 583,869 E 1,299,694	------	STD. MANHOLE	G - 5.01
M-4	474.00	420.00	419.75, 416.60	----------	N 584,324 E 1,297,595	------	STD. MANHOLE	G - 5.01
M-5	455.00	448.00	447.75	----------	N 584,183 E 1,297,890	------	STD. MANHOLE	G - 5.01
M-6	470.00	461.00, 459.76	459.50	----------	N 584,122 E 1,298,095	------	STD. MANHOLE	G - 5.01
S-1	483.69	482.14	482.14	----------	N 583,752 E 1,298,722	------	CONC. END SECTION	S.D. 5.51
S-2	416.75	416.00	416.00	----------	N 584,273 E 1,297,961	------	CONC. END SECTION	S.D. 5.51
S-3	407.15	405.40	405.40	----------	N 584,256 E 1,297,458	------	CONC. END SECTION	S.D. 5.51
S-4	442.00	440.00	440.00	----------	N 583,097 E 1,299,965	------	CONC. END SECTION	S.D. 5.51
R-1			442.00	----------	N 583,158 E 1,299,963	------	CONC. RISER	



PROFILE

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

RIP RAP CHANNEL DETAIL

NO SCALE

RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA (S.F.)	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	N	V (F.P.S.)	Q (C.F.S.)	RIP-RAP SIZE d_{50}	RIP-RAP SIZE d_{MAX}	BLANKET THICKNESS	Q_{10}	DIA.
S-1	3.78	7.1'	0.53	0.65	0.005	0.0707	4'	0.7'	0.035	1.97	7.61	9.5"	15"	19"	5.25	18"
S-3	6.1	9.02'	0.67	0.77	0.005	0.0707	5'	0.9'	0.035	2.31	14.1	9.5"	15"	19"	13.59	18"

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

1. The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional shall hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
4. Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 1/29/01

Chief, Development Engineering Division — Date 11/8/00

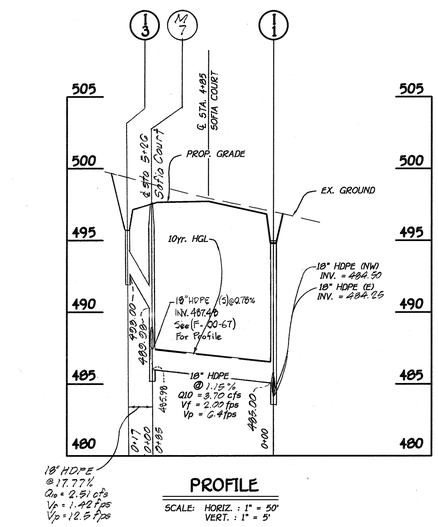
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 9-27-00

NO.	DATE	DESCRIPTION
1	1-6-03	REVISE STORM DRAIN I-3 TO S-1
		REVISIONS

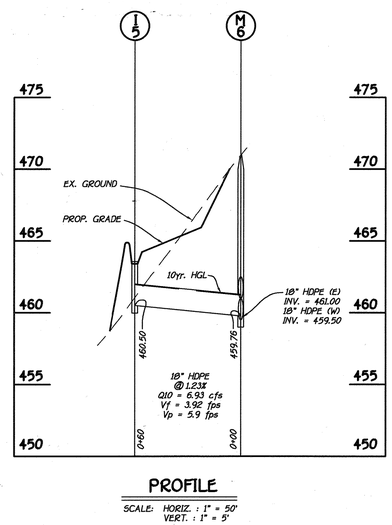
PIPE SCHEDULE

SIZE	MATERIAL	LENGTH
18"	H.D.P.E.	2004'
9"	P.V.C.	60'



PROFILE

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



PROFILE

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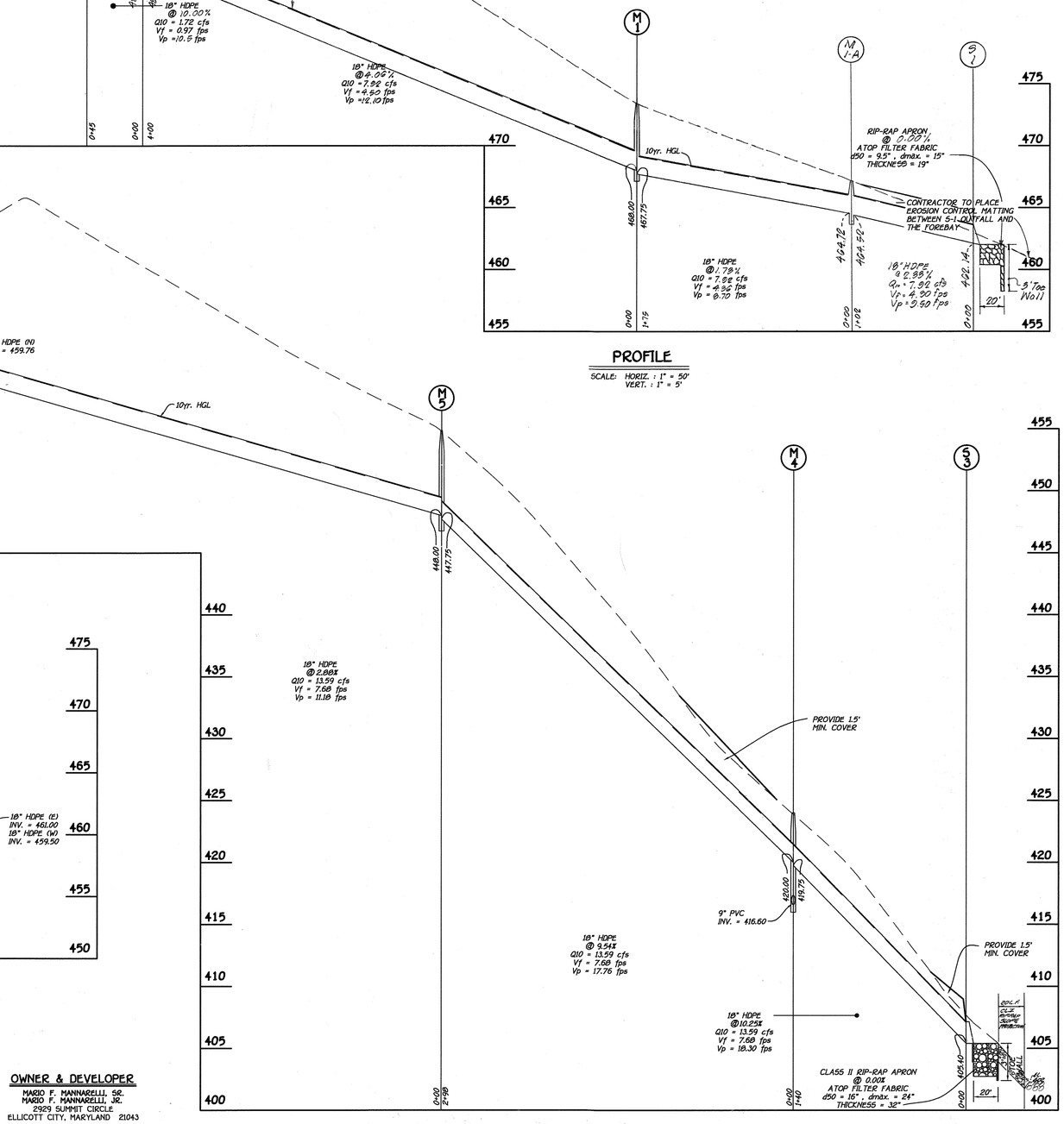
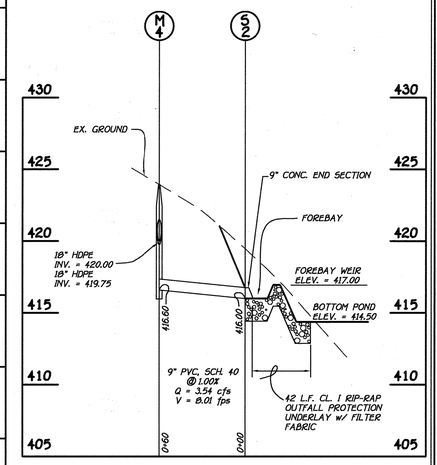




PROFILE

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

STORM DRAIN PROFILES

VINEYARDS AT CATTAIL CREEK

Lots 11 Thru 28, Buildable Preservation
Parcel 'C' and Bulk Parcel 'D'

(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)

ZONED RC-DEO
TAX MAP NO. 21 PART OF PARCEL NO. 225 GRID NO. 8
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: AUGUST 28, 2000
SHEET 7 OF 13

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F.C.C.- 3032/FINALS/SECTIONS/STORMDRAINS.DWG

STATE OF MARYLAND — MICHAEL MINNICH — No. 20719 — REGISTERED PROFESSIONAL ENGINEER

Michael M. Minnich 7-27-00

OWNER & DEVELOPER
MARIO F. MANNARELLI, SR.
MARIO F. MANNARELLI, JR.
2929 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

F00-68

APPROVED: DEPARTMENT OF PUBLIC WORKS

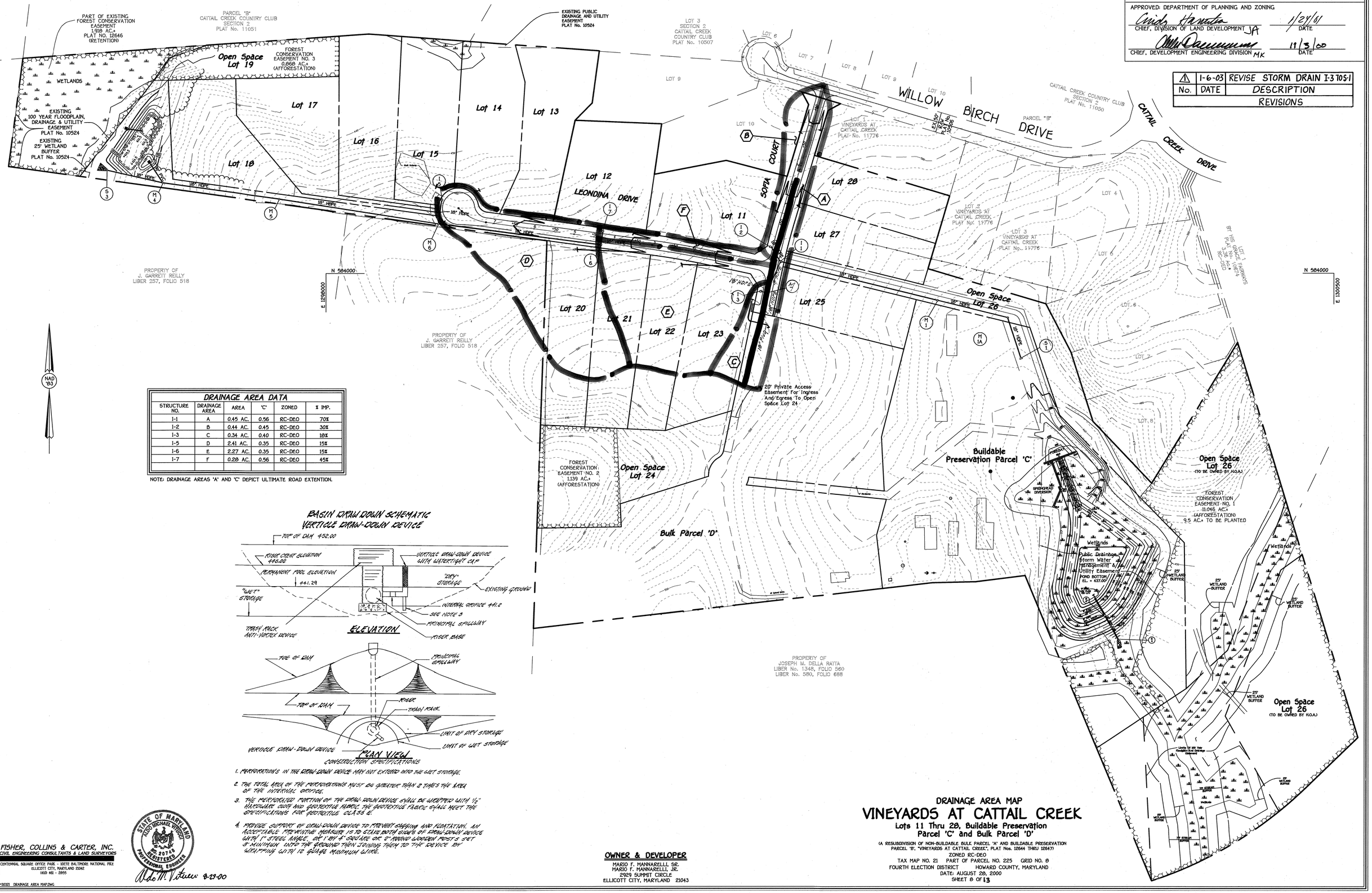
CHIEF, BUREAU OF HIGHWAYS — DATE 9-27-00

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/24/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/3/00

No.	DATE	DESCRIPTION
1	1-6-03	REVISE STORM DRAIN I-3 TO S-1
		REVISIONS



STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
I-1	A	0.45 AC.	0.56	RC-DEO	70%
I-2	B	0.44 AC.	0.45	RC-DEO	30%
I-3	C	0.34 AC.	0.40	RC-DEO	18%
I-5	D	2.41 AC.	0.35	RC-DEO	15%
I-6	E	2.27 AC.	0.35	RC-DEO	15%
I-7	F	0.28 AC.	0.56	RC-DEO	45%

DRAINAGE AREA DATA

NOTE: DRAINAGE AREAS 'A' AND 'C' DEPICT ULTIMATE ROAD EXTENTION.

BASIN DRAW-DOWN SCHEMATIC
VERTICLE DRAW-DOWN DEVICE

CONSTRUCTION SPECIFICATIONS

1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH ½" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. AN ACCEPTABLE INTERMITTENT MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE, 24" LONG AT 2' SQUARE OR 2' APPART WHERE MESH IS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

STATE OF MARYLAND — ROBERT RICHARD VOGEL — NO. 20749 — REGISTERED PROFESSIONAL ENGINEER

8-29-00

F.C.C.-10321 DRAINAGE AREA MAPING

OWNER & DEVELOPER

MARIO F. MANNARELLI, SR.
MARIO F. MANNARELLI, JR.
2929 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

DRAINAGE AREA MAP

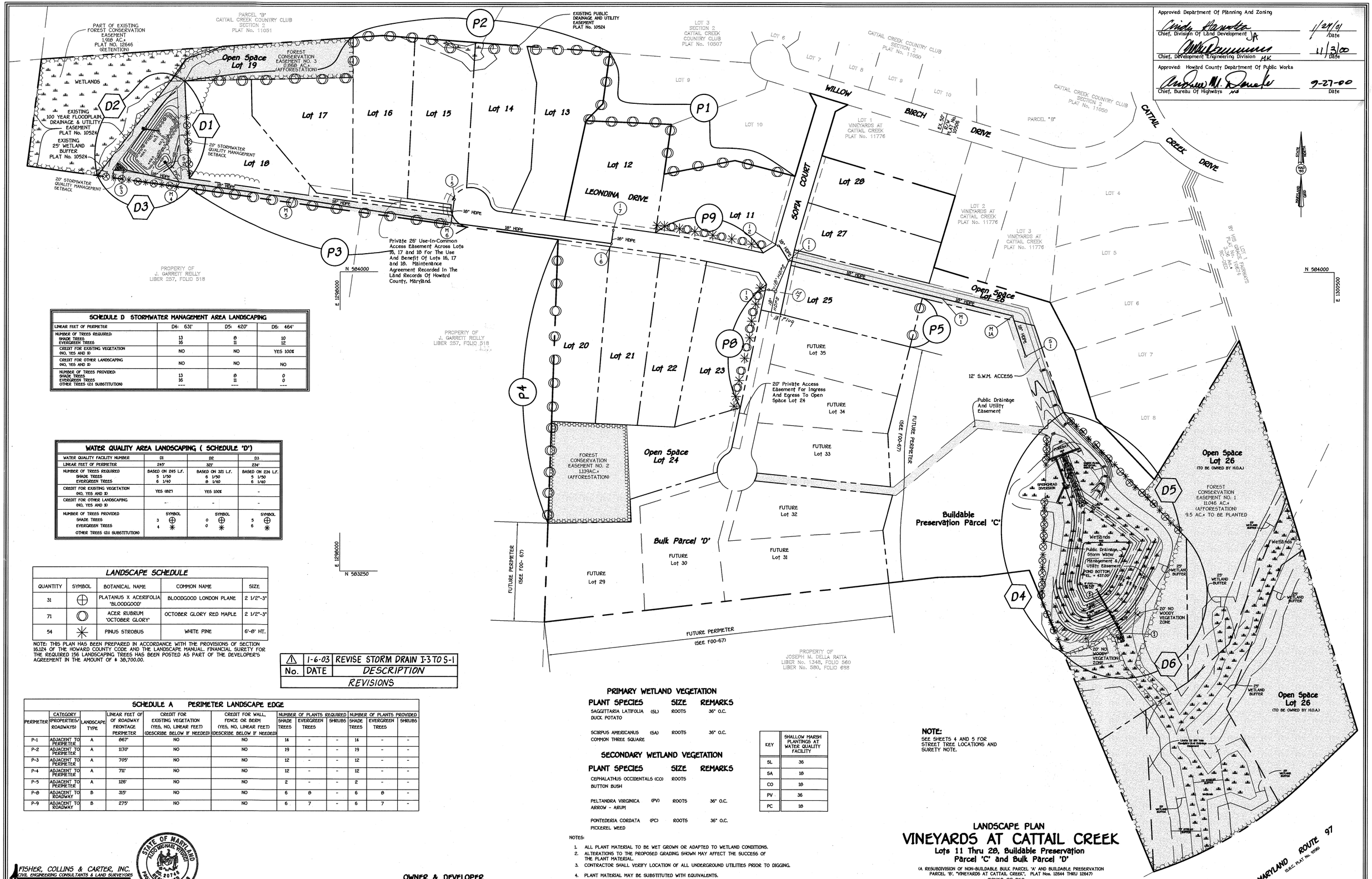
VINEYARDS AT CATTAIL CREEK

Lots 11 Thru 28, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'

(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)

ZONED RC-DEO
TAX MAP NO. 21 PART OF PARCEL NO. 225 GRID NO. 8
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: AUGUST 28, 2000
SHEET 8 OF 13

F 00-68



Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 11/21/01

Chief, Development Engineering Division — Date 11/3/00

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 9-27-00

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

	D4: 631'	D5: 420'	D6: 464'
LINEAR FEET OF PERIMETER			
NUMBER OF TREES REQUIRED: SHADE TREES	13	8	10
NUMBER OF TREES REQUIRED: EVERGREEN TREES	16	11	12
CREDIT FOR EXISTING VEGETATION (NO, YES AND X)	NO	NO	YES 100%
CREDIT FOR OTHER LANDSCAPING (NO, YES AND X)	NO	NO	NO
NUMBER OF TREES PROVIDED: SHADE TREES	13	8	0
NUMBER OF TREES PROVIDED: EVERGREEN TREES	16	11	0
NUMBER OF TREES PROVIDED: OTHER TREES (21 SUBSTITUTION)	---	---	---

WATER QUALITY AREA LANDSCAPING (SCHEDULE 'D')

WATER QUALITY FACILITY NUMBER	D1	D2	D3
LINEAR FEET OF PERIMETER	245'	321'	234'
NUMBER OF TREES REQUIRED: SHADE TREES	BASED ON 245 L.F. 5 1/50	BASED ON 321 L.F. 6 1/50	5 1/50
NUMBER OF TREES REQUIRED: EVERGREEN TREES	6 1/40	8 1/40	6 1/40
CREDIT FOR EXISTING VEGETATION (NO, YES AND X)	YES (827)	YES 100%	-
CREDIT FOR OTHER LANDSCAPING (NO, YES AND X)	-	-	-
NUMBER OF TREES PROVIDED: SHADE TREES	SYMBOL 3	SYMBOL 0	SYMBOL 5
NUMBER OF TREES PROVIDED: EVERGREEN TREES	4	0	6
NUMBER OF TREES PROVIDED: OTHER TREES (21 SUBSTITUTION)			

LANDSCAPE SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
31	⊕	PLATANUS X ACERIFOLIA 'BLOODGOOD'	BLOODGOOD LONDON PLANE	2 1/2"-3"
71	◯	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2 1/2"-3"
54	✳	PINUS STROBUS	WHITE PINE	6'-8' HT.

NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 156 LANDSCAPING TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $ 38,700.00.

No.	DATE	DESCRIPTION
1	1-6-03	REVISE STORM DRAIN I-3 TO S-1
		REVISIONS

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER	CATEGORY (PROPERTIES/ ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED: SHADE TREES	EVERGREEN TREES	SHRUBS	NUMBER OF PLANTS PROVIDED: SHADE TREES	EVERGREEN TREES	SHRUBS
P-1	ADJACENT TO PERIMETER	A	867'	NO	NO	14	-	-	14	-	-
P-2	ADJACENT TO PERIMETER	A	1170'	NO	NO	19	-	-	19	-	-
P-3	ADJACENT TO PERIMETER	A	705'	NO	NO	12	-	-	12	-	-
P-4	ADJACENT TO PERIMETER	A	711'	NO	NO	12	-	-	12	-	-
P-5	ADJACENT TO PERIMETER	A	126'	NO	NO	2	-	-	2	-	-
P-8	ADJACENT TO ROADWAY	B	315'	NO	NO	6	8	-	6	8	-
P-9	ADJACENT TO ROADWAY	B	275'	NO	NO	6	7	-	6	7	-

PRIMARY WETLAND VEGETATION

PLANT SPECIES		SIZE	REMARKS
SAGGITTARIA LATIFOLIA DUCK POTATO	(SL)	ROOTS	36" O.C.
SCIRPUS AMERICANUS COMMON THREE SQUARE	(SA)	ROOTS	36" O.C.

SECONDARY WETLAND VEGETATION

PLANT SPECIES		SIZE	REMARKS
CEPHALATHUS OCCIDENTALS BUTTON BUSH	(CO)	ROOTS	
PELTANDRA VIRGINICA ARROW - ARUM	(PV)	ROOTS	36" O.C.
PONTEDERIA CORDATA PICKEREL WEED	(PC)	ROOTS	36" O.C.

KEY	SHALLOW MARSH PLANTINGS AT WATER QUALITY FACILITY
SL	36
SA	18
CO	18
PV	36
PC	18

NOTES:

1. ALL PLANT MATERIAL TO BE WET GROWN OR ADAPTED TO WETLAND CONDITIONS.
2. ALTERATIONS TO THE PROPOSED GRADING SHOWN MAY AFFECT THE SUCCESS OF THE PLANT MATERIAL.
3. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
4. PLANT MATERIAL MAY BE SUBSTITUTED WITH EQUIVALENTS.

NOTE:
SEE SHEETS 4 AND 5 FOR STREET TREE LOCATIONS AND SURETY NOTE.

FISHER, COLLINS & CARTER, INC.
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(410) 461 - 2855

F.C.C.-30321 LANDSCAPE PLANNING

STATE OF MARYLAND — TODD MICHAEL WOOD — No. 20748 — REGISTERED PROFESSIONAL ENGINEER

8-29-00

OWNER & DEVELOPER
MARIO F. MANNARELLI, SR.
MARIO F. MANNARELLI, JR.
2929 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

LANDSCAPE PLAN
VINEYARDS AT CATTAIL CREEK
Lots 11 Thru 20, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'

(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)
ZONED RC-DEO
TAX MAP NO. 21 PART OF PARCEL NO. 225 GRID NO. 8
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: AUGUST 28, 2000
SHEET 9 OF 13

MARYLAND ROUTE 97 (S.H.C. PLAT No. 19798)

F00-68

BORING B-1

DESCRIPTION OF MATERIALS	DEPTH	REMARKS
	SURFACE	
GRAY AND BROWN, MOIST, CLAYEY SILT, AND cf SAND, TRACE ROCK FRAGS, TRACE MICA (FILL) (ML)	4.5	0.2' TOPSOIL
GRAY AND GREENISH BROWN, MOIST, MOTTLED CLAYEY SILT, AND cf SAND, TRACE MICA (ML)	6.5	
BROWN TO GREENISH BROWN, MOIST, cf SAND, AND SILT, TRACE ROCK FRAGS, TRACE MICA (DECOMPOSED ROCK) (SM)	12.0	3 DAYS AFTER COMPLETION WATER AT 6.5', CAVED AT 10.4'
GREENISH-BROWN AND LIGHT GRAY, MOIST, cf SAND, AND SILT, TRACE MICA (DECOMPOSED ROCK) (SM)	20.0	
BOTTOM OF HOLE AT 20.0'		

BORING B-2

DESCRIPTION OF MATERIALS	DEPTH	REMARKS
	SURFACE	
GRAY AND GREENISH BROWN, MOIST SILT, AND cf SAND, TRACE MICA, AND CLAY (FILL) (ML)	3.0	0.2' TOPSOIL
GRAY, VERY MOIST, CLAYEY SILT, AND cf SAND, TRACE QUARTZ FRAGS, TRACE MICA, TRACE TOPSOIL, TRACE ROOTS (FILL) (ML)	11.5	
GRAY TO BROWN, MOIST, SILT, AND QUARTZ FRAGS, SOME cf SAND, TRACE MICA (DECOMPOSED ROCK) (ML)	15.0	3 DAYS AFTER COMPLETION WATER AT 8.4', CAVED AT 13.5'
BROWN, MOIST, SILT, AND cf SAND, TRACE MICA (DECOMPOSED ROCK) (ML)	19.0	
GRAYISH BROWN, MOIST, cf SAND, AND SILT, TRACE MICA (DECOMPOSED ROCK) (SM)	25.0	
BOTTOM OF HOLE AT 25.0'		

BORING B-3

DESCRIPTION OF MATERIALS	DEPTH	REMARKS
	SURFACE	
BROWN, MOIST, SILT & CLAY, AND cf SAND, TRACE ROCK FRAGS, TRACE MICA (FILL) (ML)	5.5	0.2' TOPSOIL
DARK GRAY, VERY MOIST, SILT & CLAY, AND cf SAND, TRACE ORGANICS / TOPSOIL, TRACE MICA (FILL) (ML)	7.5	
GRAY AND GREENISH BROWN, VERY MOIST, cf SAND, AND SILT & CLAY, TRACE QUARTZ FRAGS, TRACE MICA (SM)	10.5	3 DAYS AFTER COMPLETION WATER AT 7.5', CAVED AT 9.5'
GRAY TO BROWN, MOIST, cf SAND, AND SILT TRACE ROCK FRAGS, TRACE MICA (DECOMPOSED ROCK) (SM)	13.0	
GRAYISH BROWN, MOIST, cf SAND, AND SILT, TRACE ROCK FRAGS, TRACE MICA (DECOMPOSED ROCK) (SM)	19.0	
BOTTOM OF HOLE AT 19.0'		

378 - 12 Pond
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.

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 50 foot radius around the inlet structure shall be cleared.

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

Earth Fill

Material-The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

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 eritire 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 the 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.

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

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.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoinng 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 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 ot 24' or greater over the structure or pipe,

Pipe Conduits

All pipes shall be circular in cross section.

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 Designation C-361.
2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.
3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance wfth 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 2 feet from the riser.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials-PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.
2. Joints and connections to anti-seep collars shall be completely watertight.
3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to "Structure Backfill".
5. Otherdetails (anti-seep collars ,valves, etc.) shall be as shown on the drawings.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608; Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transporation, State Highway Administration Standard Specifications for Construction and Materials, Section 905.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

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 the areas to be occupied by the permanent works. The contractor shall also furnish , install, operate, and maintain all necessary pumping and other equipment required for removal of water from the 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. 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 of 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 to sumps from which the water shall be pumped.

Stabilization

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

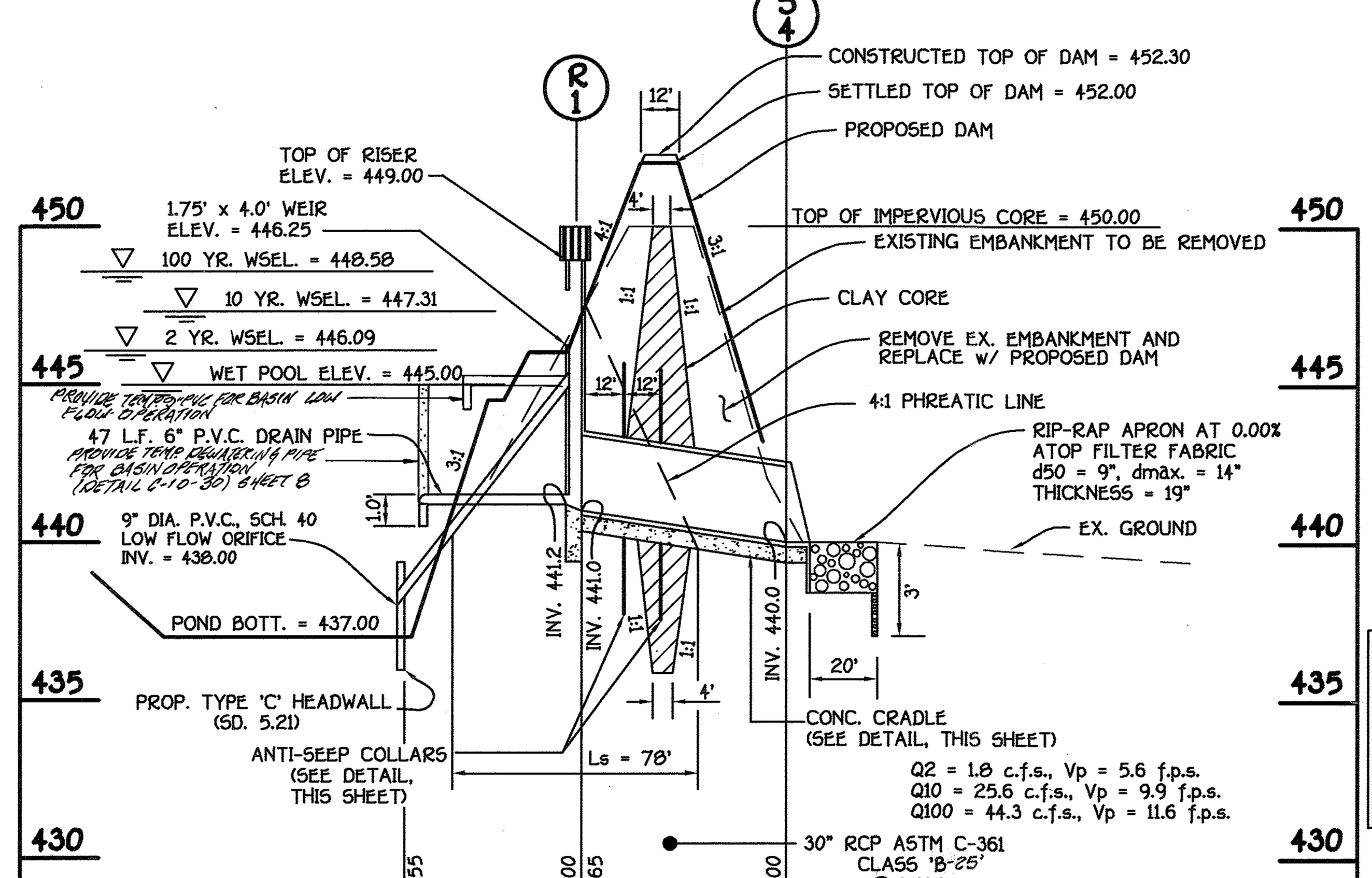
Erosion and Sediment Control

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 minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE

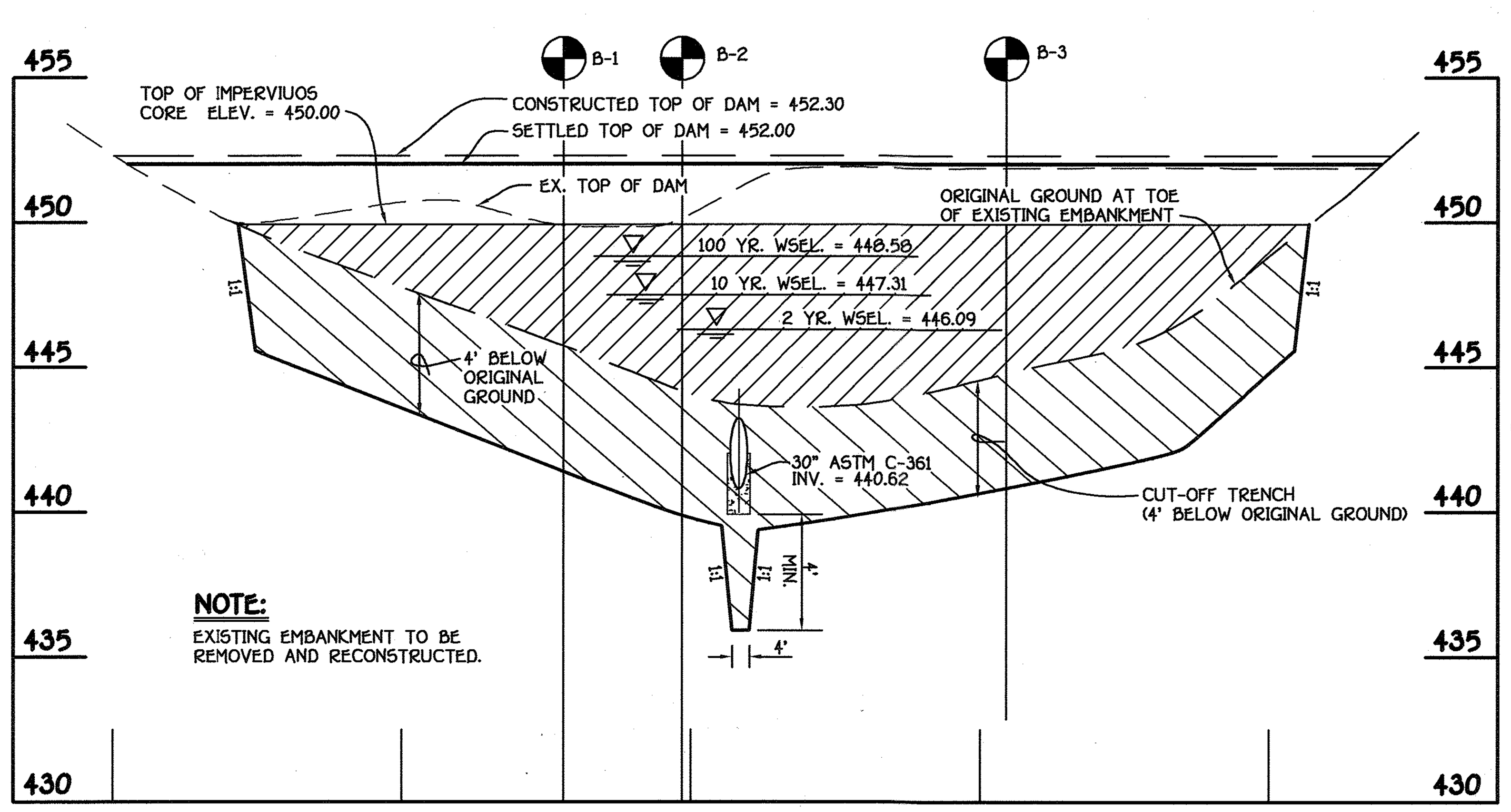
A. ROUTINE MAINTENANCE
   1. Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
   2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, 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 rip-rap putlet area shall be repaired as soon as it is noticed.

B. NON-ROUTINE MAINTENANCE
   1. Structural components of teh pond such as the dam, riser structure and the pipes shall be repaired upon the detectionof any damage. The components should be inspected during maintenance operations.
   2. Sediment should be removed when its accumalation significantly reduces the design storage, interferes with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.



SECTION THRU PRINCIPAL SPILLWAY

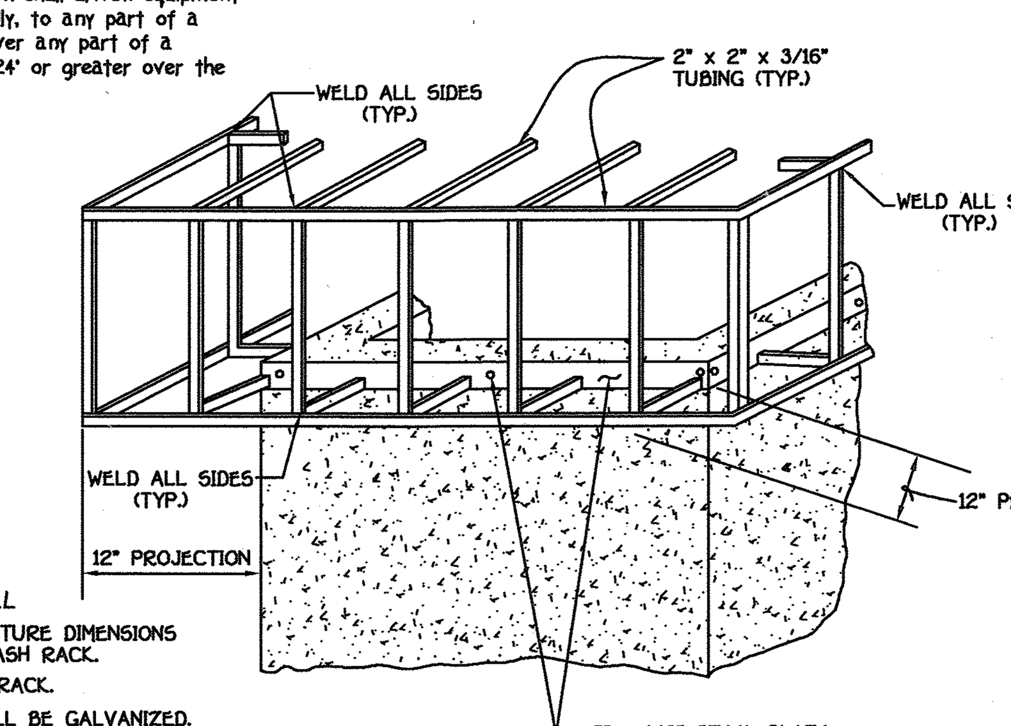
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



NOTE:
EXISTING EMBANKMENT TO BE REMOVED AND RECONSTRUCTED.

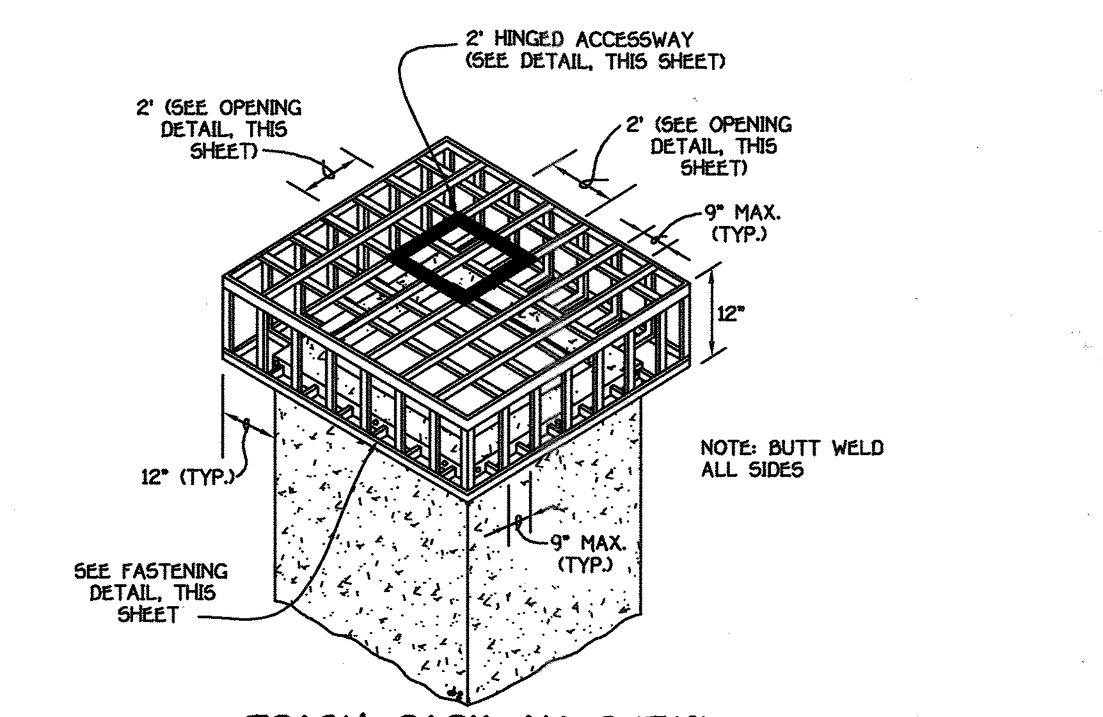
PROFILE ALONG ℄ TOP OF DAM

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

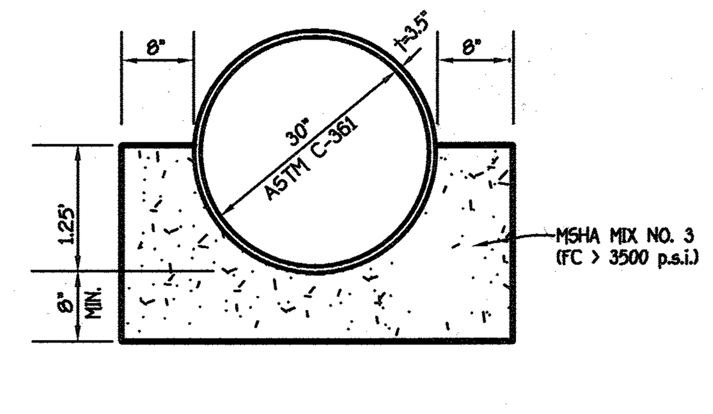


NOTE: CONTRACTOR SHALL
1. FIELD MEASURE THE STRUCTURE DIMENSIONS FOR EXACT FITTING OF TRASH RACK.
2. GALVANIZE ENTIRE TRASH RACK.
3. ALL NUTS AND BOLTS SHALL BE GALVANIZED.

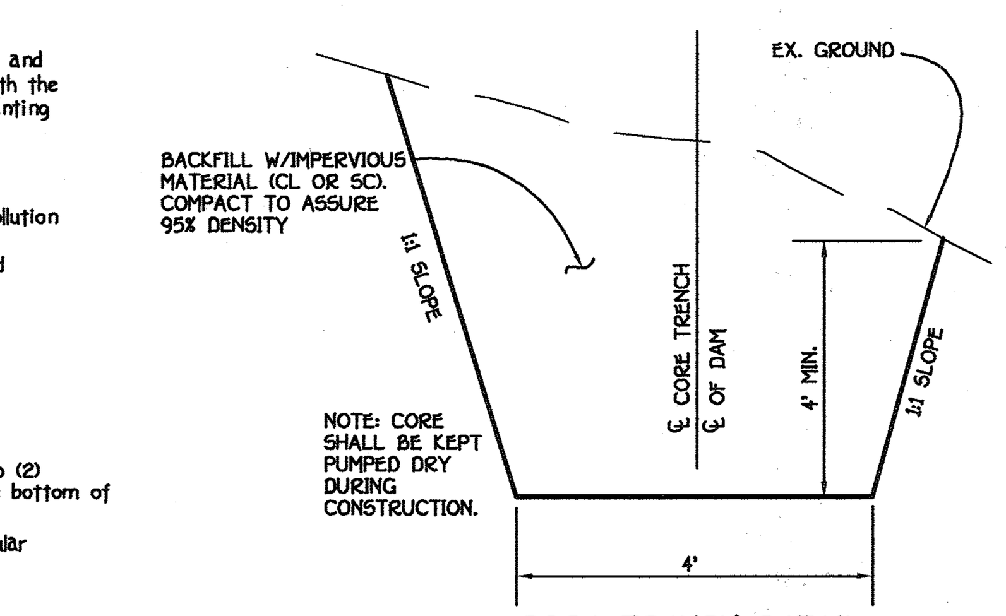
FASTENING DETAIL
NO SCALE



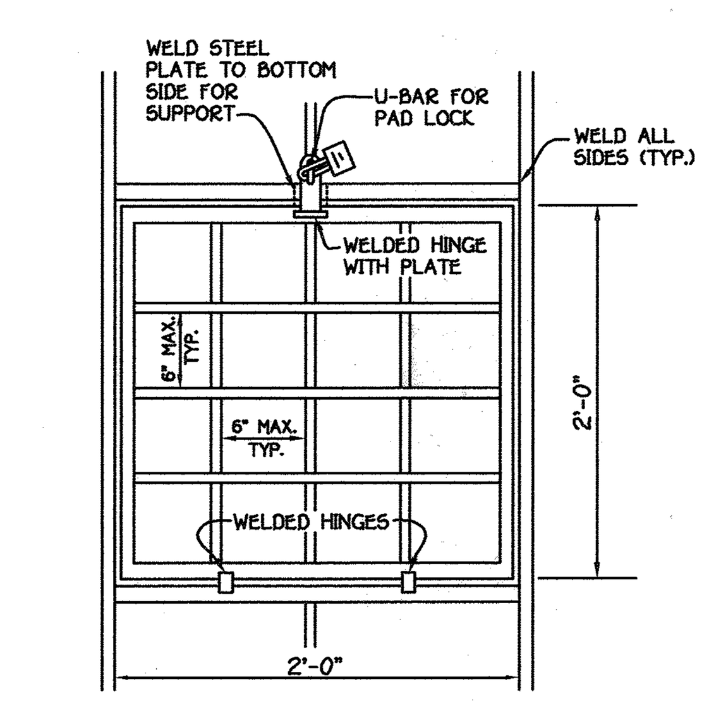
TRASH RACK 'A' DETAIL
NO SCALE



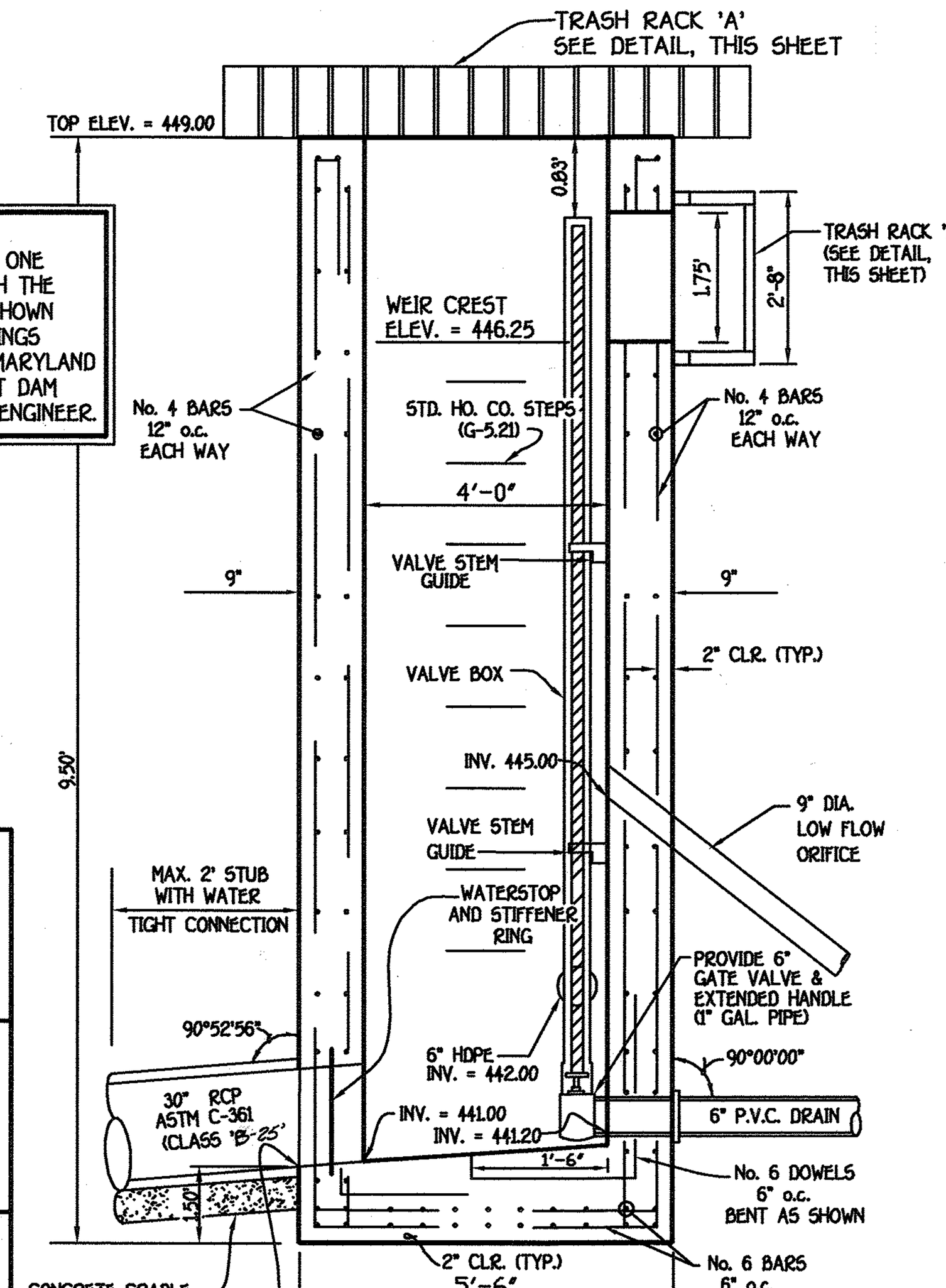
A2 CRADLE
NOT TO SCALE



CORE TRENCH DETAIL
NOT TO SCALE

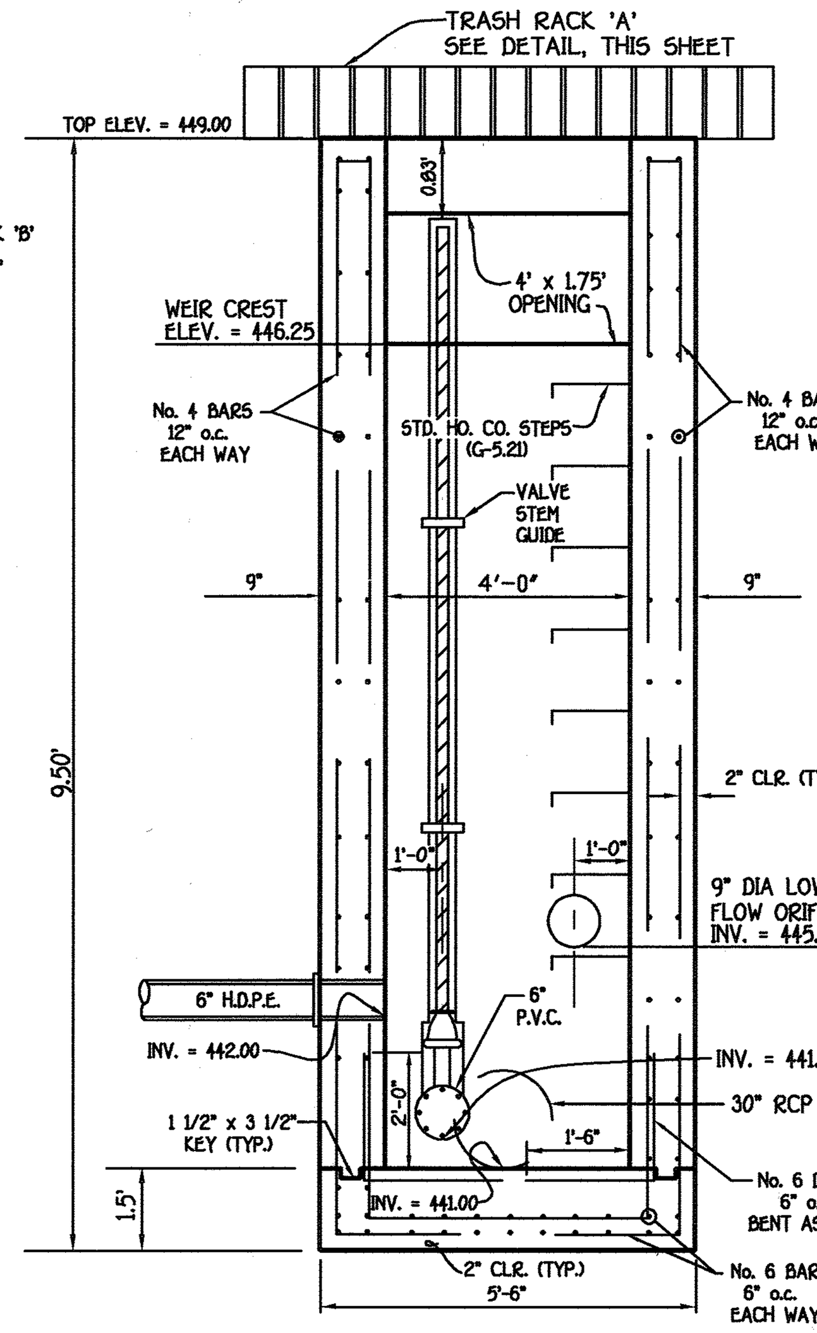


OPENING DETAIL
NO SCALE

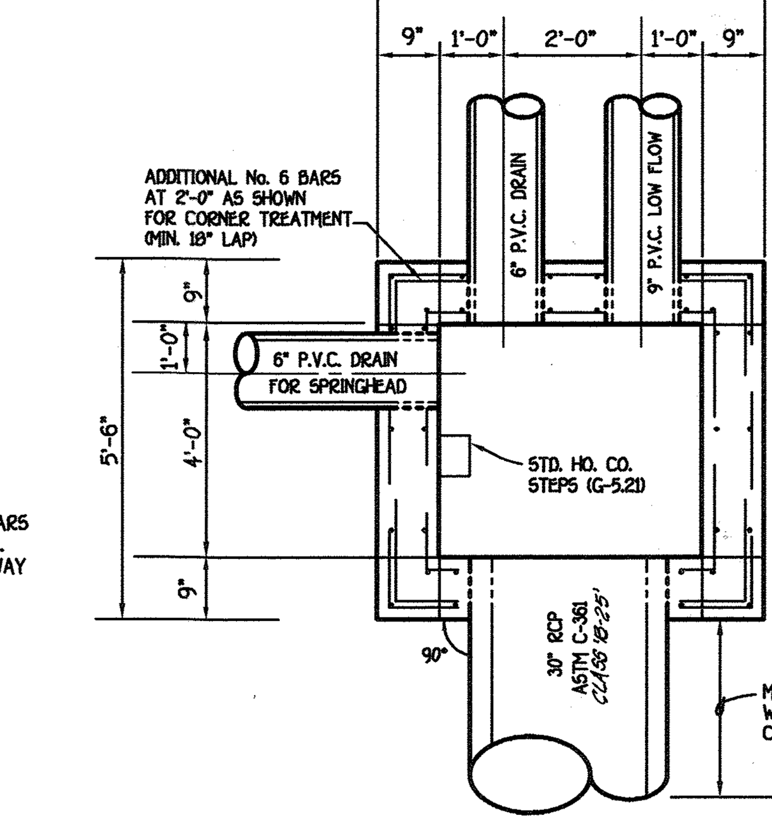


NOTE:
RISER TO BE PRE-CAST IN ONE PIECE IN ACCORDANCE WITH THE DIMENSIONS AND DETAILS SHOWN ON THIS PLAN. SHOP DRAWINGS TO BE REVIEWED BY THE MARYLAND DEPT. OF THE ENVIRONMENT DAM SAFETY DIVISION AND THE ENGINEER.

SIDE VIEW
CONCRETE RISER DETAIL
(NO SCALE)

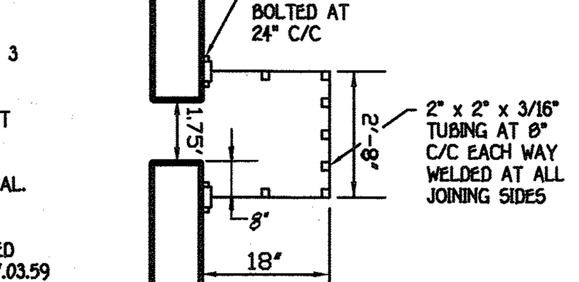


FRONT VIEW
CONCRETE RISER DETAIL
(NO SCALE)



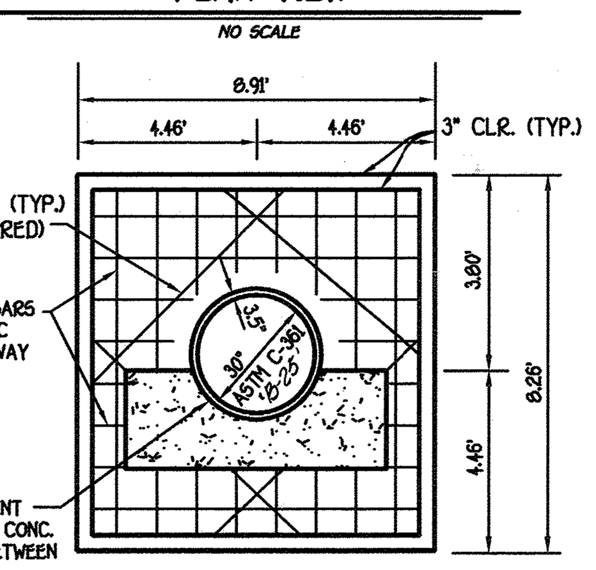
PLAN VIEW
NO SCALE

NOTES:
1. CONCRETE SHALL BE MSHA MIX No. 3 (f'c > 3,500 P.S.I.)
2. REINFORCING STEEL: GRADE 60
3. FACE FORMS FOR WALLS OF OUTLET STRUCTURE SHALL UTILIZE L.M. SCOFIELD CO. T-9055 FORM LINERS (RANDOM SPLIT-FACE ROCK) OPTIONAL.
4. PROVIDE ROUGH BROOM FINISH ON TOP OF SLAB.
5. ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6.07.03.59 OF THE MSHA STANDARDS AND SPECS.
6. ALL EXPOSED METAL SURFACES SHALL BE PAINTED IN ACCORDANCE WITH SECTION 6.07.03.60 OF THE MSHA STANDARDS AND SPECS.
7. ALL REINFORCING SPLICES SHALL BE LAP SPLICES OF 30 BAR DIA. UNLESS OTHERWISE SHOWN.
8. ALL FILTER FABRIC SHALL BE POLY FILTER-X OR EQUAL.
9. ALL EXPOSED EDGES OF CONCRETE TO BE CHAMFERED 1/2" x 1/2".

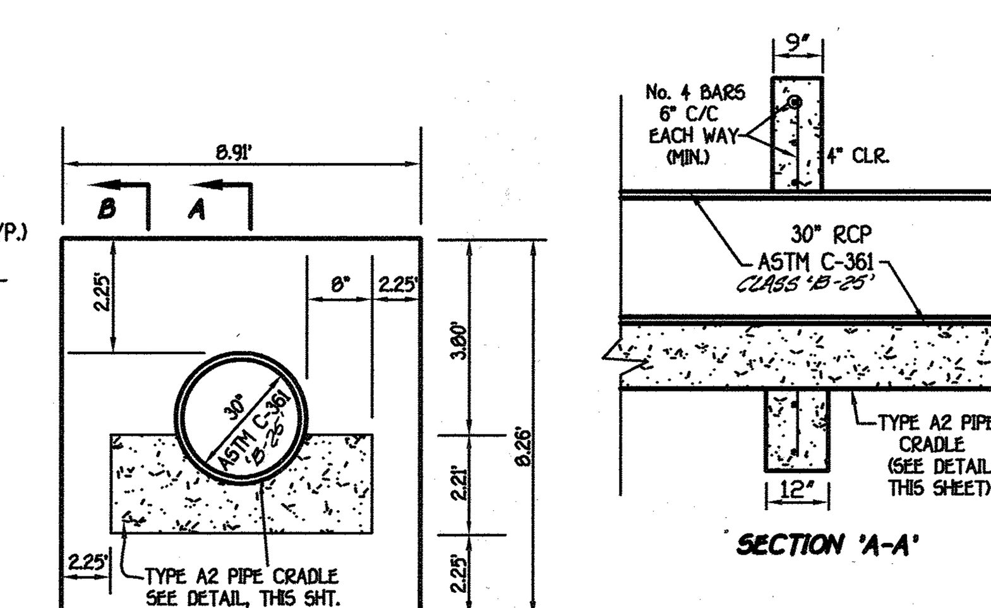


NOTES:
1. FIELD MEASURE THE STRUCTURE DIMENSIONS TO INSURE EXACT FIT OF TRASH RACK.
2. GALVANIZE ENTIRE TRASH RACK AFTER FABRICATION.
3. PAINT BATTLESHIP GRAY.

TRASH RACK 'B' DETAIL
(NO SCALE)

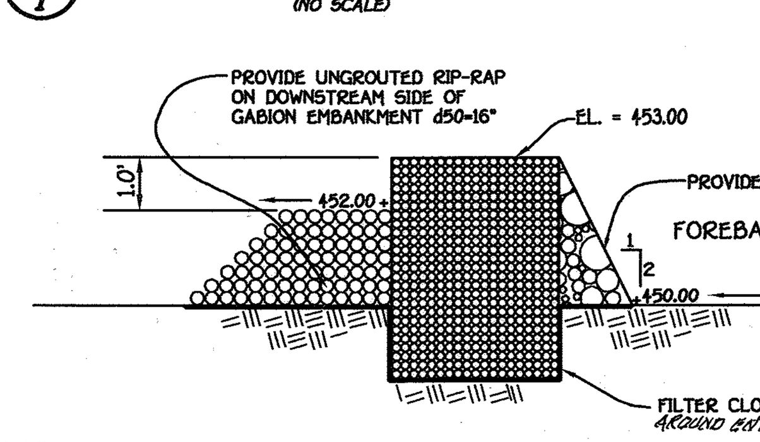


ANTI-SEEP COLLAR
NOT TO SCALE

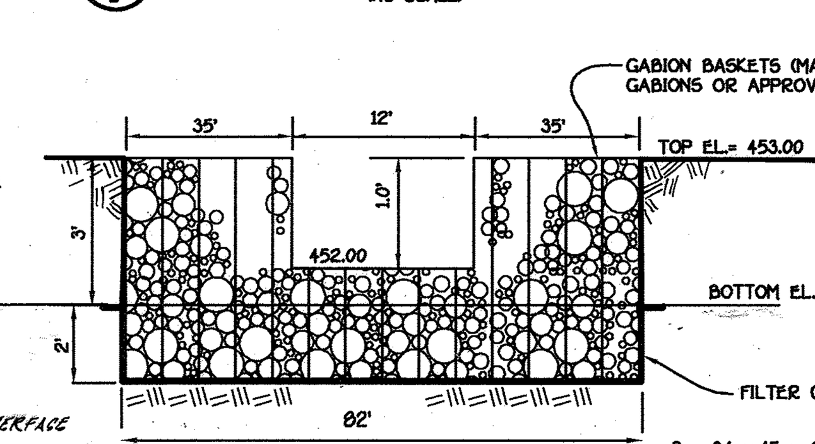


SECTION 'A-A'

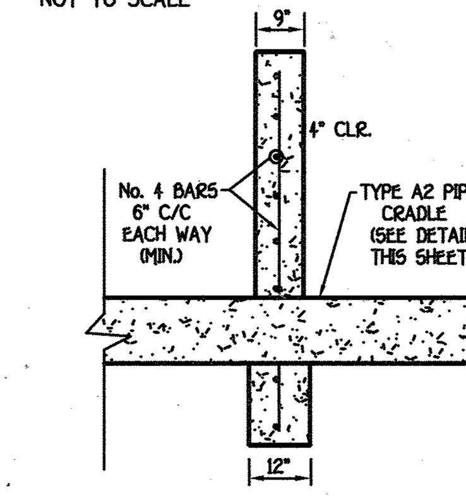
NOTE: COLLARS SHALL BE PLACED A MINIMUM OF 2'-0" FROM PIPE JOINTS.



GABION FILTER AT FOREBAY @ S-1
(NO SCALE)



$Q = 3.1 \times 15 \times 0.5^{3/2} = 16.5$ cfs



SECTION 'B-B'

NOTES:
1. CONCRETE SHALL BE MSHA MIX No. 3 (f'c > 3,500 P.S.I.)
2. REINFORCING STEEL: GRADE 60
3. FOR WALLS OF STRUCTURE SHALL UTILIZE L.M. SCOFIELD CO. T-9055 FORM LINERS (RANDOM SPLIT-FACE ROCK) OPTIONAL.
4. PROVIDE ROUGH BROOM FINISH.
5. ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6.07.03.59 OF THE MSHA STANDARDS AND SPECS.
6. ALL REINFORCING SPLICES SHALL BE LAP SPLICES OF 30 BAR DIA. UNLESS OTHERWISE SHOWN.

TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR
(NO SCALE)

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any 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 Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

[signature] 8-29-00
Signature Of Developer — Date

Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Aldo M. Vitucci 8-29-00
Signature Of Engineer — Date

STATE OF MARYLAND ALDO MICHAEL VITUCCI NO. 20748 REGISTERED PROFESSIONAL ENGINEER

ALDO M. VITUCCI
Printed Name Of Engineer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

[signature] 1/18/01
USDA Natural Resources Conservation Service — Date

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

[signature] 1/18/01
Howard Soil Conservation District — Date

Approved: Department Of Public Works
[signature] 9-27-00
Chief Bureau Of Highways — Date

Approved: Department Of Planning And Zoning
Cindy Hamilton 1/24/01
Chief, Division Of Land Development — Date

[signature] 11/3/00
Chief, Development Engineering Division MK — Date

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature — P.E. No. — Date:

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

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.

GEOTECHNICAL RECOMMENDATIONS FOR EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

THE SITE SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. FOR AREAS THAT ARE NOT ACCESSIBLE TO A DUMP TRUCK, THE EXPOSED MATERIALS SHOULD BE OBSERVED AND TESTED BY A GEOTECHICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH OR CL. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MD SCS 378 SPECIFICATIONS.

DESIGN SUMMARY

DESIGN STORM	ALLOWABLE RELEASE RATE	FACILITY INFLOW	FACILITY DISCHARGE	WATER SURFACE ELEVATION	STORAGE VOLUME (AC.FT.)
2 YEAR	2.4 CFS	22.7 CFS	1.8 CFS	446.09	1.05
10 YEAR	31.3 CFS	67.0 CFS	25.6 CFS	447.31	2.12
100 YEAR	N/A	125.3 CFS	44.3 CFS	448.58	3.70

STORAGE - HEIGHT PRODUCT = 6.83 x 3.7 = 25.27
WATERSHED AREA TO FACILITY (ACRES): 30.94 AC.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

OWNER & DEVELOPER
MARIO F. MANNARELLI, SR.
MARIO F. MANNARELLI, JR.
2925 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

S.W.M. NOTES AND DETAILS

VINEYARDS AT CATTAIL CREEK

Lots 11 Thru 28, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'

(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)

ZONED RC-DEO
TAX MAP NO. 21 PART OF PARCEL NO. 225 GRID NO. 8
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: AUGUST 28, 2000
SHEET 10 OF 13

F00-68

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 vegetative 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 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 than 11/2" in diameter.
   ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass, 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 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.

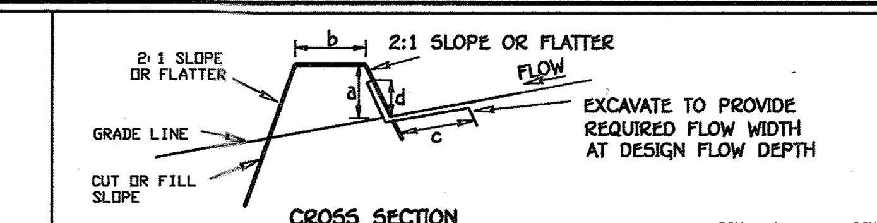
Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

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

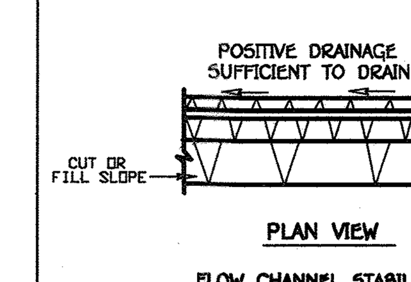
V. Topsoil Application
   i. When top soiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
   ii. Grades on the areas to be top soiled, which have been previously established, shall 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 top soiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
   iv. Topsoil shall not be placed 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.

VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
   i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
      b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
      c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
   iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding,. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.



	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.

STANDARD SYMBOL
A-2 B-3

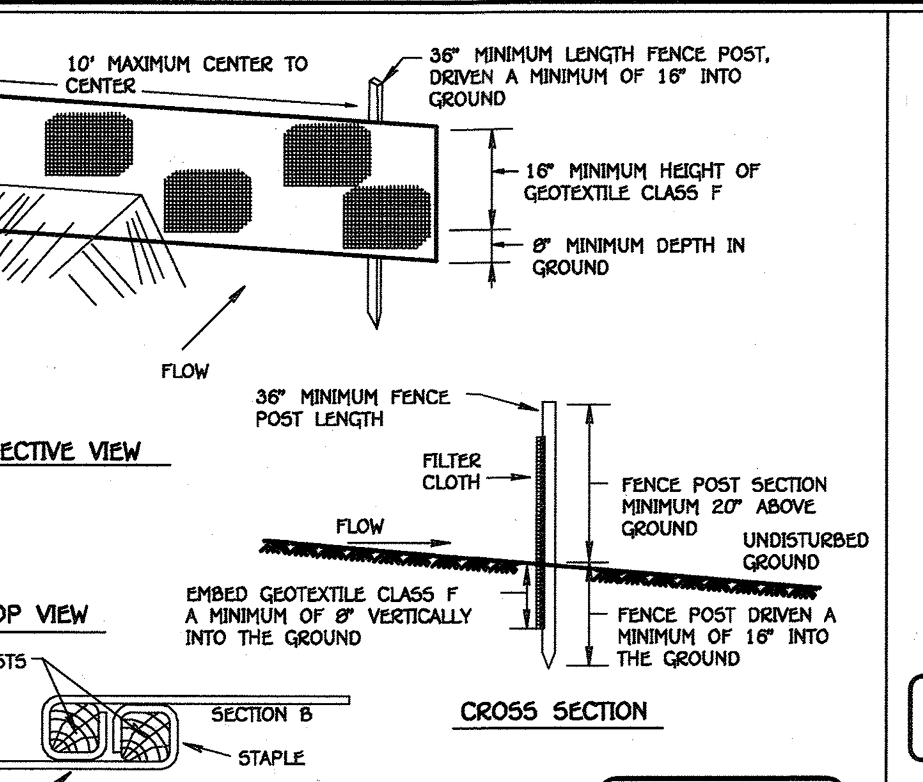
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

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 objectionable 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.

EARTH DIKE

NOT TO SCALE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond 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:

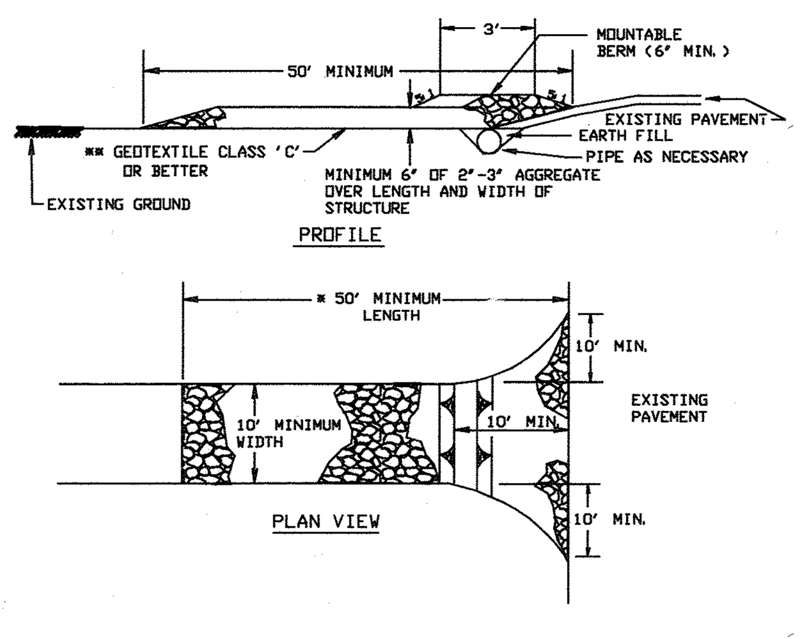
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.) 2	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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 reached 50% of the fabric height.

DETAIL 22 - SILT FENCE

NOT TO SCALE



Construction Specification

1. Length - minimum of 50' (*30' for 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.

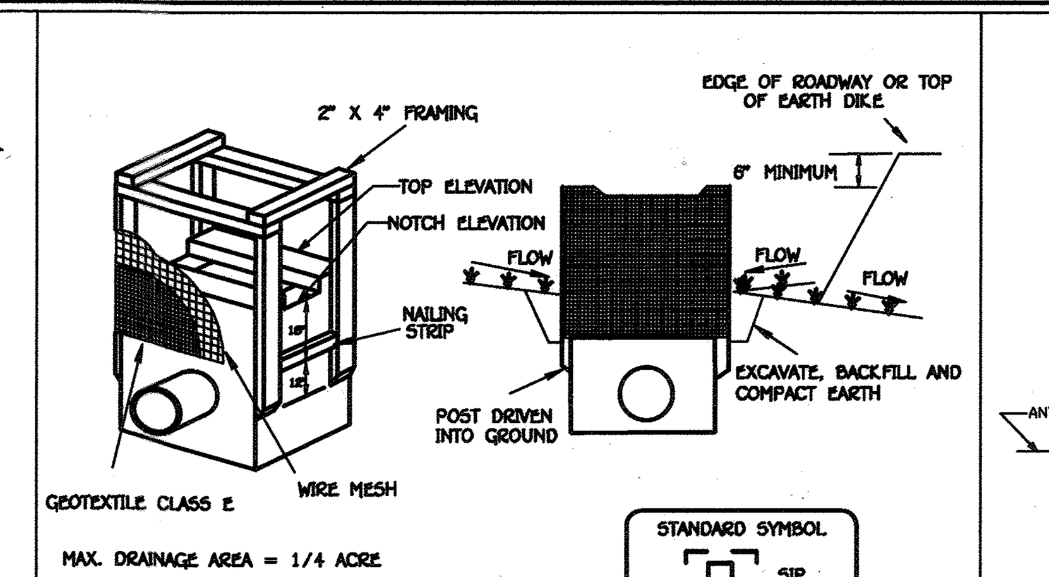
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

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.

STABILIZED CONSTRUCTION ENTRANCE - 2

NOT TO SCALE



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.

3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotixtile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

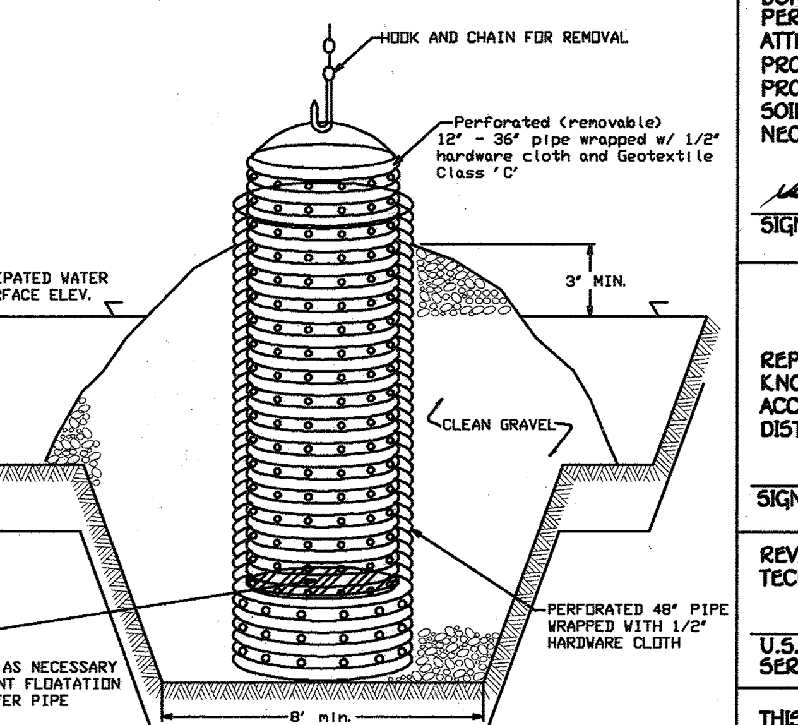
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

STANDARD INLET PROTECTION

NOT TO SCALE



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.

REMOVABLE PUMPING STATION

NOT TO SCALE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES 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 OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY".

SIGNATURE OF DEVELOPER — DATE 7/27/00

ENGINEER'S CERTIFICATE

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

Aldo M. Vitale — SIGNATURE OF ENGINEER — DATE 7-27-00

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE — DATE 1/18/01

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 1/18/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT JA — DATE 1/24/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 11/3/00

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS MS — DATE 9-27-00

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (Up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.
Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.
Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
   i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
   ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
   iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
B. Soil Amendments (Fertilizer and Lime Specifications)
   i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
   ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
   iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
   iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
C. Seedbed Preparation
   i. Temporary Seeding
      a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
      b. Apply fertilizer and lime as prescribed on the plans.
      c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
   ii. Permanent Seeding
      a. Minimum soil conditions required for permanent vegetative establishment:
         1. Soil pH shall be between 6.0 and 7.0.
         2. Soluble salts shall be less than 500 parts per million (ppm).
         3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
         4. Soil shall contain 1.5% minimum organic matter by weight.
         5. Soil must contain sufficient pore space to permit adequate root penetration.
         6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
      b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
      c. Apply soil amendments as per soil test or as included on the plans.
      d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.
D. Seed Specifications
   i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
   Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
   ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
E. Methods of Seeding
   i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
      a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous); 200 lbs/ac; K20 (potassium): 200 lbs/ac.
      b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
   ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
   iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
F. Mulch Specifications (In order of preference)
   i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
   ii. Wood Cellulose Fiber Mulch (WCFM)
      a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
      b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
      d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
      e. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.
      f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm. , diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
   i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
   ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
   iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
   i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
   ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
   iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
   iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.
I Incremental Stabilization - Cut Slopes
   i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
   ii. Construction sequence (Refer to Figure 3 below):
      a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
      b. Perform Phase 1 excavation, dress, and stabilize.
      c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
      d. Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and out of the seeding season will necessitate the application of temporary stabilization.

J. Incremental Stabilization of Embankments - Fill Slopes
   i. Embankments shall be constructed in lifts as prescribed on the plans.
   ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15", or when the grading operation ceases as prescribed in the plans.
   iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
   iv. Construction sequence: Refer to Figure 4 (below).
      a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
      b. Place Phase 1 embankment, dress and stabilize.
      c. Place Phase 2 embankment, dress and stabilize.
      d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

and placement of topsoil (if required) and permanent seed and mulch. any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

SECTION 2 - TEMPORARY SEEDING

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed mixtures - Temporary Seeding

i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary seeding summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.

ii. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

Seed Mixture (Hardiness Zone 6b) From Table 26					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
1	BARLEY OATS RYE	122 96 140	3/1 - 5/15, 8/15 - 10/15	1" - 2" 1" - 2" 1" - 2"	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)

SECTION 3 - PERMANENT SEEDING

Seeding grass and legumes to establish groung cover for a minimum of one year on disturbed areas generally receiving low maintenance.

A. Seed mixtures - Permanent Seeding

i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Techinical Field Office Guide, Section 342 - Critical Area Planting. For special lawn maintenance areas, see Sections IV Sod and V Turfgrass.

ii. For sites having disturbed area over 5 areas, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.

iii. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

Seed Mixture (Hardiness Zone 6b) From Table 25					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
3	TALL FESCUE (85%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 - 5/15, 8/15 - 10/15	1" - 2"	90 lb/ac (2.0 lb/1000sf)	175 lb/ac (4 lb/1000sf)	175 lb/ac (4 lb/1000sf)	2 tons/ac (100 lb/1000sf)
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3/1 - 5/15, 8/15 - 10/15	1" - 2"				

SEDIMENT CONTROL NOTES

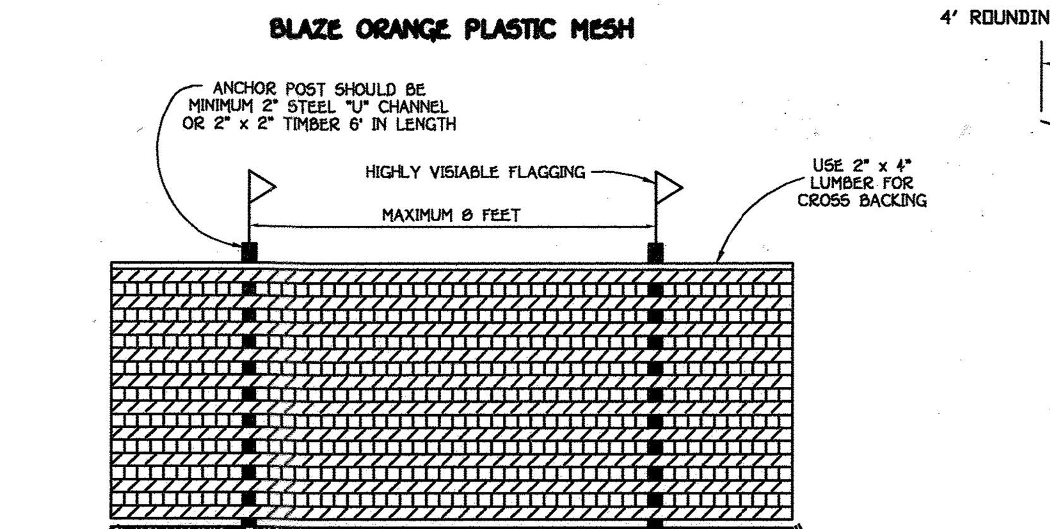
1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. GRADING NECESSARY TO INSTALL STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES TO BE PERFORMED FIRST. REMAINDER OF THE GRADING TO BE PERFORMED AFTER STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES ARE INSTALLED.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE 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 (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY 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 OF SITE	57.02	ACRES
AREA DISTURBED	8.49	ACRES
AREA TO BE ROOFED OR PAVED	0.78	ACRES
AREA TO BE VEGETATIVELY STABILIZED	7.71	ACRES
TOTAL CUT	10,000	CU.YDS.
TOTAL FILL	10,000	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	CU.YDS.

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 LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855
F.C.C.# 30321/FINALS/SECTION1/SED CON DETAILS.DWG

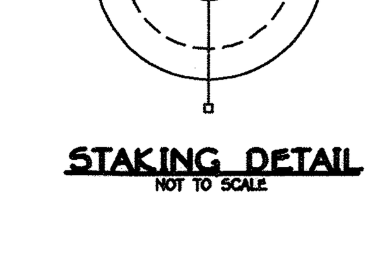
BLAZE ORANGE PLASTIC MESH



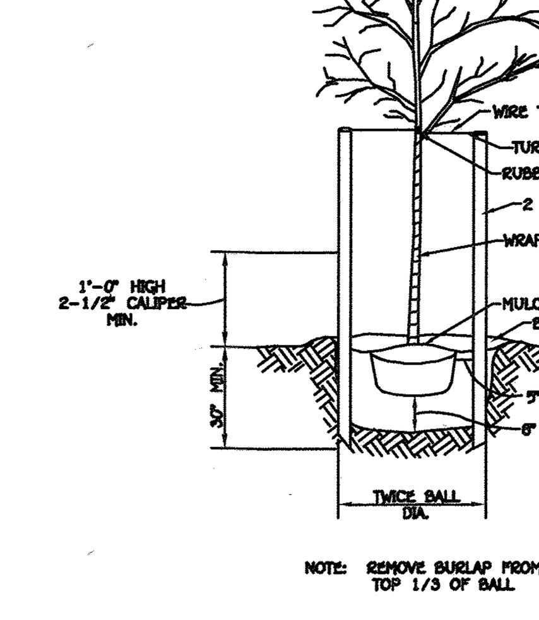
NOTES:
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT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

TREE PROTECTION DETAIL

NOT TO SCALE

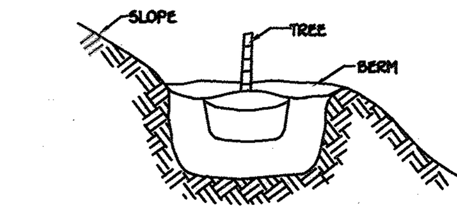


STAKING DETAIL
NOT TO SCALE

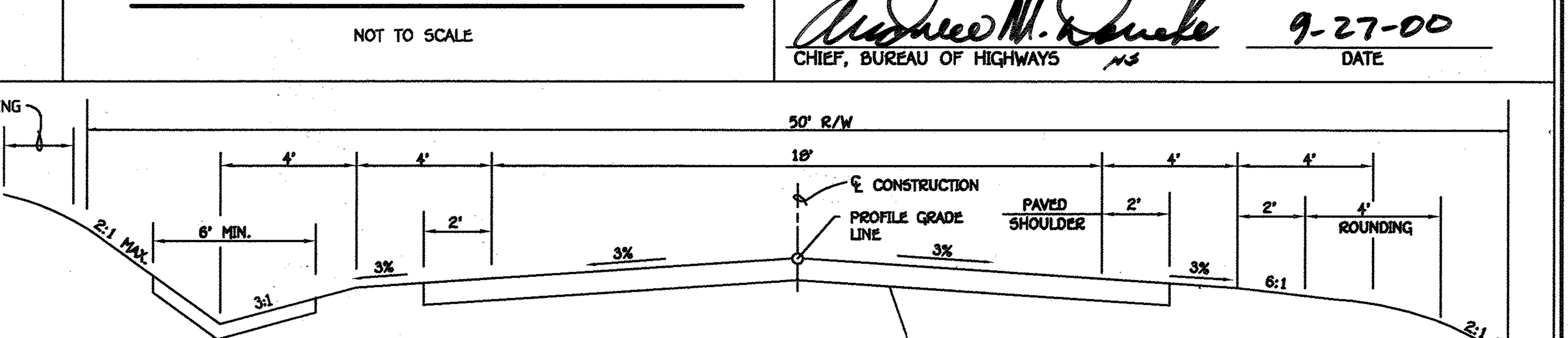


NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL

TREE PLANTING
NOT TO SCALE



GRADING FOR PLANTING ON SLOPES
NOT TO SCALE

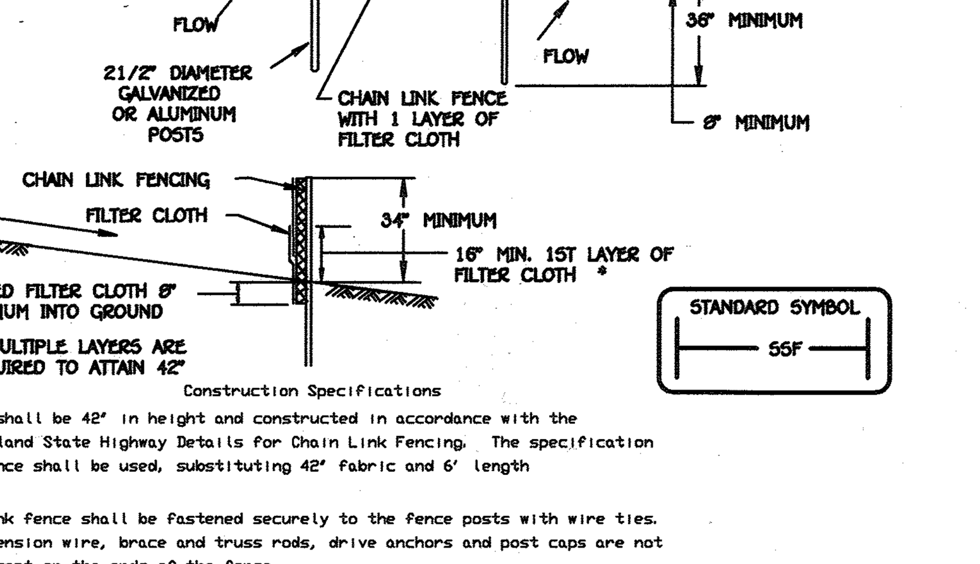


NOTE:
SEE HOWARD COUNTY STD. DETAILS FOR PAVING SECTION.

TYPICAL ROADWAY SECTION
NO SCALE

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	PAVING SECTION
SOFIA COURT	LOCAL ROAD	30 M.P.H.	RC-DEO	0+00 TO 5+80.18	P-2
LEONDINA DRIVE	LOCAL ROAD	30 M.P.H.	RC-DEO	0+00 TO 7+97.89	P-2



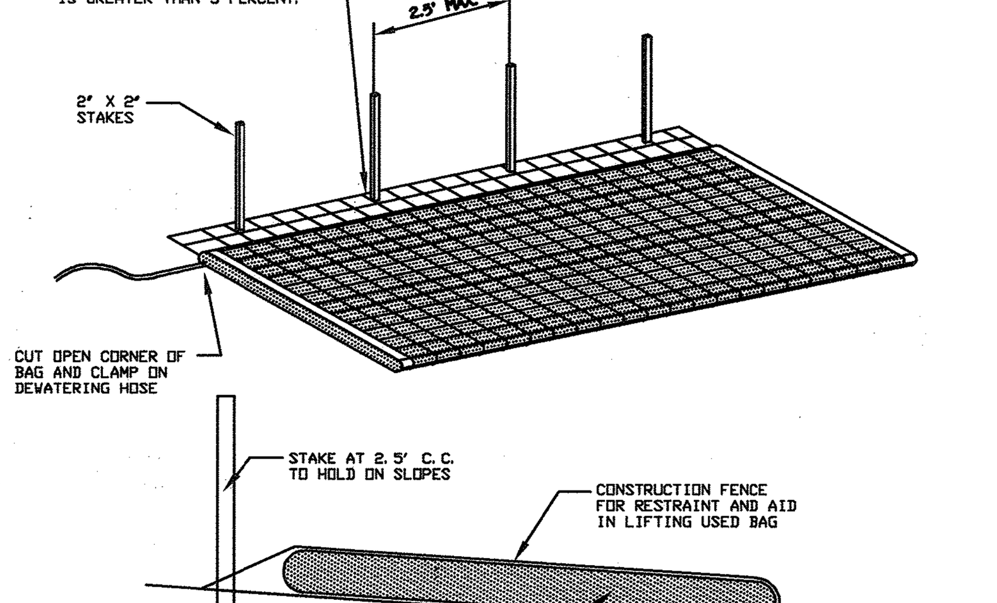
Construction Specifications

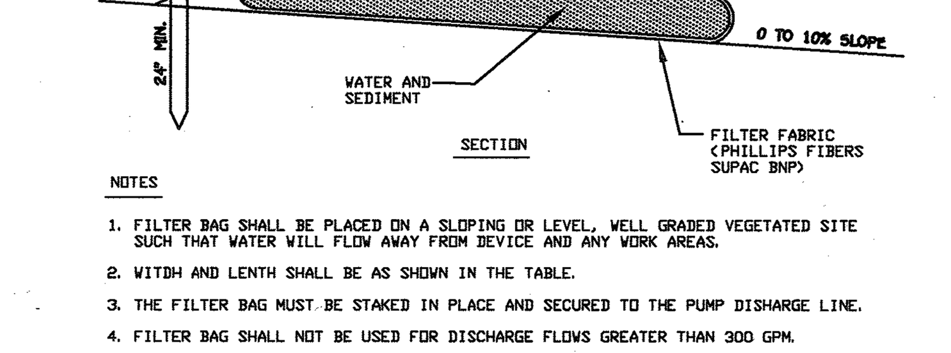
1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire 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 /minute 2 (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

SUPER SILT FENCE

NOT TO SCALE





NOTES

1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WITDH AND LENTH SHALL BE AS SHOWN IN THE TABLE.
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISHARGE LINE.
4. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
5. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.

AVAILABLE FROM:

INDIAN VALLEY INDUSTRIES, INC. P.O. BOX 810 JOHNSON CITY, NEW YORK 13790 (800) 659-5111 OR	A.C.F. ENVIRONMENTAL 1801-A WILLIS ROAD RICHMOND, VIRGINIA 23237 TOLL FREE 1-800-448-3636 OR	PRICE AND COMPANY, INC. 425 36TH STREET WYOMING, MI. 49548 (616) 530-8230

FILTER BAG DETAIL

NOT TO SCALE

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
2. NOTIFY "MISS UTILITY" AT LEATS 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1880 24 HOURS BEFORE STRATING WORK.
3. INSTALL TREE PROTECTION FENCE, CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 week)
4. INSTALL SUPER-SILT FENCE, SILT FENCE AND EARTH DIKE. (5 days)
5. OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEED.
6. EXISTING POND TO BE DEWATERED AND EMBANKMENT REMOVED IN ACCORDANCE WITH GEOTECHNICAL ENGINEER ON-SITE. (4 DAYS)
7. GRADE ROADS TO PROPOSED SUBGRADE AND INSTALL STORM DRAIN SYSTEM, S.W.M. POND AND WATER QUALITY POND. STABILZE ALL DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF GRADING AS SHOWN ON THESE PLANS. (4 weeks)
8. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS.
9. INSTALL BASE COURSE FOR THE PROPOSED ROADS. (1 week)
10. STABILZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTORS TO PROCEED.
11. APPLY TACK COAT TO SUB-BASE AND LAY SURFACE COURSE. (1 week)
12. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE DEVICES MAY BE REMOVED AND THE REMAINING AREAS BROUGHT TO FINAL GRADE. STABILIZE ALL REMAINING AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 weeks)
13. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED PROJECT.

OWNER & DEVELOPER

MARIO F. MANNARELLI, SR.
MARIO F. MANNARELLI, JR.
2929 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

SEDIMENT CONTROL NOTES AND DETAILS

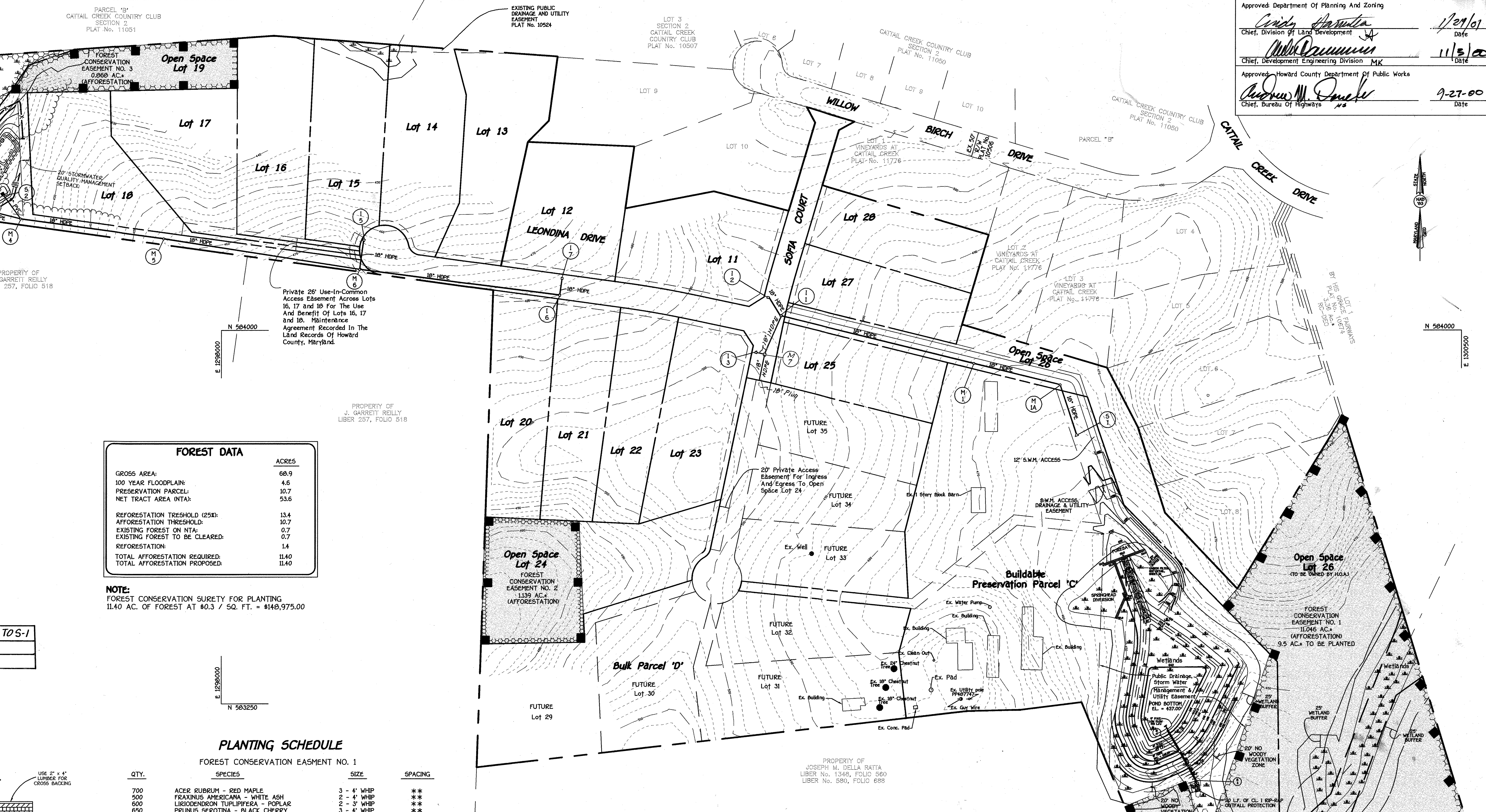
VINEYARDS AT CATTAIL CREEK

Lots 11 Thru 28, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'

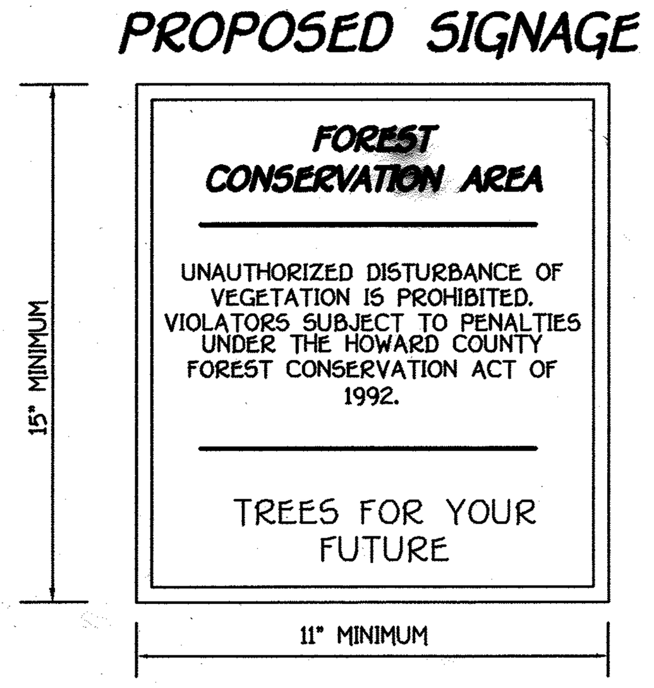
(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)
ZONED RC-DEO
TAX MAP NO. 21 PART OF PARCEL NO. 225 GRID NO. 8
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: AUGUST 28, 2000
SHEET 11 OF 13

F00-68

Approved: Department Of Planning And Zoning	
Chief, Division Of Land Development JA	1/29/01 Date
Chief, Development Engineering Division MK	11/3/00 Date
Approved: Howard County Department Of Public Works	
Chief, Bureau Of Highways HS	9-27-00 Date



PROPOSED SIGNAGE



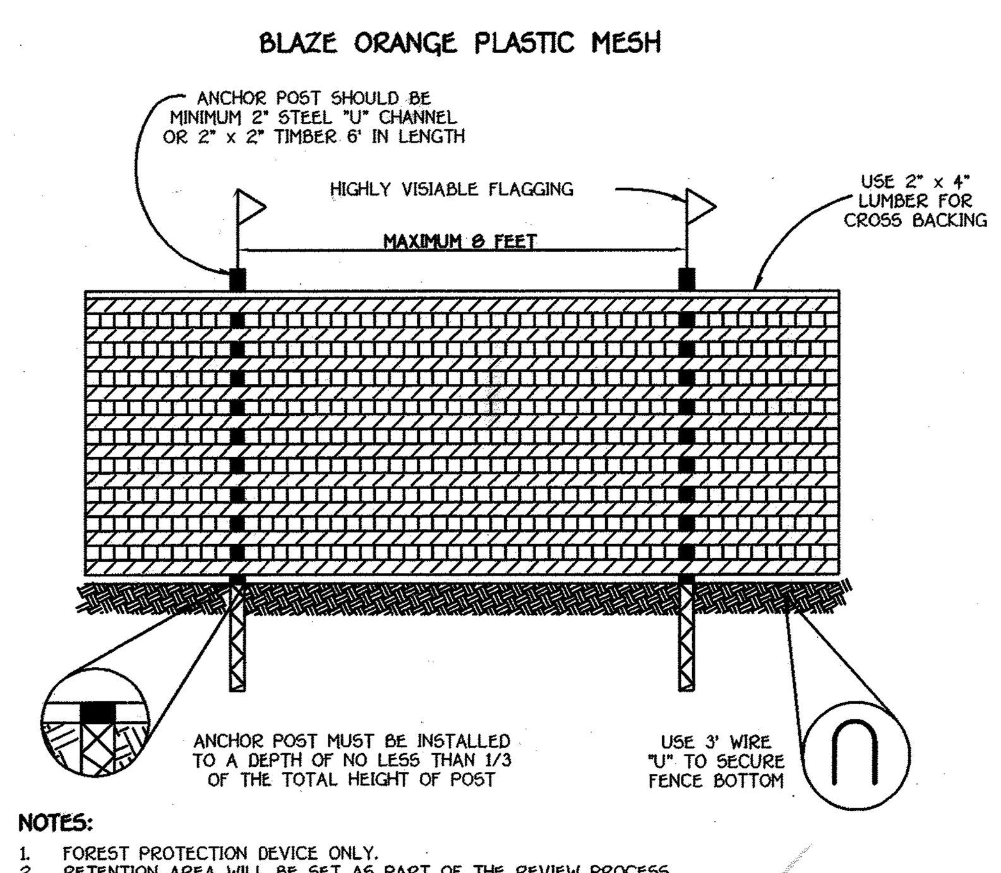
■ DENOTES: FOREST CONSERVATION SIGNAGE LOCATION

FOREST DATA

	ACRES
GROSS AREA:	68.9
100 YEAR FLOODPLAIN:	4.6
PRESERVATION PARCEL:	10.7
NET TRACT AREA (NTA):	53.6
REFORESTATION TRESHOLD (25%):	13.4
AFFORESTATION THRESHOLD:	10.7
EXISTING FOREST ON NTA:	0.7
EXISTING FOREST TO BE CLEARED:	0.7
REFORESTATION:	1.4
TOTAL AFFORESTATION REQUIRED:	11.40
TOTAL AFFORESTATION PROPOSED:	11.40

NOTE:
FOREST CONSERVATION SURETY FOR PLANTING
11.40 AC. OF FOREST AT $0.3 / SQ. FT. = $148,975.00

No	DATE	DESCRIPTION
1	1-6-03	REVISE STORM DRAIN I-3 TO S-1
		REVISIONS



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

TREE PROTECTION DETAIL
NOT TO SCALE

PLANTING SCHEDULE

FOREST CONSERVATION EASMENT NO. 1

QTY.	SPECIES	SIZE	SPACING
700	ACER RUBRUM - RED MAPLE	3 - 4' WHIP	**
500	FRAXINUS AMERICANA - WHITE ASH	2 - 4' WHIP	**
600	LIRIODENDRON TUPLIPIFERA - POPLAR	2 - 3' WHIP	**
650	PRUNUS SEROTINA - BLACK CHERRY	3 - 4' WHIP	**
500	QUERCUS RUBRA - RED OAK	2 - 3' WHIP	**
436	VIBURNUM DENTATUM - ARROWWOOD	2 - 3' B.T.	**

FOREST CONSERVATION EASMENT NO. 2

QTY.	SPECIES	SIZE	SPACING
75	FRAXINUS AMERICANA - WHITE ASH	2 - 3' WHIP	**
50	JUNIPERUS VIRGINIANA - RED CEDAR	18 - 24" BR	**
100	LIRIODENDRON TUPLIPIFERA - POPLAR	2 - 4' WHIP	**
50	POPULUS GRANDIDENTATA - BIGTOOTH ASPEN	3 - 4' WHIP	**
50	QUERCUS RUBRA - RED OAK	2 - 3' WHIP	**
38	VIBURNUM PRUNIFOLIUM - BLACKHAW	2 - 3' B.T.	**

FOREST CONSERVATION EASMENT NO. 3

QTY.	SPECIES	SIZE	SPACING
90	ACER RUBRUM - RED MAPLE	2 - 3' WHIP	**
70	FRAXINUS PENNSYLVANICA - GREEN ASH	2 - 3' WHIP	**
24	LINDERA BENZOIN - SPICEBUSH	2 - 3' B.T.	**
80	PLATANUS OCCIDENTALIS - SYCAMORE	2 - 3' WHIP	**
24	VIBURNUM DENTATUM - ARROWWOOD	2 - 3' B.T.	**

** PLANTS SHALL BE SPACED RANDOMLY ELEVEN (11) FEET ON CENTER NOT IN A GRID PATTERN

FCP NOTES

1. ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
2. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
3. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
4. NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
5. TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED AS SHOWN.
6. PERMANENT SIGNAGE SHALL BE PLACED 50 - 100' APART ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.
7. FOREST CONSERVATION EASEMENT NO. 1 IS 11.0 AC.± IN SIZE BUT CONTAINS WETLAND AND STREAM AREAS (1.5 AC.±) THAT CANNOT BE PLANTED. THE AREA WITHIN FCE NO. 1 TO BE PLANTED IS 9.5 AC.±.
8. FOREST CONSERVATION EASEMENT NO. 3 IS 0.868 AC.±. THE TOTAL EASEMENT AREA TO BE AFFORESTED.

STATE OF MARYLAND ALDO MICHAEL VITUCCI NO. 20748 REGISTERED PROFESSIONAL ENGINEER
8-29-00

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD0610044B
JOHN P. CANOLES

OWNER & DEVELOPER
MARIO F. MANNARELLI, SR.
MARIO F. MANNARELLI, JR.
2929 SUMMIT CIRCLE
ELLICOTT CITY, MARYLAND 21043

FOREST CONSERVATION PLAN
VINEYARDS AT CATTAIL CREEK
Lots 11 Thru 28, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'
(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647)
ZONED RC-DEO
TAX MAP NO. 21 PART OF PARCEL NO. 225 GRID NO. 8
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: AUGUST 28, 2000
SHEET 12 OF 13

F.C.C.#30321 FOREST CON. PLAN.DWG

F00-68

STORMWATER MANAGEMENT SUMMARY TABLE (PRIVATELY OWNED AND MAINTAINED)

FACILITY NAME AND NUMBER	DRAINAGE AREA	TYPE	% IMPERVIOUS	Pe=1.0" ESDV REQUIRED Cu.Ft.	Pe=1.3" ESDV PROVIDED Cu.Ft.	OWNERSHIP AND MAINTAINACE
MICRO-BIO #1	3,540 SQ.Ft.	MICRO BIO-RETENTION	100%	448	1075	LOT 13 PRIVATE
MICRO-BIO #2	12,051 SQ.Ft.	MICRO BIO-RETENTION	46%	751	760	LOT 13 PRIVATE

STORMWATER MANAGEMENT INFORMATION

LOT/PARCEL NUMBER	FACILITY NAME & NUMBER	PRACTICE TYPE (QUANTITY)	PUBLIC	PRIVATE	HOA MAINTAINS	MISC.
LOT 13	MICRO-BIO (M-6) #1	QUALITY		Y		
LOT 13	MICRO-BIO (M-6) #2	QUALITY		Y		

APPROVED: DEPARTMENT OF PUBLIC WORKS

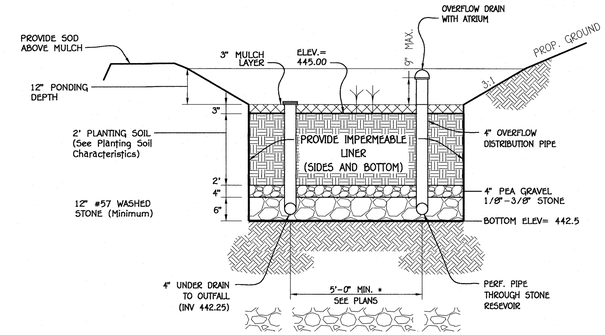
CHIEF, BUREAU OF HIGHWAYS M.K. — DATE 07/06/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT E.D. — DATE 7/26/21

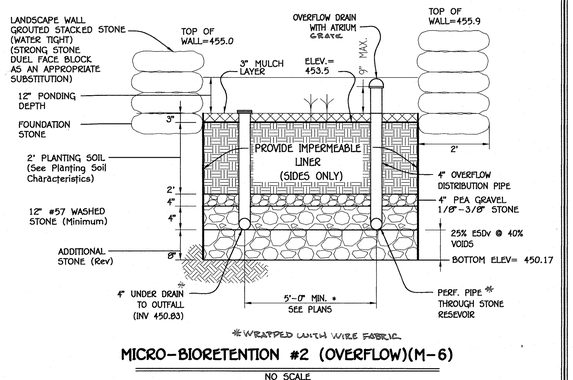
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7.16.21

REVISIONS		
NO.	DESCRIPTION	DATE
1	CREATE SHEET 13 FOR S.W.M. NOTES AND DETAILS	6/8/2021



MICRO-BIORETENTION #1 (OVERFLOW)(M-6)

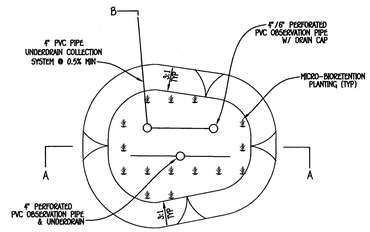
NO SCALE



*WRAPPED WITH WIRE FABRIC

MICRO-BIORETENTION #2 (OVERFLOW)(M-6)

NO SCALE



PLAN

NOT TO SCALE

MICRO-BIORETENTION NOTES

1. ONLY THE SIDES OF THE MICRO-BIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETEEN LAYER OR AT THE BOTTOM OF THE MICRO-BIORETENTION WILL CAUSE THE MBR TO FAIL, AND THEREFOR SHALL NOT BE INSTALLED.
2. WRAP THE PERFORATED MBR UNDER DRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.
3. PROVIDE 5' MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLAN)

DAILY STABILIZATION NOTE

ALL DISTURBED AREAS NOT DIRECTED TO A SEDIMENT CONTROL DEVICE SHALL BE STABILIZED AT THE END OF EACH WORKDAY. THE CONTRACTOR SHALL NOT DISTURB AN AREA GREATER THAN THAT WHICH CAN BE STABILIZED AT THE END OF EACH WORKDAY.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6)

(FACILITIES Nos. 1 & 2)

1. The owner shall maintain the plant material, mulch layer and soil layer annually. maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland stormwater design manual volume II, Table A.4.1 and 2.

2. The owner shall perform a plant inspection in the spring and in the fall each year. during the inspection, the owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material. Treat diseased trees and shrubs and replace all deficient stakes and wires.

3. The owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.

4. The owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

S.W.M. NOTES AND DETAILS

VINEYARDS AT CATTAIL CREEK

Lots 11 Thru 20, Buildable Preservation Parcel 'C' and Bulk Parcel 'D'

(A RESUBDIVISION OF NON-BUILDABLE PARCEL 'A' AND BUILDABLE PRESERVATION PARCEL 'B', "VINEYARDS AT CATTAIL CREEK", PLAT Nos. 12644 THRU 12647

ZONED: RC-DEO

TAX MAP NO.: 21 PART OF PARCEL NO.: 225 GRID NO.: 08

FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: NOVEMBER 17, 2020

SHEET 13 OF 13

OWNER/DEVELOPER

CHRISTOPHER A & MERIDETH PETERSON
15314 LEONDINA DR
GLENWOOD MD 21738

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F.C.C.-30321 GRADING, PLAN Z.DWG

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-23."

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20748 — PROFESSIONAL ENGINEER

ALDO M. VITUCCI, P.E. — DATE 6/10/2021

THE PURPOSE OF THIS SHEET IS TO ADD THE STORMWATER MANAGEMENT DETAILS FOR LOT 13.

I:\60000\61044\dwg\Redline\Lot 13 Redline sheet 4.dwg, Sheet 13, 6/10/2021 3:27:43 PM