

ROAD CONSTRUCTION PLANS TROTTER WOODS, SECTION ONE FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTIONS DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:

MISS UTILITY	1-800-257-7777
C&P TELEPHONE COMPANY	(410) 725-9976
HOWARD COUNTY BUREAU OF UTILITIES	(410) 313-4900
AT&T CABLE LOCATION DIVISION	(410) 393-3533
BALTIMORE GAS & ELECTRIC	(410) 685-0123
STATE HIGHWAY ADMINISTRATION	(410) 531-5533
HOWARD COUNTY DEPT. OF PUBLIC WORKS/ CONSTRUCTION INSPECTION DIVISION	(410) 313-1880

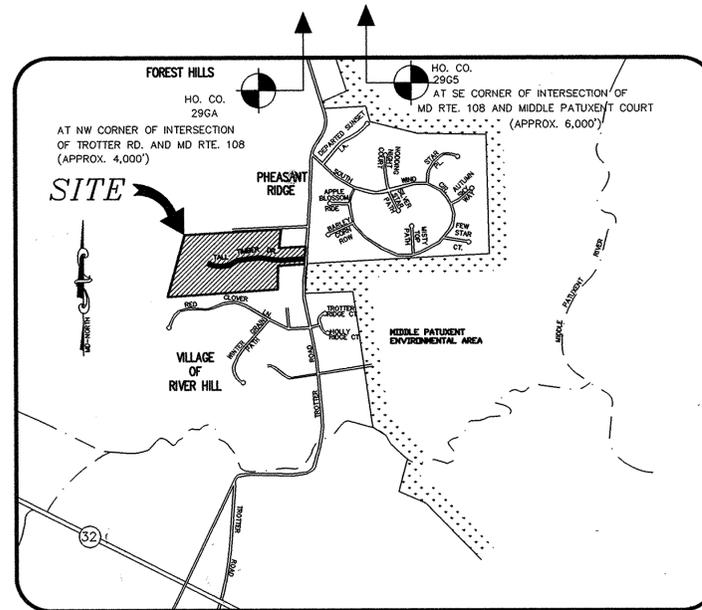
- PROJECT BACKGROUND:**
 LOCATION: 5th ELECTION DISTRICT TAX MAP 35
 LOTS: 3, 28, 29, 30 & 31
 ZONING: R - 20
 NUMBER OF LOTS: 32
 NUMBER OF BUILDABLE LOTS: 28
 TOTAL AREA OF SITE: 20.21 AC.±
 PRIOR DPZ FILE NOS.: F-81-119 PLAT 4917, F-83-96, PLAT 5590, S-97-02, P-98-01.
- DEED REFERENCE: PLAT 4917, PLAT 5590, L323/F185, L1051/F682, L3868/F0617, L1221/F073, L2593/F392.
- TWO FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS ARE BASED ON A FIELD RUN TOPOGRAPHIC SURVEY BY JOHN C. MELAMA, SR. IN 1996.
- HORIZONTAL DATUM BASED ON (NAD'83) AND VERTICAL DATUM BASED ON NAVD'29 MARYLAND STATE COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS.

STA No. 29GA	N 566,867.417	EL = 450.83
	E 1,333,325.606	
STA No. 29G5	N 568,341.182	EL = 388.10
	E 1,335,392.455	

- STREET LIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- EXISTING UTILITIES LOCATIONS ARE BASED ON AS-BUILT DRAWINGS ON RECORD AT HOWARD COUNTY.
- FLOODPLAIN DELINEATION BASED ON STUDY BY MILDENBERG, BOENDER & ASSOC. DATED MAY 1997.
- WETLANDS AND FOREST STAND DELINEATION BY ECO-SCIENCE PROFESSIONALS, INC. ON DEC. 1996.
- WATER AND SEWER ARE PUBLIC, CONTRACT # 24-3643-D
- STORMWATER MANAGEMENT WILL BE PROVIDED THROUGH BIORETENTION AND PARTIAL FEE IN LIEU PAYMENT. THE BIORETENTION FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED (P.O.A.).
- THE STREET LIGHT LOCATIONS AND TYPES OF LIGHTS SHOWN ON SHEET 2 ARE AS FOLLOWS:
 - 150-WATT HPS VAPOR PENDANT (CUTOFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12" ARM ANGLED RADIAL TO THE FILLET AT TALL TIMBER DRIVE, STATION 0+15, 30' RIGHT (LIGHT POLE #1).
 - 100-WATT "TRADITIONAIRE" HPS VAPOR POST TOP FIXTURE ON A 14' BLACK FIBERGLASS POLE AT TALL TIMBER DRIVE, STATION 7+90, 17.50' RIGHT (LIGHT POLE #2) AND AT THE END OF THE CUL-DE-SAC L.P. STATION 1+00, 3' LEFT (LIGHT POLE #3).
- FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.200 OF HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OR CONSERVATION EASEMENT ARE ALLOWED.
- CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES ON SITE PRIOR TO COMMENCING CONSTRUCTION.
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- COMPACTION IN FILL AREAS TO BE 95% DETERMINED PER AASHTO T-180.
- THE FOLLOWING HATCHES ARE USED IN THESE ROAD CONSTRUCTION DRAWINGS:

	ROAD PAVEMENT
	SIDEWALK
	TREE MAINTENANCE AND UTILITY EASEMENT
	PRIVATE SWM EASEMENT
	UTILITY EASEMENT
- BOUNDARY IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY BY JOHN C. MELAMA, SR., INC. IN OR ABOUT 1996.

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VICINITY MAP

SCALE: 1"=1000'

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Clayton Simmons 8/6/98
USDA NATURAL RESOURCE CONSERVATION SERVICE DATE

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

John R. Robertson 8/6/98
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Pascale 8-25-98
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hammett TO 9/9/98
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Clayton Simmons 9/1/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DEVELOPER'S CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

[Signature] 7/29/98
SIGNATURE OF DEVELOPER DATE

Robert [Name] MEMBER
PRINTED NAME OF DEVELOPER

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

[Signature] 7/29/98
SIGNATURE OF ENGINEER DATE

R. JACOB HIKMAT
PRINTED NAME OF ENGINEER



DEVELOPER
TROTTER WOODS, LLC.
c/o LAND DESIGN & DEVELOPMENT INC.
10805 HICKORY RIDGE ROAD
COLUMBIA, MARYLAND 21044
(410) 740-2100

date	JULY 1997
project	97021
illustration	SD
scale	PKP/SD
approval	AS SHOWN

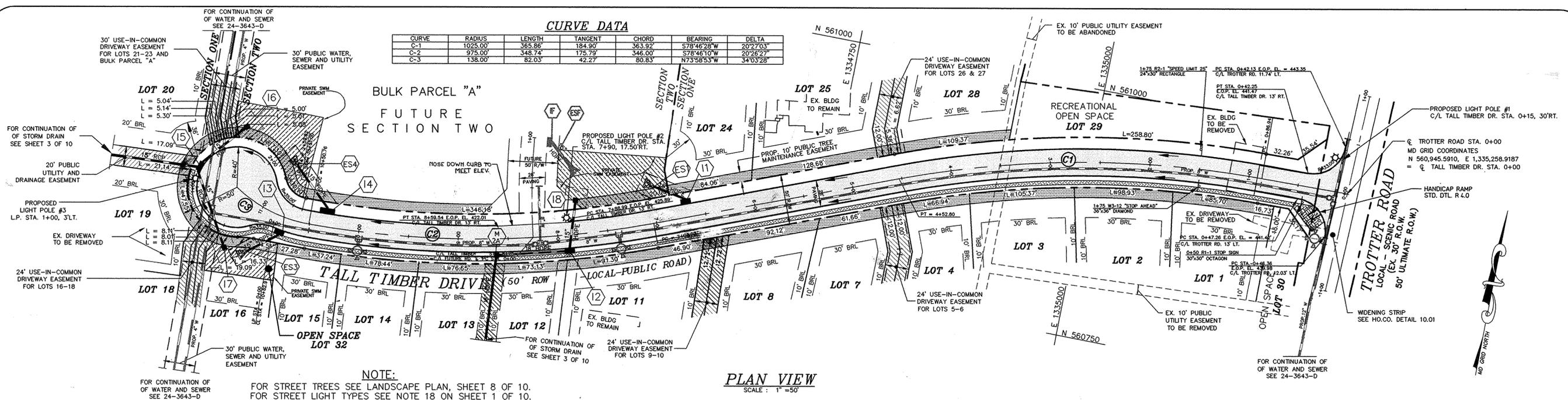
no.	description	revisions	date

TROTTER WOODS, SECTION 1
LOTS 1 THRU 32 AND BULK PARCEL A
TAX 35, LOTS 3, 28, 29, 30 & 31
5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND
COVER SHEET

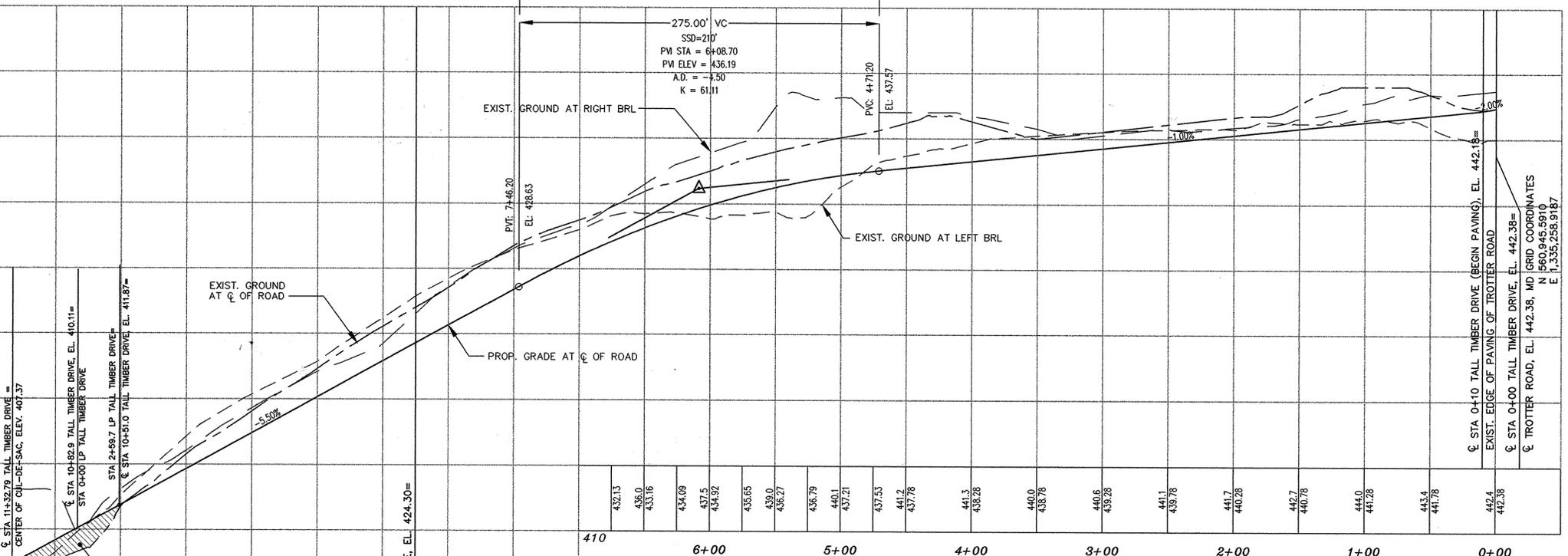
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042
(410) 987-0296 Fax. (301) 621-5521 Wash. (410) 987-0296 Fax.

CURVE DATA

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C-1	1025.00'	365.86'	184.90'	363.92'	S78°46'29"W	20°27'03"
C-2	975.00'	348.74'	175.79'	346.00'	S78°46'10"W	20°26'27"
C-3	138.00'	82.03'	42.27'	80.83'	N73°58'53"W	34°03'28"

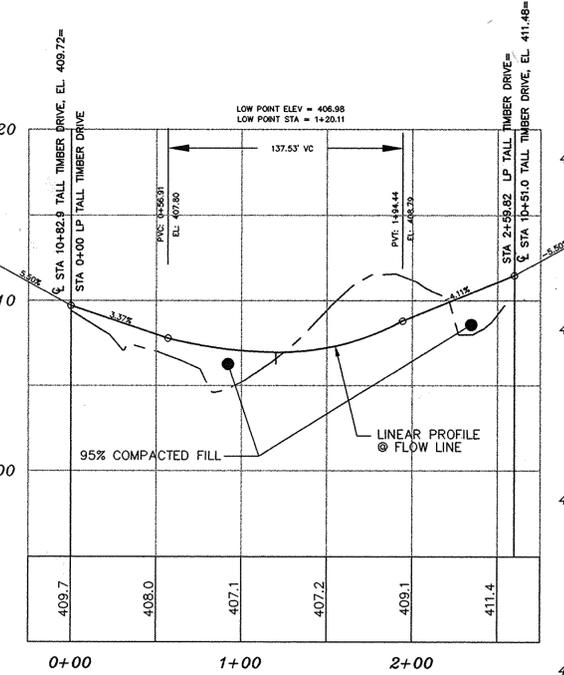


PLAN VIEW
SCALE: 1"=50'



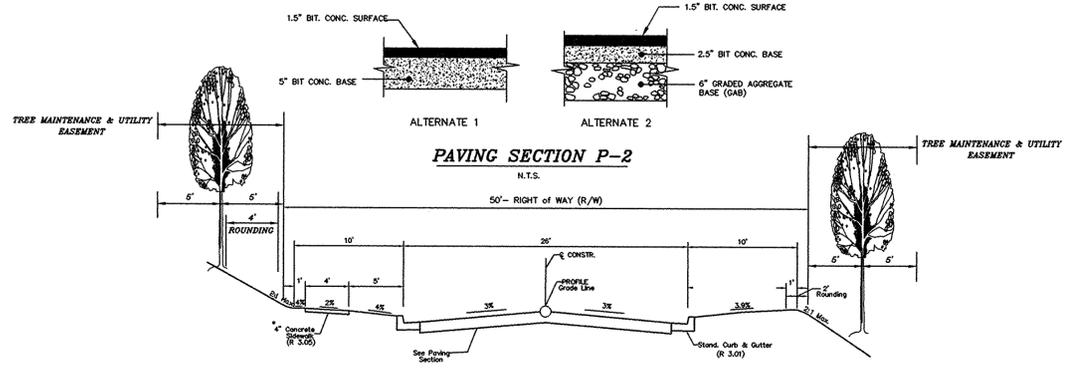
TALL TIMBER DRIVE PROFILE

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'
DESIGN SPEED: 30 MPH
CLASSIFICATION: LOCAL ROAD



TALL TIMBER DRIVE LINEAR PROFILE

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



TYPICAL SECTION

H.T.S.
TALL TIMBER DRIVE
DESIGN SPEED: 30 MPH
CLASSIFICATION: LOCAL ROAD

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Dangel 8-25-18
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Erin Hamilton 9/19/18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chris Dammus 9/19/18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



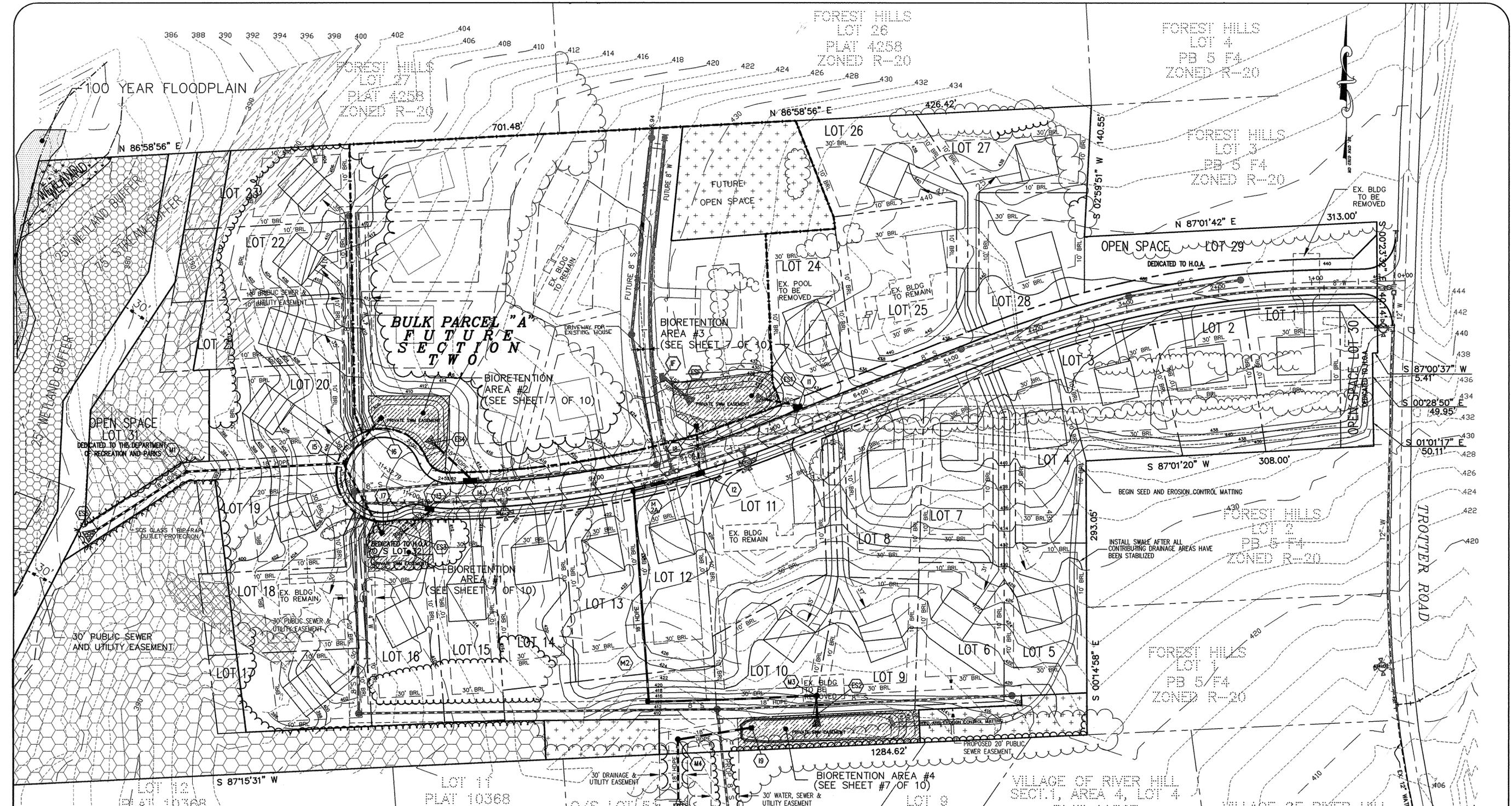
Project	97021	date	JULY 1987
Illustration	SD	engineering	PJK/SD
scale	AS SHOWN	approval	APP/OWL

no.	1	description	REVISE STORM DRAIN ALIGNMENT	date	12-3-98
no.		revisions			

TROTTER WOODS SECTION 1
LOTS 1 THRU 32 AND BULK PARCEL A
TAX 35, LOTS 3, 28, 29, 30 & 31
5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROAD PLAN AND PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5092 Dorson Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0286 Bldg. (301) 627-5521 Wash. (410) 997-0288 Fax.



THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Clayton Simmons 8/6/98
USDA - NATURAL RESOURCE CONSERVATION SERVICE DATE

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

John K. Dunston 8/6/98
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Donnell 8-25-98
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hamilton 9/9/98
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John J. Vanaman 9/1/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DEVELOPER'S CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

John J. Vanaman 7/29/98
SIGNATURE OF DEVELOPER DATE

John J. Vanaman - MEMBER
PRINTED NAME OF DEVELOPER

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

R. JACOB HIKMATT 7/29/98
SIGNATURE OF ENGINEER DATE

R. JACOB HIKMATT
PRINTED NAME OF ENGINEER



- LEGEND:**
- 15-24.9% SLOPES
 - > 25% SLOPES
 - DESIGNATES AREAS OF WETLANDS
 - DESIGNATES AREAS OF FLOODPLAIN
 - DESIGNATES SEWER AND UTILITY EASEMENT
 - DESIGNATES FOREST CONSERVATION AREA (RETENTION)
 - DESIGNATES FOREST CONSERVATION AREA (REFORESTATION)
 - PRIVATE SWM EASEMENT
 - EXISTING TREELINE
 - PROPOSED TREELINE

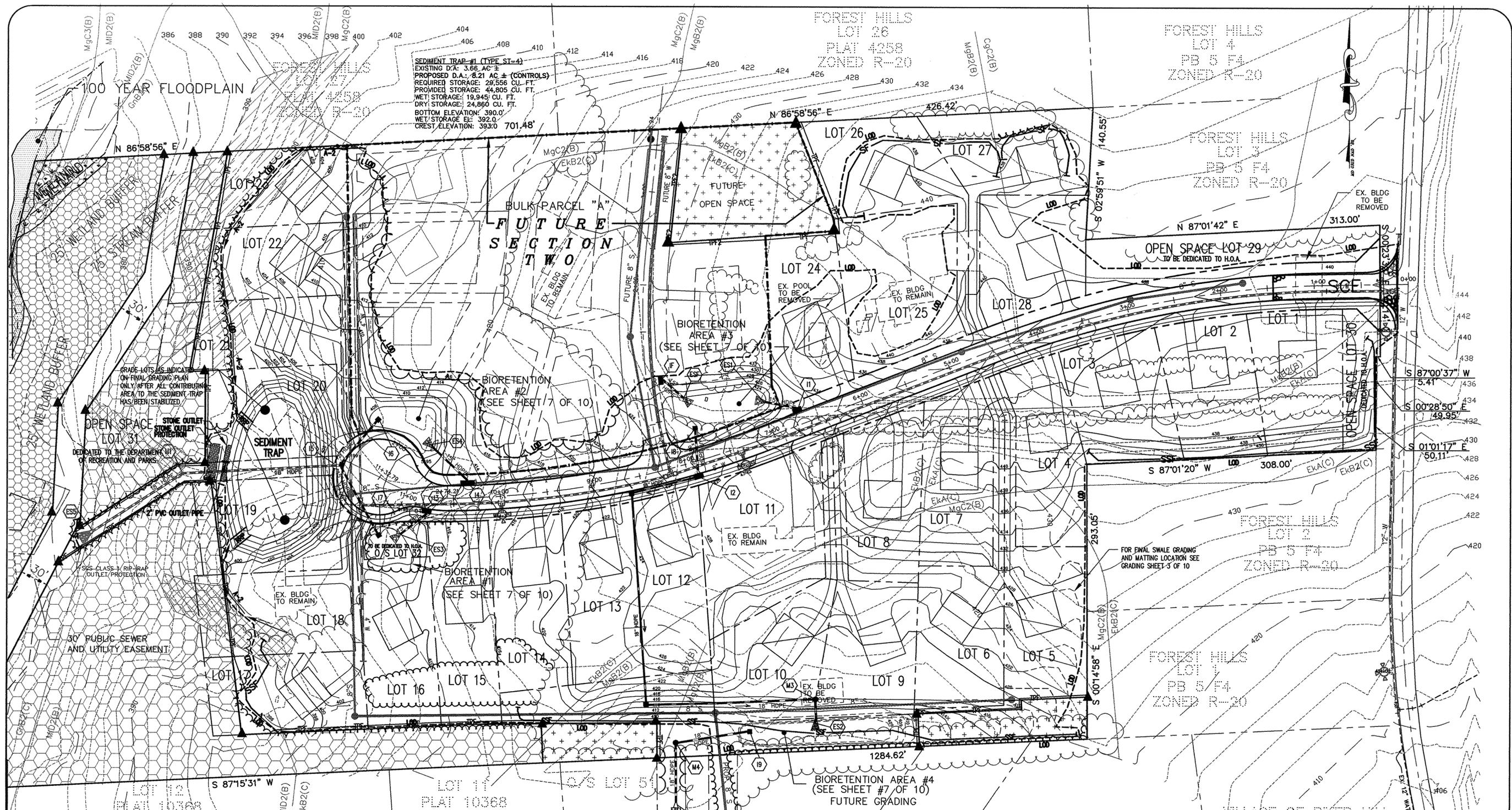
project	97021	date	JULY 1998
illustration	SD	engineering	PKP/SD
scale	1"=50'	approval	

no.	1	description	REVISE STORM DRAIN FROM L-2 TO ES-2	date	11-10-98
		revisions			

TROTTER WOODS, SECTION 1
LOTS 1 THRU 32 AND BULK PARCEL A
TAX 35, LOTS 3, 28, 29, 30 & 31
5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

GRADING PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0286 Bldg. (301) 621-5521 Wash. (410) 997-0298 Fax.



SEDIMENT TRAP #1 (TYPE ST-4)
 EXISTING D.A.: 3.66 AC ±
 PROPOSED D.A.: 8.21 AC ± (CONTROLS)
 REQUIRED STORAGE: 29,556 CU. FT.
 PROVIDED STORAGE: 44,805 CU. FT.
 WET STORAGE: 19,945 CU. FT.
 DRY STORAGE: 24,860 CU. FT.
 BOTTOM ELEVATION: 390.0'
 WET STORAGE EL: 392.0'
 CREST ELEVATION: 393.0' 701.48'

BIORETENTION AREA #1
 (SEE SHEET 7 OF 10)

BIORETENTION AREA #2
 (SEE SHEET 7 OF 10)

BIORETENTION AREA #3
 (SEE SHEET 7 OF 10)

BIORETENTION AREA #4
 (SEE SHEET #7 OF 10)
 FUTURE GRADING

BIORETENTION AREA #1
 (SEE SHEET 7 OF 10)

BIORETENTION AREA #2
 (SEE SHEET 7 OF 10)

BIORETENTION AREA #3
 (SEE SHEET 7 OF 10)

BIORETENTION AREA #4
 (SEE SHEET #7 OF 10)
 FUTURE GRADING

BIORETENTION AREA #4
 (SEE SHEET #7 OF 10)
 FUTURE GRADING

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Cheryl Simmons 8/6/98
 USDA - NATURAL RESOURCE CONSERVATION SERVICE DATE

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

John P. Adams 8/6/98
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 8-25-98
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Andy Hanatta 9/9/98
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Allen Primm 9/1/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DEVELOPERS CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

[Signature] 7/29/98
 SIGNATURE OF DEVELOPER DATE

Alma Smith - MEMBER
 PRINTED NAME OF DEVELOPER

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

[Signature] 7/29/98
 SIGNATURE OF ENGINEER DATE

R. JACOB HIKMAT
 PRINTED NAME OF ENGINEER



LEGEND:

- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- A-1 EARTH DIKE
- LOD --- LIMIT OF DISTURBANCE
- TPF --- TREE PROTECTIVE FENCING
- ▲ FOREST CONSERVATION SIGNAGE
- SEE STABILIZED CONSTRUCTION ENTRANCE
- EXISTING TREELINE
- PROPOSED TREELINE
- FUTURE 2 FOOT CONTOUR
- FUTURE 10 FOOT CONTOUR
- 15-24.9% SLOPES
- > 25% SLOPES
- DESIGNATES AREAS OF WETLANDS
- DESIGNATES AREAS OF FLOODPLAIN
- DESIGNATES SEWER AND UTILITY EASEMENT
- DESIGNATES FOREST CONSERVATION AREA (RETENTION)
- DESIGNATES FOREST CONSERVATION AREA (REFORESTATION)

Project	797021	date	JULY 1998
Illustration	SD/P&P	engineering	
scale	1" = 50'	P&P/SD	
description		approval	

no.	1	revision	REVERSE STORM DRAIN FROM L2 TO ES-2
date	12/1/98	description	
no.		revision	

TROTTER WOODS, SECTION 1
 LOTS 1 THRU 34 AND BULK PARCEL A
 TAX 35, LOTS 3, 28, 29, 30 & 31
 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND
EROSION AND SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Surveyors
 Engineers
 Planners
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 987-0296 Fax: (301) 821-5521 Wash. (410) 987-0298 Fax.

HOWARD SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

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

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SPECIFICATIONS:

- 1) PREFERRED - APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ.FT.).
2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. PER ACRE (1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (.05 LBS./1000 SQ.FT.) OF WEeping LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) - 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) - USE SOD. OPTION (3) - SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WITH A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.)

SEEDING - FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHES PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEeping LOVEGRASS (.07 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU NOVEMBER 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED WEED FREE SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- 1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES 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 REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 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 1991 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 PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:
TOTAL AREA OF SITE: 20.21 ACRES
AREA DISTURBED: 11.17 ACRES
AREA TO BE ROOFED OR PAVED: 2.34 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 8.33 ACRES
TOTAL CUT: 16,500 CU. YDS.
TOTAL FILL: 16,500 CU. YDS.
TOTAL WASTE/BORROW AREA LOCATION: 0

- 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 CONTROL 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 PERMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

- I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

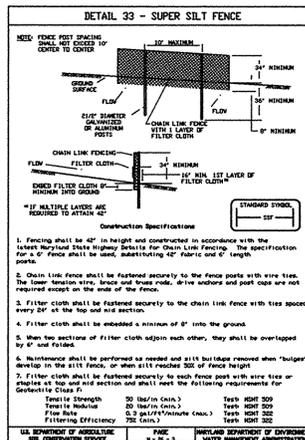
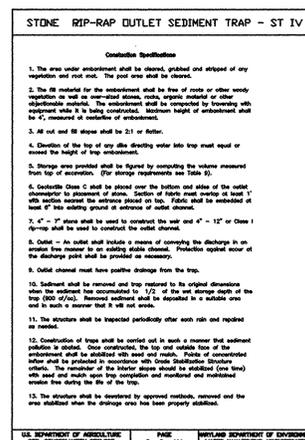
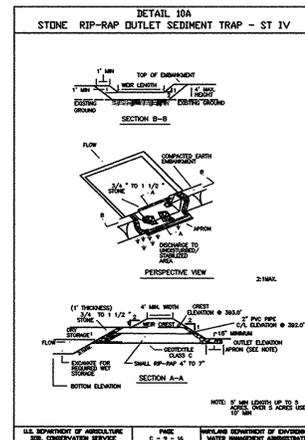
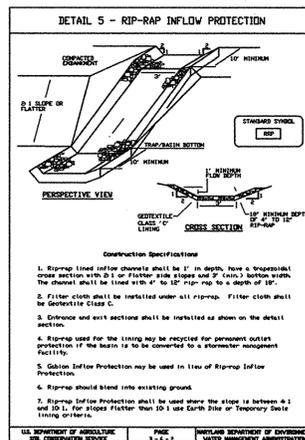
- I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATION. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
i. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF GINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
ii. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSON-SOON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
iii. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
i. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
IV. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
i. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
a. pH FOR TOPSOILS SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A pH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE pH TO 6.5 OR HIGHER.
b. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
c. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
d. NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
ii. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

- V. TOPSOIL APPLICATION
i. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
ii. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 8" HIGHER IN ELEVATION.
iii. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" TO 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
iv. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
VI. ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
i. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
a. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS WHO ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
b. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHOROUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
c. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
iv. COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.
EXTENSION SERVICE: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING, MD-VIA, PUB. #1, COOPERATIVE RESEARCH SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

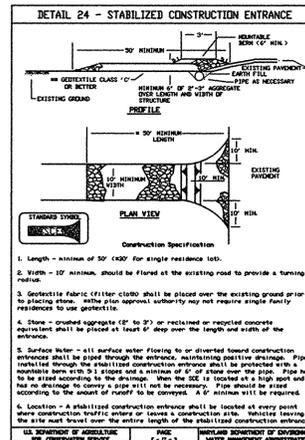
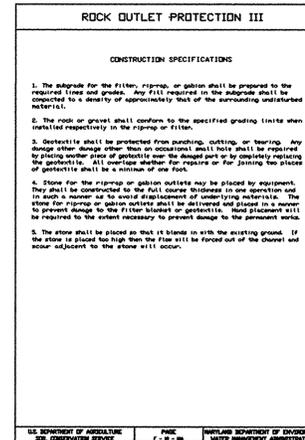
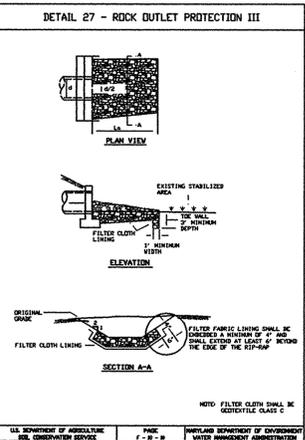
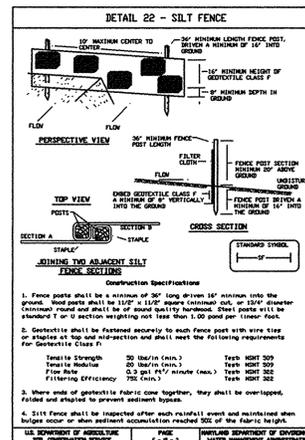
SEQUENCE OF CONSTRUCTION

- 1. OBTAIN GRADING PERMIT.
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE. (1 DAY)
3. CLEAR AND GRUB AREAS SURROUNDING SEDIMENT CONTROL FEATURES. (2 DAYS)
4. CONSTRUCT ALL SEDIMENT CONTROL FEATURES. INSTALL TREE PROTECTION DEVICES AS DESCRIBED ON THE FOREST CONSERVATION PLAN. (3 DAYS)
5. CONSTRUCT SEDIMENT TRAP TO TEMPORARY GRADES AND STABILIZE USING TEMPORARY SEEDING METHODS. (5 DAYS)
6. CONSTRUCT STORM DRAIN SYSTEM. DO NOT CONSTRUCT THE RUN FROM INLET 5 TO END SECTION 5. THIS WILL BE COMPLETED ONCE SEDIMENT TRAP HAS BEEN REMOVED. (10 DAYS)
7. SANDBAG ALL INLETS SHUT AFTER CONSTRUCTION.
8. CLEAR SITE PER LIMIT INDICATED. (10 DAYS)
9. GRADE SITE AS INDICATED ON THE PLANS WITH THE EXCEPTION OF BIORETENTION FACILITY #4. (14 DAYS)
10. UPON STABILIZATION OF GRADED AREAS, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE STORM DRAIN SYSTEM. (1 DAY)
11. DURING CONSTRUCTION, SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT TRAPS WHEN THE CLEANOUT. ELEVATIONS HAVE BEEN REACHED. (1 DAY)
12. STABILIZE ALL RIGHT OF WAY AREAS WITH PERMANENT SEEDING. (1 DAY)
13. INSPECT ALL SEDIMENT CONTROL DEVICES DAILY AND AFTER EACH RAINFALL, REPAIR AS NECESSARY.
14. CONSTRUCT FINAL RUN OF STORM DRAIN SYSTEM FROM INLET 5 TO ENDSECTION 5. PROVIDE SEDIMENT CONTROL FOR TRENCHING BY PLACING A SILT FENCE DOWNHILL OF THE OPEN TRENCH AND BY STACKING EXCAVATION ON THE UPHILL SIDE OF THE TRENCH. ONLY TRENCH WHAT CAN BE BACKFILLED IN ONE DAY. (2 DAYS)
15. CONTRACTOR SHALL REMOVE SEDIMENT AND FLUSH STORM DRAIN SYSTEM AT END OF CONSTRUCTION PERIOD. (1 DAY)
16. GRADE BIORETENTION FACILITY #4 TO GRADES SHOWN. (1 DAY)
17. CONSTRUCT BIORETENTION FACILITIES AS SHOWN ON SHEET 7 OF 10. (2 DAYS)

- 17. CONTRACTOR SHALL DEWATER THE BIORETENTION FACILITIES, REMOVE ACCUMULATED SEDIMENTS, AND GRADE TO FINAL GRADES. (4 DAYS)
18. WHEN ALL CONTRIBUTING AREAS TO SEDIMENT CONTROL DEVICES HAVE BEEN PERMANENTLY STABILIZED, AND AFTER THE APPROVAL OF THE INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES, GRADE AREAS DISTURBED, AND PROVIDE PERMANENT SEED AND MULCH. (4 DAYS)
19. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN
A.) 7 CALENDAR DAYS FOR ALL PERIMETER SLOPES AND GREATER THAN 3:1.
B.) 14 DAYS FOR ALL OTHER DISTURBED GRADED AREAS ON THE PROJECT SITE.

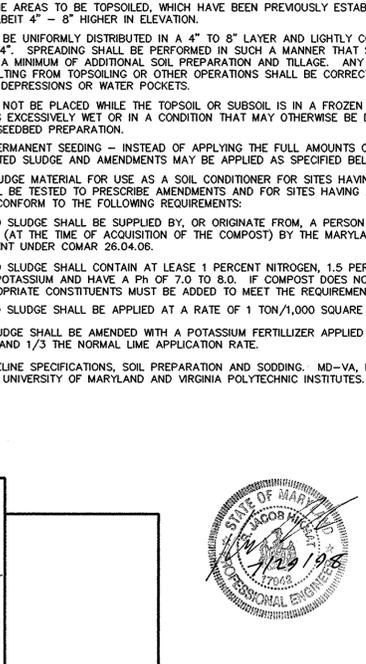


SUPER SILT FENCE. A table with columns for 'Slope Steepness', 'Slope Length (Maximum)', and 'Silt Fence Length (Maximum)'. It lists specifications for slopes of 0-100, 10-200, 20-300, 30-500, and 500+.



DEVELOPERS CERTIFICATE. A section containing signatures and dates for the developer and the Howard Soil Conservation District. It includes a site analysis table and a certification statement.

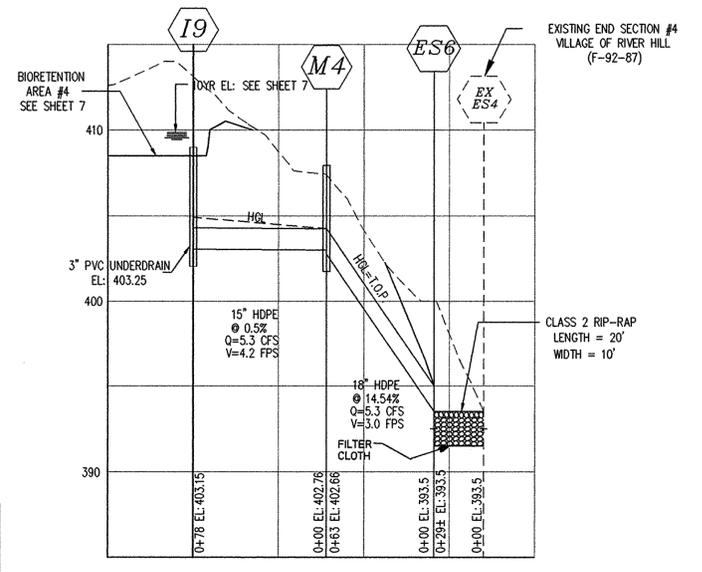
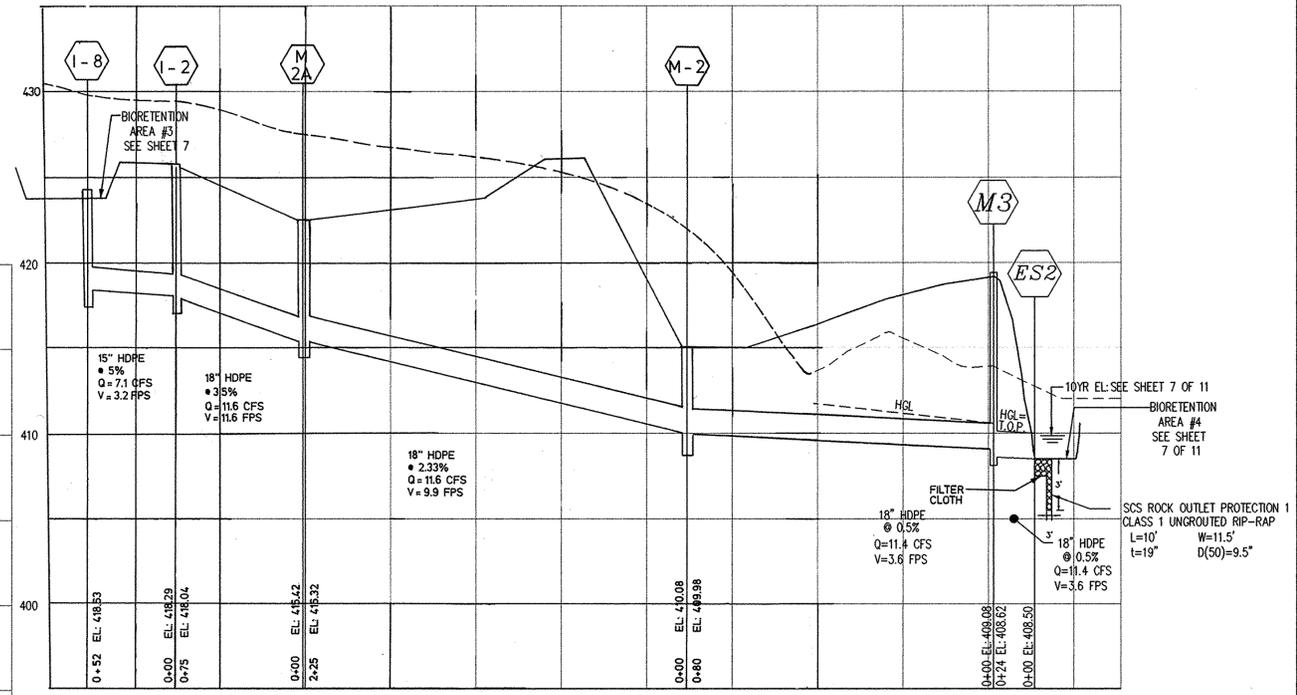
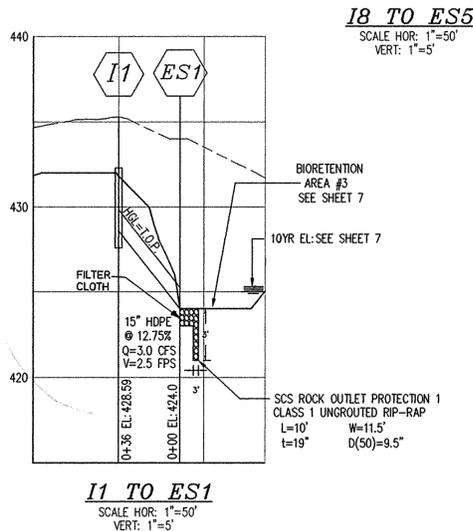
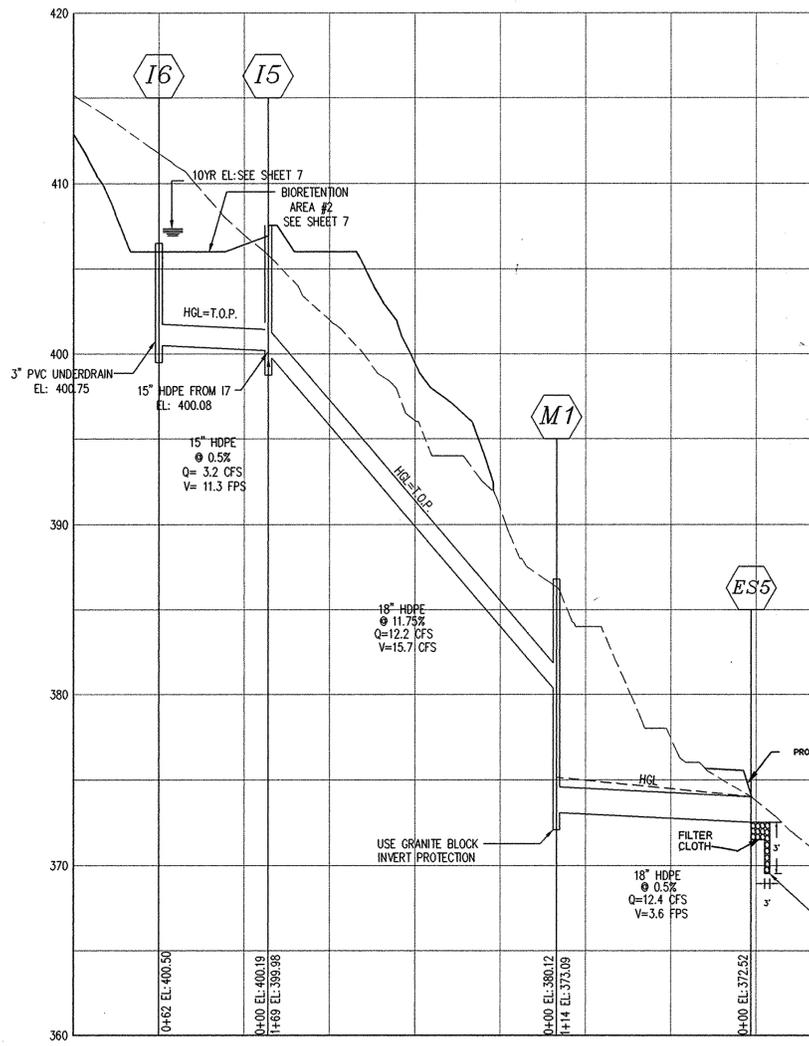
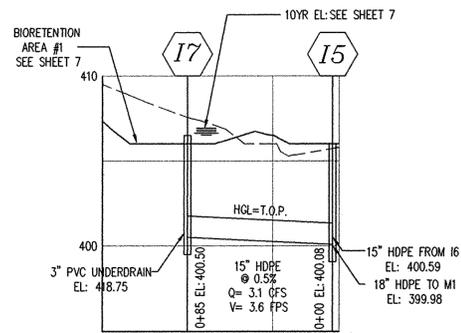
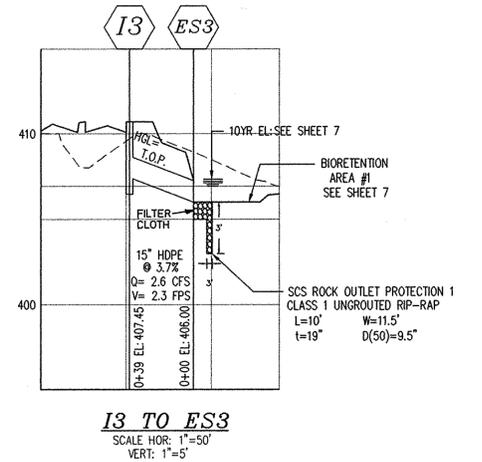
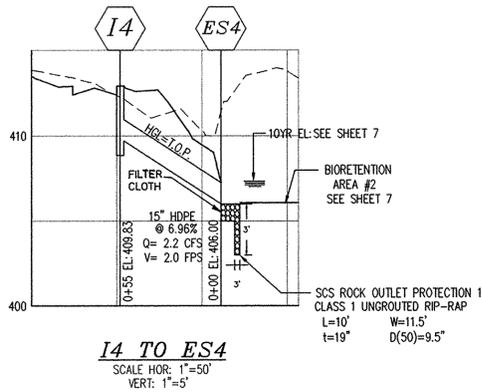
ENGINEER'S CERTIFICATE. A section containing a signature and date for the engineer, R. JACOB HIKMAT, and a certification statement regarding the plan for erosion and sediment control.



Project information table with columns for date, project number, illustration, scale, and approval. Values include 10/1/87, 97021, SD, and AS SHOWN.

TROTTER WOODS, SECTION 1 LOTS 1 THRU 32 AND BULK PARCEL A TAX 35, LOTS 3, 28, 29, 30 & 31 HOWARD COUNTY, MARYLAND 5th ELECTION DISTRICT

MILDENBERG, BOENDER & ASSOC., INC. Engineers Planners Surveyors. 5072 Dorsey Hill Drive, Suite 202, Elkton City, Maryland 21042 (410) 997-0286 Fax. (410) 997-0286. Includes a logo and the text '5 OF 10'.



STRUCTURE SCHEDULE

NO.	LOCATION	TOP/RIM EL.	INV. IN	INV. OUT	COMMENTS
I-1	TALL TIMBER RD. STA 6+67.64 - 13' OFFSET RIGHT	432.66	---	428.59	INLET TYPE A-10 (HO. CO. STD SD 4.02)
I-2	TALL TIMBER RD. STA 7+89.49 - 13' OFFSET LEFT	426.46	418.29	418.12	INLET TYPE A-10 (HO. CO. STD SD 4.02)
I-3	TALL TIMBER RD. STA 10+75.86 - 13' OFFSET LEFT	410.71	---	407.45	INLET TYPE A-10 (HO. CO. STD SD 4.02)
I-4	TALL TIMBER RD. STA 10+34.41 - 13' OFFSET RIGHT	412.99	---	409.83	INLET TYPE A-10 (HO. CO. STD SD 4.02)
I-5	TALL TIMBER RD. LIN. PRO. STA 1+20.11' OFFSET 0'	407.55	400.98	399.98	INLET TYPE A-5 (HO. CO. STD SD 4.01)
I-6	TALL TIMBER LIN.PRO. STA 1+67.96 - 19.6' LEFT	---	---	---	SEE BIORETENTION SHEET 7 OF 10
I-7	TALL TIMBER DR. STA 11+10.55 - 53.88' OFFSET LEFT	---	---	---	SEE BIORETENTION SHEET 7 OF 10
I-8	TALL TIMBER DR. STA 7+79.37 - 31.59' OFFSET RIGHT	---	---	---	SEE BIORETENTION SHEET 7 OF 10
I-9	N 560466.0764 E 1334557.4100	---	---	---	SEE BIORETENTION SHEET 7 OF 10
ES-1	TALL TIMBER RD. STA 8+96.57 - 36.53' OFFSET RIGHT	---	---	424.0	END SECTION (HO. CO. STD SD 5.51)
ES-2	N 560476.6328 E 1334625.6475	---	---	408.50	END SECTION (HO. CO. STD SD 5.51)
ES-3	TALL TIMBER RD. STA 10+93.41 - 46.11' OFFSET LEFT	---	---	406.00	END SECTION (HO. CO. STD SD 5.51)
ES-4	TALL TIMBER RD. STA 10+84.28 - 52.32' OFFSET RIGHT	---	---	408.00	END SECTION (HO. CO. STD SD 5.51)
ES-5	N 560678.4637 E 1333859.5943	---	---	372.52	END SECTION (HO. CO. STD SD 5.51)
ES-6	N 560399.4696 E 13334481.6437	---	---	393.50	END SECTION (HO. CO. STD SD 5.51)
M-1	N 560740.3085 E 1333955.4016	386.5	380.12	373.09	MANHOLE (HO. CO. STD SD 5.01)
M-2	N 560496.0404 E 1334521.7584	416.5	409.72	409.62	MANHOLE (HO. CO. STD SD 5.01)
M-3	N 560500.8470 E 1334629.8744	418.5	409.08	408.62	MANHOLE (HO. CO. STD SD 5.01)
M-4	N 560453.8368 E 1334481.1897	408.0	402.86	402.76	MANHOLE (HO. CO. STD SD 5.01)

NOTE: ALL MEASUREMENTS ON ROAD INLETS FROM FACE OF CURB AT CENTER OF INLET, FOR OFF ROAD STRUCTURES ALL MEASUREMENTS TO CENTER INLETS OR MANHOLES
NOTE: ALL MANHOLES AND INLETS TO BE LOCATED IN CENTER OF EASEMENT IF OUTSIDE ROAD RIGHT OF WAY.

FL 97021.DWG FINAL 10/21/01 - SD.DWG

APPROVED: DEPARTMENT OF PUBLIC WORKS
Richard M. Seneke 8-25-01
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Andy Hamilton 9/9/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John DeMunn 9/1/00
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

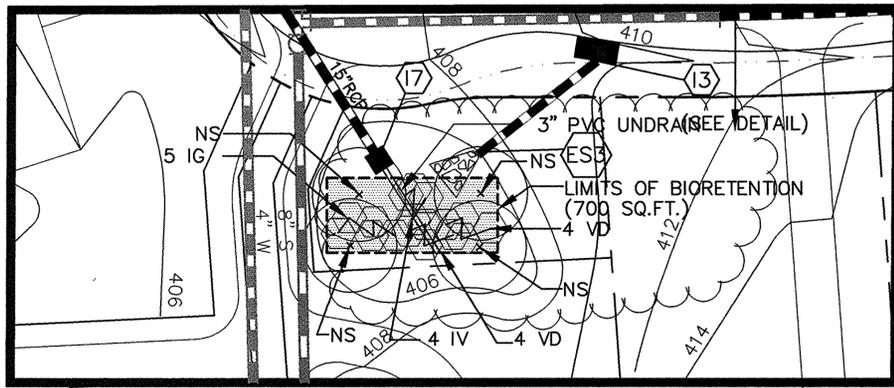


date	JULY 1998
project	97021
illustration	SD
scale	AS SHOWN
approval	SD

no.	1	description	REVISED STORM DRAIN PROFILE (I-2 TO ES-2)	date	
no.		revisions			

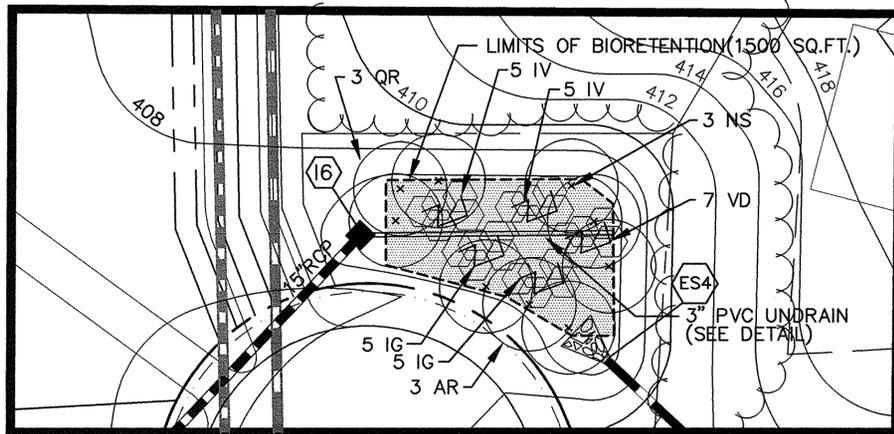
TROTTER WOODS, SECTION 1
LOTS 1 THRU 34 AND BULK PARCEL A
TAX 35, LOTS 3, 28, 29, 30 & 31
5th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
STORM DRAIN PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Elkrodt City, Maryland 21042
(410) 997-0286 Fax: (301) 621-5621 Wash. (410) 997-0288 Fax.



BIORETENTION AREA #1 PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
4	NS	NYSSA SYLVATICA	BLACK GUM	2 1/2" - 3" CAL.
8	VD	VIBURNUM DENTATUM	ARROWWOOD	2.5' - 3' HT.
4	IV	ILEX VERTICILLATA	WINTERBERRY	2.5' - 3' HT.
5	IG	ILEX GLABRA	INKBERRY	2.5' - 3' HT.
4 TREES & 13 SHRUBS=17 PLANTS				



BIORETENTION AREA #2 PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
3	NS	NYSSA SYLVATICA	BLACK GUM	2 1/2" - 3" CAL.
3	AR	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2" - 3" CAL.
3	QR	QUERCUS RUBRA	RED OAK	2 1/2" - 3" CAL.
7	VD	VIBURNUM DENTATUM	ARROWWOOD	2.5' - 3' HT.
10	IV	ILEX VERTICILLATA	WINTERBERRY	2.5' - 3' HT.
10	IG	ILEX GLABRA	INKBERRY	2.5' - 3' HT.
9 TREES & 27 SHRUBS=36 PLANTS				

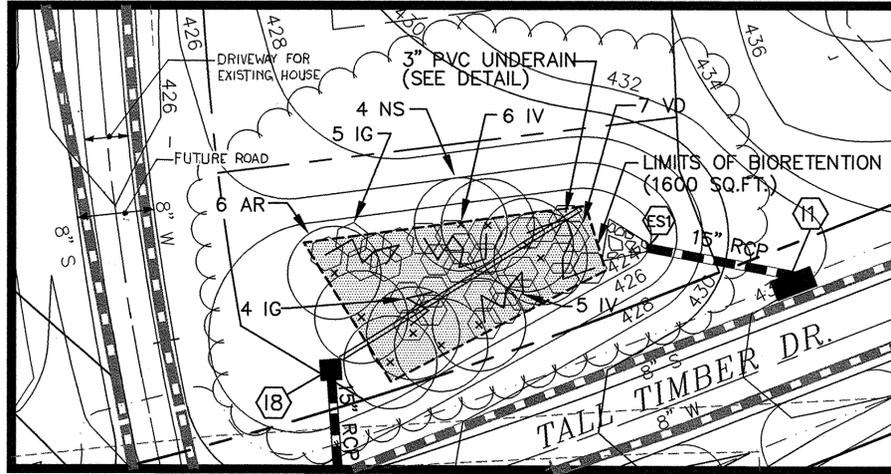
ALTERNATE PLANTS

SHRUBS

BARBERRY, JAPANESE BARBERRY, SWEET PEPPERBUSH, SWEET PEPPERBUSH, RED OSLER DOGWOOD, WINGED EUONYMUS, SPINDLE TREE, WITCH-HAZEL, COMMON ST. JOHN'S WORT, WINTERBERRY, COMMON JUNIPER, CREEPING JUNIPER, SPICE BUSH, BAYBERRY, NINBARK, NORTHERN WILD RAISIN, NANNYBERRY.

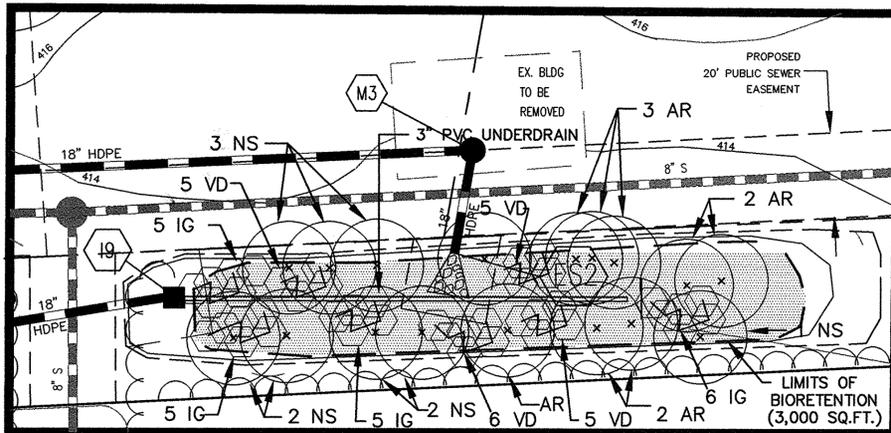
TREES

RED MAPLE, SHADBUSH, RIVER BIRCH, WHITE ASH, GREEN ASH, MALDENHAIR TREE, HONEYLOCUST, EASTERN RED CEDAR, GOLDEN RAIN TREE, SWEET GUN, BLACK GUM, LONDEN PLANE TREE, SYCAMORE, EASTERN COTTONWOOD, CALLERY PEAR, SWAMP WHITE OAK, SCARLET OAK, BUT OAK, PIN OAK, WILLOW OAK, RED OAK, SHUMARD'S RED OAK, BLACK LOCUST, JAPANESE PAGODA TREE, BALD CYPRESS, ARBORVITAE, JAPANESE ZELKOVA



BIORETENTION AREA #3 PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
4	NS	NYSSA SYLVATICA	BLACK GUM	2 1/2" - 3" CAL.
6	AR	ACER RUBRUM 'RED SUNSET'	ACER RUBRUM 'RED SUNSET'	2 1/2" - 3" CAL.
7	VD	VIBURNUM DENTATUM	ARROWWOOD	2.5' - 3' HT.
11	IV	ILEX VERTICILLATA	WINTERBERRY	2.5' - 3' HT.
9	IG	ILEX GLABRA	INKBERRY	2.5' - 3' HT.
10 TREES & 27 SHRUBS=37 PLANTS				



BIORETENTION AREA #4 PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
7	NS	NYSSA SYLVATICA	BLACK GUM	2 1/2" - 3" CAL.
9	AR	ACER RUBRUM 'RED SUNSET'	ACER RUBRUM 'RED SUNSET'	2 1/2" - 3" CAL.
21	VD	VIBURNUM DENTATUM	ARROWWOOD	2.5' - 3' HT.
22	IG	ILEX GLABRA	INKBERRY	2.5' - 3' HT.
16 TREES & 43 SHRUBS= 59 PLANTS				

PLANT MATERIAL GUIDELINES

BALLED & BURLAPPED AND CONTAINERIZED TREES AND SHRUBS SHOULD BE PLANTED BETWEEN MARCH 15 AND JUNE 30 OR SEPTEMBER 15 AND NOVEMBER 15 AS SPECIFIED ON THE ROAD PLAN DRAWINGS. GROUNDCOVERS FOLLOW TREE AND SHRUB PLANTING DATES. GRASSES AND LEGUMES SHOULD BE PLANTED IN THE SPRING.

FOR ALL PLANT INSTALLATION, THE CONTRACTOR SHALL PROVIDE A ONE (1) YEAR SOE CARE AND REPLACEMENT WARRANTY. THIS WARRANTY SHALL BEGIN AFTER INSPECTION AND APPROVAL OF THE COMPLETE INSTALLATION OF ALL PLANT MATERIAL AND CONTINUE FOR ONE (1) YEAR. REPLACEMENT OF PLANT MATERIAL SHALL CONFORM TO THE SPECIFICATIONS SET FORTH IN THE MAINTENANCE SCHEDULE.

INSTALLATION & MAINTENANCE SCHEDULE

SOILS:

SUITABLE PLANTING SOILS SHALL CONSIST OF THE FOLLOWING SOILS: LOAM, LOAMY SAND, AND/OR SANDY LOAM. INSPECT AND REPAIR EROSION MONTHLY.

ORGANIC LAYER:

ONCE TREES AND SHRUBS HAVE BEEN INSTALLED, THE MULCH MAY BE ADDED. ANY GROUNDCOVERS SPECIFIED AS PLUGS MAY BE INSTALLED ONCE THE MULCH HAS BEEN LAID DOWN. GROUNDCOVERS ESTABLISHED BY SEEDING AND/OR CONSISTING OF GRASSES SHOULD NOT BE COVERED WITH A MULCH LAYER.

SINCE THESE PLANT COMMUNITIES ARE WITHIN AN URBAN LOCATION, THE ORGANIC LAYER TENDS TO BECOME VERY ACIDIC DUE TO PRECIPITATION AND RUNOFF. ONCE TO TWICE A YEAR, TESTING OF PH OF THE ORGANIC LAYER SHALL BE DONE TO DETERMINE THE AMOUNT OF LIMESTONE REQUIRED TO TREAT THE PLANTING SOIL.

ANNUAL SOIL TESTING SHOULD BE CONDUCTED TO DETECT AND PREVENT THE ACCUMULATION OF TOXINS AND HEAVY METALS.

ONCE A YEAR IN THE SPRING BY HAND, REMOVE PREVIOUS MULCH LAYER AND APPLY NEW MULCH LAYER IF NEEDED.

WHENEVER NEEDED, REMULCH ANY VOID AREAS BY HAND.

PLANT MATERIAL:

ONCE PLANTING HAS BEEN COMPLETED, PLANT MATERIAL SHOULD BE WATERED BY HAND AT THE END OF EACH DAY FOR FOURTEEN CONSECUTIVE DAYS.

ANNUAL MAINTENANCE WILL BE REQUIRED FOR ALL PLANT MATERIAL. INSPECTION OF ALL VEGETATION SHALL OCCUR TWICE A YEAR. PLANT MATERIAL MAINTENANCE AND UPKEEP SHALL INCLUDE ADDRESSING PROBLEMS ASSOCIATED WITH DISEASE OR INSECT INFESTATIONS AND ANY NECESSARY PRUNING AS WELL AS REPLACEMENT OF DEAD PLANT MATERIAL.

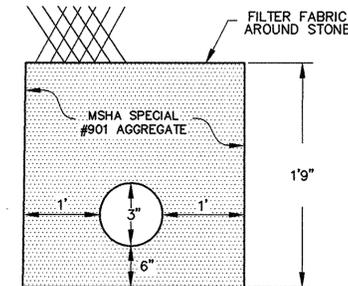
DEAD PLANT MATERIAL SHALL BE REPLACED BETWEEN MARCH 15 AND APRIL 30 OR OCTOBER 1 AND NOVEMBER 30.

DEPENDING ON THE TYPE OF INSECT AND DISEASE INFESTATION, DISEASED TREES AND SHRUBS SHOULD BE TREATED BY HAND AT VARIOUS TIMES DURING THE YEAR.

WHENEVER NEEDED, DEFICIENT STAKES OR WIRES SHOULD BE REPLACED BY HAND. ONCE

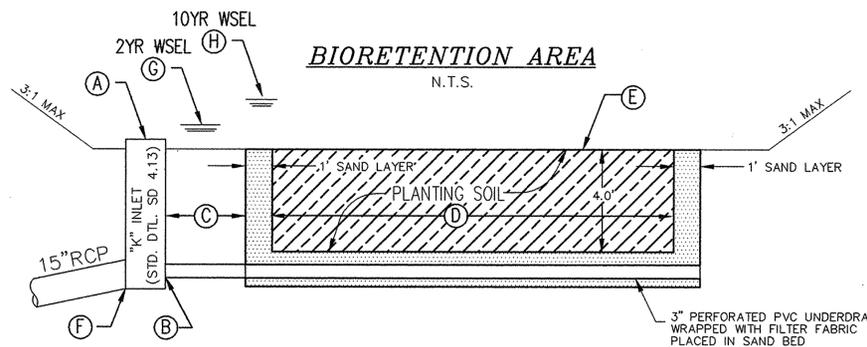
NON-ROUTINE MAINTENANCE FOR BIORETENTION AREA

1. INSPECT SIDE SLOPES OF FACILITY AND REPAIR WHEN NECESSARY.
2. REMOVE WOODY VEGETATION AS REQUIRED.
3. REPAIR TRASH RACKS AS REQUIRED.
4. REPAIR RIP RAP OUTFALL PROTECTION WHEN NECESSARY.
5. INSPECT EMBANKMENT FOR SEEPAGE.



UNDERDRAIN CROSS SECTION

N.T.S.



BIORETENTION AREA

N.T.S.

DIMENSIONS OF BIORETENTION AREAS (FT)

FACILITY	(A) INVERT OF THROAT	(B) INVERT OF UNDERDRAIN	(C)	(D) LENGTH OF PLANTING SOIL OVER UNDERDRAIN	(E) BOTTOM OF BIORETENTION FACILITY	(F) INVERT OUT	(G) 2YR WSEL	(H) 10YR WSEL
1	406.5	400.75	2.5	20.5	406.0	400.50	406.61	406.75
2	406.5	400.75	2.5	53.0	406.0	400.50	406.78	407.16
3	424.5	418.75	7.0	59.0	424.0	418.55	424.71	425.07
4	409.0	403.25	0	110.0	408.5	403.15	409.29	409.81

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL

USDA - NATURAL RESOURCE CONSERVATION SERVICE DATE: 8/16/98

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. DATE: 8/16/98

HOWARD SOIL CONSERVATION DISTRICT DATE: 8-25-98

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Andy Hanotta
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Mike Damiani
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

DEVELOPER'S CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

DATE: 7/29/98

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

DATE: 7/20/98

R. JACOB HILMAT
 PRINTED NAME OF ENGINEER



date	JULY 1998
project	97021
illustration	SD
scale	1"=20'
approval	SD

date	
description	
revisions	
no.	

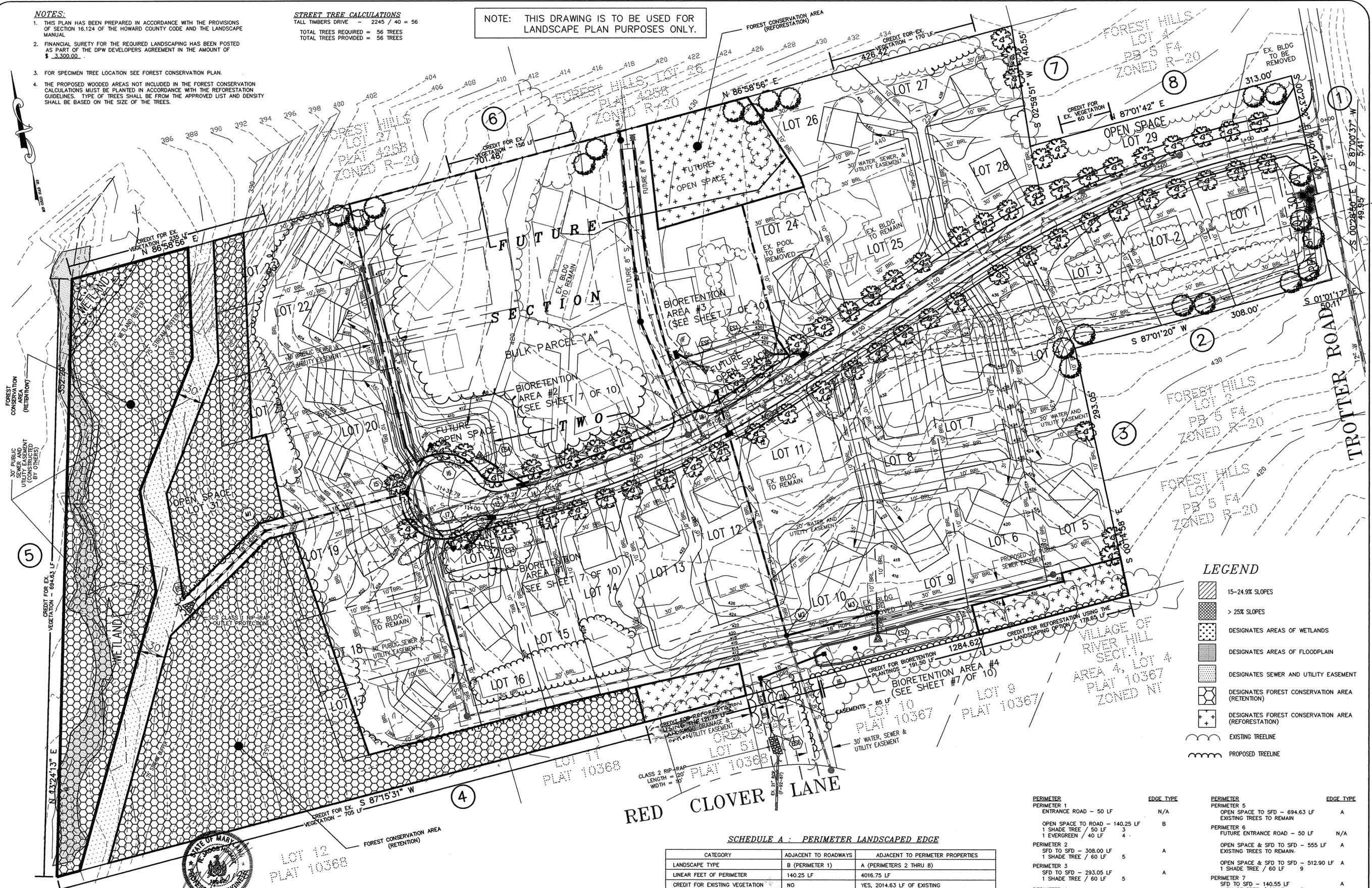
TROTTER WOODS, SECTION 1
 LOTS 1 THRU 32 AND BULK PARCEL A
 TAX MAP 35 LOTS 3, 28, 29, 30, & 31
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 BIORETENTION AREAS 1, 2, 3, AND 4

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0236 Fax: (301) 621-5521 Wash. (410) 997-0236 Fax

- NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
 - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$ 3,300.00.
 - FOR SPECIMEN TREE LOCATION SEE FOREST CONSERVATION PLAN.
 - THE PROPOSED WOODED AREAS NOT INCLUDED IN THE FOREST CONSERVATION CALCULATIONS MUST BE PLANTED IN ACCORDANCE WITH THE REFORESTATION GUIDELINES. TYPE OF TREES SHALL BE FROM THE APPROVED LIST AND DENSITY SHALL BE BASED ON THE SIZE OF THE TREES.

STREET TREE CALCULATIONS
 TALL TIMBERS DRIVE - 2245 / 40 = 56
 TOTAL TREES REQUIRED = 56 TREES
 TOTAL TREES PROVIDED = 56 TREES

NOTE: THIS DRAWING IS TO BE USED FOR LANDSCAPE PLAN PURPOSES ONLY.



- LEGEND**
- 15-24.9% SLOPES
 - > 25% SLOPES
 - DESIGNATES AREAS OF WETLANDS
 - DESIGNATES AREAS OF FLOODPLAIN
 - DESIGNATES SEWER AND UTILITY EASEMENT
 - DESIGNATES FOREST CONSERVATION AREA (RETENTION)
 - DESIGNATES FOREST CONSERVATION AREA (REFORESTATION)
 - EXISTING TREELINE
 - PROPOSED TREELINE

SCHEDULE A: PERIMETER LANDSCAPED EDGE

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	B (PERIMETER 1)	A (PERIMETERS 2 THRU 8)
LINEAR FEET OF PERIMETER	140.25 LF	4016.75 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	YES, 2014.63 LF OF EXISTING TREES
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO	YES, 191.50 LF OF BIORETENTION PLANTINGS & 300.38 LF OF REFORESTATION PLANTINGS
NUMBER OF PLANTS REQUIRED	3 SHADE TREES 4 EVERGREEN TREES 0 SHRUBS	26 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS
NUMBER OF PLANTS PROVIDED	3 SHADE TREES 4 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS (10:1 SUBSTITUTION)	26 SHADE TREES 0 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS

LANDSCAPE REQUIREMENT PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
64	(Symbol)	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	1 1/2" - 2 1/2" CAL.
21	(Symbol)	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	1 1/2" - 2 1/2" CAL.
4	(Symbol)	PINUS STROBUS	EASTERN WHITE PINE	8' - 10' HT.
TOTAL 89 TREES (85 SHADE TREES, 4 EVERGREENS) (INCLUDES STREET TREES)				

PERIMETER	EDGE TYPE	PERIMETER	EDGE TYPE
PERIMETER 1 ENTRANCE ROAD - 50 LF	N/A	PERIMETER 5 OPEN SPACE TO SFD - 694.63 LF EXISTING TREES TO REMAIN	A
OPEN SPACE TO ROAD - 140.25 LF 1 SHADE TREE / 50 LF 1 EVERGREEN / 40 LF	B	PERIMETER 6 FUTURE ENTRANCE ROAD - 50 LF	N/A
PERIMETER 2 SFD TO SFD - 308.00 LF 1 SHADE TREE / 60 LF	A	OPEN SPACE & SFD TO SFD - 555 LF EXISTING TREES TO REMAIN	A
PERIMETER 3 SFD TO SFD - 293.05 LF 1 SHADE TREE / 60 LF	A	OPEN SPACE & SFD TO SFD - 512.90 LF 1 SHADE TREE / 60 LF	A
PERIMETER 4 EASEMENTS - 85 LF	N/A	PERIMETER 7 SFD TO SFD - 140.55 LF 1 SHADE TREE / 60 LF	A
OPEN SPACE TO SFD - 705 LF EXISTING TREES TO REMAIN	A	PERIMETER 8 OPEN SPACE TO SFD - 60 LF EXISTING TREES TO REMAIN	A
OPEN SPACE TO SFD - 191.50 LF CREDIT FOR BIORETENTION PLANTINGS	A	OPEN SPACE TO SFD - 253.00 LF 1 SHADE TREE / 60 LF	A
OPEN SPACE TO SFD - 300.78 LF CREDIT FOR REFORESTATION PLANTINGS	A	TOTAL PLANTING OBLIGATION SHADE TREES 29 EVERGREEN TREES 4 SHRUBS 0	
OPEN SPACE TO SFD - 2.74 LF 1 SHADE TREE / 60 LF	A		

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 8-25-98
 CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 9/4/98
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 9/1/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

date	JULY 1998
project	97021
illustration	PKP
scale	1" = 60'
approval	SID

date	
description	
revisions	

TROTTER WOODS, SECTION 1
 LOTS 1 THRU 32 AND BULK PARCEL A
 TAX 35, LOTS 3, 28, 29, 30 & 31
 5th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 LANDSCAPE PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers, Planners, Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0286 Bldg. (301) 621-5521 Wash. (410) 997-0288 Fax.

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

NOTE:
 - A TULIP POPLAR ASSOCIATION IS THE ONLY FOREST STAND THAT EXISTS ON-SITE. FOR DETAILS REGARDING THE SPECIMEN TREES OR FOREST STAND DATA, SEE THE FOREST STAND DELINEATION PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. ON DECEMBER 23, 1996.
 - FEE-IN-LIEU OF REFORESTATION HAS BEEN REQUESTED FOR THE REMAINING AREA REQUIRED TO BE REFORESTED BY THE HOWARD COUNTY FOREST CONSERVATION MANUAL, SEE FOREST CONSERVATION CALCULATIONS THIS SHEET (1.99 ACRES OF REFORESTATION IS REQUIRED. 0.68 ACRE OF REFORESTATION HAS BEEN SHOWN ON-SITE. THE REMAINING 1.31 ACRES WILL BE A PART OF THE FEE-IN-LIEU REQUEST.)

NOTE :

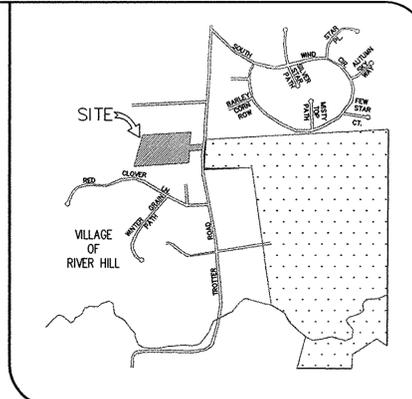
THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENTS EXCEPT AS PERMITTED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.
 THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, SOIL COMPACTION, OR EXCAVATION, INTRODUCTION OF TOXIC CHEMICALS OR OTHER DISTURBANCES DETRIMENTAL TO THE LIVE SPECIMEN TREES OR CRITICAL ROOT ZONES FOR THESE TREES EXCEPT AS PERMITTED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.

LEGEND

- 15-24.9% SLOPES
- > 25% SLOPES
- FOREST CONSERVATION AREA (RETENTION)
- FOREST CONSERVATION AREA (REFORESTATION)
- FOREST CONSERVATION SIGNAGE
- TREE PROTECTIVE FENCING
- EXISTING SPECIMEN TREE

FOREST CONSERVATION DATA

DESCRIPTION	ACRES
I. BASIC SITE DATA	
GROSS SITE AREA	20.21
AREA WITHIN 100 YEAR FLOODPLAIN	0.34
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL	0.00
NET TRACT AREA	19.87
LAND USE CATEGORY	RESIDENTIAL (SUBURBAN)
II. FOREST CONSERVATION WORKSHEET DATA SUMMARY	
B. REFORESTATION THRESHOLD (20%)	3.97
C. AFFORESTATION MINIMUM (15%)	2.98
D. EXISTING FOREST ON NET TRACT AREA	9.20
E. FOREST AREAS TO BE CLEARED	5.57
F. FOREST AREAS TO BE RETAINED	3.63
IV. REFORESTATION CALCULATIONS	
G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	5.23
H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	0.34
I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	0.00
REFORESTATION FOR CLEARING ABOVE THRESHOLD	1.31
REFORESTATION FOR CLEARING BELOW THRESHOLD	0.68
TOTAL REFORESTATION REQUIRED	1.99
TOTAL REFORESTATION PROVIDED	0.68
TOTAL REFORESTATION AS PART OF A FEE-IN-LIEU REQUEST	1.31



VICINITY MAP

SCALE 1" = 2000'

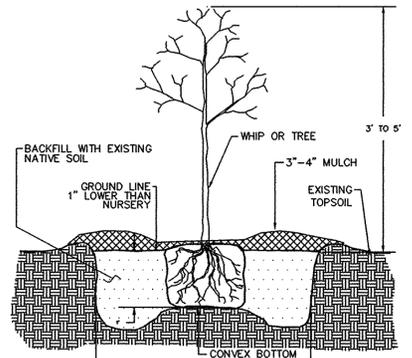
REFORESTATION PLANT LIST (AREA R1) (0.41 AC)

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C.	SPACING	SIZE & REMARKS
50	Acer rubrum Red Maple	VT	D-W	FAC	15'	11'	SEEDLING
29	Nyssa sylvatica Black Gum	T	M-W	FAC	15'	11'	SEEDLING
29	Prunus serotina Black Cherry	I	M-W	FAC+	15'	11'	SEEDLING
50	Quercus alba White Oak	I	M-W	FAC+	15'	11'	SEEDLING
50	Quercus rubra Red Oak	MT	D-M	UPL	15'	11'	SEEDLING
50	Quercus velutina Black Oak	MT	M	FAC+	15'	11'	SEEDLING
29	Sassafras albidum Common Sassafras	MT	D-M	FACU	15'	11'	SEEDLING
TOTAL 287 SEEDLINGS							

REFORESTATION PLANT LIST (0.32) (AREA R2 & R3) (LANDSCAPE OPTION)

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C.	SPACING	SIZE & REMARKS
10	Acer rubrum Red Maple	VT	D-W	FAC	15'	15'	CONT/B&B 1 1/2" - 2 1/2" CAL.
15	Ilex glabra Inkberry	T	M-W	FAC-	6'	6'	CONTAINER 18" - 24" HT.
15	Lindera benzoin Spicebush	T	M	FACW-	6'	6'	CONTAINER 18" - 24" HT.
15	Nyssa sylvatica Black Gum	T	M-W	FAC	15'	15'	CONT/BARE ROOT 3' - 5' HT.
15	Prunus serotina Black Cherry	I	M-W	FAC+	15'	15'	CONT/BARE ROOT 3' - 5' HT.
10	Quercus alba White Oak	I	M-W	FAC+	15'	15'	CONT/B&B 1 1/2" - 2 1/2" CAL.
10	Quercus rubra Red Oak	MT	D-M	UPL	15'	15'	CONT/B&B 1 1/2" - 2 1/2" CAL.
15	Sassafras albidum Common Sassafras	MT	D-M	FACU	15'	15'	CONT/BARE ROOT 3' - 5' HT.
15	Viburnum dentatum Southern Arrowwood	T	M	FACW-	6'	6'	CONTAINER 18" - 24" HT.
15	Vaccinium angustifolium Lowbush Blueberry	T	D-M	FAC+	6'	6'	CONTAINER 18" - 24" HT.
TOTAL 135 TREES & SHRUBS							

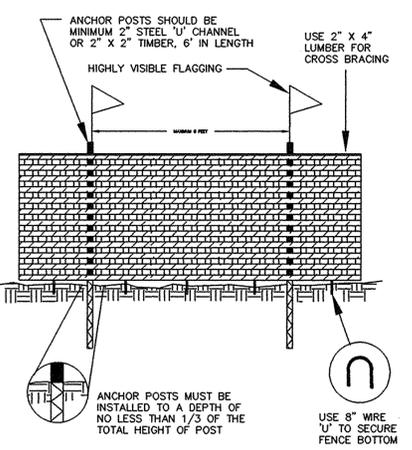
NOTE: THE GROUND PLANE FOR R2 & R3 MUST BE MULCH OR GROUND COVER.



TREE PLANTING DETAIL

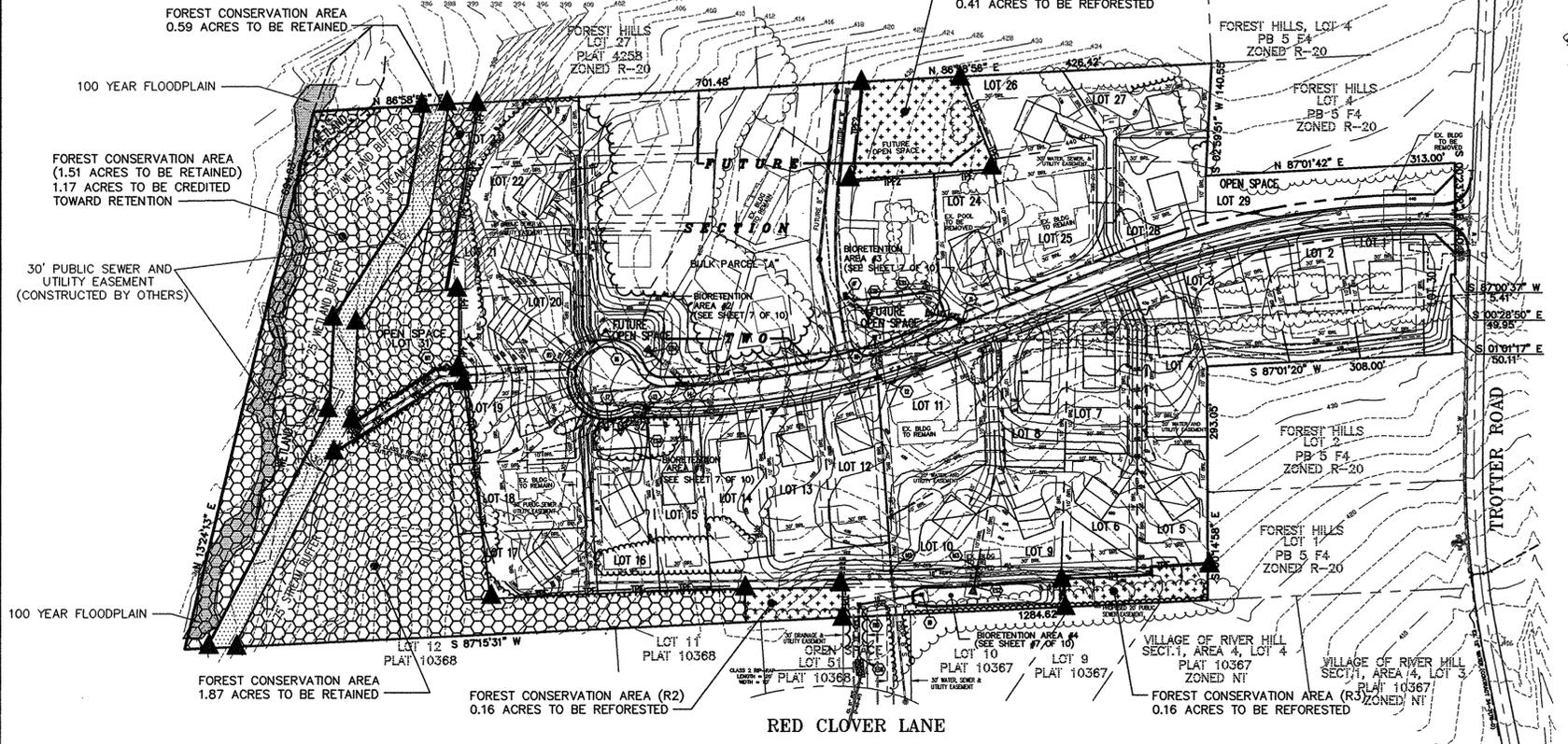
CONTAINER GROWN

PROTECTIVE FENCE DETAIL



ANCHOR POSTS MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE TOTAL HEIGHT OF POST
 USE 8" WIRE U TO SECURE FENCE BOTTOM

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.



GENERAL NOTES

- ALL FOREST RETENTION AREAS SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE ORANGE PLASTIC MESH FENCING AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
- THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES.
- ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION, INCLUDING SILT FENCE BEING USED AS PROTECTIVE FENCING. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
- ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THESE PROTECTED AREAS.
- INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
- THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
- REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
- THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS. ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL PRESERVATION AREAS, AS NECESSARY.

CONSTRUCTION MONITORING

- THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIATED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
- THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT INSTALLATION

- THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER GENEROUSLY TO SETTLE SOIL, BACKFILL AND ADJACENT TREES.
- PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
- CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THROUGH LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2 INCH ARE ENCOUNTERED DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES.
- CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES.
- FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
- THE CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FIVE (5) PER SPECIES, OVER THE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED IN THE PLANT LIST.
- A STRAIGHT GRID PATTERN SPACING IS TO BE AVOIDED. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED IN THE PLANT LIST TO OBTAIN A MORE NATURAL APPEARANCE.
- NEWLY PLANTED TREES SHALL NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE VERY DEEP, WELL DRAINED NATURE OF THE NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

NOTE :

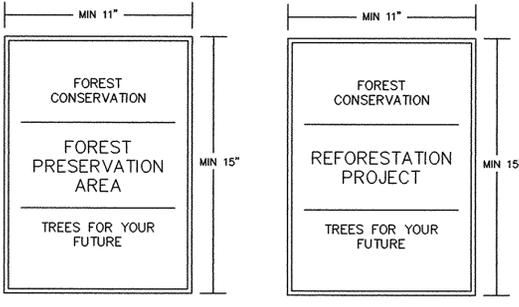
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PLANTING SPECIFICATIONS AND NOTES

- PROTECTIVE FENCING IS TO BE INSTALLED AS A FIRST ORDER OF BUSINESS PER PLAN LOCATIONS. PROTECTIVE FENCING WILL NOT BE NECESSARY ALONG THOSE PERIMETERS WHERE SILT FENCE HAS BEEN INSTALLED FOR SEDIMENT CONTROL.
- DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT.
- SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE. SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
- ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT STORAGE AND INSPECTION

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



SIGNAGE DETAILS

NOT TO SCALE

PRE-CONSTRUCTION MEETING

- AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
 - TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS;
 - INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES;
 - MAKE ALL NECESSARY ADJUSTMENTS;
 - ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 8-25-98
 CHIEF BUREAU OF HIGHWAYS

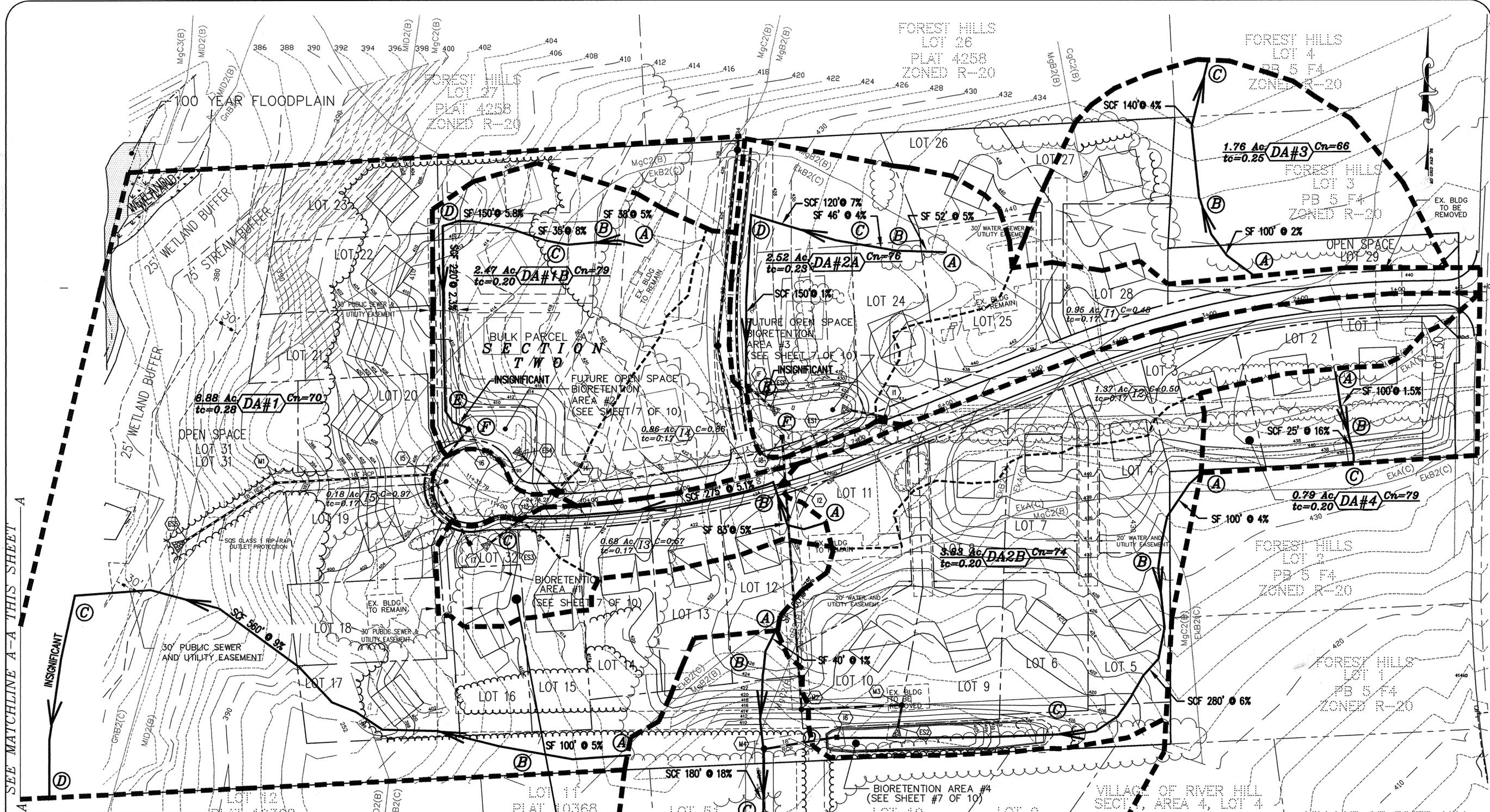
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 9/9/98
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 9/1/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

date	JULY 1998	approval	
project	97021	PKP/SID	1"=100'
illustration		scale	
description		revisions	

TROTTER WOODS, SECTION 1
 LOTS 1 THRU 32 AND BULK PARCEL A
 TAX 95, LOTS 3, 28, 29, 30 & 31
 5th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 FOREST CONSERVATION AND REFORESTATION PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0236 Fax: (301) 621-5521 Wash. (301) 997-0238 Fax.



SEE MATCHLINE A-A THIS SHEET

SEE MATCHLINE A-A THIS SHEET

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Cheryl Simmons 8/6/98
USDA - NATURAL RESOURCE CONSERVATION SERVICE

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

John J. ... 8/6/98
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS
Richard M. ... 8-25-98
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Andy ... 7/1/98
CHIEF, DIVISION OF LAND DEVELOPMENT

John ... 9/1/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DEVELOPER'S CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 SOIL EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

[Signature] 7/29/98
SIGNATURE OF DEVELOPER

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

[Signature] 7/29/98
SIGNATURE OF ENGINEER

R. JACOB HIKMAT
PRINTED NAME OF ENGINEER



NOTE
THIS DRAWING IS FOR DRAINAGE AREA PURPOSES ONLY.

date	JULY 98	approval	
project	97021	engineering	SD
illustration	SD	scale	1"=50'

description	revisors	date
no.		

TROTTER WOODS, SECTION 1
LOTS 1 THRU 34 AND BULK PARCEL A
TAX 35, LOTS 3, 28, 29, 30 & 31
5th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DRAINAGE AREA MAP

MILDENBERG, & ASSOC., INC.
Engineers Planners Surveyors
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