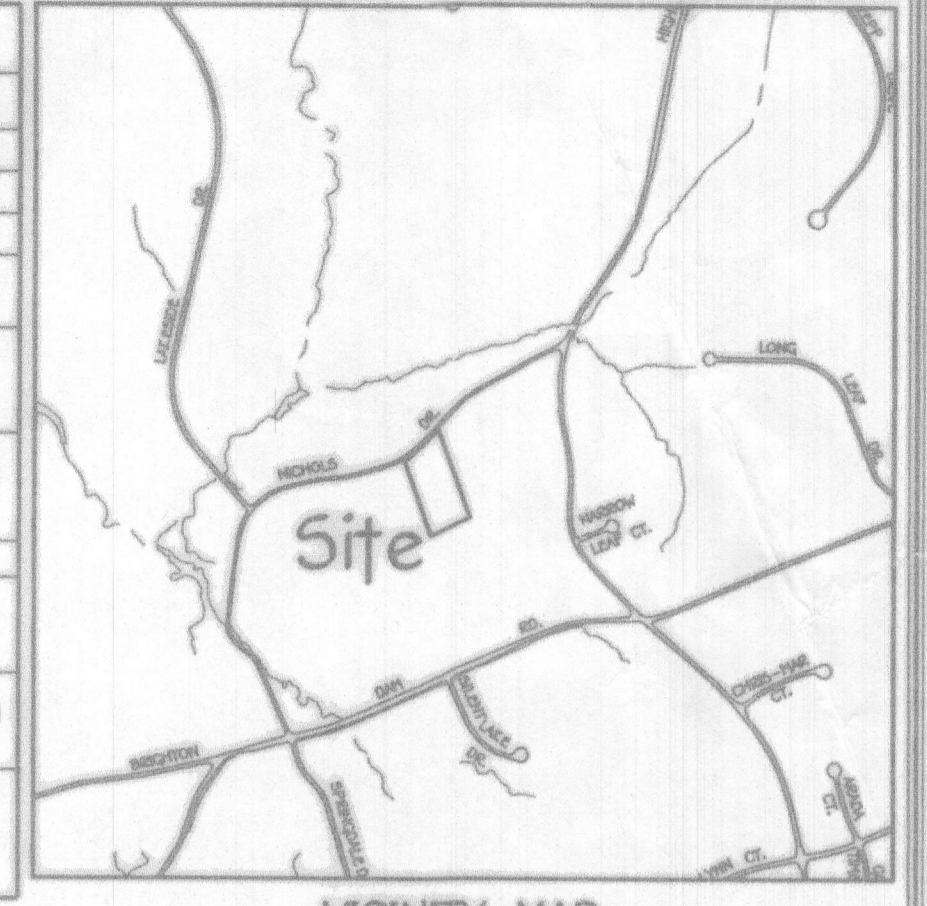


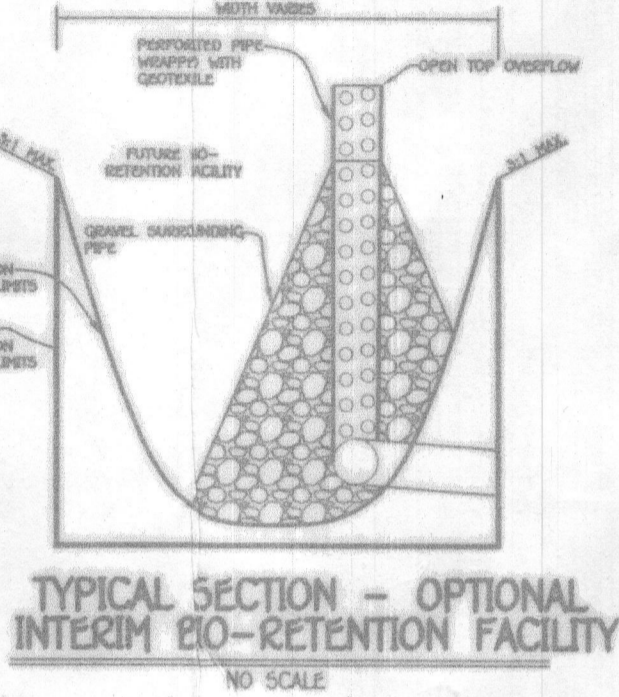
SHEET INDEX	
SHEET NO.	DESCRIPTION
1	GRADING, SEDIMENT AND EROSION CONTROL PLAN
2	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
3	STORMWATER MANAGEMENT NOTES AND DETAILS

SOILS LEGEND			
SOIL	NAME	CLASS	K _v FACTOR
GbC	Gladstone loam, 0 to 15 percent slopes	B	.32
GmC	Glenville silt loam, 0 to 15 percent slopes	C	.43
GoB	Glenville-Cadorus silt loams, 0 to 8 percent slopes	C	.49
HbC	Hainor-channery loam, 0 to 15 percent slopes	B	.32

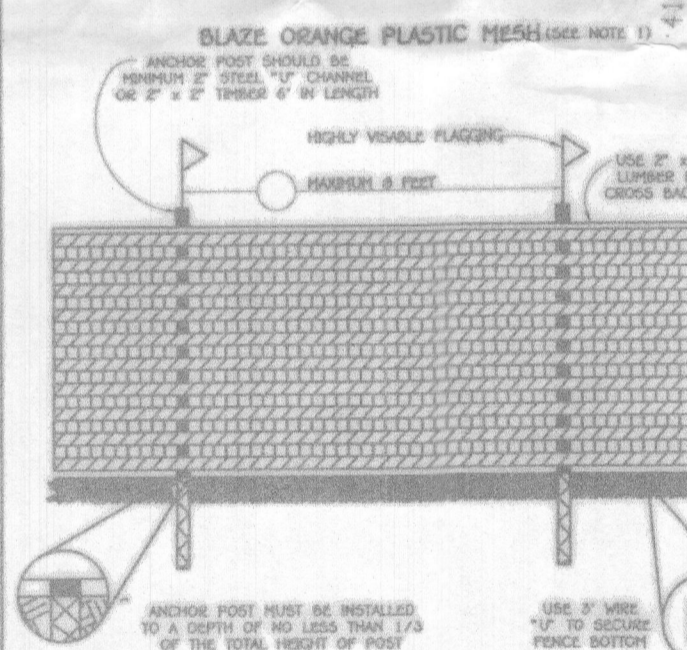
LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL	---	EXISTING TREE LINE
---	EXISTING CONTOUR 10' INTERVAL	---	PROPOSED TREE LINE
---	PROPOSED CONTOUR 10' INTERVAL	---	DRAINAGE DIVIDE
---	PROPOSED CONTOUR 2' INTERVAL	---	SOIL LINES AND TYPES
---	EXISTING FENCE	---	PERMANENT SOIL STABILIZATION CONTROL MATTING
---	EXISTING SPOT ELEVATION	---	BAD RETENTION FACILITY (F-6) OR (M-6) AS NOTED
---	PROPOSED SPOT ELEVATION	---	PROPOSED ROOF LEADES
---	EXISTING STORM DRAIN	---	DENOTES EXISTING TREES TO BE REMOVED
---	EXISTING WATER LINE	---	DENOTES EXISTING TREES TO REMAIN
---	EXISTING SEWER LINE	---	ST 3
---	EXISTING OVERHEAD WIRE	---	SPECIMEN TREE
---	PROPOSED PAVING	---	CRITICAL ROOT ZONE
---	PRIVATE UIC EASEMENT	---	
---	PRIVATE DRAINAGE & UTILITY EASEMENT	---	
---	LIMIT OF DISTURBANCE	---	
---	SSF/TP	---	
---	DF/TP	---	
---	DENOTES MBR OVERLAND FLOWPATH	---	



- GENERAL NOTES**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS PERM STANDARDS AND SPECIFICATIONS IF APPLICABLE.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 315-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
 - ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-297-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 - TOPOGRAPHY SHOWN IN THE AREA OF THE LOT BEING DISTURBED IS BASED ON A TOPOGRAPHIC SURVEY BY FENNER, COLLINS & CARTER, INC. IN OCTOBER, 2019.
 - BOUNDARY OF LOT BASED ON FIELD SURV BY FENNER, COLLINS & CARTER, INC. IN OCTOBER, 2019.
 - THIS PROPERTY IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT, PRIVATE WELL AND SEPTIC WILL BE UTILIZED.
 - STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE H.C.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2005. WE ARE PROVIDING STORM WATER MANAGEMENT BY THE USE OF TWO (2) (D-6) SEDIMENT FACILITIES, FOUR (4) (D-3) S&P WELLS AND ONE (1) AREA OF (M-2) HIGH-ISO-TOP DISCRETION CREDIT TO BE MAINTAINED BY THE HOMEOWNER OF LOT 11.
 - SUBJECT PROPERTY ZONED RR-DEO.
 - THIS PROJECT IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS PER SECTION 16.03(B)(2)(B)(I) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS WHICH STATES, "EXEMPTIONS REQUIRING A DECLARATION OF INTENT, THE TOTAL CUTTING, CLEARING OR GRADING OF FOREST RESOURCES IS LESS THAN THIRTY SQUARE FEET."
 - THIS IS PART OF THE REGISTRATION DATA ESTATES SUBMISSION RECORDED ON MAY 1, 1998 (PRIOR TO THE EFFECTIVE DATE OF THE 1993 EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS) AND IS EXEMPT FROM THE PROVISIONS OF SECTION 16.11A OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
 - SOILS SHOWN HEREON ARE BASED ON RECORDS WITH SOIL SURVEY.
 - COORDINATES ARE BASED ON NAD 83 HAYWARD COORDINATES SYSTEM AS PROTECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS.
34E2 N 571,700.864 E 1,269,806.417 ELEV. 494.447'
34E2 N 569,563.599 E 1,359,155.211 ELEV. 429.946'



A DOUBLE ROW OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE CID INSPECTOR ALONG NICHOLS DRIVE LOG, IF DEEMED NECESSARY.



SEPTIC SYSTEM INSTALLATION NOTES

THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE EASEMENT. RECONSTRUCTION OF A MODIFIED SEWERAGE EASEMENT SHALL NOT BE NECESSARY.

CONTRACTOR SHALL REFER TO THE APPROVED SEPTIC SYSTEM INSTALLATION SITE PLAN FOR INSTALLATION OF THE PROPOSED SEPTIC SYSTEM. SEPTIC SYSTEM SHOWN ON THIS PLAN IS FOR INFORMATION PURPOSES ONLY.

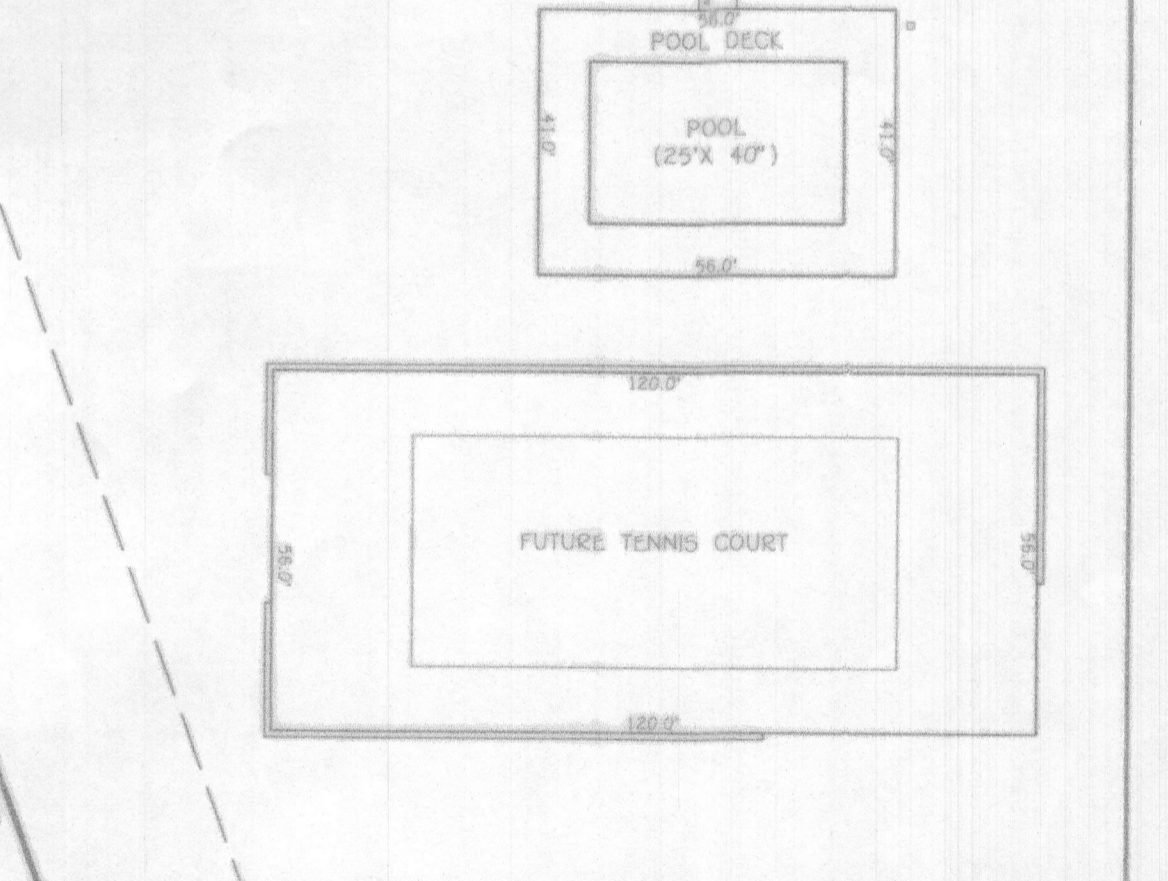
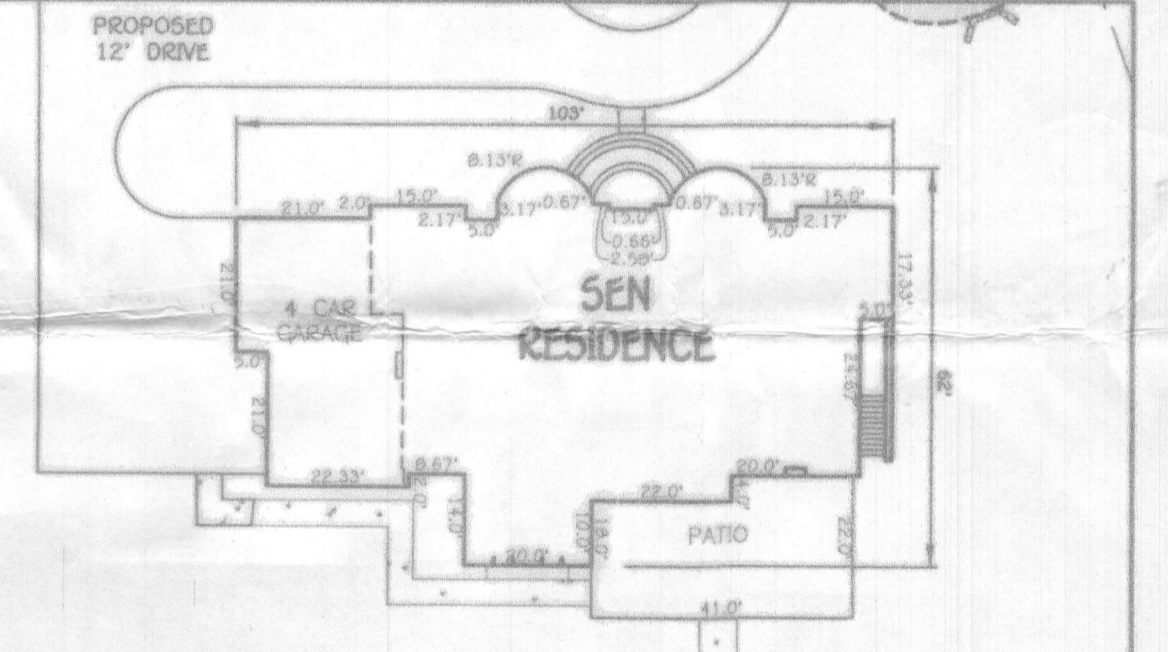
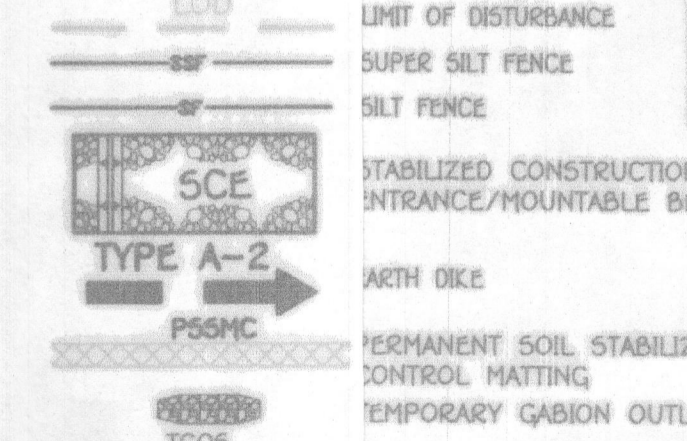
SPECIMEN TREE NOTE

CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM ADEQUATE PRE-, DURING AND POST CONSTRUCTION PRACTICES AND MEASURES AS DESCRIBED IN APPENDIX C OF THE LATEST HOWARD COUNTY FOREST CONSERVATION MANUAL WHEN WORKING IN THE VICINITY OF THE CRITICAL ROOT ZONE OF THE SPECIMEN TREES IDENTIFIED TO REMAIN WITHIN THIS PROJECT TO ENSURE SURVIVAL OF THE TREES.

SITE ANALYSIS DATA CHART

- A. TOTAL AREA OF THIS SUBMISSION = 143,051 SQ.FT./ 3.284 AC.
- B. LIMIT OF DISTURBANCE = 6,989 SQ.FT./ 1.61 AC.
- C. PRESENT ZONING DESIGNATION = RR-DEO
- D. PROPOSED USE = SINGLE FAMILY DETACHED HOUSING
- E. TOTAL NUMBER OF UNITS PROPOSED = 1 UNIT
- F. OPEN SPACE ISOLATION = N/A
- G. RECREATIONAL OPEN SPACE = N/A
- H. BUILDING COVERAGE OF SITE = 4,595 SQ.FT. OR 3.2%
- I. NO PREVIOUS HOWARD COUNTY PERMITS
- J. TOTAL AREA OF FLOODPLAIN LAYED ON SITE = 0.0 AC.
- K. TOTAL AREA OF SLOPES IN EXCESS OF 25% = 0.0 AC.
- L. NET TRACT AREA = 3.284 AC.
(TOTAL SITE AREA - FLOODPLAIN - STEEP SLOPES AREA)
(0.0 AC + 0.0 AC + 0.0 AC) = 0.0 AC
- M. TOTAL AREA OF WETLANDS (INCLUDING BUFFERS) LOCATED ON SITE = 0.0 AC.
- N. TOTAL FOREST = 1.79 AC.
- O. TOTAL GREEN OPEN AREA = 6,994 SQ.FT./ 1.61 AC.
- P. TOTAL IMPERVIOUS AREA = 20,577 SQ.FT./ 0.48 AC. (ON SITE INCLUDES FUTURE TENNIS COURT - 7,200 SQ.FT.)
- Q. AREA OF ERODIBLE SOILS = 0 AC.

SEDIMENT CONTROL LEGEND



	<p>DESIGN CERTIFICATION</p> <p>I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p><i>Frank J. Hovland II</i> 10/7/20 DATE FRANK J. HOVLAND II, P.E. NO. 21474</p>	<p>OWNER/BUILDER'S CERTIFICATION</p> <p>I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (HDC) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY TO THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.</p> <p><i>John Sen</i> 10/07/2020 DATE SIGNATURE OF OWNER</p>	<p>OWNER</p> <p>JOHN SEN 109 HUNTS BLUFF ROAD SPARKS, MARYLAND 21152 410-627-4511</p>	<p>ADDRESS HART</p> <p>LOT NUMBER 11 STREET ADDRESS 135 NICHOLS DRIVE CLARVILLE, MARYLAND 21029</p>	<p>GRADING, EROSION AND SEDIMENT CONTROL PLAN</p> <p>BRIGHTON FARM ESTATES LOT 11 13575 NICHOLS DRIVE</p>
	<p>PROFESSIONAL CERTIFICATION</p> <p>I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 07/14/21.</p> <p><i>Frank J. Hovland II</i> 10/7/20 DATE FRANK J. HOVLAND II, P.E. NO. 21474</p>	<p>OWNER/BUILDER'S CERTIFICATION</p> <p>THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p><i>John Sen</i> 10/7/20 DATE HOWARD SOIL CONSERVATION DISTRICT</p>	<p>BUILDER</p> <p>CLASSIC HOMES OF MARYLAND 50 WEST EDMONDSON DRIVE ROCKVILLE, MARYLAND 20852 301-329-5086</p>	<p>PARCEL</p> <p>BRIGHTON FARM ESTATES LOT 11 N/A FLAT NOS. BLOCK NO. ZONE TAX MAP ELEC. DIST. CENSUS TR. PARCEL NO. PB 05 F 31 08 RR-DEO 34 FIFTH 605103 104</p>	<p>TAX MAP NO.: 34 GRID NO.: 08 PARCEL NO.: 104 ZONED RR-DEO FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER, 2020 SHEET 1 OF 3 GP-21-23</p>

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 18272 BALDORNE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2200

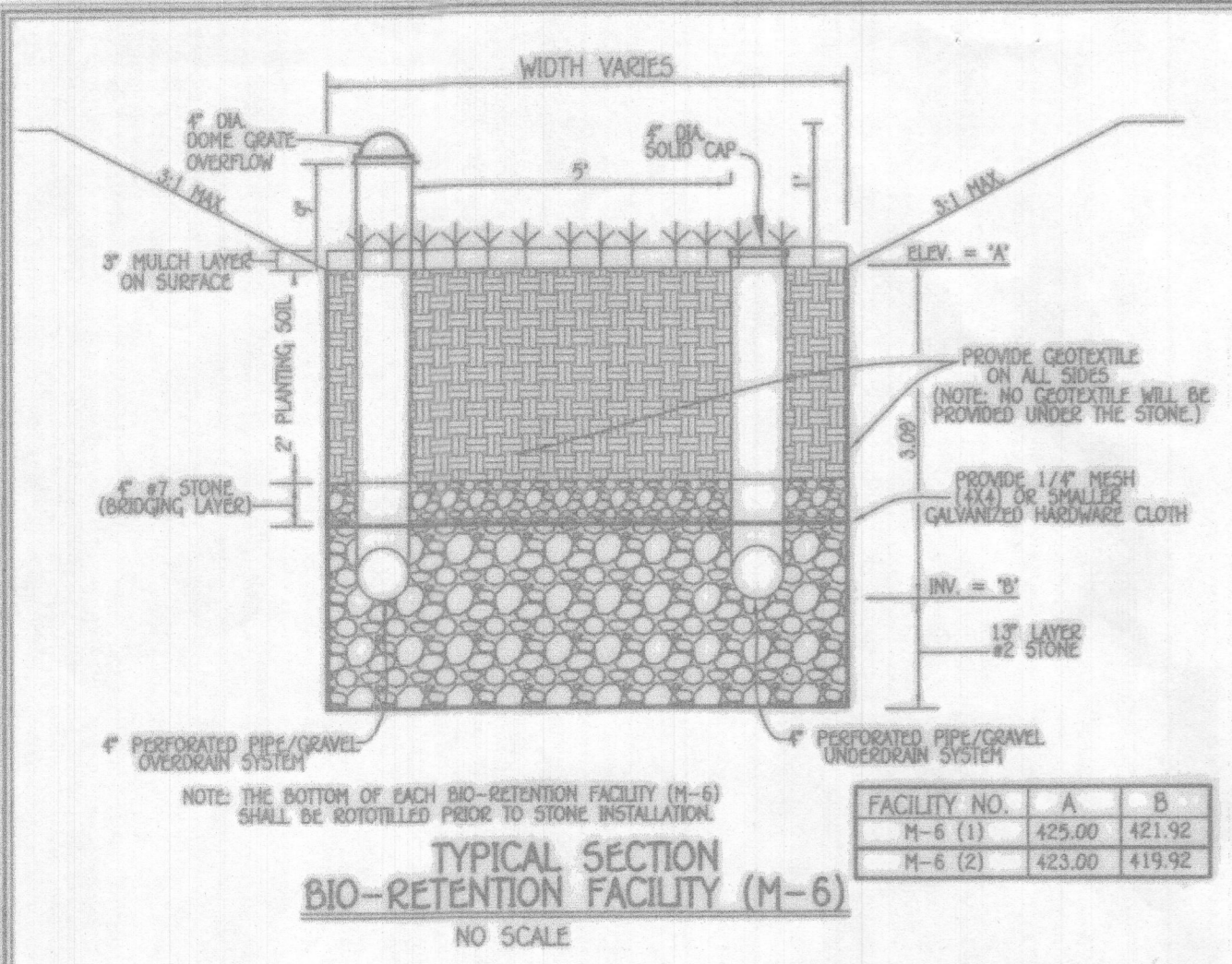
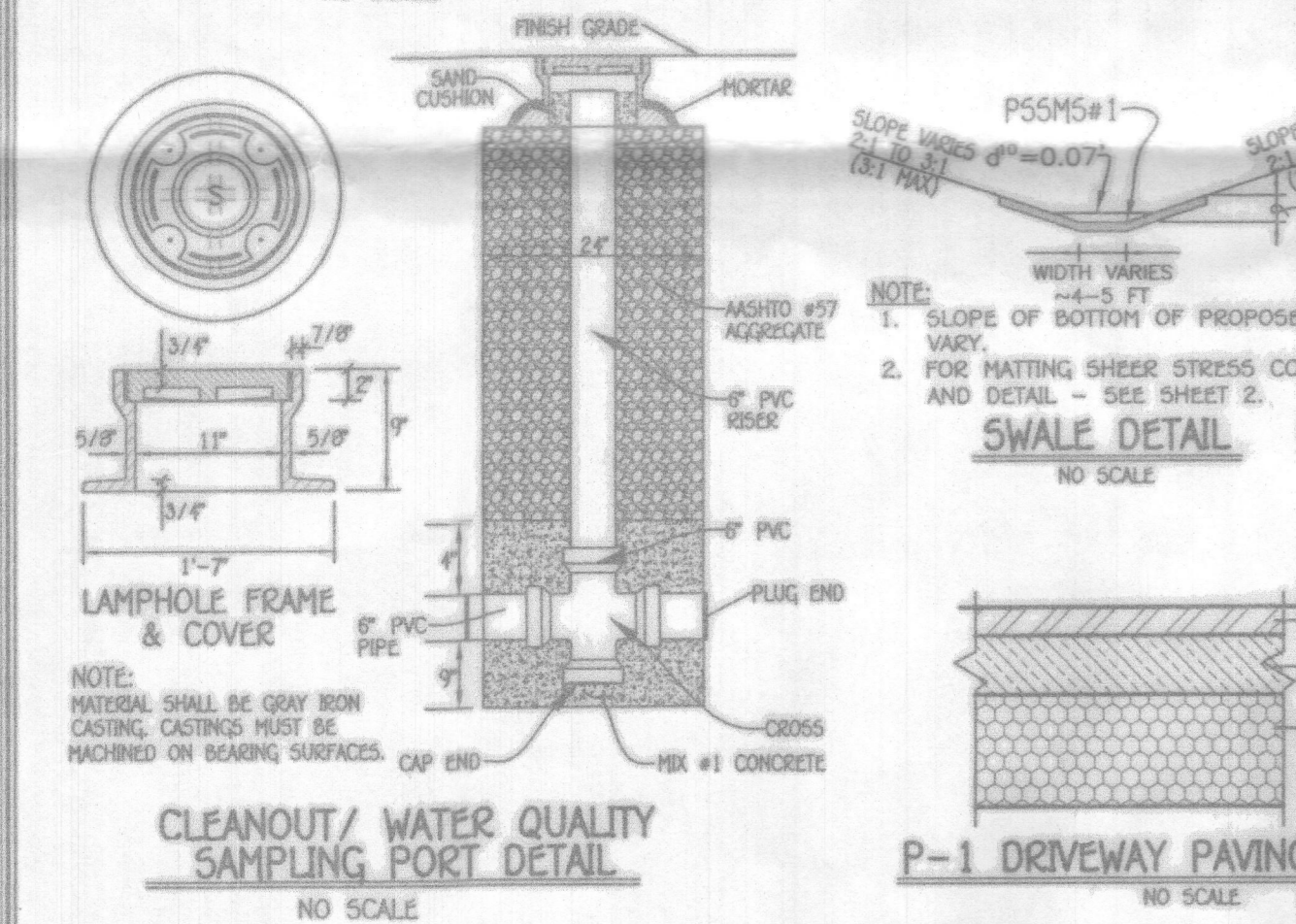
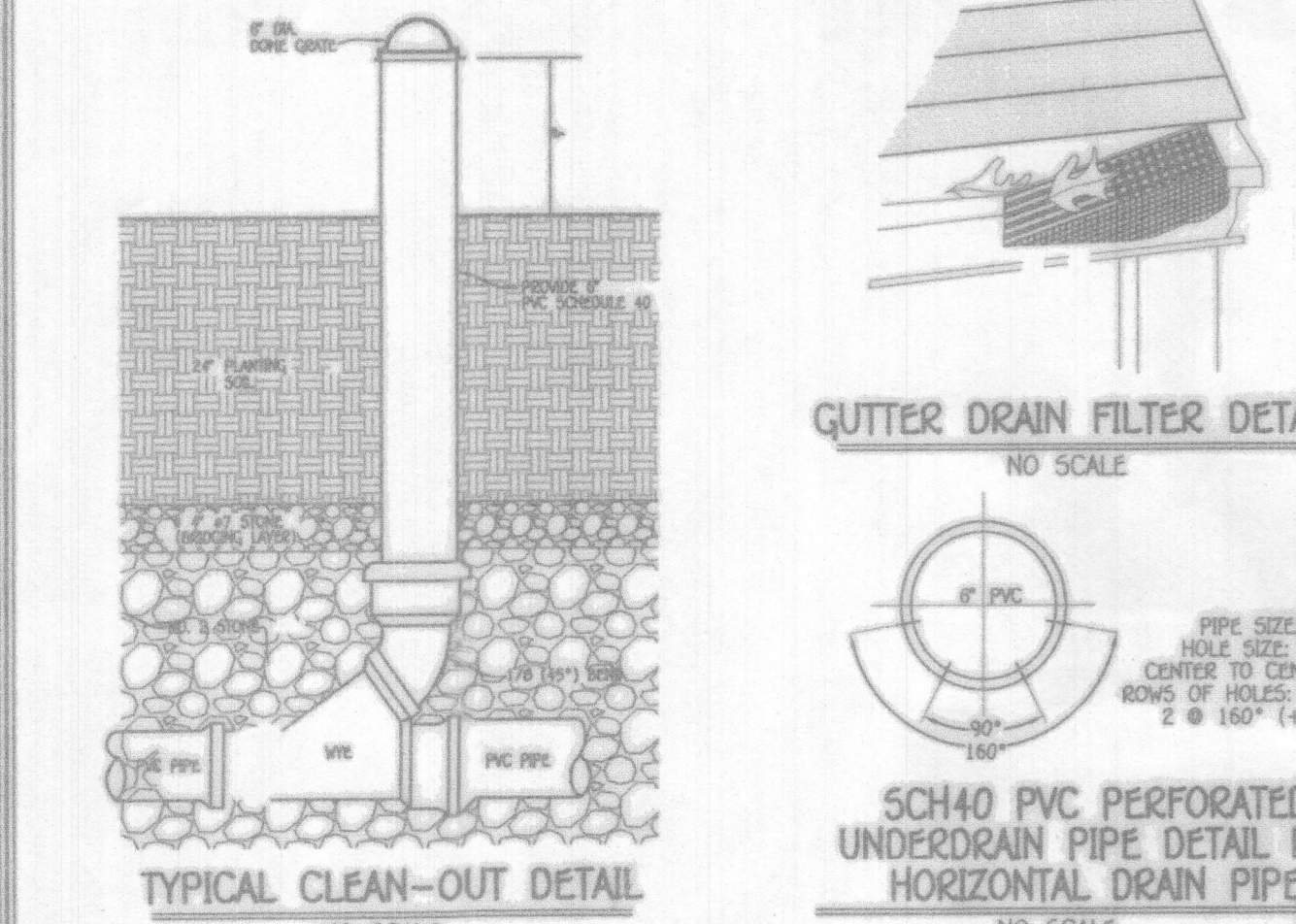


Table B.4. Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration

Material	Specification	Size	Notes
Planting	see Appendix A Table A.4	n/a	Microbiota are site-specific. USDA soil types loamy sand or sandy loam; city content <5%.
Flotting soil	loamy sand 60-10% compost 35-40% of sandy loam 30% coarse sand 30% compost 40%		
Organic Content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood	aged 6 months, minimum	
Pea gravel displacement	pea gravel: ASTM-D-449	No. 6 or No. 9 (1/8" to 3/8")	
Curbside drain	dimensional stone washed cobble	approx. 2" to 3"	
Geotextile		n/a	FC Type 1 nonwovens
Gravel (underdrains and infiltration basins)	ASTM M-63	No. 57 or No. 44 aggregate (3/8" to 3/4")	
Underdrain piping	F 750, Type 25 2" or ASTM M-270	4" to 6" rigid schedule 40 PVC or SDR35	slotted or perforated pipe; 3/8" (min.) @ 6" on center; 4 holes per row, minimum of 3" of gravel over pipe; not necessarily underdrain pipes. Perforated pipe shall be wrapped with 1/4 inch geotextile fabric.
Poured in place concrete (if required)	MSHA 104 No. 3, f = 3000 psi @ 28 days, normal weight, air-entrained, conforming to meet ASTM-615-62	n/a	90-day testing of poured-in-place concrete required; 28-day strength and slump test; all concrete design (cast-in-place or pre-cast) not using precast approved blocks or local standards require design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 308.2R(9); vertical loading 10-10 or 10-20; allowable horizontal loading (based on soil pressure); and analysis of potential cracking.
Sand	ASTM-D-6 or ASTM-C-33	0.02" to 0.04"	sand substitutions such as Dolomite and Graystone (ASTM-D-110) are not acceptable. No calcium carbonate or dolomite sand substitutions are acceptable. No "rock dust" can be used for sand.

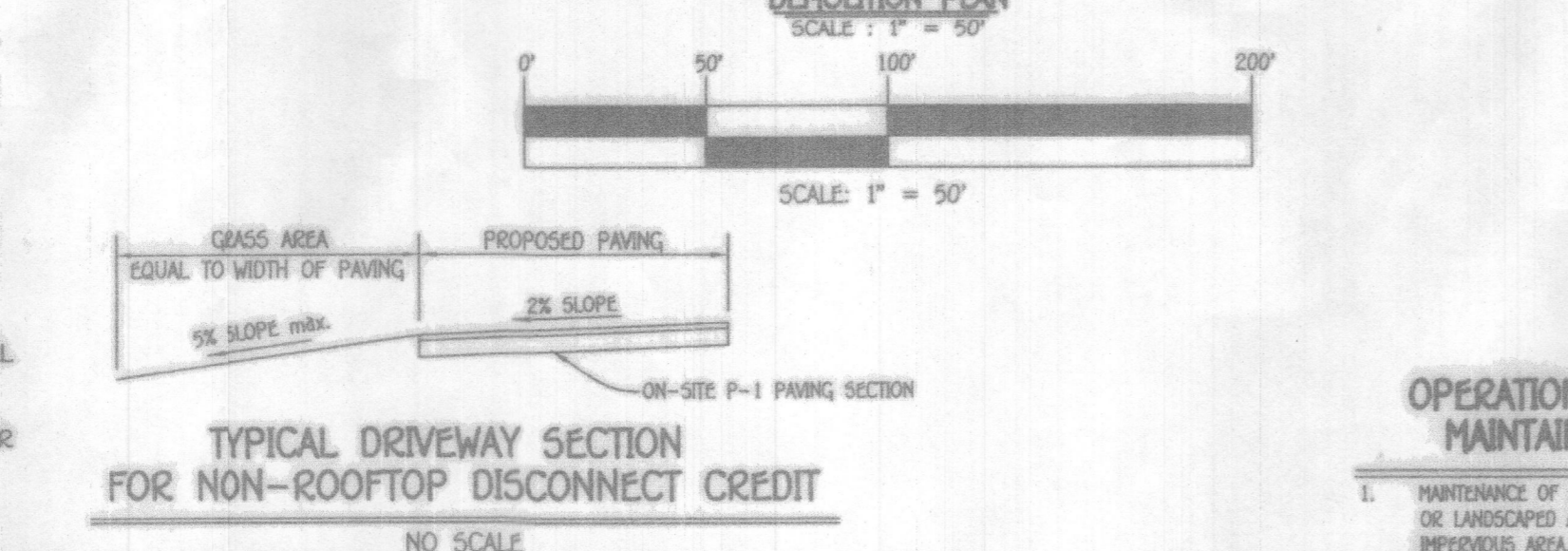
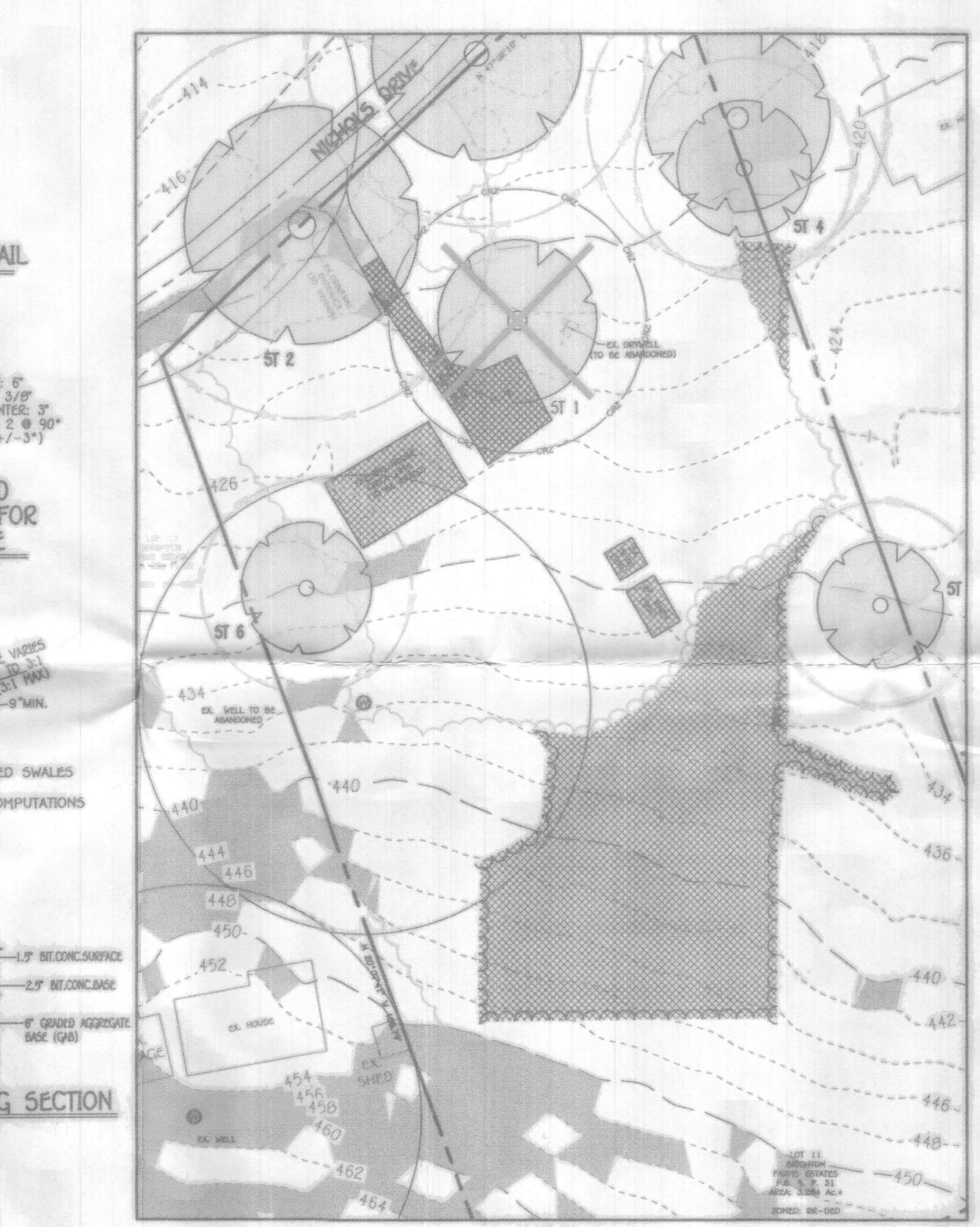


OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BIO-RETENTION AREAS (M-6) AND (F-6)

- 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 CONSIDER 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 ONCE 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.

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 DOWNSPOUT SHALL BE 500 SQ. FT. OR LESS.



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 WCI, AND ICE V. IN SOME INSTANCES WHERE PERMEABILITY IS GREAT, THESE FACILITIES MAY BE USED FOR QP 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, PRE-TREATMENT BUFFERS WILL TRAP SEDIMENTS THAT OFTEN ARE BOUND WITH PHOSPHOROUS AND METALS. VEGETATION PLANTED IN THE FACILITY WILL ADD IN NUTRIENT UPTAKE AND WATER STORAGE. ADDITIONALLY, PLANT ROOTS WILL PROVIDE A PATHWAY FOR STORMWATER TO PERMEATE 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 OF 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 (HYDROLOGY WILL BE SIMILAR TO BIORETENTION FACILITIES, SEE FIGURE A.5 AND TABLE A.4 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 HEAVY FLOW AREAS WITH EROSION CONTROL MATS OR SOO.
- TEMPORARILY DIVERT FLOWS FROM SEEDER 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 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 ROBUST VEGETATIVE COVER. IN ADDITION, MUCH OF THE NUTRIENT POLLUTANT UPTAKE (NITROGEN AND PHOSPHORUS) IS ACCOMPLISHED THROUGH ABSORPTION AND MICROBIAL ACTIVITY WITHIN THE SOIL PROFILE. THEREFORE, SOILS MUST BALANCE THEIR CHEMICAL AND PHYSICAL PROPERTIES TO SUPPORT Biotic COMMUNITIES ABOVE AND BELOW GROUNDING.

THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY VOLUME. ENVIRONMENTAL QUALITY RESOURCES (EQ2), 1996; ENGINEERING TECHNOLOGY INC. AND BIOHABITATS, INC. (ET24), 1993). SOILS SHOULD FALL WITHIN THE SM, ML, SC CLASSIFICATIONS OR THE UNITED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5"/HR) IS REQUIRED (A 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 SEEDS FROM NOXIOUS WEEDS (E.G., JOHNSON GRASS, HUGBOW, NUTSEDGE, AND CANADA THISTLE) OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.06.01.02.) SHOULD NOT BE PRESENT IN THE SOILS.

PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 12 TO 18 LBS THAT ARE LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET OR TRAWSEED BY DOZER TRACKS). THE SPECIFIC CHARACTERISTICS ARE PRESENTED IN TABLE A.5.

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

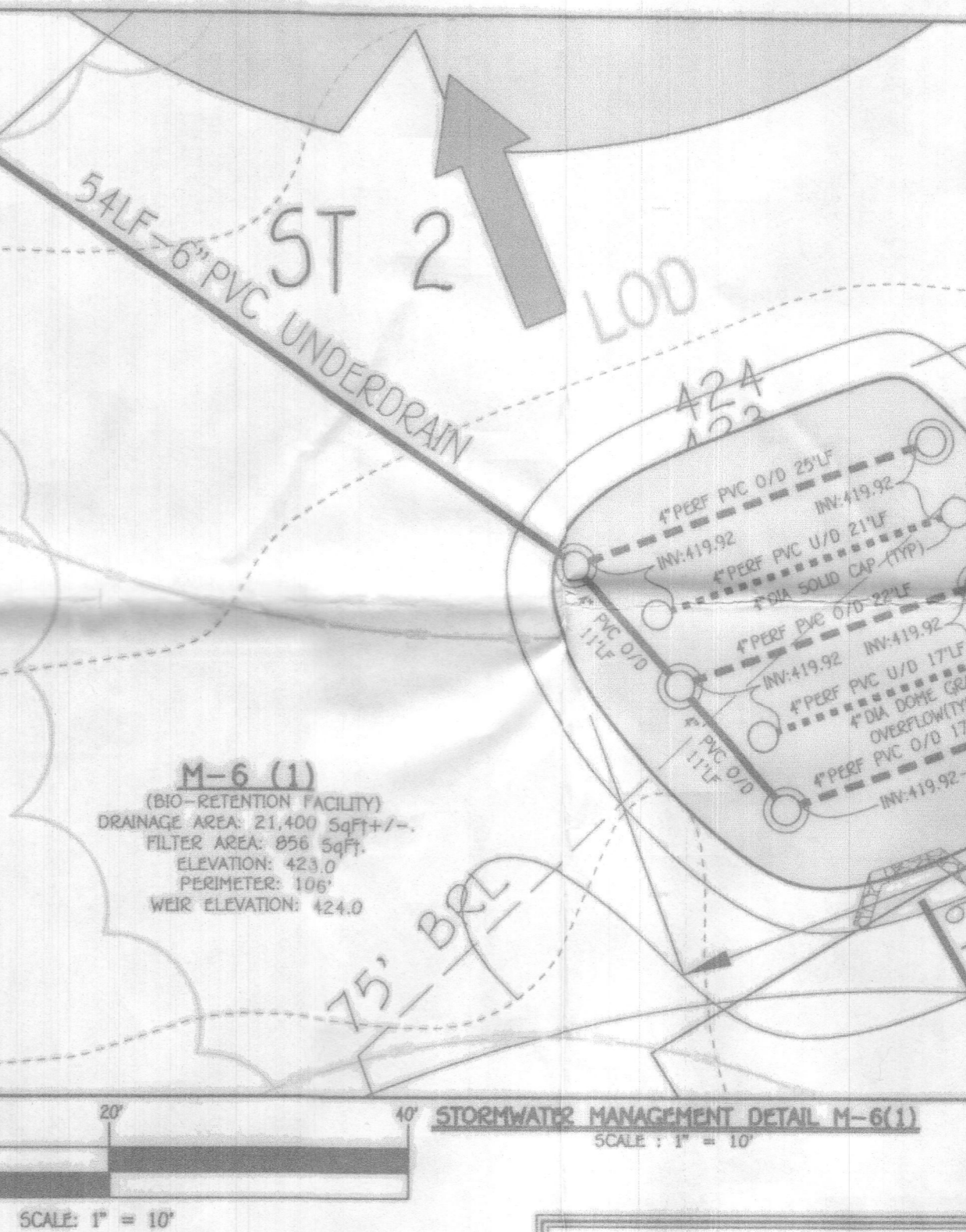
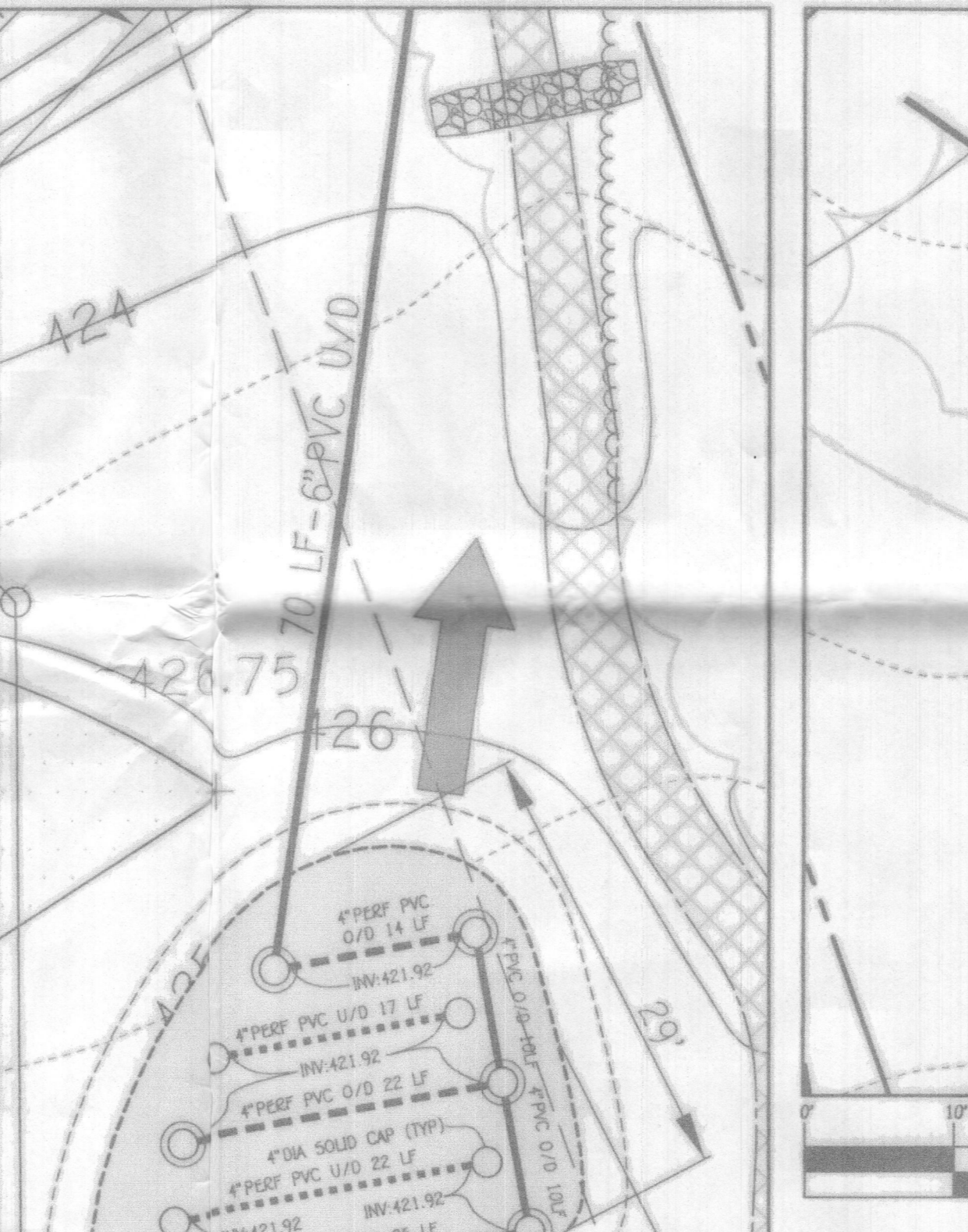
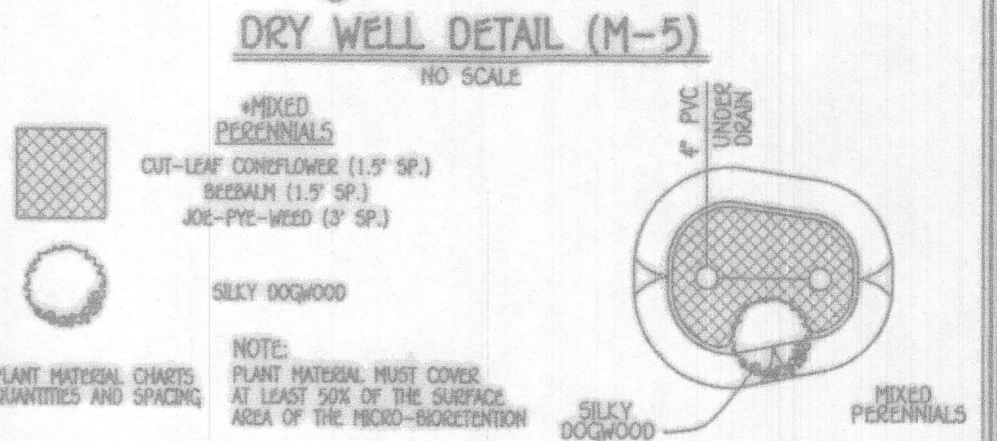
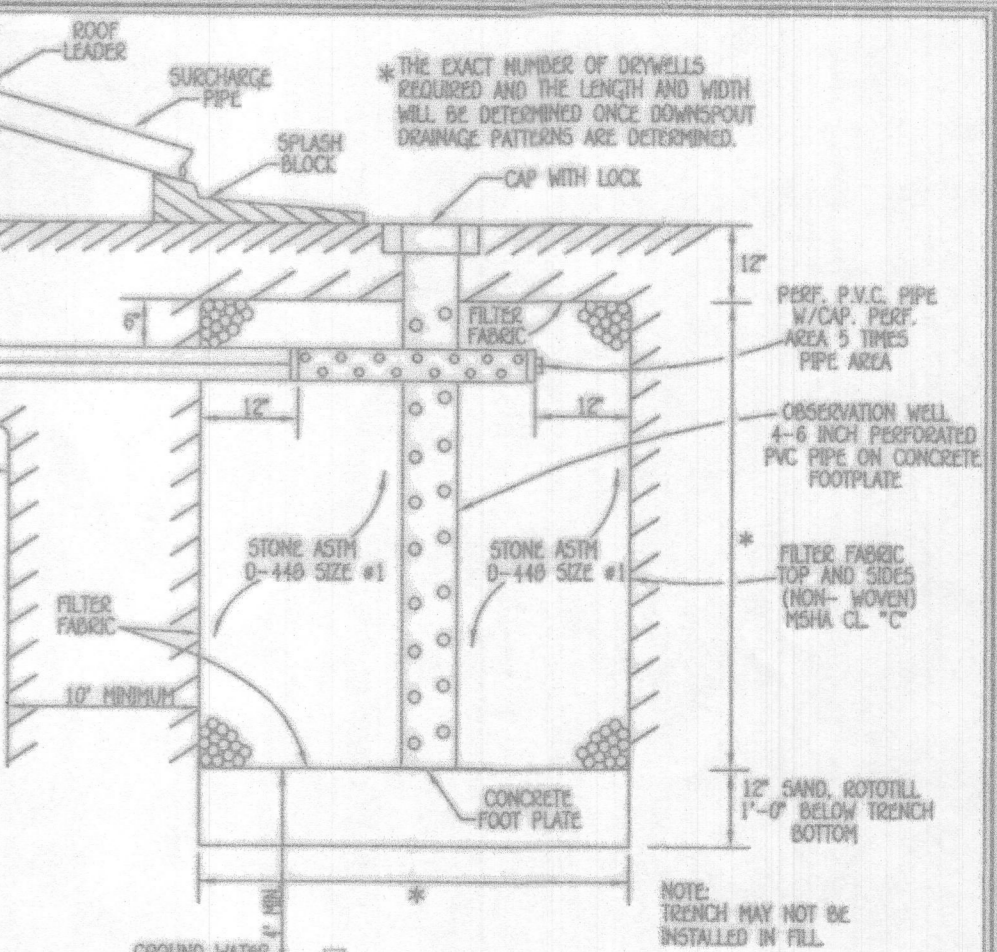
THE MULCH LAYER PLAYS AN IMPORTANT ROLE IN THE PERFORMANCE OF THE BIORETENTION SYSTEM. THE MULCH LAYER HELPS MAINTAIN SOIL MOISTURE AND AVOIDS SURFACE SEALING, WHICH REDUCES PERMEABILITY. MULCH HELPS PREVENT EROSION, AND PROVIDES A MICROENVIRONMENT SUITABLE FOR SOIL BIODIVERSITY AT THE MULCH/SOIL INTERFACE. IT ALSO SERVES AS A PRETREATMENT LAYER, TRAPPING THE FINEST 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 STORED 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 UPLAND-SPECIES ECOSYSTEM. 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, WIND, AND EXPOSURE.

THE PROPER SELECTION AND INSTALLATION OF PLANT MATERIALS IS KEY TO A SUCCESSFUL SYSTEM. THERE 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 DREAR SOIL CONDITIONS, BUT CAN STILL TOLERATE OCCASIONAL INUNDATION BY WATER. THE OUTER EDGE IS THE HIGHEST ELEVATION AND GENERALLY SUPPORTS PLANTS ADAPTED TO DRYER CONDITIONS. A SAMPLE OF APPROPRIATE PLANT MATERIALS FOR BIORETENTION FACILITIES ARE INCLUDED IN TABLE A.4. THE LAYOUT OF PLANT MATERIAL SHOULD BE FLEXIBLE, BUT SHOULD FOLLOW THE GENERAL PRINCIPLES DESCRIBED IN TABLE A.5. THE OBJECTIVE IS TO HAVE A SYSTEM WHICH RESEMBLES A RANDOM AND NATURAL PLANT LAYOUT, WHILE MAINTAINING OPTIMAL CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. FOR A MORE EXTENSIVE BIORETENTION PLAN, CONSULT ETAB, 1993 OR CLAYTON AND SCHULLER, 1997.



DRY WELL CHART

NO.	#DOWNSPOUTS PER DRYWELL	AREA OF ROOF	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF STORAGE	AREA OF TREATMENT	NO. OF DRYWELLS	DIMENSIONS OF DRYWELLS
DW-1	2	918 SqFt	131 CuFt	154 CuFt	118%	100%	1A	12' X 8' X 4'
DW-2	2	832 SqFt	119 CuFt	154 CuFt	129%	100%	1B	12' X 8' X 4'
DW-3	2	836 SqFt	120 CuFt	154 CuFt	128%	100%	2A	12' X 8' X 4'
DW-4	2	933 SqFt	133 CuFt	154 CuFt	116%	100%	2B	12' X 8' X 4'

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.

STORMWATER MANAGEMENT PRACTICES

AREA ID	DRAINAGE AREA SF	% IMPERVIOUS	ESV REQUIRED CUFT	ESV PROVIDED CUFT	MICRO-BIO-RETENTION (Y/N)	DRY WELL (Y/N)	NON-ROOFTOP DISCONNECT CREDIT (Y/N)
(M-6) 1	21,400	31.0	1,067	1,125	Y	Y	Y
(M-6) 2	11,226	75.0	1,219	1,271	Y	Y	Y
(M-5) 1	918	100	131	154	Y	Y	Y
(M-5) 2	832	100	119	154	Y	Y	Y
(M-5) 3	836	100	120	154	Y	Y	Y
(M-5) 4	933	100	133	154	Y	Y	Y
(M-2) 1	1,898	100	150	159	Y	Y	Y

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John P. Manahan II
10/17/20
DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 07/14/21.

John P. Manahan II
10/17/20
DATE

OWNER/BUILDER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THIS CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (DHE) APPROVED TRAINING PROGRAM FOR EROSION AND SEDIMENT CONTROL PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

John P. Manahan II
10/17/20
DATE

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

OWNER

JOHN SEN
109 HUNTS BLUFF ROAD
SPARKS, MARYLAND 21152
410-627-4511

BUILDER

CLASSIC HOMES OF MARYLAND
50 WEST EDMONDSON DRIVE
ROCKVILLE, MARYLAND 20852
301-329-5086

ADDRESS CHART

LOT NUMBER	STREET ADDRESS	PARCEL
11	1355 NICHOLS DRIVE CLARKSVILLE, MARYLAND 21029	104

STORMWATER MANAGEMENT NOTES AND DETAILS

BRIGHTON FARM ESTATES
LOT 11
13575 NICHOLS DRIVE

TAX MAP NO.: 34 GRID NO.: 08 PARCEL NO.: 104
ZONED RR-DEO
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: OCTOBER, 2020
SHEET 3 OF 3

STORMWATER MANAGEMENT NOTES AND DETAILS

BRIGHTON FARM ESTATES
LOT 11
13575 NICHOLS DRIVE

TAX MAP NO.: 34 GRID NO.: 08 PARCEL NO.: 104
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FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: OCTOBER, 2020
SHEET 3 OF 3