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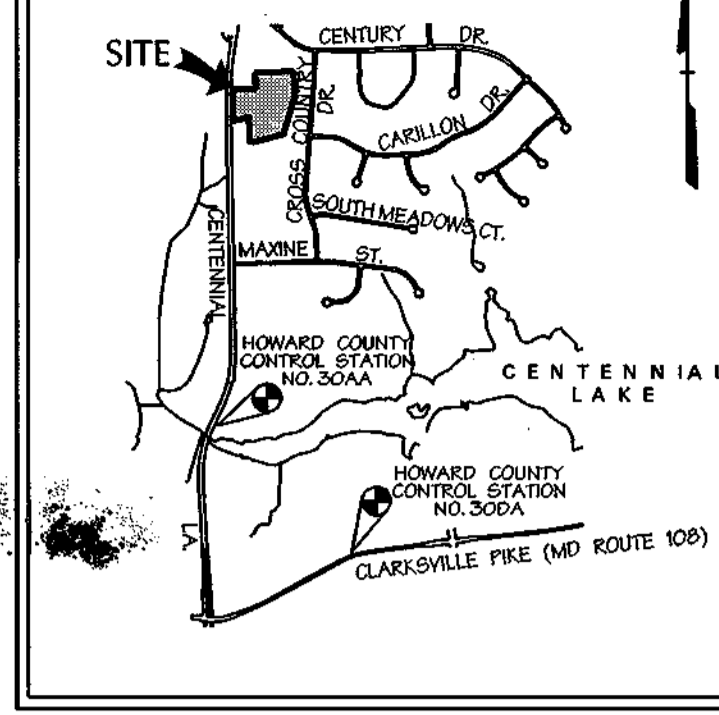
SHEET	DESCRIPTION
1	COVER SHEET
2	ROAD CONSTRUCTION PLAN
3	GRADING, EROSION & SEDIMENT CONTROL AND SWM PLAN
4	STORM DRAIN PROFILES
5	ROAD CONSTRUCTION DETAILS
6	STORM DRAIN DRAINAGE AREA MAP
7	DETAILS
8	EROSION & SEDIMENT CONTROL DETAILS
9	EROSION & SEDIMENT CONTROL DETAILS
10	SWM DETAILS & SOIL BORINGS
11	LANDSCAPE AND STREET TREE PLAN
12	LANDSCAPE AND STREET TREE DETAILS
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14	OFFSITE REFORESTATION FOREST CONSERVATION PLAN
15	OFFSITE REFORESTATION FOREST CONSERVATION PLAN

# Final Plan for Centennial Woods

RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2  
LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13

Howard County

Maryland



VICINITY MAP

SCALE: 1"=2000'

BENCHMARK  
DESCRIPTION

1. COORDINATES AND BEARINGS SHOWN ON THIS PLAN ARE REFERRED TO THE SYSTEM OF COORDINATES ESTABLISHED BY THE HOWARD COUNTY GEODETIC CONTROL SYSTEM MAP 83 (1989), AND ARE BASED ON THE FOLLOWING TRAVERSE STATIONS (TRANSLATED METERS TO FEET):

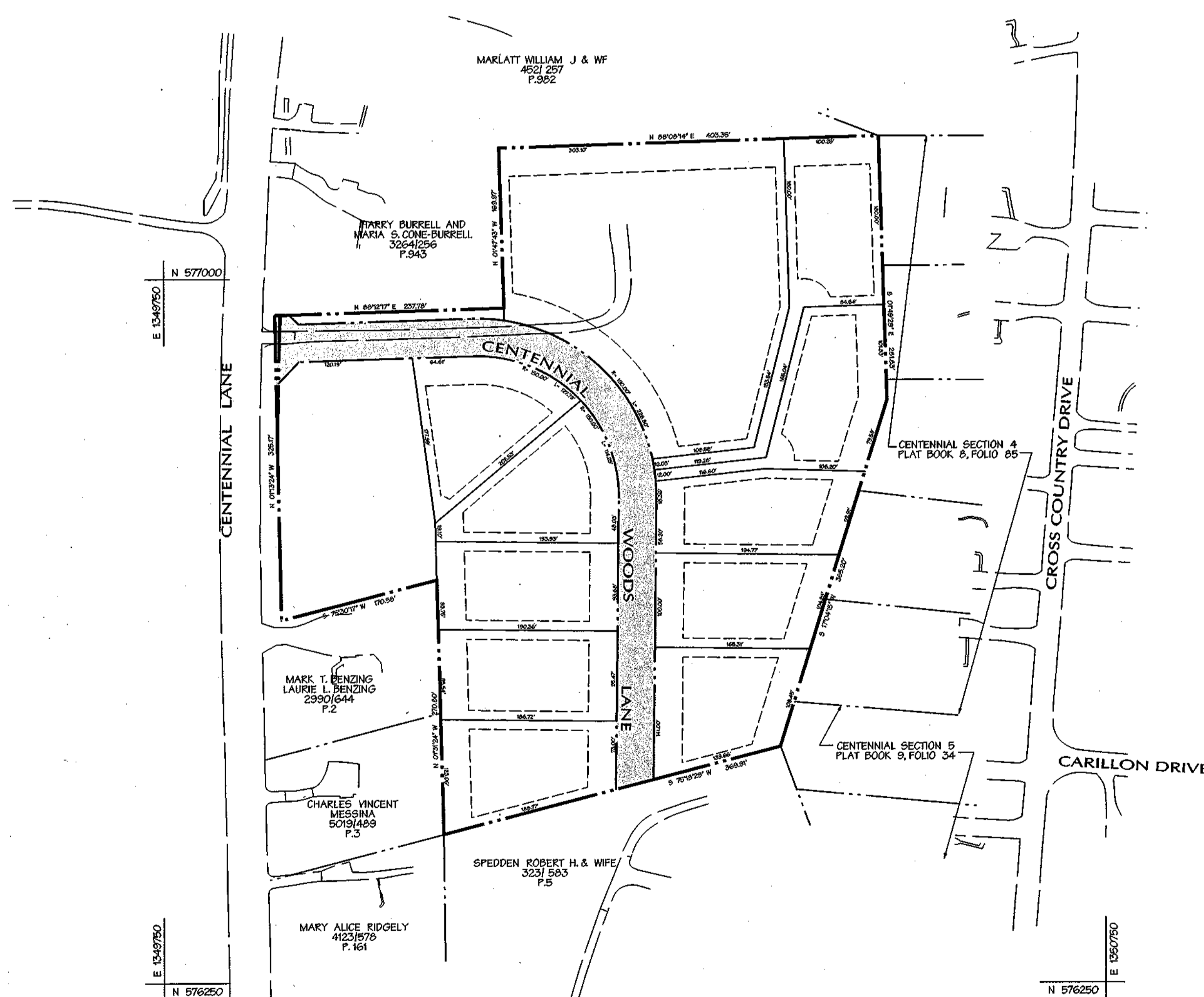
DESIGNATION	NORTH (FT)	EAST (FT)
300A	572670.206	1348816.541
300A	572670.244	1348816.289

2. ELEVATIONS SHOWN ON THIS PLAN ARE REFERRED TO THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88) WITH LOCAL REFERENCE TO THE FOLLOWING HOWARD COUNTY GEODETIC CONTROL SYSTEM STATIONS:

DESIGNATION	ELEVATION (FT)
300A	384.632
300A	436.012

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/Bureau of Engineering/Construction Inspection Division at 410-313-1280 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs be in place prior to the placement of any asphalt.
- Street light placement and the type of fixture and pole shall be in accordance with the Howard County Design Manual Volume II (1993) and as modified by "Guidelines for Street Lights in Residential Developments (June 1993)." A minimum 20 feet spacing shall be between the light and any tree.
- The existing topography is taken from aerial survey with 2' contour intervals prepared by SDI dated Feb. 3, 2001.
- The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System, Howard County Monument Nos. 300A and 300A were used for this project.
- Existing utilities are based on Existing Construction Plans.
- The traffic study for this project was prepared by Wells and Associates, and was approved on Jan. 9, 2001 and revised July 1, 2002.
- Sidewalk ramps shall meet current ADA requirements.
- Project background information:  
Subdivision Name: Centennial Woods Resubdivision of Edith's Gift Lots 1 & 2  
Tax Map: 24.30  
Section/Area: N/A  
Lot/Parcel: 294  
Zoning: R-20  
Election District: 2  
Total Tract Area: 7.834 acres  
Preliminary Plan Approval Date: 2-04-02  
Open Space Lots: 2  
File Numbers: S-00-17, P-01-22
- All sidewalks at intersections to have handicapped ramps. See detail on sheet 7.
- Street trees shall be planted at least 5' from any inlet structure.
- The Forest Conservation obligation of 4.5 acres will be satisfied on the property known as Chase Farm, Lot 5 Tax map 21.
- Stormwater Management for this project will be addressed with the installation of one Stormwater Management Facility (surface sand filter) which will control the runoff per the latest approved Design Standards. No credits are being utilized to meet the stormwater management requirement.
- The Stormwater management pond shall be owned and maintained by the H.O.A.
- Maintenance responsibility, routine and non-routine schedule is shown on sheet 10.
- As a result of the Preliminary Plan being submitted to the county prior to Nov. 15, 2001 (on June 5, 2001), this subdivision is subject to compliance with the Fourth Edition of the Subdivision and Land Development Regulations. In addition, because the Preliminary Plan did not obtain signature approval prior to Nov. 1, 2001, it is subject to compliance with Bill EO-2001 which amends the Zoning Regulations, and the amended Zoning Regulations which became effective on Jan. 8, 2002.



Overall Property Outline

Scale: 1"=100'

Site Analysis Data Chart

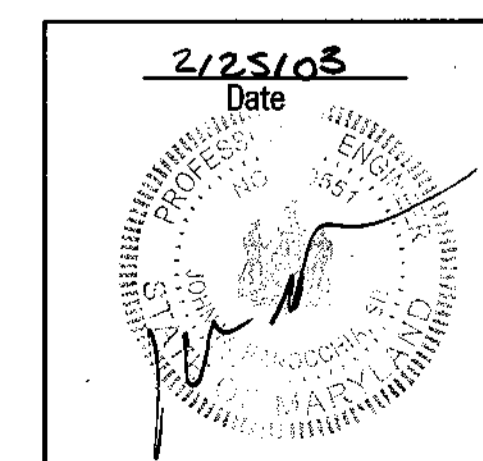
- General Site Data
  - a. Present Zoning: R-20
  - b. Applicable DZ File References: E-52-17, P-01-22, F-99-170, Plan#14167
  - c. Proposed Use of Site or Structure(s): SPD RESIDENTIAL
  - d. Proposed Water and Sewer System: X Public Private
  - e. Any Other Information Which May be Relevant: N/A
- Area Tabulation
  - a. Total Area of Site: 7.834 Acres
  - b. Approximate Area of 100 Year Floodplain: 0.0
  - c. Approximate Area of Steep Slopes (25% or Greater): 0.0
  - d. Net Area of Site: 7.834 Acres
  - e. Area of Proposed Building Lots: 6.128 +/- Acres
  - f. Area of Proposed Open Space Lots: 0.977 +/- Acres (0.925 Ac. credited plus 0.052 Ac. non-credited Open Space)
  - g. Area of Proposed Preservation Parcels: 0.0 Acres
  - h. Area of Bulk Parcels: 0.0 Acres
  - i. Area of Proposed Public Roads: 0.729 +/- Acres
  - j. Area of Proposed Private Roads: 0.0 Acres

- Unit/Lot Tabulation
  - a. Total Number of Residential Units/Lots Allowed for Project: N/A
  - b. Total Number of Residential Units/Lots Proposed on this Submission: 11
  - c. Density of Project Per Gross Acre: 1.4 Lots / Acre
  - d. Total Number of Lots Allowed Per Dec/Dec: N/A
  - e. Total Number of Preservation Parcels Proposed: 0
  - f. Total Number of Open Space Lots Proposed: 2
  - g. Total Number of Non-Buildable Bulk Parcels Proposed: NA
  - h. Total Number of Lot/Lot Parcels Proposed: 13
- Open Space Data
  - a. Minimum Residential Lot Size Selected: 10,000 Square Feet
  - b. Open Space Required: 0.78 Acres (17%)
  - c. Total Credited Open Space Provided on this Submission: 0.925 Acres (12%)
  - d. Area of Recreation Open Space Required: N/A
  - e. Area of Rec. Open Space Provided on this Submission: N/A

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	3-12-03
<i>Andrew M. D... CHIEF, BUREAU OF HIGHWAYS</i>	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	3/21/03
<i>C... CHIEF, DIVISION OF LAND DEVELOPMENT</i>	DATE
<i>... CHIEF, DEVELOPMENT ENGINEERING DIVISION</i>	3/14/03
	DATE

Date	No.	Revision Description
		FINAL PLAN
		<b>CENTENNIAL WOODS</b>
		RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2
		LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13
		TAX MAP 24 GRID 19 PARCEL 294
		TAX MAP 30 GRID 1 PARCEL 294

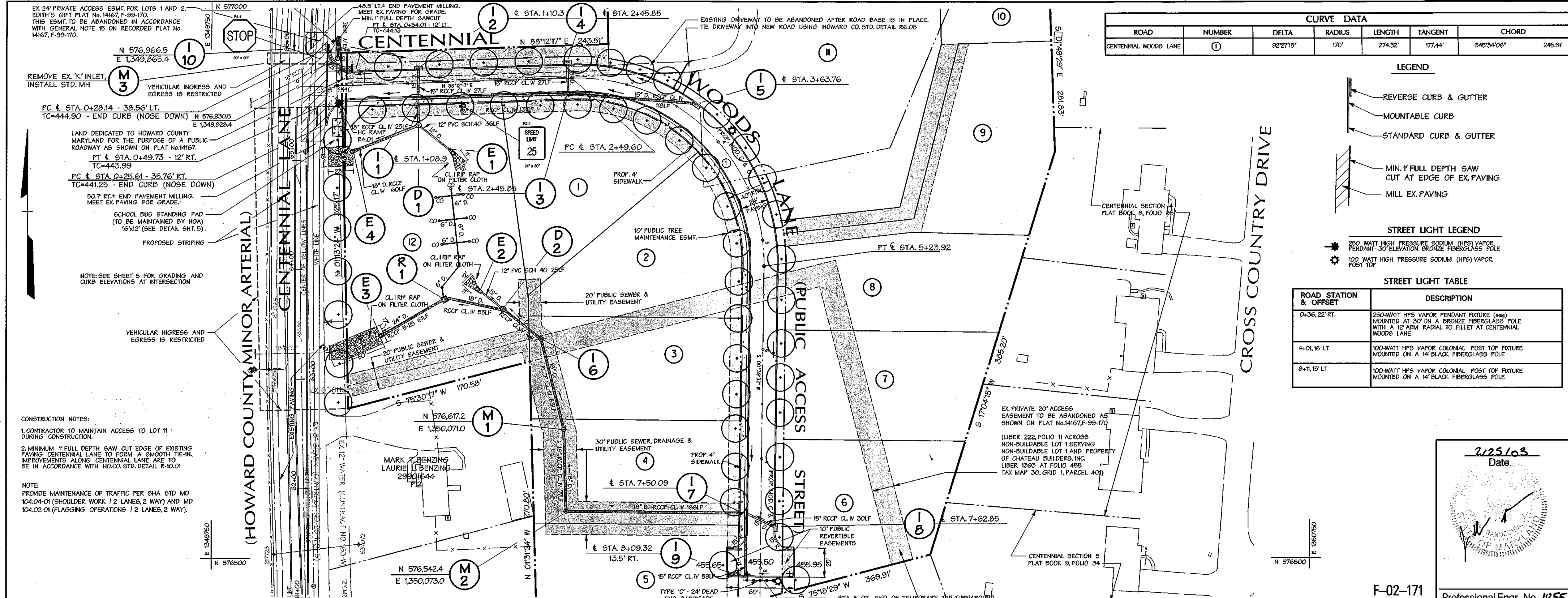
OWNER /DEVELOPER:	
OWNER: SHERI O'DONNELL, NATHAN O'DONNELL C/O NORTHBRIDGE DEVELOPMENT, LLC, 14045 GARED DRIVE GLENWOOD, MD 21736	DEVELOPER: NORTHBRIDGE DEVELOPMENT, LLC 14045 GARED DRIVE GLENWOOD, MD 21736 410-730-1074



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Landscape Architects,  
Engineers, Surveyors &  
Environmental Professionals

TITLE <b>Cover Sheet</b>			
Des By	RLH	Scale	1"=100'
Proj. No.	00044.C	Om By	KDE
Chk By	RLH	Date	2-13-03
Professional Engr. No.	10551	Approved	
			1 OF 15



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Richard M. D'Amico* 3-12-03  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
*Richard M. D'Amico* 3/14/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Harrold* 7/2/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Date No. Revision Description

FINAL PLAN

**CENTENNIAL WOODS**

RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2  
 LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13  
 TAX MAP 24 GRID 15 PARCELS 294  
 TAX MAP 30 GRID 1 PARCEL 294

OWNER: SHERI O'DONNELL, NATHAN O'DONNELL  
 C/O NORTHBRIDGE DEVELOPMENT, LLC  
 14045 GARED DRIVE  
 GLENWOOD, MD 21758

DEVELOPER: NORTHBRIDGE DEVELOPMENT, LLC  
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 GLENWOOD, MD 21758

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 Fax 286-4705

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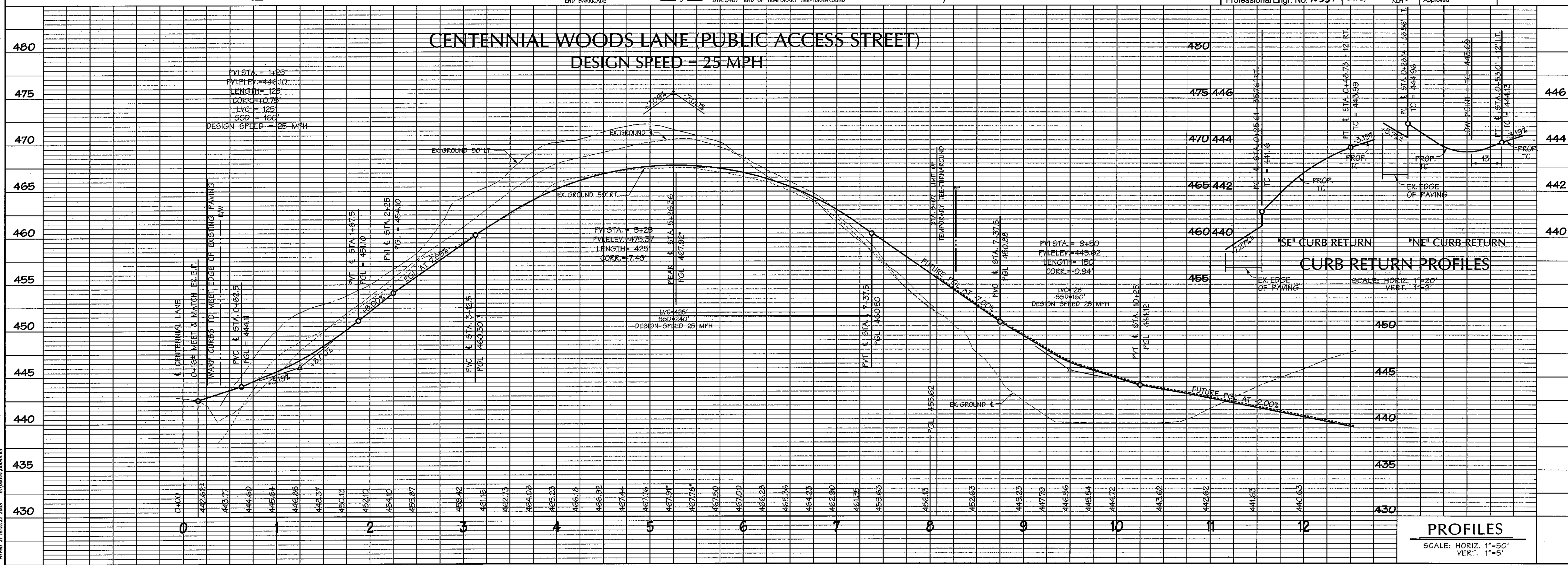
TITLE ROAD CONSTRUCTION PLAN  
**CENTENNIAL WOODS LANE**

Des By REC Scale 1"=50' Proj. No. 00044.C

Dwn By KDE Date 2-13-03

Chk By RLH Approved

F-02-171 Professional Engr. No. 10551 2 of 15



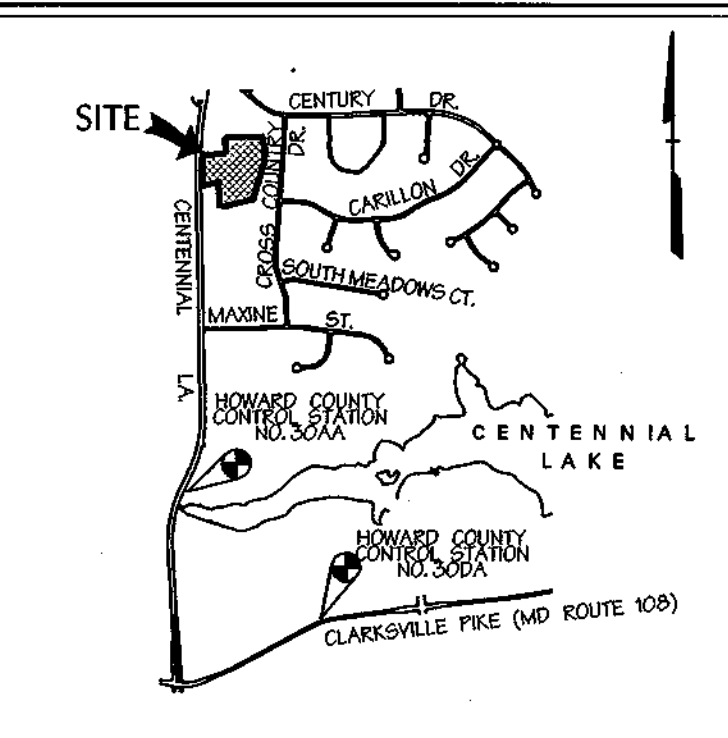
Pl. Feb. 27, 03:42:22 2003 n:\00044\00044.C



**SWQ NOTES**

NO.	CATEGORY	REQUIRED CF	PROVIDED CF	DA 1	DA 2	DA 3
1	WQV	4530	4700	N/A	N/A	N/A
2	Rev	1001	1001	N/A	N/A	N/A
3	Cpv	5925	6970	less than 2.5%	less than 2.5%	N/A
4	Qp/O	0	8720	N/A	N/A	N/A
5	Qp/O	N/A	N/A	N/A	N/A	N/A
6	EX. D.A. I DP	6.67 AC.±	0.95 AC.±	1.90 AC.±	N/A	N/A
7	DEV. D.A. I DP	8.09 AC.±	0.33 AC.±	1.10 AC.±	N/A	N/A
8	DEV. TO FOND	7.60 AC.±	N/A	N/A	N/A	N/A
9	WQV WSE	439.0 - 441.0	N/A	N/A	N/A	N/A
10	Rev WSE	441.0 - 442.0	N/A	N/A	N/A	N/A
11	Cpv WSE	441.0 - 442.62	N/A	N/A	N/A	N/A
12	10 yr. WSE	443.00±	N/A	N/A	N/A	N/A

BMP TYPE - F-1 - SURFACE SAND FILTER  
HAZARD CLASS - A



**BASIN TABLE**

BASIN NUMBER	1	
EXISTING DRAINAGE AREA: ACRES	6.42	
INTERIM DRAINAGE AREA: ACRES	7.60	
PROPOSED DRAINAGE AREA: ACRES	7.60	
STORAGE REQUIRED: CUBIC FEET	WET	13,680
	DRY	13,680
STORAGE PROVIDED: CUBIC FEET	WET	13,680
	DRY	13,680
EXISTING GROUND ELEVATION	443.0	
TOP EMBANKMENT ELEVATION	446.67	
EMERGENCY SPILLWAY CREST ELEVATION	N/A	
RISER CREST ELEVATION	443.1	
WET STORAGE ELEVATION	442.5	
CLEANOUT ELEVATION	442.0	
BOTTOM ELEVATION	439.0	
Q EXISTING (C.F.S.)	0.22	
Q INTO BASIN (C.F.S.)	4.13	
Q OUT BARREL (C.F.S.)	0.16	
Q OUT EMERGENCY SPILLWAY	N/A	
BASIN DEPTH	WET	3.5
	DRY	1.6
	TOTAL	5.1
DESIGN HIGHWATER	444.56	
FREEBOARD PROVIDED	2.2	
BARREL DIAMETER	24 in.	
RISER DIAMETER	4' x 4'	
EMERGENCY SPILLWAY WIDTH	N/A	
WET STORAGE ZONE ELEVATION	439.0-442.5	
DRY STORAGE ZONE ELEVATION	442.5-444.1	
BOTTOM DIMENSIONS	55' x 26'	
S.E.C. CONTROL PLATE ORIFICE SIZE (in.)	2.0	

BMP SELECTION (PER CHAPTER 4):

- 1) FILTERING SYSTEM 'OK' WATERSHED IS NOT SPECIAL (NO CRITICAL AREA, NO CLASS III or IV STREAMS, NO SENSITIVE STREAM, NO AQUIFER PROTECTION, NO RESERVOIR PROTECTION NOR SHELLFISH BREACH).
- 2) NO TERRAIN FACTORS.
- 3) THE BMP SELECTED IS F-1 SURFACE SAND FILTER.

Rev - MAY BE PROVIDED BY INFILTRATION  
Cpv - CONTROL ALLOWED  
Q - CONTROL ALLOWED  
NO SAFETY CONCERNS  
THIS IS NOT A HOT SPOT  
SPECIAL NATURAL SOILS NOT NEEDED  
EX WATER TABLE > 2' BELOW SAND BOTTOM  
DRAINAGE AREA = 7.6 AC. < 10 AC.  
SLOPE RESTRICTIONS - NONE  
ULTRA-URBAN = N/A  
OWNERSHIP/MAINTENANCE RESPONSIBILITY - HOA

NOTE:  
ANY SILT FENCE SYSTEMS PLACED SHALL CONFORM TO THE MOST CURRENT M.D.E. SPECIFICATIONS FOR SLOPE STEEPNESS, MAX SLOPE LENGTH, AND MAX SILT FENCE LENGTH.  
APPROXIMATE LIMIT OF DISTURBANCE 26047 SQ. FT., 5.65 AC.±  
TEMPORARY STORM WATER MANAGEMENT WILL BE PROVIDED IN SEDIMENT BASIN # 1.

**DATA SOURCES:**  
BOUNDARY PER RECORDED PLAT 1467, TOPO PER 301 AERIAL DATED FEB. 3, 2001,  
TOPO FOR CENTENNIAL LANE PER DAFT MCGUIRE WALKER DATED APRIL 23, 2001

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Richard M. Paule* 3/12/03  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Carla Hanrahan* 2/2/03  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Bill Dammann* 2/10/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date No. Revision Description

**FINAL PLAN**  
**CENTENNIAL WOODS**  
RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2  
LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13  
TAX MAP 24 GRID 19 PARCEL 294  
TAX MAP 30 GRID 1 PARCEL 294

OWNER / DEVELOPER:  
OWNER: SHERI O'DONNELL, NATHAN O'DONNELL, C/O NORTHBRIDGE DEVELOPMENT, L.L.C., 14045 GARED DRIVE, GLENWOOD, MD 21738  
DEVELOPER: NORTHBRIDGE DEVELOPMENT, L.L.C., 14045 GARED DRIVE, GLENWOOD, MD 21738

**DMW**  
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200 East Pennsylvania Avenue  
Towson, Maryland 21286  
(410) 296-3038  
Fax 296-4706  
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

TITLE: GRADING, EROSION & SEDIMENT CONTROL AND STORMWATER MANAGEMENT PLAN

Des By RLH Scale 1" = 50' Proj. No. 00044.C  
Dm By KDE Date 2-13-03  
Chk By RLH Approved 3 OF 15

Professional Engr. No. 10557

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.

APPROVED: *John W. Ranocchia, Sr.* 3/5/03  
HOWARD SOIL CONSERVATION DISTRICT DATE

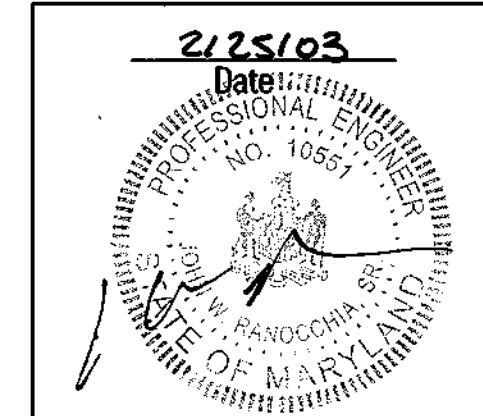
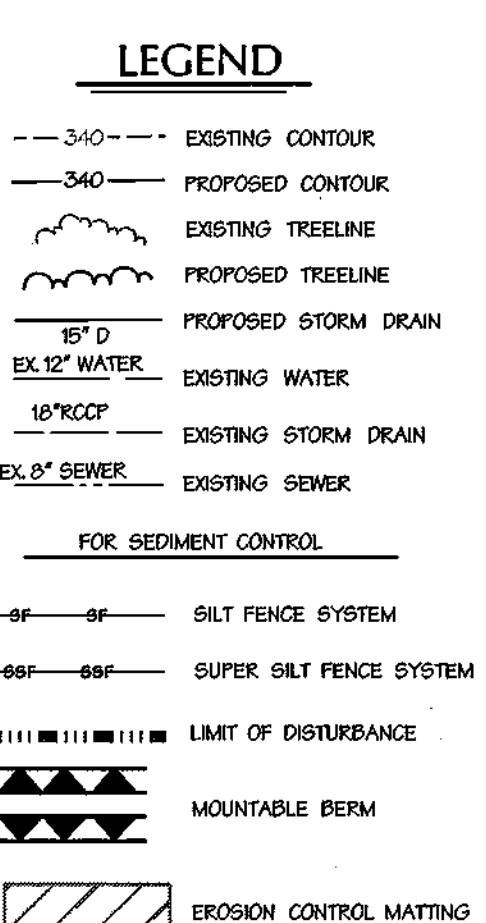
PLAN NUMBER \_\_\_\_\_

**DEVELOPER'S CERTIFICATE:**  
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 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.

*James H. Selveridge* 2/25/03  
SIGNATURE OF DEVELOPER DATE  
PRINT NAME BELOW SIGNATURE

**ENGINEER'S CERTIFICATE:**  
I/WE 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.

*John W. Ranocchia, Sr.* 2-25-03  
SIGNATURE OF ENGINEER REG. NO. DATE  
PRINT NAME BELOW SIGNATURE



**INLET SCHEDULE**

NO.	TYPE	Q <sub>10</sub>	Q <sub>25</sub>	Q <sub>50</sub>	Q <sub>100</sub>	TOP ELEV. (TC)
1	A-5 2'-6" WIDE SD 4.01	0.32	441.75	446.25		446.25
2	A-10 2'-6" WIDE SD 4.02	3.47	442.0	446.32		446.32
3	A-5 2'-6" WIDE SD 4.01	0.74	451.04	455.79		455.79
4	A-10 2'-6" WIDE SD 4.02	2.31	451.79	455.79		455.79
5	DBL. TYPE 'B' COMB. SD 4.34	4.22	459.69	463.69		463.69
6	TYPE 'D' INLET GRATE 16 SQ SD 4.11	1.73	441.80	446.0		446.0
7	A-5 2'-6" WIDE SD 4.01	0.85	451.56	459.83		459.83
8	A-10 2'-6" WIDE SD 4.02	1.22	454.43	459.94		459.94
9	A-5 2'-6" WIDE SD 4.01	0.089	452.10	456.10		456.10
10***	'K' 3' WIDE SD 4.12	-	440.67	442.75		442.75
R-1	SEE DETAIL SHEET 7	-	-	436.5	-	443.20**

\*\* GRATE ELEVATION  
 \*\*\* INV. OF THROAT, THROAT OPENING ALL FOUR SIDE  
 \*\*\* REPLACING WITH SIMILAR INLET

**MANHOLE SCHEDULE**

NO.	TYPE	SIZE	INV. OUT	TOP ELEV.
1	STD. SHALLOW G5.12	48"	444.83	451.50
2	STD. SHALLOW G5.12	48"	445.80	450.0
3	STD. SHALLOW G5.12	48"	446.67	443.75

**END SECTION SCHEDULE**

NO.	TYPE	SIZE	INV. OUT	TOP ELEV.
1	PVC END SECTION SD 5.51	12"	440.00	-
2	PVC END SECTION SD 5.51	12"	440.00	-
3	RCCP END SECTION SD 5.51	24"	436.60	-
4	RCCP END SECTION SD 5.51	18"	436.20	-

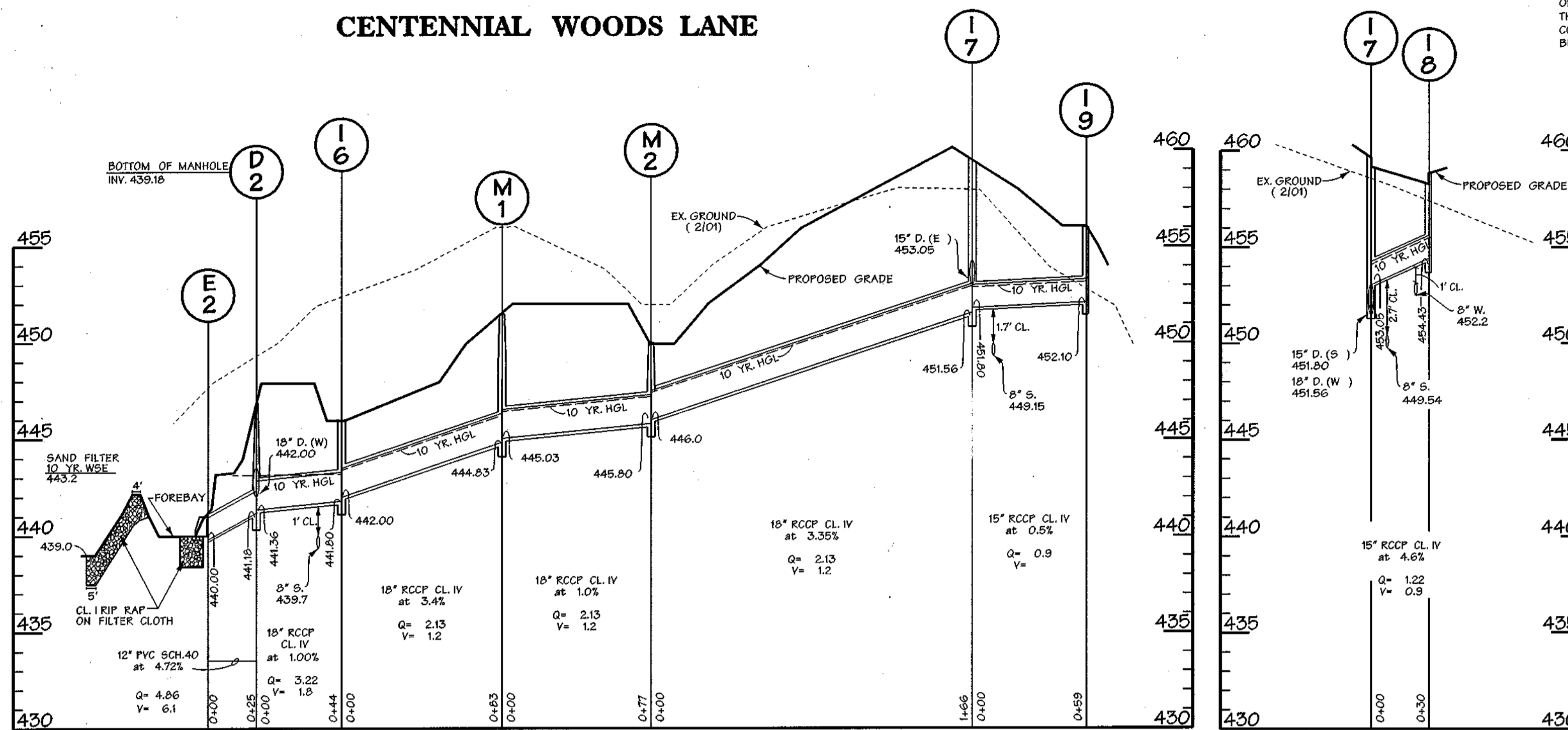
**PIPE SCHEDULE**

NO.	TYPE & CLASS	LENGTH
6"	PERFORATED PVC	129'
6"	NON-PERFORATED PVC	52'
8"	PERFORATED SCH. 40 PVC	4'
8"	NON-PERFORATED SCH. 40 PVC	50'
12"	NON-PERFORATED SCH. 40 PVC	61'
15"	RCCP CL. IV	259'
18"	RCCP CL. IV	657'
24"	RCCP C-361 B-25	61'

**DIVERSION STRUCTURE SCHEDULE**

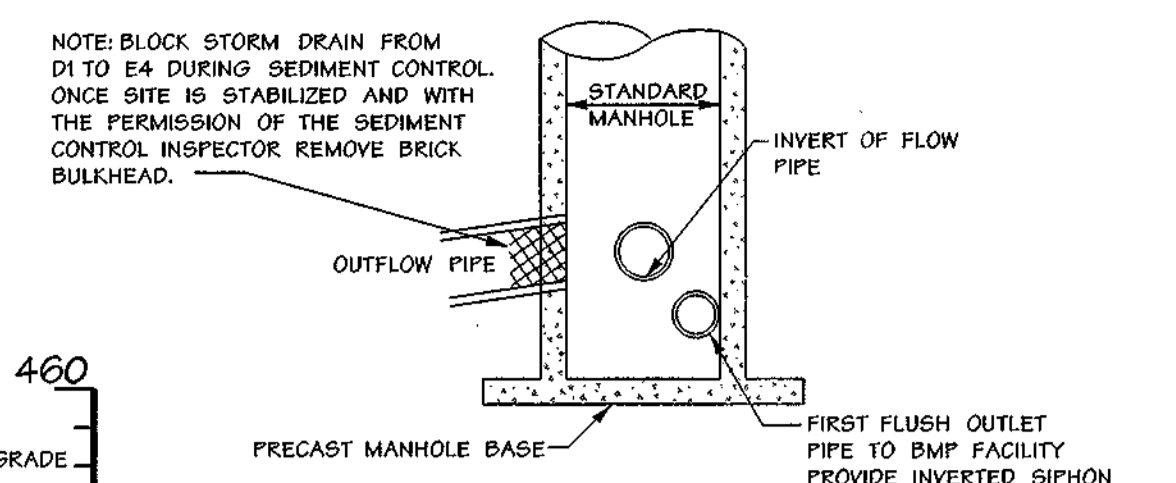
NO.	TYPE	SIZE	INV. OUT	TOP ELEV.	STRUCTURE BOTTOM
1	STD. MANHOLE G 5.13	60"	440.50	447.0	438.5
2	STD. MANHOLE G 5.13	60"	441.18	446.0	439.18

**CENTENNIAL WOODS LANE**

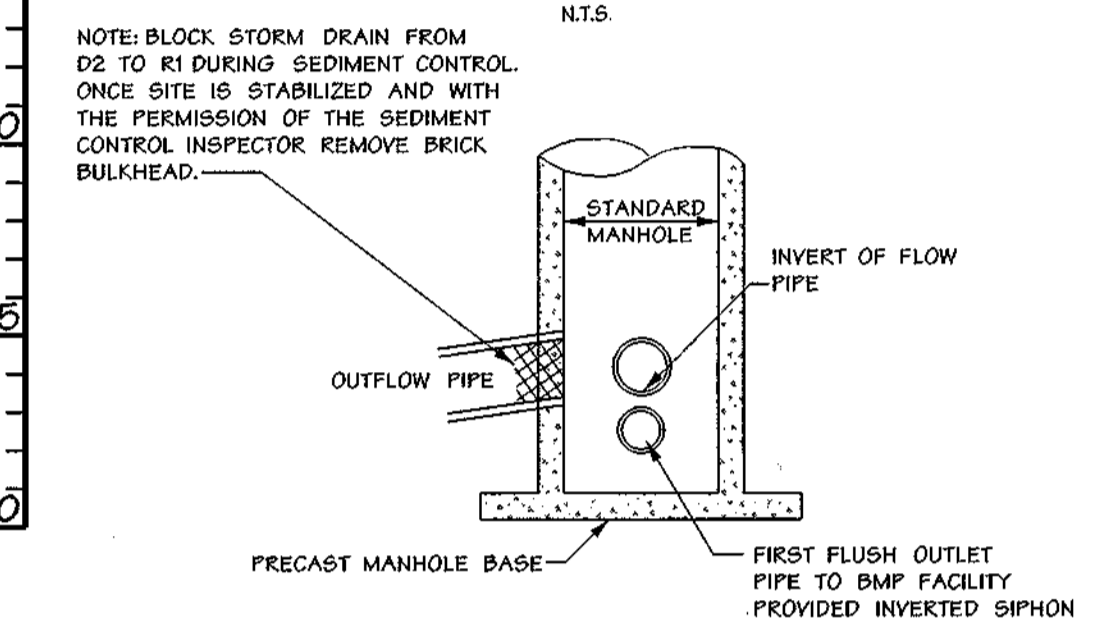


**PROFILE**

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

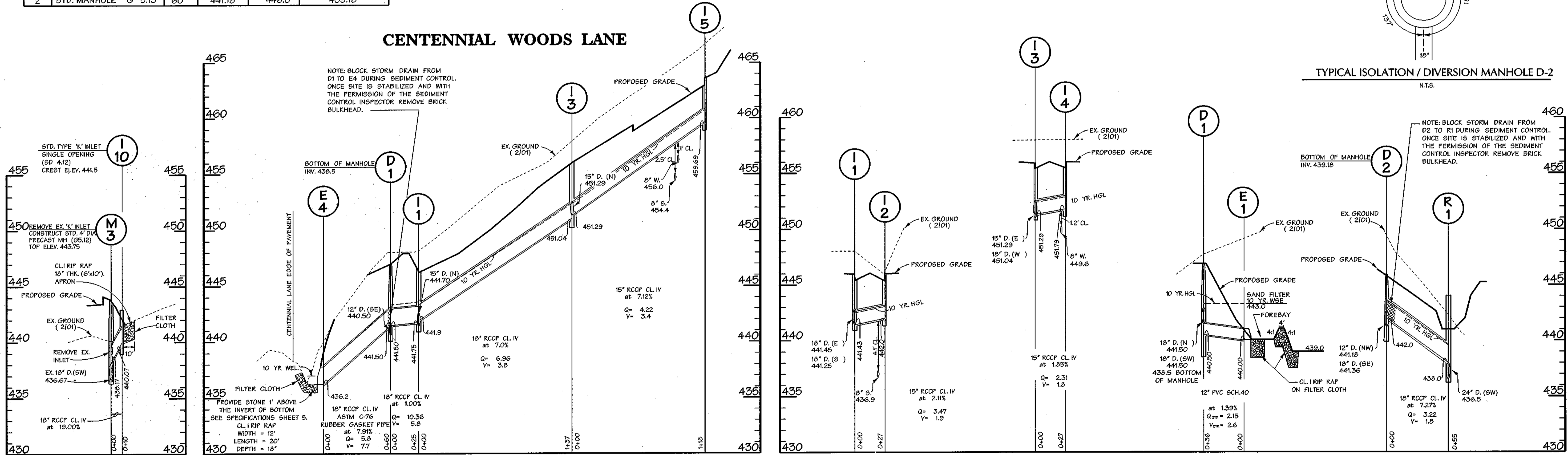


**TYPICAL ISOLATION / DIVERSION MANHOLE D-1**



**TYPICAL ISOLATION / DIVERSION MANHOLE D-2**

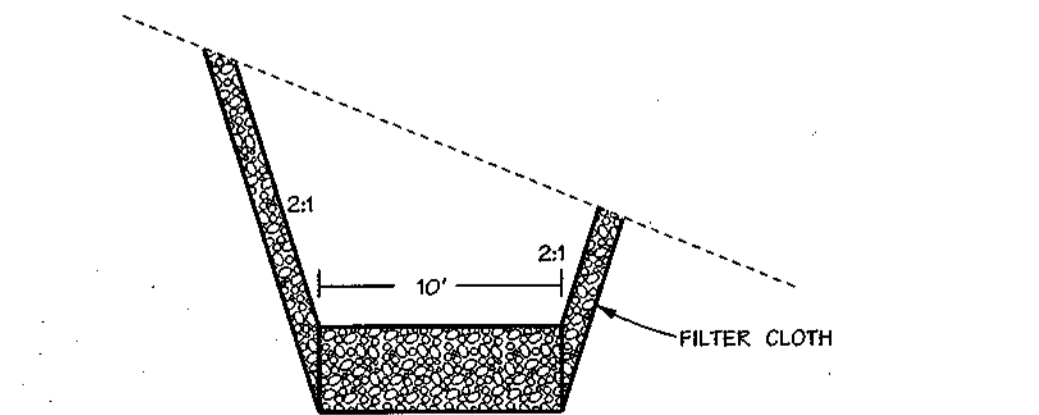
**CENTENNIAL WOODS LANE**



**PROFILE**

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

NOTE: ALL FILL AREAS UNDER THE PIPES SHALL MEET AASHTO T-180 SPECIFICATIONS FOR COMPACTION.



TYPICAL SECTION THRU RIP RAP OUTFALL  
 NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Andrew M. Casper* 3/12/03  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Andy Henth* 3/21/03  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Bob Dorman* 3/14/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE No. Revision-Description

**FINAL PLAN**

**CENTENNIAL WOODS**

RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2

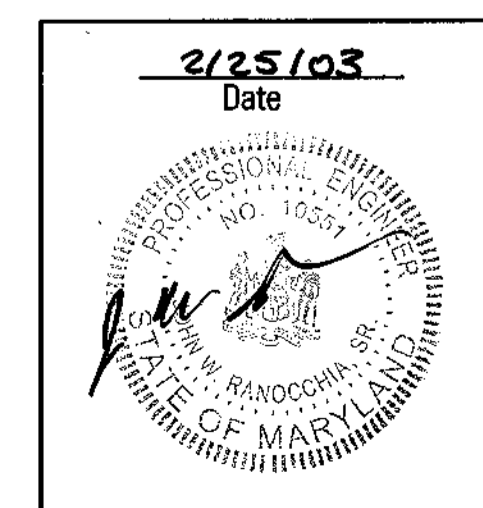
LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13

TAX MAP 24 GRID 19 PARCEL 294  
 TAX MAP 30 GRID 1 PARCEL 294

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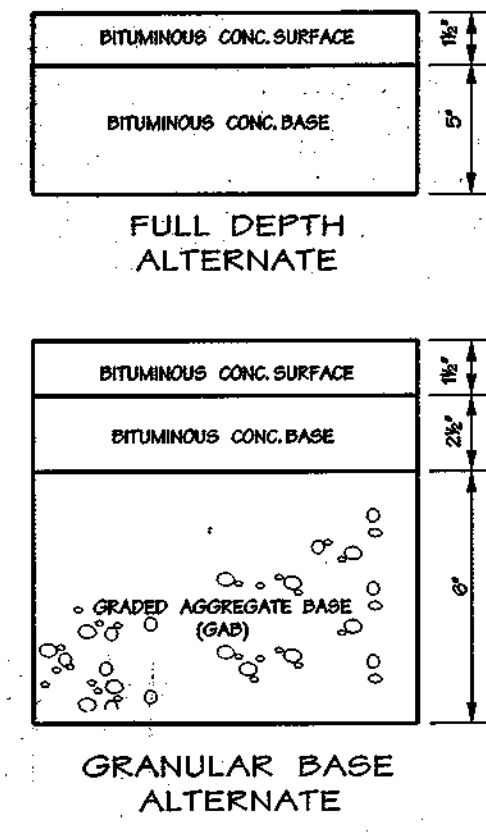
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 Engineers, Surveyors &  
 Environmental Professionals

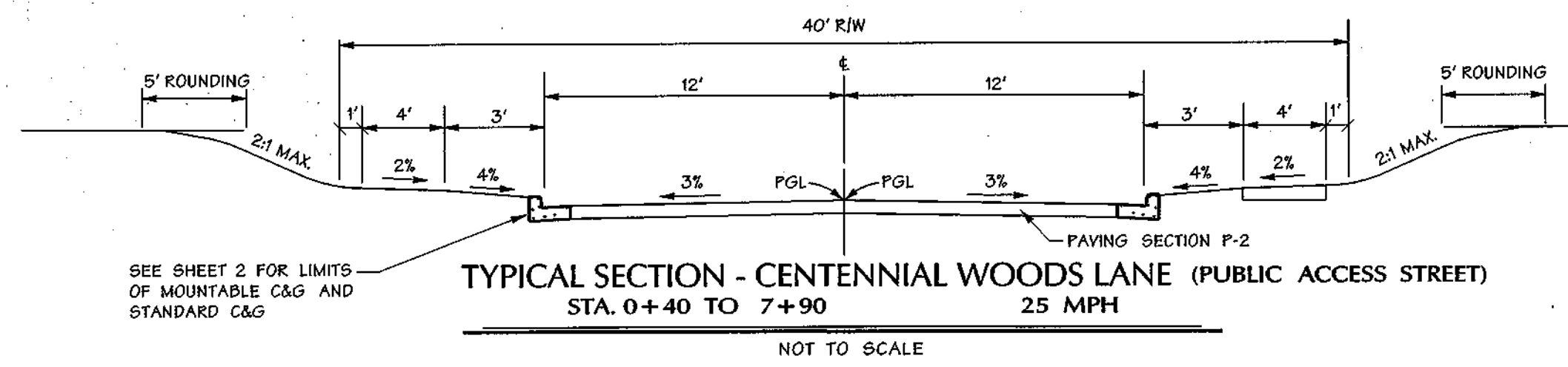
**STORM DRAIN PROFILES**

Des By RLH /REC Scale AS SHOWN Proj. No. 00044.C  
 Dm By KMF Date 2-13-03  
 Chk By RLH Approved 4 OF 15



PAVING SECTION P-2  
PUBLIC ACCESS STREET

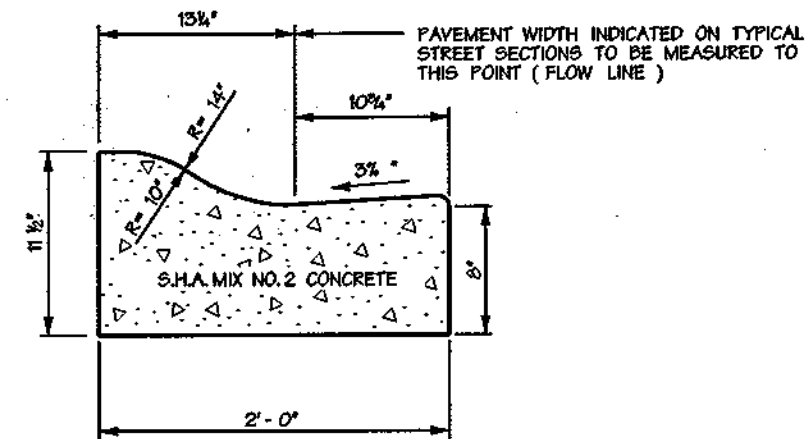
NOT TO SCALE



TYPICAL SECTION - CENTENNIAL WOODS LANE (PUBLIC ACCESS STREET)  
STA. 0+40 TO 7+90  
25 MPH

SEE SHEET 2 FOR LIMITS OF MOUNTABLE C&G AND STANDARD C&G

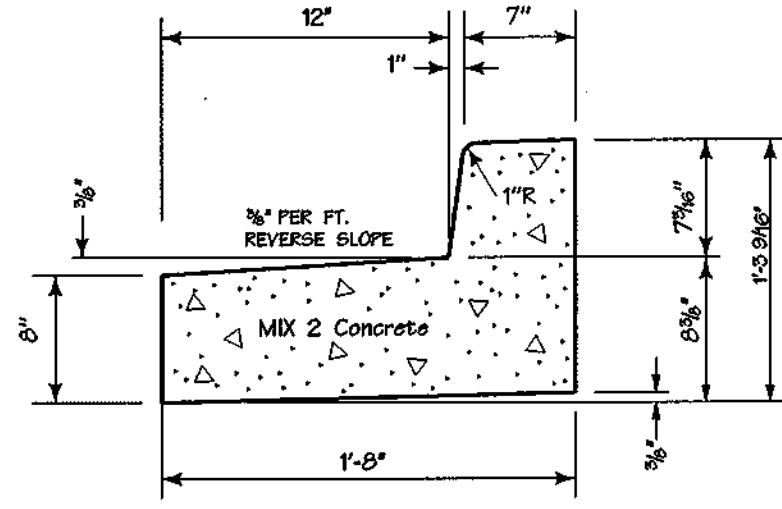
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SECTION

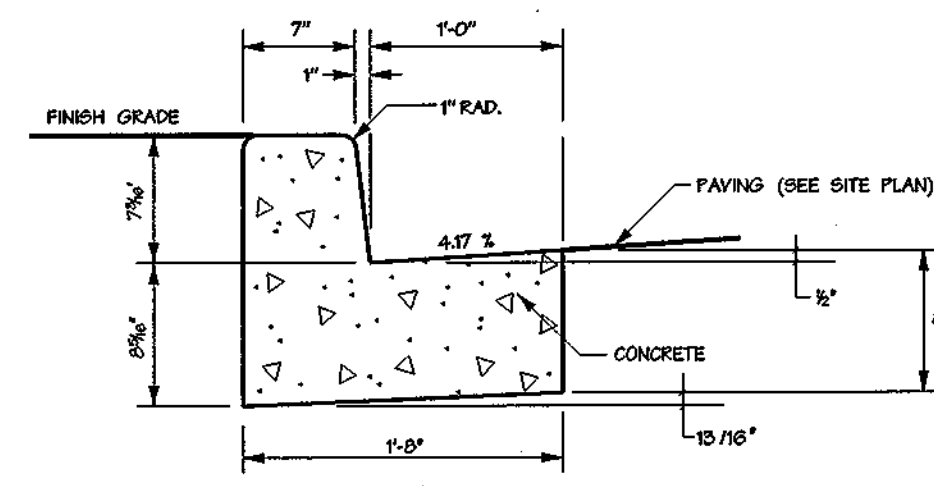
Modified Combination Curb & Gutter R-3.01

NOT TO SCALE



REVERSE 7" COMBINATION CURB & GUTTER R-3.01

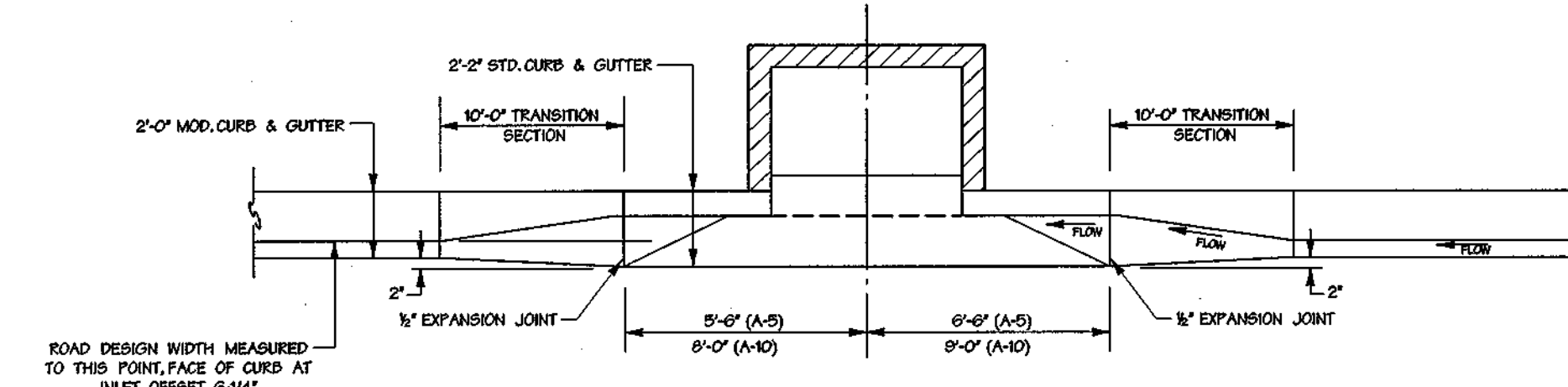
NOT TO SCALE



SECTION

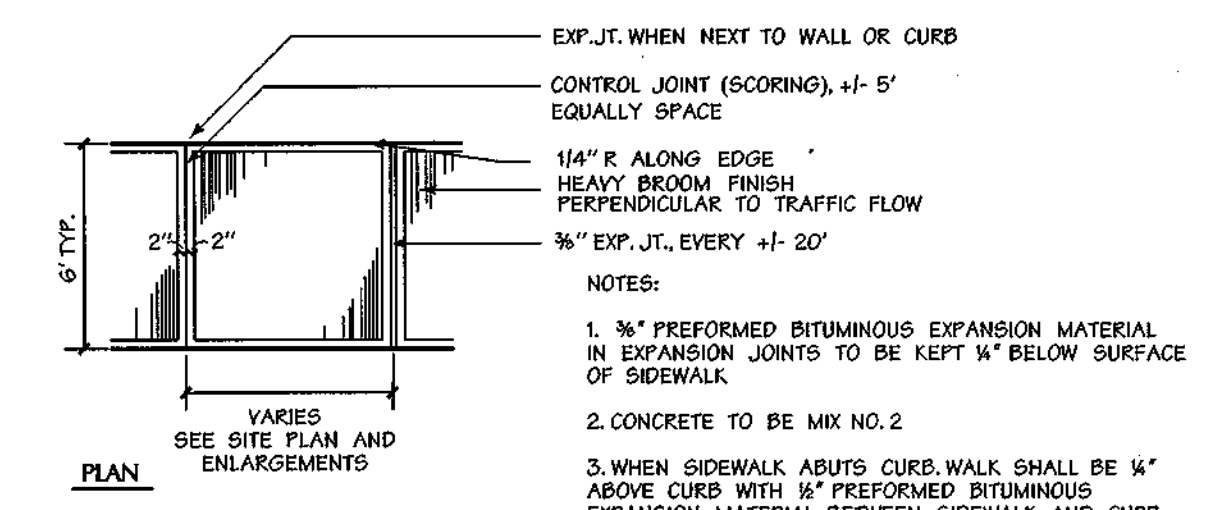
TYPE "A" CURB AND GUTTER R-3.01

NOT TO SCALE



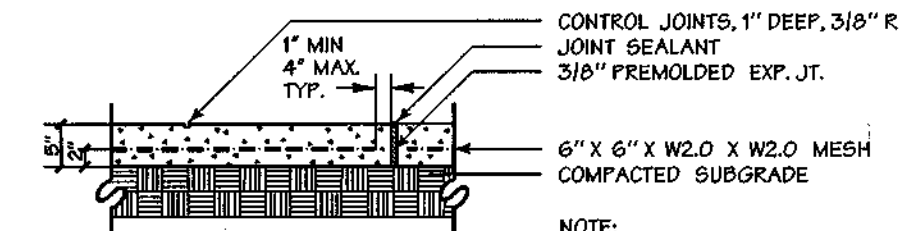
TRANSITION CURB FROM MODIFIED CURB & GUTTER TO STANDARD CURB & GUTTER AT A-5 & A-10 INLETS

NOT TO SCALE



PLAN

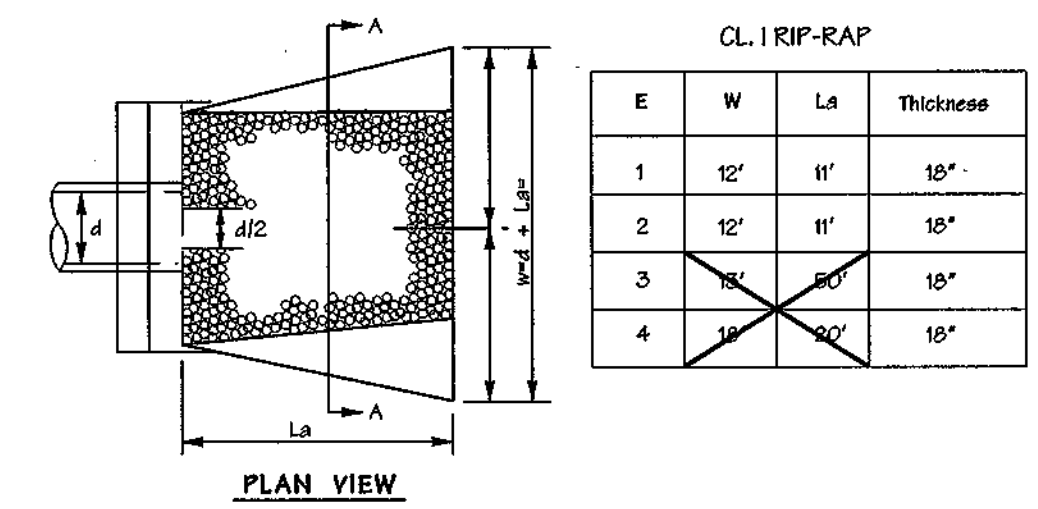
- NOTES:
1. 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
  2. CONCRETE TO BE MIX NO. 2.
  3. WHEN SIDEWALK ABUTS CURB, WALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB.



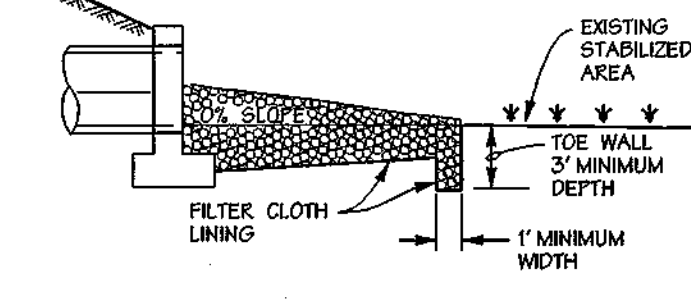
SECTION

CONCRETE WALK

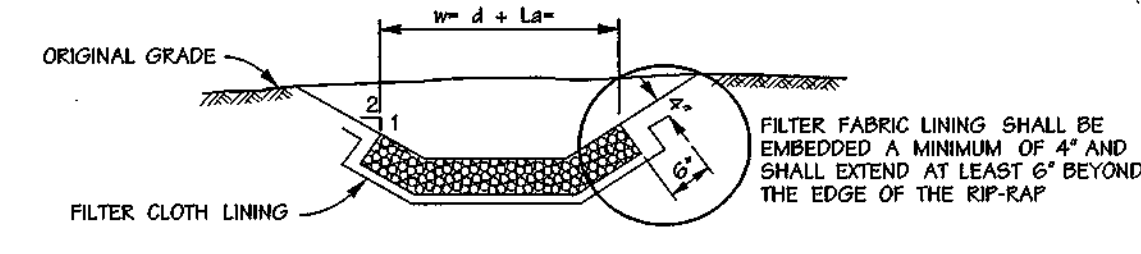
Not To Scale



PLAN VIEW



ELEVATION



SECTION A-A

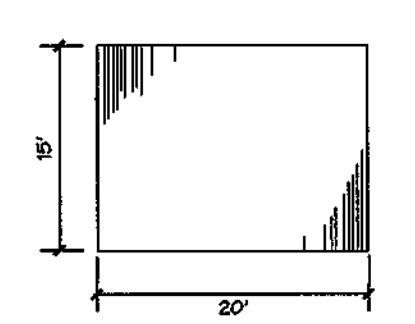
NOT TO SCALE

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 CLASS C 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.

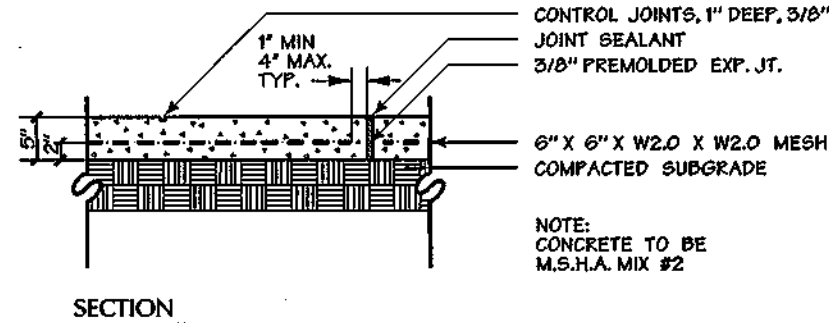
ROCK OUTLET PROTECTION III

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE



PLAN

- NOTES:
1. 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
  2. CONCRETE TO BE MIX NO. 2.



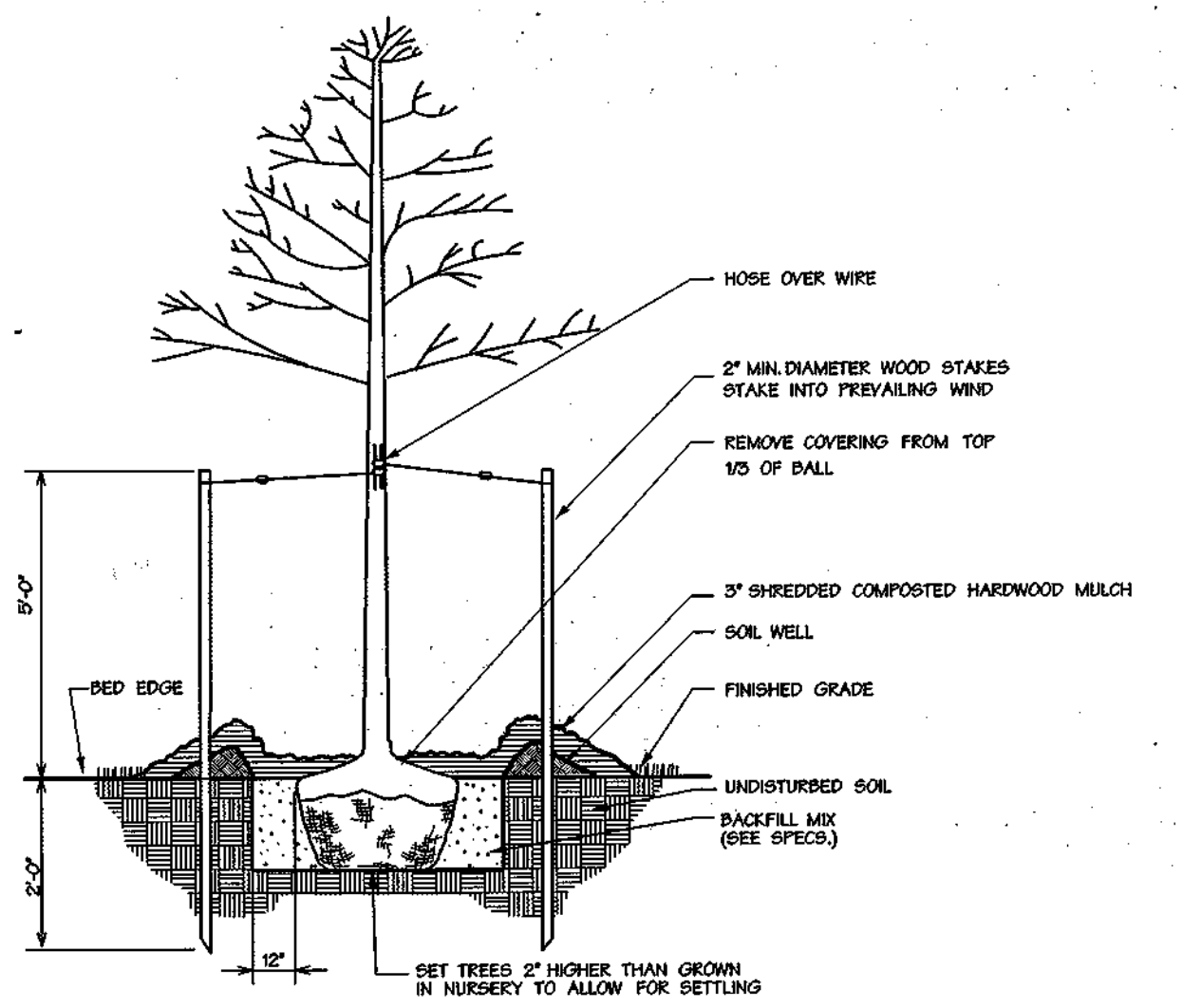
SECTION

SCHOOL BUS STANDING PAD

Not To Scale

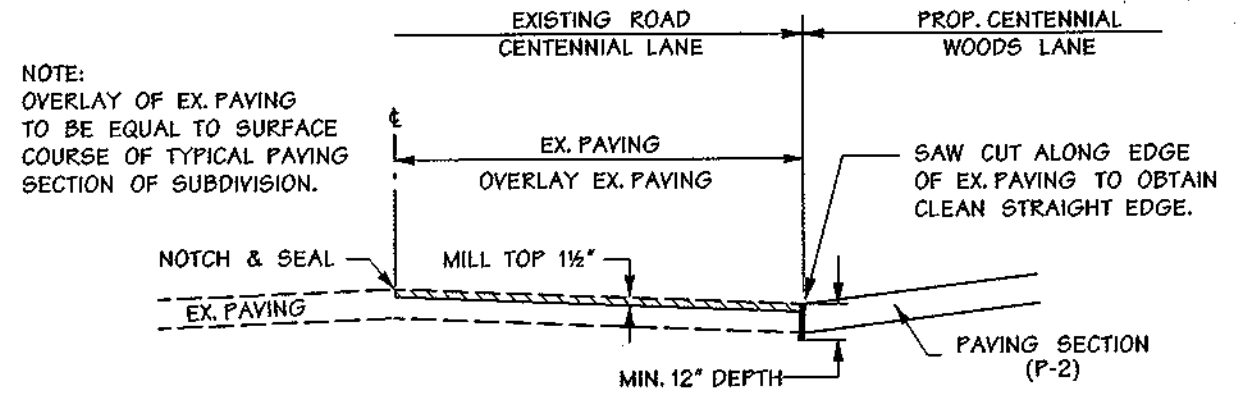
ROCK OUTLET PROTECTION SPECIFICATIONS

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE



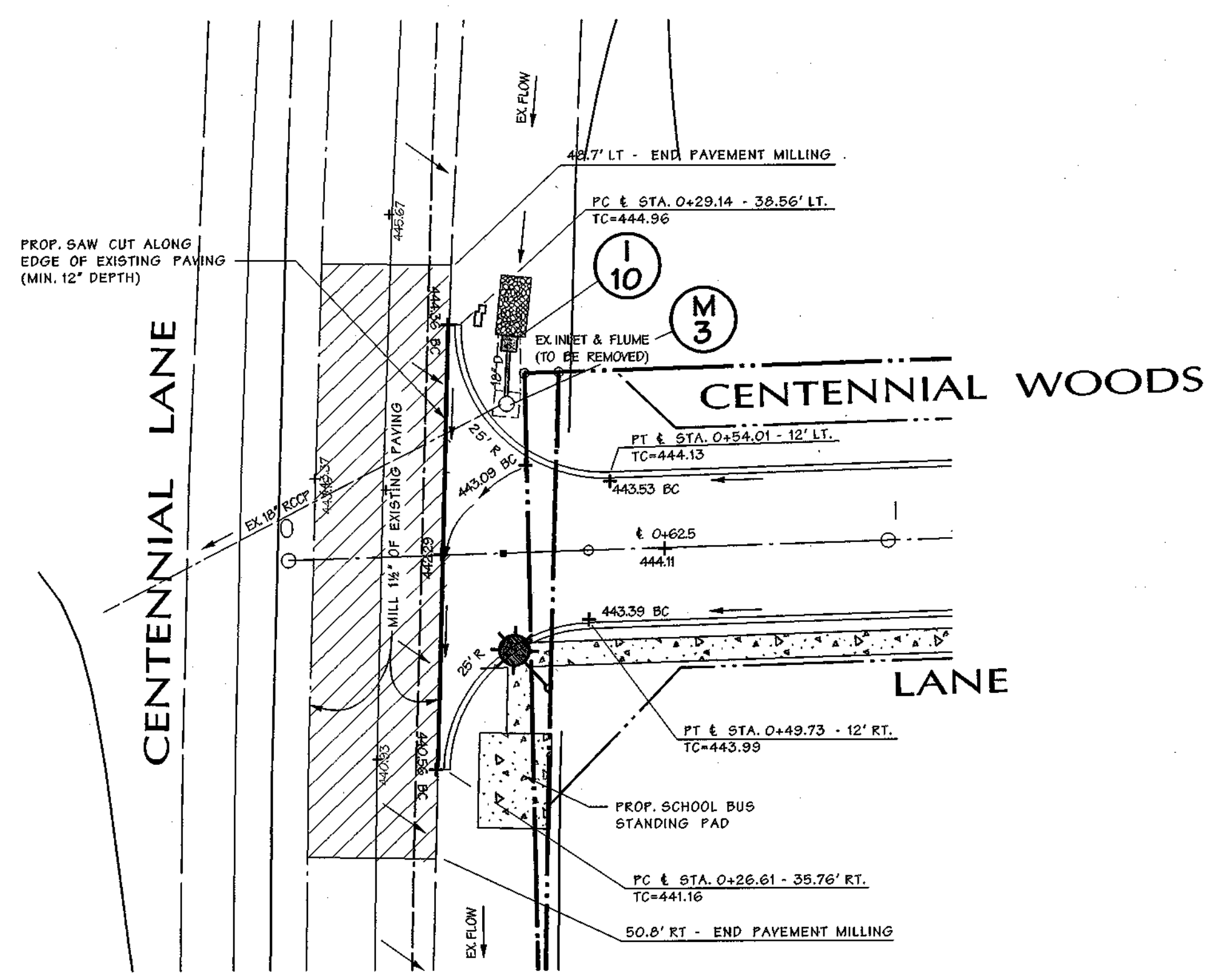
DECIDUOUS TREE DETAIL

(TO 3" CALIPER)



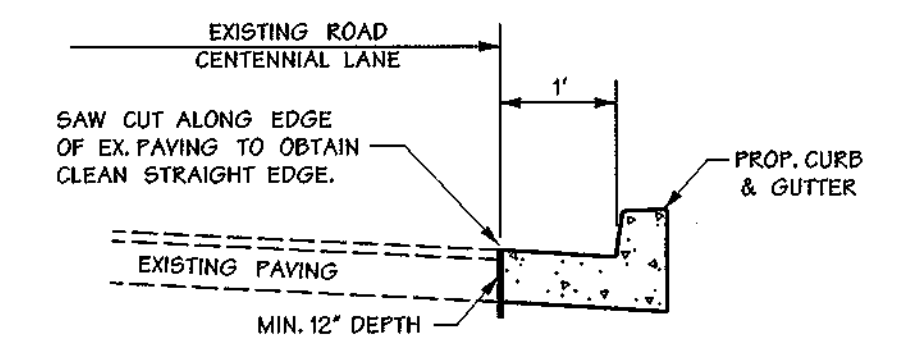
TYPICAL TIE-IN SECTION AT ENTRANCE

NOT TO SCALE



CENTENNIAL LANE AT CENTENNIAL WOODS LANE INTERSECTION GRADING PLAN

SCALE: 1"=20'



TYPICAL SECTION AT P.C. CURB RETURNS

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Howard M. Daniels* 3/12/03  
 CHIEF, BUREAU OF HIGHWAYS DATE

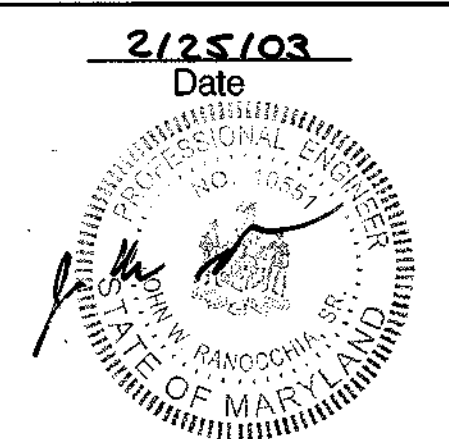
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
*John Daniels* 3/14/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*David H. Hensel* 3/21/03  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

FINAL PLAN  
**CENTENNIAL WOODS**  
 RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2  
 LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13  
 TAX MAP 24 GRID 19 PARCEL 294  
 TAX MAP 30 GRID 1 PARCEL 294

OWNER / DEVELOPER:  
 OWNER: SHERI O'DONNELL, NATHAN O'DONNELL  
 C/O NORTHEDGE DEVELOPMENT, LLC  
 14045 GARED DRIVE  
 GLENWOOD, MD 21758

DEVELOPER: NORTHEDGE DEVELOPMENT, LLC  
 14045 GARED DRIVE  
 GLENWOOD, MD 21758

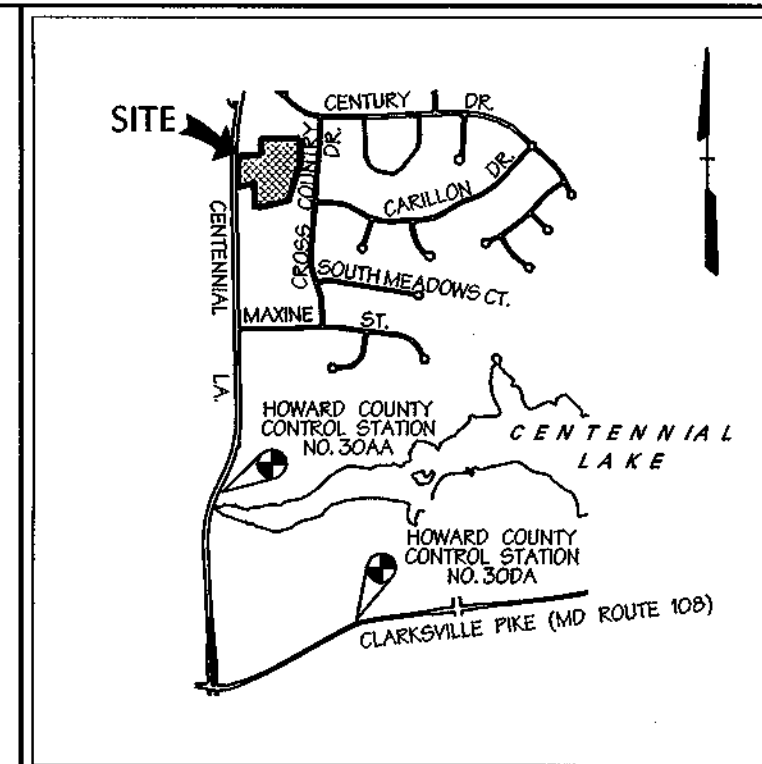


**DMW**  
 DeWitt-MacCune-Walker, Inc.  
 200 East Pennsylvania Avenue  
 Towson, Maryland 21286  
 (410) 298-3338  
 Fax 298-4708

A Team of Land Planners,  
 Landscape Architects,  
 Engineers, Surveyors &  
 Environmental Professionals

TITLE  
**ROAD CONSTRUCTION DETAILS**

Des By RLH Scale AS SHOWN Proj. No. 00044.C  
 Dwn By KDE Date 2-13-03  
 Chk By RLH Approved 5 of 15



**VICINITY MAP**  
SCALE: 1" = 2,000'

NOTE: Zoning is 25% Impervious for 1/3 acre, B soil lots.

**LEGEND**

- EX. CONTOURS
- EX. BUILDING
- PROP. WOODS LINE
- EX. WOODS LINE
- SOIL LINE
- PROP. LOT LINE
- Ⓢ LOT NUMBER
- PROPERTY LINE
- PROPOSED DA LIMITS

Area=1.35 Ac. C = 0.29  
Imp= 16% Ac. 1 PROPOSED DA LABEL

DATA SOURCES:  
BOUNDARY PER RECORD PLAT 14167, TOPO PER HOWARD COUNTY AERIAL DATED 1998.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Andrew M. Donnell* 3-12-03  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Chris Hensch* 3/31/03  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Andrew M. Donnell* 3/14/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description
		FINAL PLAN
		<b>CENTENNIAL WOODS</b>
		RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2
		LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13
		TAX MAP 24 GRID 19 PARCEL 294
		TAX MAP 20 GRID 1 PARCEL 294

OWNER / DEVELOPER:  
OWNER: MICHAEL O'DONNELL, KEITH O'DONNELL, MELINDA O'DONNELL, NATHAN O'DONNELL, C/O NORTHRIDGE DEVELOPMENT, LLC, 14045 GARED DRIVE, GLENWOOD, MD 21738  
DEVELOPER: NORTHRIDGE DEVELOPMENT, LLC, 14045 GARED DRIVE, GLENWOOD, MD 21738

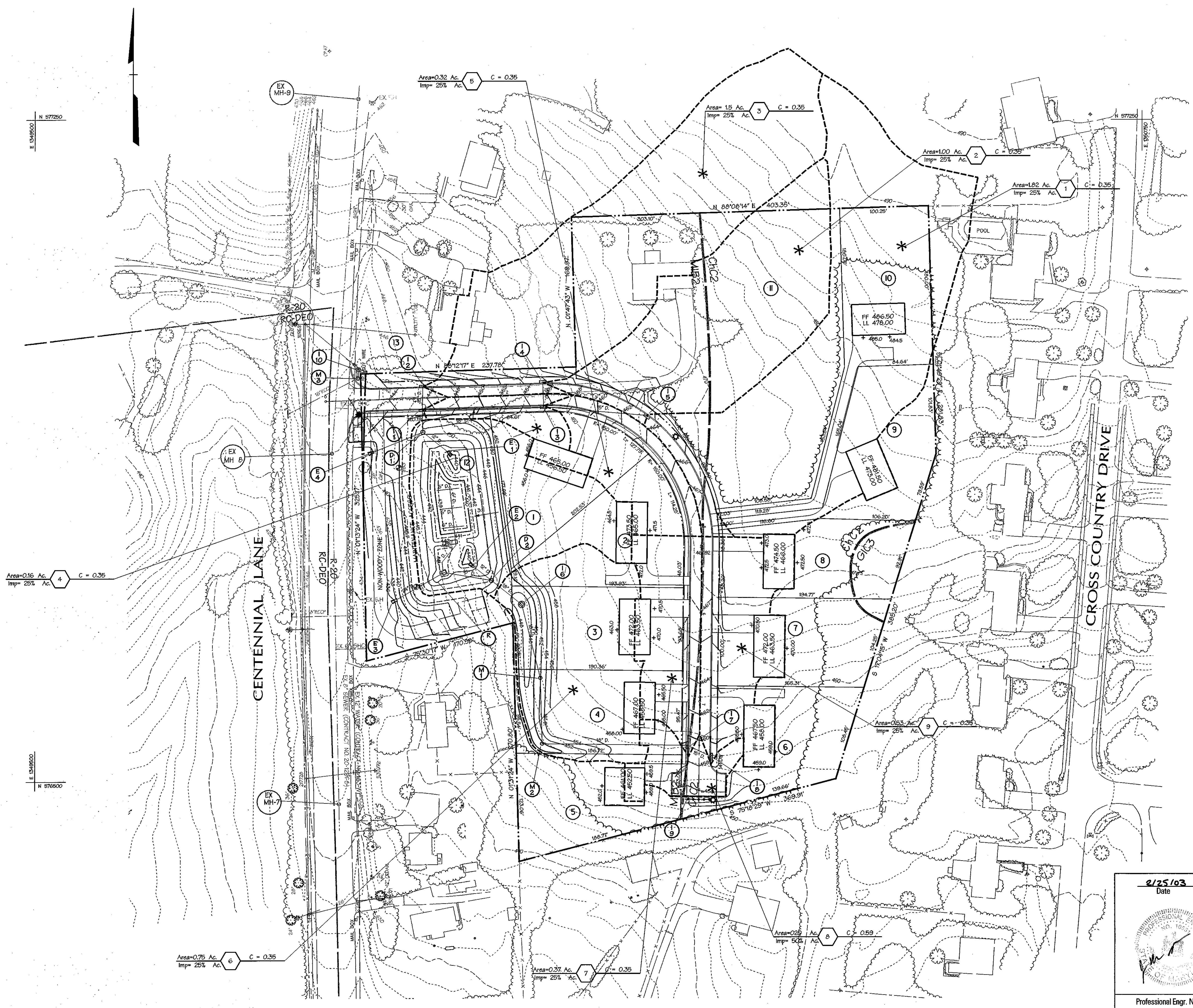
**DMW**  
Darr McCune-Walker, Inc.  
200 East Pennsylvania Avenue  
Towson, Maryland 21286  
(410) 296-3333  
Fax 296-4708

A Team of Land Planners,  
Landscape Architects,  
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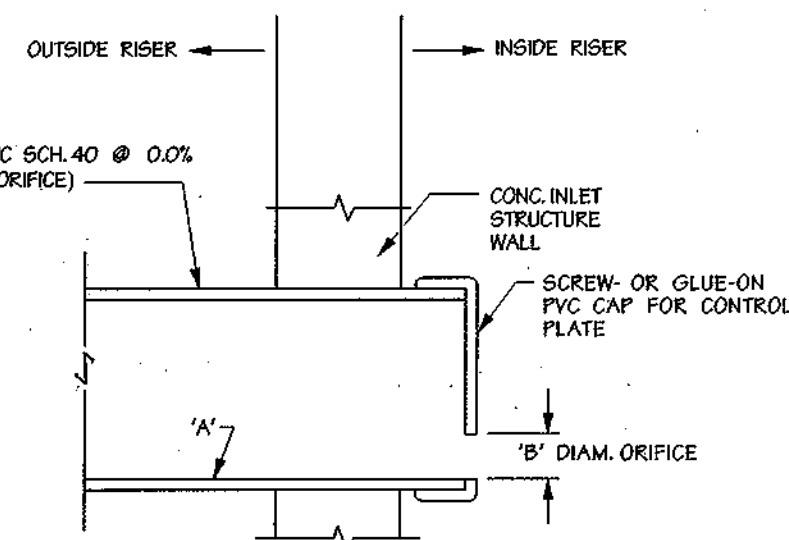
TITLE <b>STORM DRAIN DRAINAGE AREA MAP</b>		
Des By RLH	Scale 1" = 50'	Proj. No. 00044.C
Dim By KDE	Date 2-13-03	6 OF 15
Chk By RLH	Approved	

2/25/03  
Date

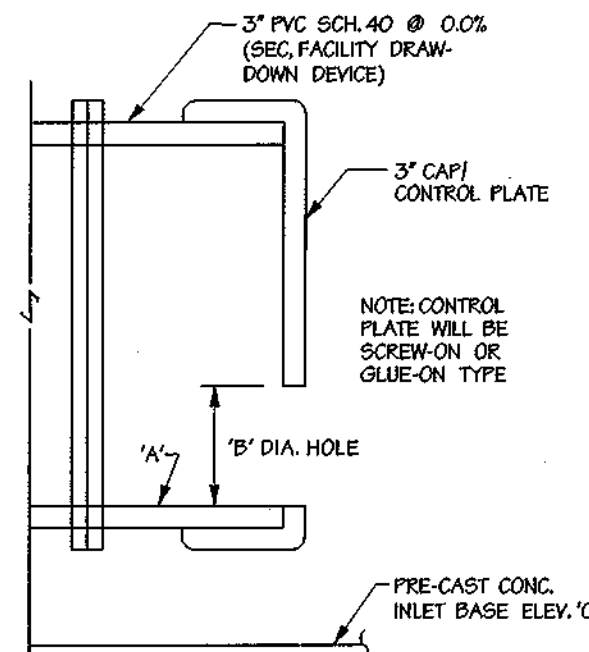
Professional Engr. No. 10557



SWM FACILITY	INVERT 'A'	DIAM. 'B'
1	441.0	15"

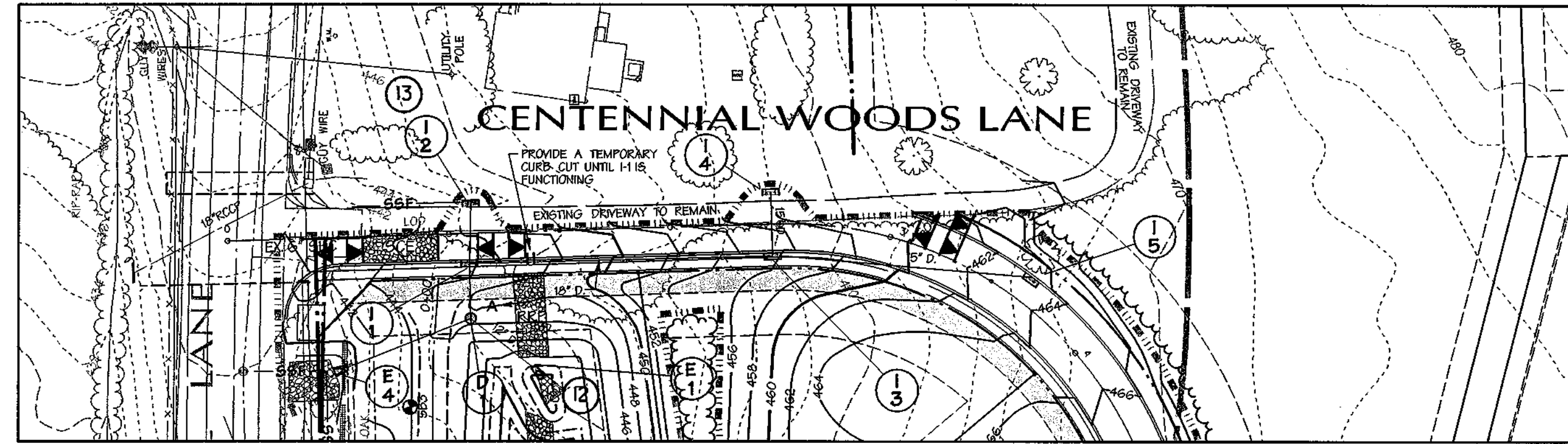


CHANNEL PROTECTION (Cpv) CONTROL PLATE DETAIL  
NTS

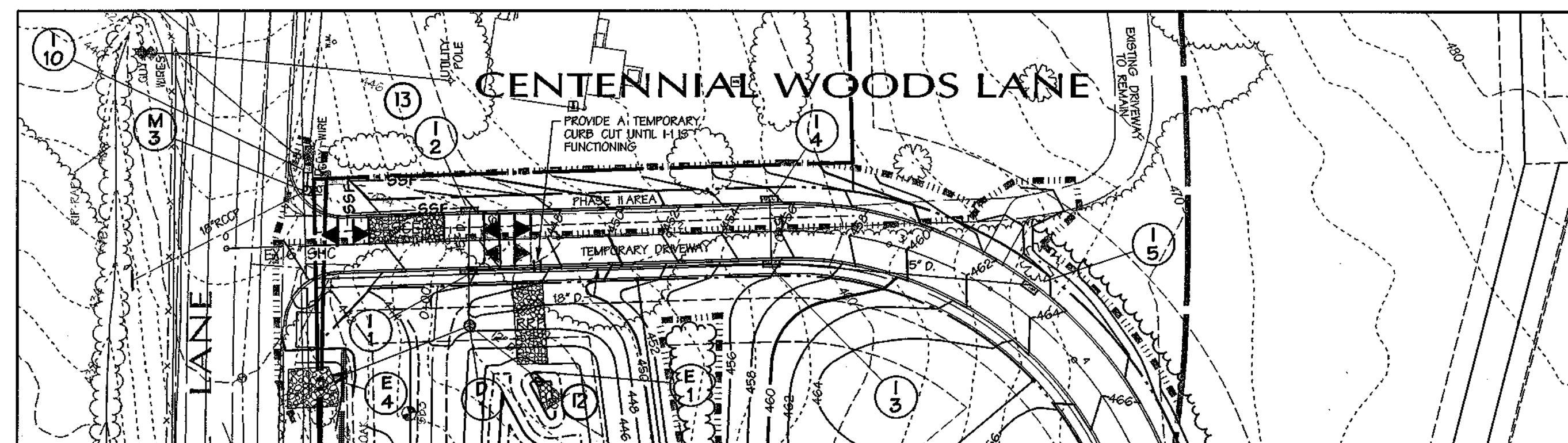


SEC BASIN	'A'	'B'	'C'
1	441.0	2.0'	439.0

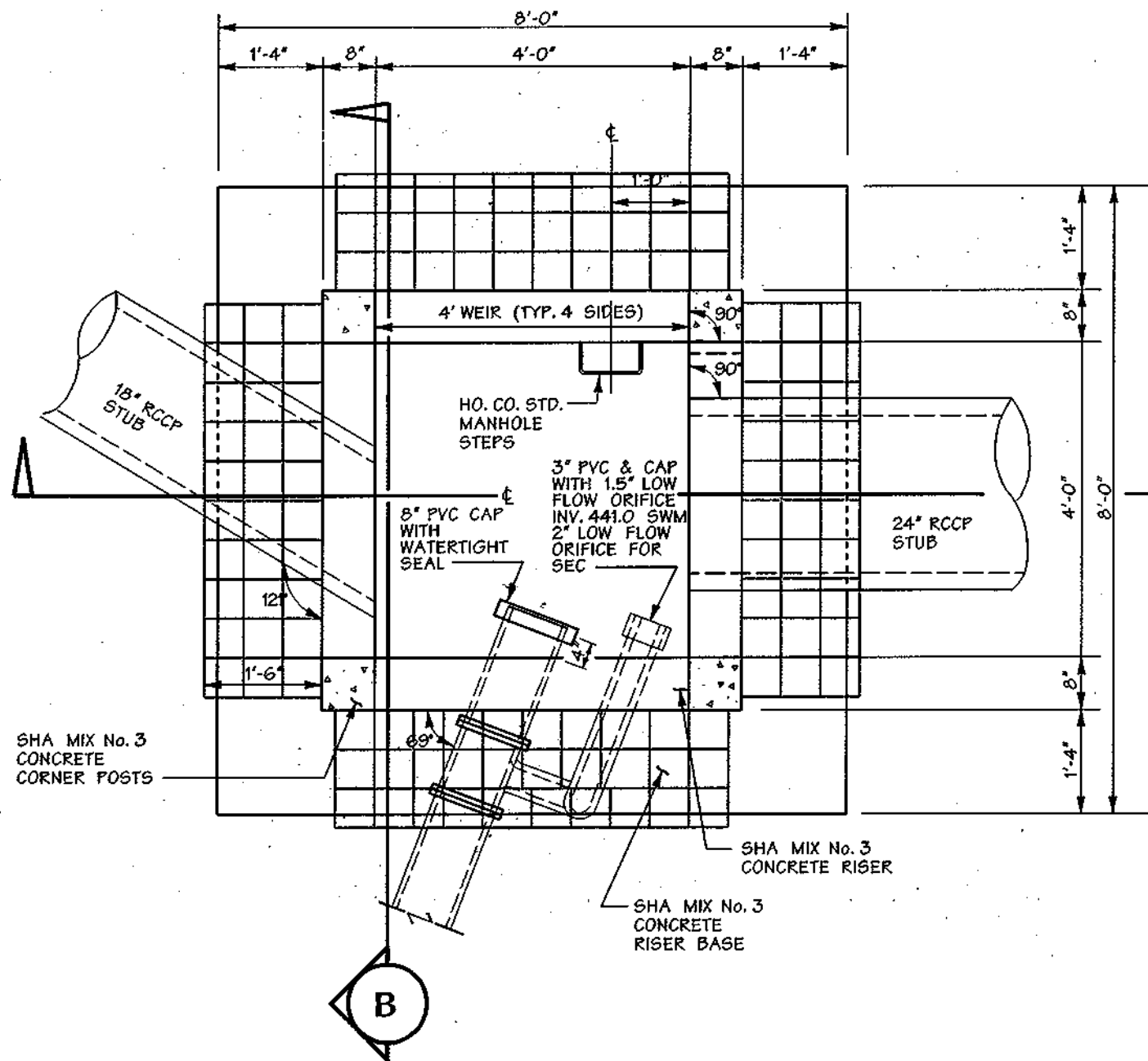
SEC 3\"/>



PHASE I  
1\"/>



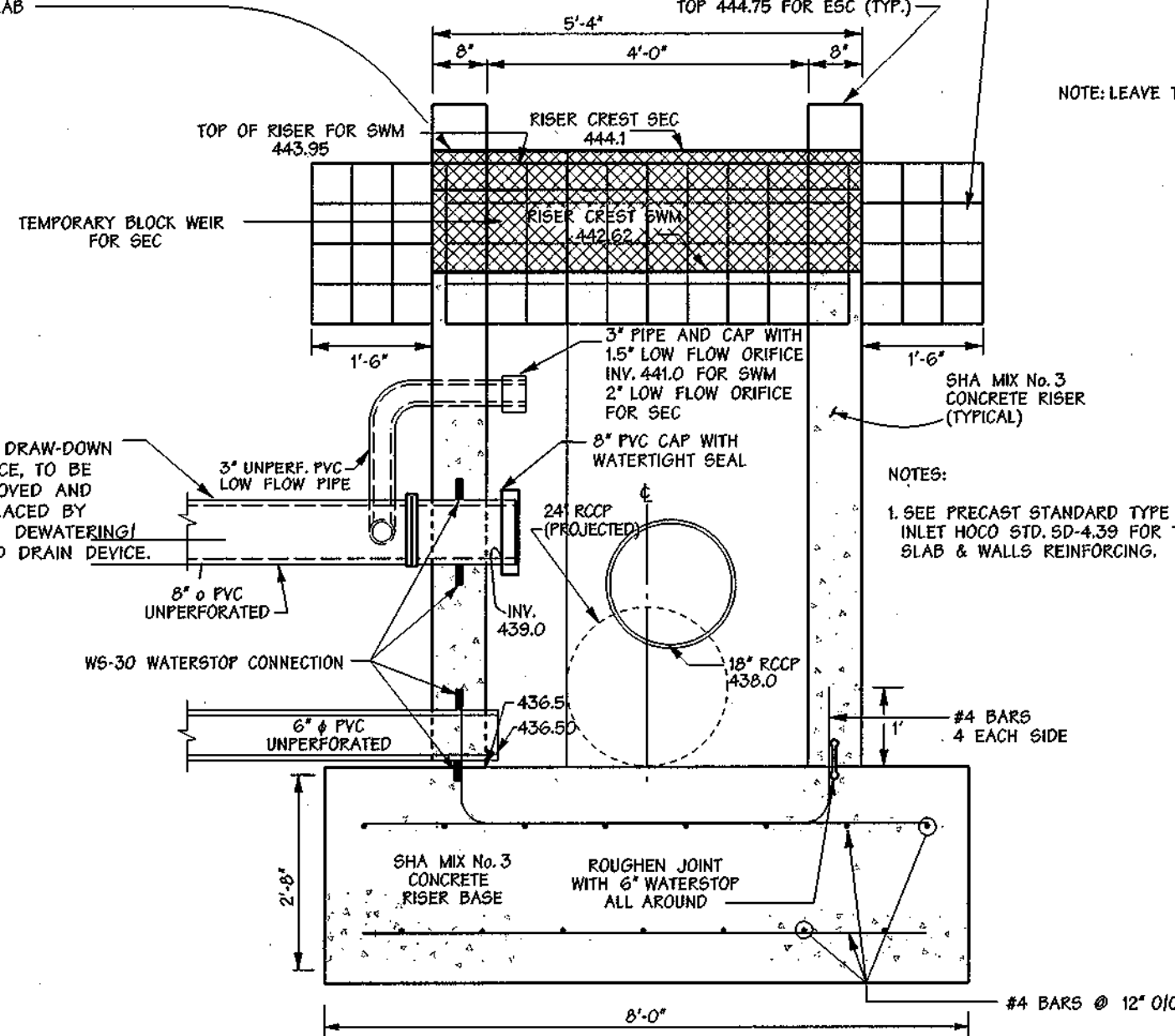
PHASE II  
1\"/>



R-1 RISER PLAN (TOP SLAB REMOVED)

Scale: 1/2\"/>

TRASH RACK 2'-0\"/>



SECTION A

SECTION B

R-1 RISER DETAIL

Scale: 1/2\"/>

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED & MAINTAINED STORMWATER PONDS

ROUTINE MAINTENANCE:

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

NON-ROUTINE MAINTENANCE:

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHALL BE REMOVED FROM POND AND FOREBAY NO LATER THAN WHEN CAPACITY OF THE POND OR FOREBAY IS HALF FULL OF SEDIMENT OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

DEVELOPER'S CERTIFICATION:

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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE ROAD CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*James H. Selfridge*  
 SIGNATURE OF DEVELOPER  
 PRINT NAME: JAMES H. SELFTRIDGE  
 DATE: 2/25/03

ENGINEER'S CERTIFICATION:

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.

*John W. Lanouchy Sr.*  
 SIGNATURE OF ENGINEER  
 PRINT NAME: JOHN W. LANOUCHY SR.  
 DATE: 2/25/03  
 PE10551

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

*Jim Lyons*  
 SIGNATURE OF REVIEWER  
 DATE: 3/5/03  
 U.S. NATURAL RESOURCE CONSERVATION SERVICE  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 HOWARD S.C.D. DATE: 3/5/03

2/25/03  
 Date



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Andrew M. Jankel*  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 3-12-03

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Chris Klenck*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 3/2/03

*Chris Dammers*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 3/14/03

Date No. Revision Description

FINAL PLAN

CENTENNIAL WOODS

RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2

LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13

TAX MAP 24 GRID 19 PARCEL 234

TAX MAP 30 GRID 1 PARCEL 294

OWNER /DEVELOPER:  
 OWNER: SHERI O'DONNELL, NATHAN O'DONNELL, C/O NORTHBRIDGE DEVELOPMENT, LLC, 14045 GARED DRIVE, GLENWOOD, MD 21738  
 DEVELOPER: NORTHBRIDGE DEVELOPMENT, LLC, 14045 GARED DRIVE, GLENWOOD, MD 21738

**DMW**  
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 Towson, Maryland 21286  
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 Fax 296-4705  
 A Team of Land Planners,  
 Landscape Architects,  
 Engineers, Surveyors &  
 Environmental Professionals

TITLE: DETAILS

Des By	RLH	Scale	AS SHOWN	Proj. No.	00044.C
Dim By	KDE	Date	2-13-03		
Chk By	RLH	Approved			7 OF 14

21.0 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 material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
c. The original soil to be vegetated contains material toxic to plant growth.
d. The soil is so acidic that treatment with limestone is not feasible.
II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section on the Soil Survey published by USDA-NRCS in cooperation with Maryland Agricultural Experiment 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, or silty loam as recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, coarse fragments, gravel sticks, roots, trash, and other materials larger than 1 1/2 inch in diameter.
II. Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, 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.
II. For sites having disturbed areas over 5 acres:
I. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
b. Organic contents 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.

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, albeit 4" - 6" higher in elevation.
III. Topsoil shall be uniformly distributed in a 4" - 6" layer and lightly compacted to a minimum. Grades of 4" - 6" 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.

Topsoil Specifications

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (2013-2015).
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 THEREOF.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
A. SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1.
B. FORTY EIGHT DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPPING STRUCTURES SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEM PERIMETER IN ACCORDANCE WITH VOL. I, 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 SEEDINGS (SEC. 51), 5005 (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 7.84 ACRES
AREA TO BE ROOFED OR PAVED 3.39 ACRES
AREA TO BE VEGETATIVELY STABILIZED 0.73 ACRES
TOTAL CUT 2.66 ACRES
TOTAL FILL 6000 CUBIC YARDS
OFF-SITE WASTE/BORROW AREA LOCATION WASTE = N/A
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 REQUIRED 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 FEET LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

Sediment Control General Notes

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 Schedules:
1. Preferred - Apply 2 tons per acre Dolomitic Limestone (92 lbs./1000 sq. ft.) and 1000 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./1000sq.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 (14 lbs./1000sq.ft.) of Kentucky 31 tall fescue. For the period May 1 thru July 31 seed with 60 lbs. Kentucky 31 tall fescue per acre and 2 lbs. per acre (.05 lbs./1000sq.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 - 90 lbs./1000sq.ft.) of rotted small grain straw immediately after seeding. Anchor mulch immediately after applications using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 3 feet or higher, use 348 gallons per acre (8 gal/1000sq.ft.) for anchoring.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where 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./1000sq.ft.)

Seeding - For the periods March 1 thru April 30, and August 15 thru October 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs./1000sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching - Apply 1-1/2 to 2 tons per acre (70 - 90 lbs./1000sq.ft.) of rotted 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 3 ft. or higher, use 348 gal. per acre (8 gal/1000 sq.ft.) for anchoring.

Refer to the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control for additional rates and methods not covered.

Permanent Seeding Notes

TEMPORARY METHODS:

- 1. MULCHING - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
2. VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
3. TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN FLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE FLOWS SPACED ABOUT 12 INCHES APART. SPRING-TOOTHED HARROWS, AND SIMILAR FLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOST KEPTEN AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THE RUNOFF BEGINS TO FLOW.
5. BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
6. CALCIUM CHLORIDE - APPLY AT A RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

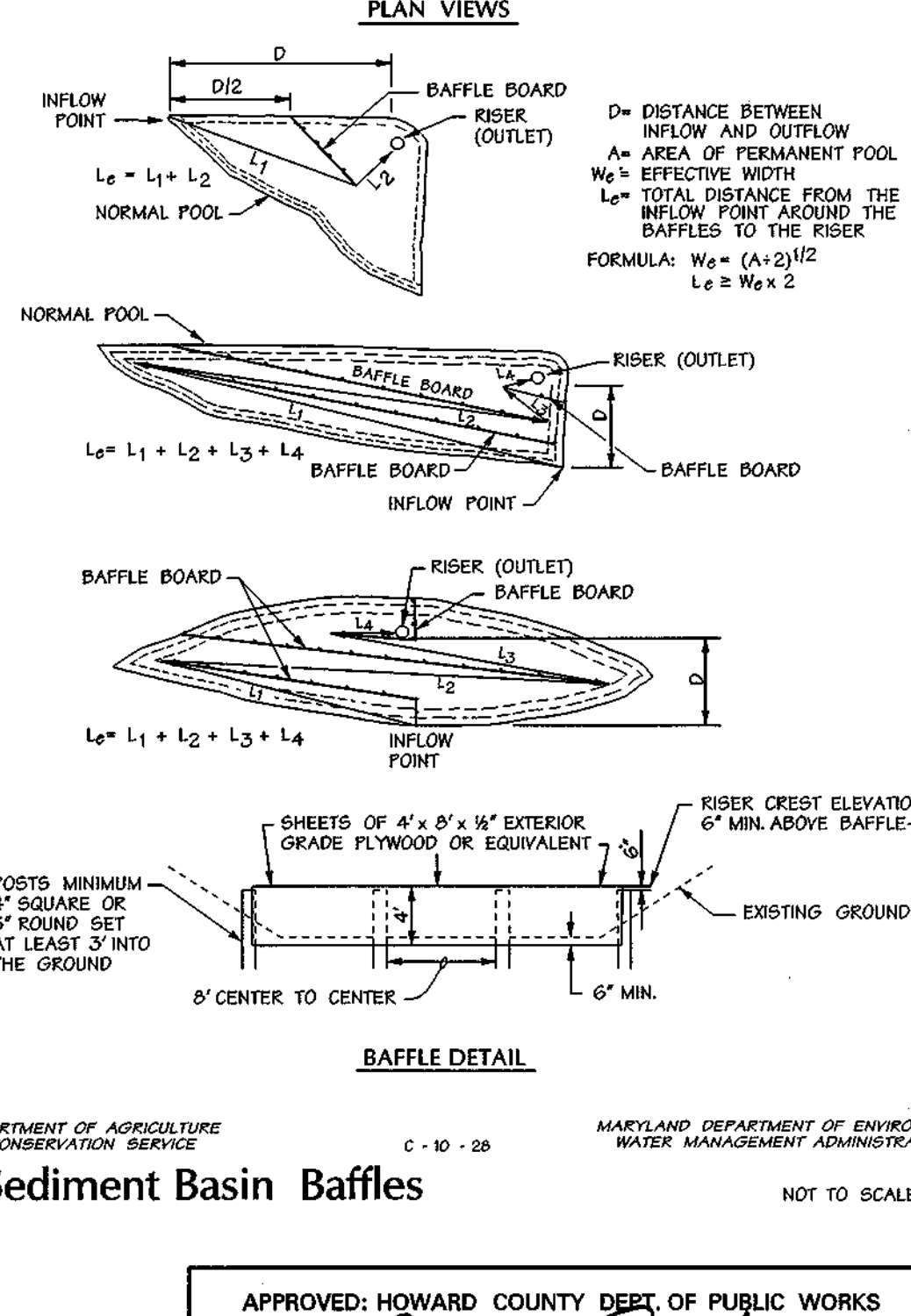
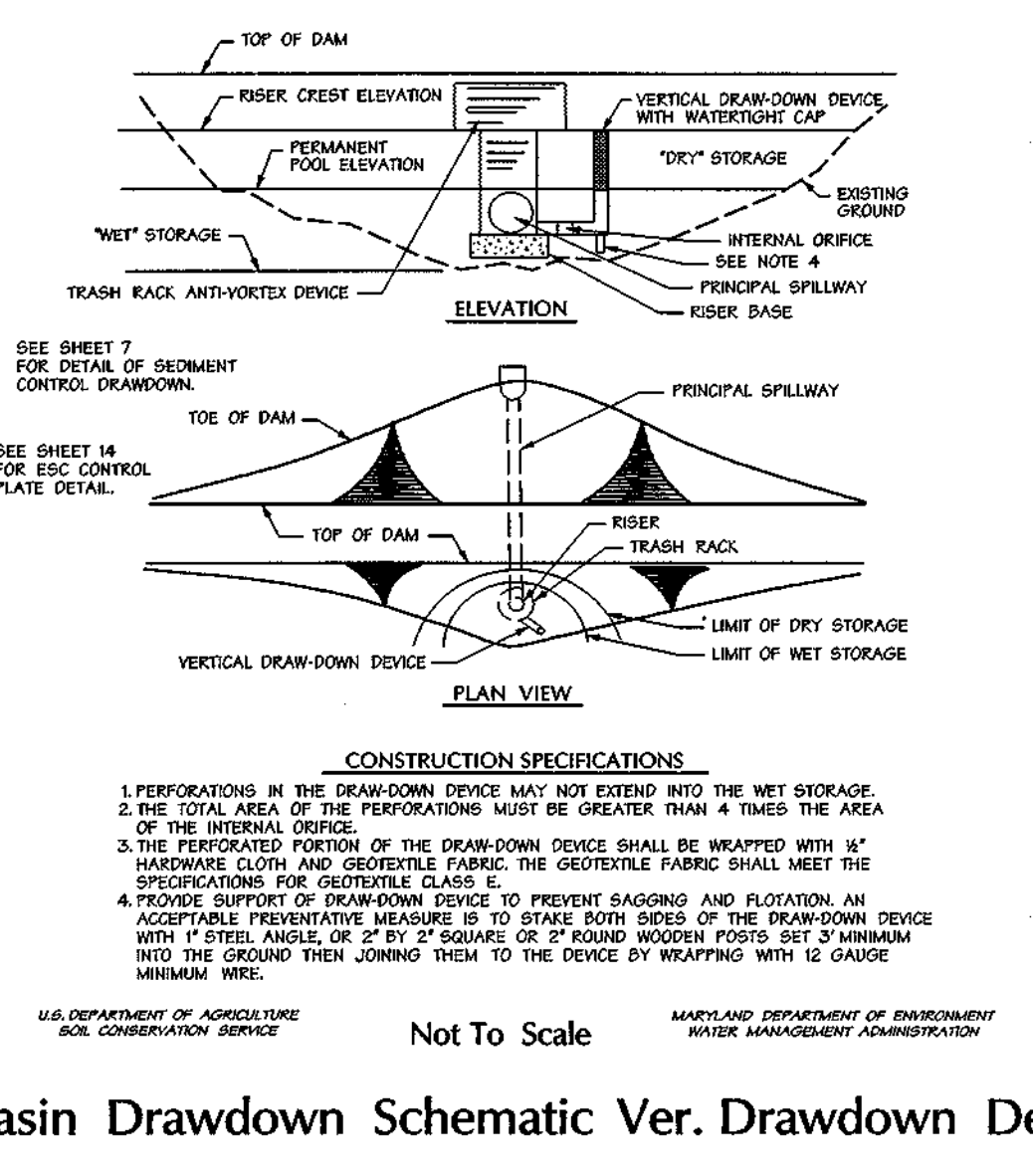
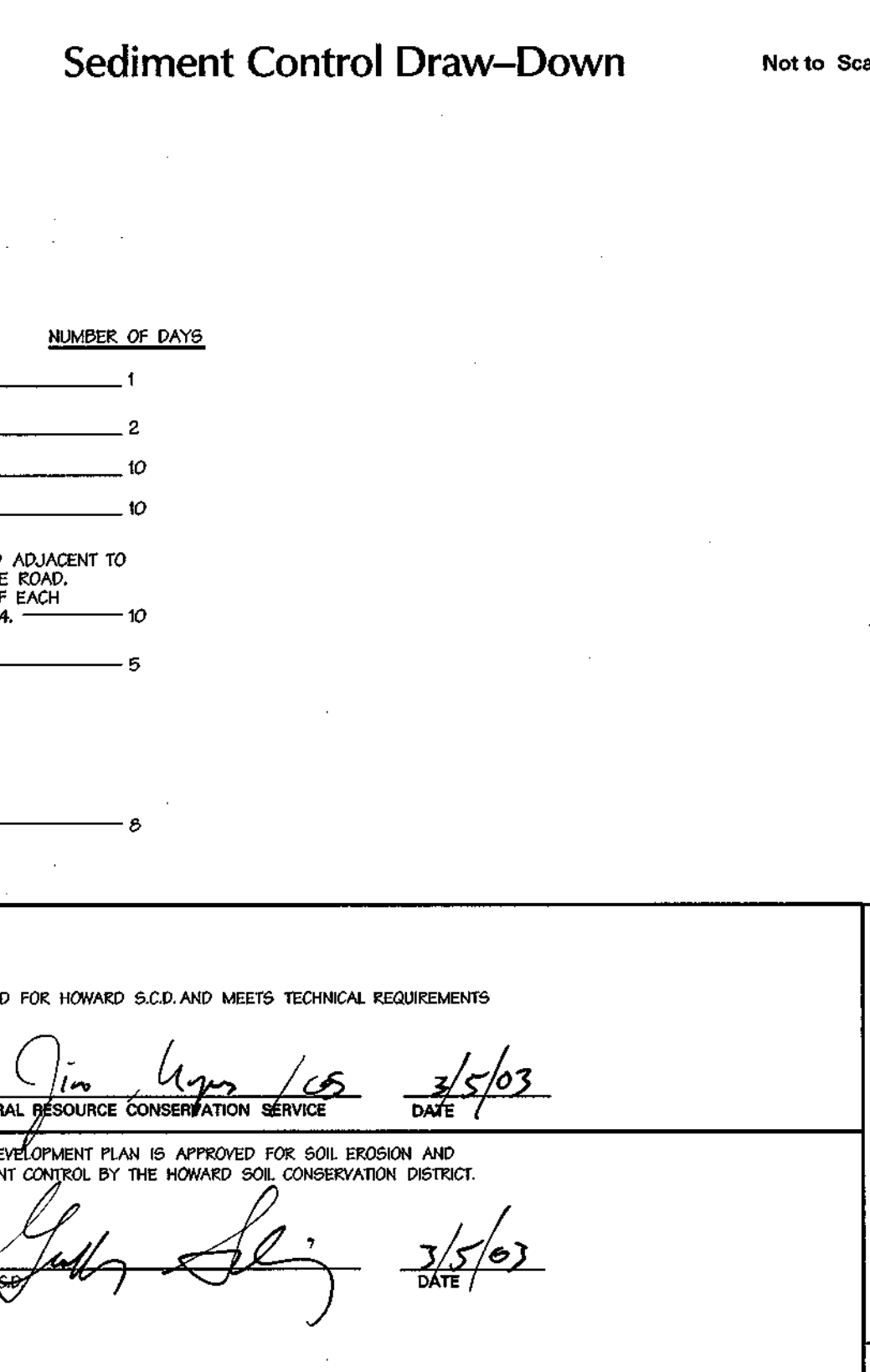
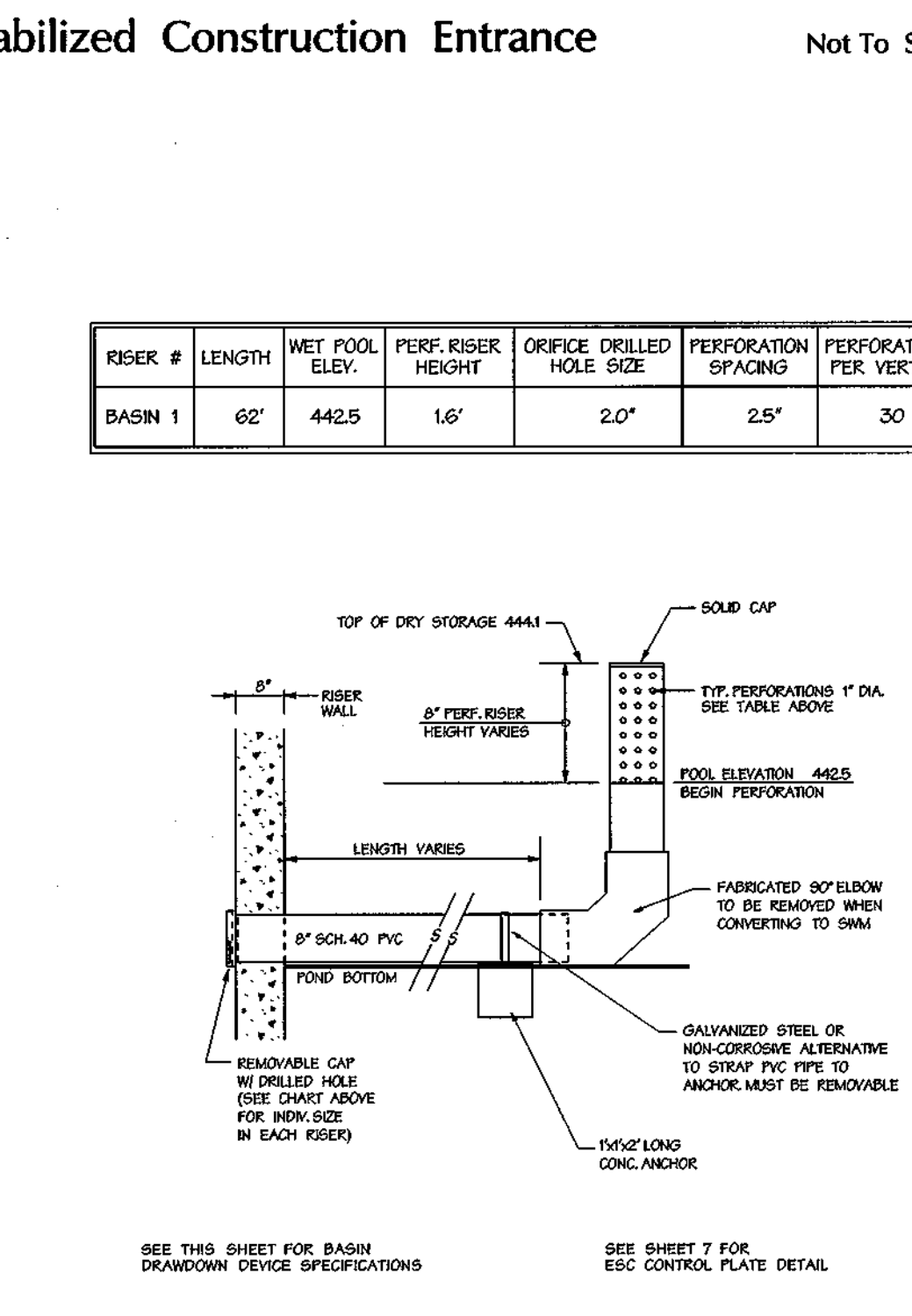
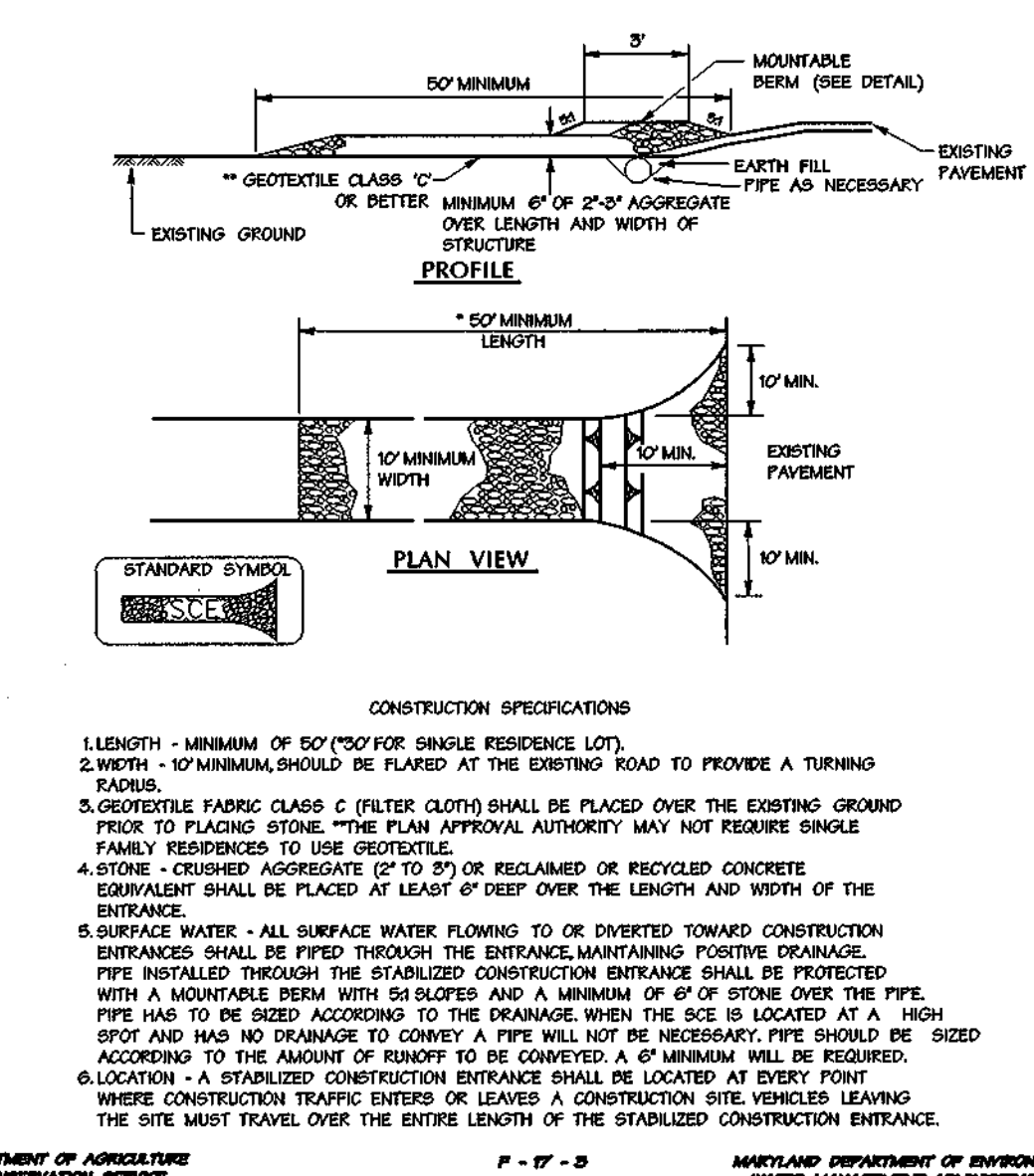
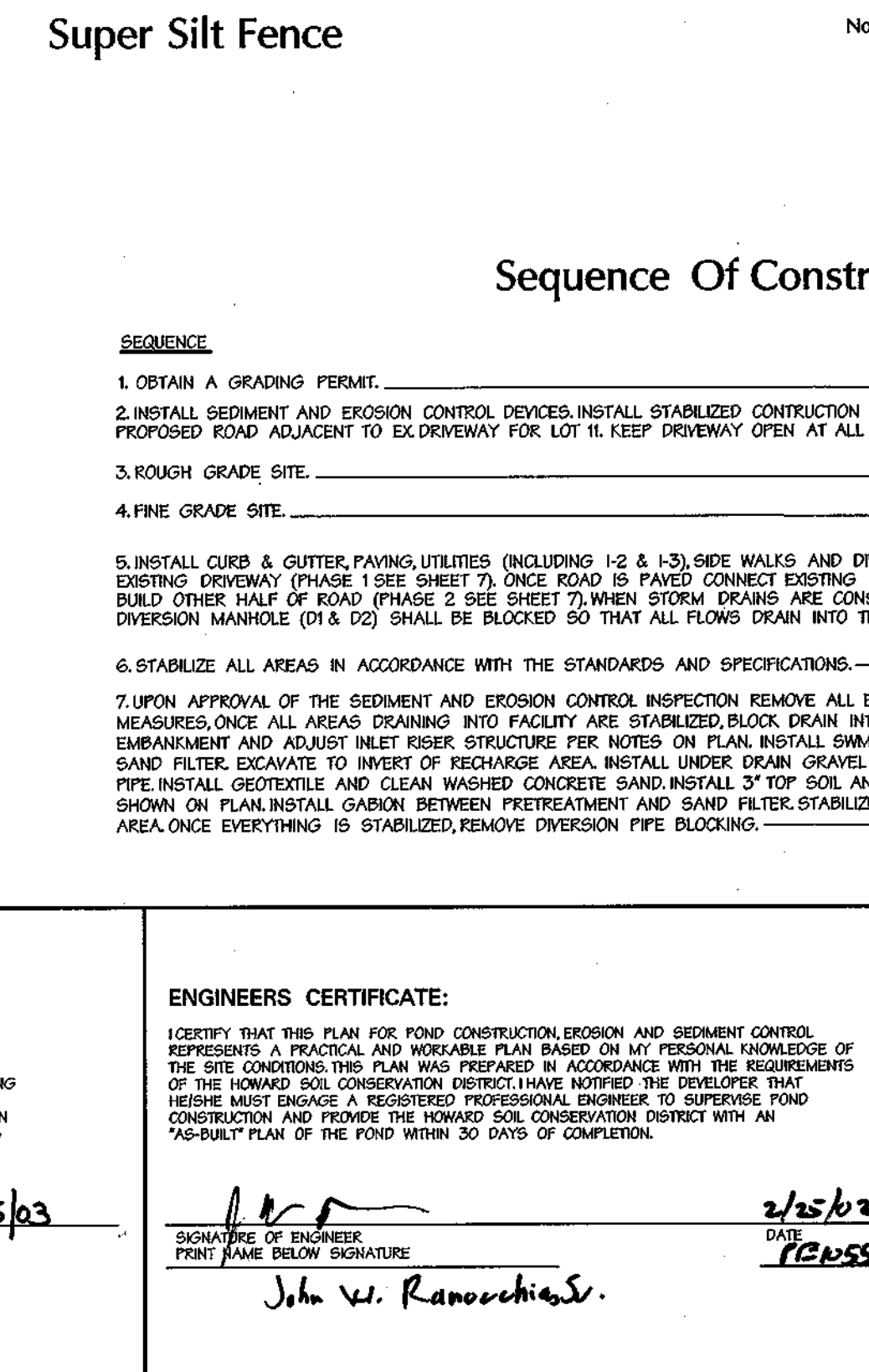
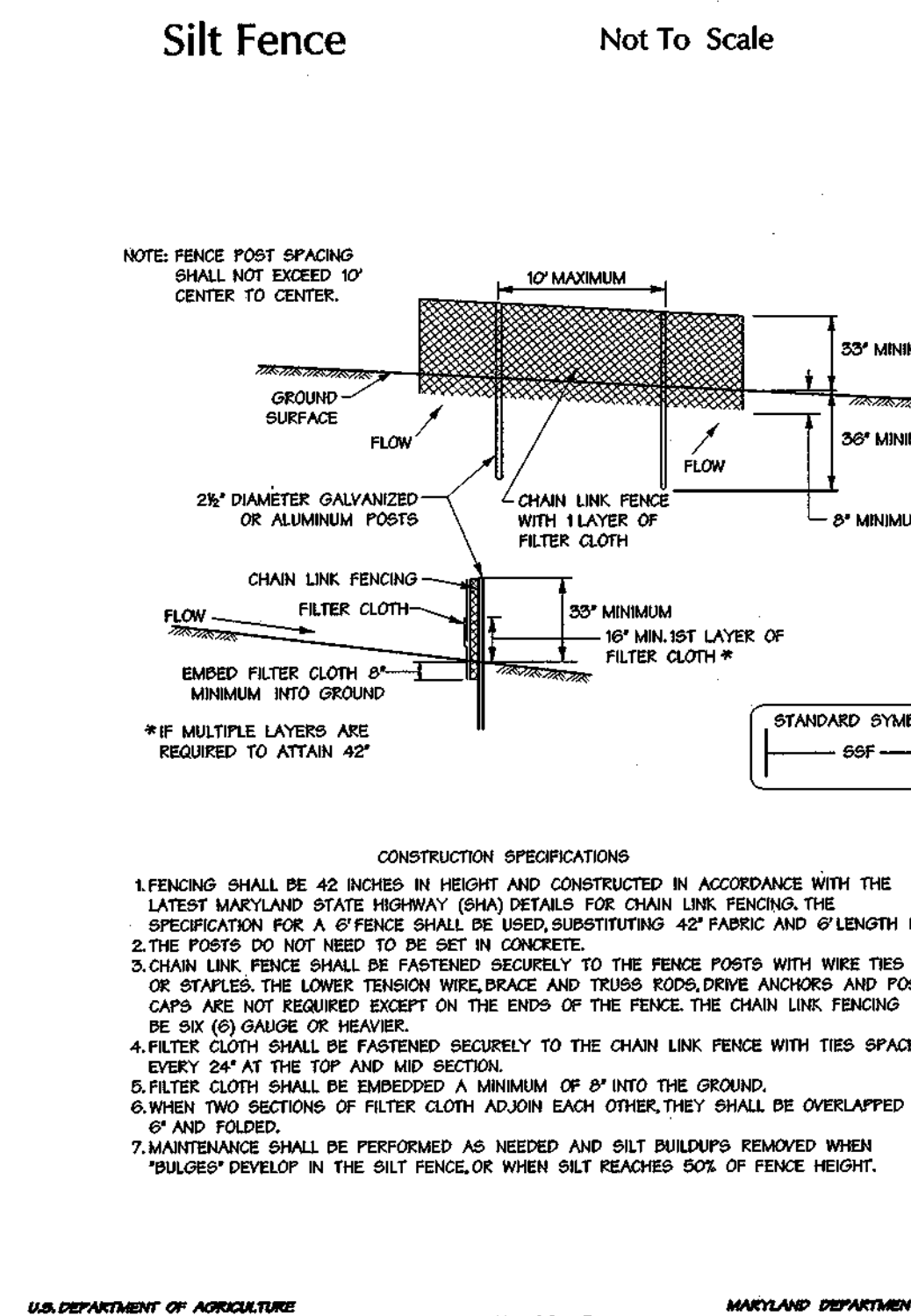
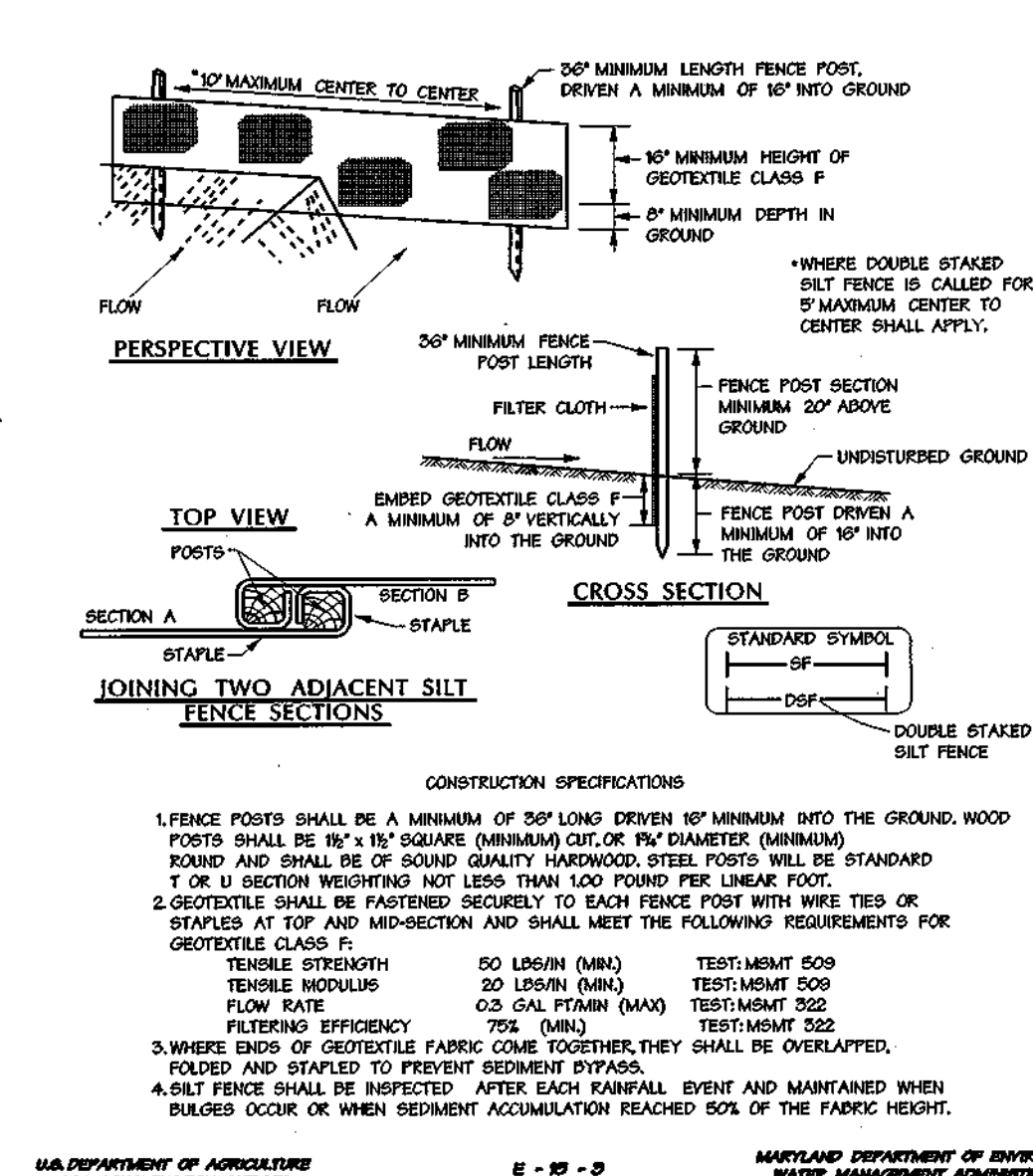
PERMANENT METHODS:

- 1. PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER AND PERMANENT STABILIZATION WITH SOIL EXISTING TREES OR LARGE SHRUBS MAY OFFER VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING - COVERING WITH LESS ERODIBLE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

Dust Control Specifications

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (2013-2015).
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 THEREOF.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
A. SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1.
B. FORTY EIGHT DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPPING STRUCTURES SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEM PERIMETER IN ACCORDANCE WITH VOL. I, 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 SEEDINGS (SEC. 51), 5005 (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 7.84 ACRES
AREA DISTURBED 3.39 ACRES
AREA TO BE ROOFED OR PAVED 0.73 ACRES
AREA TO BE VEGETATIVELY STABILIZED 2.66 ACRES
TOTAL CUT 6000 CUBIC YARDS
TOTAL FILL 6000 CUBIC YARDS
OFF-SITE WASTE/BORROW AREA LOCATION WASTE = N/A
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 REQUIRED 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 FEET LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

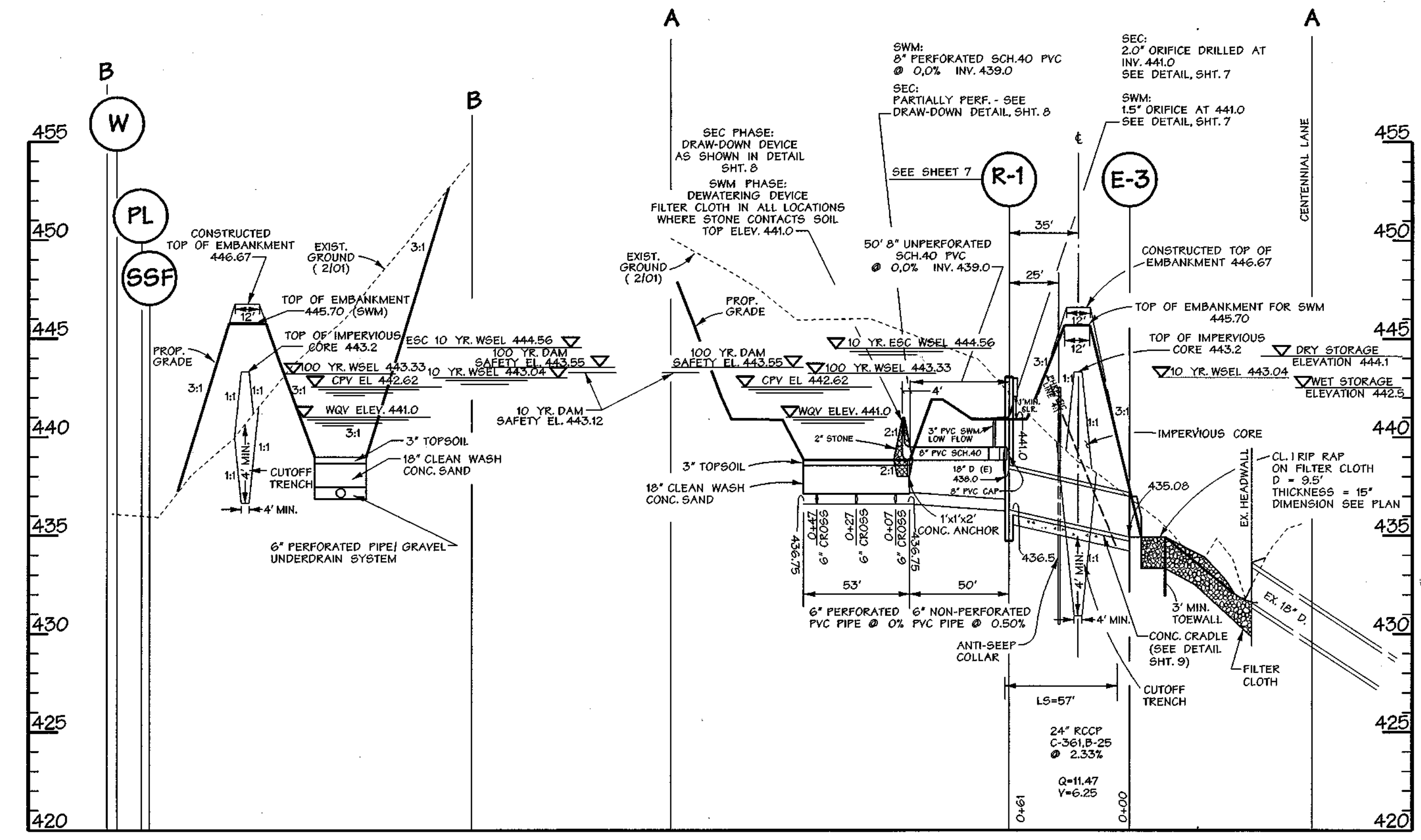
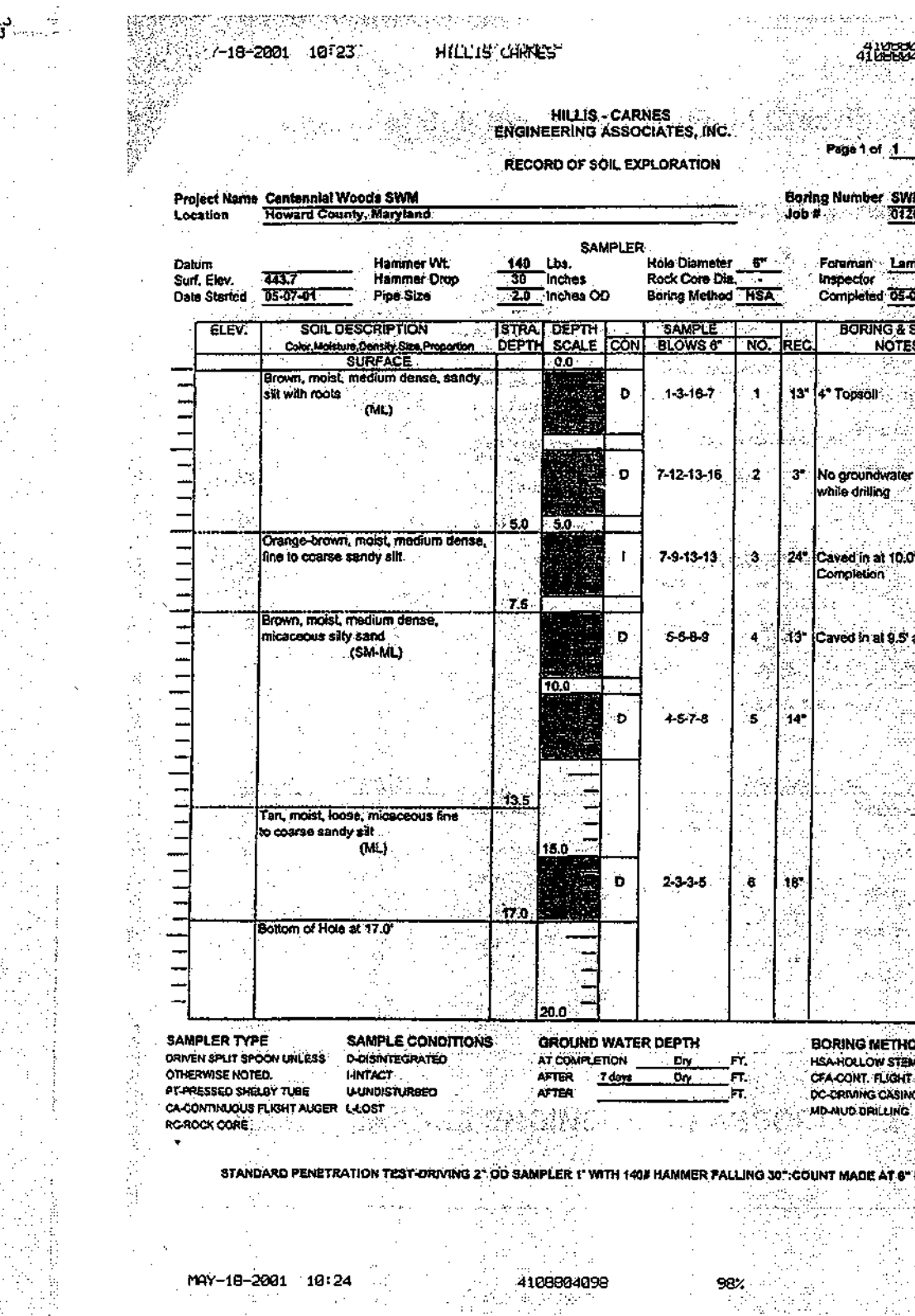
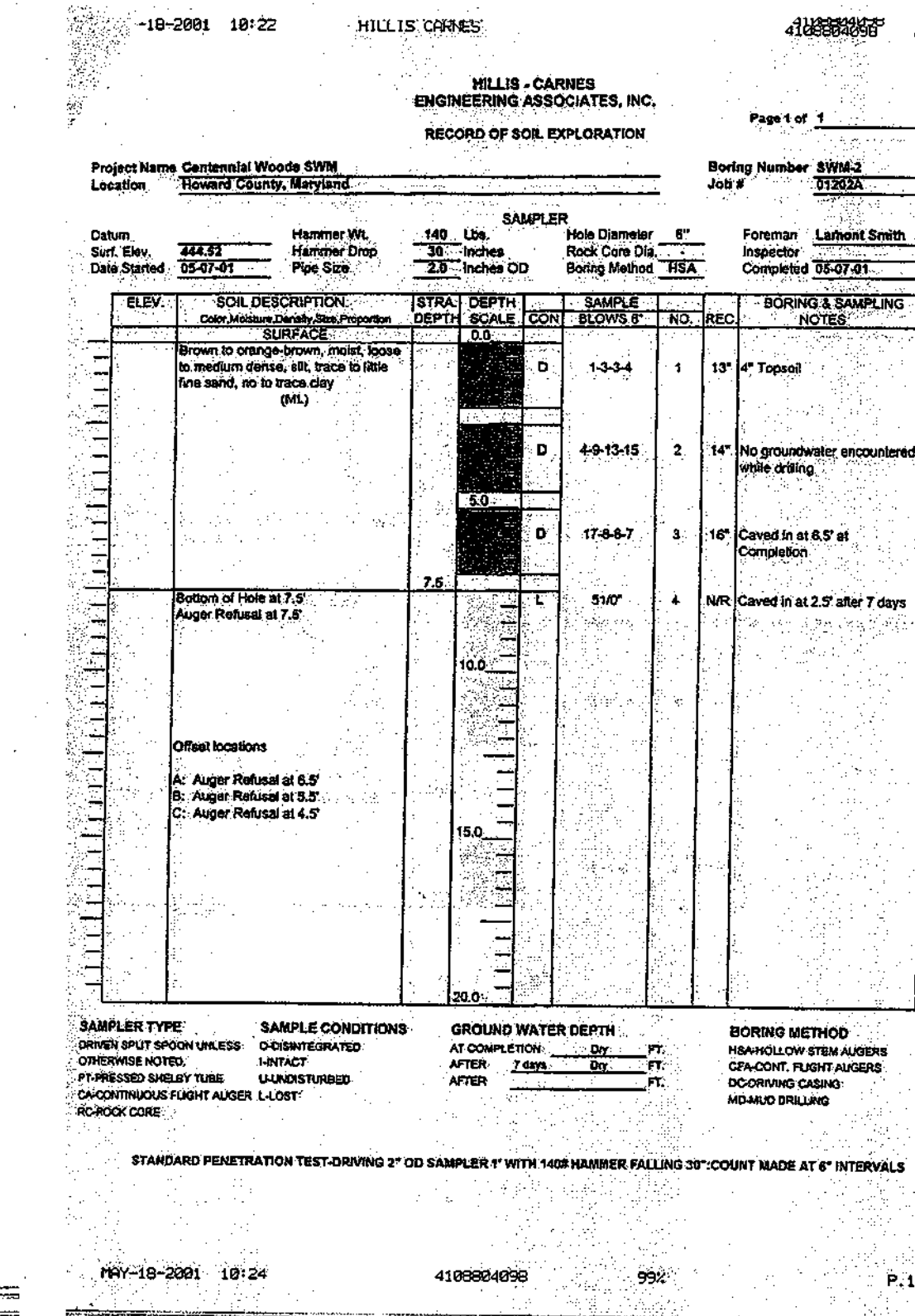
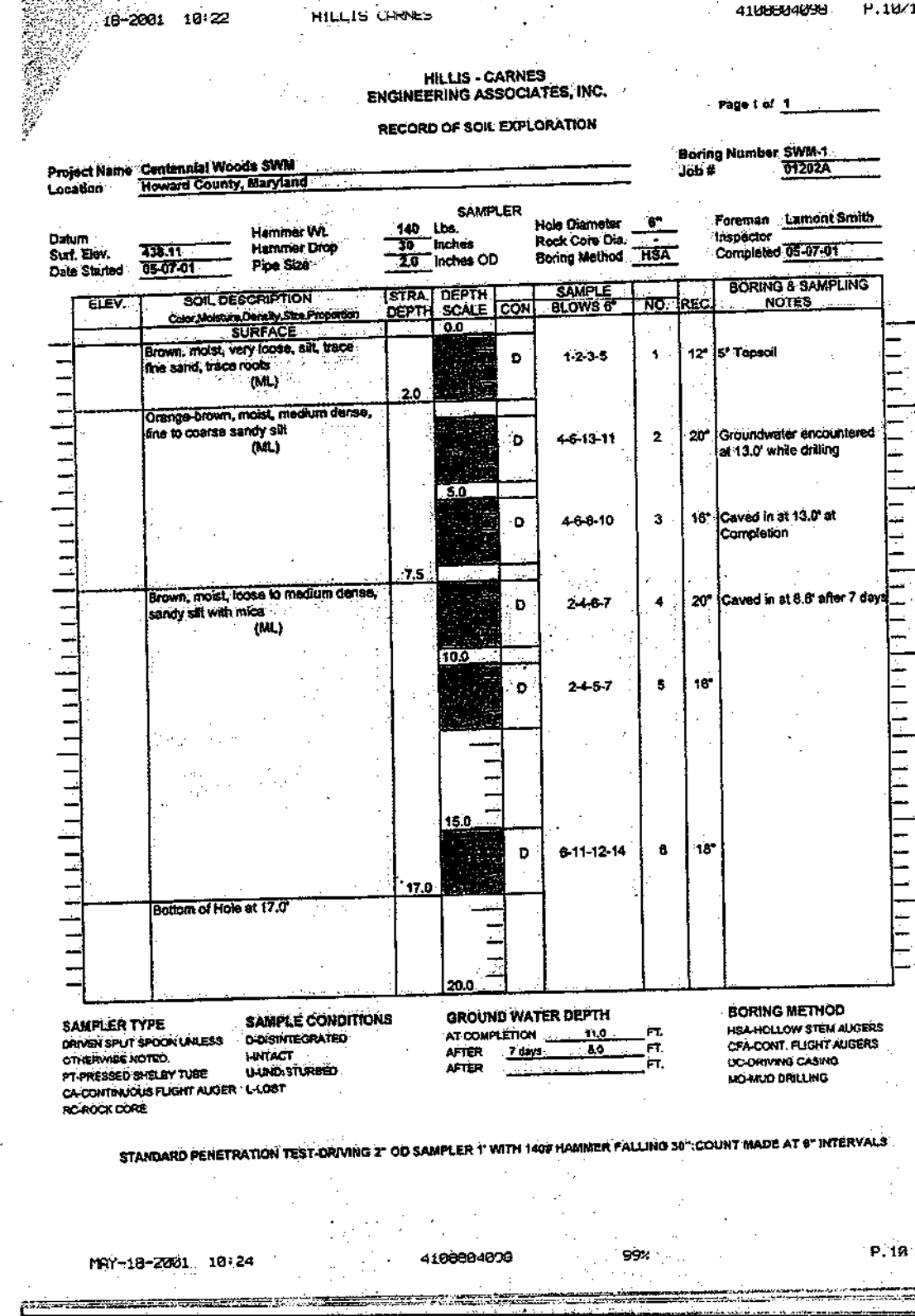
Sediment Control General Notes



Approval and permit stamps from Howard County Dept. of Public Works, Planning and Zoning, and Development Engineering Division. Includes signatures and dates.







**OPERATION AND MAINTENANCE SCHEDULE**

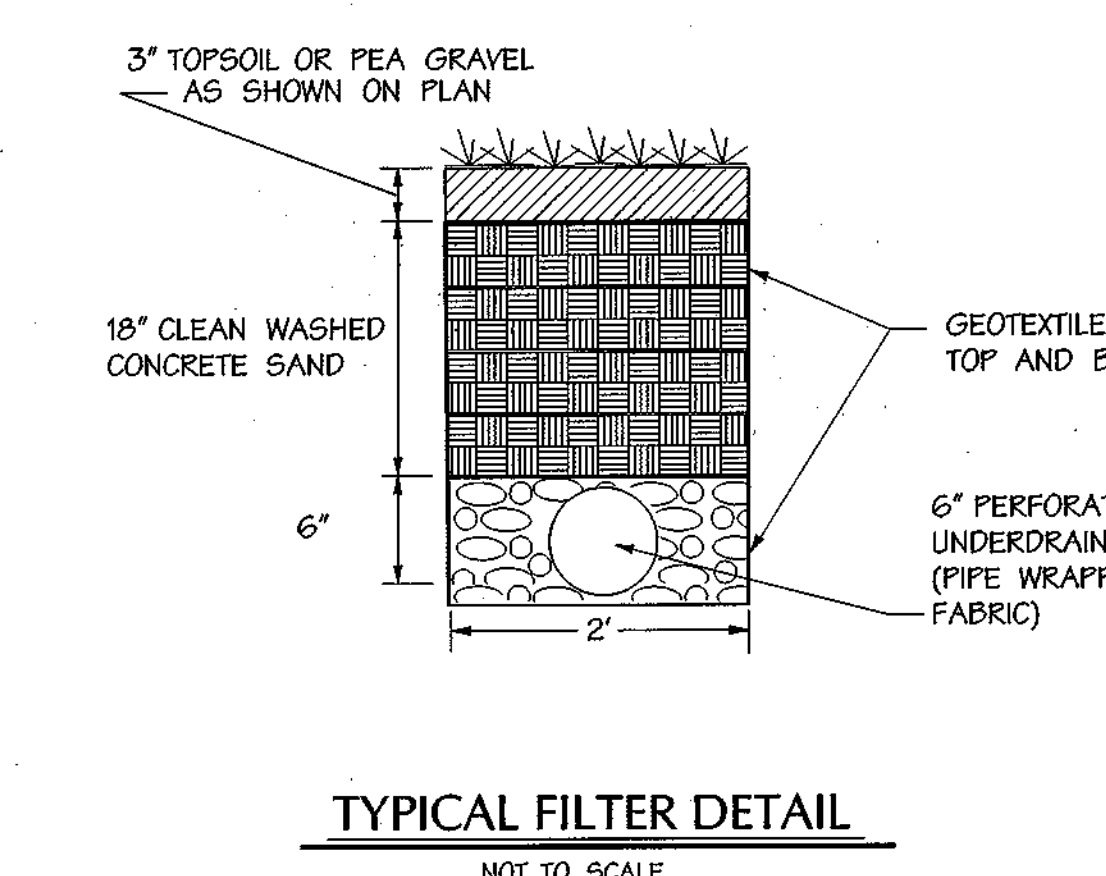
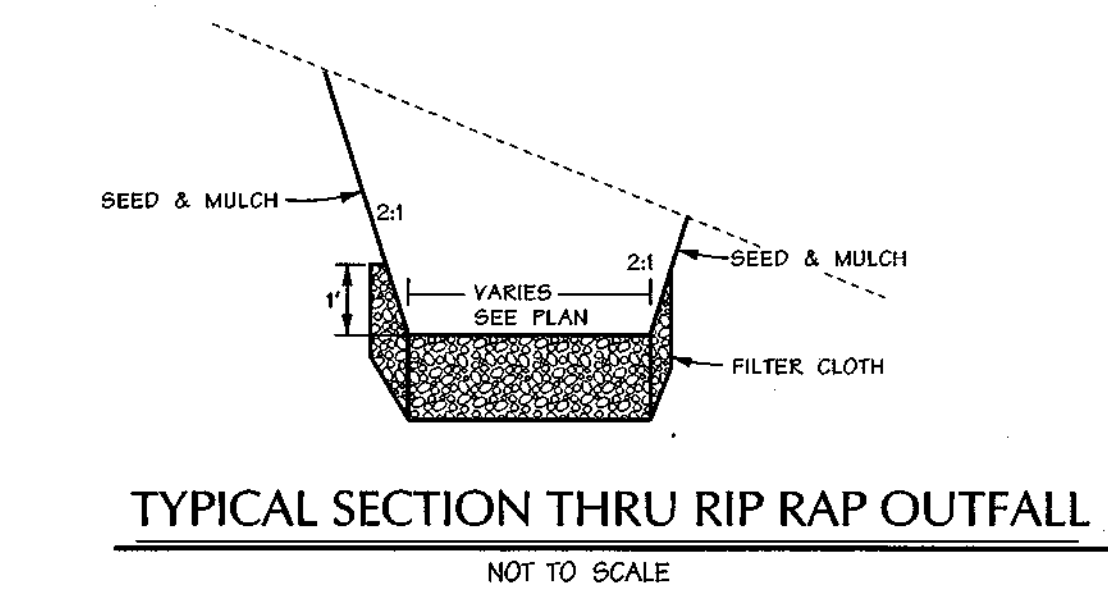
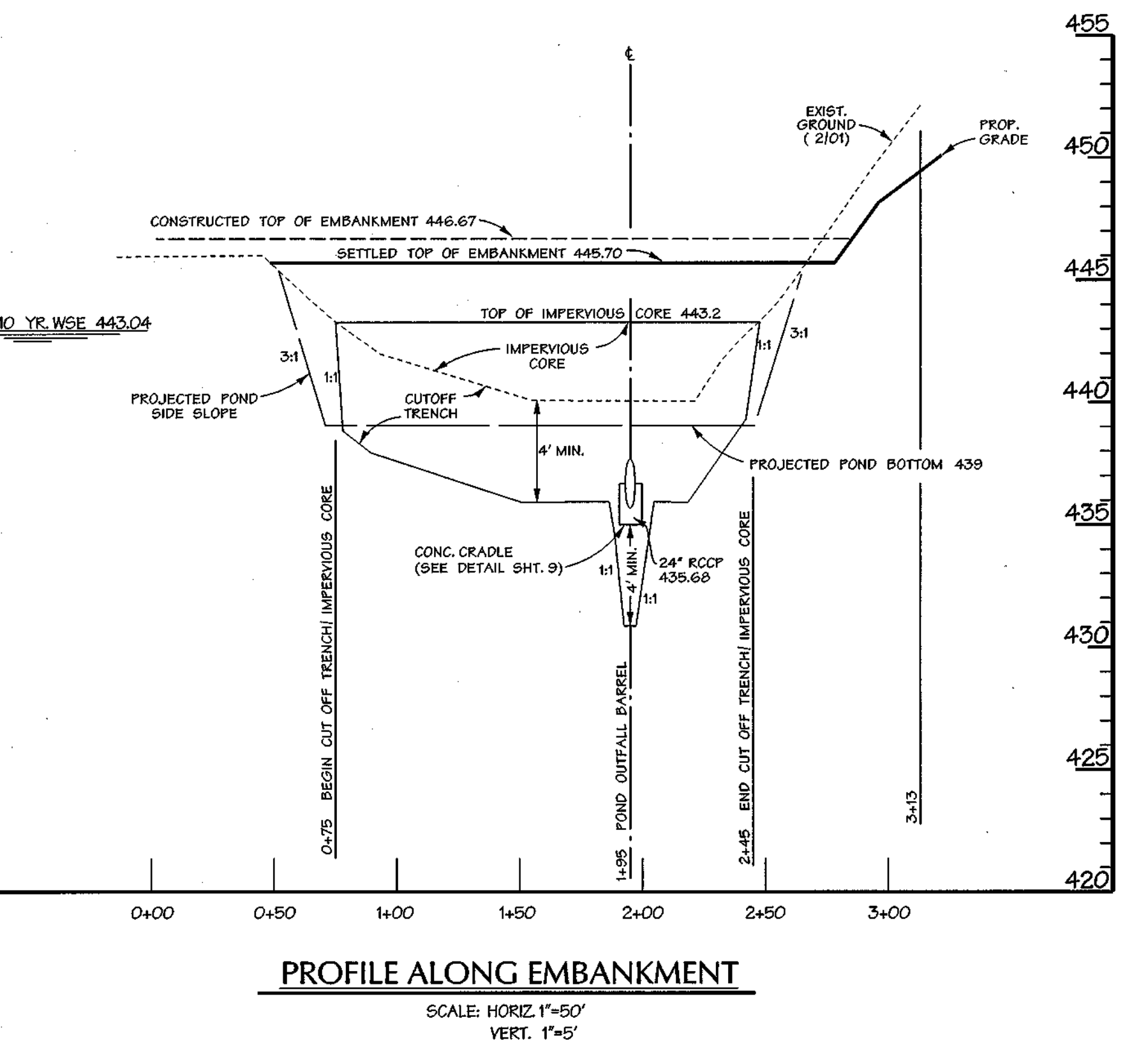
- The stormwater wetland facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
- The top and side slopes of the embankment shall be mowed a minimum of once per year, when vegetation reaches 10-inches in height or as needed.
- Filters that have a grass cover shall be mowed a minimum of three times per growing season to maintain a maximum grass height of less than 12 inches.
- Debris and litter shall be removed during regular mowing operations and as needed.
- Visible signs of erosion in the facility shall be repaired as soon as it is noticed.
- Remove silt when it exceeds four inches deep in the forebay.
- When water ponds on the surface of the filter bed for more than 72 hours, the top few inches of discolored material shall be replaced with fresh material. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
- A log book shall be maintained to determine the rate at which the facility drains.
- The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
- Once the performance characteristics of the infiltration system have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

**B.3.A SAND FILTER SPECIFICATIONS**

- Material Specifications for Sand Filters**  
The allowable materials for sand filter construction are detailed in Table B.3.1.
- Sand Filter Testing Specifications**  
Underground sand filters, facilities within sensitive groundwater aquifers, and filters designed to serve urban hot spots are to be tested for water tightness prior to placement of filter media. Entrances and exits should be plugged and the system completely filled with water to demonstrate water tightness. Water tightness means no leakage for a period of 8 hours.  
All overflow weirs, multiple orifices and flow distribution slots are to be field-tested to verify adequate distribution of flows.
- Sand Filter Construction Specifications**  
Provide sufficient maintenance access (i.e., 12-foot-wide road with legally recorded easement). Vegetated access slopes are to be a maximum of 10 percent; gravel slopes to 15 percent; paved slopes to 25 percent.  
Absolutely no runoff is to enter the filter until all contributing drainage areas have been stabilized.  
Surface of filter bed to be level.  
All underground sand filters should be clearly delineated with signs so that they may be located when maintenance is due.  
Surface sand filters may be planted with appropriate grasses; see Appendix A.  
"Pocket" sand filters shall be sized with a stone "window" that covers approximately 10 percent of the filter area. This "window" shall be filled with pea gravel (3/4-inch stone).

Table B.3.1 Material Specifications for Sand Filters

Material	Specification/Test Method	Size	Notes
sand	clean AASHTO-M-6 or ASTM-C-33 concrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Gneiss are not acceptable. No calcium carbonate or dolomite sand substitutions are acceptable. No "rock dust" can be used for sand.
peat	ash content <15 percent pH range: 5.2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	n/a	The material must be seed-grade hemi peat, shredded, uncompacted, uniform, and clean.
leaf compost	n/a	n/a	
underdrain gravel	AASHTO-M-43	0.375" to 0.75"	Minimum 125 gpm per sq. ft. flow rate. Note: a 4" pea gravel layer may be substituted for geotextile meant to "separate" sand filter layers.
geotextile fabric (if required)	ASTM-D-4833 (puncture strength - 125 lb.) ASTM-D-4632 (tensile strength - 300 lb.)	0.025" thick equivalent opening size of #20 sieve	
impermeable liner (if required)	ASTM-D-4633 (thickness) ASTM-D-412 (tensile strength 1,100 lb., elongation 200%) ASTM-D-624 (tear resistance - 150 lb./in.) ASTM-D-471 (water absorption: +8 to 2 percent mass)	30 mil thickness	Liner to be unviolated resistant. A geotextile fabric should be used to protect the liner from puncture.
underdrain piping	F 755, Type FS 28 or AASHTO-M-278	4" - 6" rigid schedule 40 PVC or SDR35	3/8" pert. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary under mesh pipes.
concrete (cast-in-place)	MSHA Standards and Specs, Section 902, Mix No. 3, f <sub>c</sub> = 3500 psi, normal weight, air-entrained; re-inforcing to meet ASTM 615 G 60	n/a	on-site testing of pour-in-place concrete required; 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer or licensed in the State of Maryland.
concrete (pre-cast)	per pre-cast manufacturer	n/a	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	n/a	structural steel to be hot-dipped galvanized ASTM-A152



REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

**U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE**

APPROVED: *[Signature]* DATE: 2/5/03

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

**DEVELOPERS CERTIFICATE:**

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 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: *[Signature]* DATE: 2/25/03  
PRINT NAME BELOW SIGNATURE: JAMES H. SELFRIDGE

**ENGINEERS CERTIFICATE:**

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: *[Signature]* DATE: 2/25/03  
PRINT NAME BELOW SIGNATURE: John W. Ramochny, Jr.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*[Signature]* 3-12-03  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*[Signature]* 3/2/03  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

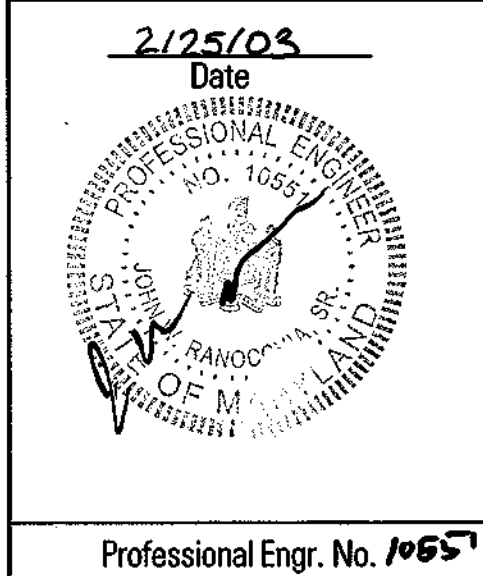
*[Signature]* 2/14/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Revision Description

**FINAL PLAN**  
**CENTENNIAL WOODS**  
RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2  
LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13  
TAX MAP 24 GRID 19 PARCEL 294  
TAX MAP 30 GRID 1 PARCEL 294

OWNER / DEVELOPER:  
SHERI O'DONNELL, NATHAN O'DONNELL  
C/O NORTHBRIDGE DEVELOPMENT, LLC  
14045 GARED DRIVE  
GLENWOOD, MD 21758

DEVELOPER:  
NORTHBRIDGE DEVELOPMENT, LLC  
14045 GARED DRIVE  
GLENWOOD, MD 21758



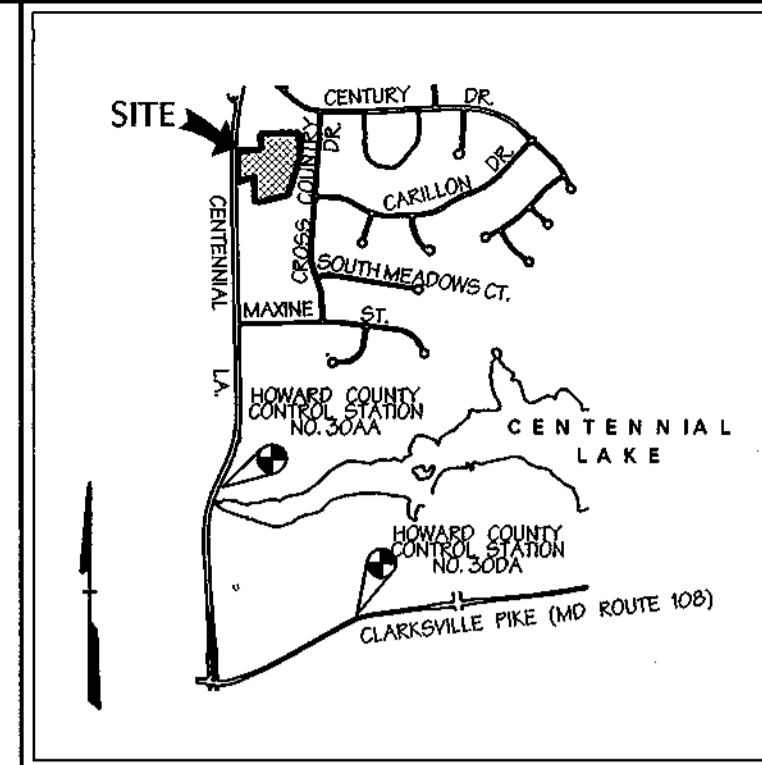
**DMW**  
Dan McCune-Walker, Inc.  
200 East Pennsylvania Avenue  
Towson, Maryland 21286  
Phone: 410-296-3333  
Fax: 296-4708

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

TITLE: SWM DETAILS AND SOIL BORINGS

Des By: RLH Scale: AS SHOWN Proj. No.: 00044.C  
Dwn By: KDE Date: 2-13-03  
Chk By: RLH Approved: 10 OF 15

Professional Engr. No. 10551



**VICINITY MAP**  
SCALE: 1" = 2,000'

- LEGEND**
- PROPERTY LINE
  - - - EX. CONTOUR
  - EX. BUILDING
  - - - EX. WOODS LINE
  - ~ PROP. WOODS LINE
  - - - ZONING LINE
  - - - PROP. ROW LINE
  - - - SOIL LINE
  - - - BUILDING SETBACK LINE
  - - - EX. SEWER LINE
  - - - EX. WATER LINE
  - ⑧ LOT NUMBER
  - NON-WOODY VEGETATION LIMIT
  - ▲ SLOPE (15% - 24.99%)
  - A PROPOSED STREET LIGHT:  
Pole: 14' - Fiberglass - bronze, black or grey ornamental  
Post-top: Colonial, Modern  
Size: 100w.HPS  
150w.HPS

**DATA SOURCES:**  
BOUNDARY PER RECORD PLAT 14167, TOPO PER 3D AERIAL DATED FEB. 3, 2001  
TOPO FOR CENTENNIAL LANE PER DAFT MCCUNE WALKER DATED APRIL 23, 2001

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Richard M. Parole* 3-12-03  
CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Chris Hovatt* 3/14/03  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Paul Dammann* 3/14/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION 4 DATE

Date	No.	Revision Description

**OWNER:** SHERI O'DONNELL, NATHAN O'DONNELL  
C/O NORTHTRIDGE DEVELOPMENT, LLC  
14045 GARED DRIVE  
GLENWOOD, MD 21736

**DEVELOPER:** NORTHTRIDGE DEVELOPMENT, LLC  
14045 GARED DRIVE  
GLENWOOD, MD 21736

**DMW**  
Datt-McCune-Walker, Inc.  
300 East Pennsylvania Avenue  
Pawnee, Maryland 21206  
(410) 296-3333  
Fax: 296-4706

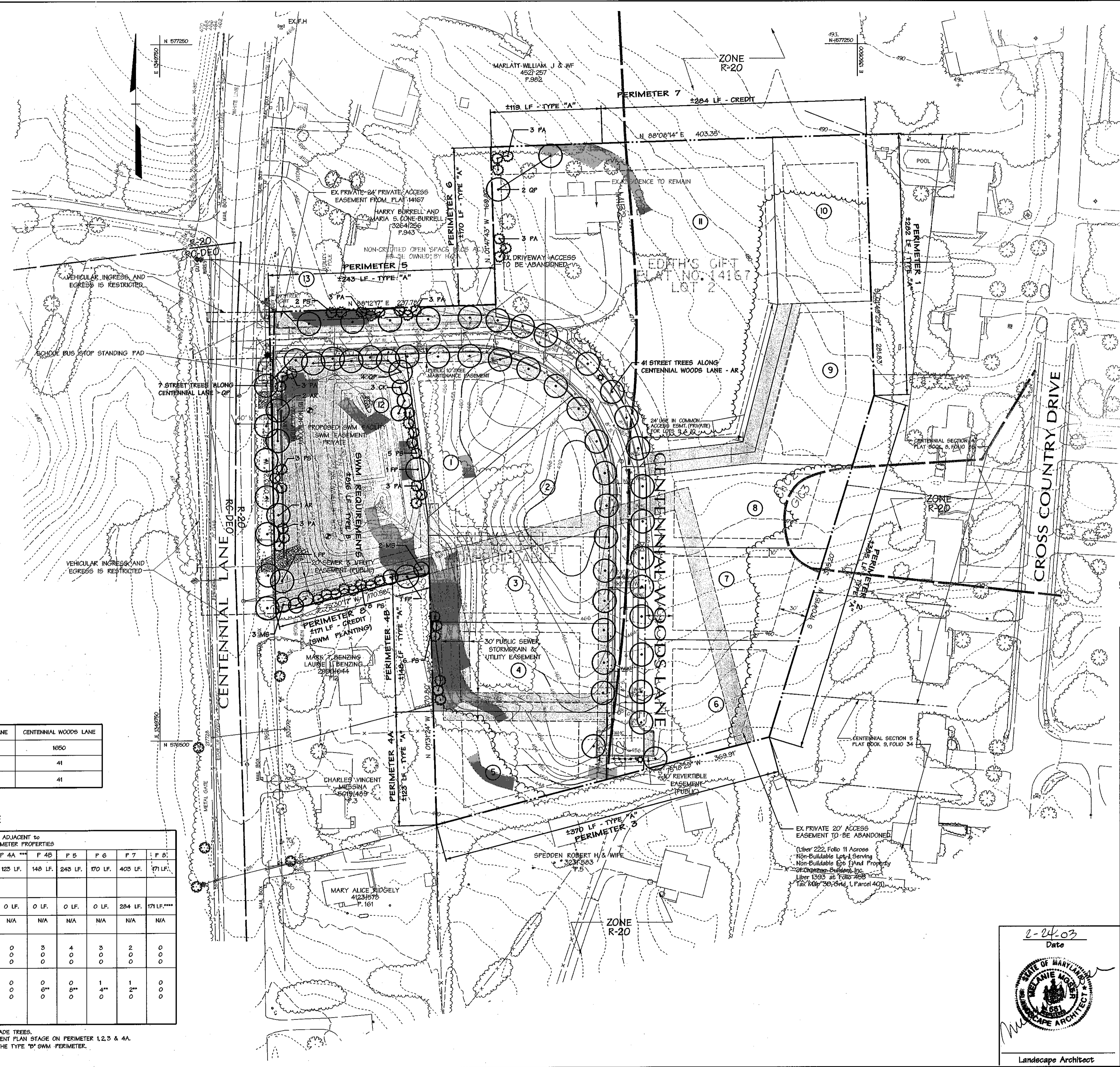
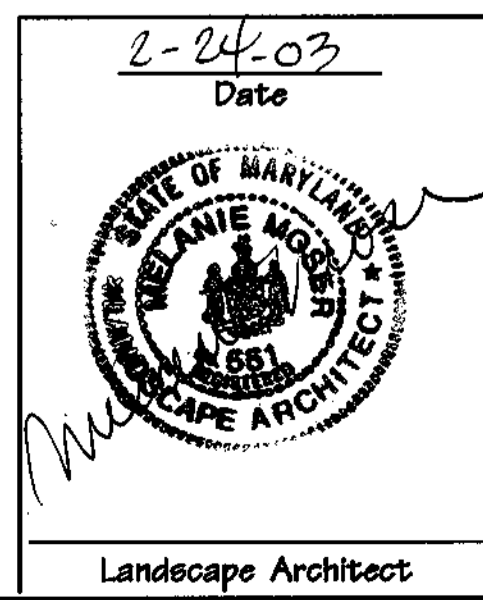
A Team of Land Planners,  
Landscape Architects,  
Engineers, Surveyors &  
Environmental Professionals

**TITLE** CENTENNIAL WOODS  
RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2  
LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13

TAX MAP 24 GRID 19 PARCEL 294  
TAX MAP 30 GRID 1 PARCEL 294

**LANDSCAPE AND STREET TREE PLAN**

Des By	RLH	Scale	1" = 50'	Proj. No.	00044
Drn By	BKC	Date	2-13-03		
Chk By	RLH	Approved			11 OF 15



**SCHEDULE D  
STORMWATER MANAGEMENT  
AREA LANDSCAPING**

LINEAR FT OF PERIMETER (TYPE "B")	816 LF
NUMBER OF TREES REQUIRED	
SHADE TREES @ 1/50 LF.	16
EVERGREEN TREES @ 1/40 LF.	20
CREDIT FOR EXISTING VEGETATION	NA
CREDIT FOR OTHER LANDSCAPING	NA
NUMBER OF TREES PROVIDED	
SHADE TREES	10
EVERGREEN TREES	25
ORNAMENTAL TREES	8

\* NOTE: 8 ORNAMENTAL TREES AND 4 EVERGREEN TREES HAVE BEEN SUBSTITUTED FOR 6 SHADE TREES.

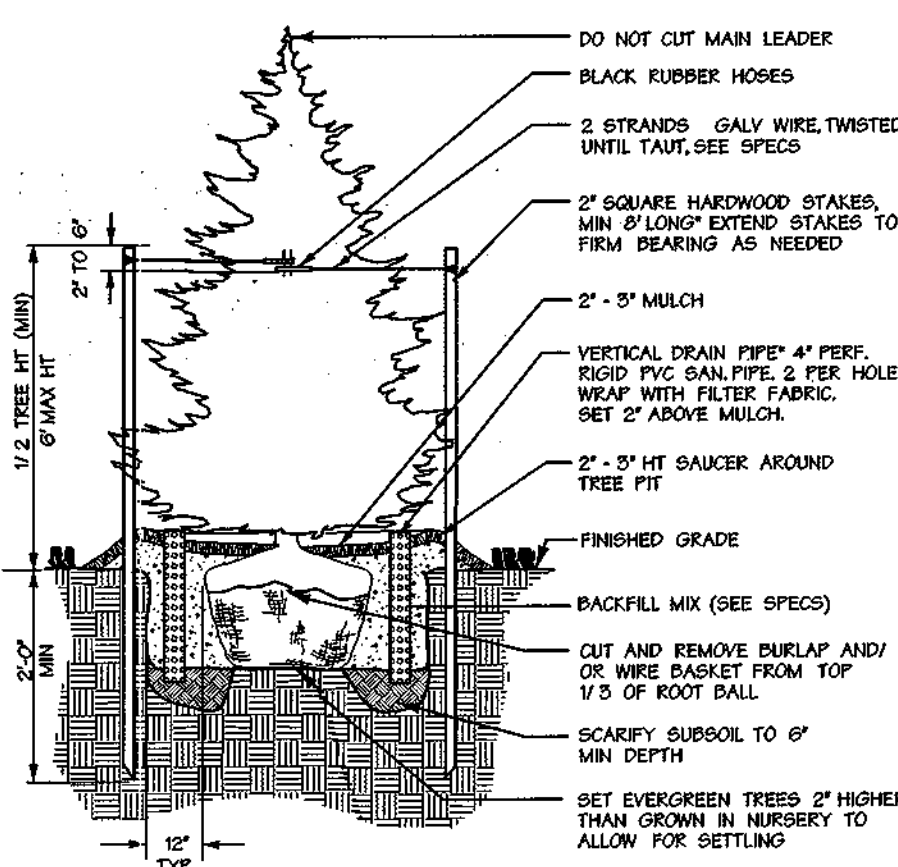
**STREET TREE REQUIREMENT**

ROAD NAME	CENTENNIAL LANE	CENTENNIAL WOODS LANE
LINEAR FEET OF ROADWAY (BOTH SIDES OF ROAD)	280	1650
NUMBER OF TREES REQUIRED @ 1/40'	7	41
NUMBER OF TREES PROVIDED	7	41

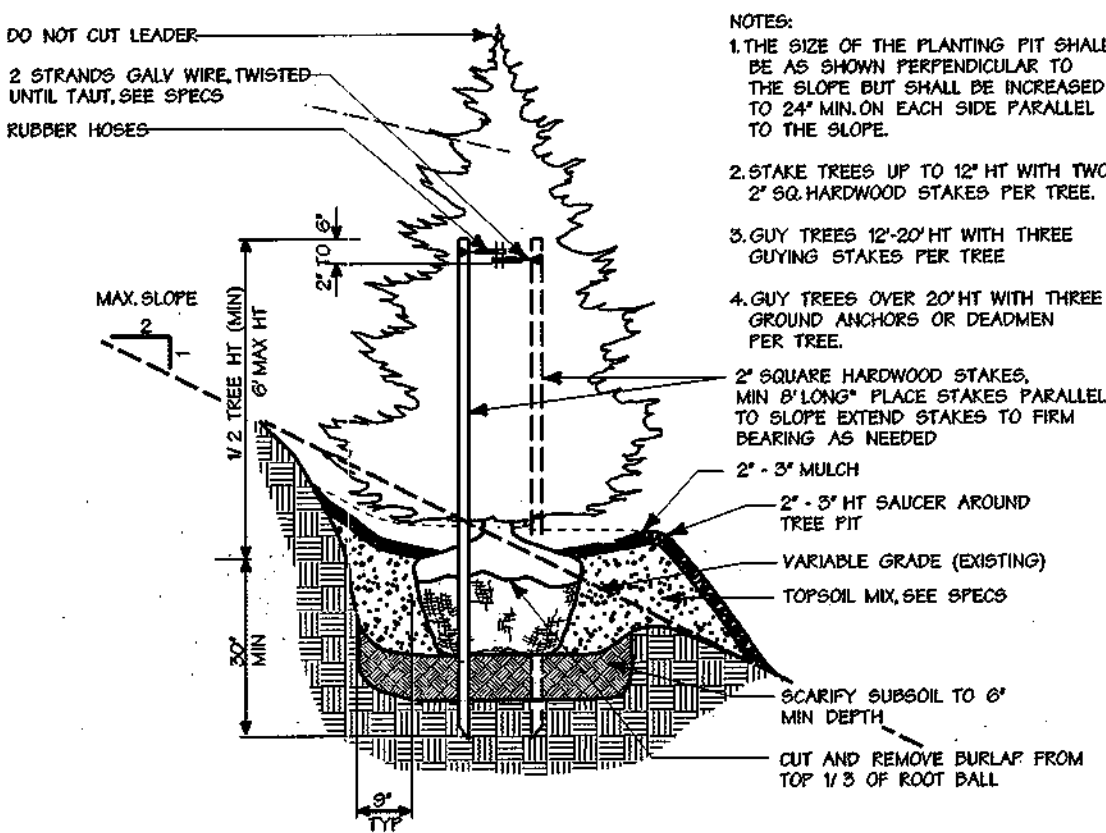
**SCHEDULE A  
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO PERIMETER PROPERTIES									
	P 1***	P 2***	P 3***	P 4A***	P 4B	P 5	P 6	P 7	P 8	P 8
PERIMETER										
LANDSCAPE TYPE "A" LINEAR FEET OF PERIMETER	282 LF.	386 LF.	370 LF.	125 LF.	148 LF.	243 LF.	170 LF.	403 LF.	171 LF.	171 LF.
LANDSCAPE TYPE "B" LINEAR FEET OF PERIMETER										
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	0 LF.	0 LF.	0 LF.	0 LF.	0 LF.	0 LF.	0 LF.	284 LF.	171 LF.	171 LF.
CREDIT FOR BERM (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NUMBER OF PLANTS REQUIRED										
SHADE TREES	0	0	0	0	3	4	3	2	0	0
EVERGREEN TREES	0	0	0	0	0	0	0	0	0	0
SHRUBS	0	0	0	0	0	0	0	0	0	0
NUMBER OF PLANTS PROVIDED										
SHADE TREES	0	0	0	0	0	0	1	0	0	0
EVERGREEN TREES	0	0	0	0	0	0	4	0	0	0
OTHER TREES (2:1 SUBSTITUTION)	0	0	0	0	0	0	0	0	0	0
SHRUBS (10:1 SUBSTITUTION)	0	0	0	0	0	0	0	0	0	0
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)										

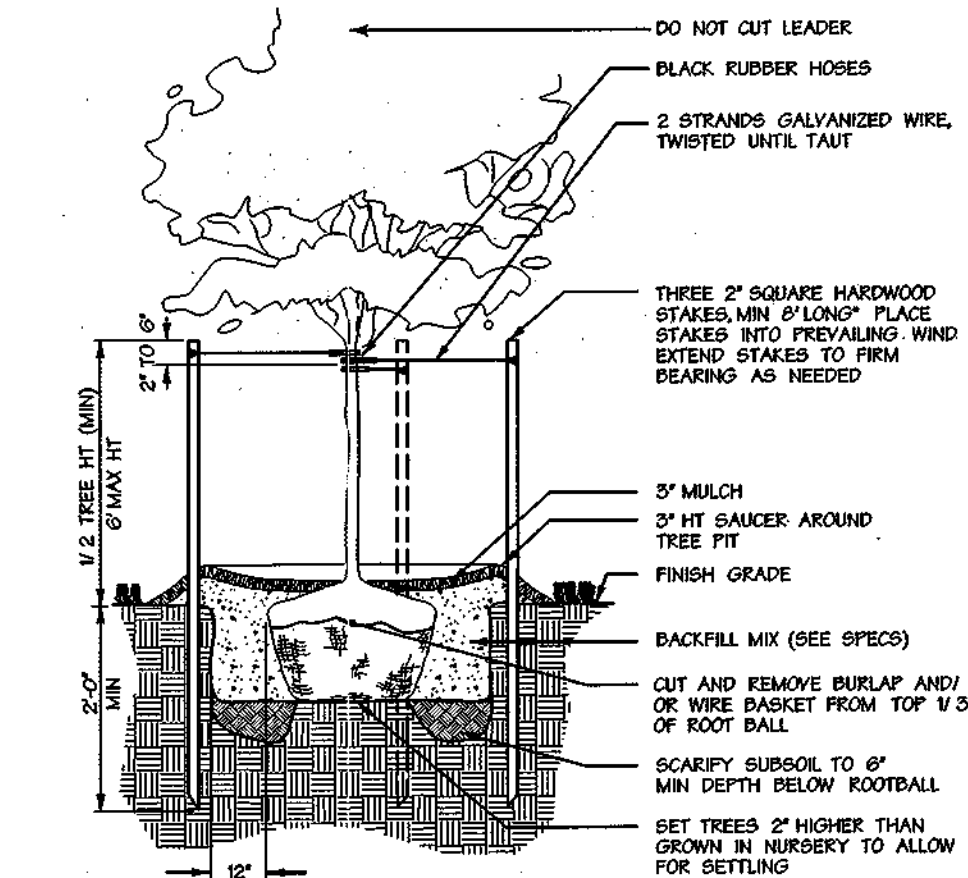
\*\* NOTE: 20 EVERGREEN TREES HAVE BEEN SUBSTITUTED FOR 10 SHADE TREES.  
\*\*\* DEFER LANDSCAPE REQUIREMENTS TO BUILDER AT SITE DEVELOPMENT PLAN STAGE ON PERIMETER 1, 2, 3 & 4A.  
\*\*\*\* CREDIT TAKEN FOR PROPOSED LANDSCAPING ASSOCIATED WITH THE TYPE "B" SWM PERIMETER.



EVERGREEN TREE PLANTING  
NOT TO SCALE



EVERGREEN TREE PLANTING ON SLOPE  
NOT TO SCALE



TREE PLANTING 2 1/2 - 3" CALIPER  
NOT TO SCALE

General Planting Notes

- All plant material to meet A.A.N. Standards.
- Landscape Contractor to follow landscape specification guidelines for Baltimore Washington Metro area approved by LCAMM.
- No substitutions to be made without consent of Landscape Architect or Owner and DPZ.
- All beds to be topped with three inches of hardwood mulch.
- Landscape Contractor to verify location of utilities with Owner before planting.
- Landscape Architect/Owner shall select, verify and/or approve all plant material. At Owner's discretion, specimen and other plant material will be selected.
- Landscape Contractor shall coordinate plant bed filling operations and plant material installation with General Contractor and Utilities Contractor. At the time of final inspection with acceptance, all electric, water, and drainage utilities, as well as all plant materials, shall remain undamaged. Likewise, Landscape Contractor and Utilities Contractor shall coordinate efforts to ensure that surface utilities are at the proper elevation relative to final grades.
- Contractor shall notify Miss Utility 72 hours prior to construction.
- The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.
- This plan has been prepared in accordance with the provisions of Section 16.124 of the Ho. Co. code. Financial surty for the required landscaping in the amount of \$11,400.00 must be posted as part of the developer's agreement. (28 shade, 20 evergreen).
- Financial surty for the required 48 Street Trees will be provided as part of the DPW, Developer's Agreement.
- At the time of installation, all shrubs and other plantings herewith listed and approved for this site, shall be of proper height requirements in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocation of required plantings as shown on this plan may be made without prior approval from the Department of Planning and Zoning. Any deviation from this approved Landscape Plan may result in denial or delay in the release of landscape surty until such time as all required materials are planted and/or revisions are made to applicable plans and certificates.
- Developer's/Builder's Certificate

I/we certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County code and the Howard County Landscape Manual. I/we further certify that upon completion, a notification of landscape installation, will be submitted to the Department of Planning and Zoning, so that the County can inspect.

NAME: James H. Selridge DATE: 2/25/03

PERIMETER PLANT LIST

Key	Qty.	Botanical Name	Common Name	Size	Condition	Remarks
<b>Major Deciduous Tree:</b>						
AR	3	Acer Rubrum 'Bowhall'	Bowhall Red Maple	3" - 3 1/2" Cal	B&B	Full
FP	3	Fraxinus pennsylvanica 'Marshall's Seedless'	Marshall's Seedless Ash	3" - 3 1/2" Cal	B&B	Full
QP	6	Quercus phellos	Willow Oak	3" - 3 1/2" Cal	B&B	Full
<b>Minor Deciduous Tree:</b>						
CK	3	Cornus kousa	Kousa Dogwood	8' - 10' Ht.	B&B	Full
MS	5	Magnolia stellata	Star Magnolia	8' - 10' Ht.	B&B	Full
<b>Evergreen:</b>						
PA	21	Picea abies	Norway Spruce	6-8' Ht.	B&B	Full
PS	24	Pinus strobus	White Pine	6-8' Ht.	B&B	Full, Unsheared

STREET TREE PLANT LIST

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	REMARKS
AR	41	ACER RUBRUM 'BOWHALL'	BOWHALL RED MAPLE	3" - 3 1/2" CAL	B&B	FULL
QP	7	QUERCUS PHELLOS	WILLOW OAK	3" - 3 1/2" CAL	B&B	FULL

DATA SOURCES:  
BOUNDARY PER RECORD PLAT 14167, TOPO PER 301 AERIAL DATED FEB. 3, 2001, TOPO FOR CENTENNIAL LANE PER DAFT MCCUNE WALKER DATED APRIL 23, 2001

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
Richard M. Penick 3/12/03  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
Richard Penick 3/21/03  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Richard Penick 3/21/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description

OWNER: SHERI O'DONNELL, NATHAN O'DONNELL  
C/O NORTHRIDGE DEVELOPMENT, LLC,  
14045 GARED DRIVE  
GLENWOOD, MD 21738

DEVELOPER: NORTHRIDGE DEVELOPMENT, LLC  
14045 GARED DRIVE  
GLENWOOD, MD 21738

**DMW**  
Duff McCune-Walker, Inc.  
200 East Pennsylvania Avenue  
Towson, Maryland 21286  
(410) 296-3333  
Fax: 296-4705

A Team of Land Planners,  
Landscape Architects,  
Engineers, Surveyors &  
Environmental Professionals

TITLE: **CENTENNIAL WOODS**  
RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2  
LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13  
TAX MAP 24 GRID 19 PARCEL 294  
TAX MAP 30 GRID 1 PARCEL 294

LANDSCAPE AND STREET TREE DETAILS

Des By	RLH	Scale	1" = 50'	Proj. No.	00044
Drn By	BKC	Date	2-13-03		
Chk By	RLH	Approved			12 OF 15

2-24-03  
Date

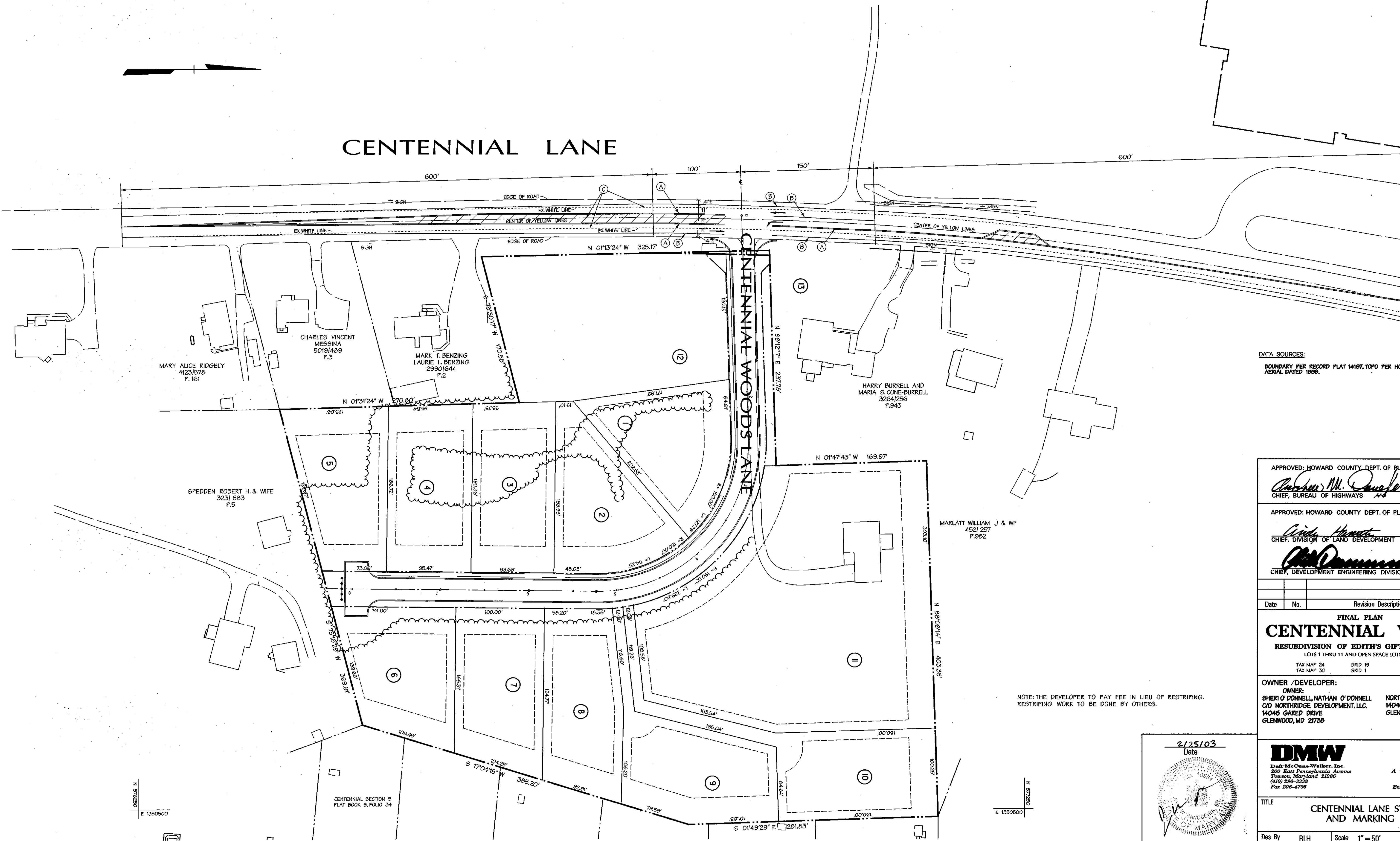
Richard Penick  
Landscape Architect

**PAVEMENT MARKING LEGEND**

- (A) 5' SOLID DOUBLE YELLOW PAVEMENT MARKING LINE
- (B) 5' SOLID WHITE PAVEMENT MARKING LINE
- (C) REMOVE EXISTING PAVEMENT MARKINGS

E 1349600  
N 57750

**CENTENNIAL LANE**



DATA SOURCES:  
BOUNDARY PER RECORD PLAT 14167, TOPD PER HOWARD COUNTY AERIAL DATED 1986.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Richard M. Dwyer* 3/12/03  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Chris H. Hester* 3/21/03  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John D. ...* 3/14/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description

**FINAL PLAN**  
**CENTENNIAL WOODS**  
RESUBDIVISION OF EDITH'S GIFT LOTS 1 & 2  
LOTS 1 THRU 11 AND OPEN SPACE LOTS 12 & 13  
TAX MAP 24 GRID 19 PARCEL 294  
TAX MAP 30 GRID 1 PARCEL 294

OWNER / DEVELOPER:  
SHERI O'DONNELL, NATHAN O'DONNELL  
C/O NORTHBRIDGE DEVELOPMENT, LLC  
14045 GARED DRIVE  
GLENWOOD, MD 21736

DEVELOPER:  
NORTHBRIDGE DEVELOPMENT, LLC  
14045 GARED DRIVE  
GLENWOOD, MD 21736

NOTE: THE DEVELOPER TO PAY FEE IN LIEU OF RESTRIPING.  
RESTRIPING WORK TO BE DONE BY OTHERS.

2/25/03  
Date

*[Signature]*

Professional Engr. No. 70551

**DMW**  
Dan McCune-Walker, Inc.  
300 East Pennsylvania Avenue  
Pawnee, Maryland 21220  
(410) 296-3333  
Fax 296-4706

A Team of Land Planners,  
Landscape Architects,  
Engineers, Surveyors &  
Environmental Professionals

TITLE  
**CENTENNIAL LANE STRIPING  
AND MARKING PLAN**

Des By	RLH	Scale	1" = 50'	Proj. No.	00044.C
Dm By	KDE	Date	2-13-03		
Chk By	RLH	Approved			13 OF 15

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels* 3-12-03  
 CHIEF, BUREAU OF HIGHWAYS DATE

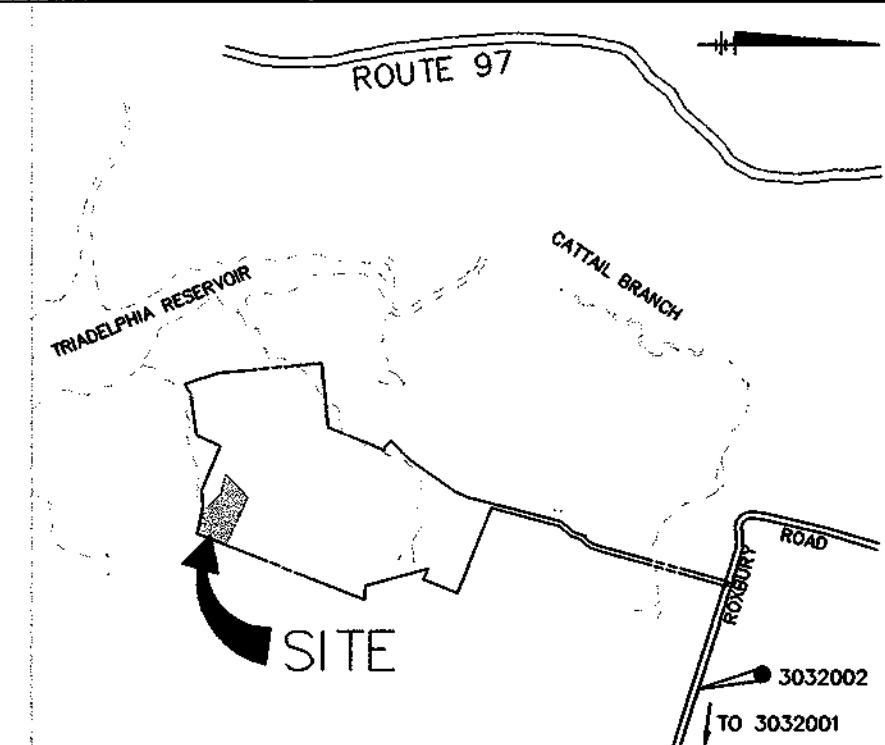
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Cindy Hanate* 7/2/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris Dammann* 5/14/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

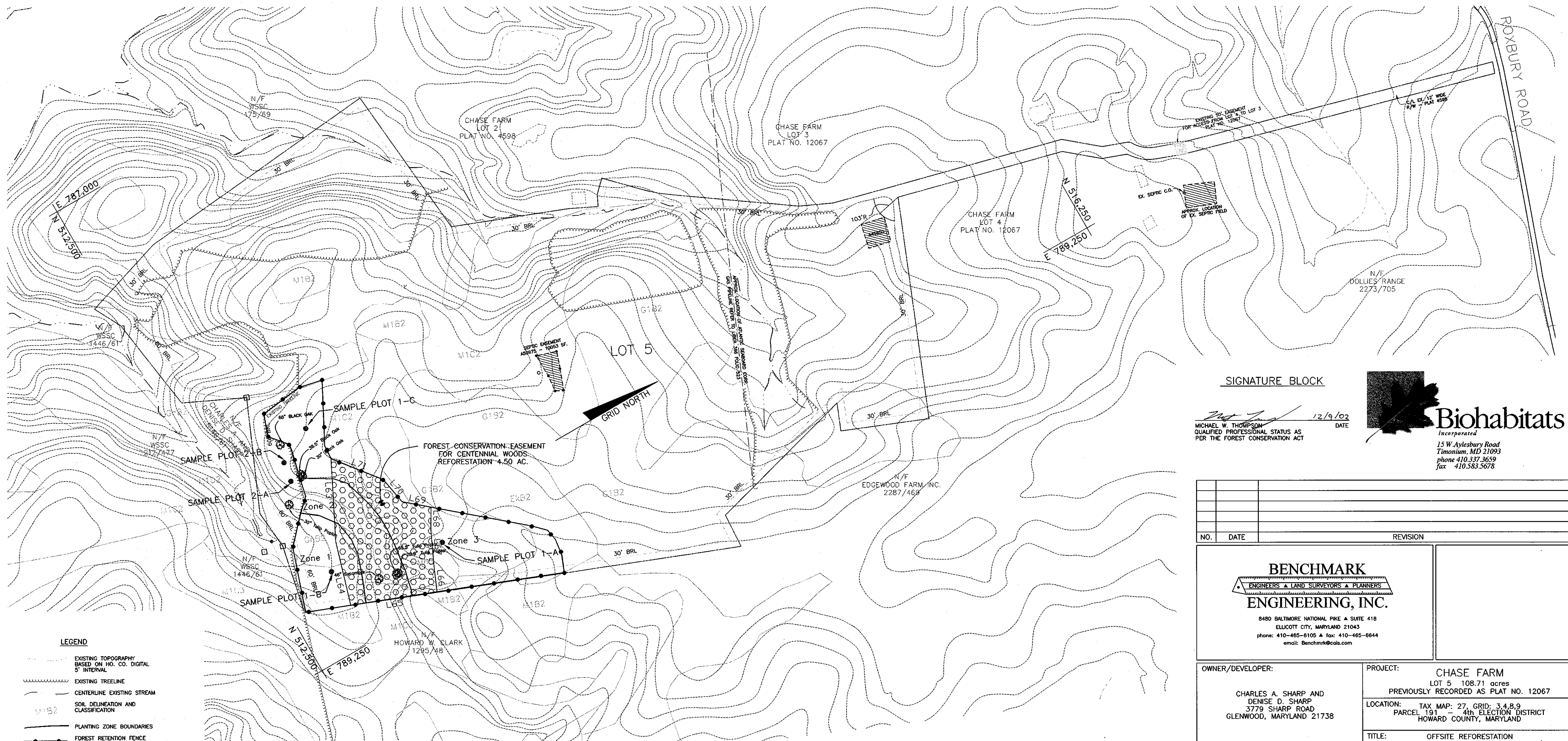
SOIL CHART			
SOIL SERIES	Series Abbr.	% SLOPES	K Value >.35
Glenville silt loam	GnB2	3-8%	Yes
Manor very stony loam	MnD	3-25%	Yes
Manor loam	M1B2	3-8%	Yes
Manor loam	M1C2	8-15%	Yes
Manor loam	M1C3	8-15%	Yes
Manor loam	M1D2	15-25%	Yes

LINE	LENGTH	BEARING
L63	351.10	S63°14'54"E
L64	278.95	S73°11'13"E
L65	369.92	N21°28'24"E
L66	116.83	N66°42'33"W
L67	149.31	N64°46'23"W
L68	96.05	N59°43'58"W
L69	124.53	S40°47'16"W
L70	123.81	S79°48'08"W
L71	238.54	S51°47'18"W

Reforestation Area	ID #	Area
Centennial Woods	F-02-171	4.5 acres
Total Reforestation Area		11.6 acres
Reforestation Area Used		4.5 acres
Reforestation Area Remaining		7.1 acres



VICINITY MAP  
 SCALE: 1" = 2000'



SIGNATURE BLOCK

*Michael W. Thompson* 12/9/02  
 MICHAEL W. THOMPSON DATE  
 QUALIFIED PROFESSIONAL STATUS AS PER THE FOREST CONSERVATION ACT

**Biohabitats**  
 Incorporated  
 15 W. Aylesbury Road  
 Timonium, MD 21093  
 phone 410.337.3659  
 fax 410.583.5678

NO.	DATE	REVISION

**BENCHMARK**  
 ENGINEERS • LAND SURVEYORS • PLANNERS  
**ENGINEERING, INC.**

8480 BALTIMORE NATIONAL PIKE & SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 phone: 410-465-6105 • fax: 410-465-6644  
 email: Benchmark@cais.com

OWNER/DEVELOPER:  CHARLES A. SHARP AND DENISE D. SHARP 3779 SHARP ROAD GLENWOOD, MARYLAND 21738	PROJECT: CHASE FARM LOT 5 108.71 acres PREVIOUSLY RECORDED AS PLAT NO. 12067 LOCATION: TAX MAP: 27, GRID: 3,4,8,9 PARCEL 191 4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE: OFFSITE REFORESTATION FOREST CONSERVATION PLAN FOR CENTENNIAL WOODS DATE: DECEMBER 9, 2002 PROJECT NO. 1528 SCALE: AS SHOWN SHEET 14 OF 15
--	---

- LEGEND**
- EXISTING TOPOGRAPHY BASED ON HO. CO. DIGITAL 5' INTERVAL
  - EXISTING TREELINE
  - CENTERLINE EXISTING STREAM
  - M1B2 SOIL DELINEATION AND CLASSIFICATION
  - PLANTING ZONE BOUNDARIES
  - FOREST RETENTION FENCE AND SIGN LOCATION
  - SLOPES > 15%
  - PROPOSED REFORESTATION EASEMENT

PLAN VIEW  
 SCALE: 1" = 200'

Centennial Woods Off-Site Reforestation										Overall Size (acres): 4.5				
Overall Spacing (feet off center)	Quantity per acre	Zone 1		Zone 2		Zone 3		Total Species Quantity	Vegetation Strata/Species Name	Common Name	Unit	Size	Spacing Type	Individual Spacing (ft.)
		Frequency (%)	Species Quantity	Frequency (%)	Species Quantity	Frequency (%)	Species Quantity							
11	350	25	47	20	136	25	177	360	Acer rubrum	Red maple	CON	2-7 FT	Random	34
		10	19	20	136	10	71	228	Sassafras albidum	Sassafras	CON	2-7 FT	Random	54
		25	47	30	204	35	247	498	Prunus serotina	Black Cherry	CON	2-7 FT	Random	34
		10	19	10	68	10	71	158	Quercus velutina	Black Oak	CON	2-7 FT	Random	54
		10	19		0		0	19	Liriodendron tulipifera	Tulip Poplar	CON	2-7 FT	Random	54
		10	19		0	10	71	90	Ilex opaca	American Holly	CON	2-7 FT	Random	54
		10	19		0		0	19	Platanus occidentalis	Sycamore	CON	2-7 FT	Random	54
		0	10		68	10	71	139	Nyssa sylvatica	Black Gum	CON	2-7 FT	Random	54
		0	10		0		0	0	Cornus florida	Flowering Dogwood	CON	2-7 FT	Random	54
		0	10		68		0	68	Fagus grandifolia	Beech	CON	2-7 FT	Random	54
		100	189	100	680	100	708	1577	= Total					

\*Quantities are intended to supplement existing vegetation. Actual numbers and sizes to be determined following initial Multiflora Rosa control efforts.

CENTENNIAL WOODS FOREST CONSERVATION CALCULATIONS

BASIC SITE DATA	ACRES (1/10)
GROSS SITE AREA	7.8
AREA WITHIN 100 YEAR FLOODPLAIN	0.0
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	0.0
NET TRACT AREA	7.8
LAND USE CATEGORY	R-20

INFORMATION FOR CALCULATIONS

A. NET TRACT AREA	7.8
B. REFORESTATION THRESHOLD (20% x A)	1.6
C. AFFORESTATION MINIMUM (15% x A)	1.2
D. EXISTING FOREST ON NET TRACT AREA	6.8
E. FOREST AREAS TO BE CLEARED	6.8
F. FOREST AREAS TO BE RETAINED	0.0

REFORESTATION CALCULATIONS

A. NET TRACT AREA	2.8
B. REFORESTATION THRESHOLD (20% x A)	1.6
C. EXISTING FOREST ON NET TRACT AREA	6.8
D. FOREST AREAS TO BE CLEARED	6.8
E. FOREST AREAS TO BE RETAINED	0.0
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	5.2
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	1.6
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	0.0

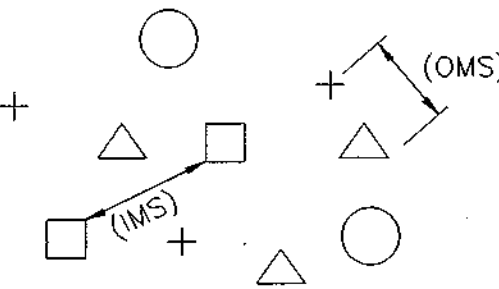
CLEARING BELOW THE THRESHOLD

IF FOREST AREAS TO BE RETAINED ARE LESS THAN THE REFORESTATION THRESHOLD (IF F IS LESS THAN B), THE FOLLOWING CALCULATIONS APPLY:

REFORESTATION FOR CLEARING ABOVE THRESHOLD	1.3
FGx1/4	
REFORESTATION FOR CLEARING BELOW THRESHOLD	3.2
GHx2	
TOTAL REFORESTATION REQUIRED	4.5
(Gx1/4) + (Hx2)	

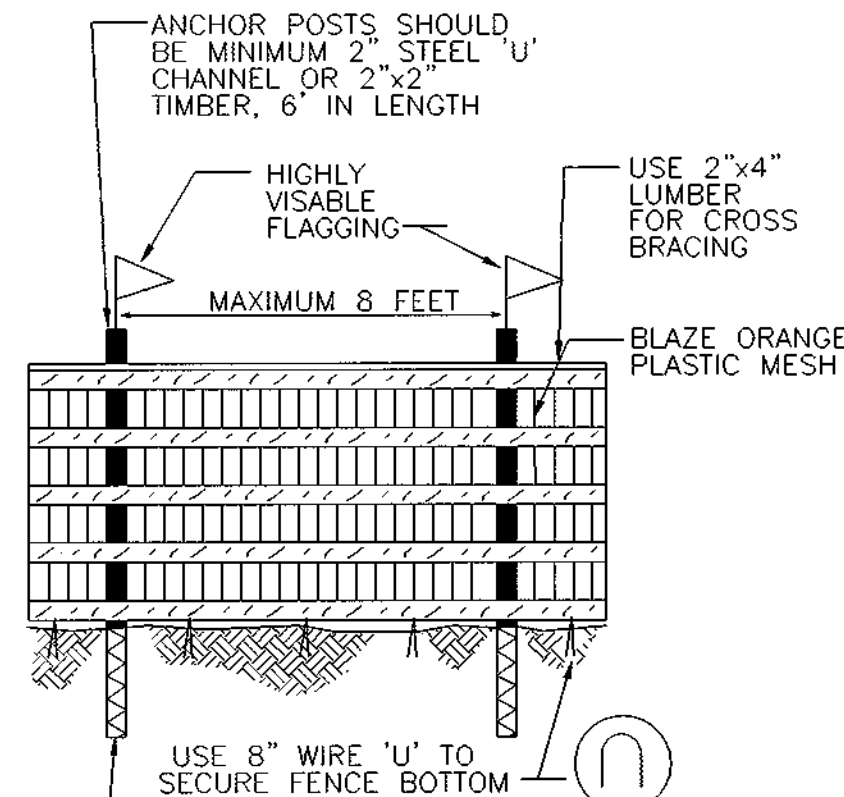
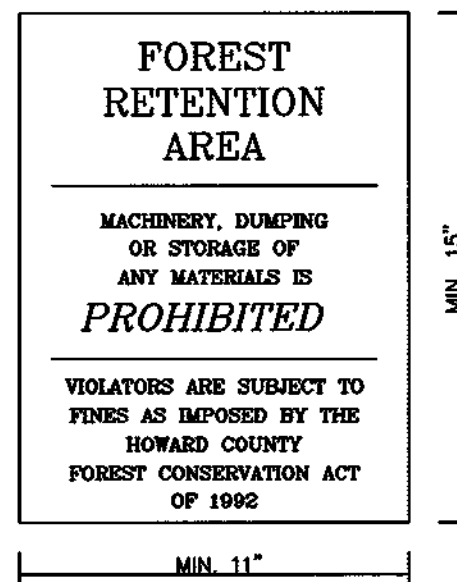
OMS- AN OVERALL MINIMUM SPACING DISTANCE (OMS) IS ASSIGNED TO THE PLANTING CONFIGURATION (SEE PLANT SCHEDULE)  
 IMS- AN INDIVIDUAL MINIMUM SPACING DISTANCES (IMS) IS ASSIGNED TO EACH INDIVIDUAL SPECIES (SEE PLANT SCHEDULE)

PLANT SPACING- RANDOM  
 PLAN VIEW Not To Scale



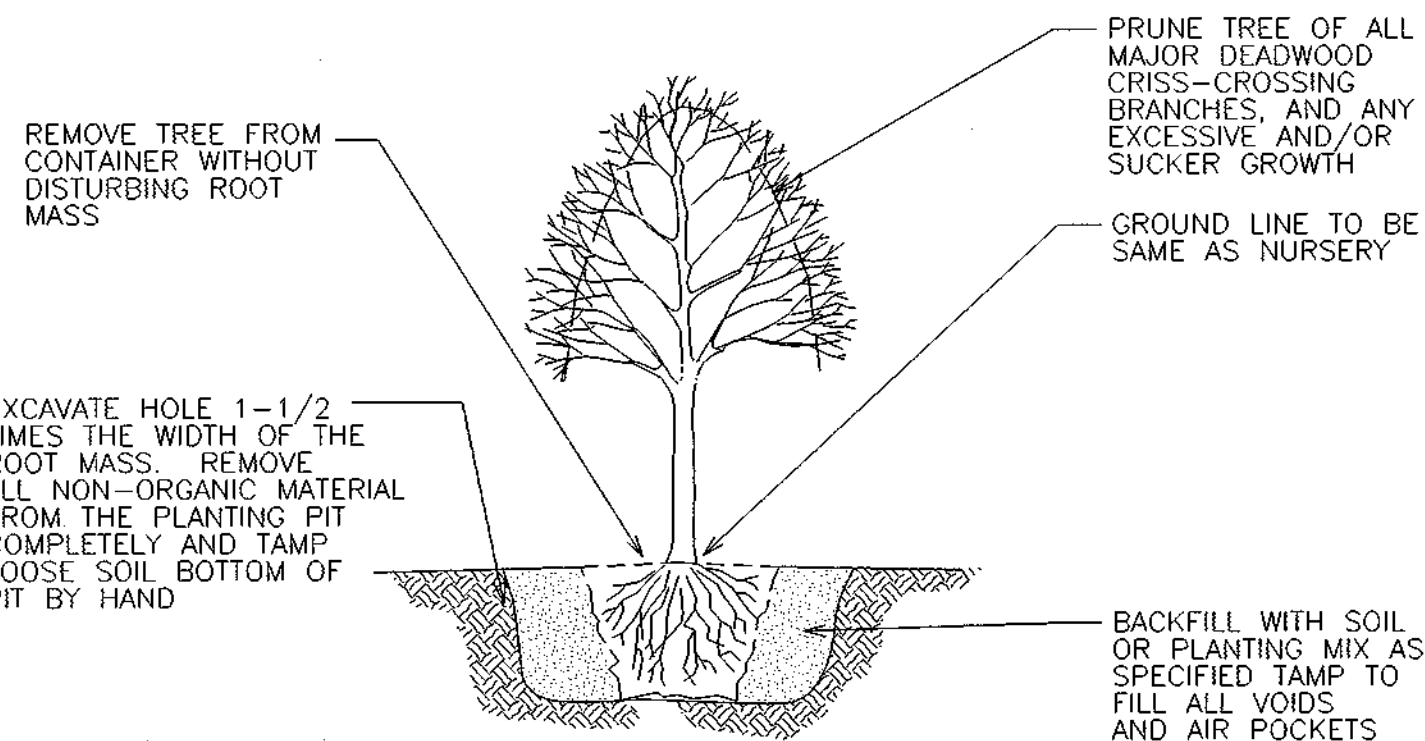
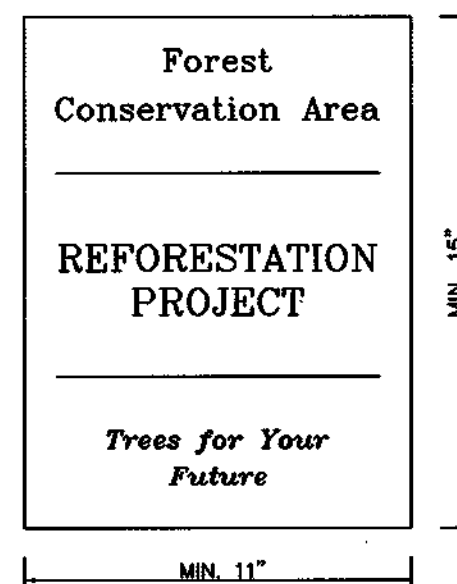
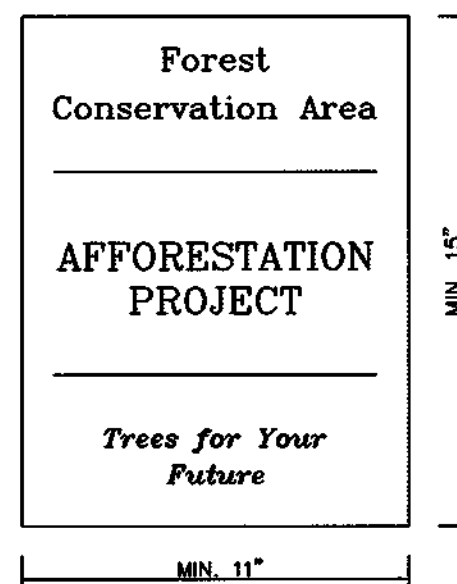
PLANTING NOTES:

- 1.) Prior to planting the site will be treated for the removal of Multiflora Rose. Selective mowing will be utilized to preserve existing whips and seedlings naturally regenerating in the afforestation area. Upon the completion of mowing operations, selective treatment with glyphosate will be conducted to ensure control of the existing Multiflora Rose.
- 2.) Planting stock should be 2' to 7' container grown stock.
- 3.) Only composted mulch may be used.
- 4.) Plant material should be planted an average of 11ft. on center.
- 5.) Site improvements including structures, and driveways, etc., are not located within the afforestation area.
- 6.) Environmentally sensitive areas within the afforestation area consist solely of steep slopes.
- 7.) Care should be taken to avoid damage to existing trees and saplings during planting activities.
- 8.) Due to site constraints at the Centennial Woods Development site, off-site afforestation is being provided at the Chase Farm property.
- 9.) A post construction protection and management program is required to ensure a high probability of survival, necessary for release of surety.
- 10.) Post construction protection will be for a minimum of 2 growing seasons.
- 11.) The survival rate for afforestation areas shall be 75% of the total number of trees per acre planted under the approved plan.
- 12.) The afforestation areas created by an approved plan must be permanently protected and recorded as non-developable conservation easements.
- 13.) The Forest Conservation Easement has been established to fulfill the requirements of Section 16.1200 of the Howard County Code and Forest Conservation Act. No clearing, grading or construction is permitted within the Forest Conservation Easement; however, Forest Management Practices as defined in the Deed of Forest Conservation Easement are allowed.
- 14.) Developer reserves unto itself, its successors and assigns all easements shown on this plan for water, sewer, storm drainage, other public utilities and forest conservation (designated as "Forest Conservation Area"), located in, on, over, and through lots/parcels, any conveyances of the aforesaid lots/parcels shall be subject to the easements herein reserved, whether or not expressly stated in the deed(s) conveying said lot(s)/parcels. Developer shall execute and deliver deeds for the easements herein reserved to Howard County with a metes and bounds description of forest conservation area. Upon completion of the public utilities and their acceptance by Howard County, and in the case of the forest conservation easement(s), upon completion of the developer's obligations under the forest conservation installation and maintenance agreement executed by the developer and the County, and the release of the developer's surety posted with said agreement. The County shall accept the easements and record the deed(s) of easement in the Land Records of Howard County.
- 15.) This plan complies with the requirements of Section 16.1200 of the Howard County Code for Forest Conservation by providing the necessary reforestation requirements and protective devices off-site at the Chase Farm Property.
- 16.) This plan complies with the requirements of Section 16.1200 of the Howard County Code for Forest Conservation. No retention credit can be achieved on-site. Proposed forest clearing generates a reforestation requirement of 4.5 acres to be satisfied off-site within the existing Forest Conservation Easement on Chase Farm, Lot 5. Surety in the amount of \$98,010.00 (4.5 acres X \$50 per sq.ft.) shall be provided with the DPW, Developer's Agreement.



- 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 DEVICES.
  4. ROOT DAMAGE SHOULD BE AVOIDED.
  5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
  6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION  
 BLAZE ORANGE PLASTIC FENCE  
 Not To Scale



TREE PLANTING- CONTAINER GROWN  
 Not To Scale

CENTENNIAL WOODS SITE DATA		ACRES
GROSS AREA:		7.8
EX. LOTS/UNFORESTED PRESERVATION PARCEL/FLOODPLAIN:		0.0
NET TRACT AREA (NTA):		7.8
EXISTING FOREST ON NTA:		6.8
REFORESTATION THRESHOLD:		1.6
FOREST TO BE CLEARED:		6.8
FOREST TO BE RETAINED (NTA):		0.0
REFORESTATION REQUIRED:		4.5
REFORESTATION PROPOSED:		4.5

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 3-12-03  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*[Signature]* 3/14/03  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*[Signature]* 3/14/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

SIGNATURE BLOCK

*[Signature]* 12/9/02  
 MICHAEL W. THOMPSON DATE  
 QUALIFIED PROFESSIONAL STATUS AS PER THE FOREST CONSERVATION ACT

**Biohabitats**  
 Incorporated  
 15 W. Aylesbury Road  
 Timonium, MD 21093  
 phone 410.337.3659  
 fax 410.383.5678

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS • LAND SURVEYORS • PLANNERS  
 8480 BALTIMORE NATIONAL PIKE • SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 phone: 410-465-6105 • fax: 410-465-6644  
 email: Benchmark@cois.com

OWNER/DEVELOPER:	PROJECT:	CHASE FARM LOT 5 108.71 acres PREVIOUSLY RECORDED AS PLAT NO. 12067
CHARLES A. SHARP AND DENISE D. SHARP 3779 SHARP ROAD GLENWOOD, MARYLAND 21738	LOCATION:	TAX MAP: 27, GRID: 3,4,8,9 PARCEL 191 - 4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE:	OFFSITE REFORESTATION FOREST CONSERVATION PLAN FOR CENTENNIAL WOODS	
DATE: DECEMBER 9, 2002	PROJECT NO. 1528	
DESIGN: MWT	DRAFT: MWT	CHECK: JAB
SCALE: N/A	SHEET 15 OF 15	