

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT PLAN
3	SEDIMENT & EROSION CONTROL NOTES & DETAILS

SOILS LEGEND				
SOIL	NAME	CLASS	K FACTOR	
ChC	Chillum-Russell loams, 5 to 10 percent slopes	B	0.28	
ChB	Chillum loams, 2 to 5 percent slopes	B	0.28	
FA	Fallingston sandy loams, 0 to 2 percent slopes	B	0.24	
SAC	Staarfras loams, 5 to 10 percent slopes	B	0.24	
Ud	Urban land-Staarfras-Beltville complex, 0 to 5 percent slopes	C	0.24	
Ud	Urban land-Staarfras-Beltville complex, 5 to 1 percent slopes	C	0.24	

Minimum Lot Size Chart			
Lot No.	Gross Area	Pipestem Area	Minimum Lot Size
1	21,566 Sq. Ft.	1,565 Sq. Ft.	20,001 Sq. Ft.
2	21,566 Sq. Ft.	1,565 Sq. Ft.	20,001 Sq. Ft.

ADDRESS CHART	
LOT #	STREET ADDRESS
1	5442 KERGER ROAD
2	5444 KERGER ROAD

TAX MAP No. 31 GRID No. 20 PARCEL NO. 867  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

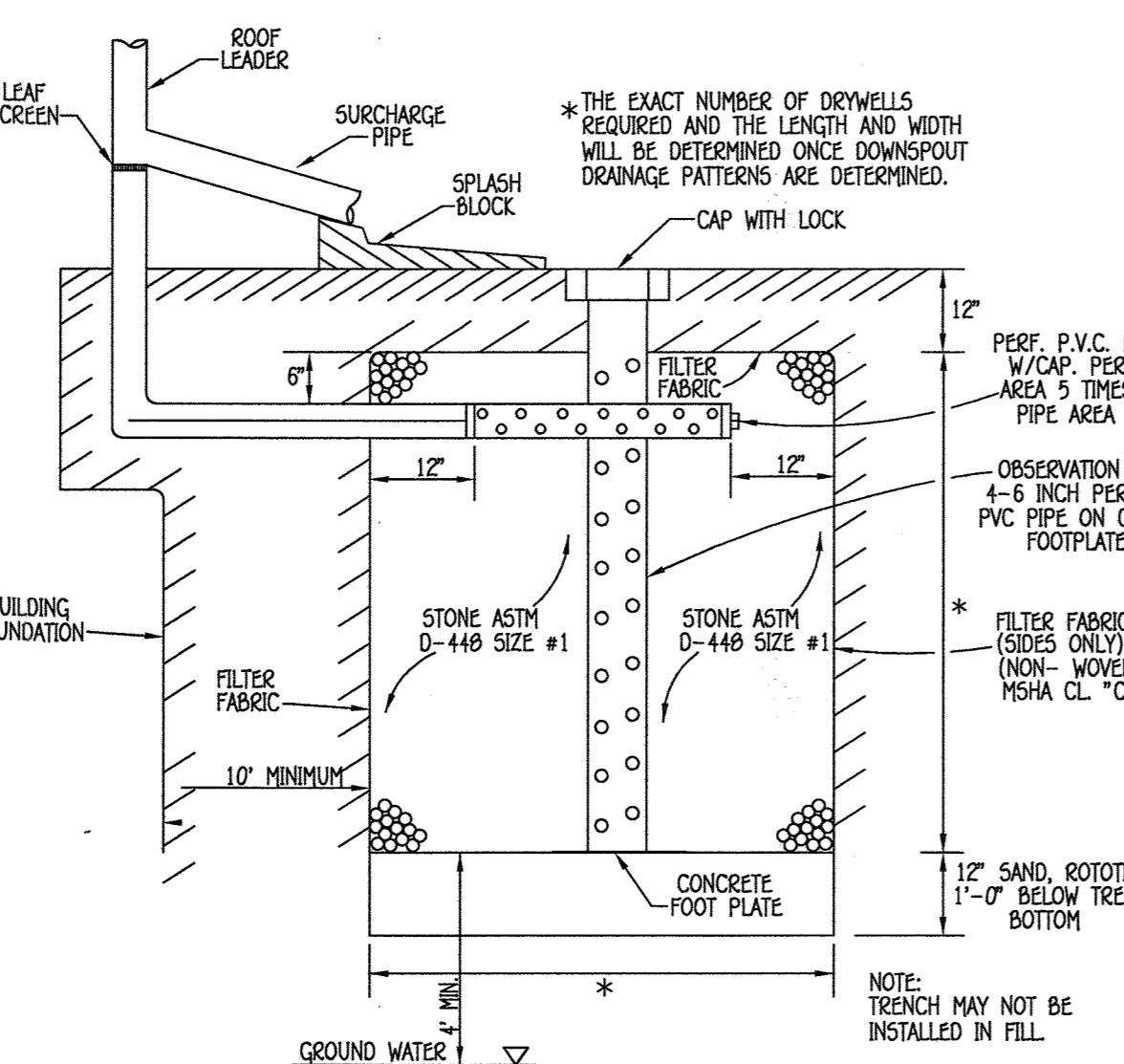
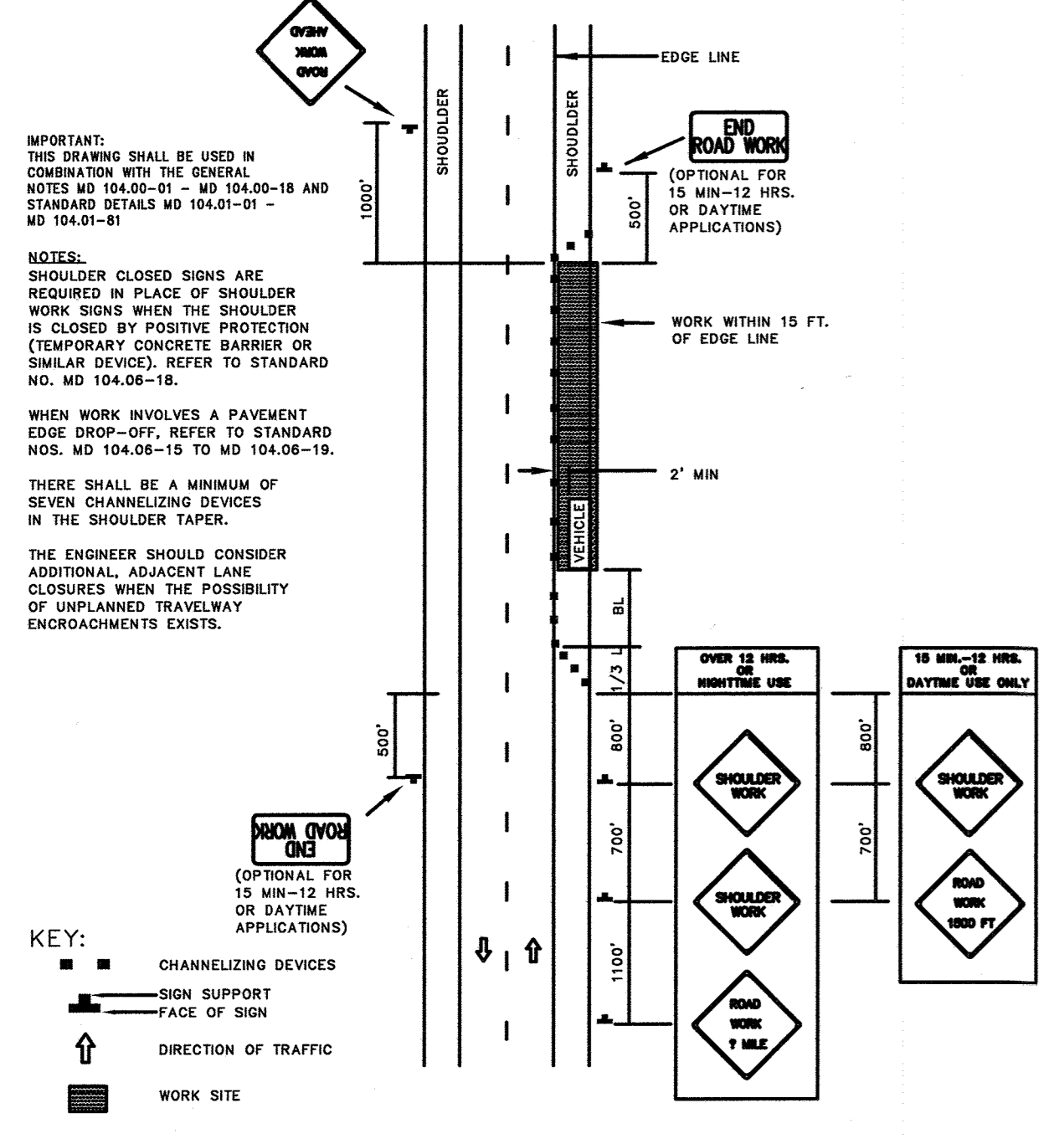
LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING 2' CONTOURS		PROPOSED CONTOUR
	EXISTING 10' CONTOURS		LIMITS OF DISTURBANCE
	SOILS LINES AND TYPE		DRAINAGE AREA DIVIDE
	EXISTING TREELINE		SILT FENCE
	INDIVIDUAL TREES & SHRUBS		EROSION CONTROL MATTING
	EXISTING FENCE LINE		STABILIZES CONSTRUCTION ENTRANCE
	EXISTING & PROPOSED PAVING		

STORMWATER MANAGEMENT SUMMARY			
AREA ID.	ESD PROVIDED CU.FT.	ESD REQUIRED CU.FT.	REMARKS
SITE	1,128	723	DRY WELL (M-5), ROOFTOP DISCONNECTION (N-1) & NON-ROOFTOP DISCONNECTION (N-2)
TOTAL	1,128	723	

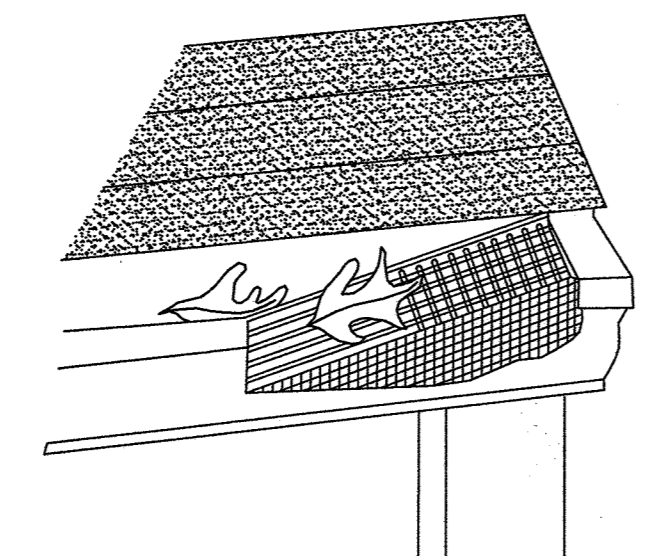
GROSS AREA = 0.96 ACRES  
 LOD = 1.01 ACRES  
 RCN = 55  
 TARGET Pe = 1.2'

STORMWATER MANAGEMENT PRACTICES				
LOT NO.	ADDRESS	DRY WELLS (M-5) Y/N, NUMBER	DISCONNECTION OF ROOFTOP RUNOFF (N-1) Y/N, NUMBER	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) Y/N, NUMBER
1	5442 KERGER ROAD	YES, 2	YES, 3	-
2	5444 KERGER ROAD	YES, 1	YES, 3	YES, 1

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION  
 MOT STANDARD MD 104.02-01



DRY WELL DETAIL (M-5)  
 NOT TO SCALE



GUTTER DRAIN FILTER DETAIL  
 NOT TO SCALE

STORMWATER MANAGEMENT NOTES

- STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
- MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DRYWELL SHALL BE 1,000 SQ. FT. OR LESS.
- DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 3% THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.
- FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

DRY WELL CHART						
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	W
(2)	870 SQ. FT.	83 C.F.	200 C.F.	100%	10' x 10' x 5'	
(1)	975 SQ. FT.	93 C.F.	188 C.F.	100%	8' x 8' x 5'	
(1)	975 SQ. FT.	207 C.F.	221 C.F.	100%	10.5' x 10.5' x 5'	

\* AREA OF TREATMENT EXCEEDED THAT REQUIRED



VICINITY MAP  
 SCALE: 1" = 1200'

BENCHMARK INFORMATION		
B.M.#1 - HOWARD COUNTY CONTROL STATION #31GD - HORIZONTAL - (NAD '83)	N 566,299.8736	E 1,372,013.9484
	ELEVATION = 419.34 - VERTICAL - (NAVD '86)	
B.M.#2 - HOWARD COUNTY CONTROL STATION #31R1 - HORIZONTAL - (NAD '83)	N 565,303.5115	E 1,372,517.7020
	ELEVATION 400.93 - VERTICAL - (NAVD '86)	

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)

- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 41,641 SQ.FT. OR 0.96 AC.+
- LIMIT OF DISTURBED AREA = 43,876 SQ.FT. OR 1.00 AC.+
- PRESENT ZONING DESIGNATION = R-20 (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- PROPOSED USE: RESIDENTIAL
- PREVIOUS HOWARD COUNTY FILES: P-93-01, S-90-09, F-94-99, F-94-99, F-10-092, ECP-11-024, F-12-043, AND WF-12-162
- TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC
- TOTAL AREA OF SLOPES IN EXCESS OF 15% TO 24.99% = 0.00 AC+
- TOTAL AREA OF SLOPES IN EXCESS OF 25% OR GREATER = 0.00 AC+
- TOTAL AREA OF WETLANDS (INCLUDING BUFFERS) = 0.00 AC+
- TOTAL AREA OF STREAM (INCLUDING BUFFERS) = 0.00 AC+
- TOTAL AREA OF EXISTING FOREST = 0.00 AC+
- TOTAL AREA OF FOREST TO BE RETAINED = 0.00 AC+
- TOTAL AREA OF LOTS / BUILDABLE PARCELS = 0.96 AC+
- TOTAL GREEN OPEN AREA = 0.73 AC+
- TOTAL IMPERVIOUS AREA = 0.23 AC+
- TOTAL AREA OF ERODIBLE SOILS = 0.00 AC+

Table B.4. Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration

Material	Specification	Size	Notes
Plantings	see Appendix A; Table A.4	n/a	plantings are site-specific
Planting soil (2' to 4' deep)	loam sand 60-95% compost 35-40% or sandy loam 30% coarse sand 30% compost 40%		USDA soil types loamy sand or sandy loam; clay content <5%
Organic Content	Min. 10% by dry weight (ASTM D 2974)		aged 6 months, minimum
Mulch	shredded hardwood		
Pea gravel diaphragm	pea gravel: ASTM-D-448	No. 8 or No. 9 (1/8" to 3/8")	
Curbside drain	ornamental stone: washed cobble	stone: 2" to 5"	
Geotextile		n/a	PE Type I nonwoven
Gravel (underdrains and infiltration beds)	AASHTO M-43	No. 57 or No. 99 (3/8" to 3/4")	
Underdrain piping	F 750, Type 25 PVC or AASHTO M-279	4" to 6" rigid schedule 40 PVC or 60825	slotted or perforated pipe; 3/8" perf. @ 8" on center; 4 holes per row minimum of 2" of gravel over pipe; not necessary underneath pipe. Perforated pipe shall be wrapped with 1/4" inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f = 3500 psi @ 28 days, normal weight.	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 site 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 318.4.2(c); vertical loading 8k-10 or H-200; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Granite (AASHTO #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

**OWNER**  
 CRAIG J. MORRIS  
 5482 BADEL COURT  
 ELICOTT CITY MD 21042  
 410-461-6771

**BUILDER**  
 VIKING CUSTOM HOMES  
 Cary Cumberland  
 1715 Archers Glen  
 Sykesville, Maryland 21784  
 410-977-2106

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 14672 SALTSTONE NATIONAL Pk  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461 - 8899

NO.	REVISION	DATE
2	REMOVE SPECIMEN TREE ON LOT 1 - SHEET 2	3/7/17
1	REVISION DEVELOPER FOR LOT 1 TREE AND RAMP SIGN PRACTICES CH	7/9/19

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

*John R. Roberts* 3/7/17  
 HOWARD SCD DATE

**PROFESSIONAL CERTIFICATION**  
 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. 36366, EXPIRATION DATE: 01/12/2018.

*Stephen J. Tite* 3/7/17  
 Signature of Professional Engineer DATE

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

*Tom C. Lombard* 3-7-17  
 SIGNATURE OF DEVELOPER DATE

**ENGINEER'S CERTIFICATE**  
 "I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

*Stephen J. Tite* 3/7/17  
 SIGNATURE OF ENGINEER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Natasha J. Miller* 4-6-17  
 Director - Department of Planning and Zoning DATE

*Victoria Seidman* 4-5-17  
 Chief, Division of Land Development DATE

*Phil Smith* 3-31-17  
 Chief, Development Engineering Division DATE

PROJECT: BOOWOODS LOTS 1 AND 2

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22693	20	R-20	31	FIRST	601104

TITLE SHEET

BOOWOODS

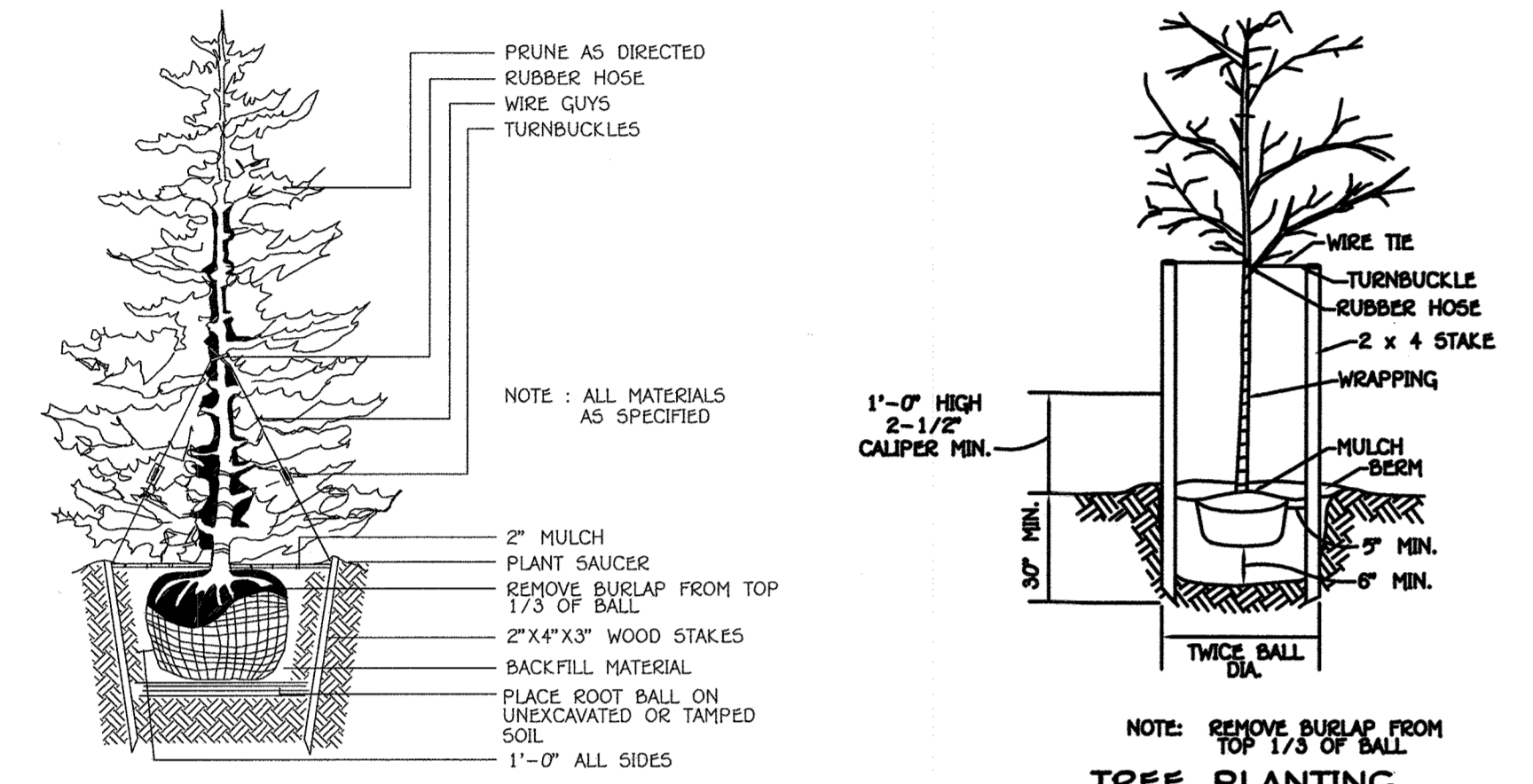
LOTS 1 AND 2  
 ZONED R-20

TAX MAP No. 31 GRID No. 21 PARCEL NO. 867  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: FEBRUARY 2017  
 SHEET 1 OF 3

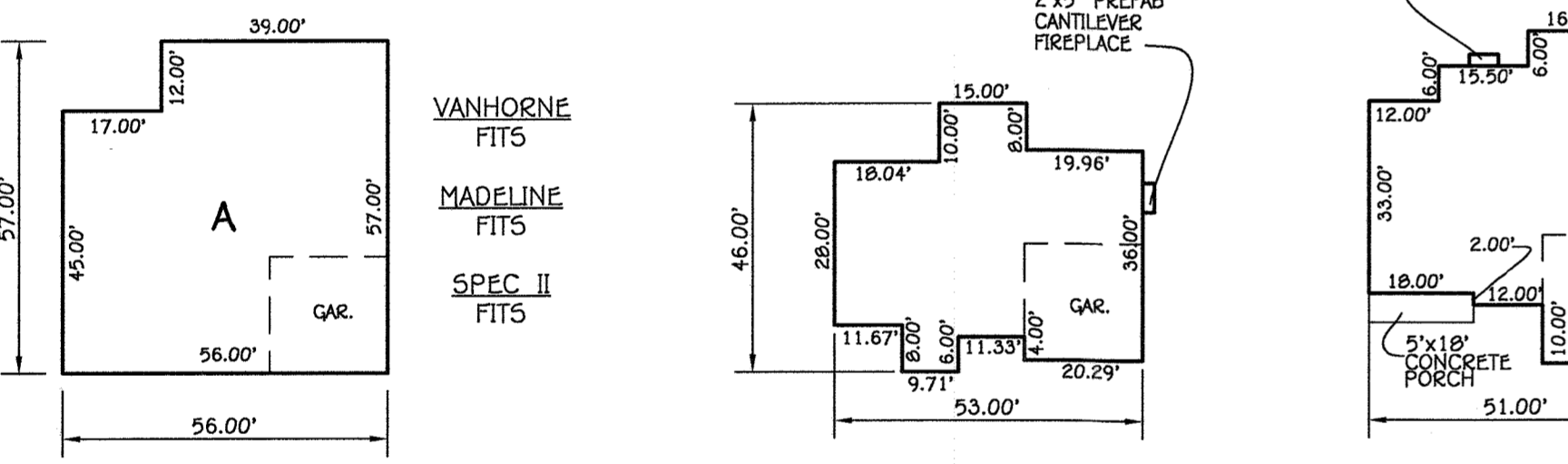
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SCHEDULE A - PERIMETER LANDSCAPE EDGE					
PERIMETER CATEGORY	P-1 ADJACENT TO PERIMETER PROPERTIES	P-2 ADJACENT TO ROADWAY	P-3 ADJACENT TO PERIMETER PROPERTIES	SPECIMEN TREE REPLACEMENT	TOTAL
LANDSCAPE TYPE	A	N/A	A		
LINEAR FEET OF PERIMETER	233 L.F.	142 L.F.	230 L.F.		
NUMBER OF PLANTS REQUIRED	4	0	4		8
SHADE TREES	(233'/60" = 3.9 OR 4)	0	(230'/60" = 3.9 OR 4)		0
EVERGREEN TREES					0
CREDIT FOR EXISTING VEGETATION	4	0	4		8
SHADE TREES	2:1	0	0		0
SMALL/MEDIUM DECIDUOUS TREES (SUBSTITUTION)					0
NUMBER OF PLANTS PROVIDED	7	0	0	2	2
SHADE TREES					4
EVERGREEN TREES					4

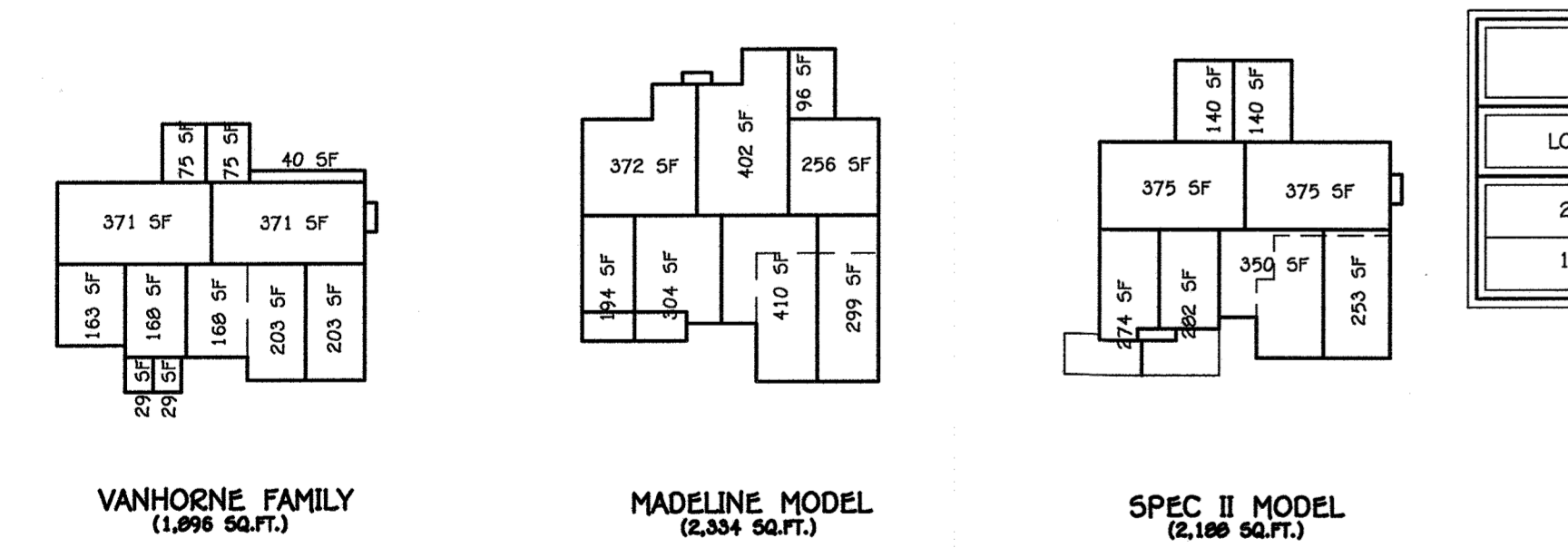
\* NOTE: CREDIT TAKEN FOR EIGHT (8) EXISTING SHADE TREES. A 3" BEECH, A 2" TULIP POPLAR, A 3" BLACK GUM, AND 6" BLACK GUM ARE CREDITED ALONG P-1 AND A 6" BLACK GUM, A 18" MAPLE, A 4" MULBERRY, AND A 3" CHERRY ARE CREDITED ALONG PERIMETER P-3.



TYPICAL EVERGREEN TREE PLANTING DETAIL  
NOT TO SCALE



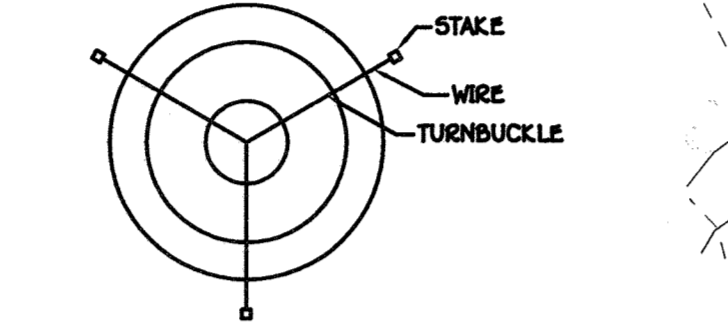
GENERIC BOX SCALE: 1" = 30'  
NOTE: SWM HAS BEEN SIZED BASED ON 2,344 SQ.FT. WHICH IS THE LARGEST MODEL FOOTPRINT (MADELINE MODEL)



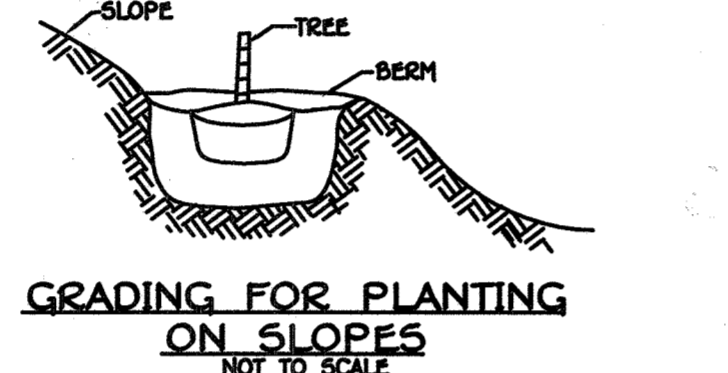
ROOF DRAINAGE AREAS SCALE: 1" = 30'

OWNER	BUILDER	REVISION	DATE
CRAIG J. MORRIS 5420 RADEL COURT ELLCOTT CITY MD 21042 410-461-6771	VIKING CUSTOM HOMES Cary Cumberland 1719 Archers Glen Sykesville, Maryland 21784 410-977-2188		
FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SOURCE OFFICE PARK - 1822 BALTIMORE NATIONAL PIKE ELLCOTT CITY, MARYLAND 21042 (410) 461-2895		REMOVE SPECIMEN TREE ON LOT 1	2/27/20
		REMOVE SPECIMEN TREE ON LOT 1	7/9/16

LANDSCAPING PLANT LIST				
QTY.	KEY	NAME	SIZE	
1		ACER RUBRUM 'OCTOBER GLORY' (OCTOBER RED MAPLE)	2 1/2" - 3" CALIPER FULL CROWN, B&B	
1		PRUNUS SARGENTII (SARGENT CHERRY)	2 1/2" - 3" CALIPER FULL CROWN, B&B	
4		THUJA STANDISHII X PULICATA (GREEN GIANT ARBOVITAE)	5'-6" HT. B&B	
TOTAL: 2 SHADE TREES, 4 EVERGREEN TREES				



STAKING DETAIL  
NOT TO SCALE



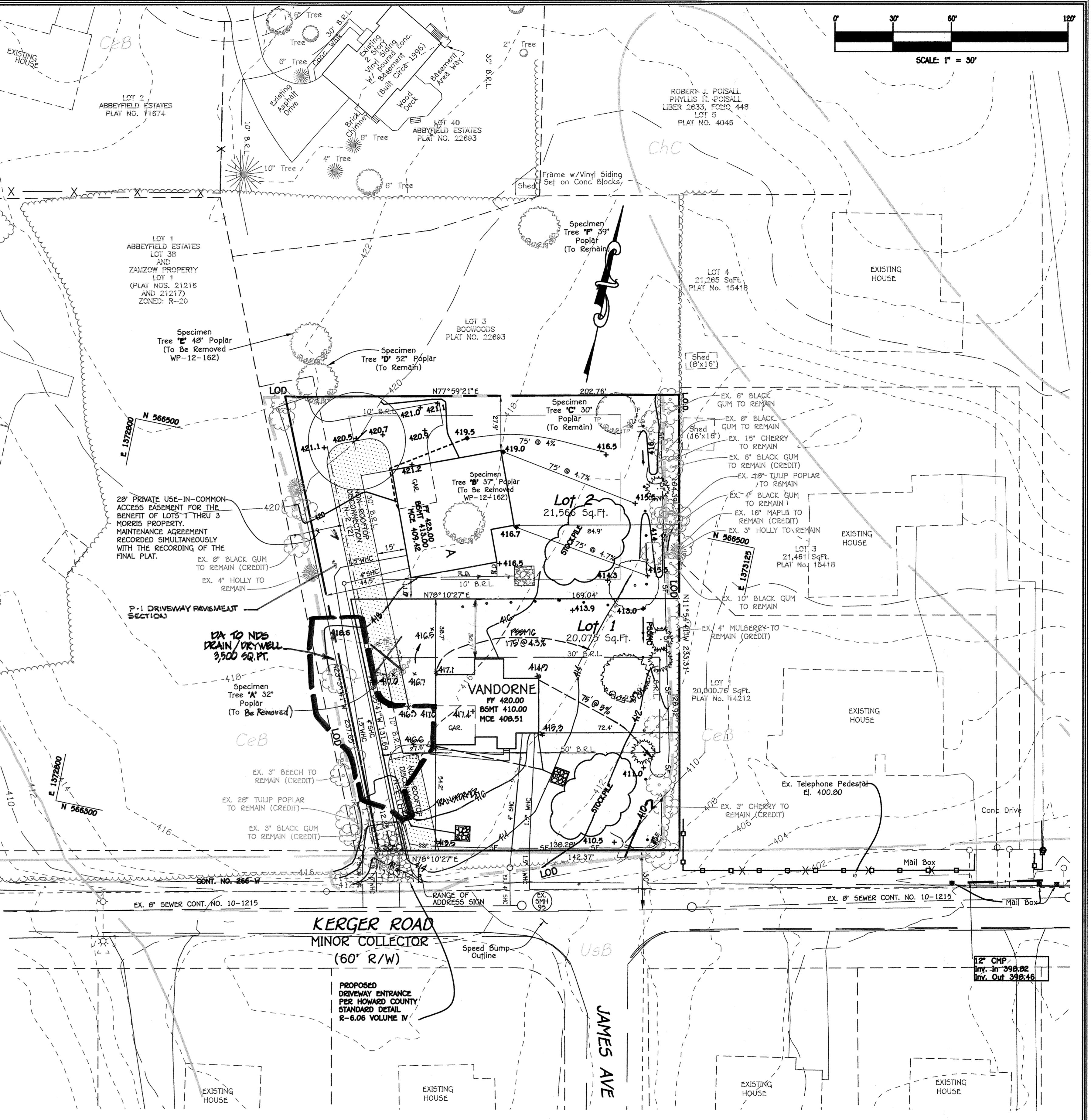
GRADING FOR PLANTING ON SLOPES  
NOT TO SCALE

SEWER HOUSE CONNECTION CHART						
LOT	ELEVATION AT MAIN	ELEVATION AT R/W	ELEVATION AT CO	ELEVATION AT HOUSE	MCE	BSE
2	402.07	402.65	405.49	405.92	409.42	413.00
1	403.37	403.55	403.65	405.01	408.51	410.00

DEVELOPER'S / BUILDER'S CERTIFICATE  
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

*Craig K. Cumberland*  
DATE: 3-7-17

PROFESSIONAL CERTIFICATION  
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. 36386, EXPIRATION DATE: 01/12/2018.  
*Stephanie Witte* 3/7/17  
DATE: 3/7/17



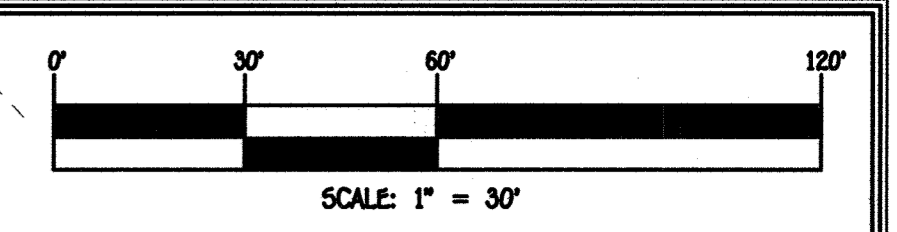
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*Craig K. Cumberland* 3-7-17  
DATE: 3-7-17

ENGINEER'S CERTIFICATE  
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*Stephanie Witte* 3/7/17  
DATE: 3/7/17

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Walter J. Jolly* 4-6-17  
DATE: 4-6-17  
Director - Department of Planning and Zoning  
*Ken C. Cawley* 4-5-17  
DATE: 4-5-17  
Chief, Division of Land Development  
*Chris Edmunds* 3-31-17  
DATE: 3-31-17  
Chief, Development Engineering Division

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22693	20	R-20	31	FIRST	601104

SITE DEVELOPMENT PLAN  
BOOWOODS  
LOTS 1 AND 2  
ZONED R-20  
TAX MAP No. 31 GRID No. 21 PARCEL No. 067  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: FEBRUARY 2017  
SHEET 2 OF 3  
SDP-17-016



SCALE: 1" = 30'

