

**SITE DATA**

LOCATION: TAX MAP 38, GRID 9, PARCEL '528'  
 1ST ELECTION DISTRICT  
 EXISTING ZONING: R-12  
 GROSS AREA OF PROJECT: 6.17 AC. (268,174 SF)  
 AREA OF 100-YEAR FLOODPLAIN: 0 AC.  
 AREA OF STEEP SLOPES: 0 AC.  
 NET AREA OF PROJECT: 6.17 AC.  
 AREA OF PROPOSED BUILDABLE LOTS: 4.24 AC. (184,816 SF)  
 AREA OF OPEN SPACE REQUIRED: 20% OR 1,234.9 AC.  
 AREA OF CREDITED OPEN SPACE PROVIDED: 20% OR 1,237.4 AC.  
 AREA ON NON-CREDITED OPEN SPACE: 0.2062 AC.  
 AREA OF PROPOSED RIGHT-OF-WAY: 0.49 AC. (21,254 SF)  
 NUMBER OF BUILDABLE LOTS PROPOSED: 18 LOTS  
 NUMBER OF OPEN SPACE LOTS: 3 LOTS  
 TOTAL APPROXIMATE LIMIT OF DISTURBANCE: 5.48 AC.± (238,571 SF)  
 MINIMUM LOT SIZE: LOT 21 (9,603 SF)

**GENERAL NOTES**

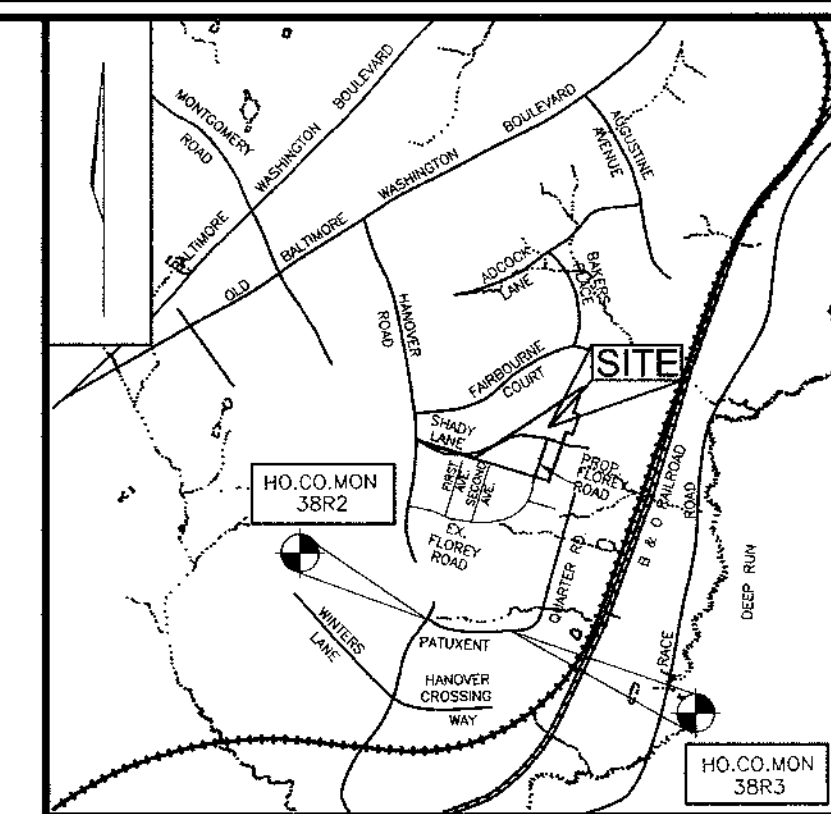
- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
  - DEED REFERENCE: 6999/695
  - THE PROJECT BOUNDARY IS BASED ON A SURVEY PERFORMED BY FREDERICK WARD ASSOCIATES, DATED JULY 2002.
  - THE TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY BY FREDERICK WARD ASSOCIATES, DATED JULY 2002.
  - WATER AND SEWER FOR THIS PROJECT WILL BE PUBLIC. SEWER FOR LOTS 1-4, LOTS 6-9 AND LOT 21 TO BE PROVIDED THROUGH CONTR. NO. 14-3754-D. SEWER FOR LOTS 10-14 AND LOTS 16-19 TO BE PROVIDED THROUGH CONTR. CONTR. NO. 14-1450-D. WATER FOR THE ENTIRE SITE TO BE PROVIDED THROUGH CONTR. NO. 14-3754-D.
  - STORM WATER MANAGEMENT FOR THIS SUBDIVISION IS PROVIDED BY A POCKET POND FACILITY TO PROVIDE Cpv AND WQv AND A BIORETENTION FACILITY TO PROVIDE WQv AND Rev. BOTH FACILITIES ARE HAZARD CLASS 'A'. THE TWO FACILITIES ARE LOCATED ON OPEN SPACE LOTS 15 AND 20 AND WILL BE OWNED AND MAINTAINED BY THE HOA.
  - NO WETLANDS OR STREAMS ARE LOCATED ONSITE.
  - NO FLOODPLAIN IS LOCATED ONSITE.
  - NO STEEP SLOPES ARE LOCATED ONSITE.
  - FOREST CONSERVATION PLAN PREPARED BY FREDERICK WARD ASSOCIATES, DATED NOVEMBER 2002. FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY THE RETENTION OF EXISTING FOREST IN THE AMOUNT OF 0.2540 AC, ON-SITE REFORESTATION IN THE AMOUNT OF 0.1110 AC, AND 2,3560 AC OF OFF-SITE REFORESTATION (CHASE FARM-TAX MAP 21 AND 27, PARCEL 191, LOT 5). TOTAL OBLIGATION IS 0.2540 AC. OF RETENTION AND 2,4670 AC. OF REFORESTATION.
  - APFO TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP, DATED JUNE 2001, AND APPROVED UNDER S-02-02, JUNE 10, 2002.
  - PLANNING AND ZONING FILE NUMBERS: S-02-02, WF-02-85 (APP. 4/25/02), P-03-09.
  - ALL LANDSCAPING REQUIREMENTS AS SET FORTH IN THE LANDSCAPE MANUAL SHALL BE COMPLIED WITH.
  - STREET LIGHTING IS REQUIRED FOR THIS SITE IN ACCORDANCE WITH SECTION 16.135 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
  - THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT.
  - TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL/CEMETERY LOCATIONS ON SITE.
  - STREET TREES ARE PROVIDED FOR THIS SUBDIVISION IN ACCORDANCE WITH SECTION 16.124(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN STREET LIGHTS AND TREES.
  - OPEN SPACE LOTS 5, 15 AND 20 TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOA.
  - EXISTING STRUCTURE ON LOT 13 IS TO REMAIN. NO ADDITIONS OR EXPANSIONS ARE ALLOWED UNLESS IN COMPLIANCE WITH THE APPLICABLE ZONING REGULATIONS. THE STRUCTURES ON LOTS 10 AND 18 ARE TO BE RAZED.
  - A NOISE STUDY IS NOT REQUIRED FOR THIS SITE.
  - NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS.
  - LOTS 14, 15 AND 16 WILL UTILIZE A USE-IN-COMMON DRIVEWAY. HOWARD COUNTY STANDARD DETAIL NO. R-6.06 WILL BE UTILIZED FOR THE ENTRANCE AT THE INTERSECTION OF THE PUBLIC ROAD.
  - TREE PROTECTION FENCING WILL BE PROVIDED AT THE LIMITS OF DISTURBANCE WHERE GRADING IS ADJACENT TO FOREST CONSERVATION RETENTION AREAS.
  - THIS SUBDIVISION IS SUBJECT TO THE REQUIREMENTS OF THE FOURTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS BASED ON THE SKETCH PLAN BEING SUBMITTED FOR REVIEW PRIOR TO 11/15/01.
  - FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT TO THE PIPESTEM LOT DRIVEWAY.
  - THIS PLAN IS SUBJECT TO WF-02-85, APPROVED APRIL 26, 2002, TO WAIVE SECTION 16.121(1)(3)(i) TO NOT BE REQUIRED TO CONSOLIDATE THE 3 PROPOSED OPEN SPACE LOTS INTO A SINGLE OPEN SPACE LOT WHICH IS CONTIGUOUS WITH ADJACENT OPEN SPACE, SECTION 16.121(e)(1) TO REDUCE THE MINIMUM REQUIRED PUBLIC ROAD FRONTAGE OF 40' FOR AN OPEN SPACE LOT TO 34' FOR OPEN SPACE LOT 5 AND 8' FOR OPEN SPACE LOT 15, AND SECTION 16.121(e)(2) TO PERMIT A STORMWATER MANAGEMENT ACCESS AND OPEN SPACE ACCESS TO OPEN SPACE LOT 15 TO BE LOCATED ON PORTIONS OF RESIDENTIAL LOTS 14 AND 16 AND OPEN SPACE ACCESS TO OPEN SPACE LOT 5 TO BE LOCATED ON PORTIONS OF LOTS 3, 4 AND 6-8.
- APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
- THE PROPOSED SHARED ACCESS EASEMENTS SHALL PERMIT MAINTENANCE VEHICLE AND/OR PEDESTRIAN ACCESS TO OPEN SPACE LOTS 5 AND 15.
  - IN ACCORDANCE WITH SECTION 16.121(o)(4) OF THE FOURTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, RECREATIONAL OPEN SPACE IS NOT REQUIRED FOR THIS SUBDIVISION OF LESS THAN 20 RESIDENTIAL LOTS.
  - THE AREA OF OPEN SPACE LOT 5 WIDER THAN 35' SHALL BE USED FOR FOREST CONSERVATION RETENTION AND REFORESTATION FOR A PART OF THE FOREST CONSERVATION PROVISIONS FOR THIS SUBDIVISION.
  - PARKING IS PROHIBITED ON THE 60' X 25' TEE TURNAROUND LOCATED ON LOTS 3, 4, 5, 6, AND 7.
  - HOA WILL BE RESPONSIBLE FOR THE TRASH PAD AND ITS SURROUNDING LANDSCAPING.
  - ALL FILLED AREAS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL MEET 95% COMPACTION IN ACCORDANCE WITH ASHTO T-180 SPECIFICATIONS.
  - DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH THE SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF THE SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION OR BUILDING/GRADING PERMIT.

# FINAL ROAD CONSTRUCTION PLAN

## WHITETAIL WOODS II

### LOTS 1-21

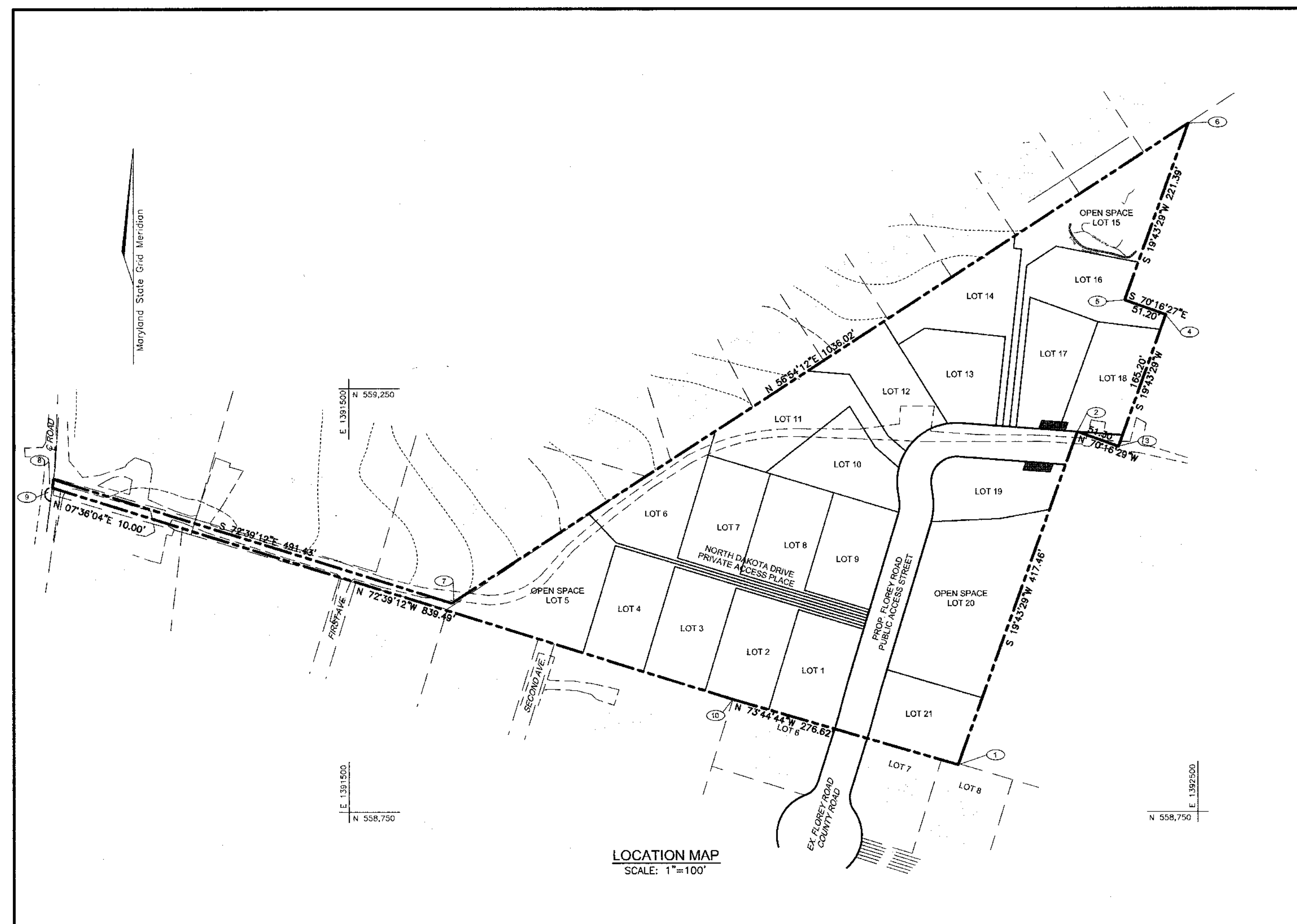
#### HOWARD COUNTY, MARYLAND



VICINITY MAP  
SCALE: 1"=2000'

BENCHMARKS			
NO.	NORTHING	EASTING	ELEVATION
38R2	557,500.663'	1,391,227.052'	168.788'
38R3	557,417.823'	1,391,983.177'	124.853'

COORDINATE TABLE		
NO.	NORTHING	EASTING
1	558805.7045	1392217.5505
2	559198.6862	1392358.4432
3	559181.3535	1392406.7342
4	559336.8599	1392462.4890
5	559354.1409	1392414.2937
6	559562.5418	1392489.0135
7	558996.6208	1391621.0875
8	559143.3427	1391152.0066
9	559133.4263	1391150.6832
10	558883.1312	1391951.9877



LOCATION MAP  
SCALE: 1"=100'

SHEET INDEX	
DESCRIPTION	SHEET NO.
COVER SHEET	1
ROAD LAYOUT PLAN	2
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LANDSCAPING AND FOREST CONSERVATION PLAN	5
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OFF-SITE PLANTING PLAN	9

NO.	REVISION	DATE

**COVER SHEET**  
**WHITETAIL WOODS II**  
**LOTS 1-21**  
 REF: S-02-02, WP-02-85, P-03-09

TAX MAP 38 BLOCK 9 PARCEL 528  
 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET TEL: 410.461.7666  
 ELLICOTT CITY, MD 21043 FAX: 410.461.8951

DESIGN BY: CMH/JCO  
 DRAWN BY: JT  
 CHECKED BY: RHV  
 DATE: SEPTEMBER 16, 2004  
 SCALE: AS SHOWN  
 W.O. NO.: 2014036

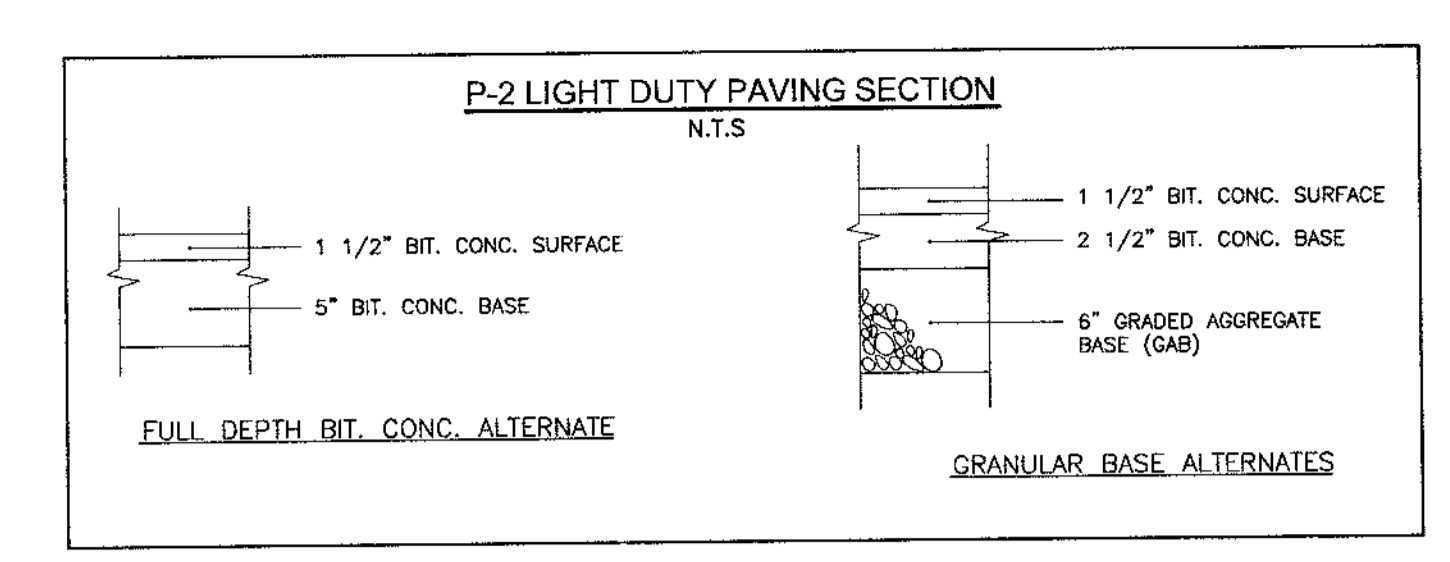
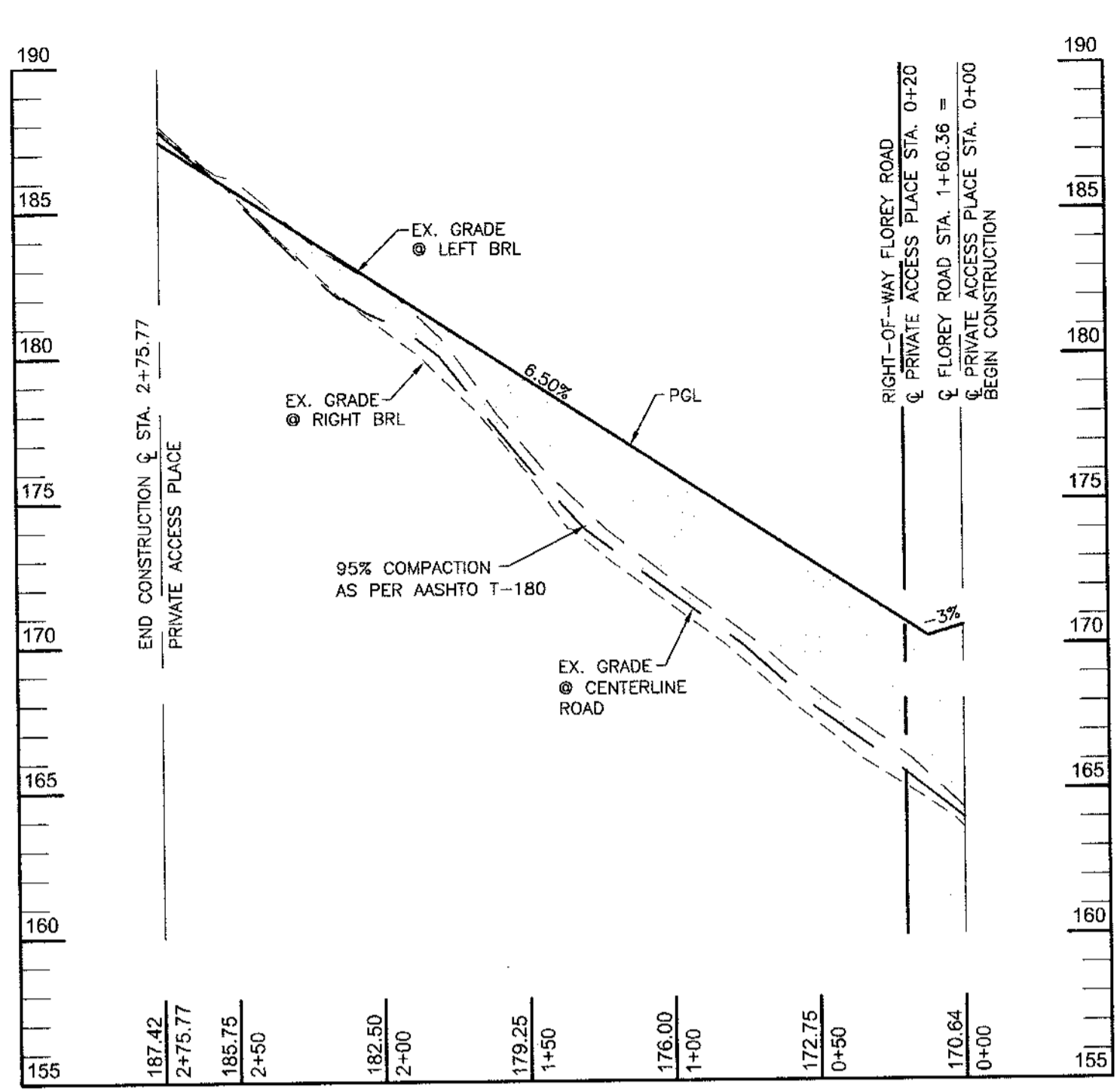
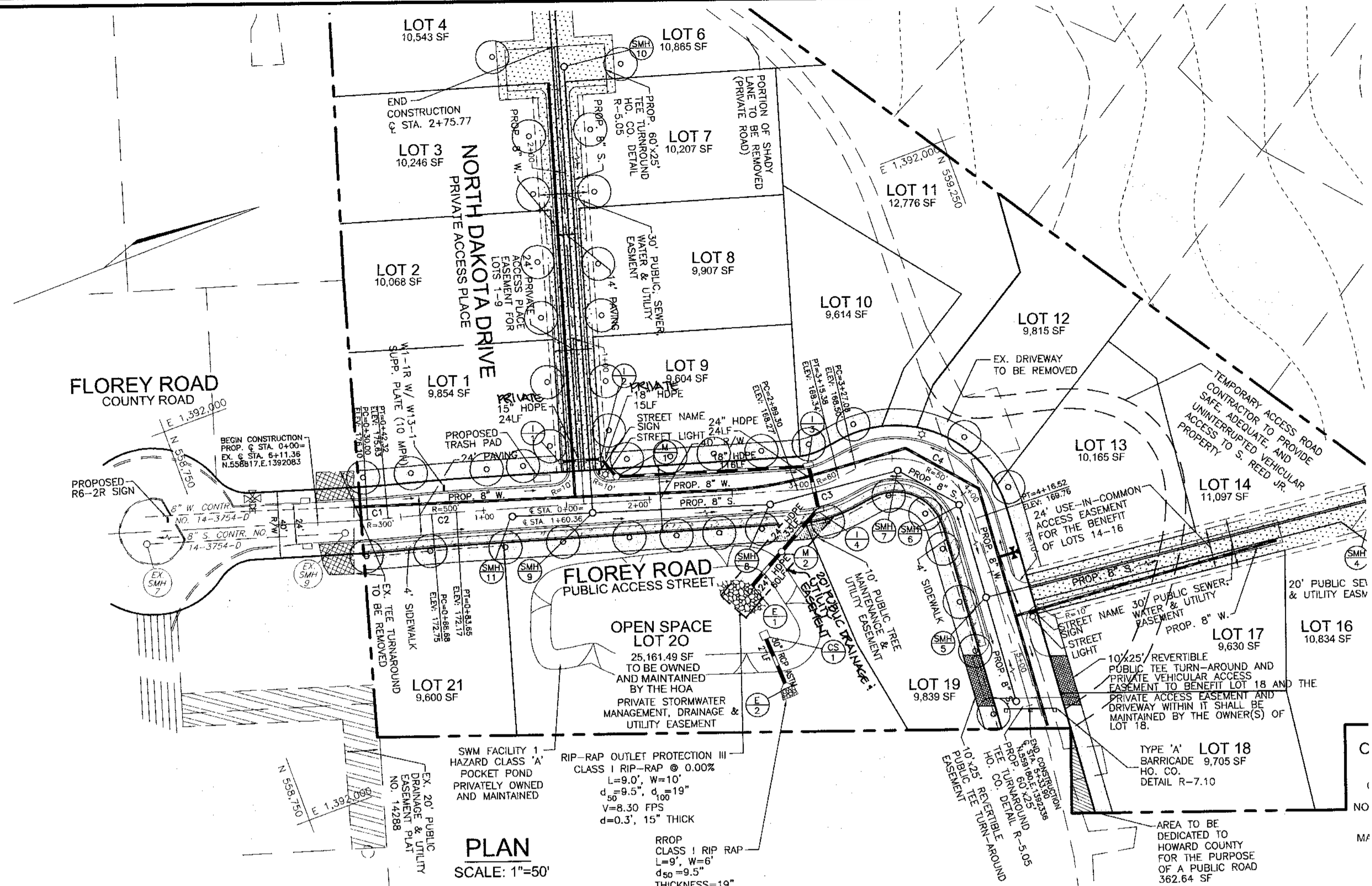
1 SHEET OF 9

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
  
 CHIEF, BUREAU OF HIGHWAYS  
 10-12-04 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 10/15/04 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT  
 1/23/04 DATE

OWNER / DEVELOPER  
 MICHAEL L. PFAUL  
 3675 PARK AVE., STE. 301  
 ELLICOTT CITY, MARYLAND 21043  
 (410) 480-0023

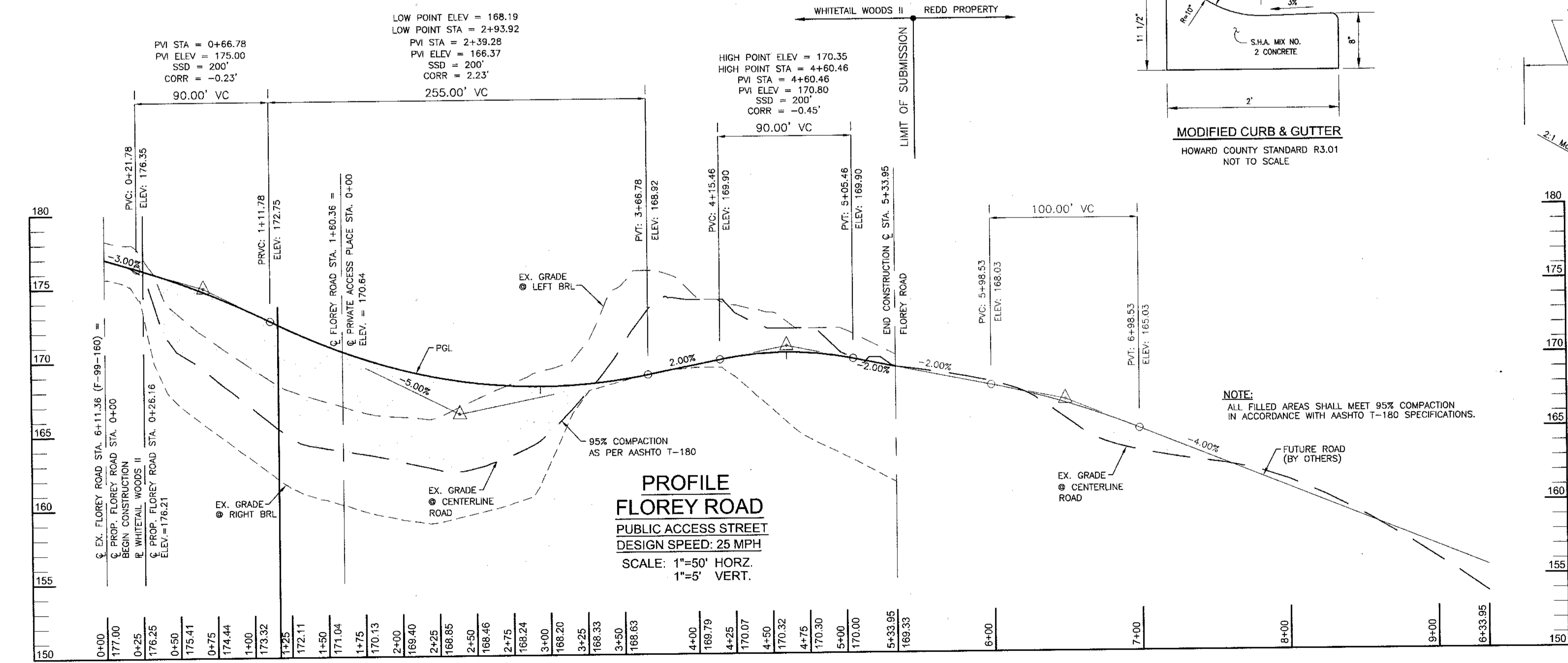
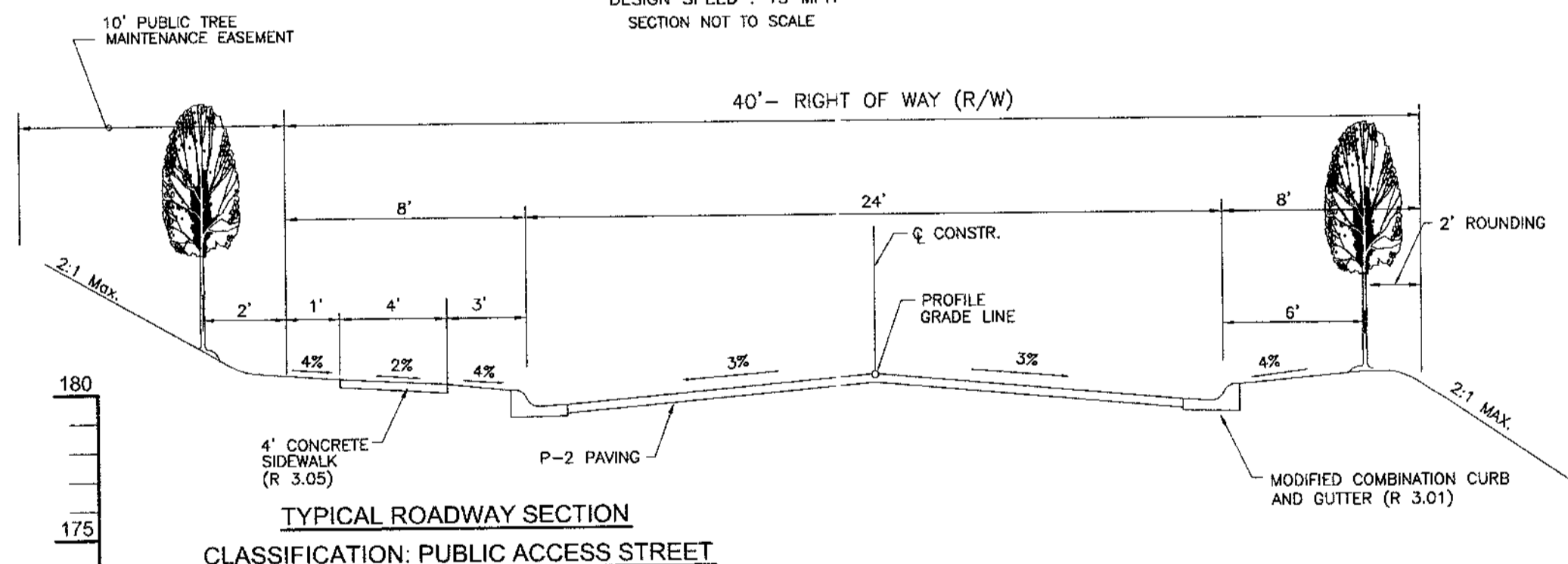
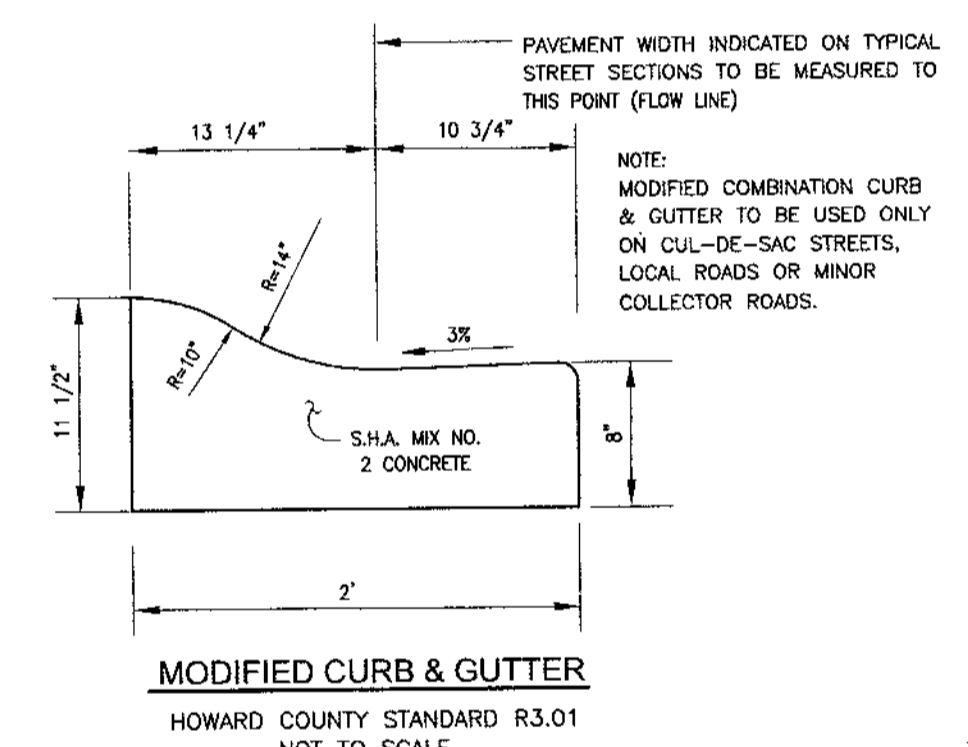
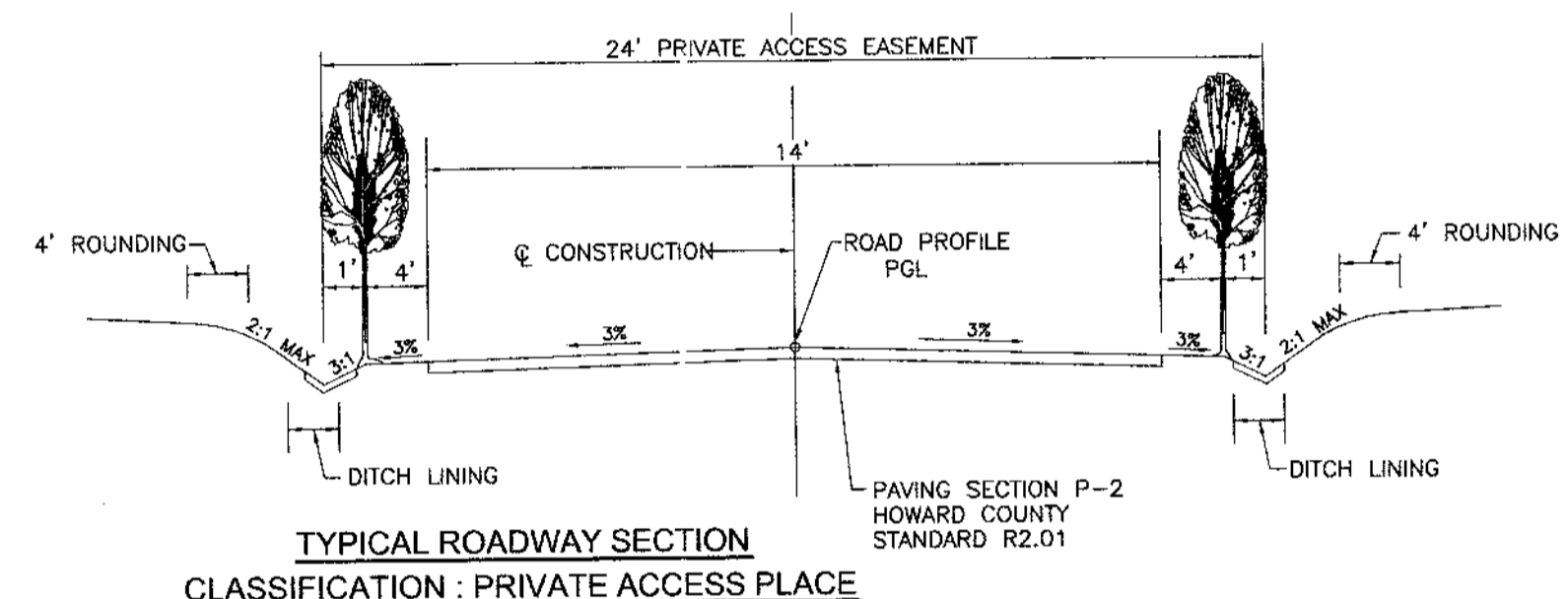


CURVE	LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	12.32'	300.00'	02°21'10"	6.16'	N 16°13'50" E	12.32'
C2	14.96'	500.00'	01°42'53"	7.48'	S 15°54'42" W	14.96'
C3	26.08'	60.00'	24°54'27"	13.25'	N 04°18'55" E	25.88'
C4	89.44'	50.00'	102°35'41"	62.34'	S 43°05'23" W	77.96'

STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
FLOREY ROAD	534/40	27	27
PRIVATE ACCESS PLACE	276/40	14	14

KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
○	41	FRAXINUS AMERICANA "WHITE ASH"	2 1/2"-3" CAL.	B & B

**PROFILE NORTH DAKOTA DRIVE**  
PRIVATE ACCESS PLACE  
DESIGN SPEED: 15 MPH  
SCALE: 1"=50' HORIZ.  
1"=5' VERT.



☼	PROPOSED STREET LIGHT
○	PROPOSED STREET TREE
▭	PROPOSED TREE MAINTENANCE BUFFER
▭	NO WOODY VEGETATION BUFFER
▭	PUBLIC WATER, SEWER, AND UTILITY EASEMENT
▭	PRIVATE WATER, SEWER, AND UTILITY EASEMENT
▭	USE-IN-COMMON ACCESS EASEMENT
▭	AREA OF 15 TO 24.9 PERCENT SLOPES
▭	FOREST CONSERVATION EASEMENT (RETENTION)

STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
FLOREY ROAD	1+74	15' LEFT	100 WATT HPS VAPOR "PREMIER COLONIAL" POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
	3+75	15' LEFT	
	4+18	15' LEFT	

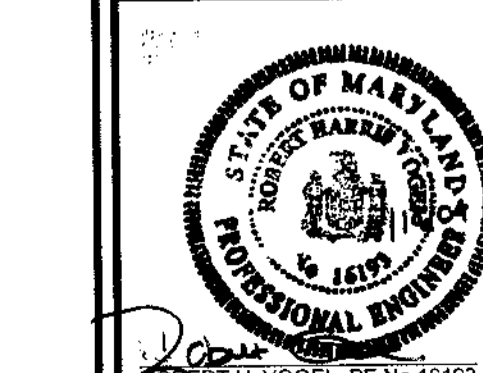
NOTE: A MINIMUM OF 20' IS REQUIRED BETWEEN ANY STREET LIGHT AND ANY TREE.

NO.	REVISION	DATE

**ROAD LAYOUT PLAN**  
**WHITETAIL WOODS II**  
**LOTS 1-21**  
REF: S-02-02, WP-02-85, P-03-09  
TAX MAP 38 BLOCK 9 1ST ELECTION DISTRICT  
PARCEL 528 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERS - SURVEYORS - PLANNERS**  
8407 MAIN STREET ELICOTT CITY, MD 21043 TEL: 410-461-7666 FAX: 410-461-8961

DESIGN BY: CMH/JCO  
DRAWN BY: JT  
CHECKED BY: RHV  
DATE: SEPTEMBER 18, 2004  
SCALE: 1"=50'  
W.O. NO.: 2014036



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William J. White* 10-12-04 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamstra* 10/22/04 DATE

SUMMARY TABLE AREA 1

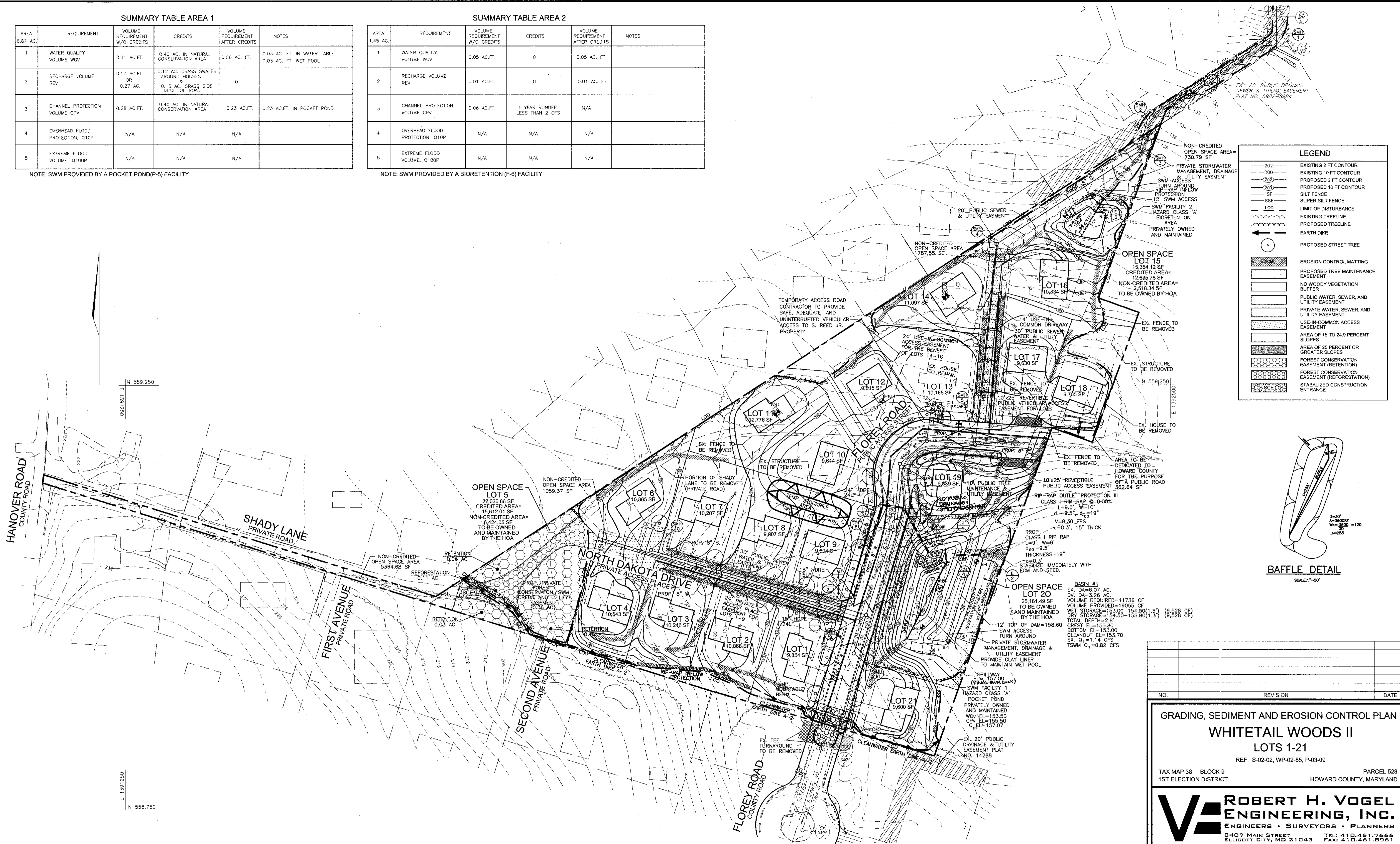
AREA	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES
1	WATER QUALITY VOLUME WQV	0.11 AC.FT.	0.40 AC. IN NATURAL CONSERVATION AREA	0.06 AC. FT.	0.03 AC. FT. IN WATER TABLE 0.03 AC. FT. WET POOL
2	RECHARGE VOLUME REV	0.03 AC.FT. OR 0.27 AC.	0.12 AC. GRASS SWALES AROUND HOUSES & 0.15 AC. GRASS SIDE DITCH OF ROAD	0	
3	CHANNEL PROTECTION VOLUME CPV	0.28 AC.FT.	0.40 AC. IN NATURAL CONSERVATION AREA	0.23 AC.FT.	0.23 AC.FT. IN POCKET POND
4	OVERHEAD FLOOD PROTECTION, Q10P	N/A	N/A	N/A	
5	EXTREME FLOOD VOLUME, Q100P	N/A	N/A	N/A	

NOTE: SWM PROVIDED BY A POCKET POND(P-5) FACILITY

SUMMARY TABLE AREA 2

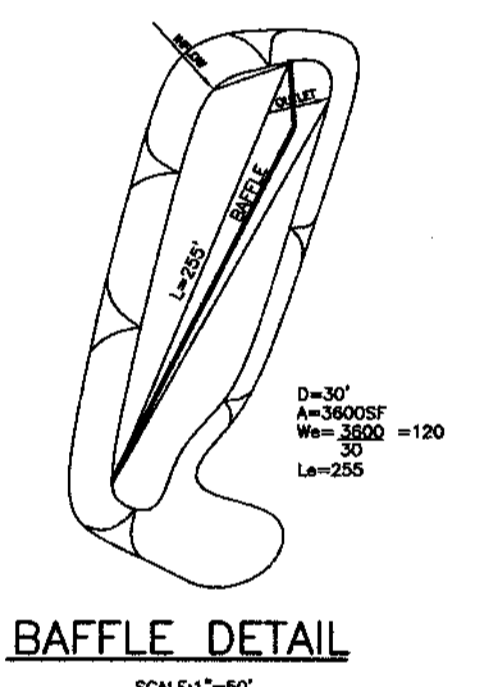
AREA	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES
1	WATER QUALITY VOLUME WQV	0.05 AC.FT.	0	0.05 AC. FT.	
2	RECHARGE VOLUME REV	0.01 AC.FT.	0	0.01 AC. FT.	
3	CHANNEL PROTECTION VOLUME CPV	0.06 AC.FT.	1 YEAR RUNOFF LESS THAN 2 CFS	N/A	
4	OVERHEAD FLOOD PROTECTION, Q10P	N/A	N/A	N/A	
5	EXTREME FLOOD VOLUME, Q100P	N/A	N/A	N/A	

NOTE: SWM PROVIDED BY A BIORETENTION (F-6) FACILITY



**LEGEND**

---202---	EXISTING 2 FT CONTOUR
---200---	EXISTING 10 FT CONTOUR
---200---	PROPOSED 2 FT CONTOUR
---200---	PROPOSED 10 FT CONTOUR
---	SILT FENCE
---	SUPER SILT FENCE
---	LIMIT OF DISTURBANCE
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	EARTH DIKE
---	PROPOSED STREET TREE
---	EROSION CONTROL MATTING
---	PROPOSED TREE MAINTENANCE EASEMENT
---	NO WOODY VEGETATION BUFFER
---	PUBLIC WATER, SEWER, AND UTILITY EASEMENT
---	PRIVATE WATER, SEWER, AND UTILITY EASEMENT
---	USE-IN-COMMON ACCESS EASEMENT
---	AREA OF 15 TO 24.9 PERCENT SLOPES
---	AREA OF 25 PERCENT OR GREATER SLOPES
---	FOREST CONSERVATION EASEMENT (RETENTION)
---	FOREST CONSERVATION EASEMENT (REFORESTATION)
---	STABILIZED CONSTRUCTION ENTRANCE



NO.	REVISION	DATE

**GRADING, SEDIMENT AND EROSION CONTROL PLAN**  
**WHITETAIL WOODS II**  
**LOTS 1-21**  
 REF: S-02-02, WP-02-85, P-03-09  
 TAX MAP 38 BLOCK 9 PARCEL 528  
 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
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APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 [Signature] 10-12-04  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 10/15/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

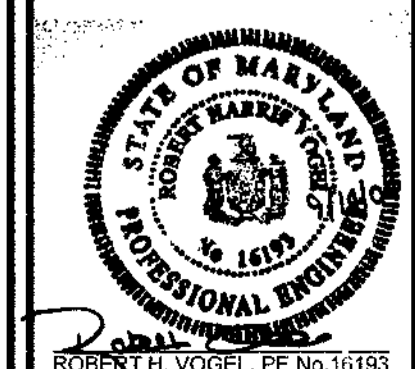
[Signature] 10/22/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.  
 [Signature] 9/28/04  
 USDA-NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 9/28/04  
 HOWARD SOIL CONSERVATION DISTRICT

**ENGINEERS CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 9/14/04  
 SIGNATURE OF ENGINEER ROBERT H. VOGEL, P.E.

**DEVELOPERS CERTIFICATE**  
 I WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.  
 [Signature] 9/15/04  
 SIGNATURE OF DEVELOPER MICHAEL L. PFAU



DESIGN BY: CMH/JCO  
 DRAWN BY: JT  
 CHECKED BY: RHH  
 DATE: SEPTEMBER 16, 2004  
 SCALE: 1"=50'  
 W.O. NO.: 2014036

3 SHEET OF 9

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

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

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

CONDITIONS WHERE PRACTICE APPLIES
I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

- A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.

II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

I. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR A SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 AND 1/2" IN DIAMETER.

II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, 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.

IV. 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 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

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, DISCING 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./100 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT THE TIME OF SEEDING. APPLY 400 LBS. PER ACRE 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 APPLY 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 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. 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 WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOIL 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

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING 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 NOVEMBER 15, SEED WITH 2 1/2 BUSHEL 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 1 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 SOIL.

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.

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

SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSE AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).

2. ALL VEGETATION AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 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, PERIMETER 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 7, HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOIL TEMPORARY SEEDING, AND MULCHING (SEC. C). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL 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:

Table with 2 columns: Category and Value. Includes TOTAL AREA (6.16 AC), AREA DISTURBED (5.48 AC), AREA TO BE ROOFED OR PAVED (1.44 AC), AREA TO BE VEGETATIVELY STABILIZED (4.04 AC), TOTAL CUT (16,850 CY), TOTAL FILL (16,850 CY), OFFSITE WASTE/BORROW AREA LOCATION (NA).

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

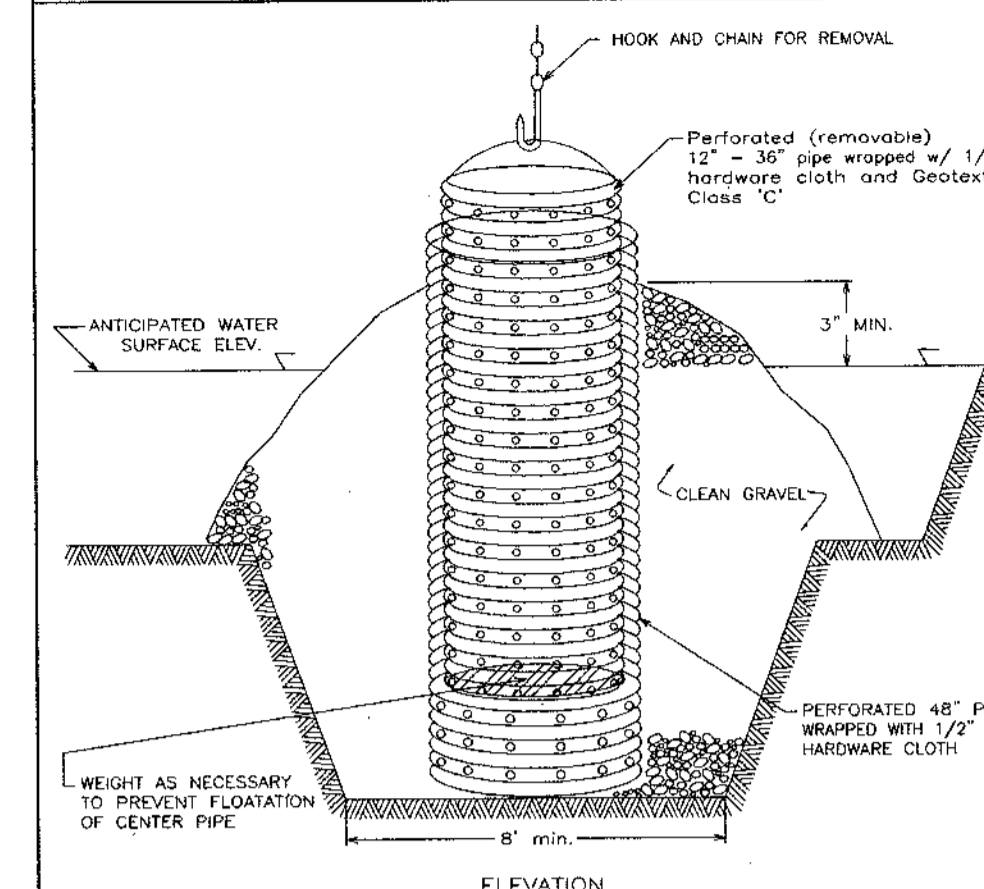
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

12. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE CURLED UP HILL AT LEAST 2 FEET WHEN RUNNING PERPENDICULAR WITH SLOPE.

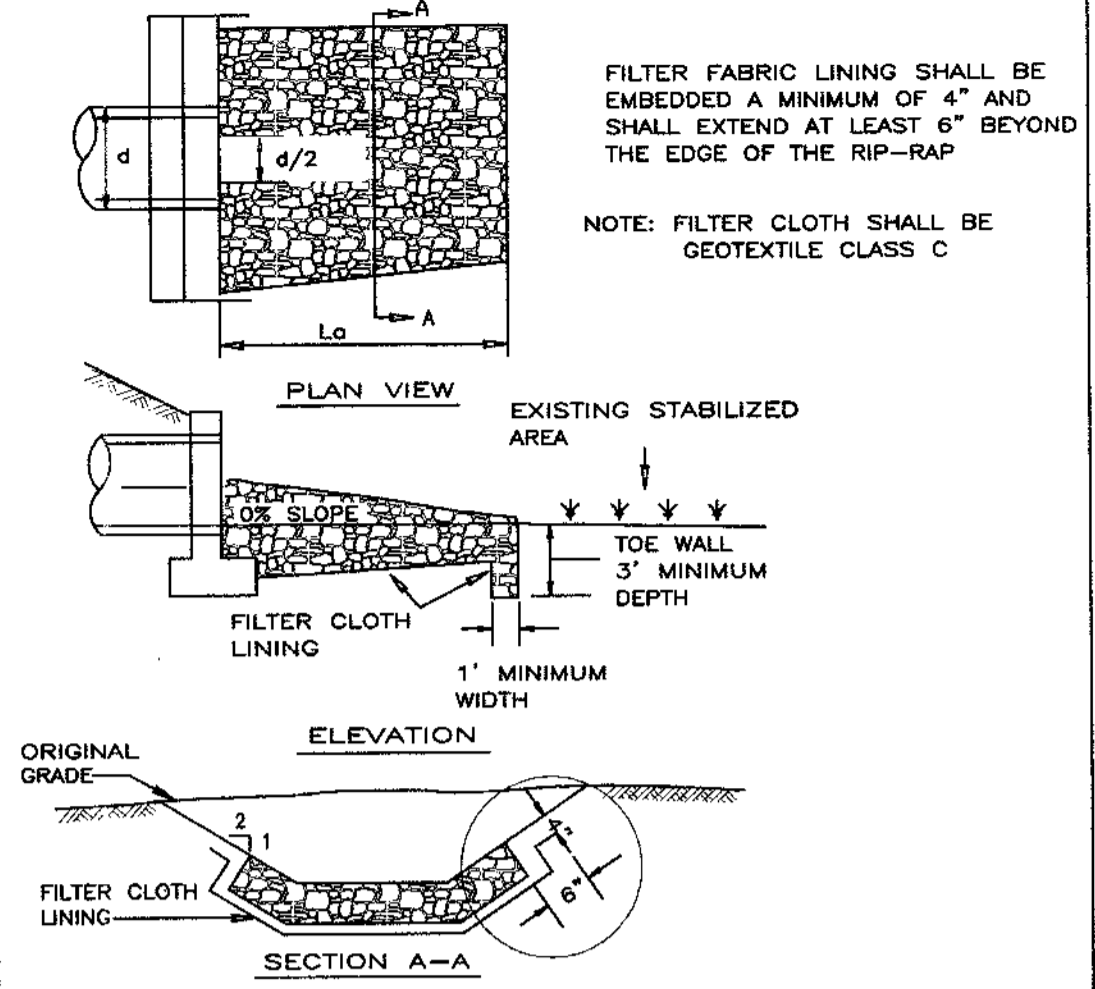
\* TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR WITH AN APPROVED AND ACTIVE GRADING PERMIT

DETAIL 20A - REMOVABLE PUMPING STATION



Construction Specifications for Detail 20A. 1. The outer pipe shall be 48\"/>

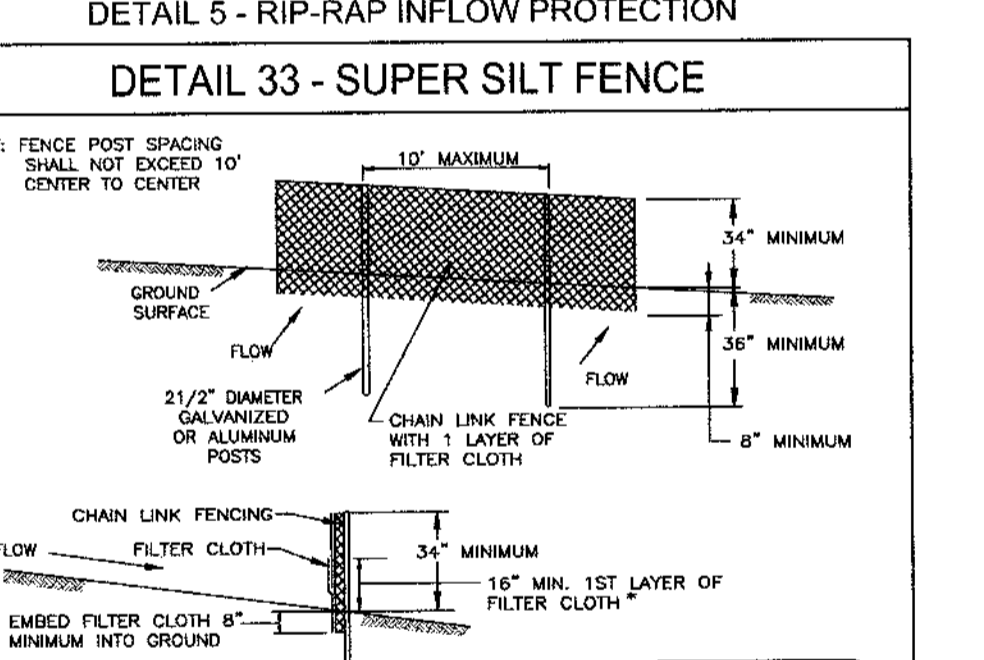
DETAIL 27 - ROCK OUTLET PROTECTION III



Construction Specifications for Detail 27. 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.

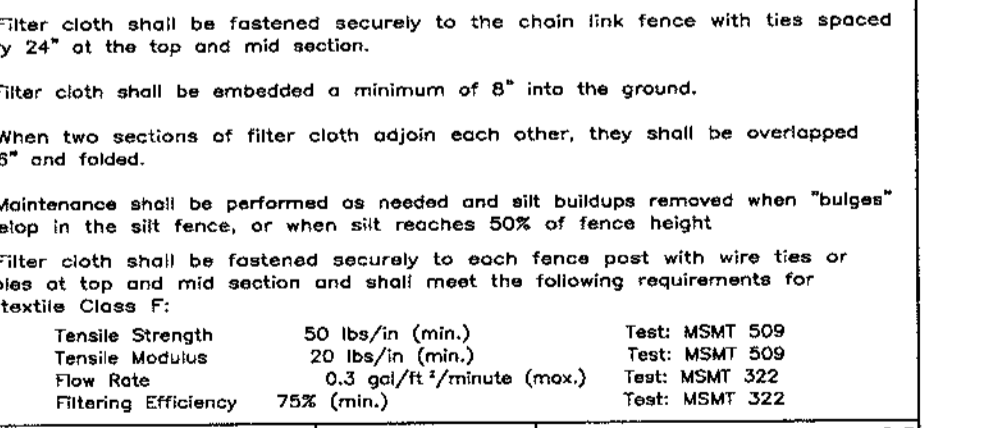
Construction Specifications for Detail 5. 1. Rip-rap lined inflow channels shall be 1\"/>

DETAIL 5 - RIP-RAP INFLOW PROTECTION



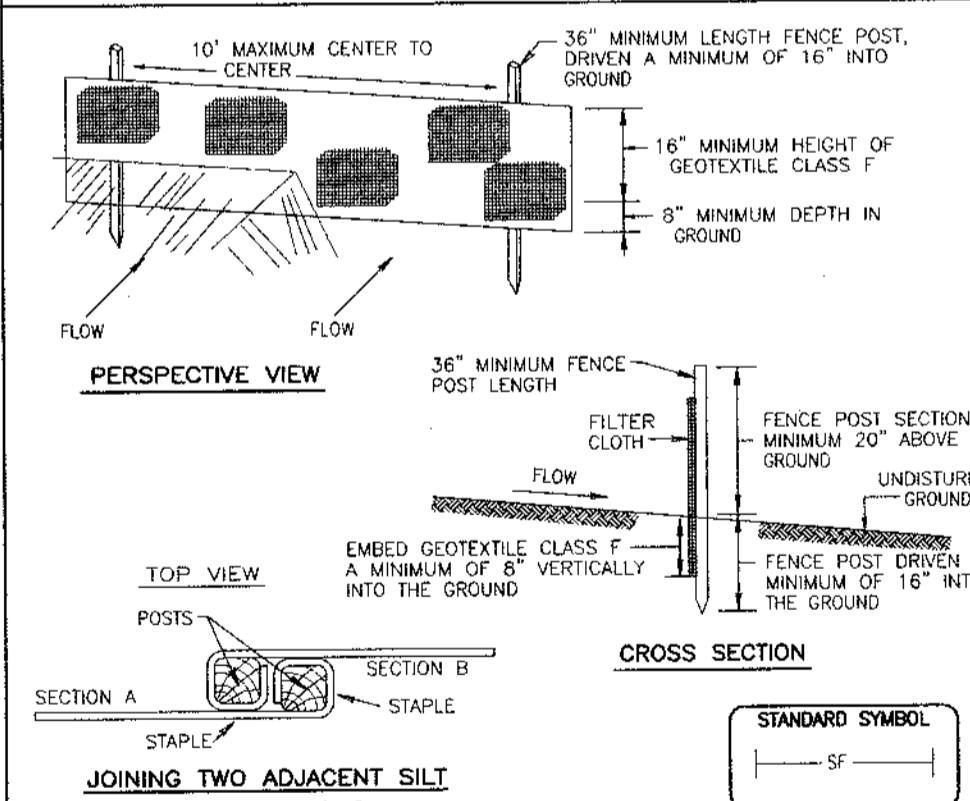
Construction Specifications for Detail 5. 1. Rip-rap lined inflow channels shall be 1\"/>

DETAIL 33 - SUPER SILT FENCE



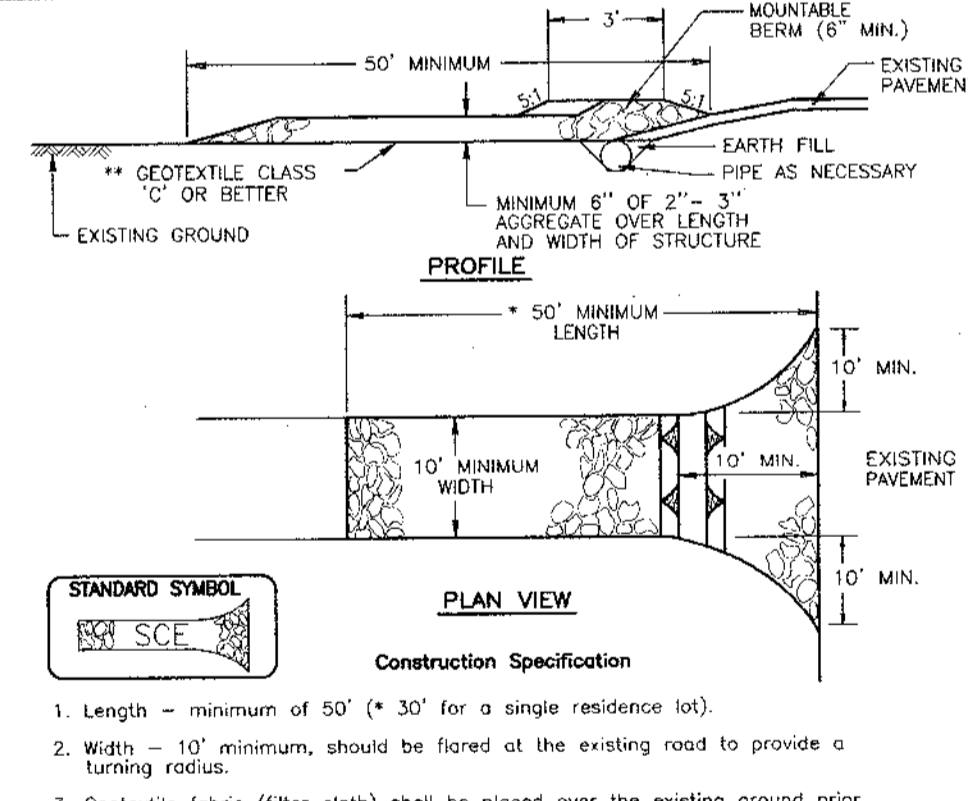
Construction Specifications for Detail 33. 1. Fencing shall be 42\"/>

DETAIL 22 - SILT FENCE



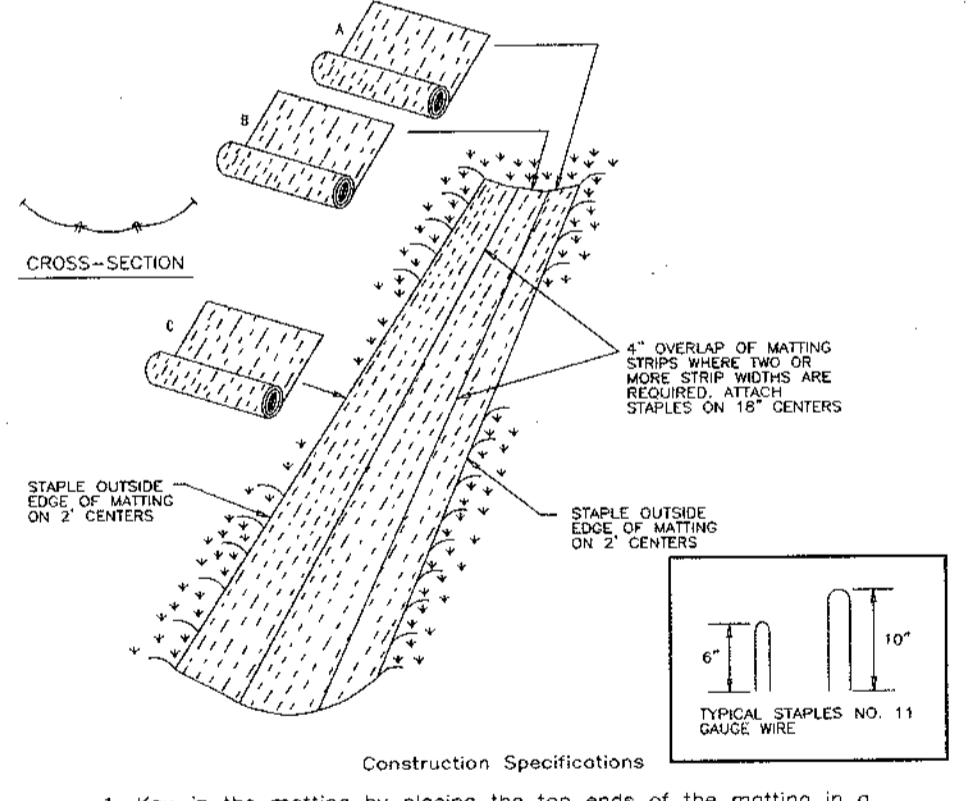
Construction Specifications for Detail 22. 1. Fence posts shall be a minimum of 36\"/>

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



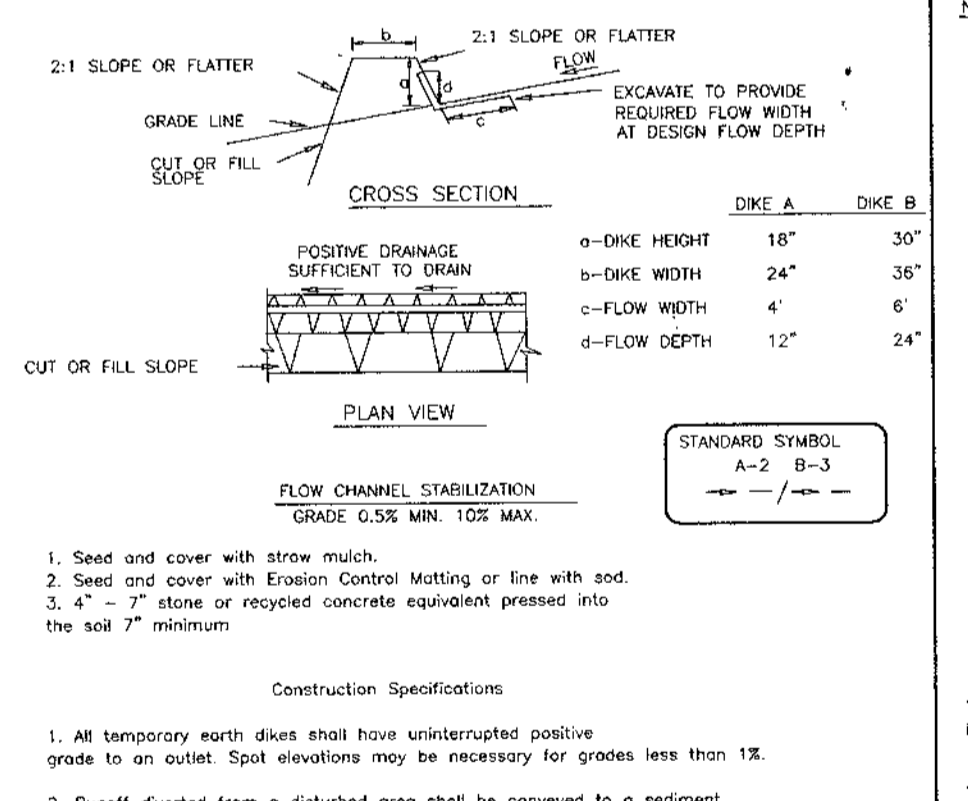
Construction Specifications for Detail 24. 1. Length - minimum of 50\"/>

DETAIL 30 - EROSION CONTROL MATTING



Construction Specifications for Detail 30. 1. Key-in the matting by placing the top ends of the matting in a narrow trench, 8\"/>

DETAIL 1 - EARTH DIKE



Construction Specifications for Detail 1. 1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spill elevations may be necessary for grades less than 1:2.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 6-15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 6-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 6-22-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE A-11-6 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 8-28-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Signature: William J. White Jr.
DATE: 10-12-04

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Signature: Cindy Hamrick
DATE: 10/27/04

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
Signature: Jim Meyer
DATE: 9/28/04

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Signature: Robert H. Vogel, P.E.
DATE: 9/15/04

DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.
Signature: Michael L. P.
DATE: 9/15/04

GRADING AND SEDIMENT EROSION CONTROL DETAILS
WHITETAIL WOODS II
LOTS 1-21
REF: S-02-02, WP-02-85, P-03-09
TAX MAP 38 BLOCK 9 PARCEL 528
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

HOWARD COUNTY  
FOREST CONSERVATION WORKSHEET

ZONED R-12  
NET TRACT AREA:  
A. TOTAL TRACT AREA 6.1744 AC  
B. AREA WITHIN 100 YEAR FLOODPLAIN 0.0000 AC  
C. NET TRACT AREA 6.1744 AC  
LAND USE CATEGORY:  
INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. ZONED R-12:  
ARA MDR IDA HDR MPD CIA  
0 0 1 0 0  
D. AFFOREST THRESHOLD 15% X D = 0.9255 AC  
E. CONSERVATION THRESHOLD 20% X D = 1.2340 AC  
EXISTING FOREST COVER:  
F. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) = 3.2300 AC  
G. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 1.9960 AC  
BREAK EVEN POINT:  
H. FOREST RETENTION WITH NO MITIGATION = 1.6332 AC  
I. CLEARING PERMITTED WITHOUT MITIGATION = 1.5968 AC  
PROPOSED FOREST CLEARING:  
J. TOTAL AREA OF FOREST TO BE CLEARED = 2.9800 AC  
K. TOTAL AREA OF FOREST TO BE RETAINED = 0.2540 AC  
PLANTING REQUIREMENTS:  
L. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD = 0.4990 AC  
M. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD = 1.9680 AC  
N. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD = 0.0000 AC  
O. TOTAL REFORESTATION REQUIRED = 2.4670 AC  
P. TOTAL AFFORESTATION REQUIRED = 0.0000 AC  
Q. TOTAL REFORESTATION AND AFFORESTATION REQUIRED = 2.4670 AC  
R. OBLIGATION TO BE FULFILLED BY ON-SITE RETENTION OF 0.2540 AC (11,065 SF)  
ON-SITE REFORESTATION OF 0.1110 AC (4,836 SF) AND OFF-SITE MITIGATION.

FOREST RETENTION AREAS AND NOTES

- NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THIS SITE.
- THE WOODED STEEP SLOPES ARE SUBSTANTIALLY RETAINED IN OPEN SPACE LOTS.
- THERE ARE NO ISOLATED FOREST STANDS ON THIS SITE.
- CHANGES IN GRADING AND RUNOFF WITHIN CONSTRUCTION/INSTALLATION AREAS NOT ADVERSELY AFFECT THE SOILS WITHIN THE FOREST RETENTION AREA. SEDIMENT CONTROL MEASURES WILL REDIRECT CONCENTRATED FLOW RUNOFF TO STORMWATER MANAGEMENT FACILITIES. RETAIN SEDIMENT WITHIN THE CONSTRUCTION SITE, AND/OR REDIRECT CLEAN WATER AWAY FROM CONSTRUCTION AREAS.
- FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY THE RETENTION OF EXISTING FOREST IN THE AMOUNT OF 0.2540 AC, ON-SITE REFORESTATION IN THE AMOUNT OF 0.1110 AC, AND 2.3560 AC OF OFF-SITE REFORESTATION (CHASE FARM - TAX MAP 21 AND 27, PARCEL 191, LOT 5). TOTAL OBLIGATION IS 0.2540 AC. OF RETENTION AND 2.4670 AC. OF REFORESTATION.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. 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.

FOREST PROTECTION NOTES

PRE-CONSTRUCTION ACTIVITIES

- FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
- FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
- A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNE TREES AS REQUIRED. WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.

CONSTRUCTION PHASE

- NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
- NO EQUIPMENT SHALL BE OPERATED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
- IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.

POST-CONSTRUCTION ACTIVITIES

- AT THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
- FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
- DO NOT REMOVE SIGNS.

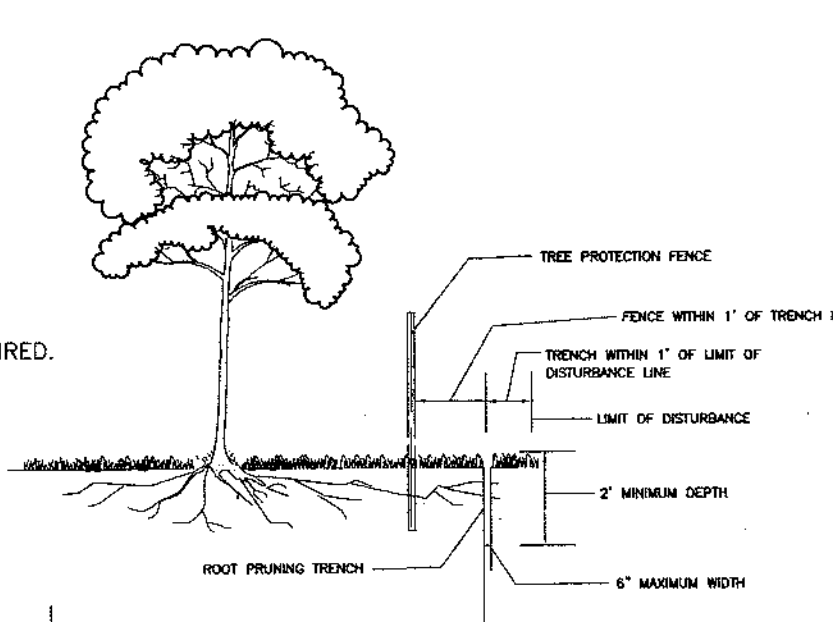
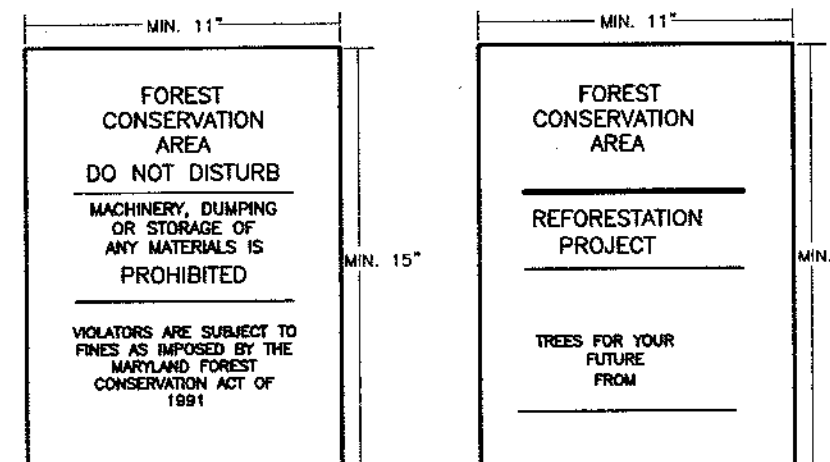
COST ESTIMATE: (For bonding purposes, only)

RETENTION OF 0.254 AC. (11,064.24 SF X 0.20) \$2,212.85  
REFORESTATION OF 0.111 AC. (4,835.16 SF X 0.50) \$2,417.58  
SURETY NOTE

FINANCIAL SURETY IN THE AMOUNT OF \$4,630.43 WILL BE POSTED WITH THE FC MAINTENANCE AGREEMENT FOR ON-SITE RETENTION AND REFORESTATION.  
ADDITIONAL SURETY FOR THE 2.356 AC OF OFF-SITE REFORESTATION WILL BE \$51,313.68 (102,627.36 X 0.50)

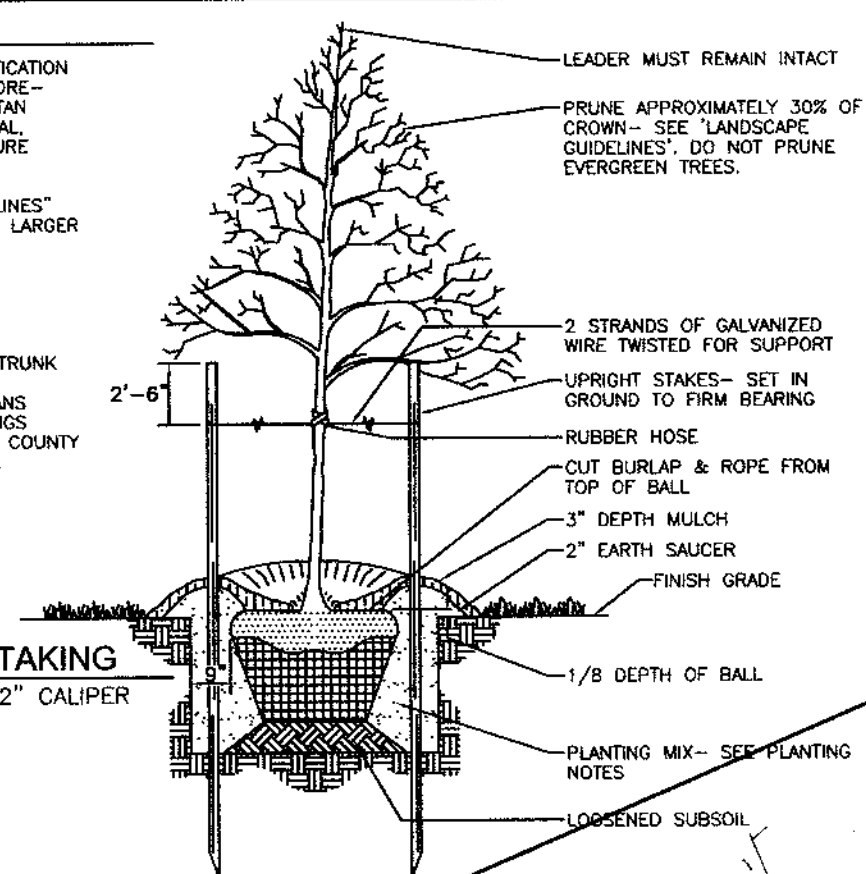
ROOT PRUNING

- RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
- BOUNDARIES OF RETENTION AREAS TO BE STAKED, FLAGGED AND/OR FENCED PRIOR TRENCHING.
- EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
- TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR ORGANO SOIL.
- ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.



TREE PLANTING AND STAKING

DECIDUOUS TREES UP TO 2-1/2" CALIPER  
NOT TO SCALE



PLANT SCHEDULE - REFORESTATION			
QUAN.	BOTANICAL NAME	SIZE	SPACING (FT)
8	Acer rubrum Red Maple	1" Cal.	15 X 15
6	Acer rubrum Red Maple	3-4"	11 X 11
5	Platanus occidentalis Sycamore	3-4"	11 X 11
5	Prunus serotina Black Cherry	3-4"	11 X 11
5	Quercus palustris Pin Oak	3-4"	11 X 11
5	Fraxinus pennsylvanica Green Ash	3-4"	11 X 11

REFORESTATION PROVIDED  
0.11 ACRES OR 4,792 SF  
1" CALIPER TREES  
8 (0.04 AC) @ 200 TREES PER ACRE  
SEEDLINGS - WITH TREE SHELTERS  
26 (0.07 AC) @ 360 WHIPS PER ACRE

- NOTES:  
1. THE PROPERTY OUTLINE IS BASED ON A BOUNDARY SURVEY PREPARED BY FREDERICK WARD ASSOCIATES, DATED JULY 2002.  
2. THE EXISTING FEATURES AND CONTOURS SHOWN HEREON ARE BASED ON A FIELD RUN SURVEY PREPARED BY FREDERICK WARD ASSOCIATES, DATED JULY 2002.  
3. HOA WILL BE RESPONSIBLE FOR THE MAINTENANCE OF THE TRASH PAD AND ITS SURROUNDING LANDSCAPING.

FOREST CONSERVATION AREA SIGN

- BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
- SIGNS TO BE PLACED APPROXIMATELY 50'-100' FEET APART, CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
- ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

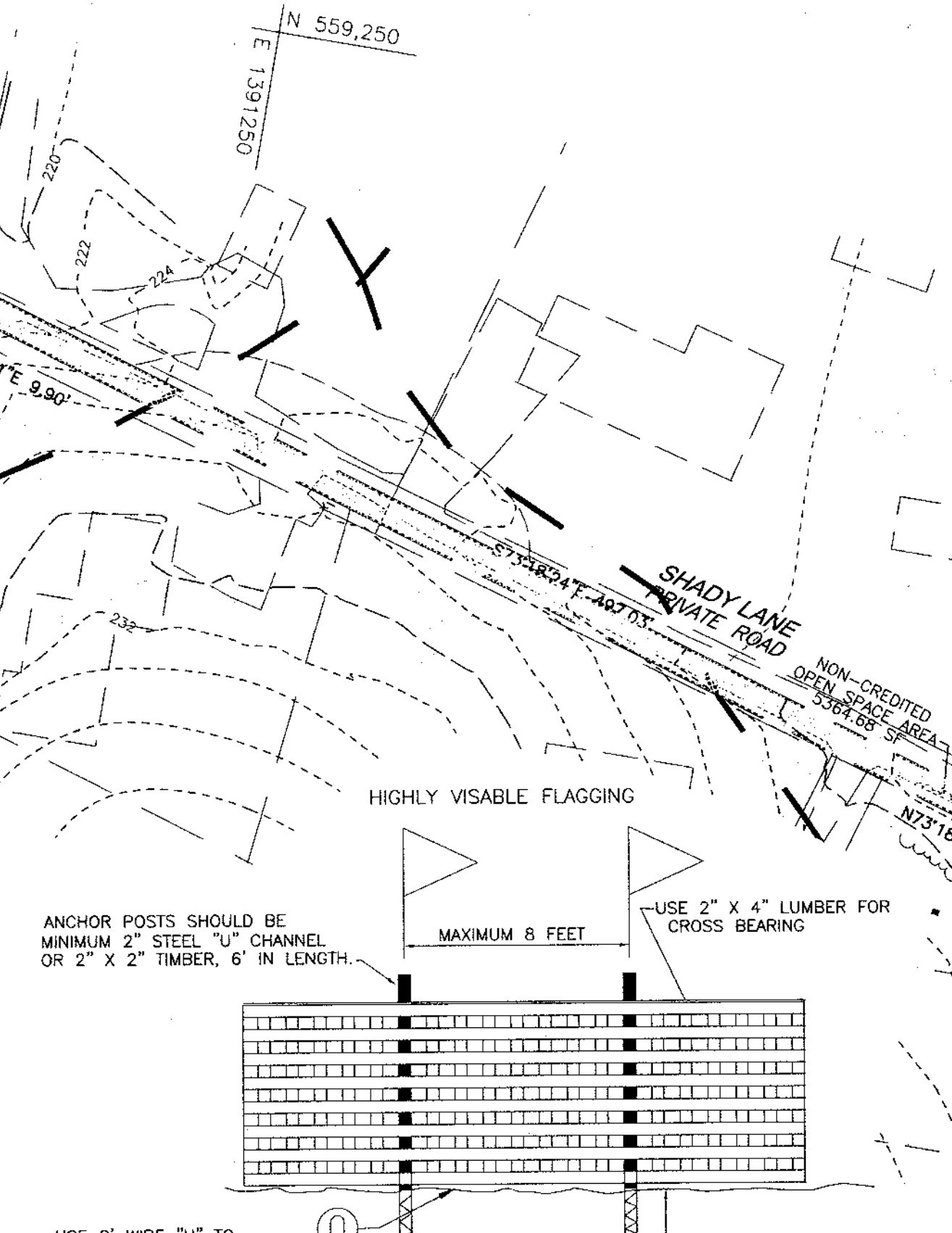
THE TYPE "A" PERIMETER, TRASH PAD, AND STORMWATER LANDSCAPING INFORMATION INDICATED ON THIS PLAN IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. IT SHALL BE SHOWN ON THE REQUIRED FUTURE SITE DEVELOPMENT PLAN. FINANCIAL SURETY FOR THE REQUIRED PERIMETER LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$21,570.00 FOR THE 62 SHADE TREES, 17 EVERGREEN TREES, AND 14 SHRUBS.  
THE MAINTENANCE OF THE TRASH PAD AND TRASH PAD LANDSCAPE PLANTING IS THE RESPONSIBILITY OF THE HOA.

DEVELOPER'S/BUILDER'S CERTIFICATE

I CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND HOWARD COUNTY LANDSCAPE MANUAL.

*Michael Pfaue* 9/15/04  
DEVELOPER/BUILDER DATE

FINANCIAL SURETY FOR THE REQUIRED TOTAL 27 STREET TREES BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$0,100.00.  
FINANCIAL SURETY FOR THE REQUIRED BIO-RETENTION PLANTINGS SHALL BE POSTED AS PART OF THE 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 DEVICE.  
4. ROOT DAMAGE SHOULD BE AVOIDED.  
5. PROTECTION SIGNAGE SHOULD BE USED.  
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

BLAZE ORANGE PLASTIC MESH

TYPICAL TREE PROTECTION FENCE DETAIL

SCHEDULE A: PERIMETER LANDSCAPE EDGE					
CATEGORY	ADJACENT TO ROADWAYS	1	2	3	5
PERIMETER FRONTSIDE DESIGNATION	N/A	A	A	A	A
LANDSCAPE TYPE	N/A	A	A	A	A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	N/A	481'	1035'	478'	111'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	N/A	YES*	YES*	YES*	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	N/A	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED (LF REMAINING)		396'	930'	386'	111'
SHADE TREES		1160'	1160'	1160'	1160'
EVERGREEN TREES					
SHRUBS					
NUMBER OF PLANTS PROVIDED		7	16	7	2
SHADE TREES					
EVERGREEN TREES					
OTHER TREES (2:1 SUBSTITUTION)					
SHRUBS (10:1 SUBSTITUTION)					
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED					

SCHEDULE D: STORMWATER MANAGEMENT AREA LANDSCAPING			
LINEAR FEET OF PERIMETER	POND #1 655' LF		
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO		
CREDIT FOR OTHER LANDSCAPING (NO, YES AND #)	NO		
NUMBER OF TREES REQUIRED			
SHADE TREES	(655')	14 SHADE TREES	
EVERGREEN TREES		17 EVERGREEN TREES	
NUMBER OF TREES PROVIDED			
SHADE TREES		14 SHADE TREES	
EVERGREEN TREES		17 EVERGREEN TREES	
SHRUBS			

TRASH PAD LANDSCAPING			
QUAN.	BOTANICAL NAME	SIZE	CAT
14	ILEX CRENATA ROTUNDFOLIA ROUNDLEAF JAPANESE HOLLY	2 1/2" - 3" HT	B & B

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT MAA SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAMM PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SLEETS.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William J. White* 10-12-04  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Andy Kraus* 10/15/04  
CHIEF, DIVISION OF LAND DEVELOPMENT

STREET TREE CALCULATIONS			
STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
FLOREY ROAD	534/40	27	27
NORTH DAKOTA DRIVE	276/40	14	14

STREET TREE SCHEDULE				
KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
○	41	OCTOBER GLORY RED MAPLE ACER RUBRUM OCTOBER GLORY	2 1/2" - 3" CAL.	B & B

BIORETENTION PLANTING DETAIL

BIORETENTION PLANTING SCHEDULE				
KEY	QTY	BOTANICAL NAME/ COMMON NAME	SIZE	ROOT
○	8	NYSSA SYLVANICA BLACK GUM	1 1/2" - 2" CAL	B & B
○	10	ILEX VERTICILLATA WINTERBERRY	2" - 3" HEIGHT	B & B OR CONT
○	12	ILEX GLABRA INKBERRY	18" - 24" HEIGHT	B & B OR CONT
□	100	VACCINIUM CORYMBOSUM Highbush Blueberry	12" - 15" HEIGHT	CONT
□	200	LOBELIA CARDINALIS CARDINAL FLOWER	8" - 12" HEIGHT	CONT
□	300	LIRIOPE SPICATA CREEPING LILY TURF	2" POT	18" O/C

PERIMETER AND STORMWATER LANDSCAPE SCHEDULE				
KEY	QUAN.	BOTANICAL NAME	SIZE	CAT
○	34	Acer rubrum October Glory Red Maple	2 1/2" - 3" Cal.	B & B
○	11	Quercus rubra Northern Red Oak	2 1/2" - 3" Cal.	B & B
○	2	Prinos alba Norway Spruce	6-8" HEIGHT	B & B
○	14	Pinus strobus White Pine	6-8" HEIGHT	B & B

LANDSCAPE AND FOREST  
CONSERVATION PLAN  
WHITETAIL WOODS II  
LOTS 1-21

TAX MAP 38 BLOCK 9 PARCEL 628  
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

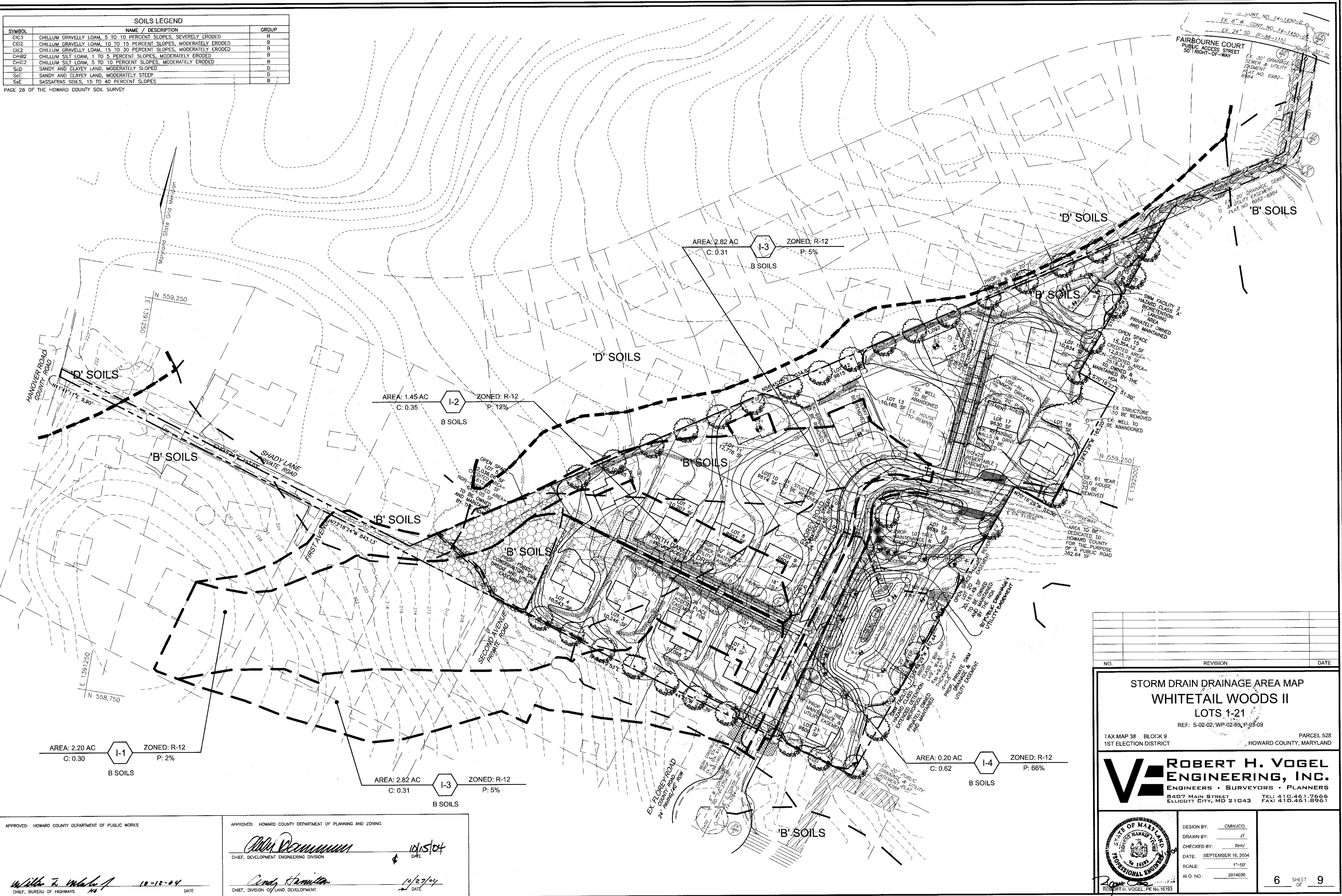
**ROBERT H. VOGEL  
ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET TEL: 410.461.7666  
ELICOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: CMH/JCO  
DRAWN BY: JT  
CHECKED BY: RHV  
DATE: SEPTEMBER 16, 2004  
SCALE: 1"=50'  
W.O. NO.: 2014036

5 SHEET OF 9

SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	GROUP
CIC3	CHILLUM GRAVELLY LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED	B
CID2	CHILLUM GRAVELLY LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
CIE2	CHILLUM GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES, MODERATELY ERODED	B
CHB2	CHILLUM SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED	B
CMC2	CHILLUM SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED	B
ScD	SANDY AND CLAYEY LAND, MODERATELY SLOPED	D
ScE	SANDY AND CLAYEY LAND, MODERATELY STEEP	D
SaE	SASSAFRAS SOILS, 15 TO 40 PERCENT SLOPES	B

PAGE 26 OF THE HOWARD COUNTY SOIL SURVEY



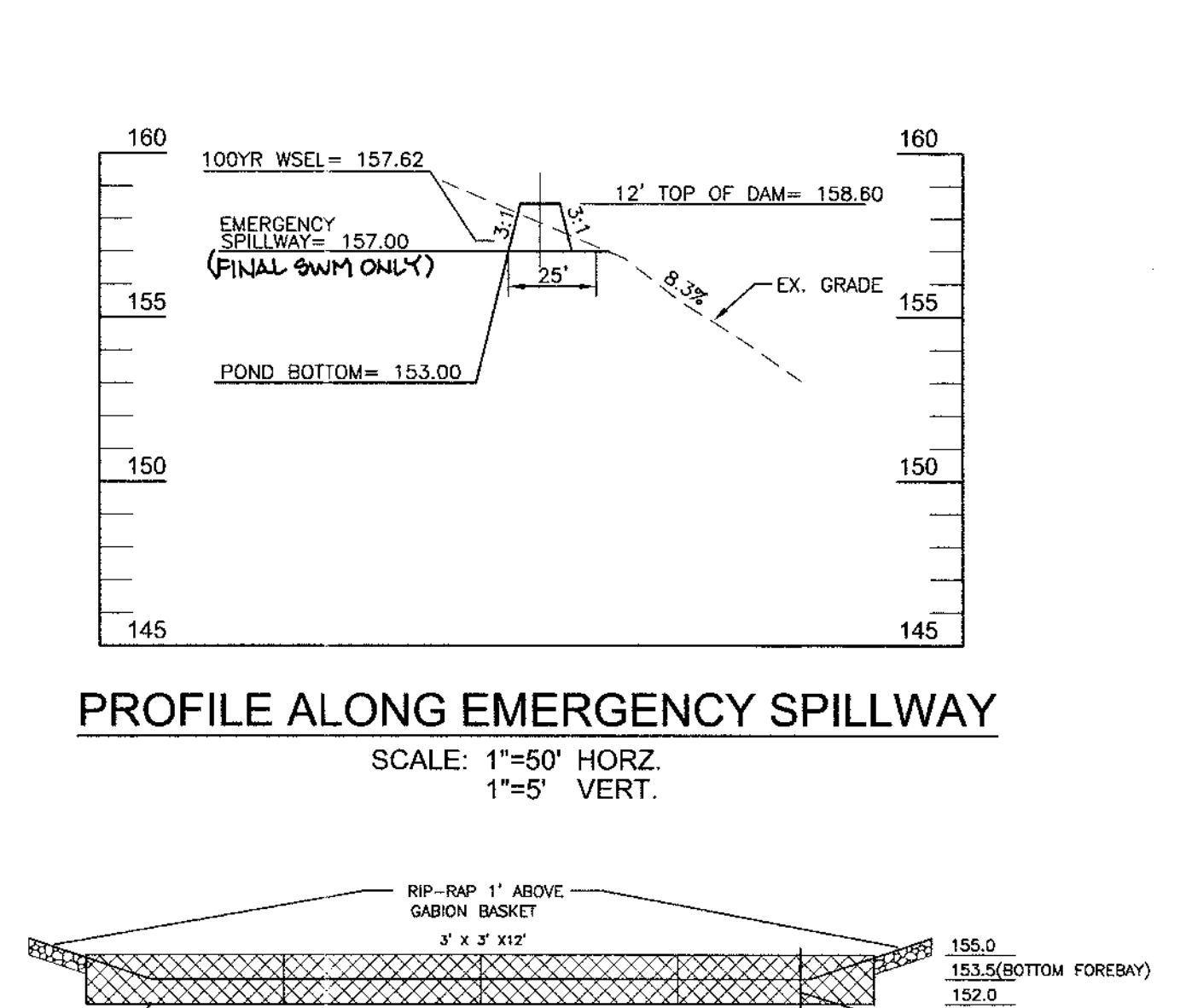
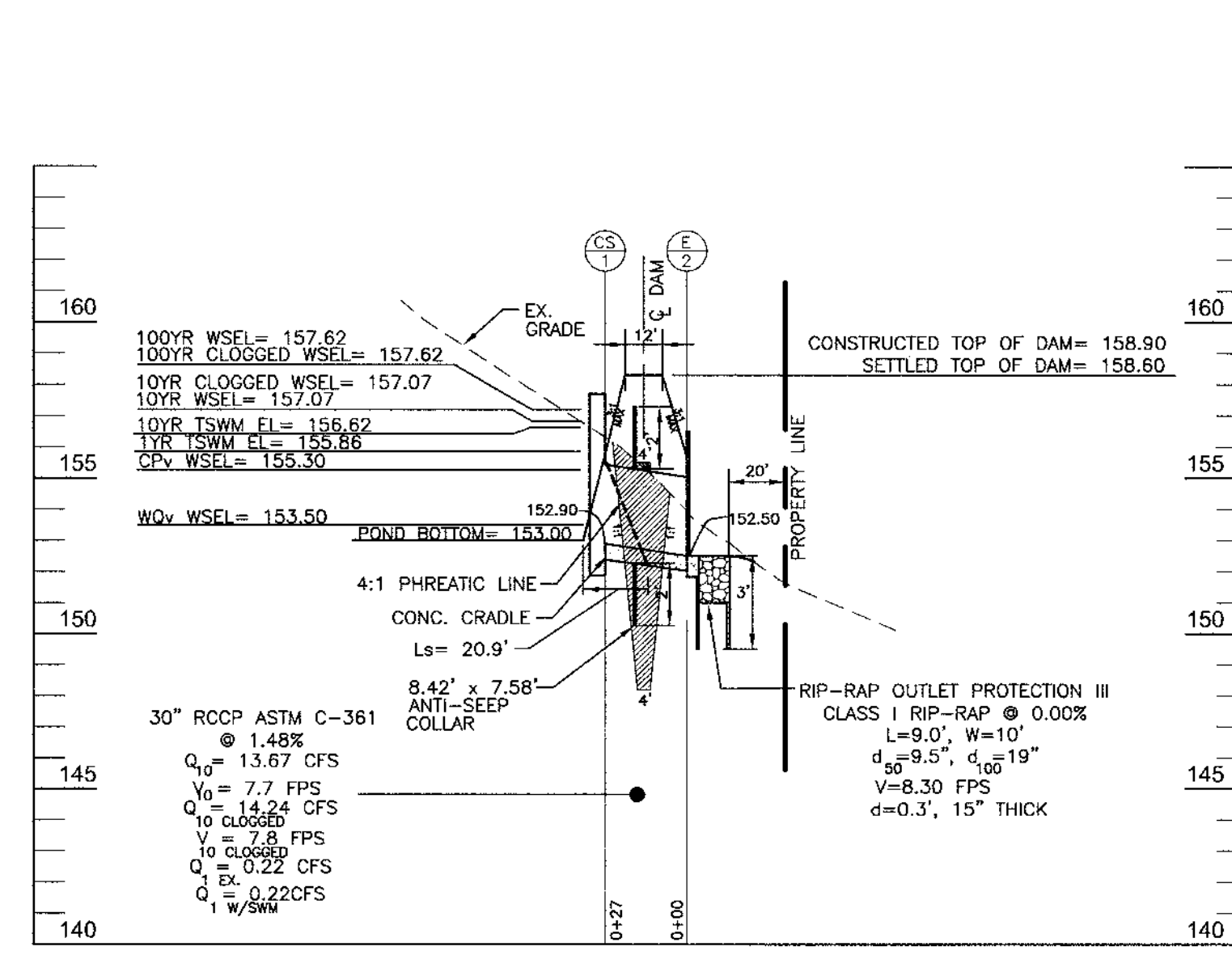
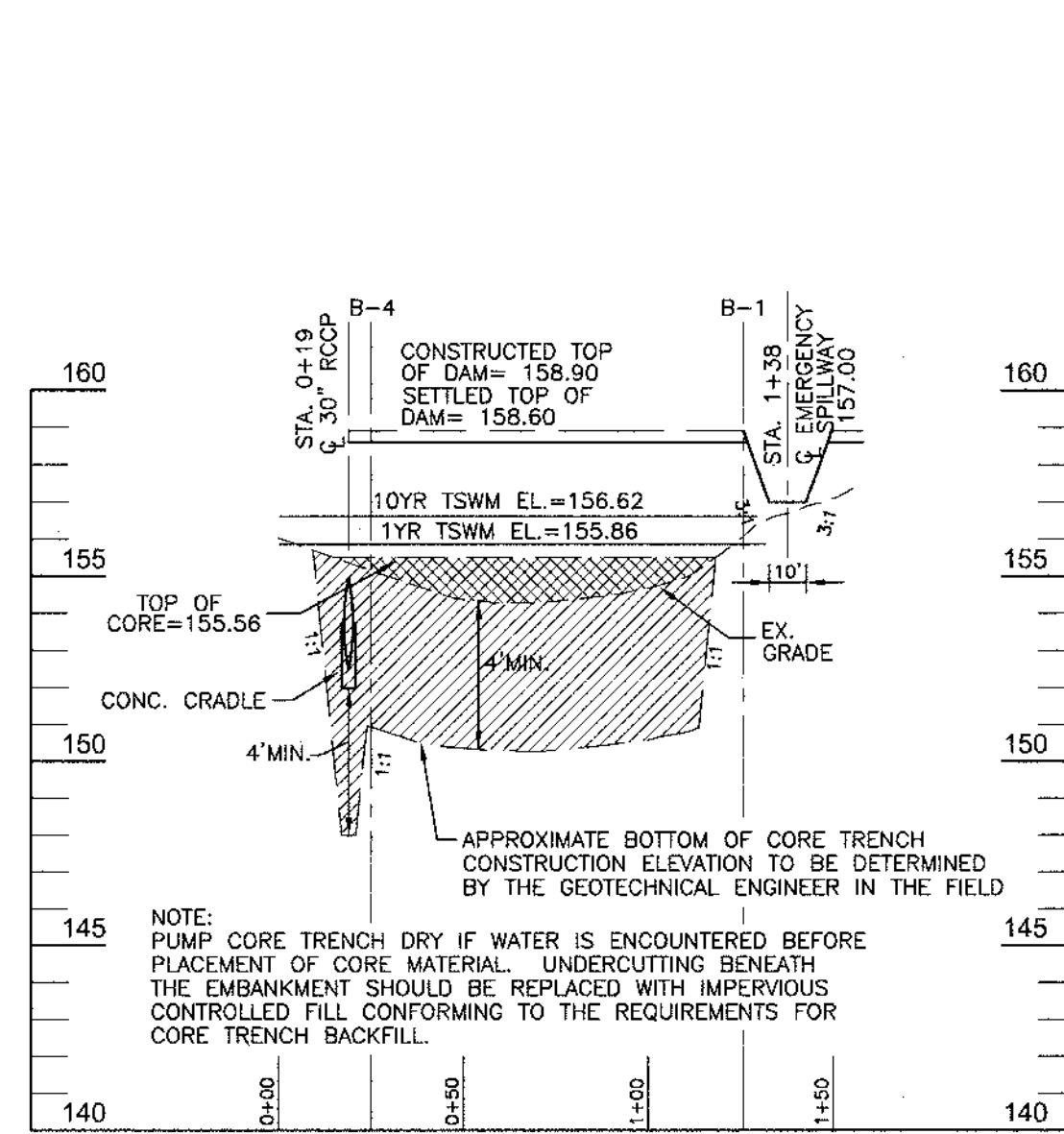
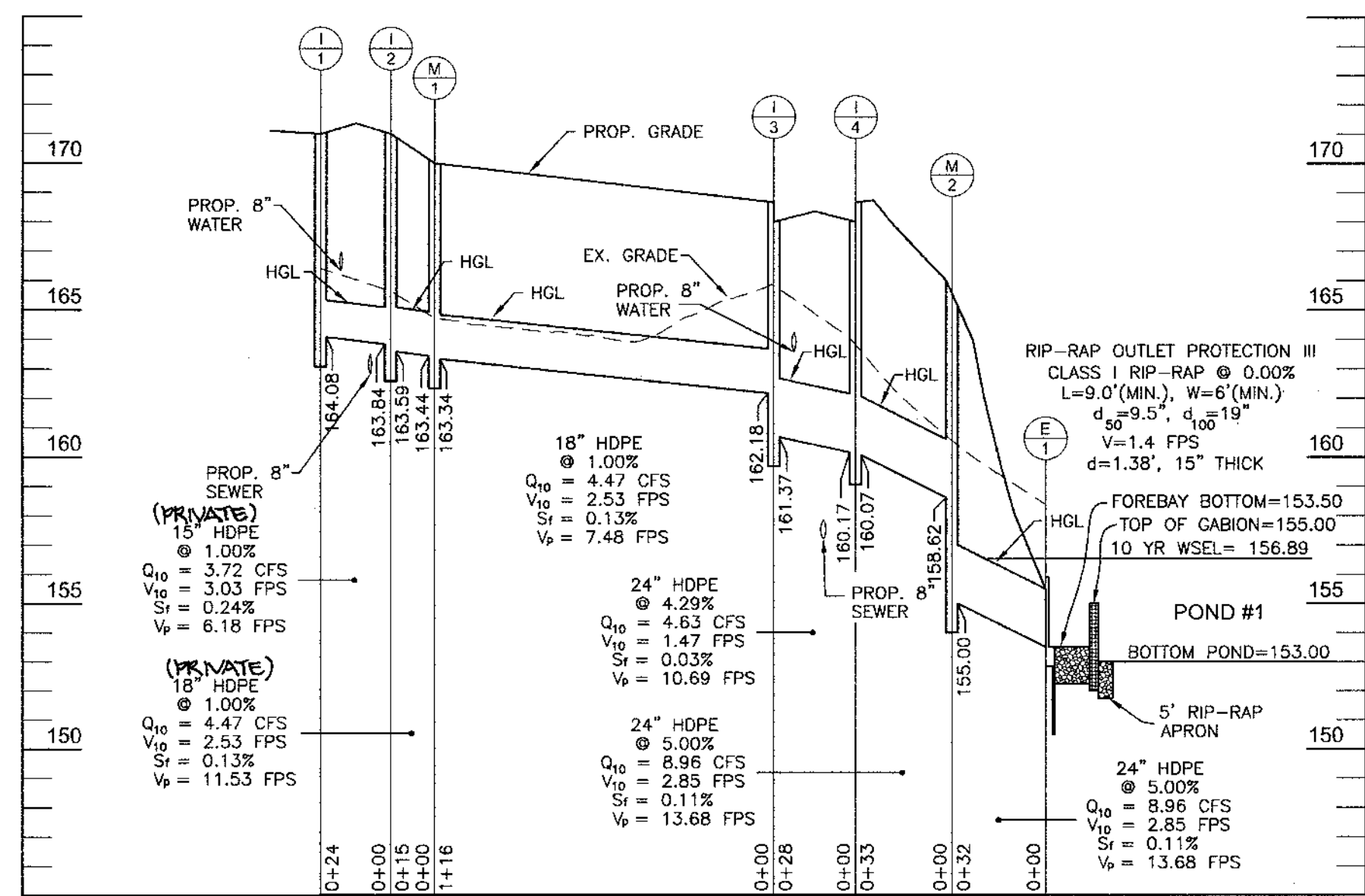
EX. 24" SD. (7-86-115)  
 EX. 30" DR. SEWER & UTILITY EASEMENT PLAT NO. 6982-6984  
 EX. 24" SD. (7-86-115)  
 EX. 30" DR. SEWER & UTILITY EASEMENT PLAT NO. 6982-6984

NO.	REVISION	DATE
<b>STORM DRAIN DRAINAGE AREA MAP</b> <b>WHITETAILED WOODS II</b> <b>LOTS 1-21</b> REF: S-02-02; WP-02-85; P-03-09		
TAX MAP 38 BLOCK 9	PARCEL 528	
1ST ELECTION DISTRICT	HOWARD COUNTY, MARYLAND	
<b>ROBERT H. VOGEL</b> <b>ENGINEERS, INC.</b> ENGINEERS • SURVEYORS • PLANNERS 8407 MAIN STREET ELICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961		
DESIGN BY: <u>CMH/UCO</u>		
DRAWN BY: <u>JT</u>		
CHECKED BY: <u>RHV</u>		
DATE: <u>SEPTEMBER 16, 2004</u>		
SCALE: <u>1"=50'</u>		
W.O. NO.: <u>2014036</u>		
6 OF 9		9

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William F. Mahan* 10-12-04  
 CHIEF, BUREAU OF HIGHWAYS

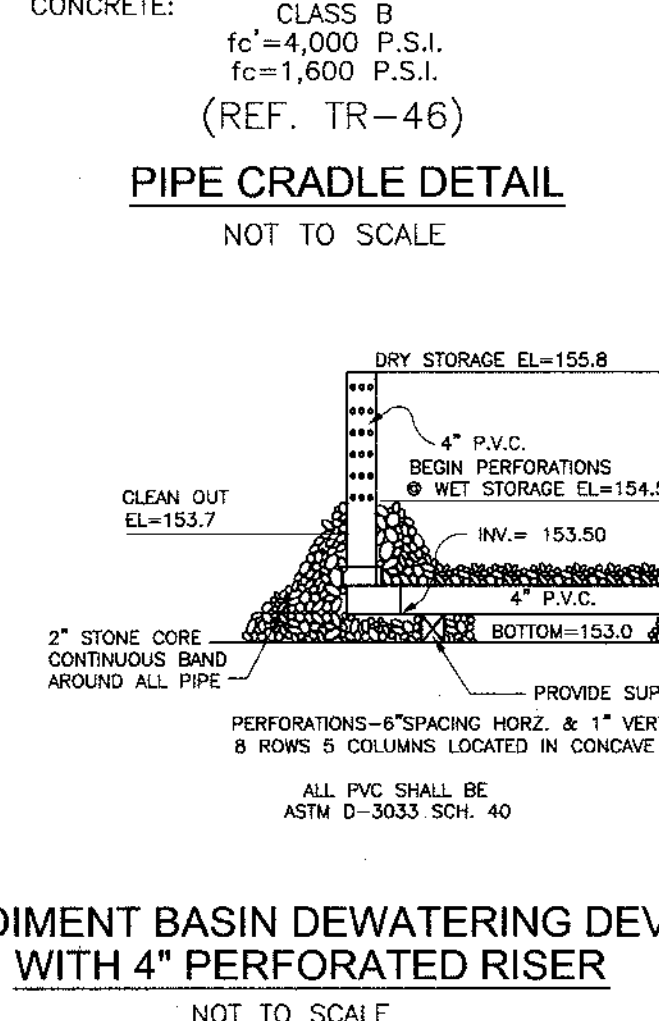
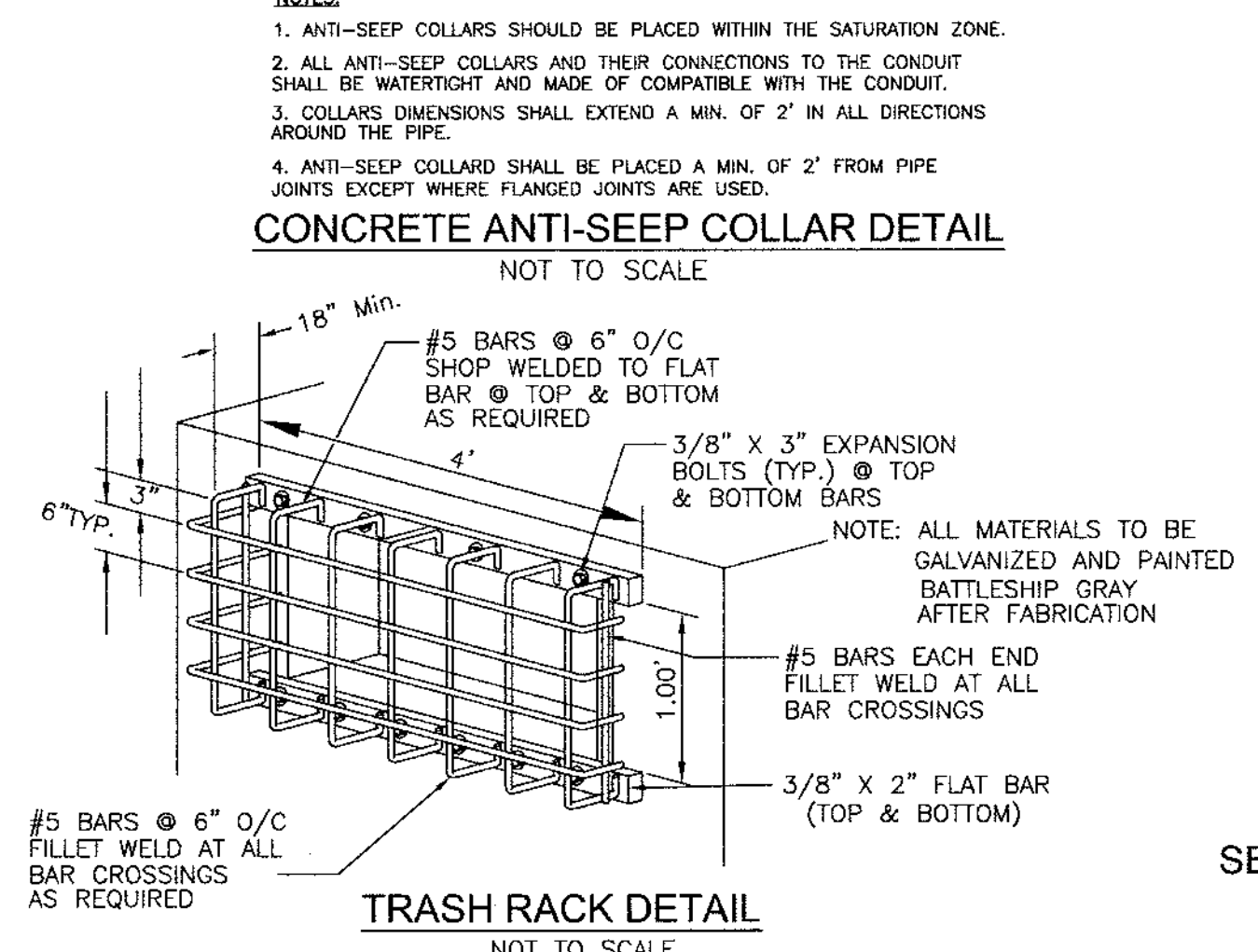
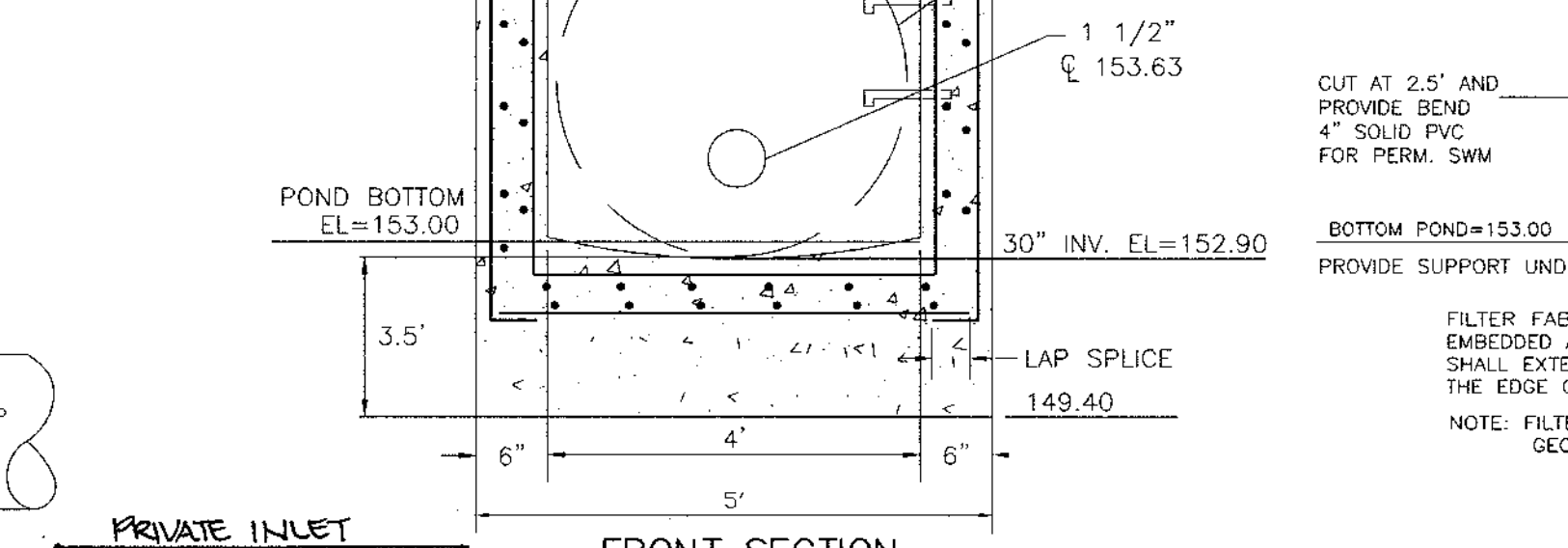
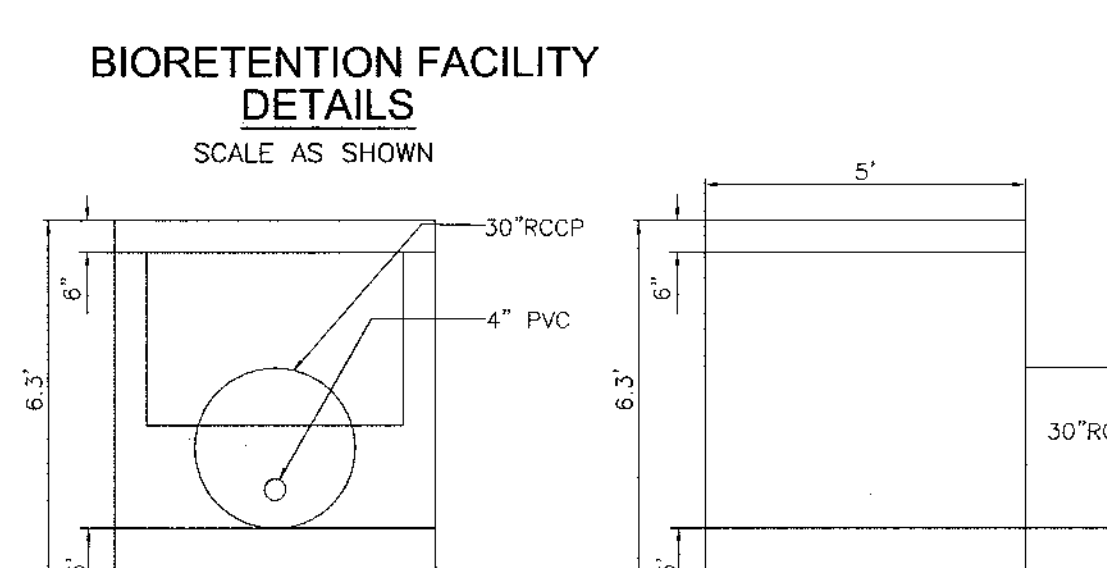
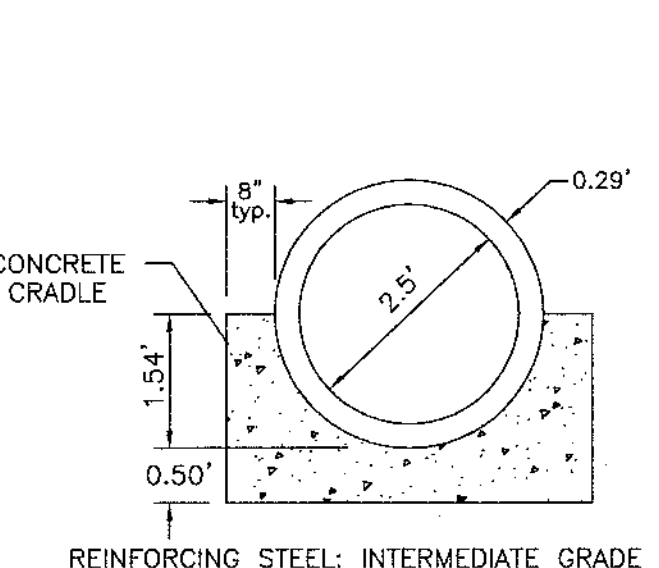
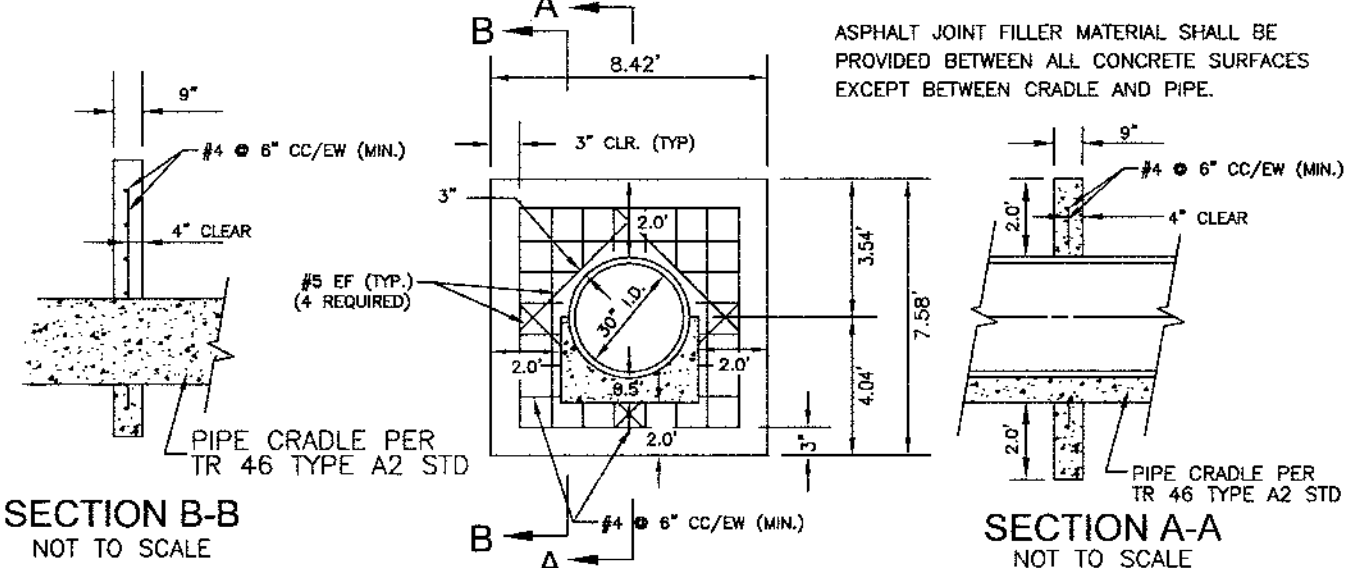
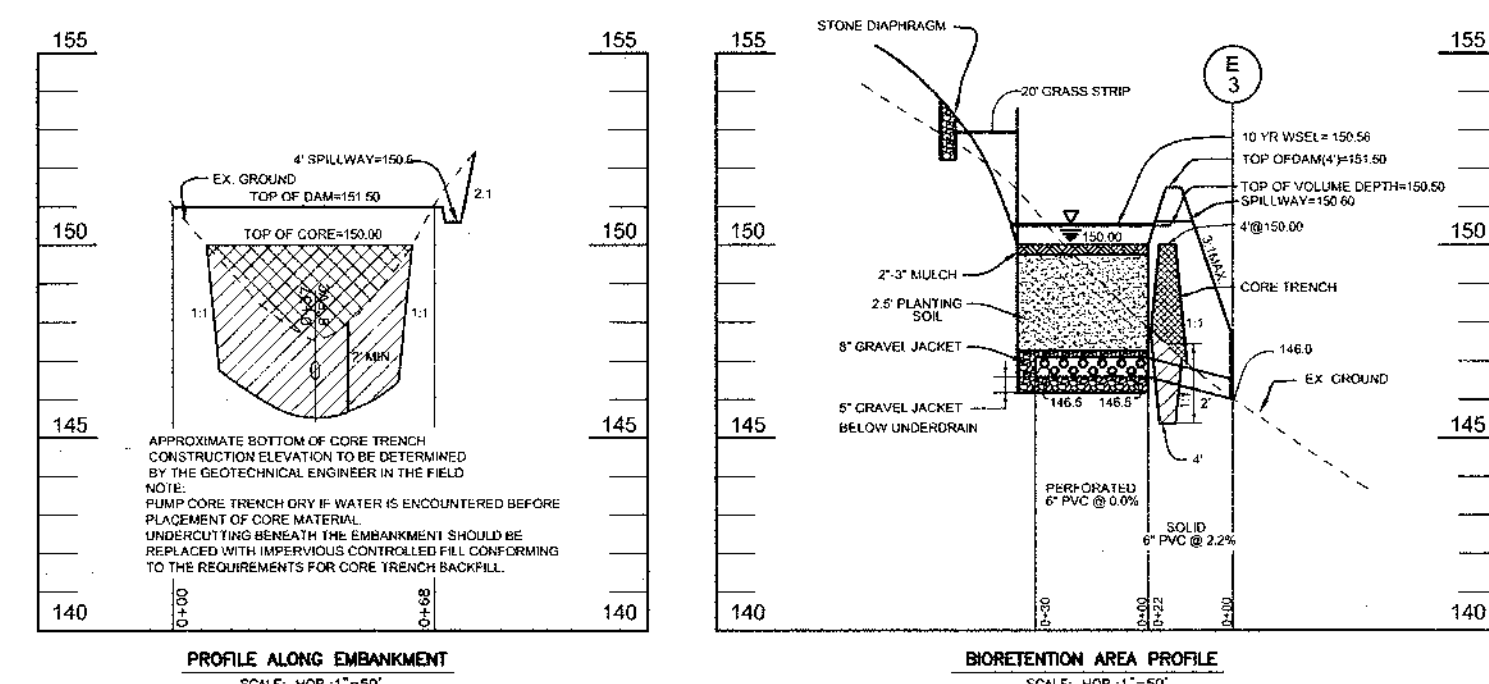
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Alvin DeCammillo* 10/15/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Candy Hamilton* 10/27/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT



**STRUCTURE SCHEDULE**

NO.	TYPE	LOCATION	TOP ELEV.	INV IN	INV OUT	REMARKS
E-1	24" TYPE 'A' ENDWALL	N 559,049.15 E 1,392,210.92	-	-	152.50	SD 5.11
E-2	24" TYPE 'A' ENDWALL	N 559,047.08 E 1,392,275.99	-	-	153.50	SD 5.11
E-3	6" TYPE 'C' ENDWALL	N 559,473.27 E 1,392,420.45	-	-	146.00	SD 5.21
I-1	TYPE 'D' INLET (PRIVATE)	N 558,967.38 E 1,392,100.55	171.00	-	164.83	SD 4.80
I-2	TYPE 'D' INLET (PRIVATE)	N 558,990.34 E 1,392,107.41	171.00	164.59	164.34	SD 4.80
I-3	A-10 INLET	N 559,106.10 E 1,392,154.82	168.67	162.93	162.37	SD 4.41
I-4	A-10 INLET	N 559,102.53 E 1,392,181.88	168.67	161.17	161.07	SD 4.41
M-1	PRECAST CONCRETE MANHOLE	N 558,995.41 E 1,392,120.72	170.00	164.19	164.09	SD 4.41
M-2	PRECAST CONCRETE MANHOLE	N 559,072.86 E 1,392,197.78	166.00	159.62	155.00	SD 4.41
CS-1	CONCRETE RISER STRUCTURE	N 559065.62 E 1,392,241.43	157.70	-	152.90	SEE DETAIL



**OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT EXTENDED DETENTION FACILITY**

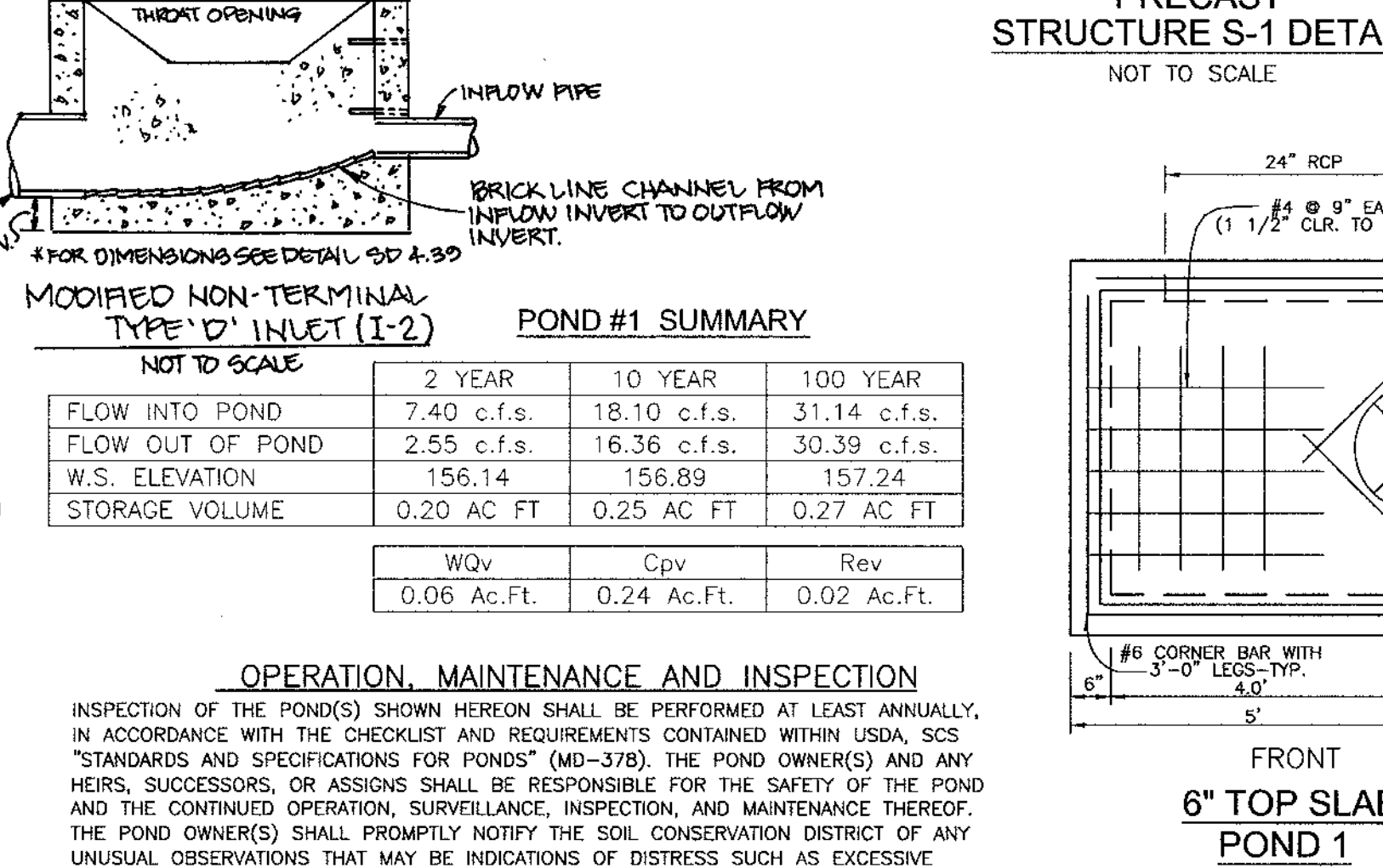
**STORMWATER MANAGEMENT FACILITY**

**ROUTINE MAINTENANCE**

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

**NON-ROUTINE MAINTENANCE**

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERE WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.



NO.	REVISION	DATE

**STORM DRAIN PROFILES AND STORMWATER MANAGEMENT DETAILS**  
**WHITETAIL WOODS II**  
LOTS 1-21  
REF: S-02-02, WP-02-85, P-03-09

TAX MAP 38 BLOCK 9  
1ST ELECTION DISTRICT

PARCEL 528  
HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET  
ELIGOTT CITY, MD 21043  
TEL: 410.461.7666  
FAX: 410.461.8961

DESIGN BY: CMH/JCO  
DRAWN BY: JT  
CHECKED BY: RHV  
DATE: SEPTEMBER 16, 2004  
SCALE: AS NOTED  
W.O. NO.: 2014036

7 SHEET OF 9

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*William Z. White* 10-12-04  
CHIEF, BUREAU OF HIGHWAYS

*John J. ...* 10/15/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Cindy Hamilton* 10/27/04  
CHIEF, DIVISION OF LAND DEVELOPMENT

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

*John ...* 9/28/04  
USDA-NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*John ...* 9/28/04  
HOWARD SOIL CONSERVATION DISTRICT

**ENGINEER'S CERTIFICATE**

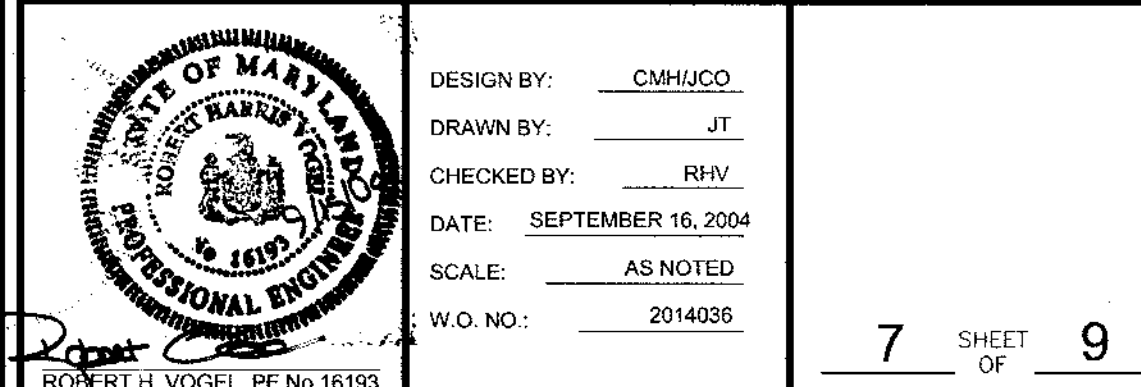
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Robert H. Vogel* 9/15/04  
SIGNATURE OF ENGINEER  
ROBERT H. VOGEL, P.E.

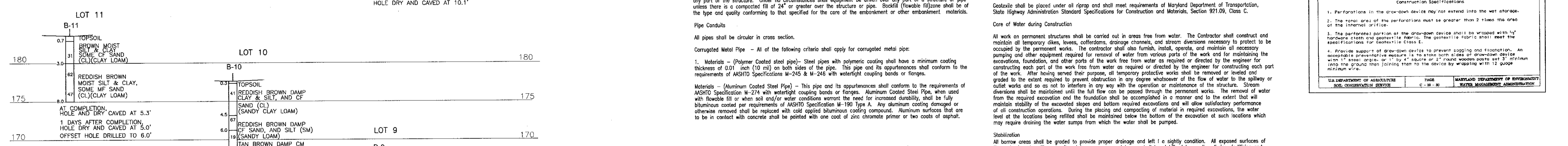
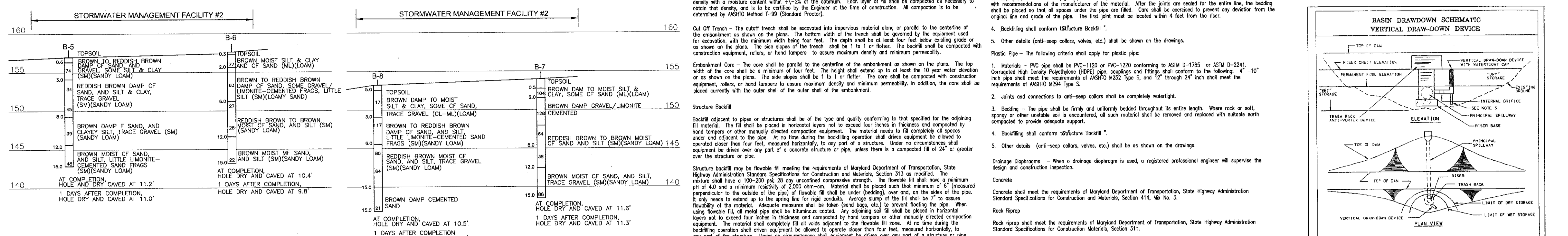
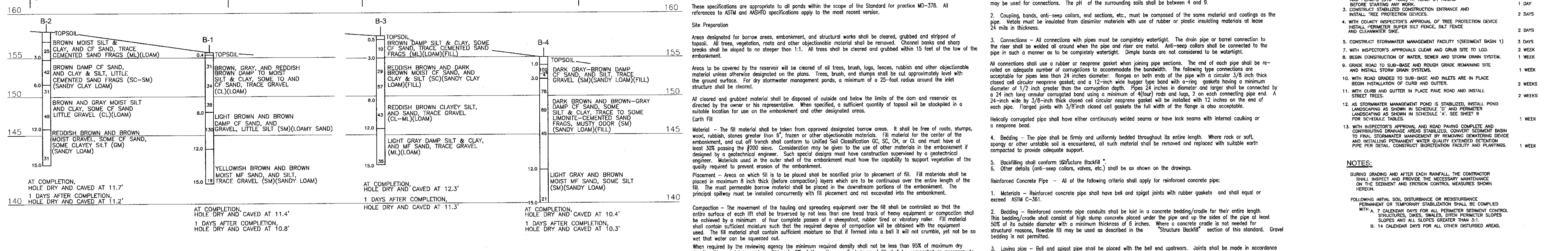
**DEVELOPER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

*Michael Z. Pfan* 9/15/04  
SIGNATURE OF DEVELOPER  
MICHAEL L. PFAN



# STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS



**A. PLANTING SOIL**  
 THE BIORETENTION AREAS SHALL CONSIST OF A PLANTING SOIL HAVING A COMPOSITION OF AT LEAST 10 TO 25 PERCENT CLAY AND SHALL BE OF A SANDY LOAM OR LOAMY SAND TEXTURE. LOAMY SANDS MAY BE UTILIZED FOR THE PLANTING SOIL BUT MUST CONSIST OF 35% SAND. IN ADDITION, THE FURNISHED PLANTING SOIL SHALL BE OF UNIFORM COMPOSITION, FREE OF STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN ONE INCH, BRUSH, OR ANY OTHER MATERIAL OR SUBSTANCE WHICH MAY BE HARMFUL TO PLANT GROWTH, OR A HINDERANCE TO PLANTING OR MAINTENANCE OPERATIONS.  
 THE PLANTING SOIL SHALL BE FREE OF PLANTS OR PLANT PARTS OF BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE OR OTHERS AS SPECIFIED.  
 IT SHALL NOT CONTAIN TOXIC SUBSTANCES HARMFUL TO PLANT GROWTH.  
**THE PLANTING SOIL SHALL MEET THE FOLLOWING CRITERIA:**  

PH RANGE	5.5 - 6.5
ORGANIC MATTER	1.5 - 3.0%
MAGNESIUM - Mg	35 lbs / ACRE
PHOSPHORUS - P205	100 lbs / ACRE
POTASSIUM - K2O	85 lbs / ACRE
SOLUBLE SALTS	NOT TO EXCEED 500 ppm

**B. MULCH LAYER SPECIFICATIONS (3" THICK)**  
 A MULCH LAYER SHALL BE PROVIDED ON TOP OF THE PLANTING SOIL. AN ACCEPTABLE MULCH LAYER SHALL INCLUDE SHREDDED HARDWOOD OR SHREDDED WOOD CHIPS OR OTHER SIMILAR PRODUCT.  
 ALL MULCH PRODUCTS MUST BE WELL AGED, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIAL INCLUDING PLANT MATERIAL. WELL AGED MULCH IS DEFINED AS MULCH THAT HAS BEEN STOCKPILED OR STORED FOR AT LEAST TWELVE (12) MONTHS.  
**C. SAND SPECIFICATIONS (1" MIN.)**  
 THE SAND SHALL BE FREE OF DELETERIOUS MATERIAL AND ROCKS GREATER THAN 1/8 INCH IN DIAMETER.  
**D. COMPACTION**  
 SOIL SHALL BE PLACED IN LIFTS LESS THAN 18 INCHES AND LIGHTLY COMPACTED (MINIMAL COMPACTIVE EFFORT) BY TAMPING WITH A BUCKET FROM A DOZER OR A BACKHOE.

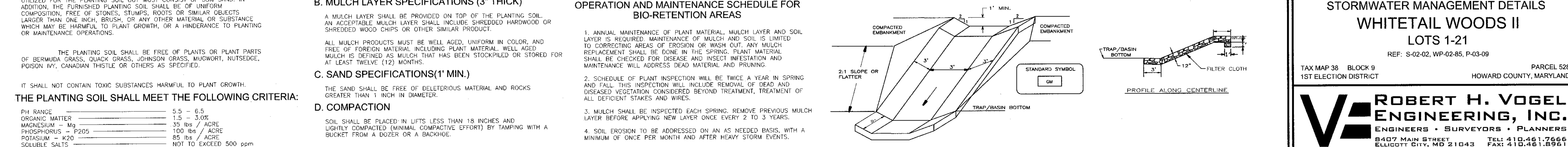
**OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS**

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.

2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DEFICIENT STAKES AND WIRES.

3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.

4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



**DETAIL 6 - GABION INFLOW PROTECTION**

1. Gabion inflow protection shall be constructed of 9' x 3' x 9' gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.

2. Geotextile Class C shall be installed under all gabion baskets.

3. The stone used to fill the gabion baskets shall be 4" - 7".

4. Gabions shall be installed in accordance with manufacturer recommendations.

5. Gabion inflow protection shall be used where concentrated flow is present on slopes steeper than 4:1.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE 8 - 7 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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**PERSPECTIVE VIEW**

**PERFORMANCE CRITERIA**

1. The gabion structure shall be designed to prevent erosion and sedimentation.

2. The gabion structure shall be designed to prevent scouring of the structure.

3. The gabion structure shall be designed to prevent the passage of any material larger than 3/8 inch.

4. The gabion structure shall be designed to prevent the passage of any material larger than 3/8 inch.

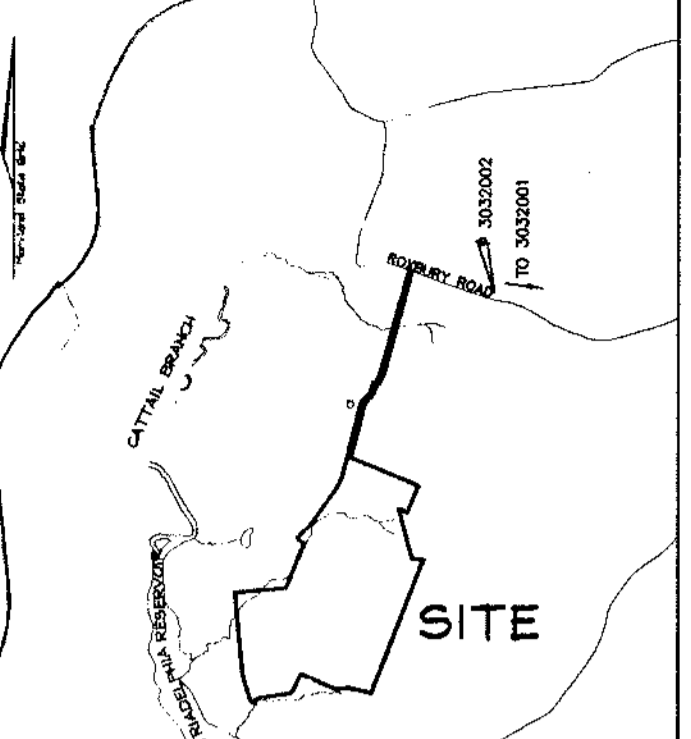
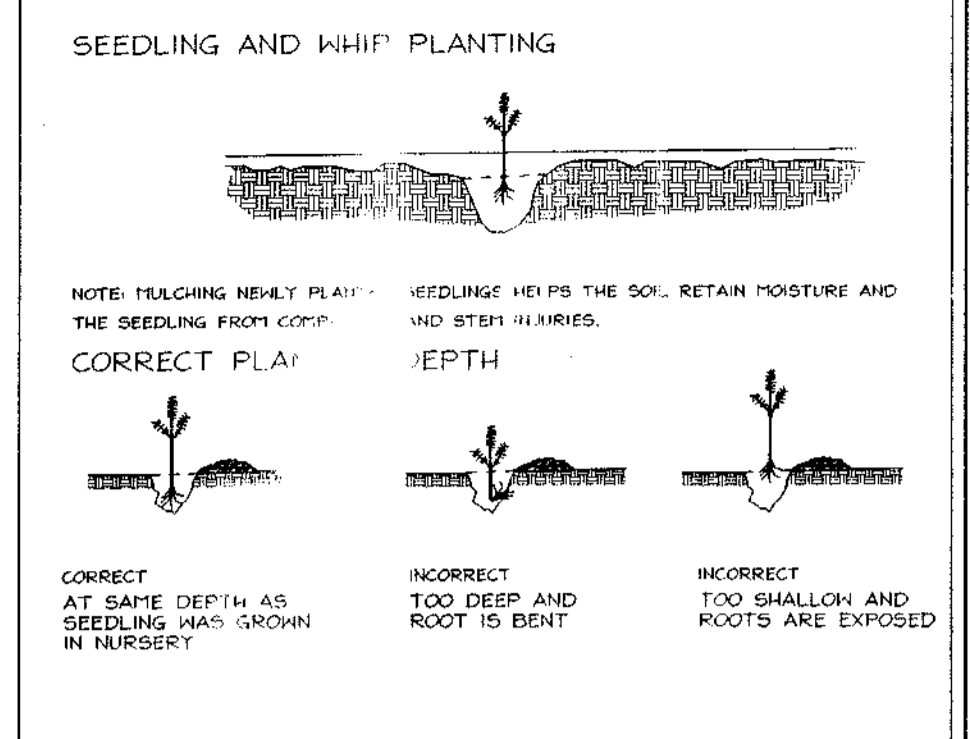
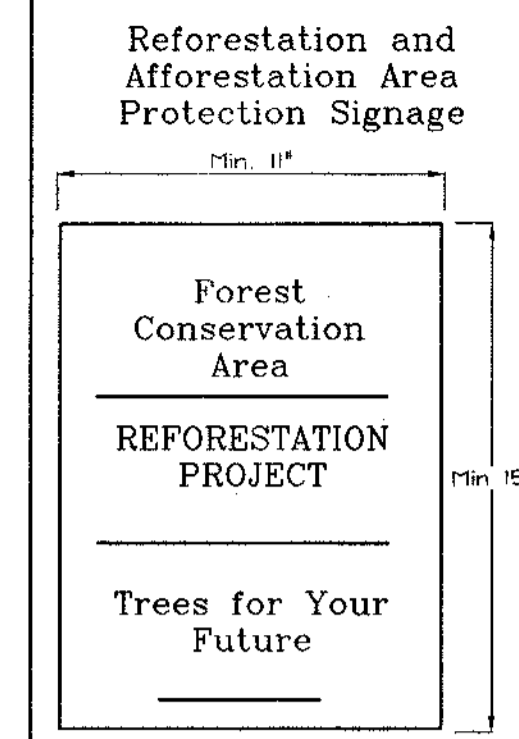
5. The gabion structure shall be designed to prevent the passage of any material larger than 3/8 inch.

**DEVELOPERS CERTIFICATE**  
 I, MICHAEL Z. PFAU, hereby certify that all development and/or construction will be done in accordance with these plans and that any responsible personnel involved in the construction project will have a certificate of attendance at a department of the environment approved training program for the control of erosion and sedimentation.

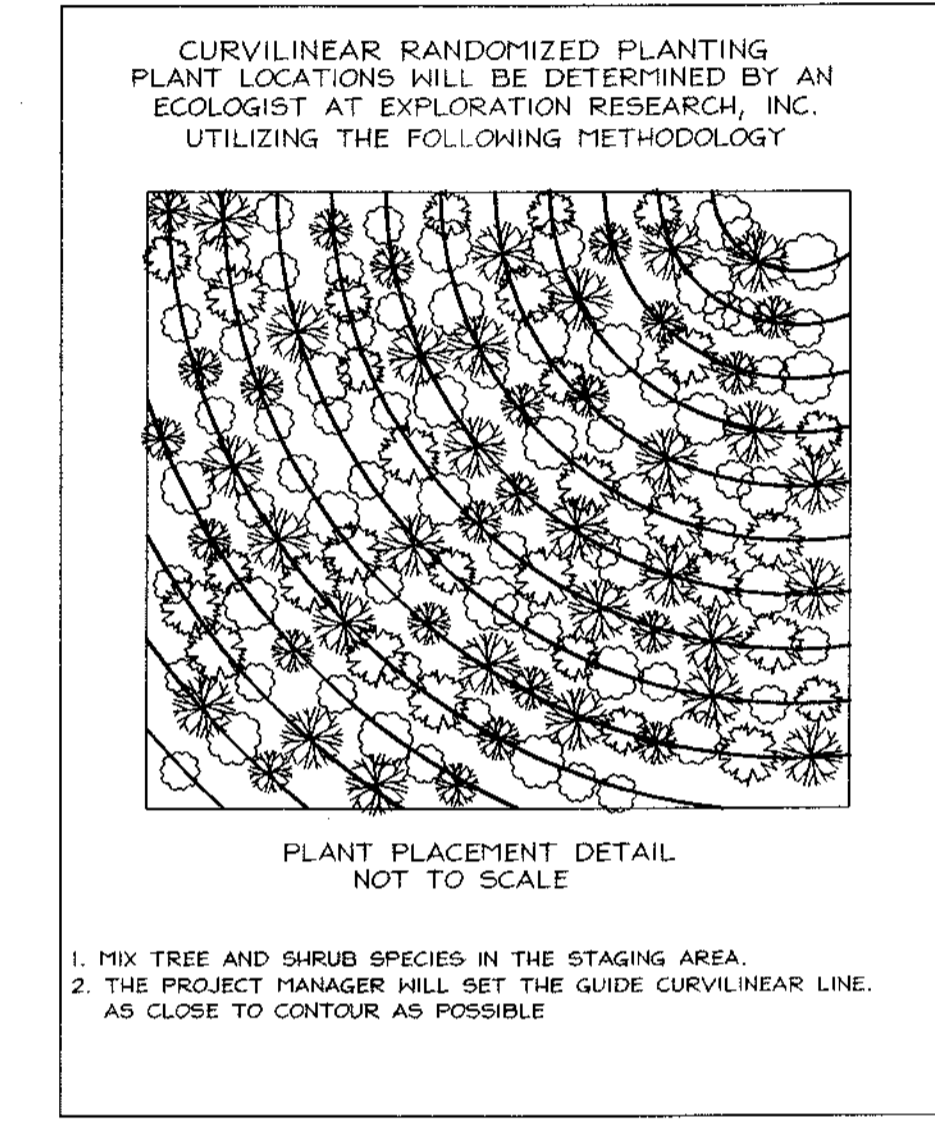
**ENGINEERS CERTIFICATE**  
 I, ROBERT H. VOGEL, P.E., hereby certify that this plan for erosion and sedimentation control meets the requirements of the Maryland Department of Environment Water Management Administration, Section 921.09, Class C.

**DESIGN BY:** CMH/CO  
**DRAWN BY:** JT  
**CHECKED BY:** RHW  
**DATE:** SEPTEMBER 16, 2004  
**SCALE:** AS NOTED  
**W.O. NUMBER:** 2014036





**SIGN DETAIL: PERMANENT SIGN**  
SIGNAGE NOTE: ALL TREE PROTECTION SIGNS SHALL BE PLACED ON METAL 'T' POSTS OR PRESSURE TREATED WOOD POLES. NO ATTACHMENT OF SIGNS TO TREES IS PERMITTED.



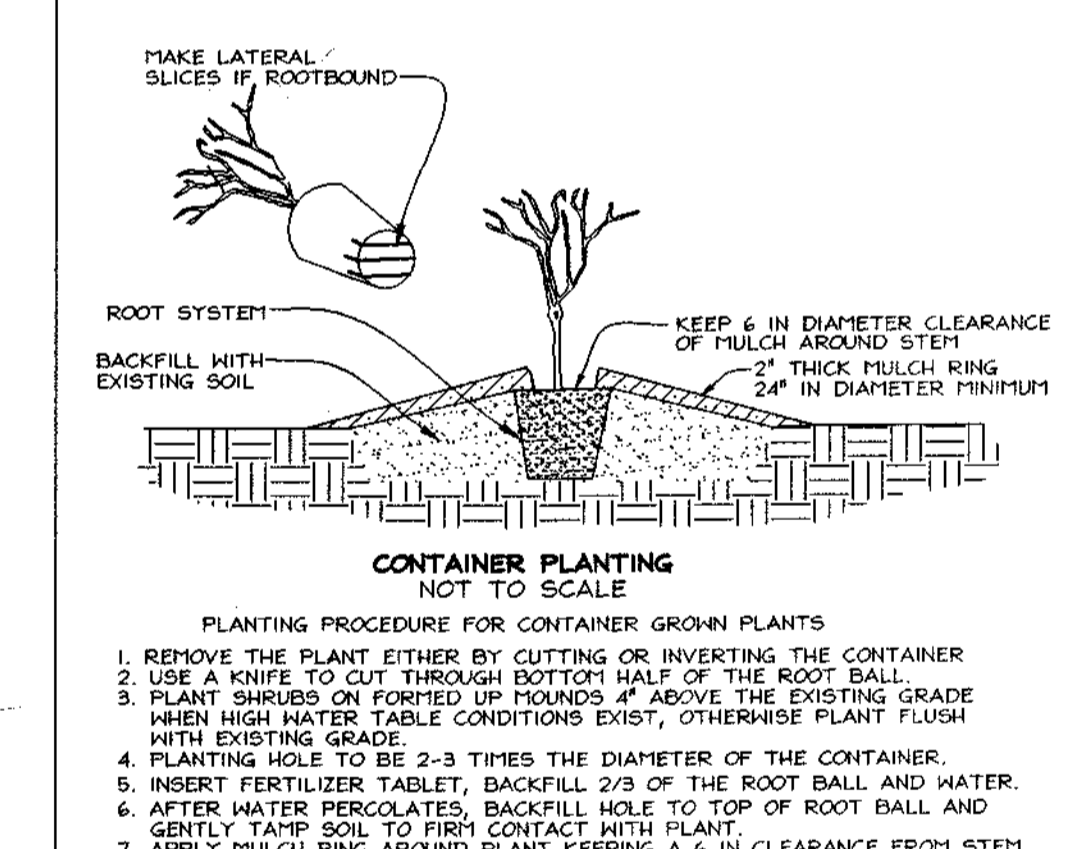
**Long Term Forest Management**  
Planted areas may be managed for aesthetics, wildlife, timber products and watershed protection in accordance with sound forest management practices. Control of invasives such as multiflora rose and honeysuckle will be crucial during the establishment years. A forest management plan should be developed by a Maryland Registered Forester for recommendations beyond the initial 5-year establishment period.

**Reforestation Area Monitoring Notes**

- Monthly visits during the first growing season are to assess the success of the plantings and to determine if riparian-related pest control or other actions are necessary, including if necessary, invasive species management, additional deer protection and minimal to control growth around plantings. Early spring visits will document winter kill and autumn or winter will document summer kill.
- The minimum survival rate shall be 75% of the total number of trees planted from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as conditions warrant.
- Survival will be determined by a stratified random sample of the plantings. The species composition of the sample population should be proportionate to the amount of each species in the entire planting to be sampled.
- Effective monitoring will assess plant survival during the first growing season and make recommendations for reinforcement planting if required at that time.

**Reforestation Area Planting Notes**

- Initial planting inspection and certification required. Planting contractor to notify ERI qualified professional 24 hours in advance of planting.
- Reforestation areas may be planted as soon as reasonable to do so. Late winter/early spring plantings are preferred. Earliest planting dates will vary from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as conditions warrant.
- Soil amendments and fertilization recommendations will be made based upon the results of soil analysis for nitrogen, phosphorus, potassium, organic matter content and pH. If required, fertilizer will be provided using a slow release, soluble 16-8-8 fertilizer designed to last 5-8 years contained in polyethylene perforated bags such as manufactured by ADCO Works, P.O. Box 310 Hattiesburg, MS 39401 or approved equal.
- Plant materials shall be planted in accordance with the planting diagram, planting details and planting schedule.
- Plant stock must be protected from desiccation at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
- Planting materials shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standards for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
- All stock to be container grown with deer repellent tablets in growing medium such as 'Repellent'.
- Newly planted trees may require watering at least once per week during the first growing season depending on rainfall in order to get established. The initial planting operation should allow for watering during installation to completely soak backfill materials.
- Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.
- Planting holes should be excavated to a minimum diameter of 2.5 to 3 times the diameter of the root ball or container. Mechanical auguring is preferred with scarification of the sides of each hole.



**LEGEND**

- Existing Contour
- Property Boundary Line
- Soils Division Line
- Forest Conservation Easement Boundary
- Forest Easement Signage
- Planting Area
- Existing Forest Conservation Easement

**Forest Conservation Narrative**  
This Forest Conservation Plan was prepared in accordance with the Howard County Forest Conservation Manual. This plan provides off-site planting for White Tail Woods II, reforestation planting is 2,4670 acres, partially fulfilled by planting 2,3560 acres within FCE# 4 on Chase Farm, Parcel 191, lot 5, Tax Map 21.

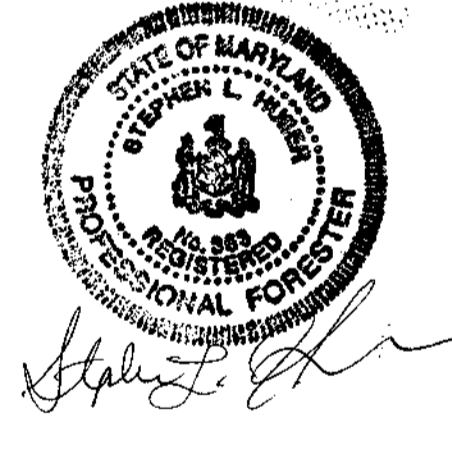
The 2,3560 Ac. planting area is located near the property boundary where sparse tree cover which does not meet the definition of forest is located. Planting in this area includes understory species and overstory species, to increase tree density and species diversity. Understory control of the invasive multiflora rose, *Rosa multiflora*, with herbicides and mechanical means will be required. This area will be planted at full density, but will supplement the existing plant community. The area will also require herbaceous and vine control before planting.

Plantings shall occur using the stock size shown on the planting schedule. However if due to seasonal variability the prescribed size or species are not available, substitutions may be made as outlined in the Plant Selection and Density Spacing Requirements notes, found on this sheet. A minimum 5 tree species must be utilized.

The total forest conservation obligation meet on this site is 2,3560 acres, with a total forest conservation surety amount of \$51,313.68. (reforestation planting 102,627.36 square feet x 0.50 = \$51,313.68) THE FOREST CONSERVATION SURETY AMOUNT OF \$51,313.68 FOR THIS PLANTING SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT.

**FCE #4 PLANTING AREA: 2,356 Ac. (200 TPA)\***

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
67	<i>Acer rubrum</i>	Red Maple	1" cal.	15' o.c.	1" cal. Balled and Burlaped
67	<i>Liquidambar styraciflua</i>	Sweetgum	1" cal.	15' o.c.	
67	<i>Platanus occidentalis</i>	Sycamore	1" cal.	15' o.c.	
67	<i>Quercus palustris</i>	Pin Oak	1" cal.	15' o.c.	
68	<i>Cercis canadensis</i>	Redbud	1" cal.	15' o.c.	
69	<i>Carpinus caroliniana</i>	American Hornbeam	1" cal.	15' o.c.	
67	<i>Pinus taeda</i>	Loblolly Pine	1" cal.	15' o.c.	
472	<b>Total Plantings</b>				



**Simplified Forest Stand Delineation**

The planting area includes open field and a transitional zone of saplings to mature hardwoods occurring along the border of the open field area. The border area contains a mixture of white pines, *Pinus strobus*, and various mixed upland hardwoods, which are sparsely located and does not meet the criteria of a forest stand. This open field area and transition area contain a dense understory of multiflora rose, *Rosa multiflora*. The planting area contains steep slopes and a stream buffer associated with the intermittent stream located off-site. Soils mapped within the planting area include the Manor loam, moderately to severely eroded soils within the upland areas and the Glenville series occurring along the intermittent stream which flows east along the southern property boundary.

**Forest Conservation Plan Prepared By:**

**EXPLORATION RESEARCH, INC.**  
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EASEMENT	TYPE	AREA (ACRES)
4	REFORESTATION PLANTING	2,356.0
TOTAL		2,356.0

**Plant Selection and Density Spacing Requirements.**  
Planting size and density shall vary with a combination of planting stock, which will be determined at the time of planting. Planting quantity and spacing are based on square footage credit, which varies by material size. A total of 43,560 sq. ft. of planting credit must be fulfilled for each acre planted. This credit can be fulfilled with any combination of material size in accordance with the following chart.

Material Size	Spacing	TPA	Sq. Ft. Credit per plant	Comments
2" caliper trees	20' x 20'	100	435.6	B # B
1" caliper trees	15' x 15'	200	217.8	B # B
seedlings or whips	11" x 11"	350	125	Container 1-3 gal. w/tree shelters
seedlings	8' x 8'	700	62	Bare root or container grown

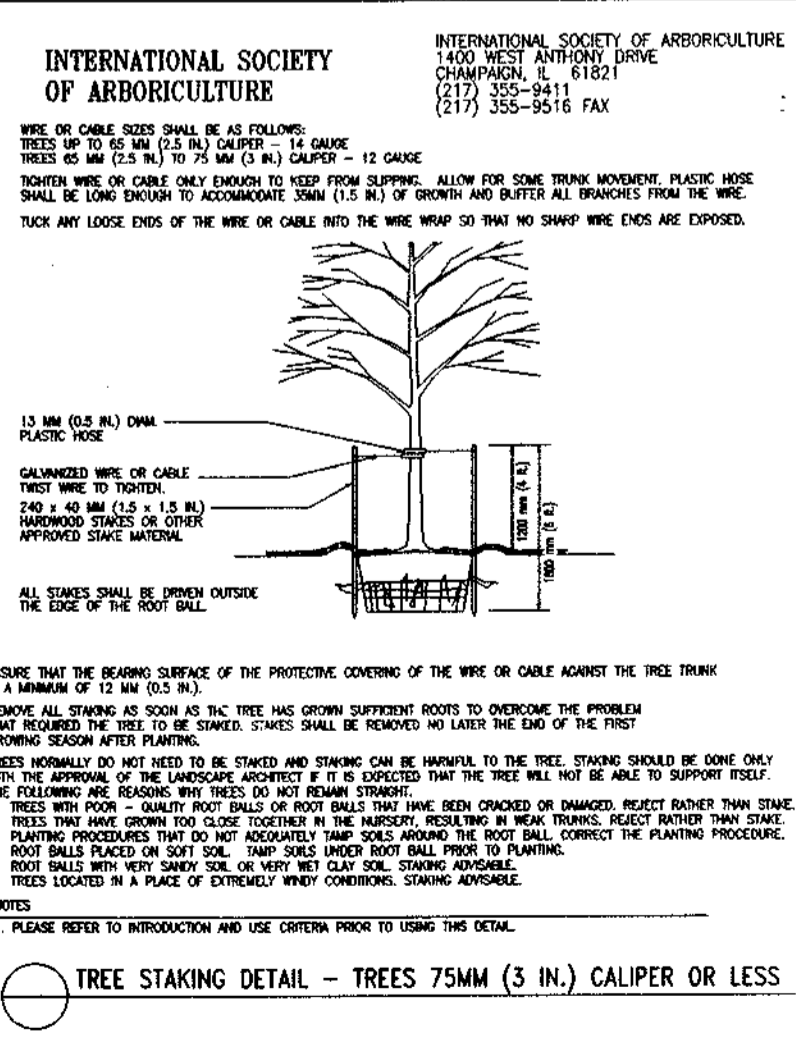
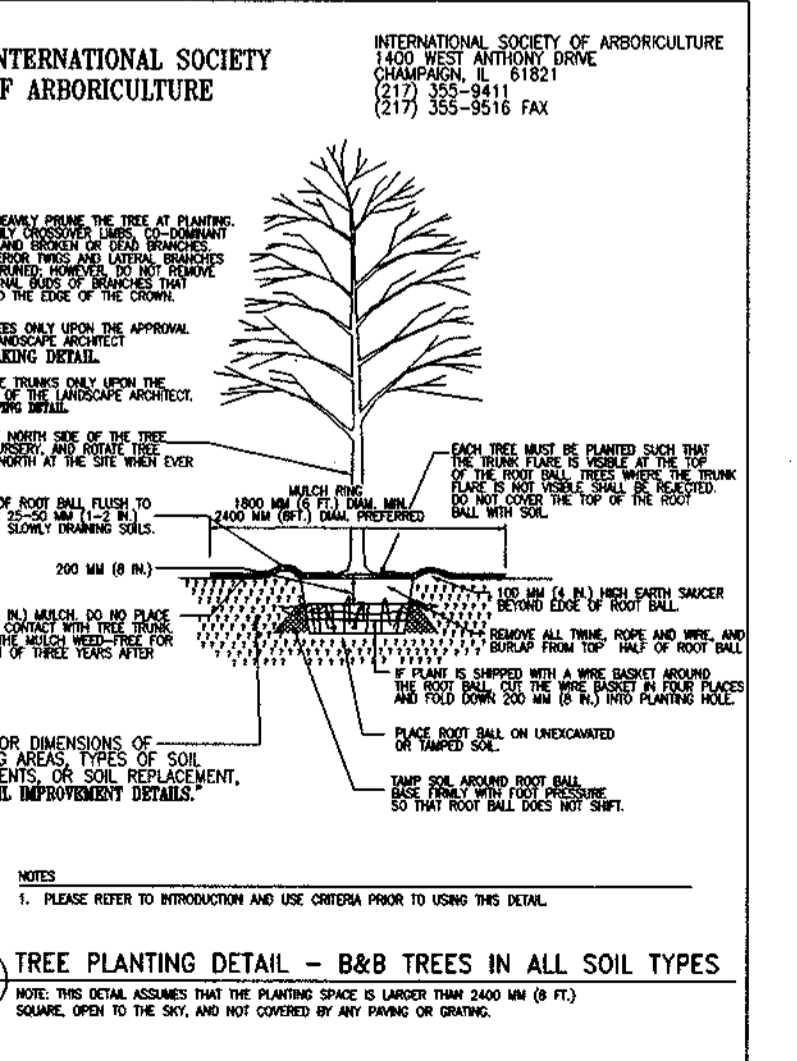
**Overstory Planting Alternate Species List \***

COMMON NAME	SCIENTIFIC NAME
Black Gum	<i>Nyssa sylvatica</i>
Black Oak	<i>Quercus velutina</i>
White Oak	<i>Quercus alba</i>
Northern Red Oak	<i>Quercus rubra</i>
Yellow Poplar	<i>Liriodendron tulipifera</i>
Virginia Pine	<i>Pinus virginiana</i>
Eastern Redcedar	<i>Juniperus virginiana</i>

**Understory Planting Alternate Species List \***

COMMON NAME	SCIENTIFIC NAME
Service Berry	<i>Amelanchier canadensis</i>
Eastern Hornbeam	<i>Ostrya virginiana</i>
American holly	<i>Ilex opaca</i>
Boxelder	<i>Acer negundo</i>
Hackberry	<i>Celtis occidentalis</i>
American Dogwood	<i>Cornus florida</i>

\* Size, species and quantities listed are suggested plantings and may be substituted, but only in conformance with the Howard County Forest Conservation Manual.



**OFF-SITE PLANTING PLAN**  
At **CHASE FARM**  
TAX MAP 21427 GRID 21 LOT 5 PARCEL 191  
4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
**WHITETAIL WOODS II**  
REF: S-02-02, WP-02-85, P-03-09  
TAX MAP 38 BLOCK 9 PARCEL 528  
1ST ELECTION DISTRICT LOTS 1-21 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET  
ELLSWORTH CITY, MARYLAND 21043  
TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: DSH/RAB	9	SHEET	9
DRAWN BY: DSH/RAB			
CHECKED BY: SLH			
DATE: Sept. 16, 2004			
SCALE: 1" = 200'			
N.O. NO.: 2014026			