INFILTRATION AND FILTER SYSTEM CONSTRUCTION SPECIFICATIONS

INFILTRATION AND FILTER SYSTEMS EITHER TAKE ADVANTAGE OF EXISTING PERMEABLE SOILS OR CREATE A PERMEABLE MEDIUM SUCH AS SAND FOR MCD, AND RR Y IN SOME INSTANCES WHERE PERMEABILITY IS LOW. THESE FACILITIES MAY BE USED FOR UP AS WELL. THE MOST COMMON SYSTEMS INCLUDE: INFILTRATION TRENCHES, INFILTRATION BASINS, SAND FILTERS, AND ORGANIC FILTERS. WHEN PROPERLY PLANTED, VEGETATION WILL THRIVE AND ENHANCE THE FUNCTIONING OF THESE SYSTEMS. FOR EXAMPLE, FILTER STRIPS WILL TRAP SEDIMENTS THAT OFTEN ARE BOUND WITH PHOSPHOROUS AND METALS. VEGETATION PLANTED IN THE FACILITY WILL AID IN NUTRIENT UPTAKE AND WATER STORAGE. ADDITIONALLY, PLANT ROOTS WILL PROVIDE INTERIORS FOR STORMWATER TO PERCOLATE SOIL FOR GROUNDWATER RECHARGE. FINALLY, SUCCESSFUL PLANTINGS PROVIDE AESTHETIC VALUE AND WILDLIFE HABITAT MAKING THESE FACILITIES MORE DESIRABLE TO THE PUBLIC.

DESIGN CONSTRAINTS:

- > PLANTING BUFFER STRIPS OR AT LEAST 20 FEET WILL CAUSE SEDIMENTS TO SETTLE OUT BEFORE REACHING THE FACILITY, THEREBY REDUCING THE POSSIBILITY OF CLOGGING.
- > DETERMINE AREAS THAT WILL BE SATURATED WITH WATER AND WATER TABLE DEPTH SO THAT APPROPRIATE PLANTS MAY BE SELECTED (HYDROLOGIC MAPS ARE SIMILAR TO BIORETENTION FACILITIES, SEE FIGURE A.5 AND TABLE A.6 FOR PLANTING MATERIAL GUIDANCE)
- > PLANTS KNOWN TO SEND DOWN DEEP TAPROOTS SHOULD BE AVOIDED IN SYSTEMS WHERE FILTER FABRIC IS USED AS PART OF FACILITY DESIGN.
- > TEST SOIL CONDITIONS TO DETERMINE IF SOIL AMENDMENTS ARE NECESSARY
- > PLANTS SHALL BE LOCATED SO THAT ACCESS IS POSSIBLE FOR STRUCTURE MAINTENANCE.
- > STABILIZE NEARBY FLOW AREAS WITH EROSION CONTROL MATS OR SOD.
- > TEMPORARILY DIVERT FLOWS FROM SEEDED AREAS UNTIL VEGETATION IS ESTABLISHED.
- > SEE TABLE A.5 FOR ADDITIONAL DESIGN CONSIDERATIONS.

BIO-RETENTION

SOIL BED CHARACTERISTICS

THE CHARACTERISTICS OF THE SOIL FOR THE BIORETENTION FACILITY ARE PERHAPS AS IMPORTANT AS THE FACILITY LOCATION, SIZE, AND TREATMENT VOLUME. THE SOIL MUST BE PERMEABLE ENOUGH TO ALLOW RUNOFF TO FILTER THROUGH THE MEDIA, WHILE HAVING CHARACTERISTICS SUITABLE TO PROMOTE AND SUSTAIN A VIGOROUS VEGETATIVE COVER CROP. IN ADDITION, MUCH OF THE NUTRIENT POLLUTANT UPTAKE (NITROGEN AND PHOSPHOROUS) IS ACCOMPLISHED THROUGH ABSORPTION AND MICROBIAL ACTIVITY WITHIN THE SOIL PROFILE. THEREFORE, SOILS MUST BALANCE THESE CHEMICAL AND PHYSICAL PROPERTIES TO SUPPORT THESE CONVENTIONS ABOVE AND BELOW GROUND.

THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (LOAM), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 50% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY VOLUME. (ENVIRONMENTAL QUALITY RESOURCES (EQR), 1996; ENGINEERING TECHNOLOGY INC. AND BIOGRANTOR, INC. (ETBA), 1993). SOILS MEETING THE SM, ML, SC CLASSIFICATIONS OR THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5 FT/HR) IS DISCUSSED IN CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS (E.G., JOHNSON GRASS, MUGHORT, NUTSEDGE, AND CANADA THISTLE OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.03-3. SHOULD NOT BE PRESENT IN THE SOILS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 8 TO 10 LIFTS THAT ARE LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET OR TRAVERSED BY DOZER TRACKS). THE SPECIFIC CHARACTERISTICS ARE PRESENTED IN TABLE A.3.

TABLE A.3 PLANTING SOIL CHARACTERISTICS

PARAMETER	VALUE
PH RANGE	5.2 TO 7.00
ORGANIC MATTER	1.5 TO 4.0% (BY WEIGHT)
MAGNESIUM	35 LBS. PER ACRE, MINIMUM
PHOSPHORUS (PHOSPHATE – P2O5)	75 LBS. PER ACRE, MINIMUM
POTASSIUM (POTASH – K2O)	85 LBS. PER ACRE, MINIMUM
SOLUBLE SALTS	500 PPM
CLAY	10 TO 25 %
SILT	30 TO 55 %
SAND	35 TO 60%

MULCH LAYER

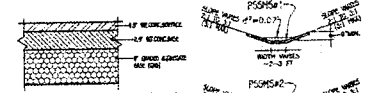
THE MULCH LAYER PLAYS AN IMPORTANT ROLE IN THE PERFORMANCE OF THE BIORETENTION SYSTEM. THE MULCH LAYER HELPS MAINTAIN SOIL MOISTURE AND INHIBIT SURFACE SEALING, WHICH REDUCES PERMEABILITY. MULCH HELPS PREVENT EROSION, AND PROVIDES A MICROENVIRONMENT SUITABLE FOR SOIL BIOTA AT THE MULCH/SOIL INTERFACE. IT ALSO SERVES AS A POLLUTION/TRAPPING LAYER, TRAPPING FINE PARTICLE SEDIMENTS, WHICH REMAIN SUSPENDED AFTER THE PRIMARY PRETREATMENT.

THE MULCH LAYER SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE SHREDDED HARDWOOD MULCH OR CHIPS. THE MULCH LAYER SHOULD BE WELL AGED (STOCKPILED OR COMPOSTED FOR AT LEAST 12 MONTHS), UNIFORM IN COLOR, AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE MULCH SHOULD BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES. GRASS CLIPPINGS SHOULD NOT BE USED AS A MULCH MATERIAL.

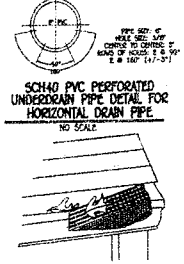
PLANTING GUIDANCE

PLANT MATERIAL SELECTION SHOULD BE BASED ON THE GOAL OF SIMULATING A TERRESTRIAL FORESTED COMMUNITY OF NATIVE SPECIES. BIORETENTION SIMULATES AN LOWLAND-SPECIES ECOSYSTEMS. THE COMMUNITY SHOULD BE DOMINATED BY TREES, BUT HAVE A DISTINCT COMMUNITY OF UNDERSTORY TREES, SHRUBS AND HERBACEOUS MATERIALS BY CREATING A DIVERSE, DENSE PLANT COVER. A BIORETENTION FACILITY WILL BE ABLE TO TREAT STORMWATER RUNOFF AND WITHSTAND URBAN STRESSES FROM INSECTS, DISEASE, DROUGHT, TEMPERATURE, SPILL, AND EXPOSURE.

THE PROPER SELECTION AND INSTALLATION OF PLANT MATERIALS IS KEY TO A SUCCESSFUL SYSTEM. THESE ARE ESSENTIALLY THREE ZONES WITHIN A BIORETENTION FACILITY (FIGURE A.5). THE LOWEST ELEVATION SUPPORTS PLANT SPECIES ADAPTED TO STANDING AND FLUCTUATING WATER LEVELS. THE MIDDLE ELEVATION SUPPORTS PLANTS THAT LIKE DRIER SOIL CONDITIONS, BUT CAN STILL TOLERATE OCCASIONAL INUNDATION BY WATER. THE DRIEST EDGE IS THE HIGHEST ELEVATION AND GENERALLY SUPPORTS PLANTS ADAPTED TO DRIER CONDITIONS. A SAMPLING OF APPROPRIATE PLANT MATERIALS FOR BIORETENTION FACILITIES ARE INCLUDED IN TABLE A.6. THE LAYOUT OF PLANT MATERIAL SHOULD BE FLEXIBLE, BUT SHOULD FOLLOW THE GENERAL PRINCIPALS DESCRIBED IN TABLE A.5. THE OBJECTIVE IS TO HAVE A SYSTEM, WHICH RESEMBLES A GRADUAL AND NATURAL PLANT LAYOUT, WHILE MAINTAINING OPTIMAL CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. FOR A MORE EXTENSIVE BIORETENTION PLANT, CONSULT ETBA, 1993 OR CLAYTON AND SCHUILER, 1997.

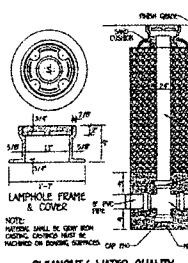


SWALE DETAIL
NO SCALE



SCH40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE
NO SCALE

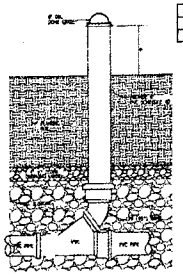
GUTTER DRAIN FILTER DETAIL
NO SCALE



LAMPHOLE FRAME & COVER

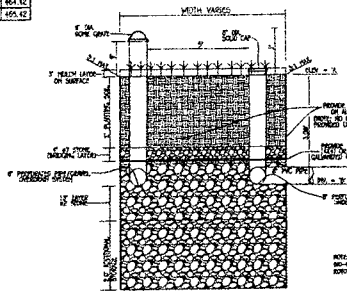
NOTE: MASONRY SHALL BE GROUT BOOM CONCRETE. CAULKING MUST BE MACHINED ON BONDING SURFACES.

CLEANOUT/ WATER QUALITY SAMPLING PORT DETAIL
NO SCALE



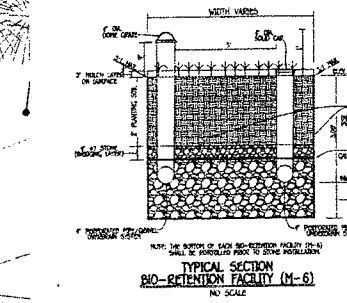
TYPICAL CLEAN-OUT DETAIL
NO SCALE

FACILITY NO.	A	B
F-6 (1)	457.50	464.42
M-6 (1)	459.00	465.42



TYPICAL SECTION MICRO BIO-RETENTION FACILITY (F-6) WITH ADDITIONAL STORAGE TO MANAGE IN EXCESS OF 1 YR. STORM EVENT
NO SCALE

NOTE: THE BOTTOM OF EACH BIO-RETENTION FACILITY (F-6) SHALL BE EXCAVATED PRIOR TO STONE INSTALLATION.



TYPICAL SECTION BIO-RETENTION FACILITY (M-6)
NO SCALE

NOTE: THE BOTTOM OF EACH BIO-RETENTION FACILITY (M-6) SHALL BE EXCAVATED PRIOR TO STONE INSTALLATION.

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL		EXISTING TREE LINE
	EXISTING CONTOUR 10' INTERVAL		PROPOSED TREE LINE
	PROPOSED CONTOUR 10' INTERVAL		DRAINAGE DIVIDE
	PROPOSED CONTOUR 2' INTERVAL		SOIL LINES AND TYPES
	EXISTING FENCE		
X 449.5	SPOT ELEVATION		PERMANENT SOIL STABILIZATION CONTROL MATTING
	EXISTING STORM DRAIN		BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	EXISTING WATER LINE		
	EXISTING SEWER LINE		PROPOSED ROOF LEADER
	EXISTING OVERHEAD WIRE		DENOTES EXISTING TREES TO BE REMOVED
	PRIVATE UIE EASEMENT		
	PRIVATE DRAINAGE & UTILITY EASEMENT		DENOTES EXISTING TREES TO REMAIN
	LIMIT OF DISTURBANCE		
SSF / TP	SUPER SILT FENCE/TREE PROTECTION FENCE		SPECIMEN TREE CRITICAL ROOT ZONE
DF / TP	DIVERSION FENCE/TREE PROTECTION FENCE		
	DENOTES AREA OVERLAND FLOWPATH		

STORMWATER MANAGEMENT STORAGE SUMMARY

AREA ID	ESDV REQUIRED CU.FT.	ESDV PROVIDED CU.FT.	REMARKS
F/O HOUSE & DRIVEWAY	798	1,031	BIO RETENTION (F-6)
F/O HOUSE & DRIVEWAY	576	401	MICRO BIO RETENTION (M-6)
TOTAL	1,375	1,432	

GROSS AREA = 1.99 ACRES
LOD = 1.05 ACRES
RDN = 77
TARGET Pe = 1.2"

STORMWATER MANAGEMENT NOTES

1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
2. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 500 SQ. FT. OR LESS.

SHRUBS
BAYBERRY, BLACKHAW VIBURNUM, ARROWWOOD VIBURNUM, WITCHHAZEL, WINTERBERRY, WINTERBERRY, INKBERRY, WITCH HAZEL, SWEETBAY MAGNOLIA, SWEETSHRUB, BUTTERNUT, BUCKEYE, SWEETLEAF, SWEETSHRUB, SUCCOTASH

GRASS
INDIAN GRASS, LITTLE BLUESTEM, SWITCHGRASS

ANY OF THE SHRUBS LISTED MAY BE USED

ANY OF THE GRASS LISTED MAY BE USED

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

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.1	n/a	plantings are site-specific
Planting soil (2' to 4' deep)	loamy sand (85-90% sand) or sandy loam (55-65% sand) with a clay content less than 10% and a minimum 30% compost mix		check soil types before using mixes or amend soils - see subpart 4.5%
Organic Content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months minimum
Pea gravel diaphragm	pea gravel, ASTM D-448	No. 8 or No. 9 (1/8" to 3/8")	
Organic soils	amendments: aged, screened compost	sieve: 2" to 3"	
Geotextile	n/a		PE Type I nonwoven
Lower Geotextile (for bioretention basins)	AASHTO M-288	Min. 10 oz/sq. yd. (340 g/m²)	
Underdrain piping	F 758, Type PS 28 or AASHTO M-270	4" to 6" perforated pipe	Sections of perforated pipe 3/8" min. Ø, 8" on center, 4 holes per row, staggered, 45 Ø at spring invert. Wrapped underdrain pipe with No. 57 stone wrapped in filter cloth. Underdrain pipe shall be connected with 3/4 inch galvanized reducing coupling.
Poured in place concrete (if required)	1500 psi, 28 day, 3 1/2" slump, air-entrained, conforming to meet ASTM C-94	n.a.	Concrete mixing or ground-delivered ready-mixed concrete shall be used. Concrete shall develop a minimum 28 day strength and strong limit of pressure. Concrete failed to develop adequate strength shall be removed and replaced at no cost. Concrete placing, placing, finishing and curing shall be performed in accordance with applicable requirements of ACI 301 and ACI 318. Concrete shall be placed in one continuous operation. Placing shall be performed as rapidly as possible until placement of a section is completed. Concrete shall be placed in forms and shall be thoroughly worked around reinforcement and embedded fixtures and into corners. Concrete shall not be placed in forms that have been coated with material that will reduce bond with subsequently placed concrete. Forms shall be removed in such manner as to prevent damage to the concrete. Bulkheads shall be used to limit placement of concrete to sections that can be completed as specified. Bulkheads shall be located at expansion joints or at the end of the day's pour. Concrete shall be protected from rain, flowing water, and traffic until sufficiently hardened. Concrete shall be cured by keeping it moist for a minimum of 7 days. Curing shall be accomplished by any of the following methods: (1) Covering with polyethylene sheeting; (2) Covering with burlap cloth kept saturated with water; (3) Applying membrane curing compound. Curing compound shall be applied immediately after finishing operations are completed. Curing compound shall be applied in accordance with the manufacturer's recommendations. Curing compound shall not be used on surfaces against which concrete is to be placed or on which joint sealer is to be applied.
Sand	ASTM C-33 or M-6 or AASHTO M-80	0.02" to 0.04"	Sand substitutions such as limestone and screenings SHALL NOT be acceptable. No natural substitutes of materials such substitutions are acceptable. No "rock dust" can be used for sand.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) AND (F-6)

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF OF MULCH AND SOIL IS LIMITED TO CONDUCTING 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. CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STALES AND WEEDS.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER SINCE EVERY 2 TO 3 YEARS.
4. SOIL BIOTA MAY TO BE ADDRESSED ON AN AS NEEDED BASIS. WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

SOILS LEGEND

SOIL NAME	CLASS	"K" VALUE
UnB — Urban land-Chillum-Baltimore complex, 0 to 5 percent slopes	D	0.37

HOWARD COUNTY WEBSOILS SURVEY 05/06/19

PLANT MATERIAL- BIO-RETENTION M-6 (1)

QUANTITY	NAME	MAXIMUM SPACING (FT.)
25 (75 sq.ft.)	GRASSES	18" o.c.
11	SHRUBS	36"-48" o.c.

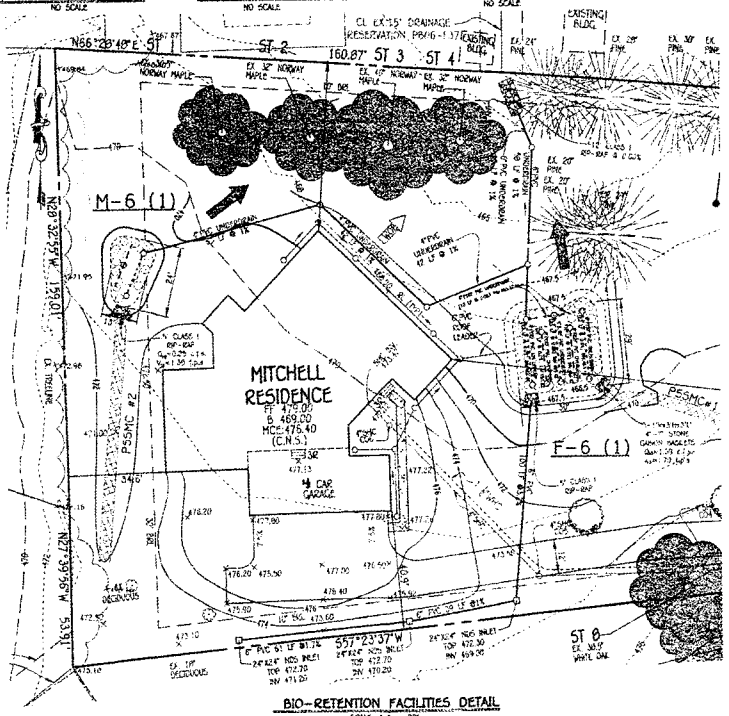
M-6 (1)
(BIO-RETENTION FACILITY)
SCALE: 1" = 10'
DRAINAGE AREA: 10,053 SQ.FT.
FILTER AREA: 500 SQ.FT.
ELEVATION: 464
PERIMETER: 87
WSE ELEVATION: 470

PLANT MATERIAL- BIO-RETENTION F-6 (1)

QUANTITY	NAME	MAXIMUM SPACING (FT.)
77 (216 sq.ft.)	GRASSES	18" o.c.
31	SHRUBS	36"-48" o.c.

F-6 (1)
(BIO-RETENTION FACILITY)
SCALE: 1" = 10'
DRAINAGE AREA: 27,813 SqFt.
FILTER AREA: 864 SqFt.
ELEVATION: 466.5
PERIMETER: 111'
WSE ELEVATION: 467.5

BIO-RETENTION FACILITIES DETAIL
SCALE: 1" = 20'


CL EX 15" DRAINAGE RESERVATION PB/96-137
EXISTING BLDG
ST-2
160.87'
ST 3
ST 4
N66°29'48"E 51'
EX. 12" NORWAY MAPLE
EX. 30" NORWAY MAPLE
EX. 24" NORWAY MAPLE
M-6 (1)
F-6 (1)
MITCHELL RESIDENCE
FF 475.00
B 469.00
MCE 475.40 (C.N.S.)
4 CAR GARAGE
PSSMS#1
PSSMS#2
N23°32'54"W 199.01'
N57°49'56"E 159.15'
S57°23'37"W
6" PVC @1.0% LF 81.12'
24"X24" NDS INLET TOP 472.70 INV 470.20
24"X24" NDS INLET TOP 472.30 INV 469.80
ST 8 EX. 36" WHITE OAK
EX. 15" DECIDUOUS
EX. 20" PINE
EX. 30" PINE
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LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
	EXISTING FENCE
× 448.5	SPOT ELEVATION
	EXISTING STORM DRAIN
	EXISTING WATER LINE
	EXISTING SEWER LINE
	EXISTING OVERHEAD WIRE
	PROPOSED PAVING
	PRIVATE UIC EASEMENT
	PRIVATE DRAINAGE & UTILITY EASEMENT
	LIMIT OF DISTURBANCE
SF	SILT FENCE
SSF/TP	SUPER SILT FENCE/TREE PROTECTION FENCE
DF/TP	DIVERSION FENCE/TREE PROTECTION FENCE
	EXISTING TREE LINE
	PROPOSED TREE LINE
	DRAINAGE DIVIDE
	PERMANENT SOIL STABILIZATION CONTROL MATTING
	SOIL LINES AND TYPES
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	PROPOSED ROOF LEADER
	DENOTES EXISTING TREES TO BE REMOVED
	DENOTES EXISTING TREES TO REMAIN
ST 3	SPECIMEN TREE CRITICAL ROOT ZONE
B-1	DENOTES SWM TEST BORING LOCATION

SEDIMENT CONTROL NOTES

1) WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE CONTRACTOR MAY SUBSTITUTE SILT FENCE FOR SUPER SILT FENCE WHERE APPROPRIATE.
2) AT THE REQUEST OF THE SEDIMENT CONTROL INSPECTOR, THE CONTACTOR MAY BE REQUIRED TO PROVIDE SUPER SILT FENCE WHERE SILT FENCE IS SHOWN ON THESE PLANS.
3) BIO RETENTION FACILITIES MAY BE USED IN AN INTERIM CONDITION FOR SEDIMENT CONTROL- SEE DETAIL SHEET 3.
4) ALL SPECIMEN TREES AND WOODS TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION PER HOWARD COUNTY FOREST CONSERVATION GUIDELINES.
5) FOR SEDIMENT CONTROL NOTES AND DETAILS – SEE SHEET 3.

Specimen Tree Chart

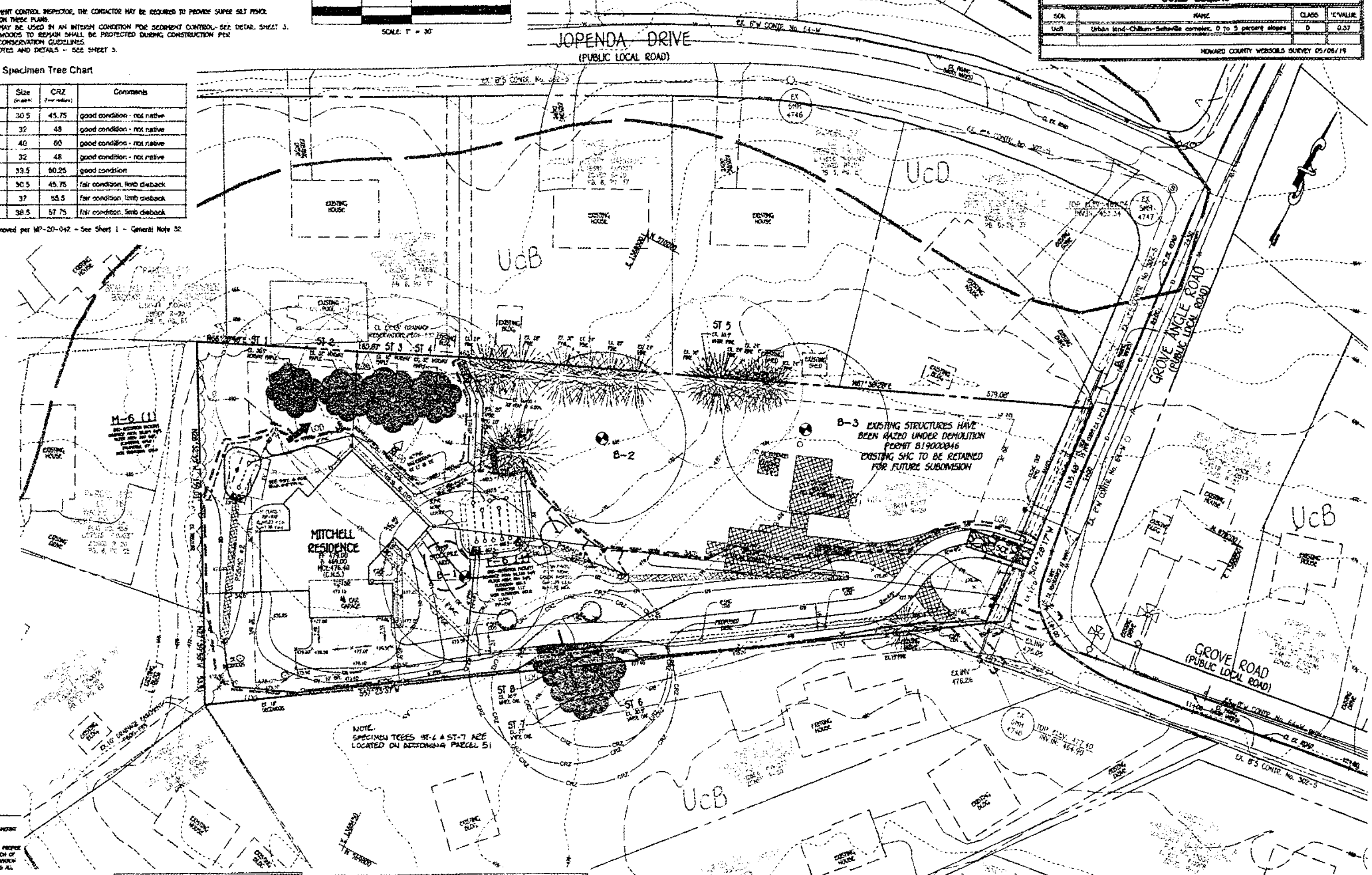
Key (X#)	Species	Size (in dbh)	CRZ (feet radius)	Comments
1	Norway maple	30.5	45.75	good condition - not native
2	Norway maple	32	48	good condition - not native
3	Norway maple	40	60	good condition - not native
4	Norway maple	32	48	good condition - not native
5	White pine	33.5	50.25	good condition
6	White oak	30.5	45.75	fair condition, limb dieback
7	White oak	37	55.5	fair condition, limb dieback
8*	White oak	38.5	57.75	fair condition, limb dieback

* Specimen Tree #8 to be removed per WP-20-042 – See Sheet 1 – General Note 32.

SOILS LEGEND

SOIL	NAME	CLASS	'K' VALUE
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes	D	0.37

HOWARD COUNTY WEBSOILS SURVEY 05/06/19



PLANTING SPECIFICATIONS

PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN.

ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, ROOT AND SHAPE SHOWN ON THE PLANT LIST AND THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN SCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL NOT BE ACCEPTED. ALL PLANTS SHALL BE FRESHLY DUG, NO HEALED-IN PLANTS FROM COLD STORAGE WILL BE ACCEPTED.

UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATION SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS", (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECT, LATEST EDITION, INCLUDING ALL AGENDA.

CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.

BID SHALL BE BASE ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.

ALL SHRUBS SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT WHERE NOTED ON PLANS.

POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS 2 PERCENT SLOPE).

PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS – TWO PARTS TOPSOIL, ONE PART WELL-ROTTED COW OR HORSE MANURE. ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS – TWO PARTS TOPSOIL, ONE PART HUMUS OR OTHER APPROVED ORGANIC MATERIAL. ADD 3 LBS. OF EVERGREEN (ACIDIC) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.

WEED CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED.

ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED AND SEEDED.

NOTES

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE PROPOSED LANDSCAPING WILL BE POSTED AS PART OF THE GRADING PERMIT IN THE AMOUNT OF $600.00 BASED ON 2 SHADE TREES @ $300.00 EACH.
2. AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
3. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
4. FOR ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH CREDIT IS GIVEN, BE REMOVED OR DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR IF THE TREE IS LISTED AS A PROHIBITED OR INVASIVE SPECIES ON THE OFF TREE LIST IT SHOULD BE REPLACED WITH A RECOMMENDED TREE SPECIES WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE LANDSCAPE MANUAL."

LANDSCAPING PLANT LIST

QTY.	KEY	NAME	SIZE
2 (1)		ACER RUBRUM 'OCTOBER GLORY' (OCTOBER RED MAPLE)	2 1/2" – 3" CALIPER FULL CROWN, B&B

TOTAL: 2 SHADE TREES
(1) FOR WP-20-042 ALTERNATIVE COMPLIANCE PETITION: CONDITIONS OF APPROVAL – SEE SHEET 1, GENERAL NOTE 32.

SEWER CLEANOUT CHART

	EX. SMH 4746	CO10 R/W	CO2	CO3	CO4	CO5	CO6	INV @ HOUSE	FFE
INV OUT INV. IN	465.00 464.5	465.74 465.64	467.34 467.24	369.44 368.84	370.54 370.44	371.82 371.72	373.42 373.32	473.42	484.4 (C.N.S.)

PROFESSIONAL CERTIFICATE

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

SIGNATURE OF LICENSED PROFESSIONAL FRANK JOHN MANALANSAN II — DATE 2/11/20

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

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."

SIGNATURE OF DEVELOPER — DATE 2-11-20

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 2/13/20

OWNER/DEVELOPER

GROVE ANGLE LLC.
6611 HAYSHED LANE
COLUMBIA, MARYLAND 21043
443-506-3043

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date

Chief, Development Engineering Division — Date

Director – Department of Planning and Zoning — Date

PROJECT				PHASE	PARCEL NO.
GROVE ANGLE PROPERTY				N/A	35
DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 16444 F. 117	13	R-20	31	2	602302

PREVIOUS HOWARD COUNTY FILES:
SDP-19-059, WP-20-042

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

NO.	REVISION	DATE

SITE DEVELOPMENT AND SEDIMENT / EROSION CONTROL PLAN

SINGLE FAMILY HOUSE

GROVE ANGLE PROPERTY

8325 GROVE ANGLE ROAD
ZONED R-20
TAX MAP NO.: 31 GRID NO.: 13 PARCEL NO.: 35
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY, 2020
SHEET 2 OF 4

SDP-20-011

U.S. Equivalent Coordinate Table			Metric Coordinate Table	
POINT	NORTH (feet)	EAST (feet)	NORTH (meters)	EAST (meters)
100	570023.4016	1368236.6748	173743.480304	417039.372557
101	570087.6009	1368384.1832	173763.048293	417084.333209
102	570227.7780	1368724.9698	173805.774343	417188.205169
105	570090.7554	1368735.9767	173764.009780	417191.560084
106	569835.9810	1368337.6960	173686.354382	417070.163861
107	569863.7280	1368312.6650	173700.907696	417062.534417

The Requirements § 3-108, The Real Property Article, Annotated Code Of Maryland, 1988 Replacement Volume, (As Supplemented) As Far As They Relate To The Making Of This Plat And The Setting Of Markers Have Been Complied With.

Frank John Manalansan II, L.S. #21476 (Professional Land Surveyor) — Date

Grove Angle, LLC By: William Mitchell, Member — Date

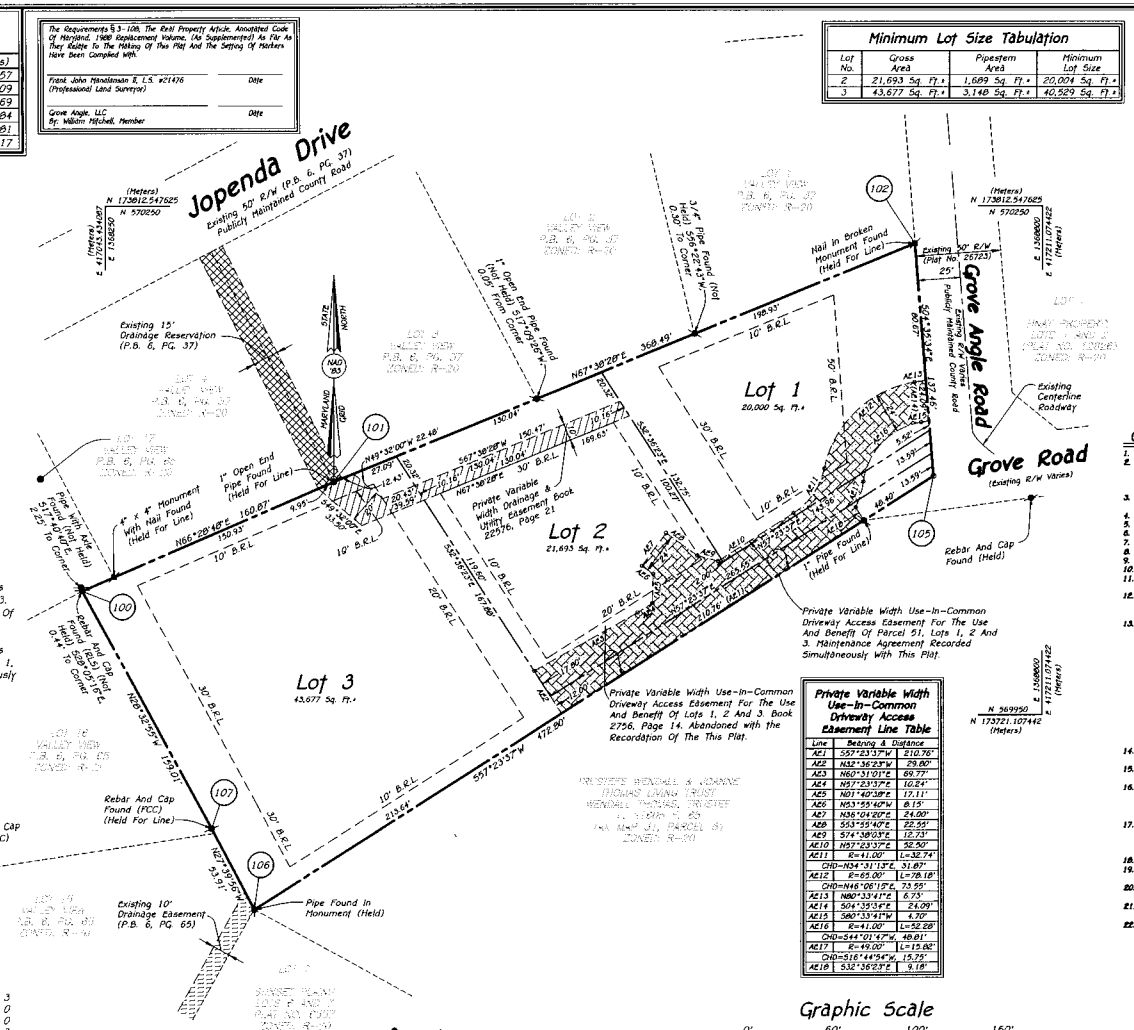
Minimum Lot Size Tabulation				
Lot No.	Gross Area	Pipestem Area	Minimum Lot Size	
2	21,693 Sq. Ft.±	1,699 Sq. Ft.±	20,004 Sq. Ft.±	
3	43,677 Sq. Ft.±	3,140 Sq. Ft.±	40,529 Sq. Ft.±	

General Notes Continued:

23. This Revision Plat Is Exempt From Perimeter Landscaping In Accordance With Section 16.124 Of The Howard County Code And Landscape Manual, Since It Is A Plat Of Revision That Does Not Create Any Additional Lots.
24. Site Development Plan Approval By The Department Of Planning And Zoning For Lots 1 And 2 Is Required Prior To Building Permits Being Issued For The Construction Of Residential Dwellings On These Lots.
25. This Property Is Located Within The Metropolitan District And Will Be Served By Public Water And Sewer.
26. The Private Variable Width Use-In-Common Driveway Access Easement And Maintenance Agreement For The Use And Benefit Of Parcel 51, Lots 1, 2 And 3 Is Recorded Simultaneously With This Plat.
27. The Lots Created By This Subdivision Plat May Be Subject To A Fee Or A Assessment To Cover Or Defray All Or Part Of The Developers Cost Of The Installation Of The Water And Sewer Facilities, Pursuant To The Howard County Code Section 18.112. This Fee Or Assessment, Which Runs With The Land, Is A Contractual Obligation Between The Developer And Each Owner Of This Property And Is Not In Any Way A Fee Or Assessment Of Howard County.
28. This Subdivision Is In Conformance With The Latest Howard County Standards Unless Alternative Compliance Has Been Approved.
29. The Planning Director On December 20, 2019 Approved The Request (WP-20-042-VOID) For An Alternative Compliance Of Section 16.1205(a)(7), Forest Retention Priorities: State Champion Trees, Trees 75 Percent Of The Diameter Of State Champion Trees, And Trees 30 Inches In Diameter Or Larger. The Enactment Of Council Bill 62-2019 On December 20, 2019 Voids The Approval Of The Alternative Compliance Request Due To The Plans Not Reaching The Required Milestones Of Grandfathering.
30. This Plat Is Subject To DMV2-21-006 Which On October 9, 2020 The Director Of Public Works Approved A Waiver To Howard County Design Manual Volume II, Section Which Requires All Sewer House Connections Be Installed At The Required Depths To Provide Gravity Service To The Cellar Of Each Lot. Approval Is Subject To The Following Requirements:
   a. Use An Ejector Pump To Provide Service From The Basement To The First Floor And Provide Gravity From The First Floor To The Public Sewer Located At The Street.
   b. Label C.N.S. As The Basement Is Not Serviced By Gravity.
   c. Show 4" SHC's From The Property Line Back To The Property For Lots 2 & 3 As "Private".

Legend

- Private Variable Width Use-In-Common Driveway Access Easement For The Use And Benefit Of Lots 1, 2 And 3, Book 2756, Page 14. Abandoned with the Recordation Of The This Plat.
- Private Variable Width Use-In-Common Driveway Access Easement For The Use And Benefit Of Parcel 51, Lots 1, 2 And 3. Maintenance Agreement Recorded Simultaneously With This Plat.
- Existing 15' Drainage Reservation (P.B. 6, PG. 37)
- Existing 10' Drainage Easement (P.B. 6, PG. 65)
- Private Variable Width Drainage & Utility Easement Book 22756 Page 21



Private Variable Width Use-In-Common Driveway Access Easement Line Table		
Line	Bearing & Distance	
AE1	S57°23'37"W	210.76'
AE2	N32°36'23"W	29.80'
AE3	N60°31'01"E	69.77'
AE4	N57°23'37"E	102.4'
AE5	N01°40'38"E	17.11'
AE6	N53°55'40"E	22.55'
AE9	S74°38'03"E	12.73'
AE10	N57°23'37"E	52.50'
AE11	R=41.00'	L=32.74'
CHD=N34°31'13"E		31.87'
AE12	R=65.00'	L=78.18'
CHD=N46°06'15"E		73.55'
AE13	N80°33'41"E	6.73'
AE14	S04°39'14"E	24.09'
AE15	S80°33'41"W	4.70'
AE16	R=41.00'	L=52.28'
CHD=S44°01'47"W		48.81'
AE17	R=49.00'	L=15.83'
CHD=S16°44'54"W		15.75'
AE18	S32°36'23"E	9.18'

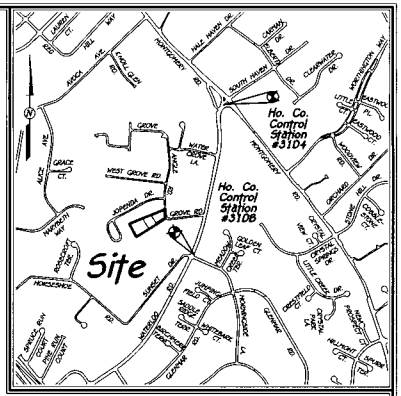
Area Tabulation This Submission

TOTAL NUMBER OF BUILDABLE LOTS TO BE RECORDED	3
TOTAL NUMBER OF OPEN SPACE LOTS TO BE RECORDED	0
TOTAL NUMBER OF PARCELS TO BE RECORDED	0
TOTAL NUMBER OF LOTS/PARCELS TO BE RECORDED	3
TOTAL AREA OF BUILDABLE LOTS TO BE RECORDED	1.960 Ac.±
TOTAL AREA OF OPEN SPACE LOTS TO BE RECORDED	0.000 Ac.±
TOTAL AREA OF PARCELS TO BE RECORDED	0.000 Ac.±
TOTAL AREA OF LOTS/PARCELS TO BE RECORDED	1.960 Ac.±
TOTAL AREA OF ROADWAY TO BE RECORDED	0.000 Ac.±
TOTAL AREA TO BE RECORDED	1.960 Ac.±

Owner And Developer
Grove Angle, LLC
8611 Hayshed Lane
Columbia, Maryland 21043

Fisher, Collins & Carter, Inc.
Civil Engineering Consultants & Land Surveyors
Centennial Square Office Park-10272 Baltimore National Pike
Ellicott City, Maryland 21042
(410) 461-2855

Graphic Scale
0' 50' 100' 150'
Scale: 1" = 50'



Vicinity Map

Scale: 1"=1,200'

General Notes:

1. Subject Property Zoned R-20 Per 10/06/13 Comprehensive Zoning Plan.
2. Coordinates Based On Nad '83, Maryland Coordinate System As Projected By Howard County Geodetic Control Stations No. 31D8 And No. 31D4.
   Sta. 31D8 N 569,583.5890 E 1,369,155.2110 Elev = 492.348
   Sta. 31D4 N 571,700.6640 E 1,369,606.4170 Elev = 494.445
3. This Plat Is Based On Field Run Monumented Boundary Survey Performed On Or About March, 2019 By Fisher, Collins And Carter, Inc.
4. B.R.L. Denotes Building Restriction Line
5. ● Denotes Iron Pin Set Capped "F.C.C. 106"
6. ◉ Denotes Iron Pipe Or Iron Bar Found.
7. ○ Denotes Angular Change In Bearing Of Boundary Or Rights-Of-Way.
8. ■ Denotes Concrete Monument Set With Aluminum Plate "F.C.C. 106".
9. ▰ Denotes Concrete Monument Or Stone Found.
10. All Areas Are More Or Less (±).
11. Distances Shown Are Based On Surface Measurement And Not Reduced To Nad '83 Grid Measurement.
12. For Flag Or Pipe Stem Lots, Refuse Collection, Snow Removal And Road Maintenance Are Provided To The Junction Of Flag Or Pipe Stem And Road Right-Of-Way Line Only And Not Onto The Flag Or Pipe Stem Lot Driveway.
13. 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 The Following (Minimum) Requirements:
   a). Width - 12 Feet (16 Feet Serving More Than One Residence);
   b). Surface - Six (6") Inches Of Compacted Crusher Run Base With Tar And Chip Coating. (1 - 1/2" Minimum);
   c). Geometry - Maximum 15% Grade, Maximum 10% Grade Change And 45-Foot Turning Radius;
   d). Structures - (Culverts/Bridges) - Capable Of Supporting 25 Gross Tons (H25-Loading);
   e). Drainage Elements - Capable Of Safely Passing 100 Year Flood With No More Than 1 Foot Depth Over Surface;
   f). Structure Clearance - Minimum 12 Feet;
   g). Maintenance - Sufficient To Ensure All Weather Use.
14. Property Subject To Prior Department Of Planning And Zoning File No's: ECP-19-059, WP-20-042 (VOID), SDP-20-011, DMV2-21-006, SDP-20-011 And F-20-034.
15. No Cemeteries Exist On The Subject Property Based On Visual Observation Or Listed In Available Howard County Cemetery Inventory Map.
16. There Is An Existing Dwelling On Lot 3 To Remain. No New Buildings, Extensions Or Additions To The Existing Dwelling Are To Be Constructed At A Distance Less Than The Zoning Regulations Requirements. There Was An Historic House On The Site HO-800) That Was Authorized For Demolition December, 2018 And Was Demolished On September, 2019.
17. There Are No Forest Stands, Wetlands, Wetland Buffers, Streams And Stream Buffers Existing On-Site As Presented In An Environmental Findings Letter Prepared By Eco-Science Professionals, Inc. Dated May 6, 2019. No 100 Year Floodplain, Wetlands, Stream(s) And/Or Their Buffers, And Steep Slopes Exist On-Site.
18. Site Is Not Adjacent To A Scenic Road
19. This Plat Addressed The Requirements Of Section 16.1200 Of The Howard County Code Of Forest Conservation Under F-20-034.
20. Public Water And/Or Sewer Allocations For This Development Are Subject To Section 18.1228 Of The Howard County Code.
21. Public Water And Sewer Allocation Will Be Granted At The Time Of Issuance Of The Building Permit If Capacity Is Available At That Time.
22. This Plan Is Subject To The Amended Fifth Edition Of The Subdivision And Land Development Regulations Per Council Bill 45-2003 And The 10/06/13 Comprehensive Zoning Plan. Development Or Construction On These Lots Must Comply With Setback And Buffer Regulations In Effect At The Time Of Submission Of The Site Development Plan, Waiver Petition Application Or Building/Grading Permit.

General Notes Continued This Sheet:

Purpose Note: The Purpose Of This Record Plat Is To Remove The Private Variable Width Use-In-Common Driveway Access Easement And Replace With An Identical Easement That Provides Use And Benefit To Lots 1 Thru 3 And Parcel 51

APPROVED: For Public Water And Public Sewerage Systems Howard County Health Department

Howard County Health Officer — Date

APPROVED: Howard County Department Of Planning And Zoning.

Chief, Development Engineering Division — Date

Director — Date

Owner's Certificate

Grove Angle, LLC, By William Mitchell, Member, Owners Of The Property Shown And Described Hereon, Hereby Adopt This Plan Of Subdivision; And In Consideration Of The Approval Of This Plat By The Department Of Planning And Zoning Establish The Minimum Building Restriction Lines. All Easements Of (Or) Rights-Of-Way Affecting The Property Are Included In This Plan Of Subdivision. Witness My Hand This Day Of , 2025.

Grove Angle, LLC
By: William Mitchell, Member

Witness

Surveyor's Certificate

I Hereby Certify To The Best Of My Knowledge That The Final Plat Shown Hereon Is Correct, That It Was Prepared By Me Or Under My Responsible Charge And That I Am A Duly Licensed Professional Line Surveyor Under The Laws Of The State Of Maryland; That It Is All Of The Lands Conveyed By Omid Land Group, LLC To Grove Angle, LLC By Deed Dated November 2, 2018 And Recorded Among The Land Records Of Howard County, Maryland In Liber 18444 At Folio 117; All Monuments Are In Place In Accordance With The Annotated Code Of Maryland, As Amended.

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

Frank John Manalansan II, Professional Land Surveyor No. 21476 — Date
Expiration Date: 7/14/25

RECORDED AS PLAT No. _____ ON _____
AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND.

Revision Plat
Grove Angle Property
Lots 1 Thru 3

(Being A Revision Of Lots 1 Thru 3 On Plat, Recorded Among The Land Records Of Howard County, Maryland As Plat No. 26725 ENTITLED "Grove Angle Property, Lot 1 Thru 3

Zoned: R-20
Tax Map: 31, Grid: 13, Parcel: 35
Second Election District - Howard County, Maryland
Date: May 12, 2025 Scale: As Shown Sheet 1 Of 1

I:\2018\18008\Engineering\Dwgs\18008_3001 8325 Grove Angle Road\F-20 034 Folder\Record Plats\18008 Cs ONLY RECORD PLAT REPLACEMENT.dwg, RECORD PLAT, 7/1/2025 5:52:01 PM, DWG To PDF.pc3, ARCH C (24.00 x 18.00 Inches), 1:1