SHEET INDEX	
SHEET No.	SHEET
1	TITLE SHEET
2	SYCAMORE VALLEY RUN PLAN AND PROFILE, CHAMPIONSHIP DRIVE PLAN AND PROFILE
3	CHAMPIONSHIP DRIVE PLAN AND PROFILE
4	STREET TREE, GRADING & SEDIMENT CONTROL PLAN
5	STREET TREE, GRADING & SEDIMENT CONTROL PLAN
6	DRAINAGE AREA MAP & LANDSCAPE PLAN
7	DRAINAGE AREA MAP & LANDSCAPE PLAN
8	STORM DRAIN PROFILES
9	STORMWATER MANAGEMENT DETAILS
10	DETAIL SHEET
11	SEDIMENT CONTROL NOTES & DETAILS
12	FOREST CONSERVATION PLAN AND DETAILS

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-9-98

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT TC — DATE 7/7/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION TC — DATE 7/10/98

FINAL ROAD CONSTRUCTION AND STORMWATER MANAGEMENT PLANS

SYCAMORE VALLEY II

LOTS 1 - 17 AND PRESERVATION PARCELS "A" - "C"

ZONED RC-DEO

TAX MAP NO. 21 PARCEL 7

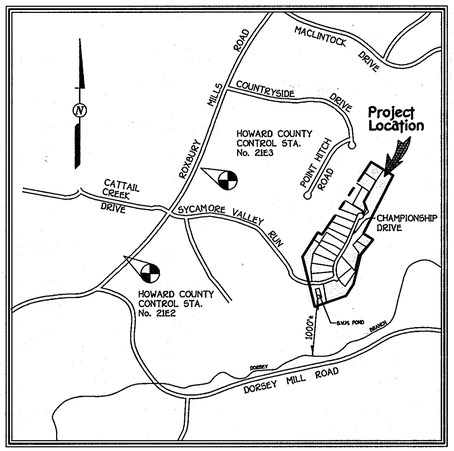
FOURTH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

MINIMUM LOT SIZE CHART			
LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE
11	46,097 SQ. FT. ±	2,957 SQ. FT. ±	43,140 SQ. FT. ±
12	52,778 SQ. FT. ±	552 SQ. FT. ±	52,226 SQ. FT. ±
13	57,712 SQ. FT. ±	5,070 SQ. FT. ±	52,642 SQ. FT. ±
14	64,531 SQ. FT. ±	11,223 SQ. FT. ±	53,308 SQ. FT. ±

TRAFFIC CONTROL SIGNS				
STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE
SYCAMORE VALLEY RUN	34+23	13'R	STOP	R1-1
CHAMPIONSHIP DRIVE	4+00	13'R	SPEED LIMIT 25	R2-1
SYCAMORE VALLEY RUN	32+25	13'L	SPEED LIMIT 25	R2-1

ROAD CLASSIFICATION CHART		
ROAD NAME	CLASSIFICATION	R/W WIDTH
SYCAMORE VALLEY RUN	LOCAL ROAD	50'
CHAMPIONSHIP DRIVE	CUL-DE-SAC	50'



VICINITY MAP
Scale: 1" = 1200'

GENERAL NOTES

1. UNLESS OTHERWISE NOTED, ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE FOLLOWING:
   a. HOWARD COUNTY STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.
   b. MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, AS AMENDED
   c. SOIL CONSERVATION SERVICE 1983 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
   d. SOIL CONSERVATION SERVICE 1993 MARYLAND STANDARDS AND SPECIFICATION FOR POND CONSTRUCTION (CODE 378)
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, DIVISION OF CONSTRUCTION INSPECTION AT 410-313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.
4. TOPOGRAPHY SHOWN HEREON IS FROM FIELD RUN SURVEY PERFORMED ON AUGUST 1996 BY FISHER, COLLINS & CARTER, INC. AT 2' CONTOUR INTERVALS.
5. THIS HORIZONTAL AND VERTICAL DATUM SHOWN ARE BASED ON THE FOLLOWING NAD'83 HOWARD COUNTY CONTROL STATIONS:

HOWARD COUNTY MONUMENT NO. 21E2	N 583,065.30 E 1,300,868.44	ELEV. = 476.65
HOWARD COUNTY MONUMENT NO. 21E3	N 584,559.48 E 1,302,074.53	ELEV. = 515.08

6. SINCE THIS PROJECT HAS AN APPROVED SKETCH PLAN AND A WAIVER APPROVED FOR PRELIMINARY PLANS, PREVIOUS VERSION OF THE DESIGN MANUAL VOL. III, CHAPTERS 1 AND 2 (FEB. 1993) ARE USED FOR THIS PROJECT.
7. FOREST CONSERVATION PLANS WERE PROVIDED BY EXPLORATION & RESEARCH, INC. IN MAY, 1997.
8. THE WETLANDS STUDY WAS PREPARED BY EXPLORATION & RESEARCH, INC. IN APRIL,1997.
9. THE TRAFFIC STUDY WAS PROVIDED BY STREET TRAFFIC STUDIES ON APRIL 15, 1997, AND APPROVED ON OCT 17, 1997.
10. THE SOILS INVESTIGATION REPORT WAS PREPARED BY HILLIS-CARNES ENGINEERING ASSOC., INC. ON JUNE 27, 1997.
11. THE SKETCH PLAN (SP 98-02) WAS APPROVED ON 10/17/97. PRELIMINARY PLANS WERE WAIVED UNDER (WP 98-62) ON JANUARY 21, 1998. PREVIOUS VERSION OF THE DESIGN MANUAL (FEB. 1993) CHAPTERS 1 AND 2 ARE USED FOR THIS PROJECT.
12. 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.
13. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)."
14. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
15. PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS DEVELOPMENT.
16. 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.

STATE OF MARYLAND — JAYESH V. PANCHOLI — REGISTERED PROFESSIONAL ENGINEER

AS BUILT 5/3/99

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

30575TITLE.DWG

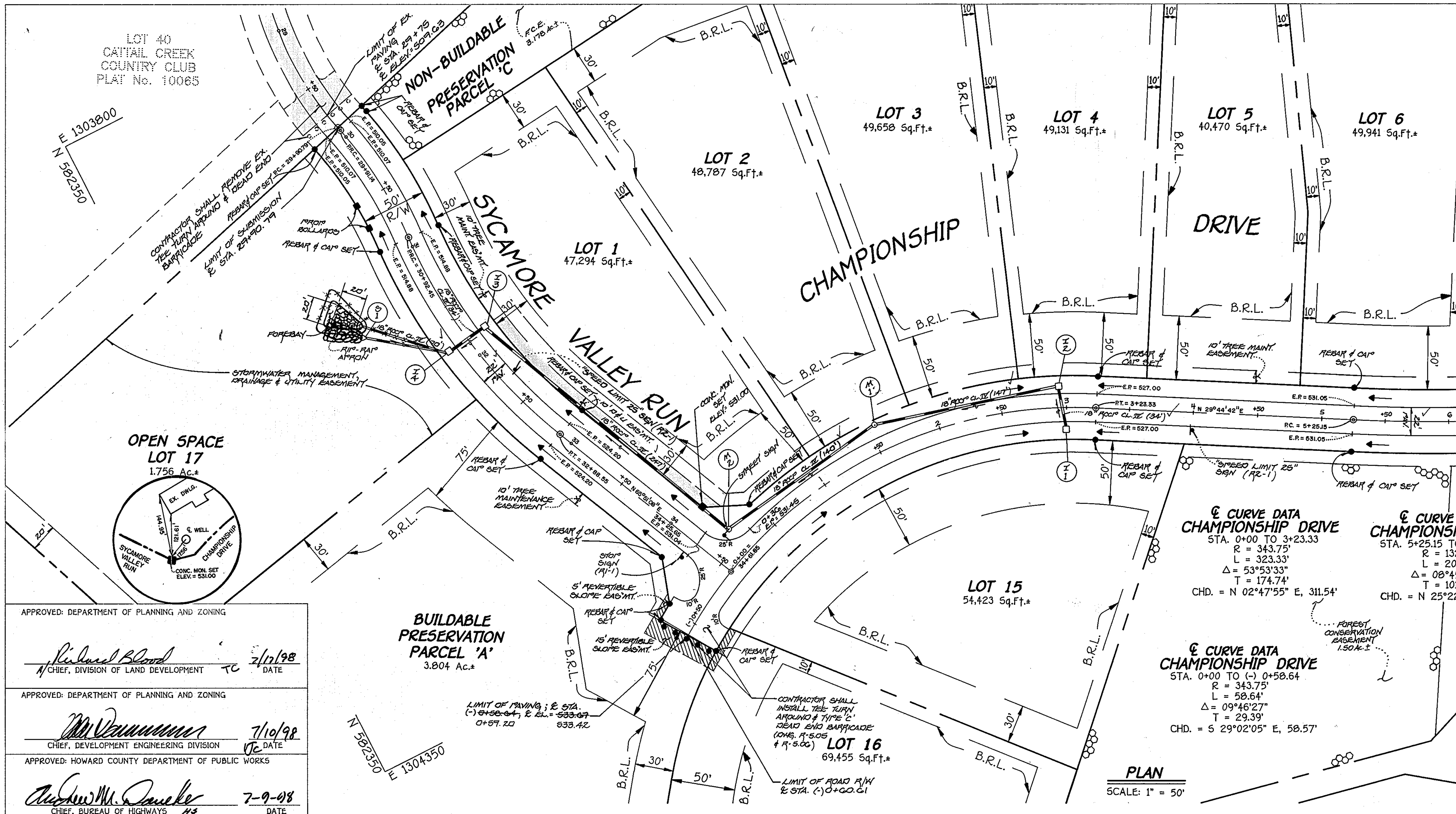
OWNER AND DEVELOPER
MID-ATLANTIC DEVELOPMENT II, L.L.C.
c/o MR. J. THOMAS SCRIVNER
5026 DORSEY HALL DRIVE
SUITE 204
ELLICOTT CITY, MARYLAND 21042

JAYESH V. PANCHOLI — DATE 2-11-98

TITLE SHEET
SYCAMORE VALLEY II
LOTS 1 - 17 AND PRESERVATION PARCELS "A" - "C"
ZONED: RC-DEO
TAX MAP No. 21 PARCEL 7
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY 6, 1998
SHEET 1 OF 12

AS-BUILT 5/3/99

F-98-89



APPROVED: DEPARTMENT OF PLANNING AND ZONING

A/CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/98

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-9-98

STATE OF MARYLAND — JAYESH VITTHALBHAI PANCHAL — No. 21147 — REGISTERED PROFESSIONAL ENGINEER

SYCAMORE VALLEY II

LOTS 1-17 AND PRESERVATION PARCELS "A" - "C"

ZONED: RC-DEO

FOURTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SYCAMORE VALLEY RUN PLAN AND PROFILE — **CHAMPIONSHIP DRIVE** PLAN AND PROFILE

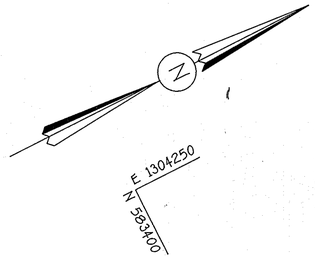
OWNER AND DEVELOPER
MID-ATLANTIC DEVELOPMENT II, L.L.C.
c/o MR. J. THOMAS SCRIVENER
5026 DORSEY HALL DRIVE, SUITE 204
ELLICOTT CITY, MARYLAND 21042

SCALE: AS SHOWN	DATE: FEB. 6, 1998	DWG. NO. 2 OF 12
DES. J.V.P.	DRN. J.C.L.	CHK. C.J.C.

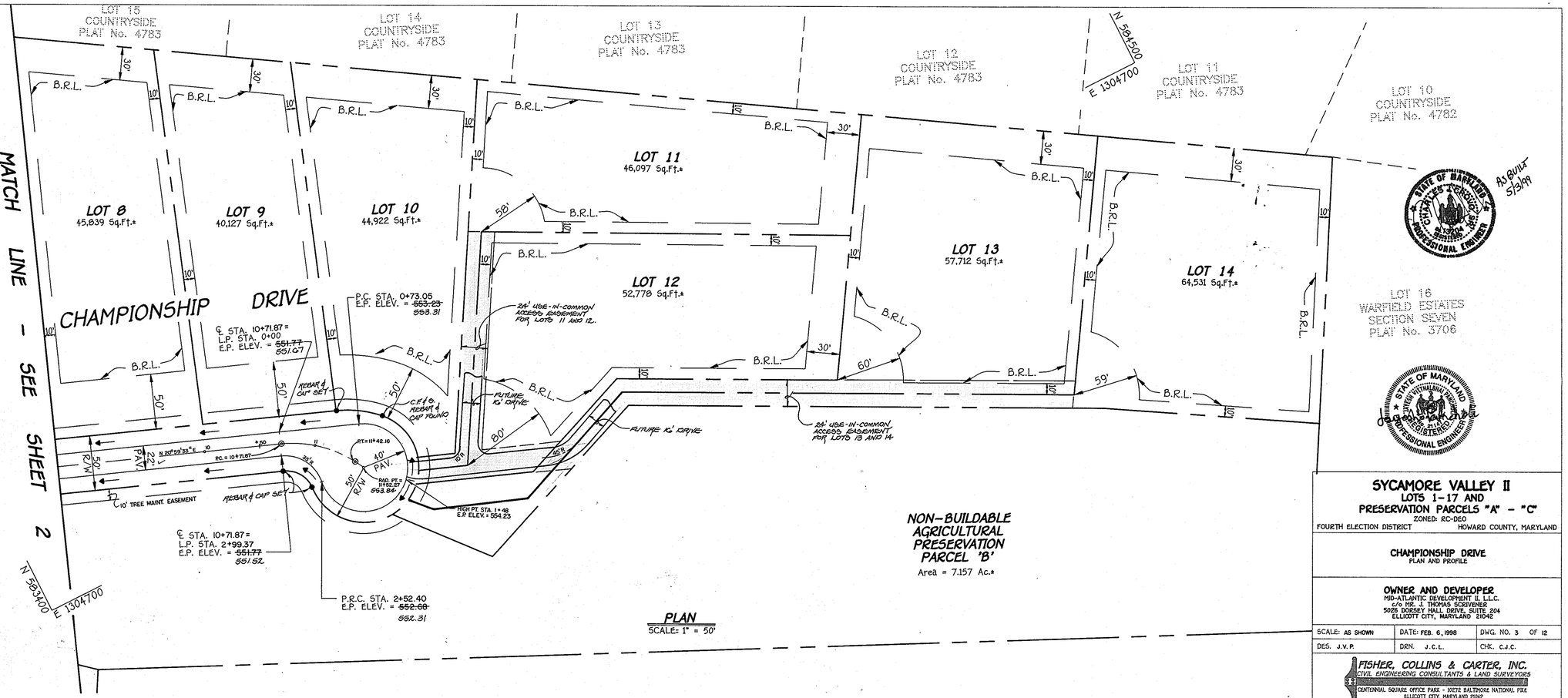
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

AS-BUILT 5/3/99

F-98-89



℄ CURVE DATA
CHAMPIONSHIP DRIVE
STA. 10+71.87 TO STA. 11+42.16
R = 104.71'
L = 70.29'
Δ = 38°26'58"
T = 36.52'
CHD. = N 40°13'02" E, 68.97'



PLAN
SCALE: 1" = 50'

NON-BUILDABLE AGRICULTURAL PRESERVATION PARCEL 'B'
Area = 7.157 Ac.±

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/12/98

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 7-9-98

SYCAMORE VALLEY II
LOTS 1-17 AND PRESERVATION PARCELS "A" - "C"
ZONED: RC-DEO
FOURTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

CHAMPIONSHIP DRIVE
PLAN AND PROFILE

OWNER AND DEVELOPER
MID-ATLANTIC DEVELOPMENT II, L.L.C.
c/o MR. J. THOMAS SCRIVENER
5025 DORSEY HALL DRIVE, SUITE 204
ELLICOTT CITY, MARYLAND 21042

SCALE: AS SHOWN	DATE: FEB. 6, 1998	DWG. NO. 3 OF 12
DES. J.V.P.	DRN. J.C.L.	CHK. C.J.C.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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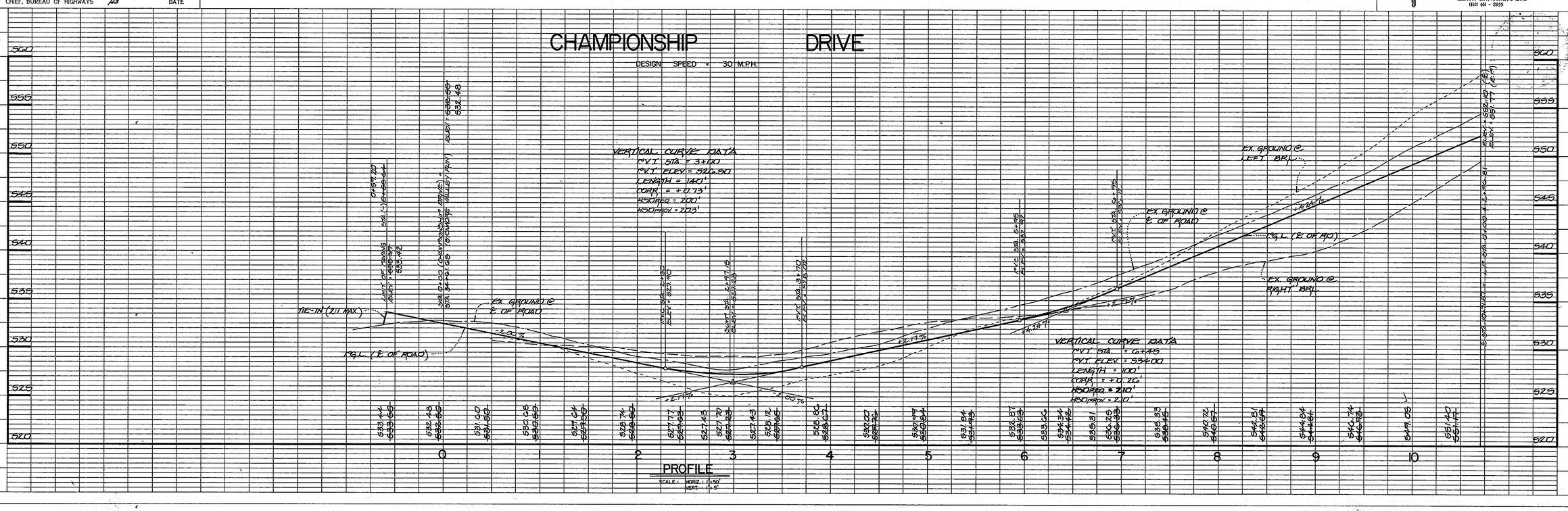


AS-BUILT 5/3/99 F-98-89

STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
(+)	ACER RUBUM 'OCTOBER GLORY' RED MAPLE	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W
(×)	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT.
TOTAL NUMBER OF STREET TREES: 95

(+) - 22 STREET TREES

(×) - 63 STREET TREES

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.

Cheryl Simmons 7/1/98
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.

Robert W. Zirhm 7/1/98
Howard Soil Conservation District — Date

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 — 2/11/98 Date
THOMAS SCRIVENER
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."

Jayesh Pancholi — 2-11-98
Signature Of Engineer — Date
JAYESH V. PANCHOLI
Printed Name Of Engineer

SEDIMENT TRAP #2 DATA
STONE OUTLET SEDIMENT TRAP
D.A. = 1.3 Ac.±
STORAGE REQ'D. = 4,680 cu. Ft.
STORAGE PROV'D. = 7,800 cu. Ft.
BOTTOM OF POND = 523.00
SIDE SLOPES = 2:1
CLEANOUT ELEV. = 524.00
WEIR CREST ELEV. = 525.00
WEIR WIDTH = 6.0'
WET STORAGE = 2340 cu. Ft.
DRY STORAGE = 2340 cu. Ft.
WET STORAGE EL. = 524.00
OUTLET EL. = 524.00
DRY STORAGE EL. = 525.00

* SEE SHEET 5 OF 12 FOR SEDIMENT TRAP GRADING PLAN.

PLAN
SCALE: 1" = 50'

Approval	Date
Approved: Department Of Public Works — Chief Bureau Of Highways	7-9-98
Approved: Department Of Planning And Zoning — Chief, Division Of Land Development	7/17/98
Chief, Development Engineering Division	7/10/98

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

30575GRADINGPLAN1.DWG

OWNER AND DEVELOPER
MID-ATLANTIC DEVELOPMENT II, L.L.C.
c/o MR. THOMAS SCRIVENER
5026 DORSEY HALL DRIVE
SUITE 204
ELLICOTT CITY, MARYLAND 21042

LEGEND

Symbol	Description
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
—S — S — S—	SILT FENCE
A-2	EARTH DIKE
(heavy line)	LIMIT OF DISTURBANCE
—X — X — X—	TREE PROTECTION FENCE
—SS—SS—	SUPER-SILT FENCE

STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
SYCAMORE VALLEY II
LOTS 1 - 17 AND
PRESERVATION PARCELS "A" - "C"
ZONING: RC-DEO
TAX MAP NO. : 21 PARCEL NO. : 7
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY 6, 1998
SHEET 4 OF 12

AS-BUILT 5/3/99

F-98-89

Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 7-9-98

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 7/17/98

Chief, Development Engineering Division — Date: 7/10/98

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: 2/11/98

THOMAS SCRIVENER
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: 2-11-98

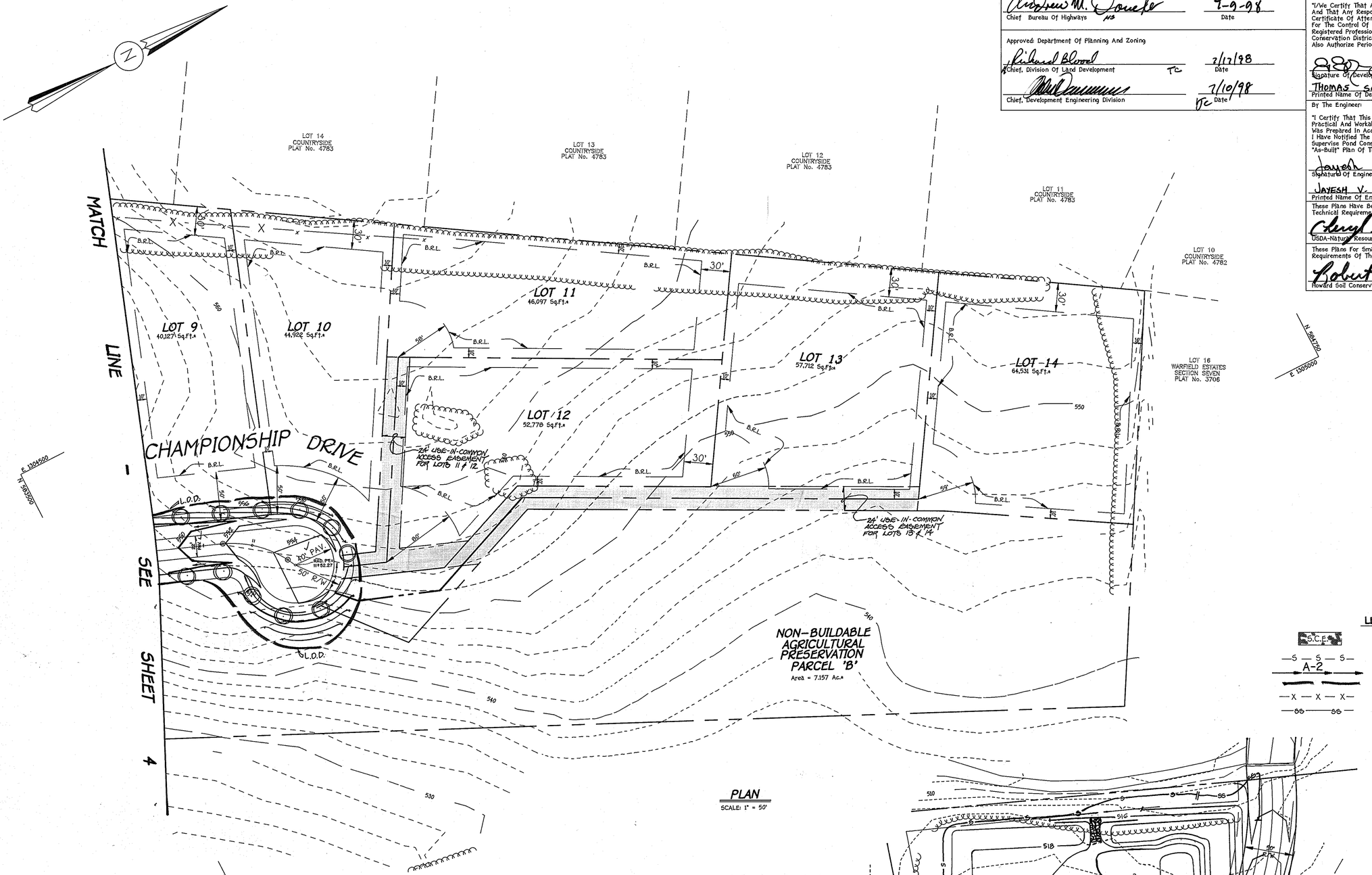
JAYESH V. PANCHOLI
Printed Name Of Engineer

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 — Date: 7/1/98

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: 7/1/98

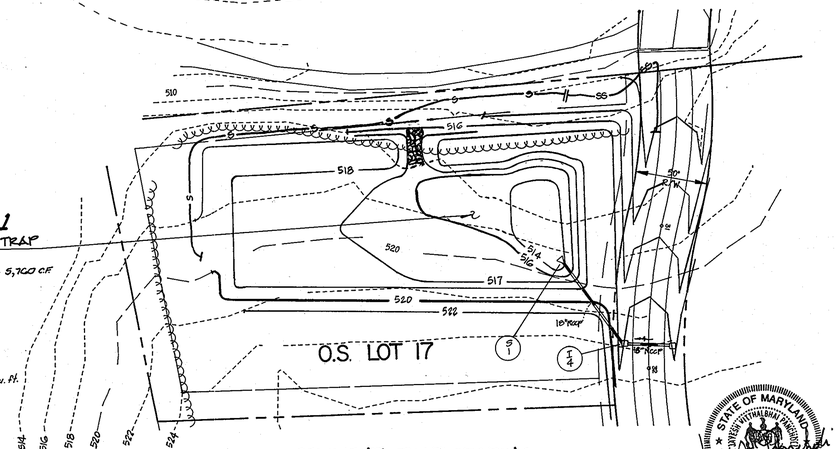


PLAN
SCALE: 1" = 50'

SEDIMENT TRAP # 1

TYPE: STONE OUTLET SEDIMENT TRAP

DRAINAGE AREA: 1.6 Ac.
STORAGE REQUIRED: 1.6 Ac. x 3600 C.F. = 5,760 C.F.
STORAGE PROVIDED: 18,250 C.F.
WEIR CREST EL. = 517.00
WEIR LENGTH: 10'
CLEAN OUT EL. = 513.00
BOTTOM EL. = 512.75
WET STORAGE = 1.6 Ac. x 1800
REQUIRED = 2880 Cu. Ft.
WET STORAGE EL. = 516.00
OUTLET EL. = 516.00
DRY STORAGE REQUIRED = 2880 cu. ft.
DRY STORAGE EL. = 517.00



SEDIMENT TRAP GRADING
SCALE: 1"= 50'

LEGEND

- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- —S—S—S— SILT FENCE / EARTH DIKE
- A-2 — LIMIT OF DISTURBANCE
- —X—X—X— TREE PROTECTION FENCE
- —SS—SS— SUPER-SILT FENCE

STATE OF MARYLAND — JAYESH V. PANCHOLI — REGISTERED PROFESSIONAL ENGINEER

AS BUILT 5/3/99

SEE SHEET 4 OF 12 FOR STREET TREE SCHEDULE.

STATE OF MARYLAND — JAYESH V. PANCHOLI — REGISTERED PROFESSIONAL ENGINEER

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

30575GRADINGPLAN2

OWNER AND DEVELOPER
MID-ATLANTIC DEVELOPMENT II, L.L.C.
C/O MR. THOMAS SCRIVENER
5026 DORSEY HALL DRIVE
SUITE 204
ELLICOTT CITY, MARYLAND 21042

STREET TREE, GRADING AND SEDIMENT CONTROL PLAN

SYCAMORE VALLEY II

LOTS 1 - 17 AND PRESERVATION PARCELS "A" - "C"

ZONING: RC-DEO
TAX MAP NO. : 21 PARCEL NO. : 7
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY 6, 1998
SHEET 3 OF 12.

AS-BUILT 5/3/99 F-98-89

STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
(+)	ACER RUBUM 'OCTOBER GLORY' RED MAPLE	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W
(x)	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT.
TOTAL NUMBER OF STREET TREES: 95

(+) - 22 STREET TREES
(x) - 63 STREET TREES

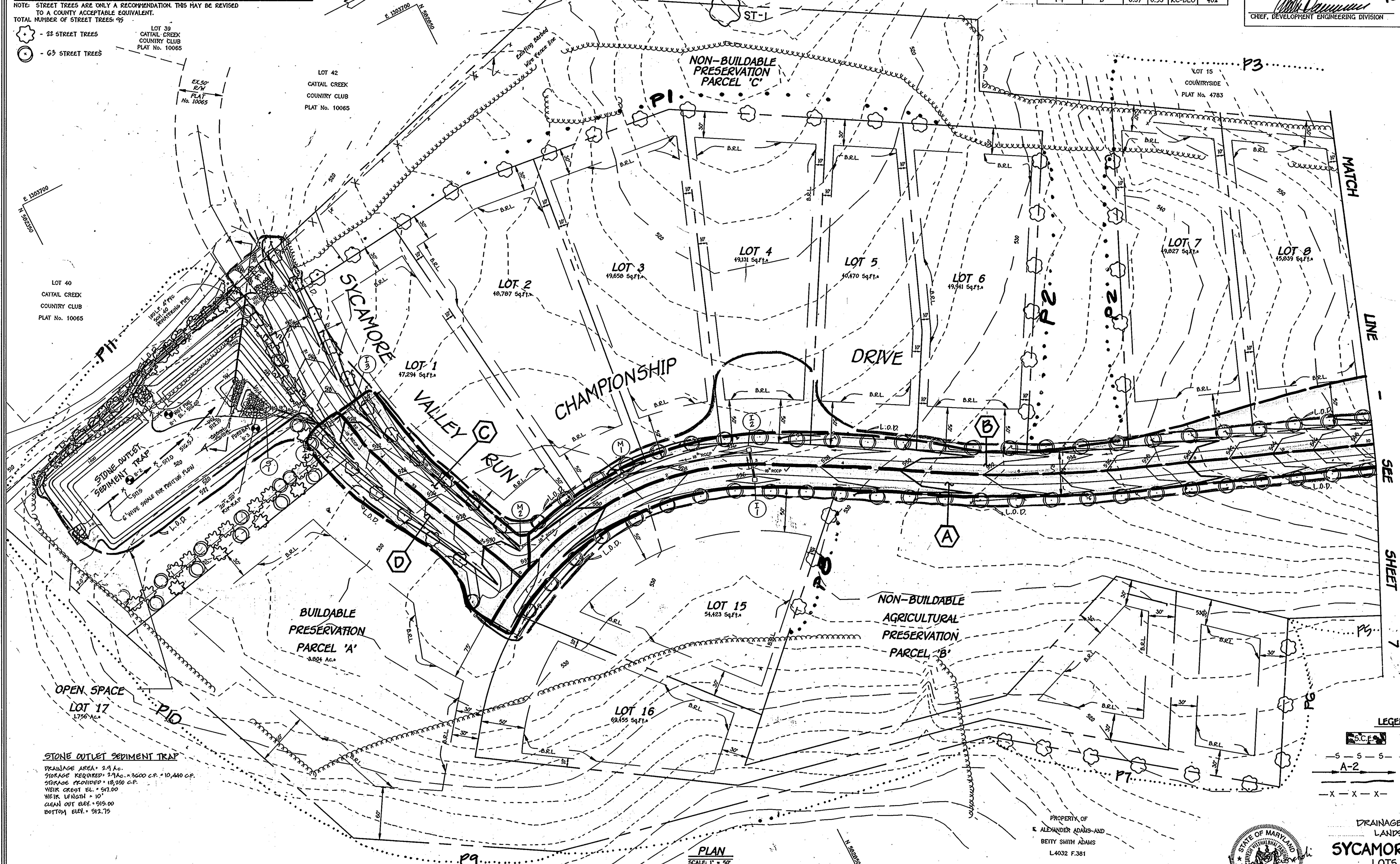
DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
I-1	A	0.92	0.59	RC-DEO	49%
I-2	B	1.33	0.52	RC-DEO	39%
I-3	C	0.30	0.54	RC-DEO	42%
I-4	D	0.37	0.53	RC-DEO	40%

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 7-9-98

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/98



PLAN
SCALE: 1" = 50'

STONE OUTLET SEDIMENT TRAP

DRAINAGE AREA = 2.9 Ac.
STORAGE REQUIRED = 2.9Ac. x 3600 C.F. = 10,440 C.F.
STORAGE PROVIDED = 18,250 C.F.
WEIR CREST EL. = 517.00
WEIR LENGTH = 10'
CLEAN OUT ELEV. = 515.00
BOTTOM ELEV. = 512.75

LEGEND

S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
—S—S—S— SILT FENCE
A-2 — EARTH DIKE
LIMIT OF DISTURBANCE
—X—X—X— TREE PROTECTION FENCE

* SEE SHEET 7 OF 12 FOR LANDSCAPE CHART

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
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30575GRADINGPLAN1.DWG

OWNER AND DEVELOPER
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5026 DORSEY HALL DRIVE
SUITE 204
ELLICOTT CITY, MARYLAND 21042

STATE OF MARYLAND — JAYESH VITTHALBHAI PANCHOLI — No. 21147 — REGISTERED PROFESSIONAL ENGINEER

DRAINAGE AREA MAP AND LANDSCAPE PLAN

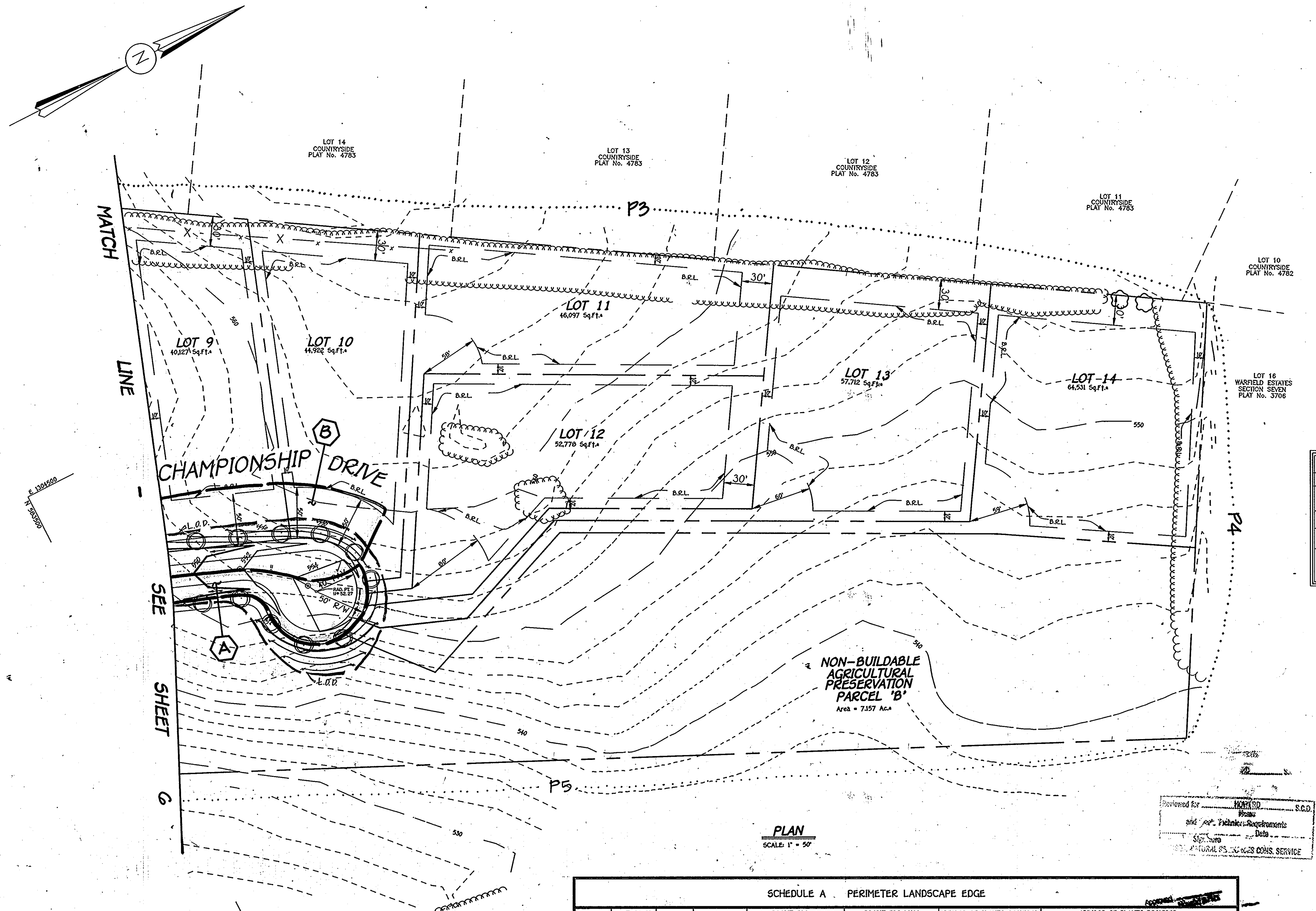
SYCAMORE VALLEY II

LOTS 1 - 17 AND
PRESERVATION PARCELS "A" - "C"
ZONING: RC-DEO
TAX MAP NO. : 21 PARCEL NO. : 7
FOURTH ELECTION DISTRICT HOWARD COUNTY,MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY 6, 1998
SHEET 6 OF 12

AS-BUILT 5/3/99

F-98-89

APPROVED: DEPARTMENT OF PUBLIC WORKS	
[signature] CHIEF, BUREAU OF HIGHWAYS	7-9-98 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
[signature] CHIEF, DIVISION OF LAND DEVELOPMENT	7/17/98 DATE
[signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION	7/10/98 DATE



PLAN

SCALE: 1" = 50'

LEGEND

S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
—S— S— S—	SILT FENCE
A-2	EARTH DIKE
	LIMIT OF DISTURBANCE
—X— X— X—	TREE PROTECTION FENCE

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	1070'
NUMBER OF TREES REQUIRED: SHADE TREES EVERGREEN TREES	BASED ON 1070' - 370' = 700' 14 17
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES 370'
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED: SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	 14 17 ----

AS BUILT 5/3/99

SCHEDULE A . PERIMETER LANDSCAPE EDGE

PERIMETER	CATEGORY (PROPERTIES/ ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF 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	NUMBER OF PLANTS REQUIRED: EVERGREEN TREES	NUMBER OF PLANTS REQUIRED: SHRUBS	NUMBER OF PLANTS PROVIDED: SHADE TREES	NUMBER OF PLANTS PROVIDED: EVERGREEN TREES	NUMBER OF PLANTS PROVIDED: OTHER TREES (2:1 SUBSTITUTION)	NUMBER OF PLANTS PROVIDED: SHRUBS (10:1 SUBSTITUTION)
									(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)			
P-1	ADJACENT TO PERIMETER	A	780'	NO	NO	13	-	-	13	-	-	
P-2	ADJACENT TO PERIMETER	A	650'	NO	NO	11	-	-	11	-	-	-
P-3	ADJACENT TO PERIMETER	A	1555'	YES 1455'	NO	2	-	-	2	-	-	
P-4	ADJACENT TO PERIMETER	A	430'	YES 320'	NO	0	-	-	0	-	-	-
P-5	ADJACENT TO PERIMETER	A	1100'	NO	NO	0	-	-	0	-	-	-
P-6	ADJACENT TO PERIMETER	A	190'	NO	NO	3	-	-	3	-	-	-
P-7	ADJACENT TO PERIMETER	A	335'	NO	NO	6	-	-	6	-	-	-
P-8	ADJACENT TO PERIMETER	A	265	YES 195'	NO	3	-	-	3	-	-	-
P-9	ADJACENT TO PERIMETER	A	230'	YES 230'	NO	0	-	-	0	-	-	-
P-10	ADJACENT TO PERIMETER	A	555'	YES 555'	NO	0	-	-	0	-	-	-
P-11	ADJACENT TO ROADWAY	B	380'	NO	NO	7	9	-	7	9	-	-

SEE SHEET 6 OF 12 FOR STREET TREE SCHEDULE.

LANDSCAPING PLANT LIST			
QTY.	KEY	NAME	SIZE
59		ACER RUBRUM 'OCTOBER GLORY' (OCTOBER RED MAPLE)	2 - 2 1/2" CALIPER FULL CROWN, B&B
14		PLATANUS OCCIDENTALIS 'BLOODGOOD' 'LONDON PLANETREE	2 - 2 1/2" CALIPER FULL CROWN, B&B
26		PINUS STROBUS (EASTERN WHITE PINE)	6'-8.5' HEIGHT

"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 99 REQUIRED LANDSCAPE TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $9,900.00

Reviewed for HOWARD S.C.D. and meet Technical Requirements Date Signature NATURAL RESOURCES CONS. SERVICE

STATE OF MARYLAND JAYESH VITTHALBHAI PANCHOLI No. 21147 REGISTERED PROFESSIONAL ENGINEER

OWNER AND DEVELOPER

MID-ATLANTIC DEVELOPMENT II, L.L.C.
c/o MR. THOMAS SCRIVENER
5026 DORSEY HALL DRIVE
SUITE 204
ELLICOTT CITY, MARYLAND 21042

DRAINAGE AREA MAP AND LANDSCAPE PLAN

SYCAMORE VALLEY II

LOTS 1 - 17 AND PRESERVATION PARCELS "A" - "C"

ZONING: RC-DEO

TAX MAP NO. : 21 PARCEL NO. : 7

FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: FEBRUARY 6, 1998

SHEET 7 OF 12

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

30575GRADINGPLAN2

AS-BUILT 5/3/99 F-98-89

APPROVED: DEPARTMENT OF PUBLIC WORKS

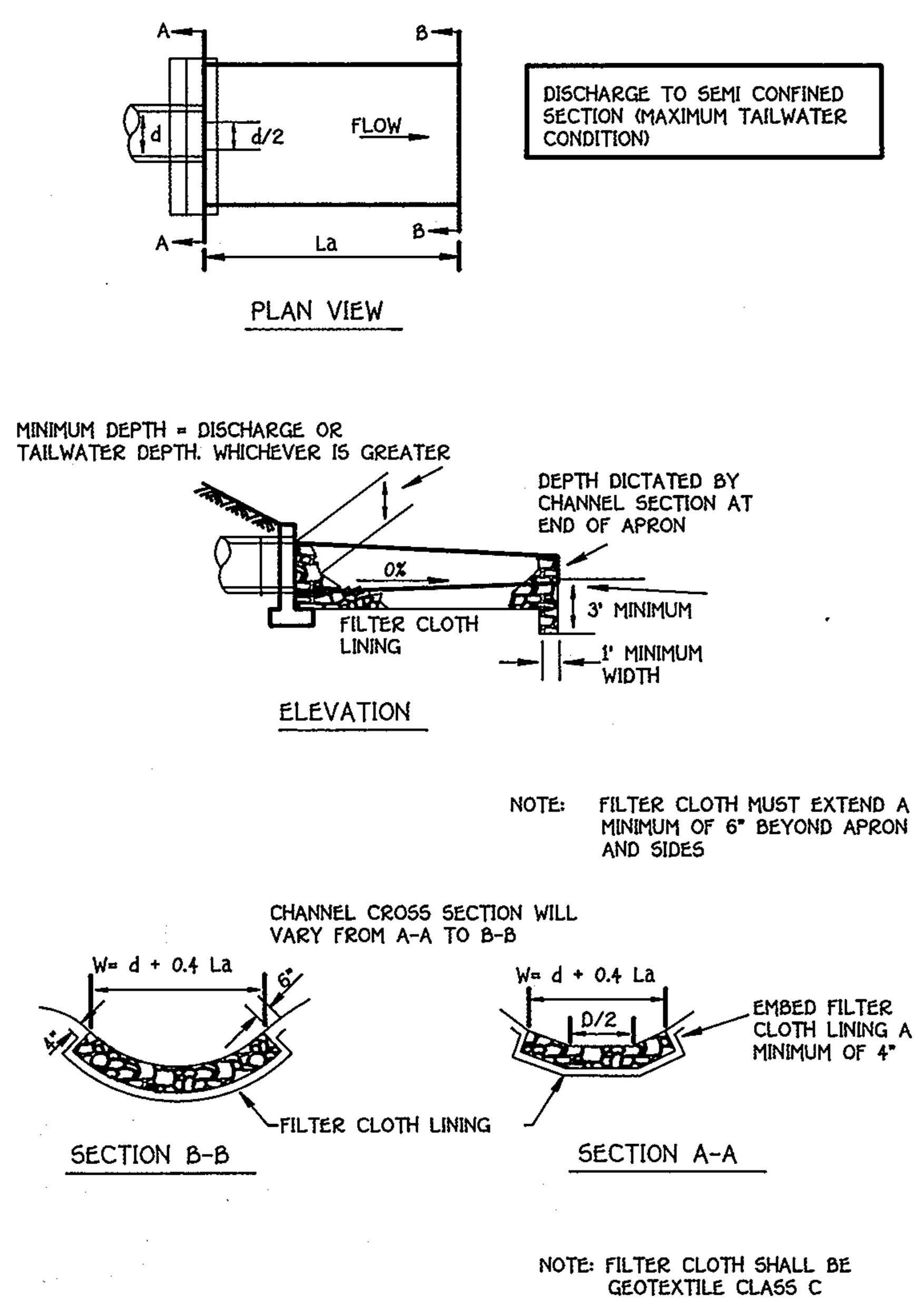
CHIEF, BUREAU OF HIGHWAYS — DATE 7-9-98

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/98

DETAIL 25 - ROCK OUTLET PROTECTION I



ROCK OUTLET PROTECTION

Construction Specifications

1. The subgrade for the filter, rip-rap, 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 rip-rap or filter.

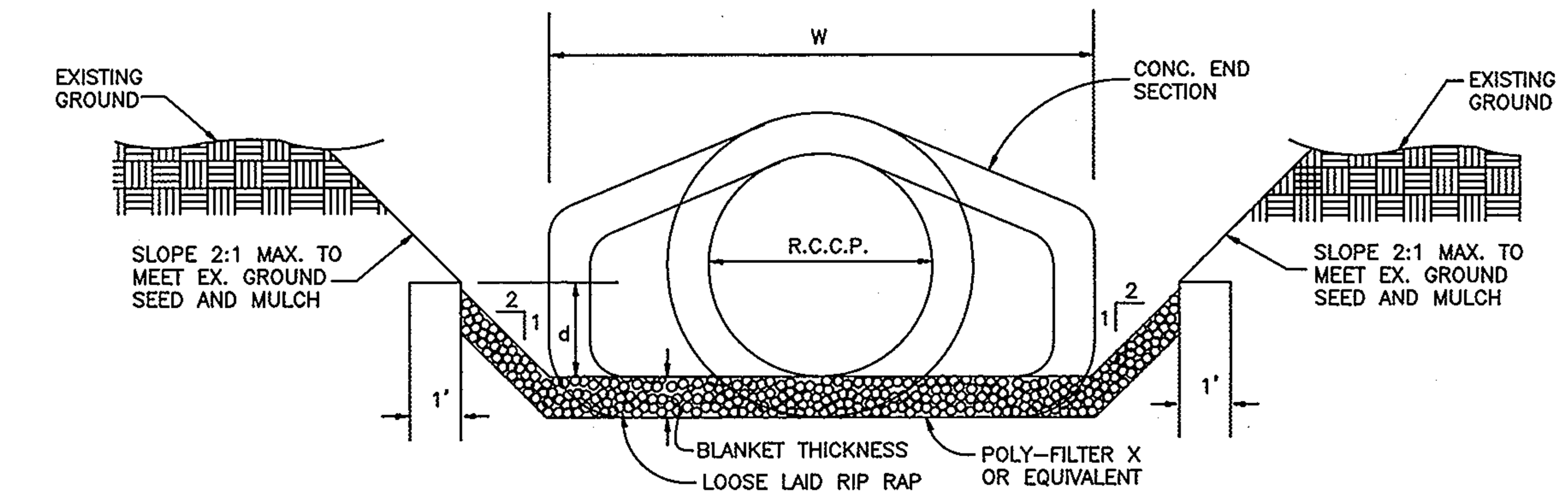
3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.

4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall 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 rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	THROAT ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	526.~~76~~ 84	~~525.51~~ 526.21	-----	~~523.96~~ 524.08	CHAMPIONSHIP DRIVE	~~2+97.15~~ 3+05	20' ~~17~~'R	'K' INLET ✓	S.D. 4.13 w/ S.D. 4.36
I-2	526.~~76~~ 94	~~525.51~~ 526.30	523.~~62~~ 77	523.~~37~~ 72	CHAMPIONSHIP DRIVE	~~2+92~~ 2+94	✓ 17'L	'K' INLET ✓	S.D. 4.13 w/ S.D. 4.36
I-3	518.~~87~~ 44	517.~~62~~ 77	514.~~29~~ 04	~~514.04~~ 513.88	SYCAMORE VALLEY RUN	~~31+83~~ 31+80	20' ~~17~~'L	'K' INLET ✓	S.D. 4.13 w/ S.D. 4.36
I-4	518.~~87~~ 63	517.~~62~~ 95	513.~~70~~ 47	513.~~45~~ 25	SYCAMORE VALLEY RUN	~~31+83~~ 31+80	20' ~~17~~'R	'K' INLET ✓	S.D. 4.13 w/ S.D. 4.36
	529.99								
M-1	~~530.00~~	-----	521.~~90~~ 77	521.~~65~~ 74	CHAMPIONSHIP DRIVE	~~1+53~~ 1+51	20' ~~22~~'L	STD. MANHOLE ✓	G - 5.12
M-2	530.~~20~~ 19	-----	520.~~25~~ 12	520.~~00~~ 01	SYCAMORE VALLEY RUN	~~34+40~~ 34+39	22' ~~25~~'L	STD. MANHOLE ✓	G - 5.12
S-1	514.~~25~~ 13	-----	512.~~75~~ 63	512.~~75~~ 63	----------	~~N 582,493.071~~ ~~E 1,304,020.607~~	-----	CONC. END SECTION ✓	S.D. 5.52
						N 582,486.880 E 1,304,034.043			



RIP RAP CHANNEL DETAIL

NO SCALE

RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	CROSS SECTIONAL AREA	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} (C.F.S.)	PIPE DIA.
S-1	4.85 S.F.	7.80'	0.62	0.73	0.005 FT./FT.	0.0707	4.0'	0.85'	0.035	2.20	10.67	9.5"	15"	19"	10.61	18"

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

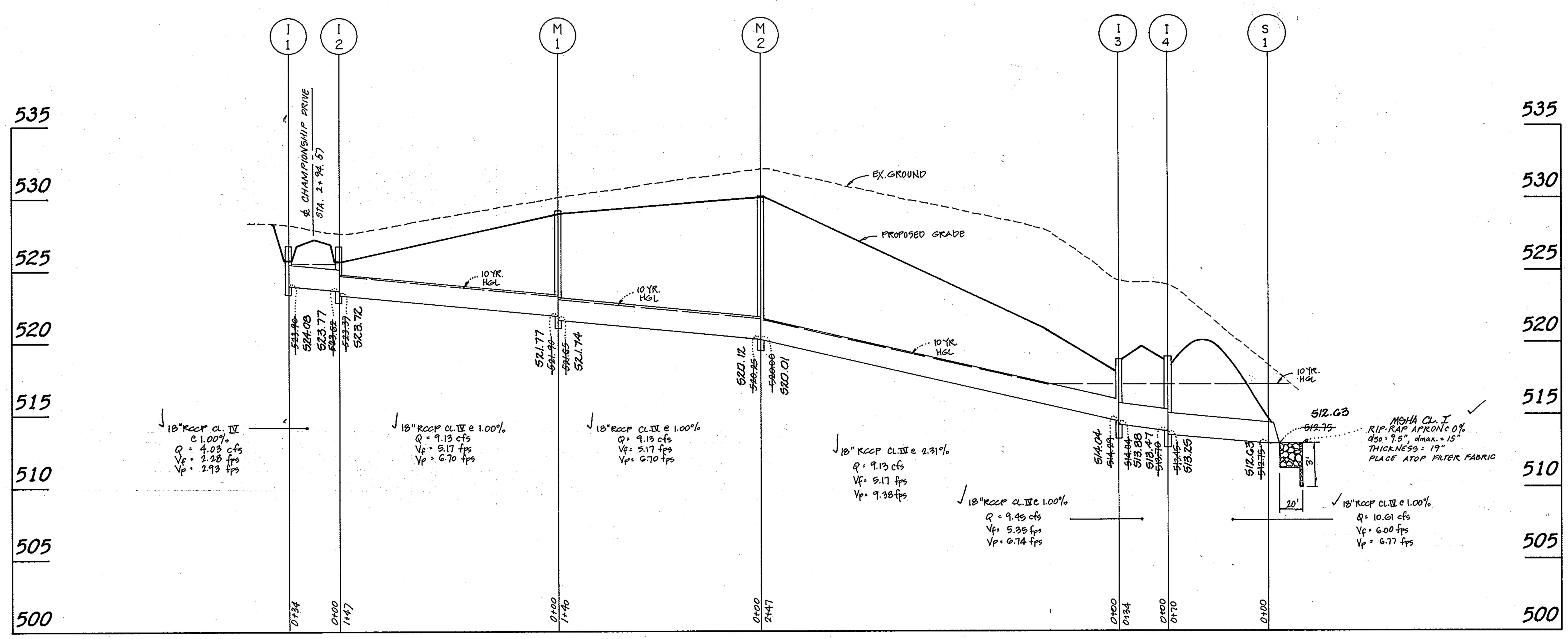
1. The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional 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.
5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

Reviewed for HOWARD S.C.D. and meets Technical Requirements — Date 7/1/98

USDA, NATURAL RESOURCES CONS. SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT — 7/1/98

AS BUILT 5/3/99



PROFILE

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

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT
2. NOTIFY "MISS UTILITY" 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION INSPECTION AT (410) 313-1880 (5) WORKING DAYS PRIOR TO START OF CONSTRUCTION.
3. INSTALL TREE PROTECTION FENCE. (2 DAYS)
4. INSTALL SEDIMENT CONTROL MEASURES, STABILIZED CONSTRUCTION ENTRANCE, STONE OUTLET SEDIMENT TRAP, EARTH DIKES AND SILT FENCE. STABILIZE DISTURBED AREAS PER TEMPORARY SEEDING NOTES. (1 WEEK)
5. GRADE ROAD TO SUBGRADE AND INSTALL STORM DRAINS, INLETS AND ROAD SIDE DITCHES. (1 WEEK)
6. CONSTRUCT STORMWATER MANAGEMENT POND. (1 WEEK)
7. CONSTRUCT ROAD. (1 WEEK)
8. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEEDING. (2 DAYS)
9. OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO REMOVE SEDIMENT CONTROL. (2 DAYS)

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

305755TORMDRAINS.DWG

OWNER AND DEVELOPER

STATE OF MARYLAND — JAYESH VITTHALBHAI PANCHOLI — No. 21147 — REGISTERED PROFESSIONAL ENGINEER

STORM DRAIN PROFILES

SYCAMORE VALLEY II

LOTS 1 - 17 AND PRESERVATION PARCELS "A" - "C"

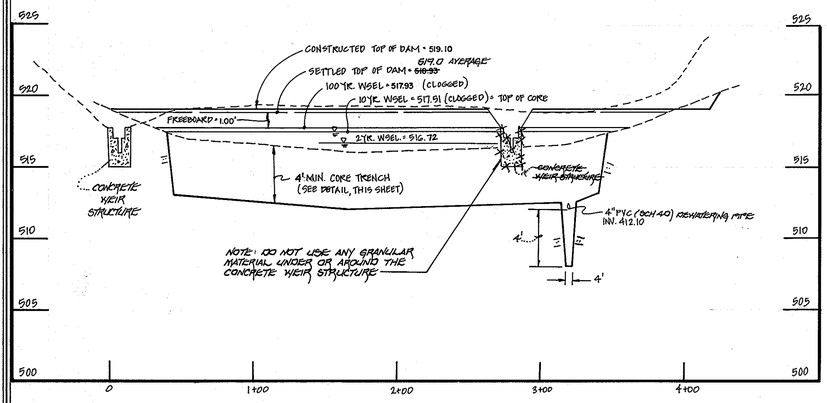
ZONING: RC-DEO

TAX MAP NO. : 21 PARCEL NO. : 7

FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

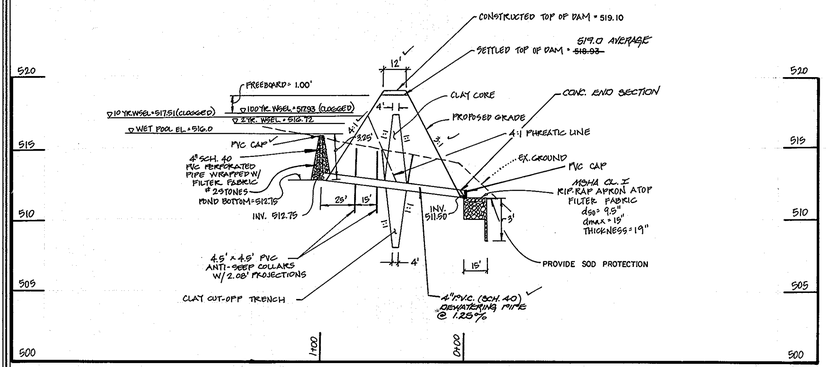
SCALE: AS SHOWN DATE: FEBRUARY 6, 1998

AS-BUILT 5/3/99 F-98-89



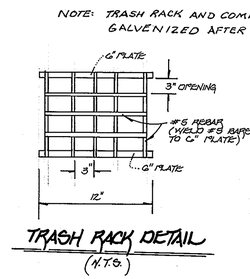
PROFILE THRU ℄ OF DAM

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



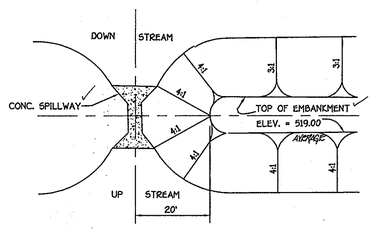
SECTION 'A-A'

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



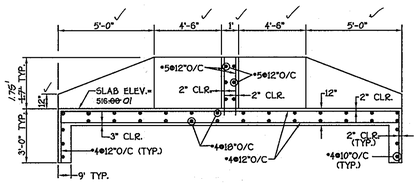
TRASH RACK DETAIL

(N.T.S.)

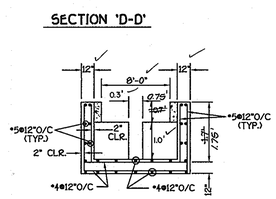


EARTH TRANSITION DETAIL

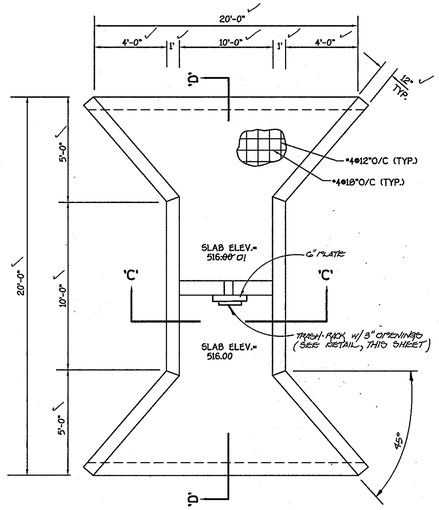
NOT TO SCALE



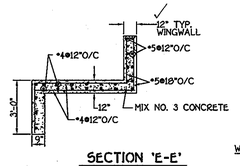
SECTION 'D-D'



SECTION 'C-C'

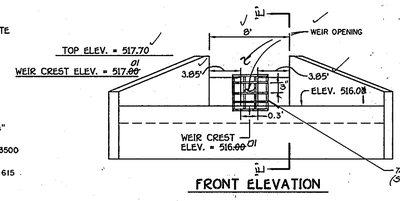


PLAN

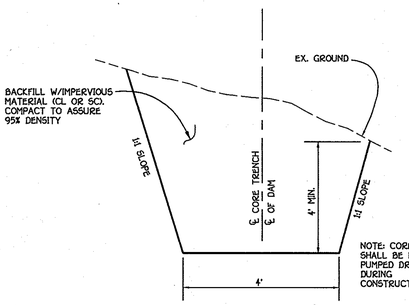


SECTION 'E-E'

NOTES:
1. ALL EXPOSED EDGES TO HAVE 3/4" x 3/4" CHAMFER OR AS DIRECTED.
2. CONC. SHALL BE S.H.A. MIX NO. 3 (f'_c = 3500 P.S.I. AT 28 DAYS).
3. REINFORCING STEEL SHALL BE ASTM A-615 GRADE 60.

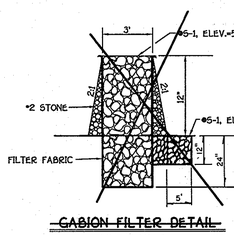


FRONT ELEVATION



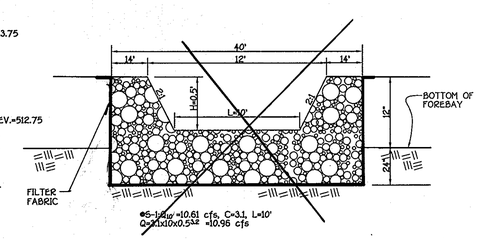
CORE TRENCH DETAIL

NOT TO SCALE



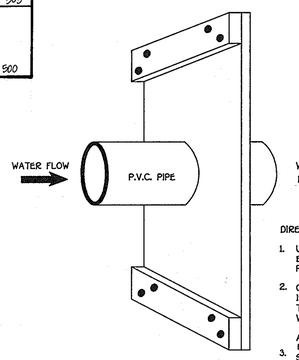
GABION FILTER DETAIL

NOT TO SCALE



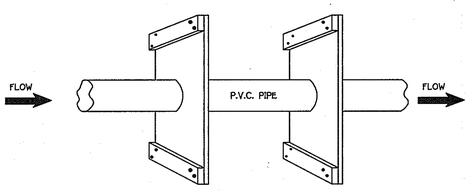
GABION WEIR SECTION

NOT TO SCALE



DIRECTIONS FOR USING THE ANTI-SEEP COLLAR.

1. UNROLL THE ANTI-SEEP AND ATTACH THE BOARDS TO THE EDGES TO FORM A SQUARE. (USE THE BOARDS AND NAILS PROVIDED) (4'X4' AND LARGER)
2. CUT A ROUND HOLE IN THE CENTER OF THE RUBBER THAT IS SMALLER THAN THE PIPE SIZE (APPROX. 25% SMALLER). THIS WILL ALLOW THE RUBBER TO STRETCH OVER THE PIPE WHEN THE ANTI-SEEP IS INSTALLED ON THE PIPE. THIS MUST PROVIDE A WATERPROOF SEAL BETWEEN THE PIPE AND THE ANTI-SEEP COLLAR. SECURE THE PIPE W/ GLUE OR EQUIVALENT TO THE COLLAR.
3. SLIP THE PIPE THROUGH THE ANTI-SEEP, INSPECT THE SEAL BETWEEN THE PIPE AND THE ANTI-SEEP CAREFULLY BACKFILL AND COMPACT W/SUITABLE SOIL.



P.V.C. ANTI-SEEP COLLAR DETAIL

NOT TO SCALE

(MODIFIED HOWARD COUNTY STD. DTL. S.D.-7.00)

CONCRETE WEIR STRUCTURE DETAIL

NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE
OF HOME OWNERS ASSOCIATION OWNED AND MAINTAINED
STORMWATER MANAGEMENT FACILITY
WET POND

HOME OWNERS ASSOCIATION'S MAINTENANCE RESPONSIBILITIES:

1. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access should be mowed as needed.
2. Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
3. When deemed necessary for aesthetic reasons, sediment should be removed from the pond. Approval of the Department of Public Works is required.

OPERATION AND MAINTENANCE SPECIFICATIONS

I hereby certify that I will operate and maintain the completed pond in accordance with
the following:

1) Periodic inspections of the facility will be made to identify potential problems that may affect its safety. These inspections will be made after periods of heavy rainfall and at least twice annually. Inspection reports shall be kept until the next subsequent inspection. Inspection items to be looked at include:

A. Spillway and outlet works
B. Rip-rap
C. Vegetative cover
D. Cracks in the fill
E. Slope failures; and
F Seepage and other signs of distress.

2) Problems identified during inspections will be promptly corrected. Major problems will be brought to the attention of the soil conservation district and the dam safety division of the Maryland Water Resources Administration. As a very minimum, grassy vegetation will be maintained in a dense and healthy state, and woody vegetation will not be permitted to grow on the embankment.

NOTES

1. Concrete shall conform to the Maryland D.O.T.S.H.A. Standard Specs for construction and materials, 1982 Mix No. 6, except that TY. III Cement and A.S.T.M. C 33 No. 8 coarse AGG. Shall be used.

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: 2/11/98

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: 2-11-98

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 — Date: 7/1/98

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: 7/1/98

Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 7-9-98

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 7/17/98

Chief, Development Engineering Division — Date: 7/10/98

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 — 13804 P.E. No. — 5/3/99 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.

AS-BUILT 5/3/99

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

305605WMDETAILS2.DWG

OWNER AND DEVELOPER
MID-ATLANTIC DEVELOPMENT II, L.L.C.
C/O THOMAS SCRIVENER
5026 DORSEY HALL DR., SUITE 204
ELLICOTT CITY, MD. 21042

STORMWATER MANAGEMENT DETAILS

SYCAMORE VALLEY II

LOTS 1-17 AND PRESERVATION PARCELS 'A-C'

ZONED : "RC-DEO"
TAX MAP No. 21 PARCEL 7
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY , 1998
SHEET 9 of 12

AS-BUILT 5/3/99 F-98-89

G:\drawings\30575 Revlin Property\30575wmdetails.dwg Fri Feb 06 08:29:30 1998 PREPARED BY JULIE UDICH

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.

Signature Of Engineer — 2-11-98 Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved 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 — 2-11-98 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

U.S.D.A. - Natural Resources Conservation Service — 7/1/98 Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Howard Soil Conservation Dist. — 7/1/98 Date

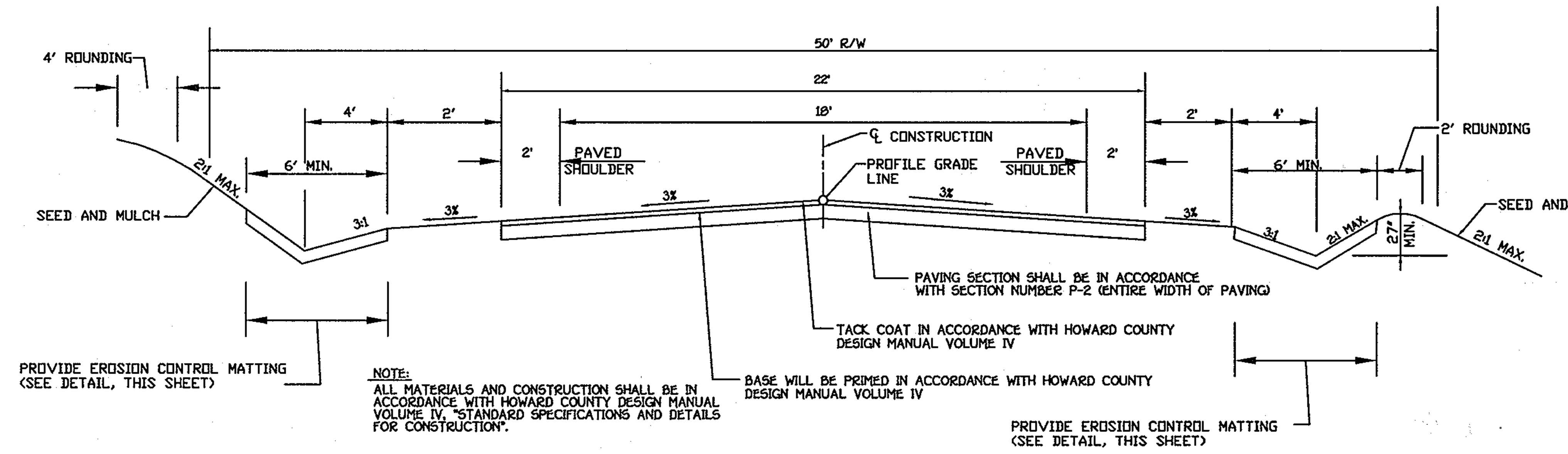
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 7/17/98 Date

Chief, Development Engineering Division — 7/10/98 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 7-9-98 Date



NOTE:
ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION".

BASE WILL BE PRIMED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV

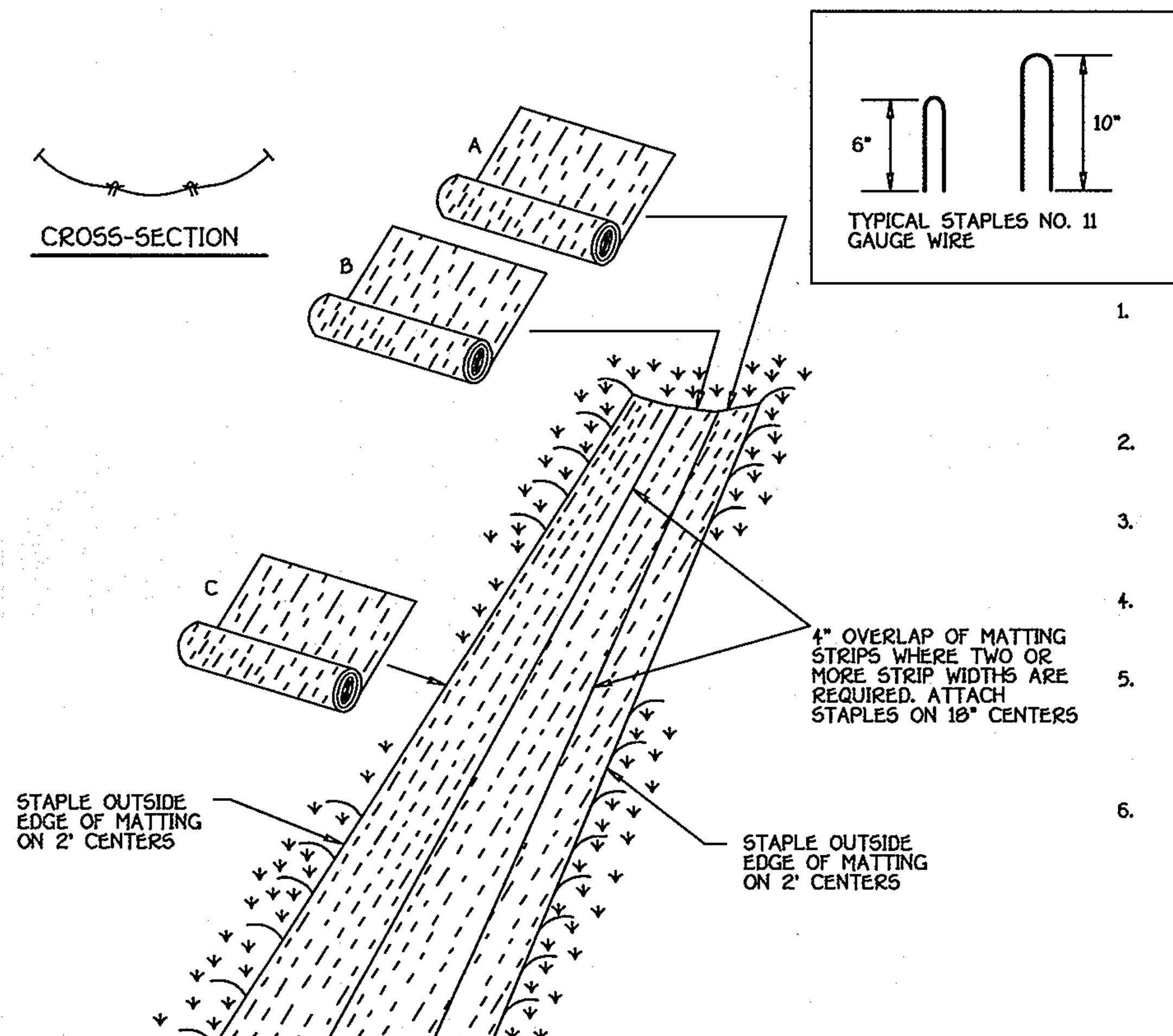
PROVIDE EROSION CONTROL MATTING (SEE DETAIL, THIS SHEET)

TYPICAL ROADWAY SECTION

NO SCALE

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	PAVING SECTION
SYCAMORE VALLEY RUN	LOCAL ROAD	30 M.P.H.	RC-DEO	29+90.79 TO 34+61.65	P-2
CHAMPIONSHIP DRIVE	CUL-DE-SAC	30 M.P.H.	RC-DEO	0+00 TO (-) 0+58.64	P-2
CHAMPIONSHIP DRIVE	CUL-DE-SAC	30 M.P.H.	RC-DEO	0+00 TO 11+52.27	P-2



EROSION CONTROL MATTING

Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
2. Staple the 4" overlap in the channel center using an 18" spacing between staples.
3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

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

EROSION CONTROL MATTING

NOT TO SCALE

SOIL BORING B-1

BROWN, MOIST, VERY LOOSE FINE SANDY SILT (ML) (LOAM)		4" TOPSOIL
	2.0	
GREEN AND BROWN, DRY, DENSE TO VERY DENSE, SILTY FINE SAND AND WEATHERED ROCK FRAGMENTS (SM) (SANDY LOAM) S-4 IS MEDIUM DENSE		NO GROUNDWATER ENCOUNTERED WHILE DRILLING; CAVED IN TO 8.7' AT COMPLETION; CAVED IN TO 8.9' AFTER 24 HOURS
	12.8	
BOTTOM OF HOLE AT 12.8'		

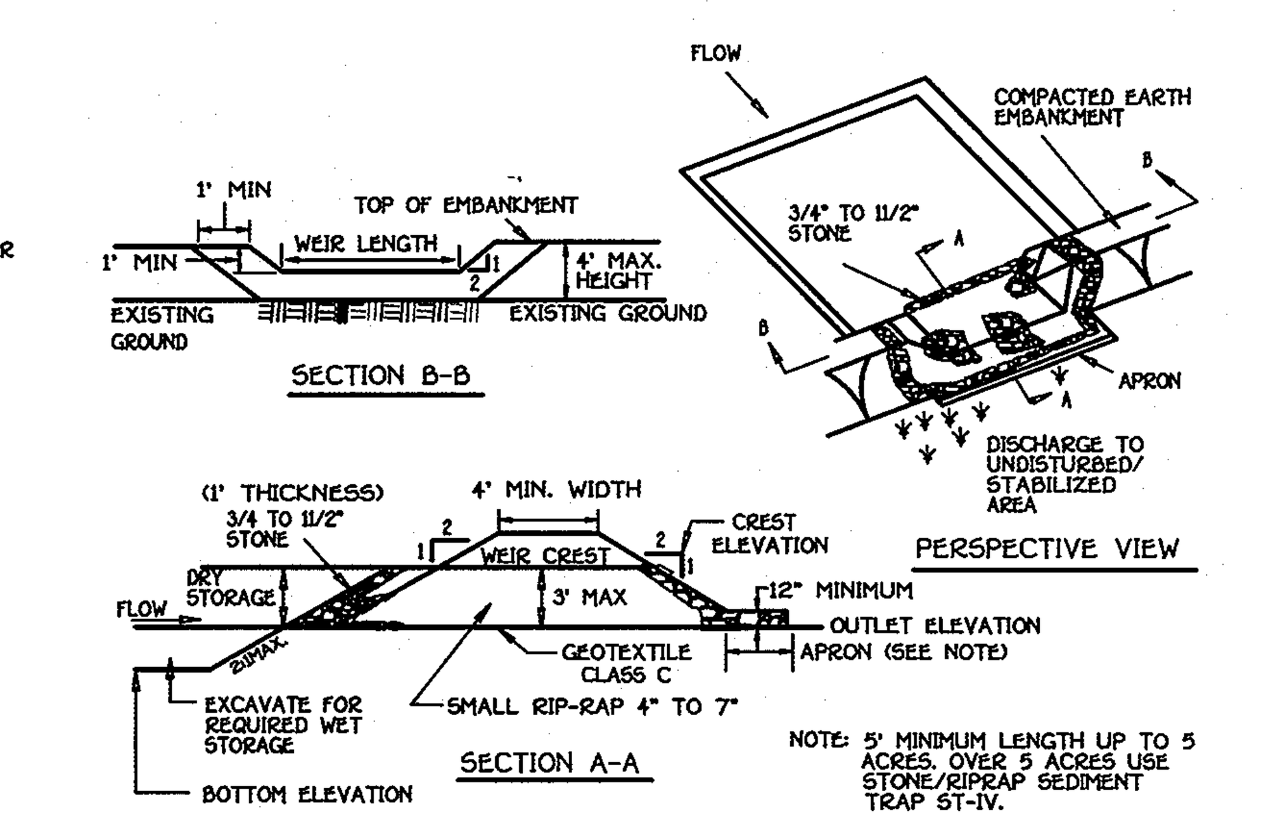
SOIL BORING B-2

BROWN, MOIST, VERY LOOSE FINE SANDY SILT (ML) (LOAM)		0" TOPSOIL
	2.0	
GREEN AND BROWN, MOIST TO DRY, DENSE TO VERY DENSE SILTY FINE SAND AND WEATHERED ROCK (SM) (SANDY LOAM)		NO GROUNDWATER ENCOUNTERED WHILE DRILLING; CAVED IN TO 9.0' AT COMPLETION; CAVED IN TO 9.0' AFTER 24 HOURS
	12.6	
BOTTOM OF HOLE AT 12.6'		

SOIL BORING B-3

BROWN, MOIST, LOOSE, FINE SANDY SILT (ML) (LOAM)		0" TOPSOIL
	2.0	
GREEN AND BROWN, MOIST TO DRY, VERY DENSE TO DENSE, SILTY FINE SAND AND WEATHERED ROCK FRAGMENTS (SM) (SANDY LOAM)		NO GROUNDWATER ENCOUNTERED WHILE DRILLING; CAVED IN TO 8.7' AT COMPLETION; CAVED IN TO 9.0' AFTER 24 HOURS
	14.0	
BOTTOM OF HOLE AT 14.0'		

DETAIL 9 - STONE OUTLET SEDIMENT TRAP (ST II)



NOTE: 5' MINIMUM LENGTH UP TO 5 ACRES. OVER 5 ACRES USE STONE/RIPRAP SEDIMENT TRAP ST-IV.

Construction Specifications

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
3. All cut and fill slopes shall be 2:1 or flatter.
4. The stone used in the outlet shall be small rip-rap 4" to 7" in size with a 1' thick layer of 3/4" to 11/2" washed aggregate placed on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.
5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
6. The structure shall be inspected periodically and after each rain and repairs made as needed.
7. Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentration inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and much upon trap completion and monitored and maintained erosion free during the life of the trap.
8. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.
9. Refer to Section D for specifications concerning trap dewatering.
10. Minimum trap depth shall be measured from the weir elevation.
11. The elevation of the top of any dike directing water into the trap must equal or exceed the elevation of the trap embankment.
12. Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to the placement of stone. Sections of filter cloth must overlap at least 1' with the section nearest the entrance placed on top. The filter cloth shall be embedded at least 6" into existing ground at the entrance of the outlet channel.
13. Outlet - An outlet shall be provided, including a means of conveying the discharge in an erosion free manner to an existing stable channel.

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 of 24' or greater over the structure or pipe.

Pipe Conduits

All pipes shall be circular in cross section.

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

1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasli-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appunertenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

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

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

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter. Flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket: and a 12" wide hugger type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

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

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

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

Reinforced Concrete 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.

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

30575DT2.DWG

STATE OF MARYLAND — CHARLES CROVO, SR. — No. 13204 — REGISTERED PROFESSIONAL ENGINEER

AS BUILT 5/3/99

OWNER AND DEVELOPER

MID-ATLANTIC DEVELOPMENT II, L.L.C.
c/o MR. J. THOMAS SCRIVENER
5025 DORSEY HALL DRIVE
SUITE 204
ELLICOTT CITY, MARYLAND 21042

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — No. 21147

DETAIL SHEET

SYCAMORE VALLEY II

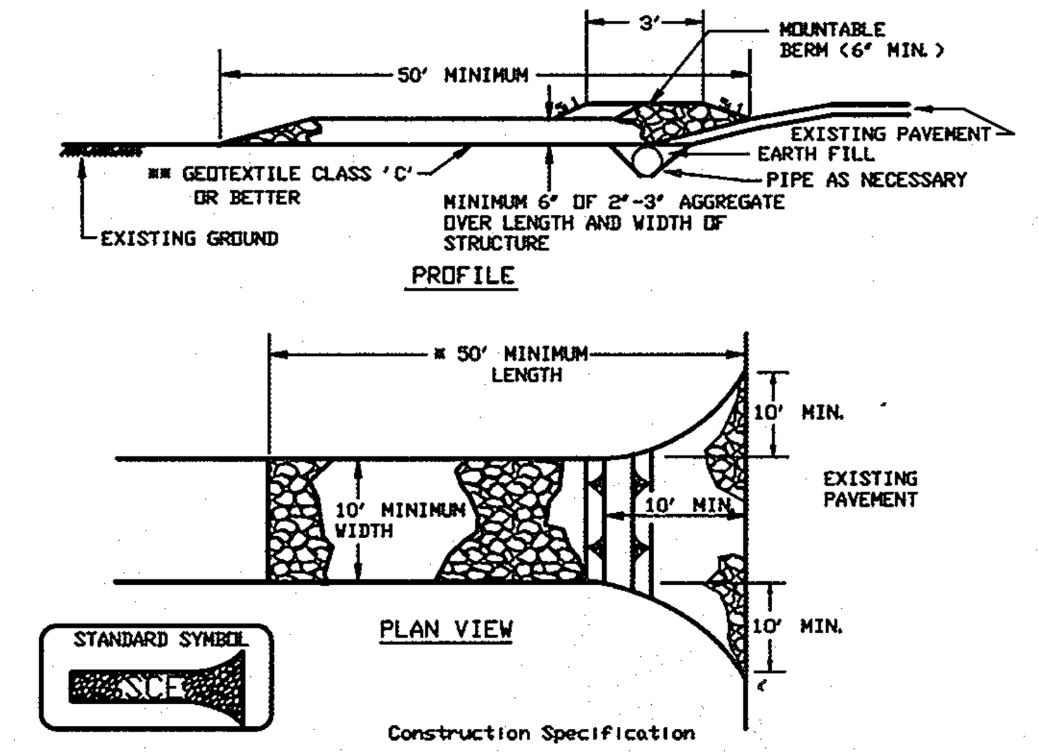
LOTS 1 - 17 AND
PRESERVATION PARCELS "A" - "C"

ZONING: RC-DEO

TAX MAP NO. : 21 PARCEL NO. : 7
FOURTH ELECTION DISTRICT HOWARD COUNTY,MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY 6, 1998
SHEET 10 OF 12

AS-BUILT 5/3/99

F-98-89



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.

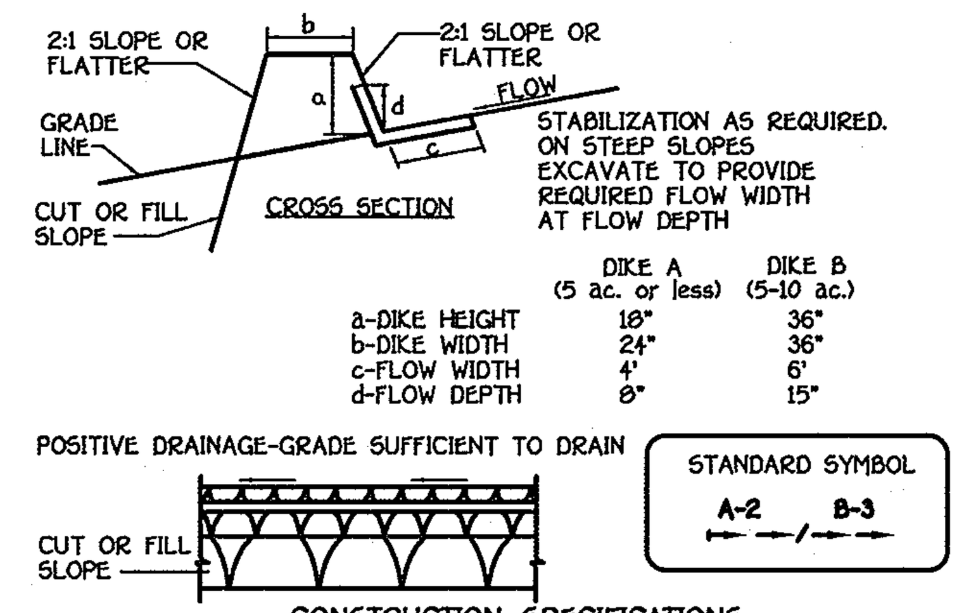
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

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



CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

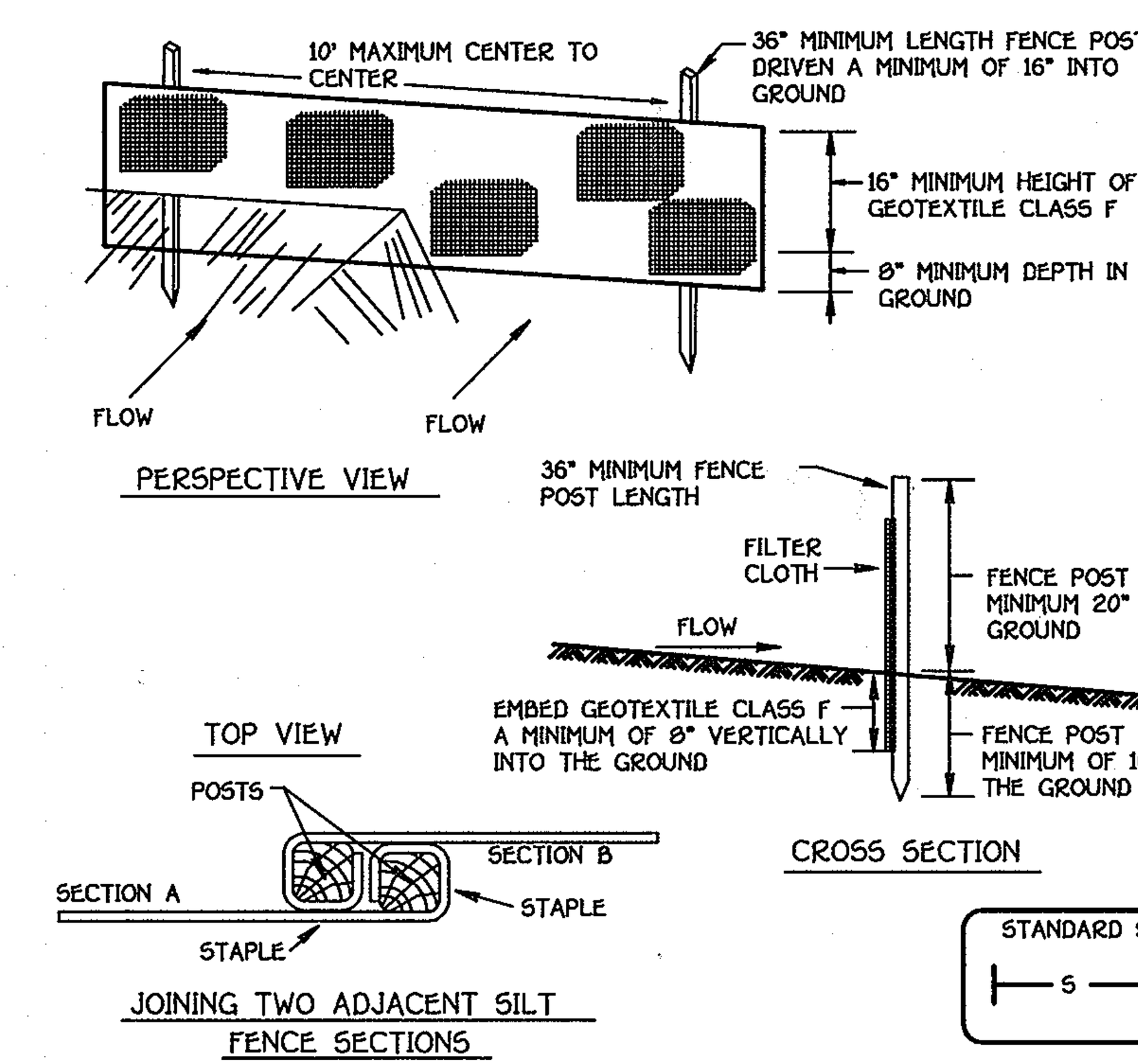
A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

EARTH DIKE

NOT TO SCALE

DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 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.

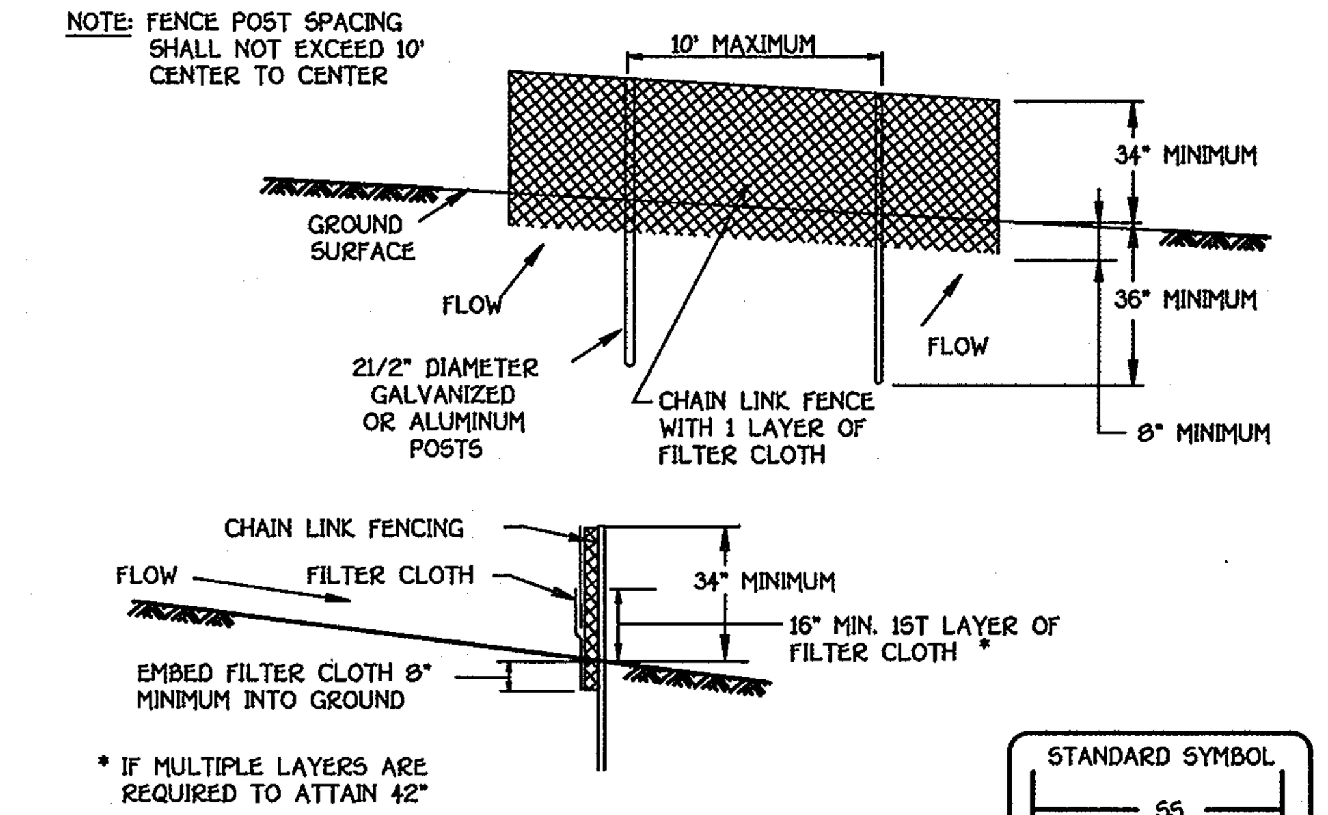
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

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.)*	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 33 - SUPER SILT FENCE



Construction Specifications

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

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

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

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

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

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

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

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

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 2/11/98

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.

Jayesh Pancholi — SIGNATURE OF ENGINEER — DATE 2-11-98

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

Cheryl Simmons — U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE — DATE 7/1/98

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

APPROVED:

Robert W. Zirbes — HOWARD SOIL CONSERVATION DISTRICT — DATE 7/1/98

APPROVED: DEPARTMENT OF PLANNING AND ZONING

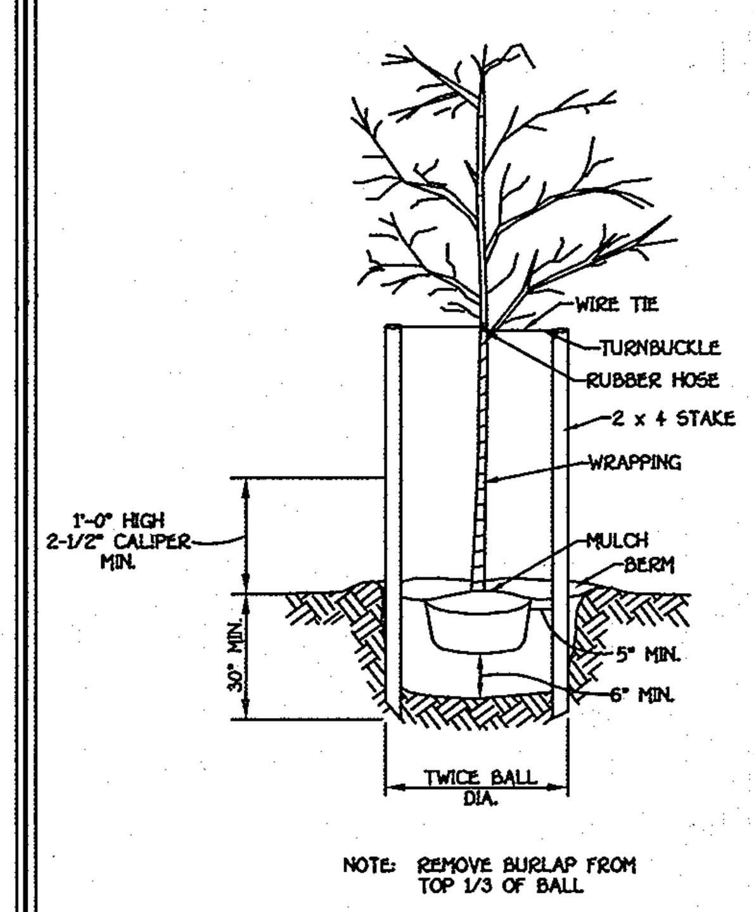
Richard Blood — CHIEF, DIVISION OF LAND DEVELOPMENT TC — DATE 7/17/98

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Dansker — CHIEF, BUREAU OF HIGHWAYS — DATE 7-9-98



TREE PLANTING

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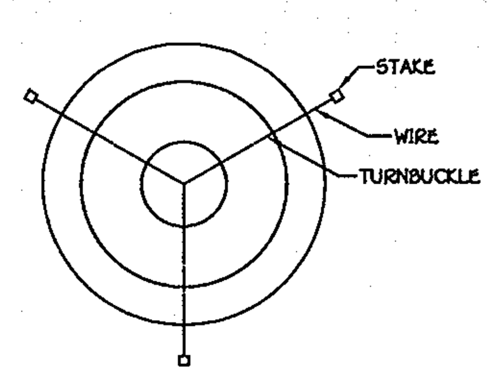
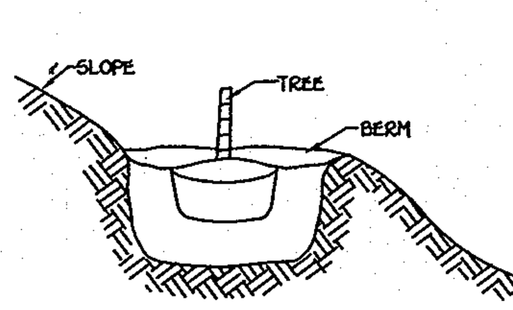


STAKING DETAIL

NOT TO SCALE



GRADING FOR PLANTING ON SLOPES

NOT TO SCALE

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.
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	36.57	ACRES
AREA DISTURBED	2.90	ACRES
AREA TO BE ROOFED OR PAVED	1.50	ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.40	ACRES
TOTAL CUT	7000	CU. YDS.
TOTAL FILL	7000	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.

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.

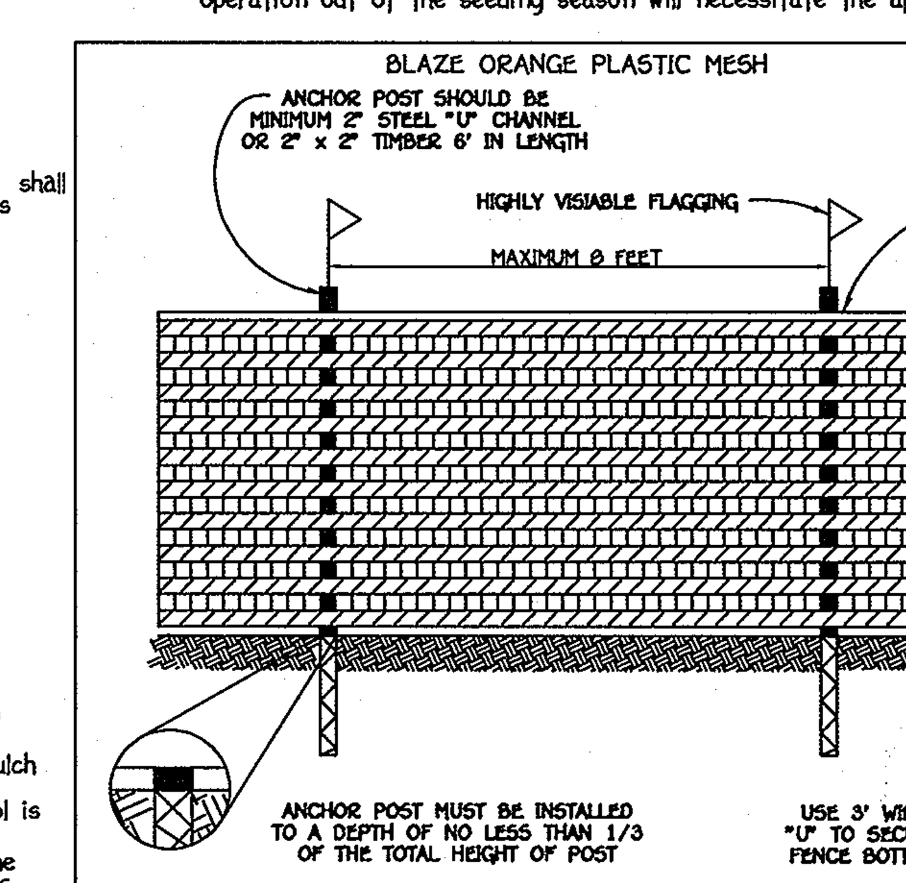
H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
   i. A mulch anchoring tool 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 placement of topsoil (if required) and permanent seed and mulch. Any interruptions int he operation of completing the operation 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.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading 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.



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.

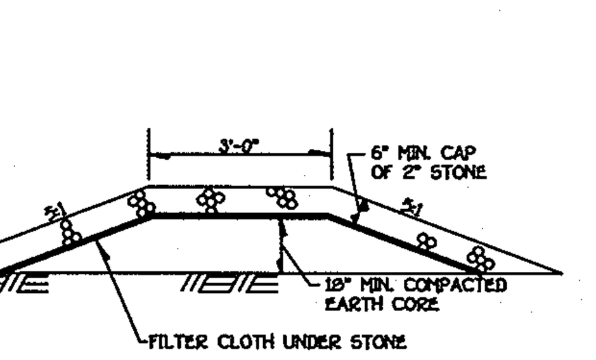
TREE PROTECTION DETAIL

NOT TO SCALE

SWM POND GEOTECHNICAL RECOMMENDATIONS

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 OF 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 GEOTECHNICAL 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. A REVIEW OF THE SITE BORINGS DID NOT INDICATE THE PRESENCE OF SUITABLE CORE OR CUT-OFF TRENCH MATERIALS AT THE TESTED LOCATIONS. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MD SCS 378 SPECIFICATIONS.



MOUNTABLE BERM DETAIL

NOT TO SCALE

OWNER AND DEVELOPER

MID-ATLANTIC DEVELOPMENT II, L.L.C.
c/o MR. THOMAS SCRIVENER
5026 DORSEY HALL DRIVE
SUITE 204
ELLICOTT CITY, MARYLAND 21042

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

305750T1.DWG

STATE OF MARYLAND — CHARLES ... — REGISTERED PROFESSIONAL ENGINEER — 13201 (stamp) — AS BUILT 5/3/99

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER (stamp)

SEDIMENT CONTROL NOTES AND DETAILS

SYCAMORE VALLEY II

LOTS 1 - 17 AND PRESERVATION PARCELS "A" - "C"

ZONING: RC-DEO
TAX MAP NO. : 21 PARCEL NO. : 7
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY 6, 1998

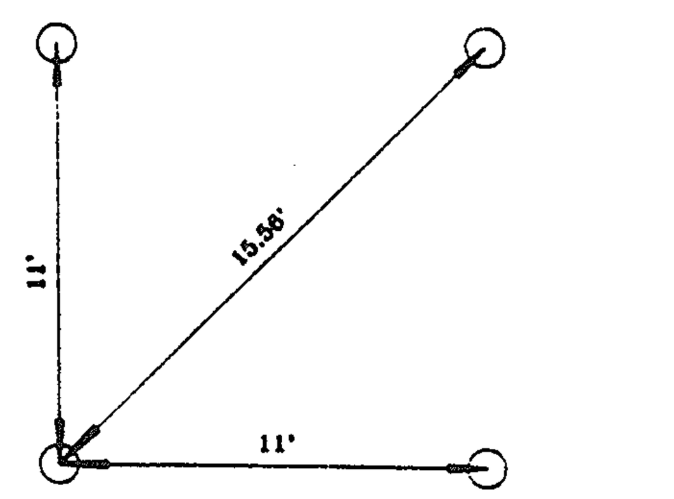
AS-BUILT 5/3/99

F-98-89

SOILS LEGEND

SOIL	NAME	CLASS
ChB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	B
* Co	Codorus silt loam	C
* CuB	Comus silt loam, local alluvium, 3 to 8 percent slopes	B
EkB2	Elioak silt loam, 3 to 8 percent slopes, moderately eroded	B
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
* GnA	Glenville silt loam, 0 to 3 percent slopes	C
* GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	C
** Ha	Hatboro silt loam	D
MlB2	Manor loam, 3 to 8 percent slopes, moderately eroded	B
MlC2	Manor loam, 8 to 15 percent slopes, moderately eroded	B
MlD3	Manor loam, 15 to 25 percent slopes, severely eroded	B
MlE	Manor loam, 25 to 45 percent slopes	B
MnD	Manor very stony loam, 3 to 25 percent slopes	B
MnF	Manor very stony loam, 25 to 60 percent slopes	B

NOTES:
- * Hydric soils and/or contains hydric inclusions
- ** May contain hydric inclusions
- † Generally only within 100-year floodplain areas



TYPICAL 11' X 11' PLAN VIEW

RANDOMIZED PLANTING DETAIL

ROW	A	B	C	D	E	F	G	H	I	J	K	L
A	1	2	3	4	2	1	2	3	4	3	1	3
B	3	5	4	2	2	3	1	4	5	4	3	2
C	4	2	2	2	1	3	2	3	5	1	2	2
D	3	1	1	1	3	5	5	1	3	2	1	1
E	4	2	3	2	3	5	1	1	2	2	2	3
F	1	4	5	2	1	3	2	1	4	5	1	2
G	3	5	1	1	2	1	5	4	3	3	3	1
H	3	1	1	3	2	3	2	1	3	3	1	3

1	25%	MIXED OAKS
2	25%	TULIP POPLAR
3	25%	RED MAPLE
4	15%	FLOWERING DOGWOOD
5	10%	WHITE PINE

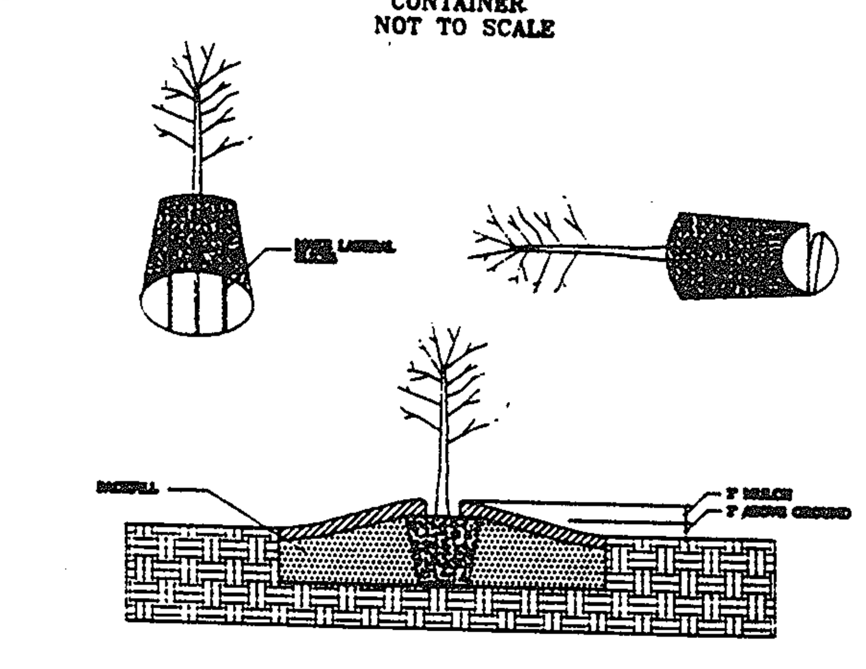
PLANT QUANTITIES

TYPE	ROOT	SIZE	QTY
OAK (VARIOUS)	1-3 GAL. CONT.	3-4'	292
TULIP POPLAR	"	"	292
RED MAPLE	"	"	292
FLOWER. DOG.	"	"	174
WHITE PINE	1-3 GAL. CONT.	3-4'	116
			1166

NOTE: INSPECT FOREST CONSERVATION PLANTINGS TWICE/YEAR TO MONITOR PLANT SURVIVAL AND TAKE APPROPRIATE MAINTENANCE STEPS TO ENSURE SURVIVAL AT SPECIFIED LEVEL. MAINTENANCE MAY INCLUDE MOWING TWICE ANNUALLY, WATERING, MULCHING, SPRAYING AND FERTILIZING.

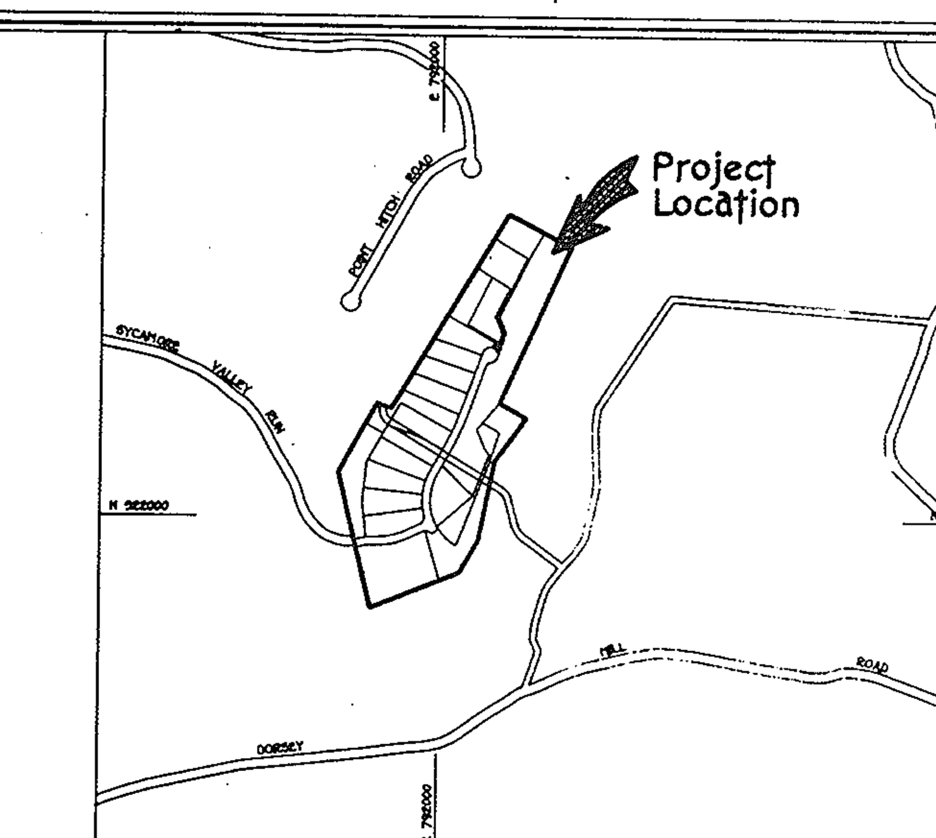
WHIP PLANTING DETAIL

CONTAINER
NOT TO SCALE

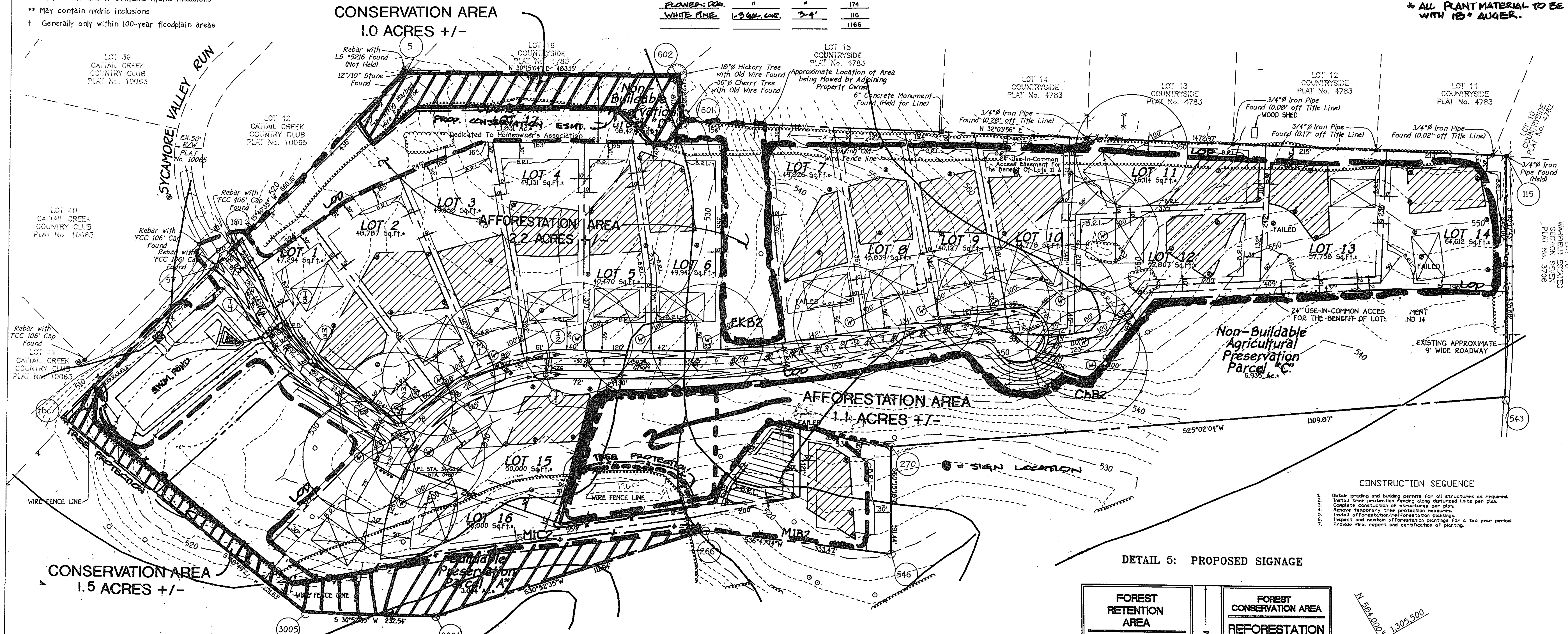


PLANTING PROCEDURES FOR POT BOUND CONTAINER GROWN PLANTS

* ALL PLANT MATERIAL TO BE AUGERED WITH 18" AUGER.



Vicinity Map
Scale: 1" = 1200'



GnB2

MlD3

MlC2

CONSTRUCTION SEQUENCE

Obtain grading and building permits for all structures as required.
Install tree protection fencing along disturbed limits per plan.
Complete construction of structures per plan.
Remove temporary tree protection measures.
Install afforestation/reforestation plantings.
Inspect and maintain afforestation plantings for a two year period.
Provide final report and certification of planting.

DETAIL 5: PROPOSED SIGNAGE

FOREST RETENTION AREA
MACHINERY, DUMPING OR STORAGE OF ANY MATERIAL IS
PROHIBITED
VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991

FOREST CONSERVATION AREA
REFORESTATION PROJECT
TREES FOR YOUR FUTURE
FORESTRY DESIGN BY: EXPLORATION RESEARCH, INC. 8318 FORREST STREET ELLICOTT CITY, MARYLAND 21043 (410) 750-1150

15" MINIMUM
11" MINIMUM
11" MINIMUM

ROAD CENTERLINE CURVE TABULATION

STREET NAME	FROM STA. TO STA.	RADIUS	DELTA	ARC LENGTH
SYCAMORE VALLEY RUN	29+89.79 - 30+91.10	R=316.00'	18°22'10"	101.31'
SYCAMORE VALLEY RUN	30+91.10 - 32+87.20	R=406.30'	27°39'15"	196.10'
SYCAMORE VALLEY RUN	-0+58.64 - 3+23.33	R=343.75'	82°57'28"	381.97'
SYCAMORE VALLEY RUN	5+25.15 - 7+27.48	R=1324.51'	08°45'08"	202.33'

PLANTING NOTES

1. Area will be planted in late winter and early spring. Planting may begin as soon as the ground is no longer frozen. Contact Exploration Research, Inc. for guidance prior to planting if an alternate date is proposed.

2. Soil amendment and fertilization recommendations will be made based upon the results of soil analyses for nitrogen, phosphorus, potassium, organic matter content, and PH. Apply woodchips or hardwood bark mulch as shown in details provided.

3. Planting materials will consist of containerized whips planted on 11' X 11' Average density over the planting area will be 350 trees/acre. Hardwood spieces will consist of a randomized mix of three major and two minor spieces. A typical planting plan is shown in the RANDOM PLANTING DIAGRAM DETAIL.

4. Plant material shall be nursery grown containerized stock in compliance with all standards of the AAN 'American Standard for Nursery Stock'. All nursery stock is to be grown in container for a minimum of one full growing season.

5. Substitutions in plant species or size shall be made only with written approval of Exploration Research, Inc.

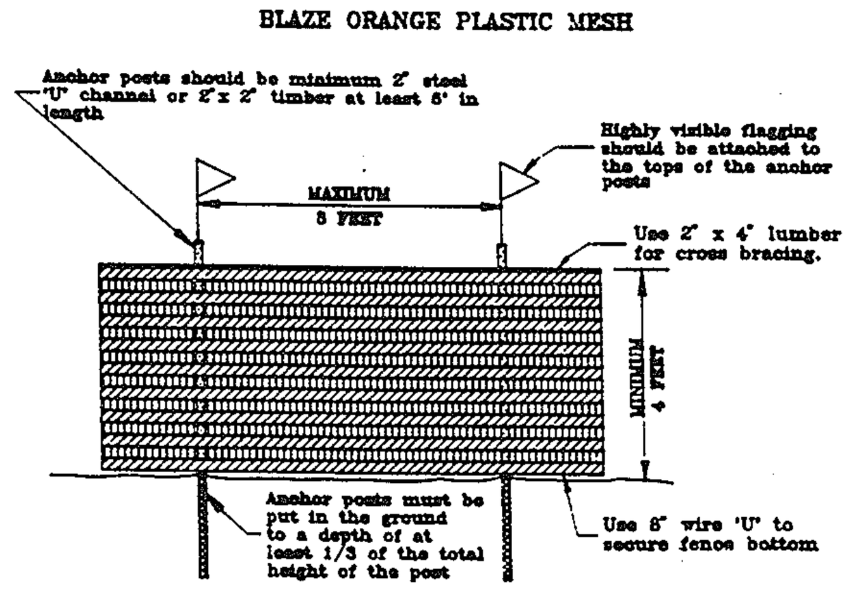
6. The contractor shall transport and handle plants to ensure protection from dessication and breakage.

7. The contractor shall guarantee 75% survival of plant stock through the second growing season.

8. All treesa shall be thoroughly watered immediately after planting and biweekly thereafter during the first growing season.

DETAIL 1: TREE PROTECTION FENCE

BLAZE ORANGE PLASTIC MESH



GENERAL 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.

Source: Prince George's County, Maryland: Woodland Conservation Manual

PLAN
0' 100' 150' 200'
Scale: 1" = 100'

PRESERVATION AREA NOTES

1. ALL PROPOSED ACTIVITIES SHALL CONFORM TO THE TERMS, CONDITIONS AND SCHEDULES OF AN APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.

2. SNOW FENCING, [TYPICAL SECTION SHOWN IN PLAN DETAIL 1] SHALL BE INSTALLED ALONG ALL TREE SAVE AREAS THAT ARE WITHIN FIFTY FEET [50'] OF PROPOSED CONSTRUCTION ACTIVITIES. THE TREE PROTECTIVE DEVICES SHALL BE IN PLACE AT THE TIME CONSTRUCTION ACTIVITIES COMMENCE. NO PROTECTIVE DEVICES SHALL BE INSTALLED ALONG TREE SAVE AREAS THAT ARE GREATER THAN FIFTY (50') FEET FROM CONSTRUCTION ACTIVITY. THE LOCATION OF ALL TREE PROTECTION DEVICES ARE SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN DRAWINGS WHICH WILL BE INCORPORATED INTO THIS TREE CONSERVATION PLAN BY REFERENCE.

N 583,000 E 1,305,500

N 584,000 E 1,305,500

MINIMUM LOT SIZE CHART

Lot No.	Gross Area	Pipestem Area	Minimum Lot Size
11	46,114 Sq.Ft.	2,974 Sq.Ft.	43,140 Sq.Ft.
12	52,807 Sq.Ft.	581 Sq.Ft.	52,226 Sq.Ft.
13	57,758 Sq.Ft.	6,373 Sq.Ft.	51,385 Sq.Ft.
14	64,612 Sq.Ft.	10,047 Sq.Ft.	54,565 Sq.Ft.

FOREST MANAGEMENT NOTES

PRECONSTRUCTION
Conduct a preconstruction meeting with the contractor(s) to review forest protection measures and practices. Consultant to select edge trees to remove as appropriate.

DURING CONSTRUCTION
Provide maintenance to tree protection measures.

Water trees having critical root zone impacts on a bi-weekly basis or as needed.

Monitor conditions of remaining trees for signs of stress (leaf discoloration, leaf drop, insect infestation, etc). ■

POST CONSTRUCTION (TWO YEAR MINIMUM)
Inspect existing trees around the perimeter of disturbed limits for signs damage or stress from construction, including excessive compaction in the root zone.■

Evaluate remaining trees for signs of stress and conduct appropriate cultural management: crown reduction, pruning, watering, soil aeration, fertilizing, etc. Remove dead or dying trees and evaluate for hazard trees.■

■ A licensed arborist or forester should be retained for these services.

GENERAL NOTES:

1. SUBJECT PROPERTY ZONED "RC-DEO" PER 10/18/1992 COMPREHENSIVE ZONING.
2. TOTAL AREA OF PROPERTY = 36.565 Ac.*
   a) AREA OF PROPOSED BUILDABLE LOTS: 18.070 AC.*
   b) AREA OF ROAD RIGHT-OF-WAY: 2.135 Ac.*
   c) TOTAL NO. OF BUILDABLE LOTS: 16
   d) TOTAL NO. OF BUILDABLE PRESERVATION PARCELS = 1
   e) TOTAL AREA OF BUILDABLE PRESERVATION PARCELS = 3.044 AC.*
   f) TOTAL NO. OF NON-BUILDABLE PRESERVATION PARCELS = 3
   g) TOTAL AREA OF NON-BUILDABLE PRESERVATION PARCELS = 11.485 AC.
3. DENSITY CALCULATIONS:
   a) BASE DENSITY: 36.565 : 4.25 AC./UNIT = 8.6 OR 8 UNITS
   b) MAX. DENSITY WITH "CEO" OPTION : 36.565 : 2 AC./UNIT = 18.28 OR 18 UNITS
   c) PROPOSED No. OF UNITS = 17 BUILDING LOTS AND PRESERVATION PARCEL
   d) NUMBER OF CEO'S REQUIRED = 17 UNITS - 8 UNITS = 9 UNITS
4. ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS.
5. PRIVATE WATER AND SEWER WILL BE USED WITHIN THE PROJECT
6. THE WETLANDS DELINEATION STUDY AND FOREST CONSERVATION PLANS WERE PREPARED BY EXPLORATION RESEARCH, INC.
7. THE TRAFFIC-STUDY WAS PREPARED BY STREET TRAFFIC STUDIES.
8. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN WETLAND OR STREAM BUFFERS. UNLESS, APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING OF HOWARD COUNTY, MARYLAND.
9. THIS AREA DESIGNATED A PRIVATE SEWERAGE EASEMENT OF 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWER DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENTS INTO THE PRIVATE SEWERAGE EASEMENT. RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
10. THE LOTS HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
11. THIS PLAN IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY AND TOPOGRAPHIC SURVEY PERFORMED ON OR ABOUT AUGUST, 1996 BY FISHER, COLLINS, AND CARTER INC.
12. DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
    A) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE)
    B) SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING
    C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45 FOOT TURNING RADIUS
    D) STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING)
    E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
    F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
    G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE
13. ALL AREAS ARE MORE OR LESS (*)
14. 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.
15. NO CEMETERIES EXIST ON THE PROPERTY.
16. OPEN SPACE REQUIRED = 36.565 Ac.* x 5% = 1.828 Ac.*
17. OPEN SPACE PROVIDED = 1.831 Ac.*
18. ALL STREET TREE PLANTINGS AND PERIMETER AND S.W.M. PLANTINGS WILL BE INSTALLED BY THE DEVELOPER IN CONJUNCTION WITH THE FINAL PLAN.

APPENDIX G
FOREST CONSERVATION WORKSHEET

ACRES. (1/10 acre)

I. BASIC SITE DATA

GROSS SITE AREA	36.6
AREA WITHIN 100 YEAR FLOODPLAIN	—
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	11.5
NET TRACT AREA	25.1
LAND USE CATEGORY (R-RLD, R-RMD, R-S, C/I/O, I) R-RMD	

II. INFORMATION FOR CALCULATIONS

A.	NET TRACT AREA	25.1
B.	REFORESTATION THRESHOLD (25 % x A)	6.3
C.	AFFORESTATION MINIMUM (20 % x A)	5.0
D.	EXISTING FOREST ON NET TRACT AREA	3.1
E.	FOREST AREAS TO BE CLEARED	0.7
F.	FOREST AREAS TO BE RETAINED	2.4

Select the alternative that applies:

1. No clearing below the Minimum

   If existing forests are less than the afforestation minimum (if D is less than C) and no clearing is proposed, the following calculations apply:

   TOTAL AFFORESTATION REQUIRED C - D —

   Afforestation must make total forest area equal the minimum required.

2. Clearing below the Minimum

   If existing forests are less than the afforestation minimum (if D is less than C) and clearing is proposed, the following calculations apply:

   AFFORESTATION FOR UNFORESTED AREAS BELOW MINIMUM C - D 1.9
   AFFORESTATION FOR CLEARING BELOW MINIMUM E X 2 1.4
   TOTAL AFFORESTATION REQUIRED (C - D) + (E x 2) 3.3

FOREST CON. PLAN & DETAILS

AS BUILT 5/3/99

STATE OF MARYLAND CHARLES J. CROVO PROFESSIONAL ENGINEER

STATE OF MARYLAND STEVEN STANNARD REGISTERED LANDSCAPE ARCHITECT

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.# 30529PC2.DWG

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Richard Blood — 7/12/98
A/CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

[signature] — 7/10/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION TC DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

Andrew M. Daneker — 7-9-98
CHIEF, BUREAU OF HIGHWAYS DATE

EXPLORATION RESEARCH, INC
8318 FORREST STREET
HISTORIC ELLICOTT CITY, MARYLAND 21043
PHONE: (410) 750-1150, FAX: (410) 750 7350

OWNER AND DEVELOPER
MID-ATLANTIC DEVELOPMENT II, LLC
c/o MR. J. THOMAS SCRIVENER
8808 CENTER PARK DRIVE, SUITE, 204
COLUMBIA, MARYLAND 21046

SYCAMORE VALLEY II
LOTS 1 - 17 AND PRESERVATION PARCELS "A" - "C"

ZONING: RC-DEO
TAX MAP NO. : 21 PARCEL NO. : 7
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY 6, 1998

AS-BUILT 5/3/99 print F-98-89