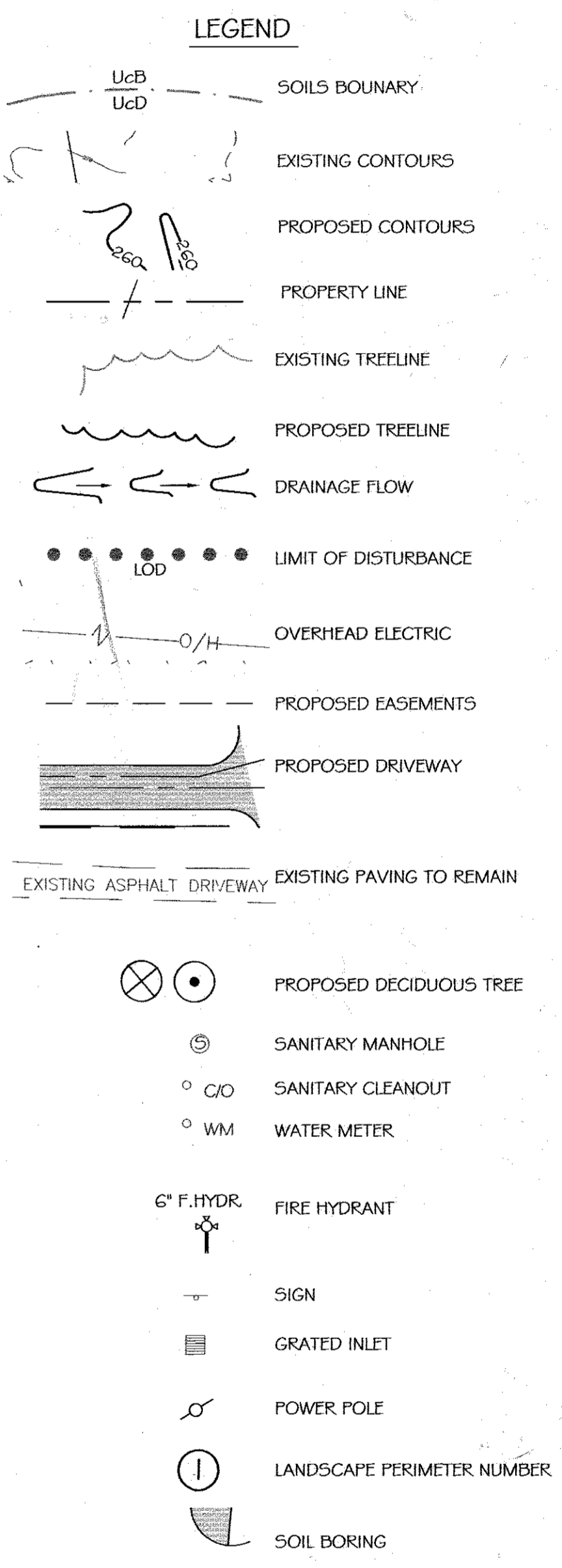
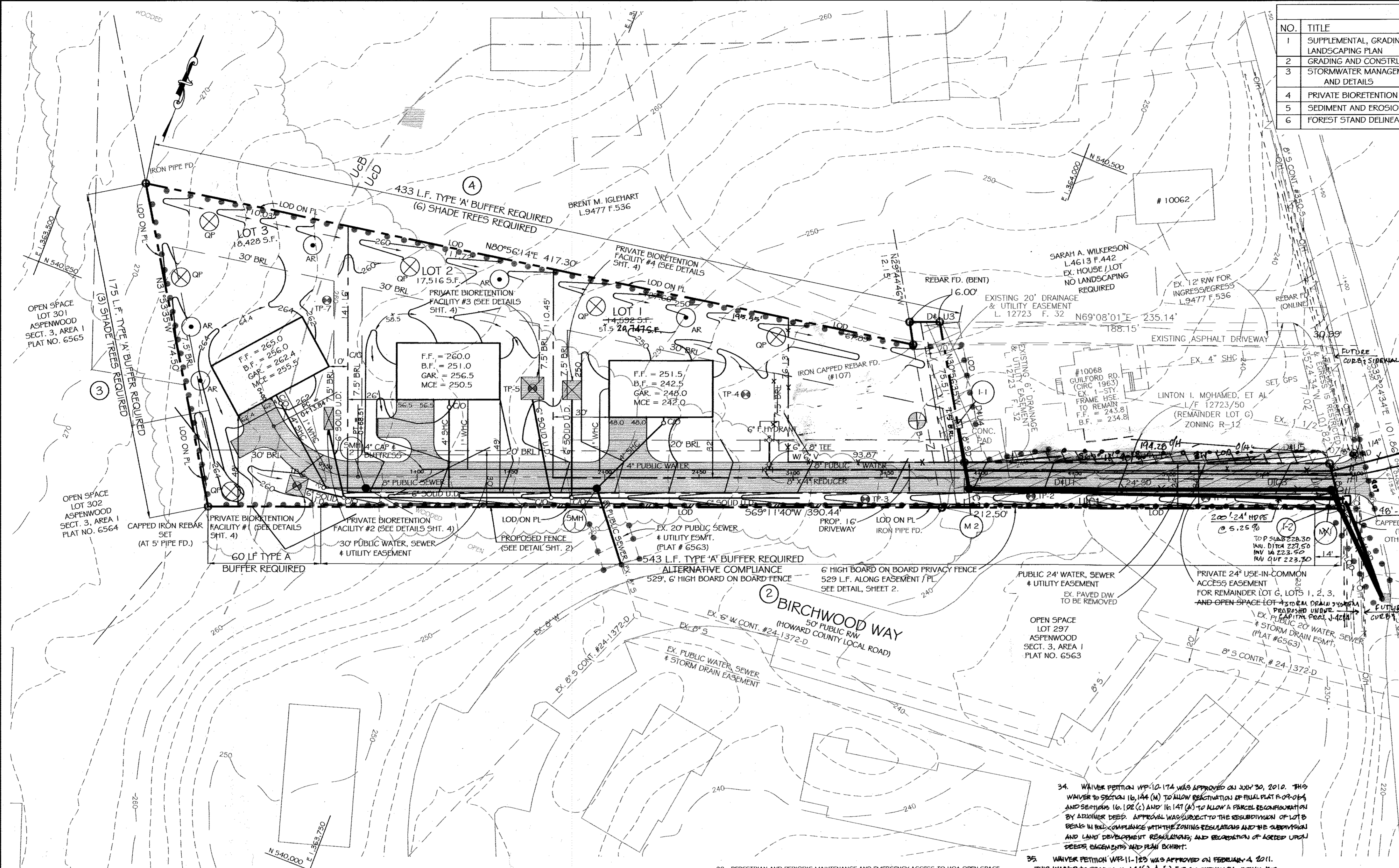
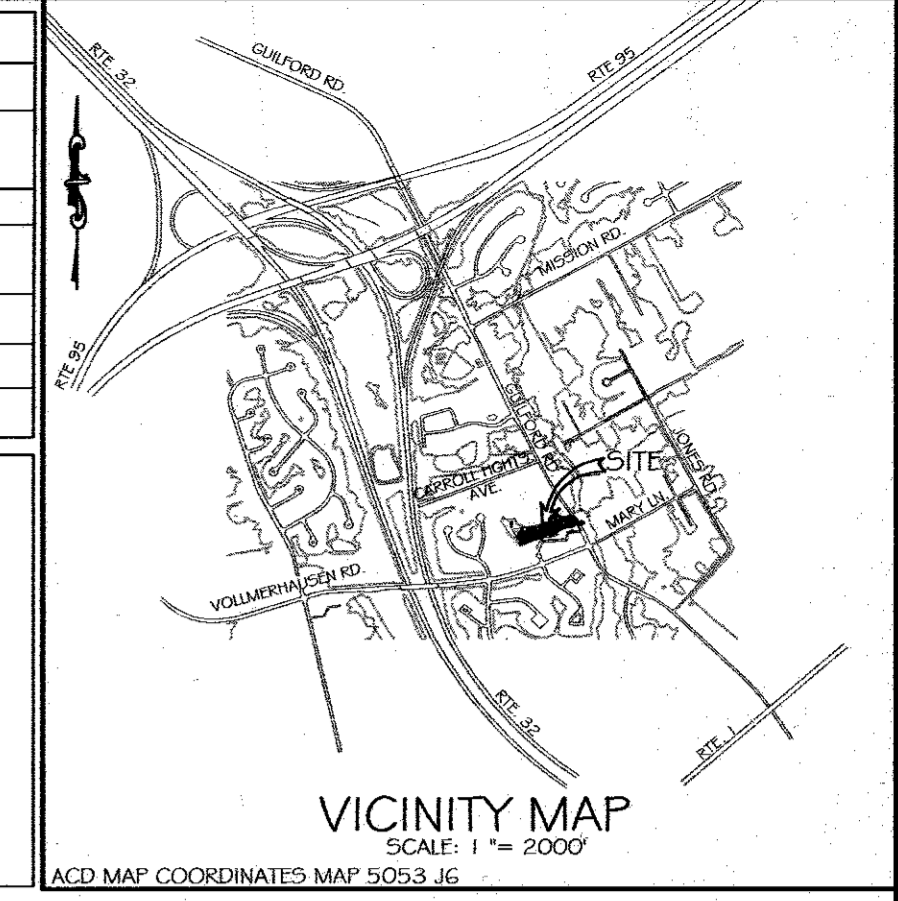


SHEET INDEX	
NO.	TITLE
1	SUPPLEMENTAL GRADING, STORMWATER MANAGEMENT AND LANDSCAPING PLAN
2	GRADING AND CONSTRUCTION NOTES AND DETAILS
3	STORMWATER MANAGEMENT AND STORM DRAIN NOTES, PROFILES AND DETAILS
4	PRIVATE BIORETENTION (RAIN GARDENS) NOTES, DETAILS AND SPECIFICATIONS
5	SEDIMENT AND EROSION CONTROL PLAN AND NOTES AND DETAILS
6	FOREST STAND DELINEATION / CONSERVATION PLAN AND SOILS MAP

BENCH MARKS

1 # 47C1 DISK SET ON TOP OF CONCRETE MONUMENT.
 N 539613.7036
 E 1362608.4439
 EL = 260.96

2 # 47C0 DISK SET ON TOP OF CONCRETE MONUMENT
 N 540529.7021
 E 1362460.5328
 EL = 265.74



GENERAL NOTES

- PROPERTY OWNERS: GUILD DEVELOPMENT, LLC. ADDRESS: 4609 LEARNED SAGE COURT, ELLICOTT CITY, MD 21042. TAX MAP: 47, GRID G, P/O PARCEL 604, TAX ACCOUNT # 06-433650 AND # 06-433659 DEED REFERENCE L. 10944, F. 10.
- PROPERTY INFORMATION: TAX MAP 47, GRID G, P/O PARCEL 604, TAX ACCOUNT # 06-433650 AND # 06-433659 DEED REFERENCE L. 10944, F. 10.
- PLAT REFERENCES: LOT 1 PLAT BOOK 3, FOLIO 24, LOT 18 BY DEED 577, FOLIO 42.
- THE SUBJECT PROPERTY IS ZONED R-12 PER THE 2002/04 COMPREHENSIVE ZONING PLAN, AND PER THE COMP LITE ZONING AMENDMENTS, EFFECTIVE 7/29/06.
- TOPOGRAPHY FROM HOWARD COUNTY GIS DATA, SUPPLEMENTED BY FIELD RUN LOCATIONS BY VANMAR ASSOCIATES, INC., JUNE 2010. CONTOUR INTERVAL IS 2' VERTICAL DATUM IS NAVD 83.
- WATER AND SEWER SERVICE TO LOTS 3 - 5 WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 16.122.B OF THE HOWARD COUNTY CODE. WATER CONTRACT # 3W & SEWER CONTRACT # 24-1372-D.
- PUBLIC WATER & SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- THE BASIS OF DEBARINGS FOR THIS SURVEY IS THE MARYLAND COORDINATE SYSTEM (NAD83) AS PROJECTED BY HOWARD COUNTY SURVEY CONTROL STATIONS: 0090 N 542,366.9133 E 1,363,075.9515 EL 282.35 FT. 421A N 543,390.4141 E 1,364,912.6115 EL 311.94 FT.
- THIS PLAT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITED DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.
- PERIMETER LANDSCAPING FOR THIS SUBDIVISION IS PROVIDED IN ACCORDANCE WITH A CERTIFIED LANDSCAPE PLAN ON FILE WITH THIS PLAT IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$8,580.00 FOR 11 SHADE TREES AND 529 LINEAR FEET OF FENCING HAS BEEN POSTED AS PART OF THE DR. WATER AND SEWER DEVELOPER AGREEMENT #24-461-1-D.

- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER TO FOLLOWING MINIMUM REQUIREMENTS:
 - Width - 12' (10' serving more than one residence).
 - Surface - 6" of compacted crusher run base with tar and chip coating (1-1/2" min.).
 - Geometry - Maximum 15% grade, maximum 10% grade change and minimum 45-foot turning radius.
 - Structures (overhead/under) - Capable of supporting 25 gross tons (B25 loading).
 - Structure clearance - minimum 12 feet.
 - Maintenance - sufficient to ensure all weather use.
- STORMWATER MANAGEMENT FOR THIS RESUBDIVISION WILL BE PROVIDED VIA THE GRASS CHANNEL CREDIT AND PRIVATE RAIN GARDENS.
- THERE ARE NO WETLANDS, STEEP SLOPES, FLOODPLAIN, STREAMS OR OTHER BUFFERS ON THIS SITE.
- THIS PLAT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY THE PAYMENT OF A FEE-IN-LIEU FOR THE REQUIRED 0.67 ACRES OF RESTORATION IN THE AMOUNT OF \$21,889.00 (29,185 S.F. X \$0.75/S.F. = \$21,889.00).
- THIS PROPERTY WAS INVESTIGATED FOR WETLANDS. NO WETLANDS WERE FOUND.
- NO HISTORIC STRUCTURES, CEMETRIES OR ENVIRONMENTAL FEATURES (I.E. STREAMS, FLOODPLAIN, STEEP SLOPES, ETC.) WERE FOUND ON THIS SITE.
- ALL AREAS SHOWN HEREON AREA + OR - MORE OR LESS.
- A TOTAL OF 10.9% OF THE GRASSY PROPERTY AREA WILL BE PROVIDED AS OPEN SPACE ON LOT 4 IN ORDER TO MEET THE OPEN SPACE REQUIREMENTS FOR THIS R-12 RESUBDIVISION.
- PUBLIC WATER AND SEWER DRAWINGS FOR THIS RESUBDIVISION, CONTRACT NO. 24-461-1-D WERE APPROVED ON DECEMBER 6, 2010.
- OPEN SPACE DEDICATION - THE OPEN SPACE SHOWN HEREON IS HEREBY DEDICATED TO A PROPERTY OWNERS ASSOCIATION FOR THE RESIDENTS OF THE SUBDIVISION AND RECORDING MEMBERSHIP OF THE ARTICLES OF INCORPORATION AND RESTRICTIONS ARE SHOWN HEREON.
- FOR FLAG OR PISTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PISTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PISTEM LOT DRIVEWAY.
- PROTECTIVE COVENANTS GOVERNING THE MAINTENANCE OF THE COMMON DRIVEWAY, COMMONLY OWNED OPEN SPACE TO A PERIMETER LANDSCAPING, FENCING AND THE GRASS CHANNEL ARE OUTLINED IN THE ARTICLES OF INCORPORATION OF THE HOMEOWNERS ASSOCIATION (HOWA 0525033-1) APPROVED BY THE BOARD OF SUPERVISORS AND RECORDED IN THE LAND RECORDS OF HOWARD COUNTY AS 11/26/10 16370 FOLIO 376.

34. WAIVER PETITION WP-10-174 WAS APPROVED ON JULY 30, 2010. THIS WAIVER TO SECTION 16.144 (M) TO ALLOW RESTORATION OF FULL PLAT FOR 0.14 AND SECTION 16.192 (C) AND 16.141 (A) TO ALLOW A PARCEL RECONFIGURATION BY ADJOINER DEED. APPROVAL WAS SUBJECT TO THE RESUBDIVISION OF LOT B BEING IN FULL COMPLIANCE WITH THE ZONING REGULATIONS AND THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS; AND RELOCATION OF AGREED UPON DEED EASEMENTS AND PLAN EXHIBIT.

35. WAIVER PETITION WP-11-123 WAS APPROVED ON FEBRUARY 4, 2011. THIS WAIVER TO SECTION 16.144 (P) & (Q) FOR AN EXTENSION OF TIME FOR DEVELOPER TO PAY ALL FEES, POST FINANCIAL SURETY AND TO SUBMIT THE ORIGINAL INLAND SUBDIVISION PLAT. APPROVAL WAS CONTINGENT ON COMPLIANCE WITH ALL DEC AGENCY COMMENTS, SUBMISSION OF FINAL PLAT ORIGINAL FOR SIGNATURE BY FEBRUARY 4, 2011 AND PAYMENT OF ALL PLAN PROCESSING FEES.

36. WAIVER PETITION WP-12-113 WAS APPROVED ON FEBRUARY 14, 2012. THIS WAIVER TO SECTION 16.144 (P) & (Q) FOR AN EXTENSION OF TIME FOR DEVELOPER TO PAY ALL FEES, POST FINANCIAL SURETY AND TO SUBMIT THE ORIGINAL INLAND SUBDIVISION PLAT. APPROVAL WAS CONTINGENT ON COMPLIANCE WITH ALL DEC AGENCY COMMENTS, SUBMISSION OF FINAL PLAT ORIGINAL FOR SIGNATURE BY FEBRUARY 4, 2012 AND PAYMENT OF ALL PLAN PROCESSING FEES.

37. WAIVER PETITION WP-15-282 WAS APPROVED ON OCTOBER 16, 2014. THIS WAIVER TO SECTION 16.144 (P), (Q) & (R) TO RE-ACTIVATE THE FULL PLAT PROCESSING FEES FOR THIS DEVELOPMENT. APPROVAL WAS CONTINGENT ON A REVISED FINAL PLAT SUBMISSION BEFORE NOVEMBER 30, 2014 AND A NEW PRE-SUBMISSION COMMUNITY MEETING BEING HELD PRIOR TO RESUBMISSION OF THE FULL PLAT.

MINIMUM LOT SIZE TABLE

LOT NO.	MINIMUM LOT SIZE	PIPESTEM AREA	TOTAL AREA
1	12,181 S.F.	2,411 S.F.	14,592 S.F.
2	14,196 S.F.	3,320 S.F.	17,516 S.F.
3	14,369 S.F.	4,059 S.F.	18,428 S.F.

SUBJECT PROPERTY IS ZONED R-12. MINIMUM LOT SIZE, EXCLUDING PIPESTEM IS 12,000 S.F.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Karl Schuler 1/12/11
 CHIEF, DIVISION OF LAND DEVELOPMENT

John P. ... 1/12/11
 CHIEF, DEVELOPMENT, ENGINEERING DIVISION

DEVELOPER'S / BUILDER'S CERTIFICATION

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 THE HOWARD COUNTY LANDSCAPE MANUAL. I FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

John P. ... 1-3-2011
 SIGNATURE OF DEVELOPER / BUILDER

STORMWATER MANAGEMENT SUMMARY TABLE

STORAGE REQUIREMENTS	DA 'A'	DA 'B' & 'B-1'	DA 'C'	DA 'C-1'	DA 'C-2'	DA 'D'	REMARKS
Rwv REQUIRED	0.0 CU. FT.	377 CU. FT.	32 CU. FT.	39 CU. FT.	18 CU. FT.	30 CU. FT.	NET IN GRASS CHANNEL AND PRIVATE RAIN GARDENS
Rwv PROVIDED	0.0 CU. FT.	377 CU. FT.	32 CU. FT.	39 CU. FT.	18 CU. FT.	30 CU. FT.	NET IN RAIN GARDENS
Wgv REQUIRED	0.0 CU. FT.	1,448 CU. FT.	145 CU. FT.	149 CU. FT.	71 CU. FT.	117 CU. FT.	NET IN GRASS CHANNEL AND PRIVATE RAIN GARDENS
Wgv PROVIDED	0.0 CU. FT.	1,448 CU. FT.	145 CU. FT.	149 CU. FT.	71 CU. FT.	117 CU. FT.	NET IN RAIN GARDENS
QpV REQUIRED	N/A	N/A	N/A	N/A	N/A	N/A	N/A
QpV PROVIDED	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Qp10 REQUIRED	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Qp10 PROVIDED	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Qp100 REQUIRED	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Qp100 PROVIDED	N/A	N/A	N/A	N/A	N/A	N/A	N/A

- DRAINAGE AREAS 'B' AND 'B-1' BOTH DRAIN INTO THE 4% GRASS CHANNEL ALONG THE SOUTH SIDE OF THE COMMON DRIVEWAY. GRASS CHANNEL CREDIT USED FOR THESE DRAINAGE AREAS.
- DRAINAGE AREAS 'C', 'C-1', 'C-2' AND 'D' EACH DRAIN TO A PRIVATE INDIVIDUAL RAIN GARDEN FACILITY.
- DRAINAGE AREAS 'E' AND 'F' AREA BOTH LOCATED OFFSITE. THESE AREAS ARE BYPASSSED EITHER AROUND THE SITE VIA SWALES OR THRU THE SITE VIA THE CLOSED STORM DRAIN SYSTEM. (AREA 'F' DRAINS INTO 'I').

OWNER / DEVELOPER:
 GUILD DEVELOPMENT, LLC
 4609 LEARNED SAGE COURT
 ELLICOTT CITY, MD 21042
 410-884-1929

CUNABAR DRIVE, LLC
 5300 DORSEY HALL DR. #107
 ELLICOTT CITY, MD 21042
 443-967-0422

DATE: 11-2-10
 COUNTY COMMENTS: 2-19-15 RED-LINE REVISIONS
 11-29-16 RED-LINE REVISIONS

STATE OF MARYLAND PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 9/1/11

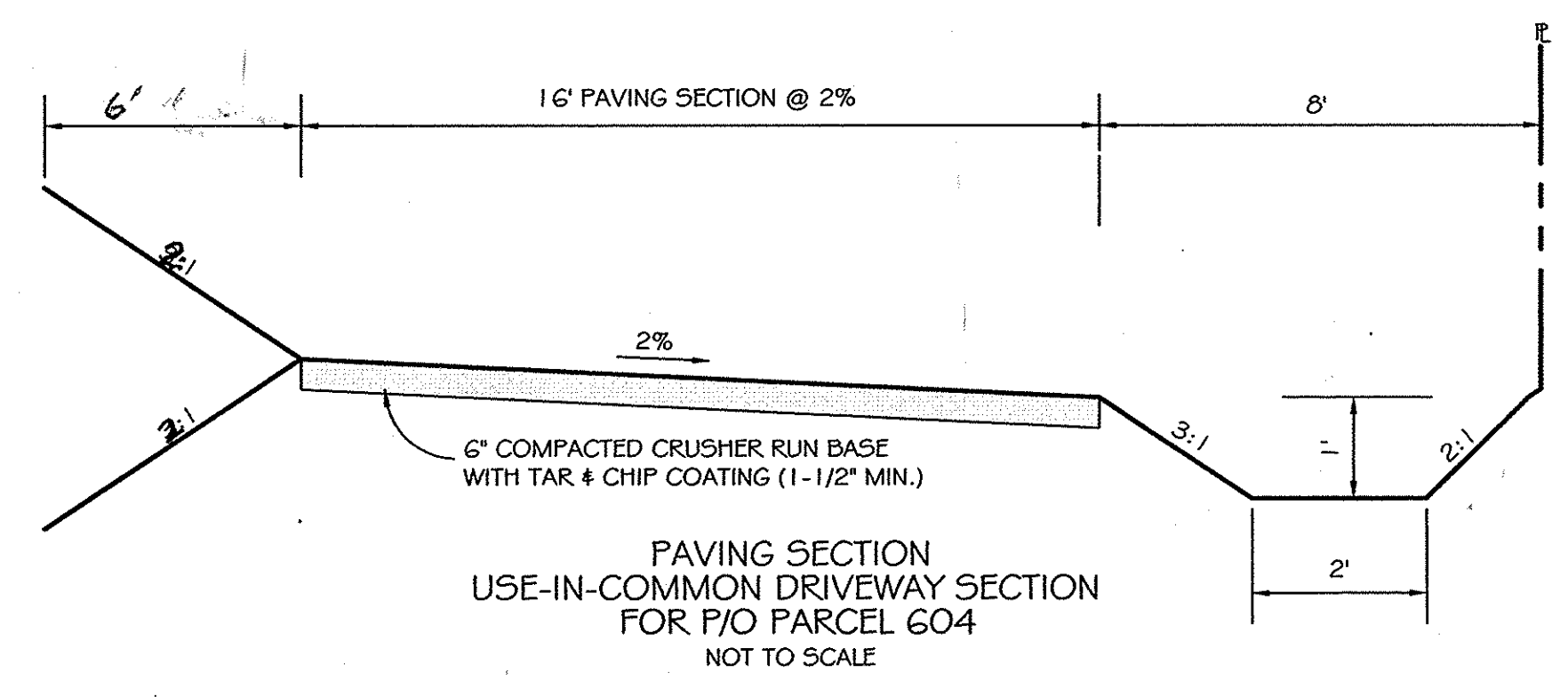
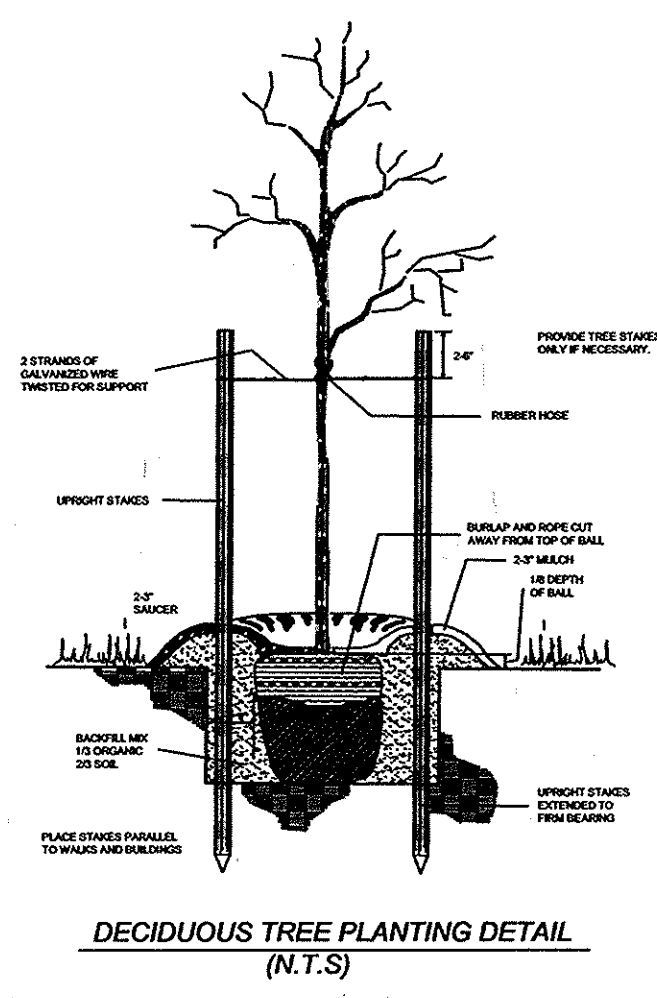
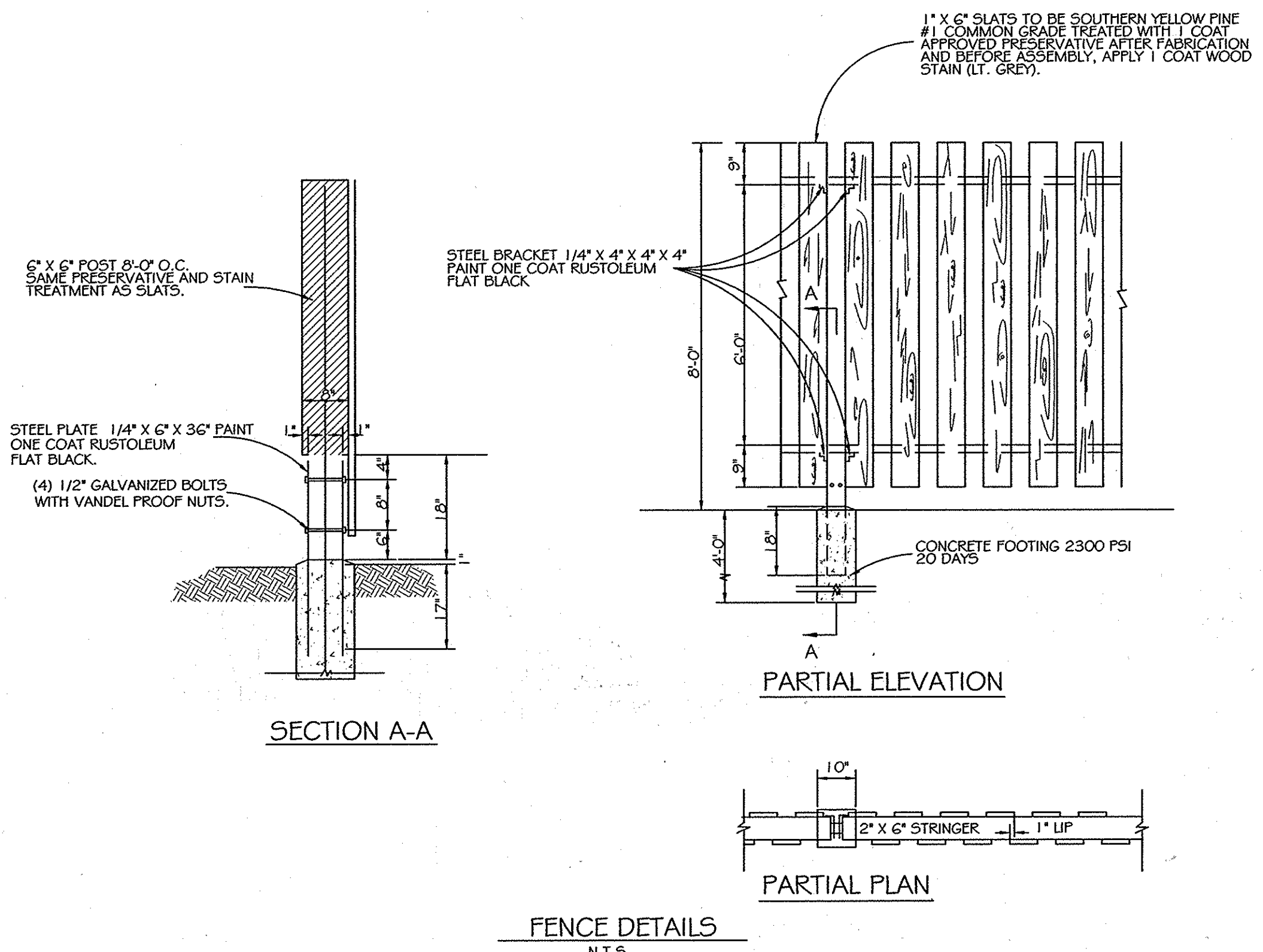
SIGNED: *Ronald E. Thompson* DATE: 1/3/11
 RONALD E. THOMPSON, P.E.

SUPPLEMENTAL GRADING, STORMWATER MANAGEMENT & LANDSCAPE PLAN GUILFORD LANDING

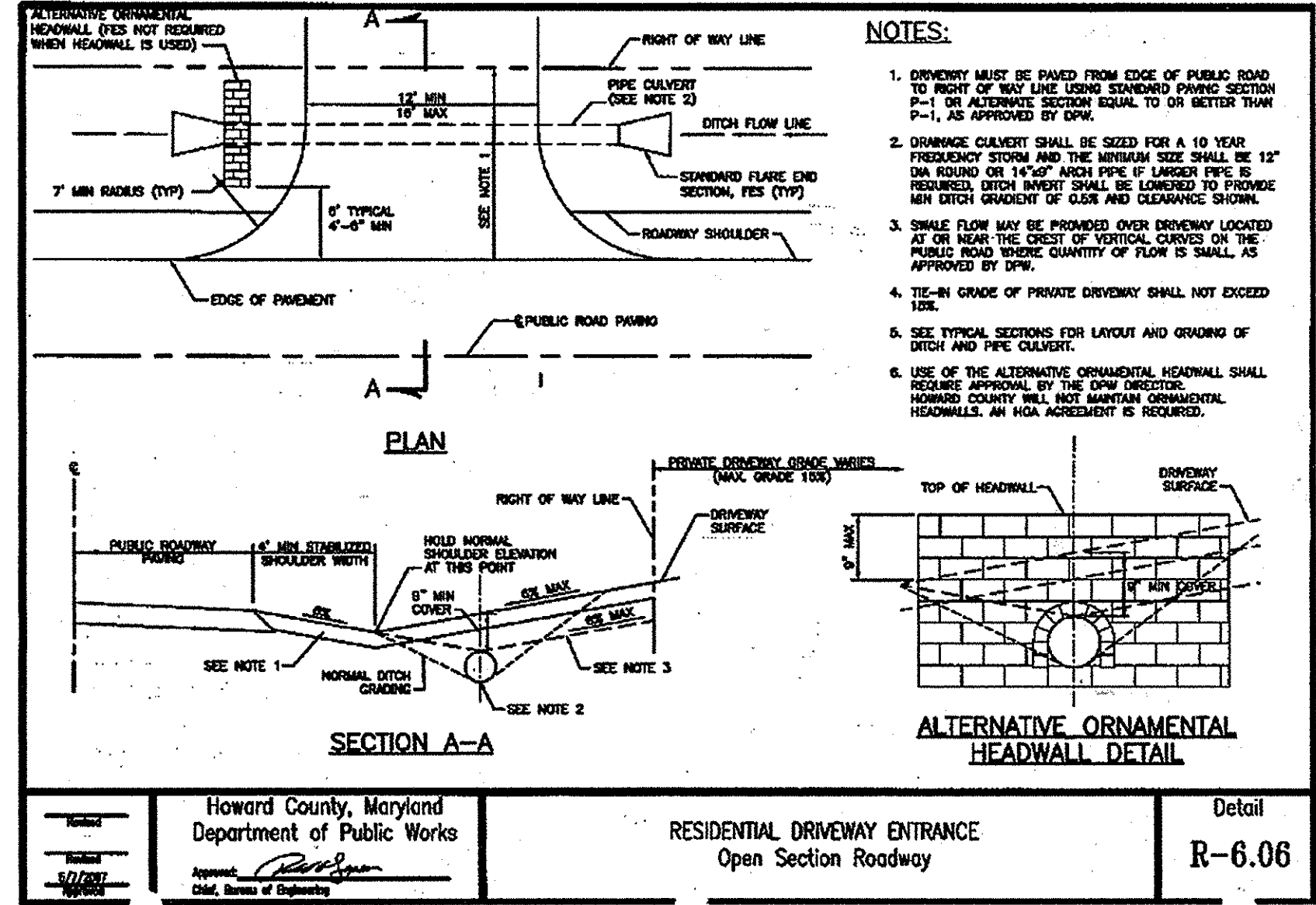
LOTS 1, 3 AND OPEN SPACE LOT 4, A RESUBDIVISION OF 406.6 CON. COLLOCATED NATHANIEL G. BARNES SUBDIVISION (DEED BOOK 3, FOLIO 242) AND LOT 8, ISABELLA CORMAN SUBDIVISION (DEED 577, FOLIO 42) AS RECONFIGURED BY ADJOINER DEED LIBER 12723, FOLIO 032 IN ACCORDANCE WITH WAIVER PETITION WP-10-174 T.M. 47, GRID G, P/O PARCEL 604 6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND ZONING: R-12

SCALE: 1" = 30' DATE: AUGUST, 2010

VANMAR ASSOCIATES, INC. Engineers Surveyors Planners
 310 South Main Street Mount Airy, Maryland 21771
 (301) 829-2880 (301) 831-5015 (410) 548-2791
 Fax: (301) 831-5053 ©Copyright, Latest Date Shown



NOTE:
THE BOARD ON BOARD "CLOSED" FENCE SHALL COMPLY WITH SECTION 12B OF THE ZONING REGULATIONS. IT CANNOT EXCEED 6' IN HEIGHT ALONG THE SIDE YARD AND CANNOT EXCEED 3' IN HEIGHT WITHIN 30' FROM THE PUBLIC R/W. ALSO, ITS LOCATION MUST NOT OBSTRUCT THE LINE OF SIGHT ALONG THE FRONTAGE OF GUILFORD ROAD.



SCHEDULE A - PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAY		ADJACENT TO PERIMETER PROPERTIES	
	P-1	P-2	P-3	P-4
PERIMETER	N/A	A(1:60)	A(1:60)	A(1:60)
LANDSCAPE TYPE	N/A	A(1:60)	A(1:60)	A(1:60)
LINEAR FEET OF ROADWAY FRONTAGE / PERIMETER	24'	603'	175'	433'
CREDIT TO EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	NO	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET)	NO	YES - 529 L.F. (75')	NO	NO
NUMBER OF PLANTS REQUIRED: SHADE TREES	N/A	1*	3	7
NUMBER OF PLANTS PROVIDED SHADE TREES	N/A	1	3	7

*CREDIT FOR BOARD ON BOARD FENCE ALONG P-2 REDUCES THE REQUIRED NUMBER OF TREES FROM TEN (10) TO ONE (1).

* THE EXISTING HOUSE TO REMAIN, FRONTS ON GUILFORD ROAD THEREFORE, NO PERIMETER LANDSCAPING IS PROPOSED ALONG THE NORTH SIDE OR FRONT PERIMETER OF LOT 1. THE DEVELOPER SHALL PLANT 11 SHADE TREES, AS SHOWN ON THE APPROVED LANDSCAPING PLAN.
** 529 LF OF PERIMETER #2 IS WITHIN A PUBLIC EASEMENT DEVELOPER PROPOSES A 6' PRIVACY FENCE AS ALTERNATIVE COMPLIANCE ALONG EASEMENT.

LANDSCAPE NOTES

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- THE OWNER / DEVELOPER IS RESPONSIBLE FOR THE PLANTING OF ALL PLANT MATERIAL REQUIRED TO MEET THE STANDARDS ESTABLISHED BY THE HOWARD COUNTY LANDSCAPE MANUAL.
- FINANCIAL SURETY IN THE AMOUNT OF \$6,500.00 FOR 11 SHADE TREES AND 529 LINEAR FEET OF FENCING HAS BEEN POSTED AS PART OF THE DFW WATER AND SEWER DEVELOPER AGREEMENT #24-4611-D-1.
- ALL PLANT MATERIALS SHALL BE IN GOOD CONDITION AND BE OBTAINED LOCALLY WITHIN A 100 MILE RADIUS OF THE SUBJECT SITE.
- THE FENCE HAS BEEN INSTALLED AS PART OF THE LANDSCAPE REQUIREMENTS AND SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION AND, WHENEVER NECESSARY REPAIRED OR REPLACED, THE HOA SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE FENCE.

DEVELOPER'S / BUILDER'S CERTIFICATION

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 THE HOWARD COUNTY LANDSCAPE MANUAL. I FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

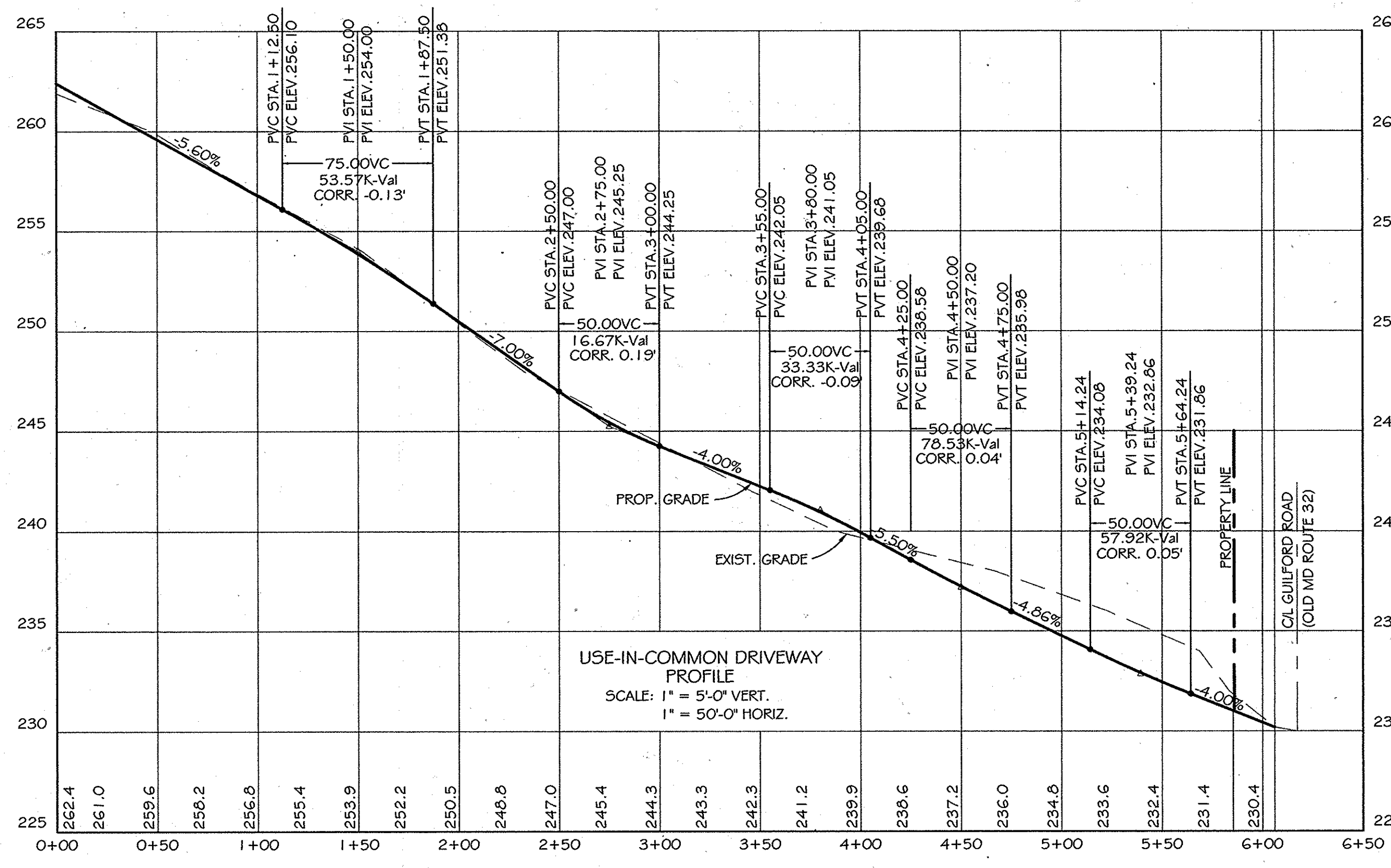
Roderic Jarry 1-3-2011
SIGNATURE OF DEVELOPER / BUILDER DATE

LANDSCAPE PERIMETER TABLE

PERIMETER NO.	PERIMETER LENGTH	BUFFER TYPE	ADJACENT LAND USE
1	66 LF	B	ROAD
2	603 LF	A	SFD
3	175 LF	A	SFD
4	433 LF	A	SFD
TOTAL	1,299 LF		

PERIMETER PLANTING SCHEDULE

SYM	COMMON NAME	BOTANICAL NAME	QTY.	SIZE	REMARKS
⊗	PIN OAK	QUERCUS PALUSTRIS	6	2'-2 1/2" CALIPER	D&B
⊙	RED SUNSET	ACER RUBRUM	5	2'-2 1/2" CALIPER	D&B



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Kristin Lane 1/2/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Michael M... 1/2/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CALL "MISS UTILITY" AT
1-800-287-7777
48 HOURS BEFORE START OF CONSTRUCTION

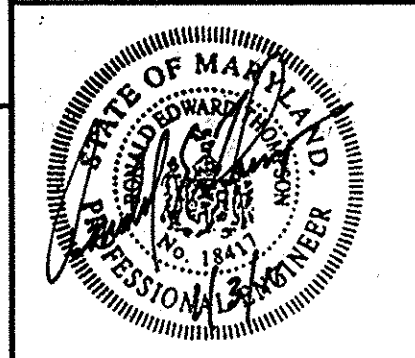
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 9/1/91

SIGNED *Ronald E. Thompson* DATE 1/3/11
RONALD E. THOMPSON, P.E.

OWNER / DEVELOPER:
GUILD DEVELOPMENT, LLC
1609 LEARNED SAGE COURT
ELLICOTT CITY, MD 21042
410-864-1929

CINNABAR DRIVE, LLC
8300 DORSEY HALL DR. #107
ELLICOTT CITY, MD 21042
443-361-0422

DATE: 2-19-15
REVISIONS: Red-Line Revision



GRADING AND CONSTRUCTION NOTES AND DETAILS
GUILFORD LANDING

LOTS 1-3 AND OPEN SPACE LEFT 4, A RESUBDIVISION OF LOT 6, CONSOLIDATED WITH DANIEL-G. BARNES-SUBDIVISION (PLAT 2509-2), FOLIO 24

AND LOT B, ISABELLA CORMAN SUBDIVISION (LIBER 577, FOLIO 42) AS RECONFIGURED BY ADJOINER DEED LIBER 1273, FOLIO 032 IN ACCORDANCE WITH WAIVER PETITION WP-10-172

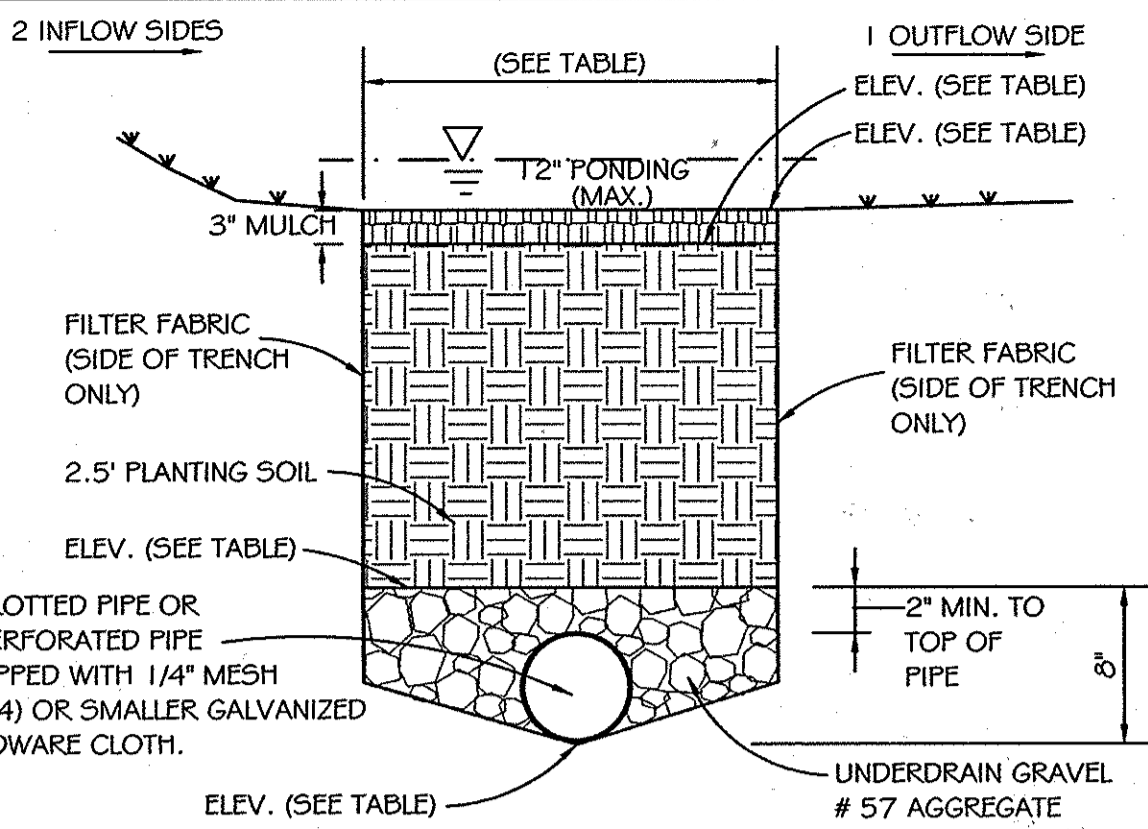
T.M. 47, GRID 6, P/O PARCEL 604
6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND
ZONING: R-12
SCALE: 1" = 30' DATE: AUGUST, 2010

YANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 828-2890 (301) 831-9015 (410) 549-2751
Fax (301) 831-5603 ©Copyright, Latest Date Shown

SHEET NO. 2 OF 6
F-09-064

SPECIFICATIONS FOR BIORETENTION

- MATERIAL SPECIFICATIONS:**
THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREA ARE DETAILED IN TABLE B.4.1
- PLANTING SOIL**
THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.
THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
PH RANGE 5.2 - 7.0
ORGANIC MATTER 15 - 4% (BY WEIGHT)
MAGNESIUM 35 LB/OC
PHOSPHORUS (PHOSPHATE - P2O5) 75 LB/OC
POTASSIUM (POTASH-K2O) 85 LB/OC
SOLUBLE SOILS NOT TO EXCEED 500 PPM
ALL BIORETENTION AREAS SHALL HAVE A MINIMUM OF ONE TEST. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHORUS, POTASSIUM AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOLUBLE SOILS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.
SINCE DIFFERENT LABS CALIBRATE THEIR TESTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHALL COME FROM THE SAME TESTING FACILITY.
SHOULD THE PH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MODIFIED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.
- COMPACTION:**
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF BIORETENTION RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES, IT IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW RIPPER OR SUBSOILER. THESE TILLING OPERATIONS AREA TO REFRACATURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FOR HEAVY EQUIPMENT.
ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.
WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL TO FINAL GRADE.
WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
- PLANT MATERIAL:**
RECOMMENDED PLANT MATERIAL FOR BIORETENTION AREAS CAN BE FOUND IN APPENDIX 'A', SECTION A.2.3.
- PLANT INSTALLATION:**
MULCH SHOULD BE PLACED TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. FINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.
ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHALL BE PLANTED SO THAT 1/3 OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST 6" LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.
TREES SHALL BE BRACED USING 2" X 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL. GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.
THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES TO GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.
- UNDERDRAINS:**
UNDERDRAINS ARE TO BE PLACED ON A 3'-0" WIDE SECTION OF FILTER CLOTH. PIPE IS PLACED NEXT, FOLLOWED BY THE GRAVEL BEDDING. THE ENDS OF UNDERDRAIN PIPES NOT TERMINATING IN AN OBSERVATION WELL SHALL BE CAPPED. THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).
- MISCELLANEOUS:**
THE BIORETENTION FACILITIES SHALL NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTIN DRAINAGE AREA HAS BEEN STABILIZED.



TYPICAL SECTION FOR PROPOSED PRIVATE BIORETENTION FACILITIES N.T.S.

Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels

B.3.C Specifications for Open Channels and Filter Strips

1. Material Specifications

The recommended construction materials for open channels and filter strips are detailed in Table B.3.3.

2. Dry Swales

Permeable soil mixture (20" to 30" deep) should meet the bioretention "planting" soil specifications.

Check dams, if required, shall be placed as specified.

System to have 6" of freeboard, minimum above 2 year water surface elevation.

Side slopes to be 3:1 maximum; (4:1 or flatter is preferred).

No gravel or perforated pipe is to be placed under driveways.

Bottom of facility to be above the seasonally high water table per Table 2 of Appendix D.1.

Seed with flood/drought resistant grasses; see Appendix A, Section 2.4.

Longitudinal slope to be 4%, maximum.

Bottom width to be 8" maximum to avoid braiding; larger widths may be used if proper berming is supplied. Width to be 2" minimum.

3. Wet Swales

Follow above information for dry swales, with the following exceptions: the seasonally high water table may inundate the swale; but not above the design bottom of the channel [NOTE: if the water table is stable within the channel, the WQ₂ storage may start at this point - see Figure 3.19]

Excavate into undisturbed soils; do not use an underdrain system.

4. Filter Strips

Construct pea gravel diaphragms 12" wide, minimum, and 24" deep minimum.

Pervious berms to be a sand/gravel mix [sand (35-60%), silt (30-55%), and gravel (10-25%)]. Berms to have overflow weirs with 6 inch minimum head.

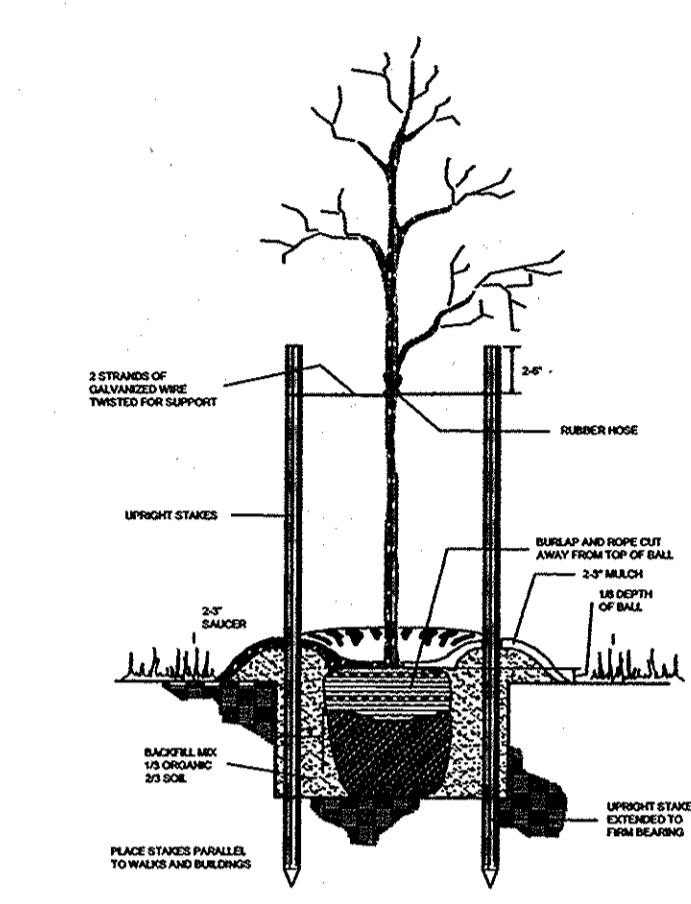
Slope range to be 2% minimum to 6% maximum.

5. Plant Selection

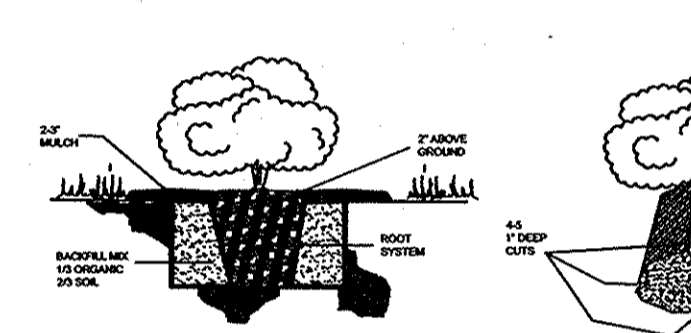
Recommended grass species for use in establishing permanent ground cover are provided in Section 2.4 of Appendix A.

MAINTENANCE SCHEDULE FOR BIORETENTION GARDENS

- INSPECT FACILITY ON A SEMI-ANNUAL BASIS THE FIRST YEAR, AND AFTER MAJOR STORM EVENTS.
- INSPECT FACILITY ANNUALLY AFTER THE FIRST YEAR.
- TEST PLANTING BED SOILS ON AN ANNUAL BASIS FOR PH TO ESTABLISH ACIDIC LEVELS. IF THE PH IS BELOW 5.2, APPLY LIMESTONE. IF THE PH IS ABOVE 7.0, IRON SULFATE PLUS SULFUR SHOULD BE ADDED. CORRECT EROSION PROBLEMS AS NECESSARY.
- INSPECT SURFACE BED FOR CLOGGING FROM FINE SEDIMENTS ON AN ANNUAL BASIS. IF CLOGGED, CORES AERATE NON-VEGETATED AREAS TO INSURE ADEQUATE FILTRATION.
- BI-ANNUAL MULCHING IS RECOMMENDED. A 3" MULCH DEPTH IS RECOMMENDED.
- ALL PLANT MATERIALS SHOULD BE INSPECTED ANNUALLY. DEAD OR SEVERELY DISEASED SPECIES SHOULD BE REPLACED.
- WOODY VEGETATION MAY REQUIRE PERIODIC PRUNING.



TREE PLANTING/ STAKING DETAIL N.T.S.

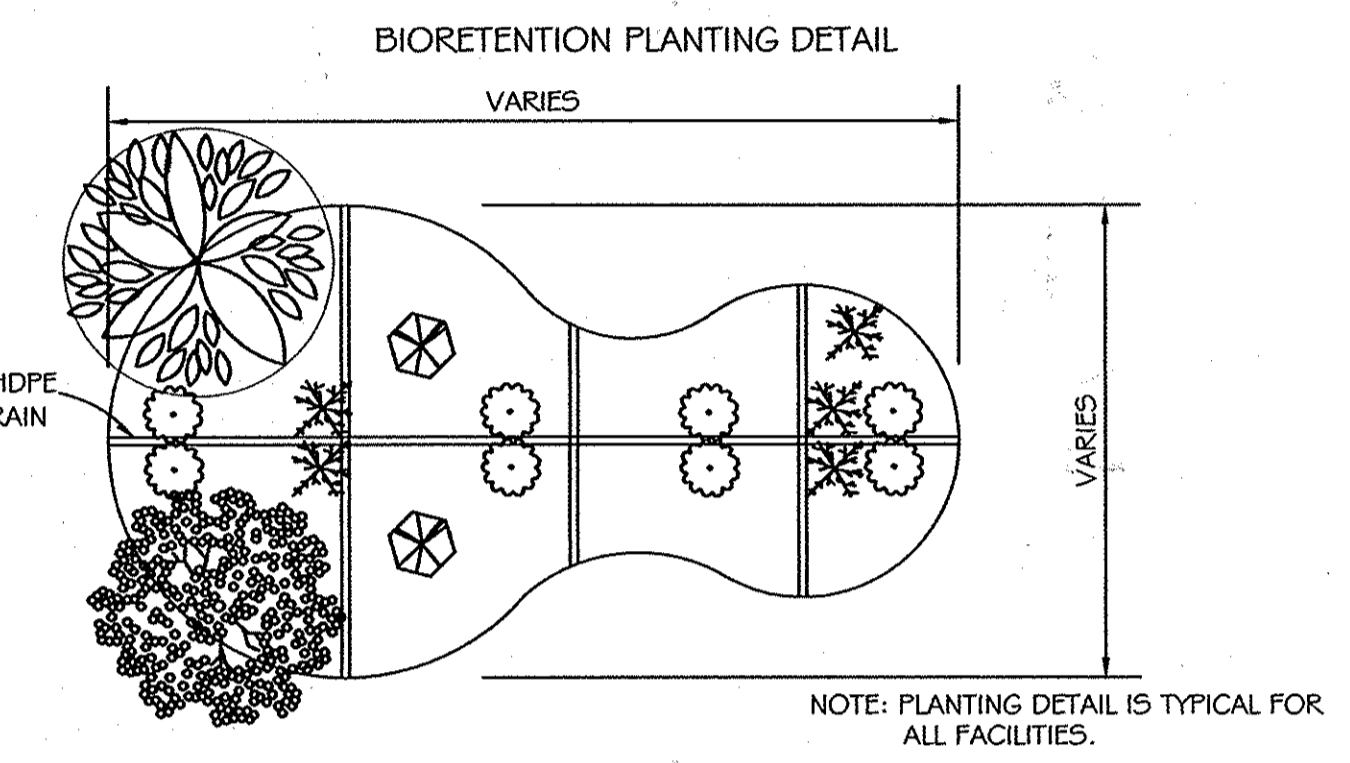


TYPICAL CONTAINER-GROWN PLANTING DETAIL N.T.S.

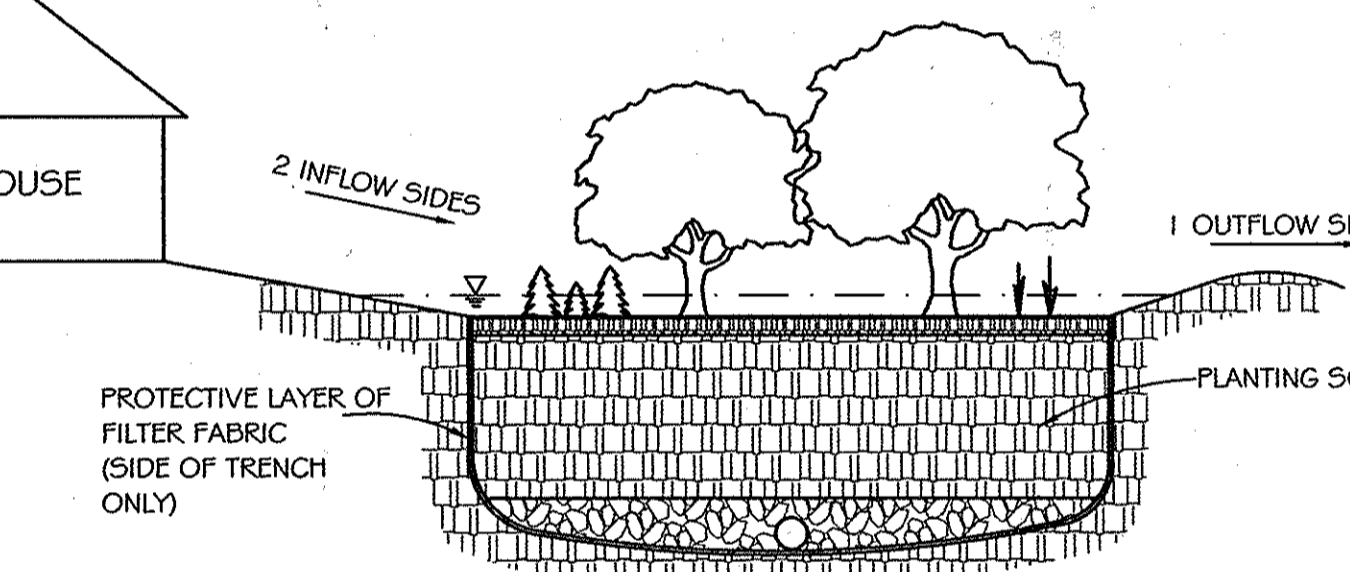
BIO RETENTION LANDSCAPE SCHEDULE					
SYMBOL	QNTY	COMMON NAME	SCIENTIFIC NAME	SIZE	REMARKS
SHADE TREES					
RM	8	RED MAPLE OCTOBER GLORY	ACER RUBRUM	2" - 2 1/2" CALIPER	B + B
RB	6	RIVER BIRCH (HERITAGE CLUMP BIRCH)	BETULA NIGRA HERITAGE	10' - 12' HT.	B + B
AZ	16	AZALEA	AZALEA SP	18" - 24" HT.	CONTAINER 3" O.C.
IB	16	INKBERRY	LIEUX GLABRA	18" - 24" HT.	CONTAINER 3" O.C.
AW	16	ARROWWOOD	VIBUMUM DENTATUM	18" - 24" HT.	CONTAINER 3" O.C.
HERBACEOUS GRASSES					
SG	164 S.F.	SWITHGRASS	PANICUM VIRGATUM		SEED MIXTURE

PLANTING DISTRIBUTION FACILITIES #1, #2, #3 #4

- (2) RM, (2) RB,
- (4) AZ, (4) IB, (4) AW



N.T.S.



N.T.S.

OPERATION AND MAINTENANCE SCHEDULE FOR RAIN GARDENS

- 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.
- 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 DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil (2" to 4" deep)	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (10%), coarse sand (10%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type I nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f _c ' = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-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 licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressure); and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.075" to 0.04"	Sand substitutions such as Diabase and Gneiss (AASHTO) #10 are not acceptable. No calcium carbonate or dolomite sand substitutions are acceptable. No "rock dust" can be used for sand.

Table B.3.3 Open Channel Systems and Filter Strip Materials Specifications

Material	Specification	Size	Notes
dry swale soil	USCS: ML, SM, SC	n/a	soil with a higher percent organic content is preferred
dry swale sand	ASTM C-33 fine aggregate concrete sand	0.02" to 0.04"	
check dam (pressure treated)	AWPA Standard C6	6" by 6" or 8" by 8"	do not coat with creosote; embed at least 3" into side slopes
check dam (natural wood)	Black Locust, Red Mulberry, Cedars, Catalpa, White Oak, Chestnut Oak, Black Walnut	6" to 12" diameter; notch as necessary	do not use the following, as these species have a predisposition towards rot: Ash, Beech, Birch, Elm, Hackberry, hemlock, Hickories, Maples, Red and Black Oak, Pines, Poplar, Spruce, Sweetgum, Willow
filter strip sand/gravel pervious berm	sand: per dry swale sand gravel: AASHTO M-43	sand: 0.02" to 0.04" gravel: 1/2" to 1"	mix with approximately 25% loam soil to support grass cover crop; sand (35-60%), silt (30-55%), and gravel (10-25%) see Bioretention planting soil specs for more detail.
pea gravel diaphragm and curtain drain	ASTM D 448	varies (No. 6) or (1/8" to 3/8")	use clean bank-run gravel
underdrain gravel	AASHTO M 43	0.25" to 0.75"	
underdrain	F 758 Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underdrain pipes
geotextile	Class "C" - apparent opening size (ASTM-D-4751), grab tensile strength (ASTM-D-4655), puncture resistance (ASTM-D-4833)	n/a	
rip rap	per county criteria; if none given, use MSHA Standards and Specs Section 902	size per county DOT requirements based on 10-year design flows	

FACILITY NO.	LOCATION	WIDTH	LENGTH	SQUARE FEET	DEPTH	INV. OUT	TOP MULCH ELEV.	GROUND ELEV. OUTFLOW SIDE	GROUNDWATER DEPTH	LENGTH OF PIPE
1	LOT 5	10'	10'	100	3.42'	254.58	258.00	259.00	6'	20'
2	LOT 5	5	12'	60	3.42'	256.08	259.50	260.50	6'	200'
3	LOT 4	12'	12'	144	3.42'	247.58	251.00	252.00	5'	53'
4	LOT 3	10'	10'	100	3.42'	245.58	249.00	250.00	5'	53'

INVERT = PIPE INVERT

*TOTAL DEPTH OF FACILITY FROM TOP OF MULCH TO INVERT OF 6" UNDERDRAIN/BOTTOM GRAVEL.

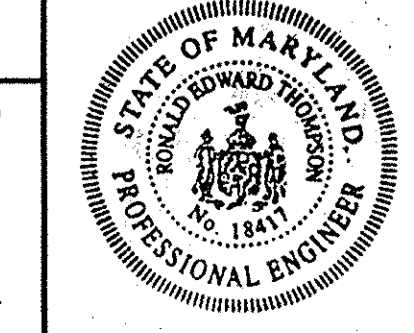
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 1/21/11

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 1/21/11

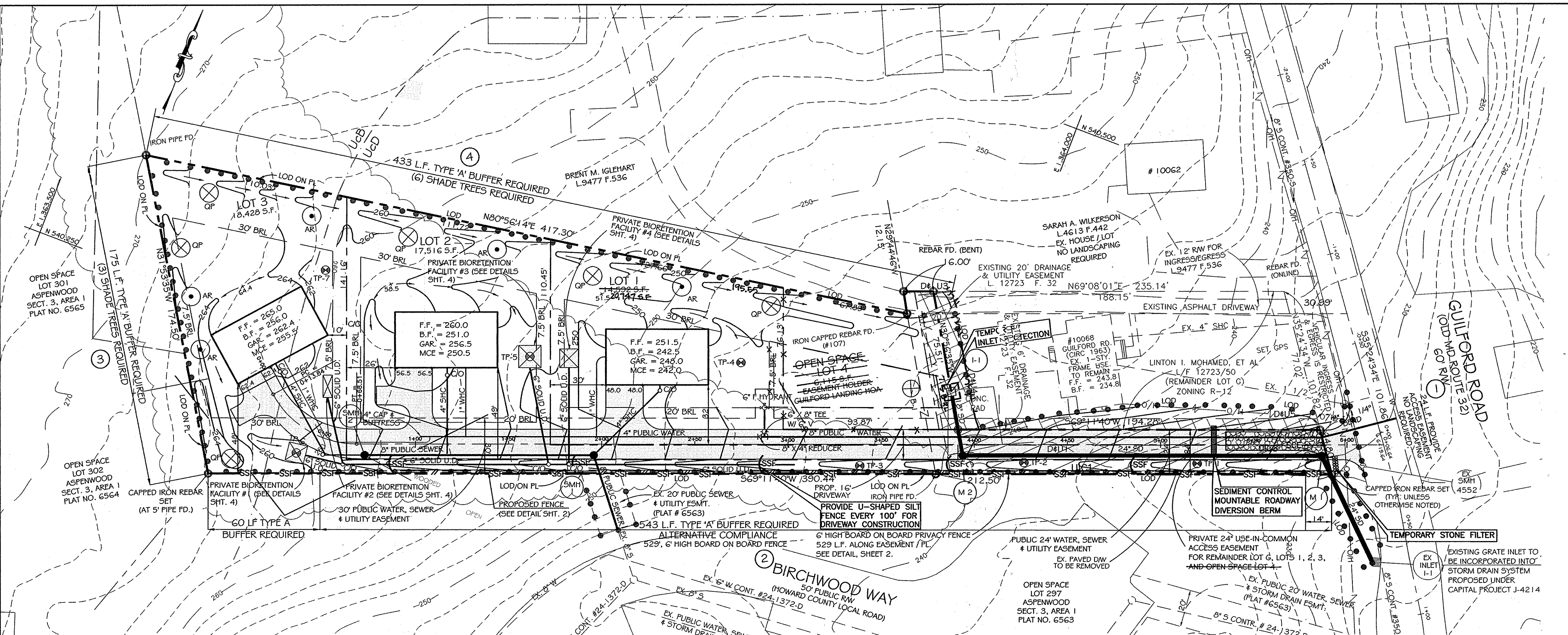
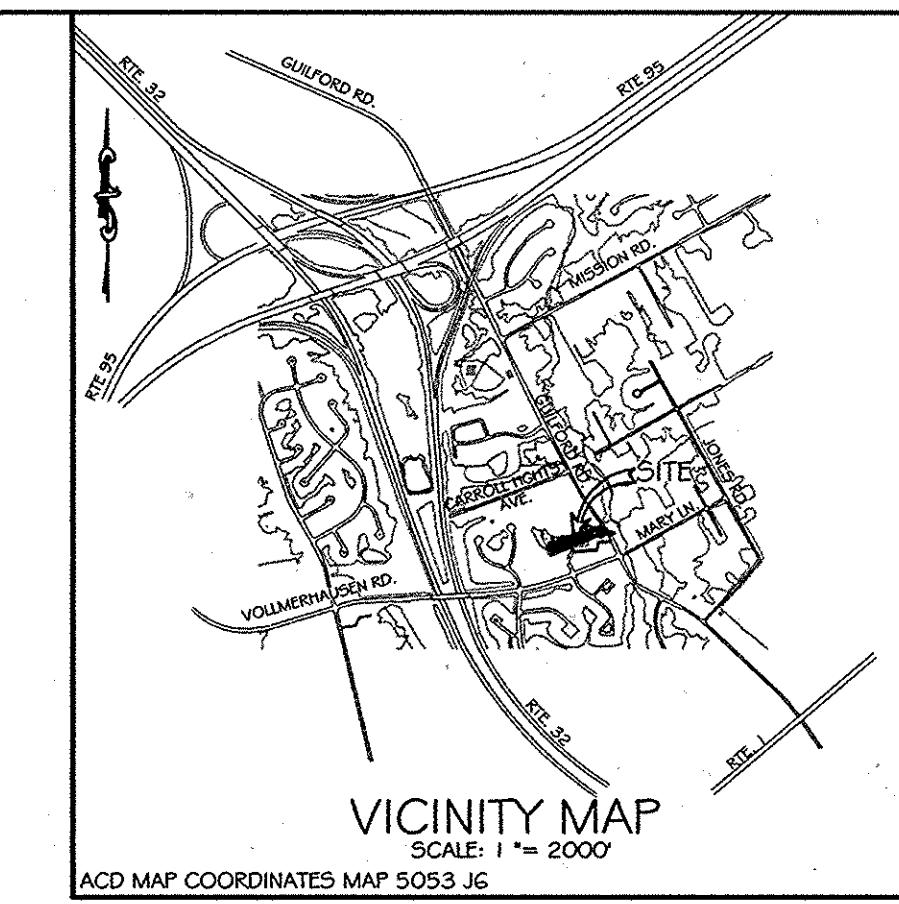
CALL "MISS UTILITY" AT
1-800-257-7777
48 HOURS BEFORE START OF CONSTRUCTION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 9/18/11
SIGNED: Ronald L. Thompson DATE: 1/21/11
RONALD L. THOMPSON, P.E.



OWNER / DEVELOPER:
GUILD DEVELOPMENT, LLC - CARLIABAR DRIVE, LLC
4800 LEARNED JUDGE COURT - 5300 DORSEY HALL DR. #107
ELLICOTT CITY, MD. 21042 - ELLICOTT CITY, MD 21042
410-804-1925 442-367-0422

PRIVATE BIORETENTION FACILITY (RAIN GARDENS)
NOTES, DETAILS AND SPECIFICATIONS
GUILFORD LANDING
LOTS 1 - 3 AND OPEN SPACE LOT 4, A RESUBDIVISION OF LOT 6, COA SOLIDATED
NATHANIEL G. BARNES SUBDIVISION (PLAT BOOK 2, FOLIO 24)
AND LOT 6, ISABELLA CORMAN SUBDIVISION (LIBER 577, FOLIO 42) AS
RECONFIGURED BY ADJOINER DEED LIBER 12723, FOLIO 032 IN ACCORDANCE
WITH WAIVER PETITION WF-10-174-MF
T.M. 47, GRID 6, P/O PARCEL 604
6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND
ZONING: R-12
SCALE: 1" = 30' DATE: AUGUST, 2010
VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 828-2890 (301) 831-8015 (410) 549-2751
T.M. 47, GRID 6, P/O PARCEL 604
Vanmar.com



HOWARD SOIL CONSERVATION DISTRICT PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate future disturbance where a permanent long-lived vegetative cover is needed.

Seeding 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/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureiform fertilizer (9 lbs/1000 sq. ft.).
2. Acceptable—Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding: For the periods March 1–April 30, and August 1–October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1–July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 15–February 28, protect site by:

- Option 1—Two 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 30 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 unrattled 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 reseeding.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

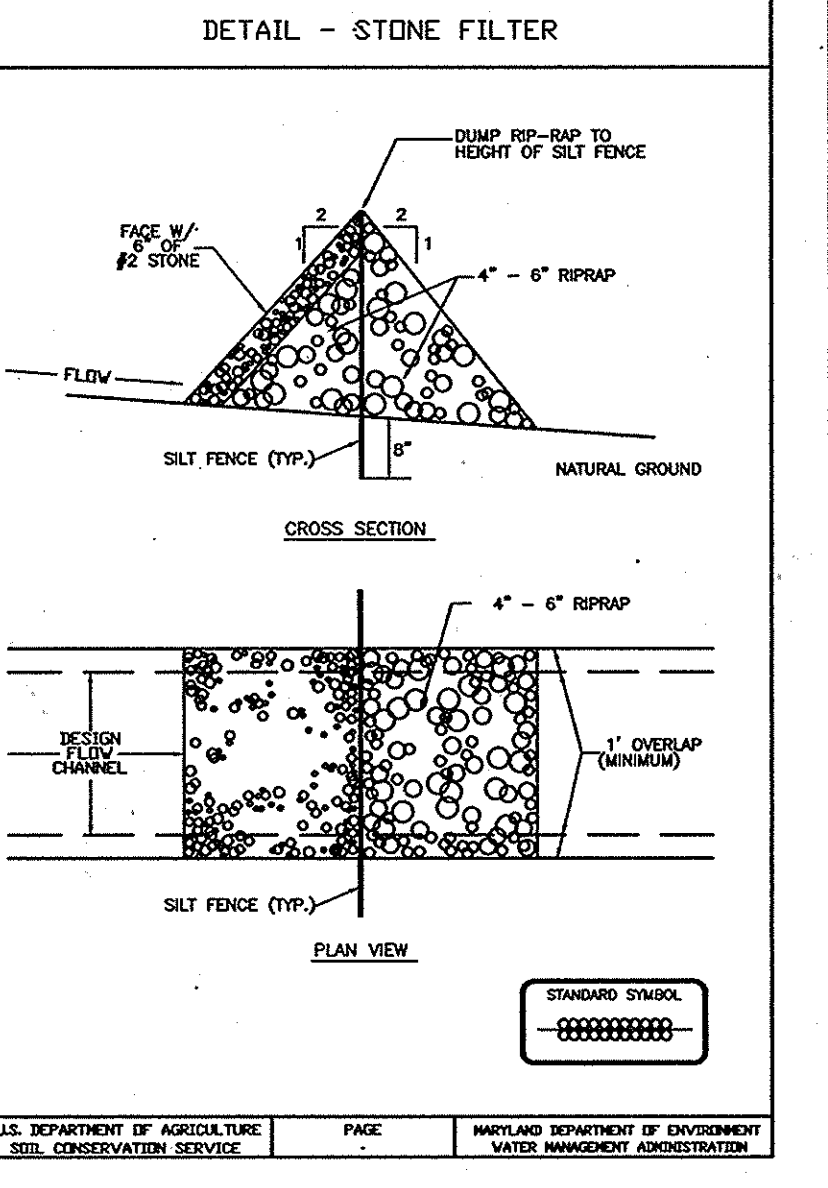
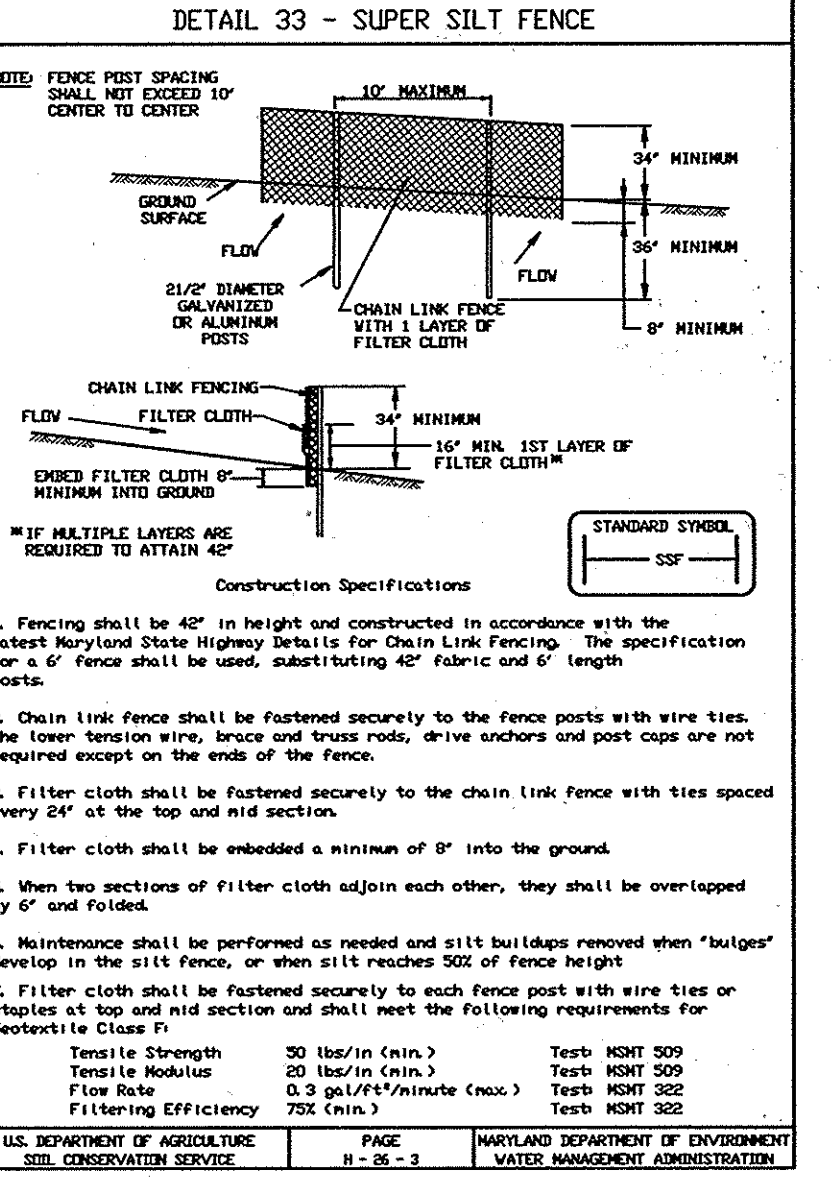
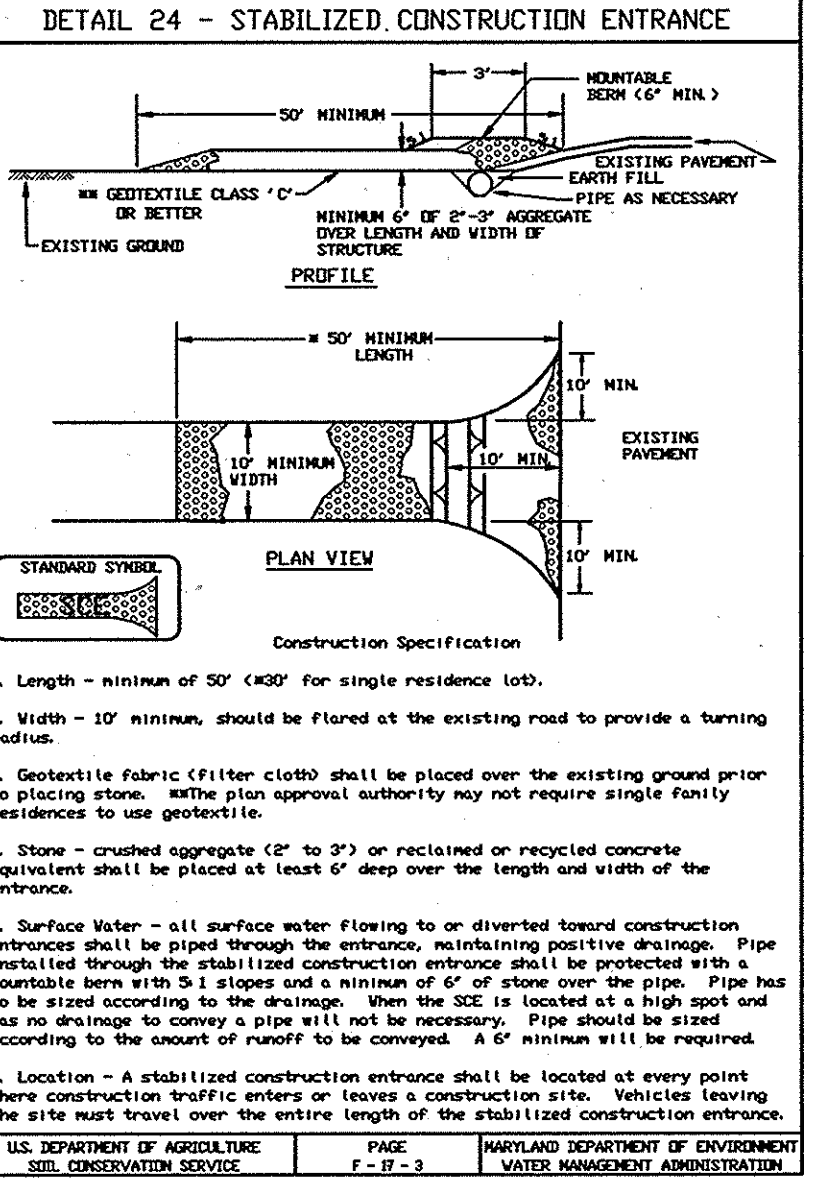
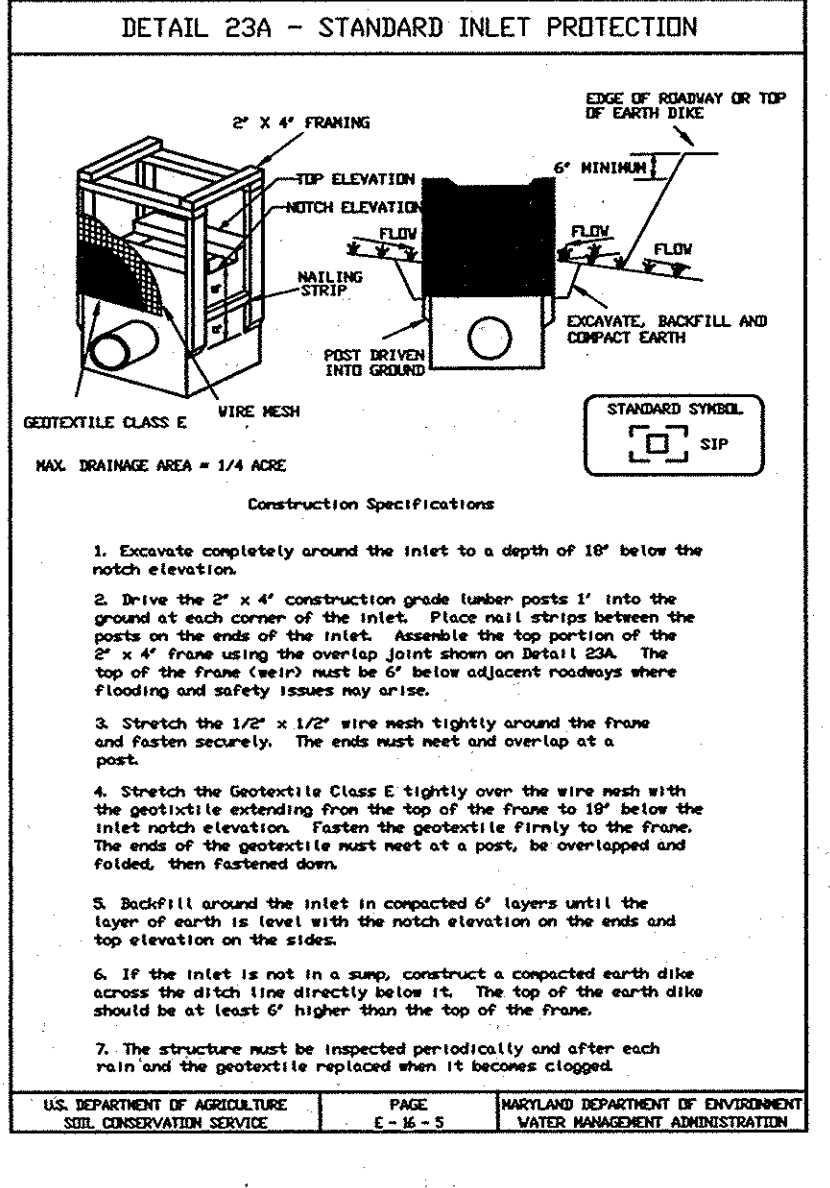
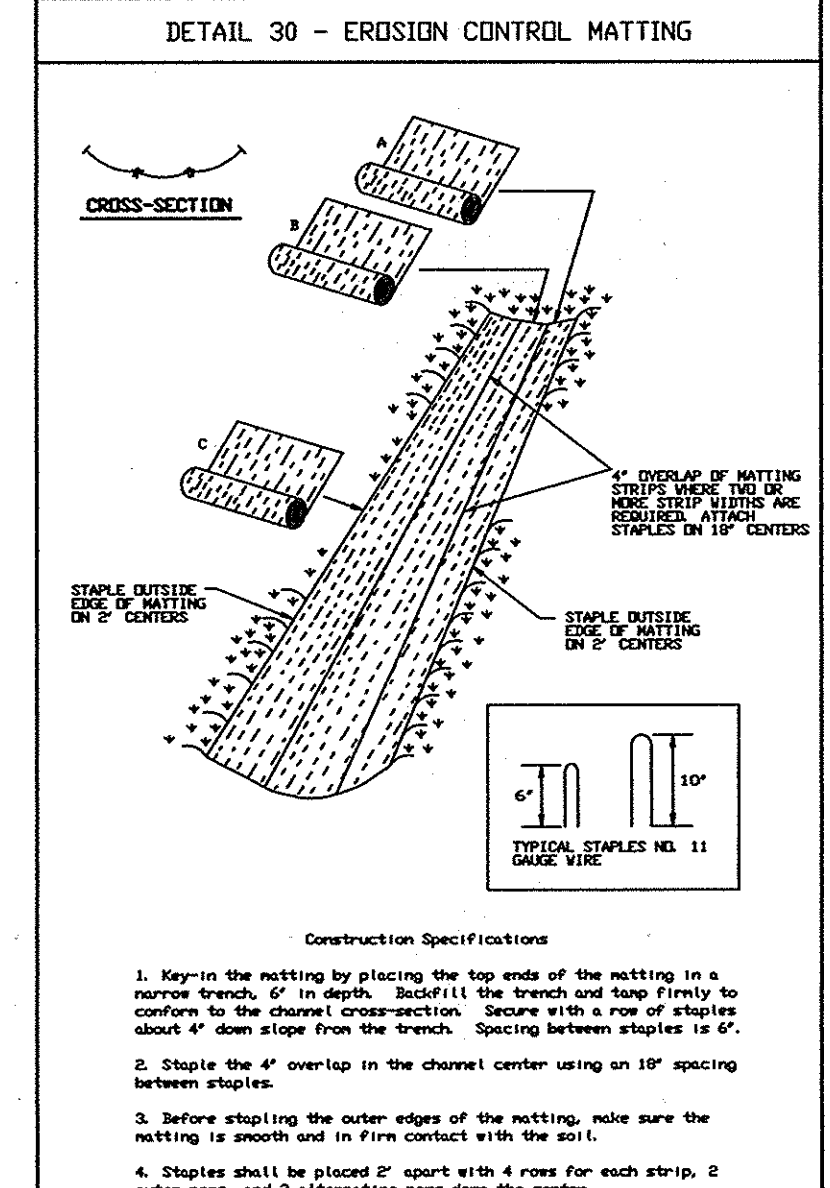
Seeding Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding: For periods March 1–April 30, and from August 15–October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1–August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16–February 28, protect site by applying 2 tons 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/acre (70 to 90 lbs/1000 sq. ft.) of unrattled weed-free, 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 ft. or higher use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional notes and methods not covered.



HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction. (313-1855).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
3. Following initial soil disturbance or redistribution, 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 troughs/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1 Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:

Total Area of Site	1.16 Acres
Area Disturbed	1.41 Acres
Area to be roofed or paved	0.38 Acres
Area to be vegetatively stabilized	1.05 Acres
Total Cut	1,214 Cu. Yds.
Total Fill	454 Cu. Yds.
Off-site waste/borrow area location	N/A

Location must have active grading permit and as approved by inspector.
- 8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- 10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of 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 can be back filled and stabilized within one working day, whichever is shorter.

CALL "MISS UTILITY" AT
1-800-257-7777
48 HOURS BEFORE START OF CONSTRUCTION

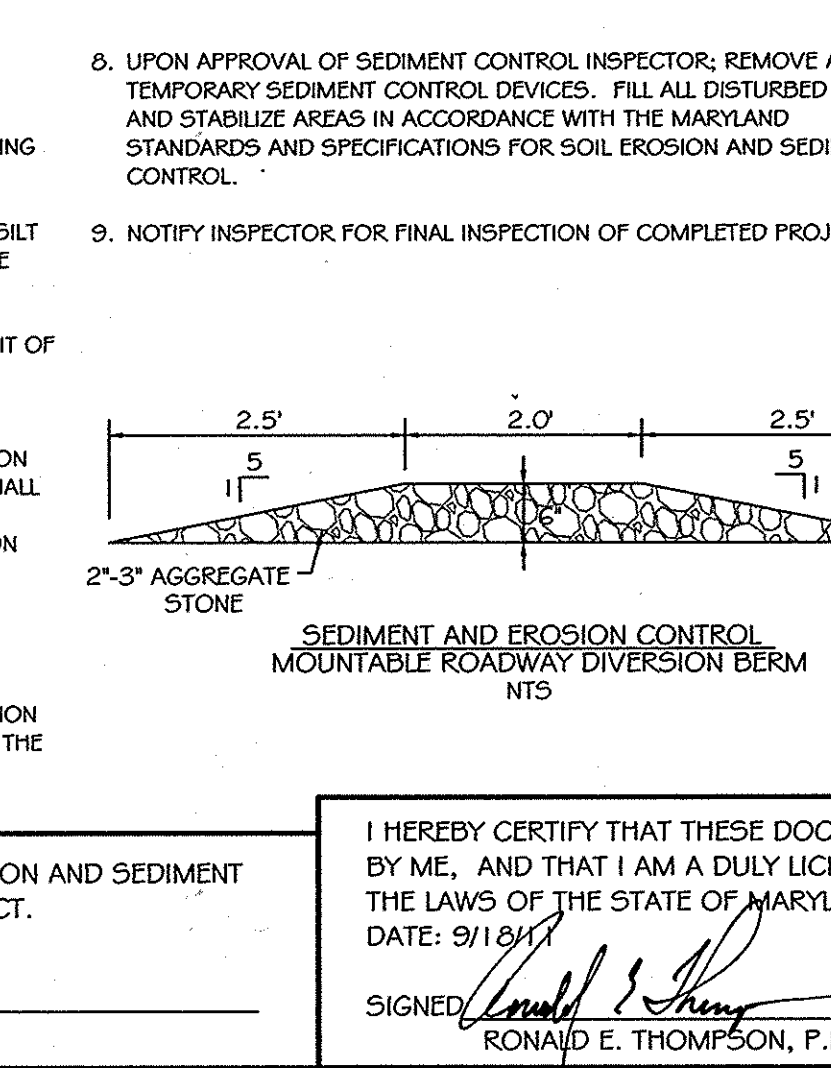
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Kurt Sealander
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 1/12/11

John P. Thompson
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 1/12/11

SEQUENCE OF CONSTRUCTION

1. OBTAIN ALL REQUIRED GRADING, MDE PERMITS, APPROVALS AND LICENSES FROM APPROPRIATE AGENCIES.
2. NOTIFY SEDIMENT CONTROL INSPECTOR AT LEAST THREE (3) WORKING DAYS PRIOR TO STARTING WORK.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCES. INSTALL SUPER SILT FENCE AND OTHER SEDIMENT CONTROL DEVICES AS SHOWN IN THE SEDIMENT CONTROL PLAN.
4. STABILIZE ALL THE GRADED AREAS UP TO 20' OUTSIDE OF THE LIMIT OF GRADING AS PER PERMANENT SEEDING NOTES.
5. COMPLETE ROADWAY GRADING AFTER INSTALLATION OF STORM DRAINS, SANITARY SEWER AND WATER UTILITIES AND CONSTRUCTION THROUGH INITIAL BITUMINOUS PAVING COURSE. CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS PRIOR TO ANY RAIN EVENT. CONTRACTOR SHALL FOLLOW PLANS TO PROVIDE INLET PROTECTION UNTIL FINAL GRADING AND STABILIZATION OF SURROUNDING EMBANKMENTS/FILL AREAS.
6. COMPLETE FINAL ROADWAY PAVING.
7. UPON COMPLETION OF ROADWAY CONSTRUCTION AND STABILIZATION OF DISTURBED AREAS CONSTRUCT RAIN GRADENS AS SHOWN ON THE PLANS.



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 9/1/11

SIGNED *Ronald E. Thompson* DATE 1/12/11
RONALD E. THOMPSON, P.E.

OWNER / DEVELOPER:
GUILD DEVELOPMENT, LLC
4609 LEARNED SAGE COURT
ELICOTT CITY, MD 21042
410-664-1929

DEVELOPER'S CERTIFICATE:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

Donald E. Thompson 1-3-2011
DEVELOPER DATE

ENGINEER'S CERTIFICATE:

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

Ronald E. Thompson 1/12/11
RONALD E. THOMPSON, P.E. DATE

SEDIMENT AND EROSION CONTROL PLAN AND NOTES AND DETAILS

GULFORD LANDING

LOTS 1 - 3 AND OPEN SPACE LOT 4, A RESUBDIVISION OF LOT 6, CONSOLIDATED

NATHANIEL G. BARNES SUBDIVISION (PLAT BOOK 3, PAGES 24-25)

AND LOT B, ISABELLA CORMAN SUBDIVISION (LIBER 577, FOLIO 42) AS RECONFIGURED BY ADJOINER DEED LIBER 12723, FOLIO 032 IN ACCORDANCE WITH WAIVER PETITION WF-10-174

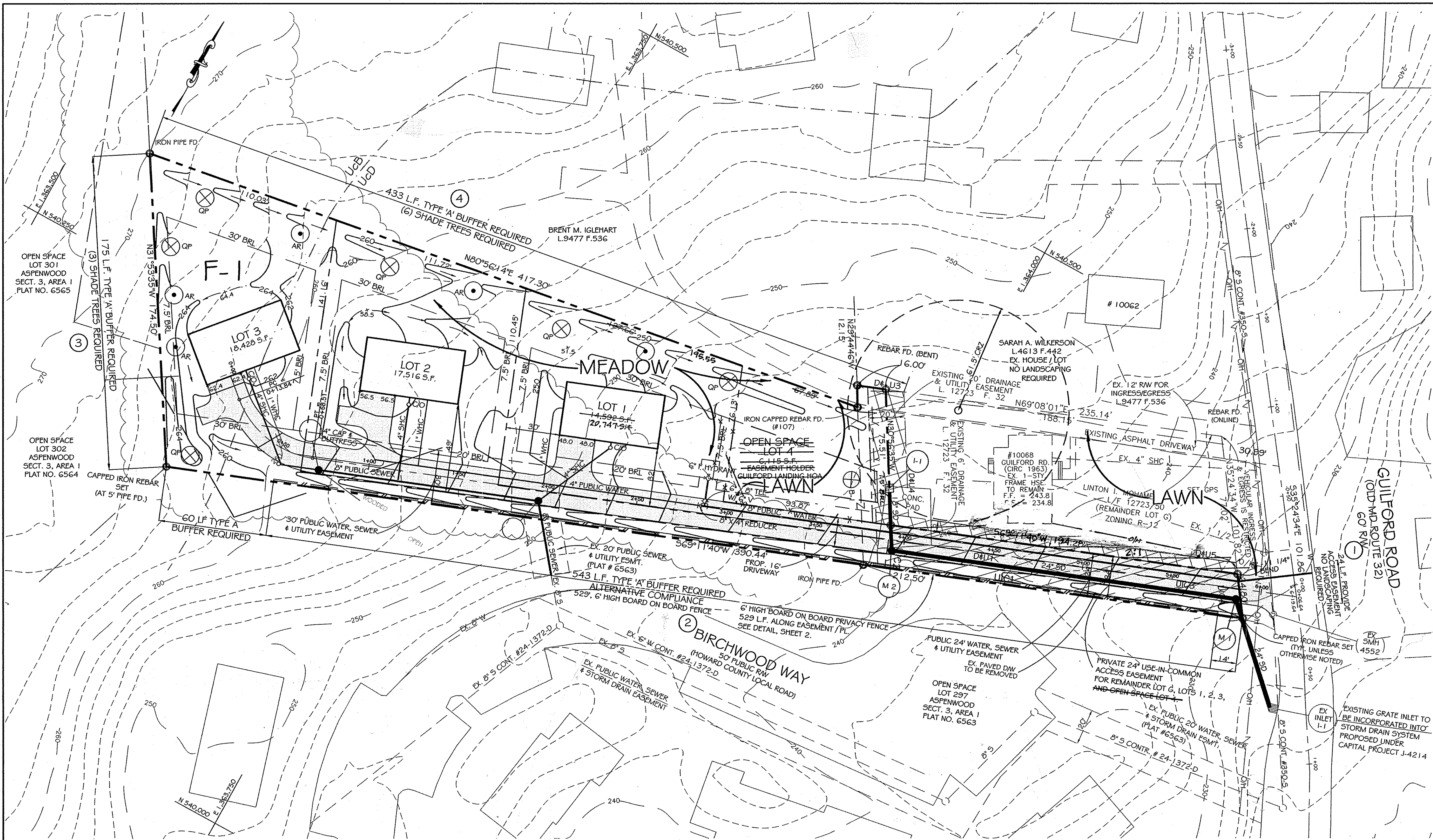
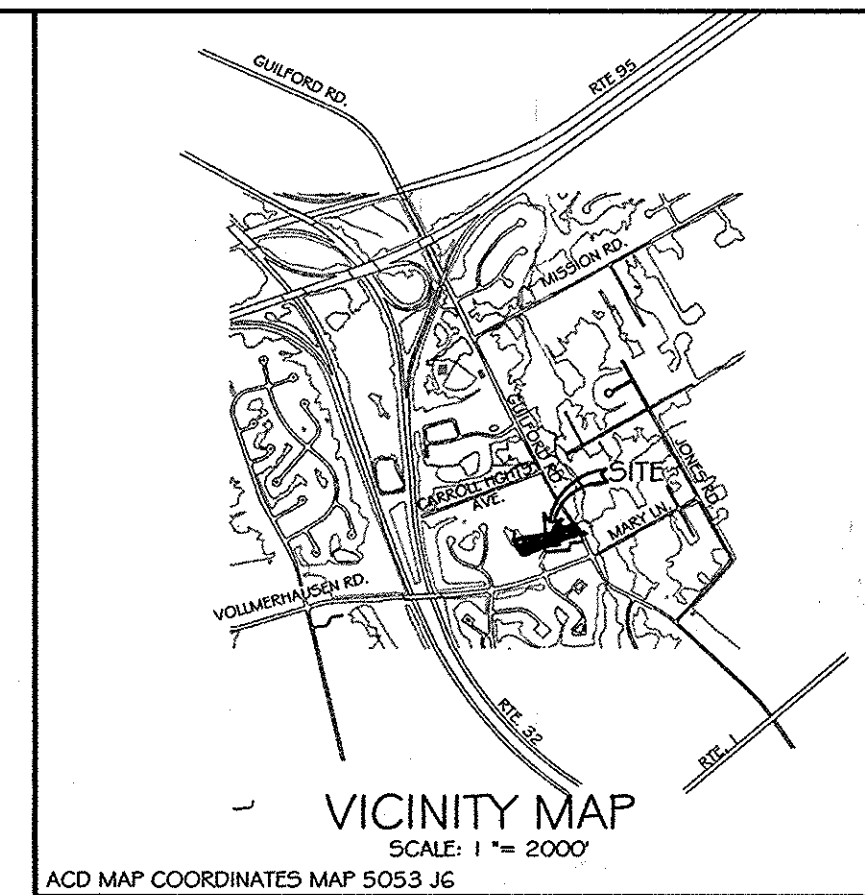
T.M. 47, GRID 6, P/O PARCEL 604
6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND
ZONING: R-12

SCALE: 1" = 30' DATE: AUGUST, 2010

YANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 629-2890 (301) 831-2015 (410) 349-2720
Fax: (301) 831-5603 ©Copyright, Latest Date Shown

SHEET NO. 5 OF 6

STATE OF MARYLAND
DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
SOIL CONSERVATION DISTRICT



Forest Conservation Worksheet 2.0

Net Tract Area		
A. Total Tract Area	A =	1.30
B. Deductions	B =	0.00
C. Net Tract Area	C =	1.30
Land Use Category		
Input the number "1" under the appropriate land use zoning, and limit to only one entry		
ARA	MDR	IDA
0	0	0
HDR	MPD	CIA
0	0	0
Existing Forest Cover		
D. Afforestation Threshold (Net Tract Area x 15%)	D =	0.20
E. Conservation Threshold (Net Tract Area x 20%)	E =	0.26
Existing Forest Cover		
F. Existing Forest Cover within the Net Tract Area	F =	0.84
G. Area of Forest Above Conservation Threshold	G =	0.58
Break Even Point		
H. Break Even Point	H =	0.38
I. Forest Clearing Permitted Without Mitigation	I =	0.46
Proposed Forest Clearing		
J. Total Area of Forest to be Cleared	J =	0.84
K. Total Area of Forest to be Retained	K =	0.00
Planting Requirements		
L. Reforestation for Clearing Above the Conservation Threshold	L =	0.15
M. Reforestation for Clearing Below the Conservation Threshold	M =	0.52
N. Credit for Retention above the Conservation Threshold	N =	0.00
P. Total Reforestation Required	P =	0.67
Q. Total Afforestation Required	Q =	0.00
R. Total Planting Requirement	R =	0.67

NARRATIVE FOR FOREST STAND 'F-1'
 ONE FOREST STAND WAS DELINEATED ON THE SUBJECT SITE. THIS STAND WAS DESIGNATED STAND 'F-1'. THIS STAND IS DOMINATED BY RED MAPLE WITH HICKORY BEING CO-DOMINATE. OTHER SPECIES IDENTIFIED DURING THE SITE VISIT INCLUDE TULIP POPLAR, BLACK CHERRY, MULBERRY, SYCAMORE, AMERICAN HOLLY AND SILVER MAPLE. HERBACEOUS VEGETATION IDENTIFIED WITHIN STAND 'F-1' INCLUDED RASPBERRY, POISON IVY, POKEWEEED, SMARTWEED AND NETTLES. THIS FOREST STAND PROVIDES A WOODED CORRIDOR BETWEEN THE SUBJECT PROPERTY AND THE ADJACENT ASPENWOOD TOWNHOUSES.

NO INVASIVE, RARE, THREATENED OR ENDANGERED PLANT OR ANIMAL SPECIES WERE IDENTIFIED DURING THE FIELD RECONNAISSANCE. THE OVERALL CONDITION OF STAND 'F-1' CAN BE CLASSIFIED AS GOOD.

SPECIMEN TREES
 ONLY ONE (1) SPECIMEN TREE WAS IDENTIFIED ON THE SUBJECT SITE. A 4 1/2" DBH WHITE OAK WAS IDENTIFIED DIRECTLY BEHIND THE EXISTING HOUSE. THIS SPECIMEN TREE IS NOT LOCATED WITHIN STAND 'F-1'. THE SPECIMEN TREE IS SURROUNDED BY THE EXISTING ASPHALT PARKING PAD LOCATED BEHIND THE EXISTING HOUSE. THE TREE APPEARS TO BE EXPERIENCING STRESS FROM THE SURROUNDING ASPHALT AND VEHICLES THAT DRIVE AND PARK NEAR IT. THE SPECIMEN TREE CAN BE CLASSIFIED AS BEING IN FAIR CONDITION.

SPECIMEN TREE
DO NOT REMOVE

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS PROHIBITED

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991

PROFESSIONAL DNR CERTIFICATION

SIGNED: *David A. Adams* DATE: 1/3/11

DAVID A. ADAMS
 LICENSED LANDSCAPE ARCHITECT NO. 569

GROSS AREA OF SITE: 1.30 ACRES
 AREA OF ONSITE 100 YEAR FLOODPLAIN: 0.0 ACRES
 NET TRACT AREA: 1.30 ACRES

SOILS TABLE
 ACCORDING TO THE LATEST HOWARD COUNTY SOIL SURVEY (MDO27), ALL ONSITE SOILS ARE CLASSIFIED AS URBAN LAND - CHILLUM - BELTSVILLE COMPLEX (UcB & Ucd)
 7% - 15% SLOPES.

GENERAL NOTES:
 1. ADJACENT LAND USES ARE RESIDENTIAL ATTACHED AND SINGLE FAMILY DETACHED USES.
 2. THE OWNER/ DEVELOPER WILL PAY A FEE-IN-LIEU OF PROVIDING THE REQUIRED 0.67 ACRES OF REFORESTATION ON THIS SITE. THE REQUIRED FEE WILL BE 0.67 ACRES X 43,560 S.F./ACRE = 29,185 S.F. X \$0.75/ S.F. = \$21,889.00

OWNER / DEVELOPER:
 GUILD DEVELOPMENT, LLC
 1600 LEARNED SAGE COURT
 BELLEFONTAINE, MD. 21042
 410-604-1920

CINNABAR DRIVE, LLC
 5300 DORSEY HALL DR. #107
 BELLEFONTAINE, MD 21042
 443-367-0422

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

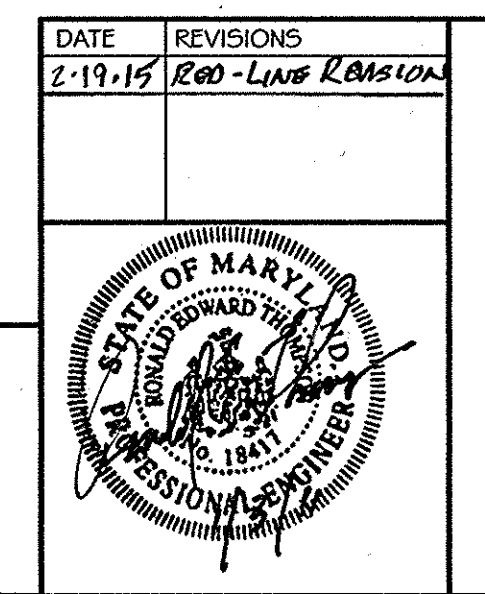
Kat Sheehan 1/12/11
 CHIEF, DIVISION OF LAND DEVELOPMENT

David Adams 1/12/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

CALL "MISS UTILITY" AT
 1-800-257-7777
 48 HOURS BEFORE START OF CONSTRUCTION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 9/1/11

SIGNED: *Ronald E. Thompson* DATE: 1/3/11
 RONALD E. THOMPSON, P.E.



FOREST STAND DELINEATION / CONSERVATION PLAN AND SOILS MAP
GUILFORD LANDING

LOTS 1 - 3 AND OPEN SPACE LOT 4, A RESUBDIVISION OF LOT 6, CONSOLIDATED WITH PARCELS C - BARNES SUBDIVISION (PLAT BOOK 3, FOLIO 24) AND LOT B, ISABELLA CORMAN SUBDIVISION (LIBER 577, FOLIO 42) AS RECONFIGURED BY ADJOINER DEED LIBER 12723, FOLIO 032 IN ACCORDANCE WITH WAIVER PETITION WF-10-174.

T.M. 47, GRID 6, P/O PARCEL 604
 6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND
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SHEET NO. 6 OF 6
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