FINAL SUPPLEMENTAL PLAN
PINEHURST
LOTS 1-4 AND OPEN SPACE LOT 5
A RE-SUBDIVISION OF LOT 20, HIGH RIDGE, PLAT# 6111

GENERAL NOTES

1. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
3. THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:

MISS UTILITY:	1-800-257-7777
VERIZON TELEPHONE COMPANY:	1-410-954-6281
HOWARD COUNTY BUREAU OF UTILITIES:	410-313-2366
AT&T CABLE LOCATION DIVISION:	1-800-393-3553
B.G.&E. CO. CONTRACTOR SERVICES:	410-850-4620
B.G.&E. CO. UNDERGROUND DAMAGE CONTROL:	410-787-4620
STATE HIGHWAY ADMINISTRATION:	410-531-5533

4. THIS FINAL PLAN IS SUBJECT TO THE FOLLOWING DPZ FILES: PLAT 8 F. 53. VP-84-129, F-85-041 (PLAT#6111), ECP-15-038, WP16-083.
5. THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEYS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED SEPTEMBER 2014. OFFSITE TOPOGRAPHY FROM HOWARD COUNTY GIS.
6. THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED DECEMBER, 2014.
7. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
8. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
9. ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
10. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THE SUBJECT PROPERTY.
11. STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF NON STRUCTURAL PRACTICES AND MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDES THE USE OF RAIN BARRELS, RAIN GARDEN, MICRO-BIORETENTION, GRAVEL WETLAND AND A BIOSWALE. NON-STRUCTIRAL PRACTICES INCLUDE ROOFTOP DISCONNECTIONS. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
12. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
    - WATER FOR THIS PROJECT SHALL BE EXTENDED FROM CONTRACT NO. 20-1018.
    - SEWER FOR THIS PROJECT SHALL BE EXTENDED FROM CONTRACT NO. 20-1018.

    -WATER AND SEWER SERVICE WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE. ALLOCATIONS WILL BE GRANTED AT TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
13. THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION OF THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION, OR BUILDING AND GRADING PERMITS.
14. THE SUBJECT PROPERTY IS ZONED "R-SC" IN ACCORDANCE WITH THE 10/6/2013 COMPREHENSIVE ZONING PLAN AND AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003.
15. THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
16. EXISTING UTILITIES ARE BASED ON ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
17. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 47GD AND 47GE WERE USED FOR THIS PROJECT.
18. PER ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES; NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITATS WERE OBSERVED ON THE PROPERTY.
19. NO FLOODPLAIN IS LOCATED ONSITE.
20. SEDIMENT AND EROSION CONTROL WILL BE PROVIDED FOR THIS SITE.
21. WETLANDS AND STREAMS SHOWN ONSITE ARE BASED ON ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, NOVEMBER 26, 2014.
22. FOREST STAND DELINEATION PLAN PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, NOVEMBER 26, 2014.
23. A TOTAL OF 4 RESIDENTIAL LOTS AND 1 OPEN SPACE LOTS ARE PROPOSED UNDER THIS PLAN.
24. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR THEIR BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
    - REFER TO WP 16-083. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLAND, STREAM OR THEIR BUFFERS EXCEPT AS PERMITTED BY THE CONDITIONS STATED IN WAIVER PETITION, WP-16-083 APPROVAL LETTER DATED FEBRUARY 18, 2016. LIMITED GRADING IN THE WETLAND AND STREAM BUFFERS HAS BEEN DETERMINED TO BE "ESSENTIAL DISTURBANCE". IN ORDER TO PROVIDE SUITABLE OUTFALL FROM THE ENVIRONMENTAL SITE DESIGN FEATURES, THE STORM DRAIN WILL DISCHARGE (END OF RIP RAP) AS CLOSE AS 15' FROM THE EDGE OF THE WETLAND. THIS DISTURBANCE IS REQUIRED TO ADEQUATELY ACCOMMODATE THE STORM WATER TREATMENT PRACTICES WHICH ARE ESSENTIAL FOR REASONABLE DEVELOPMENT OF THIS PROPERTY.
25. A NOISE STUDY IS NOT REQUIRED. NOISE WALL MITIGATION CURRENTLY EXISTS ALONG INTERSTAE 95.
26. IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME 3, CHAPTER 4 - SECTION 4.7(B)(5), A TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT.
27. THERE ARE NO STEEP SLOPES LOCATED ON THE SUBJECT SITE.
28. FOREST CONSERVATION REQUIREMENTS AS SET FORTH IN SECTION 16.1202 OF THE HOWARD COUNTY CODE AND MANUAL. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THE FOREST CONSERVATION OBLIGATION TO BE FULFILLED BY THE PLACEMENT OF 0.40 AC. INTO RETENTION EASEMENT.
    - NO SURETY IS REQUIRED
29. A LANDSCAPE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF $ 5,850.00 FOR THE REQUIRED 16 SHADE TREES, 5 SHRUBS (TRASH PAD) AND 3 SHADE (WP16-083) SHALL BE POSTED WITH THE DEVELOPER AGREEMENT FOR THIS PLAN.
30. UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6.06 FOR THE USE-IN-COMMON DRIVEWAY ENTRANCE AT STANSFIELD ROAD.
31. DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE 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 - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. (1-1 1/2" MIN.)
    C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% CHANGE AND MINIMUM OF 45-FOOT TURNING RADIUS.
    D) STRUCTURES (CULVERT/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 DRIVEWAY SURFACE.
    F) STRUCTURE CLEARANCES-MINIMUM 12 FEET.
    G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
32. THE EXISTING DWELLING AND STRUCTURES SHALL BE RAZED. THE EXISTING HOUSE AND GARAGE WILL BE REMOVED PRIOR TO RECORDATION OF THE FINAL PLAT, F-16-002.
33. STANSFIELD ROAD IS CLASSIFIED AS A MINOR COLLECTOR. SITE ACCESS SHALL BE VIA A USE-IN-COMMON DRIVEWAY.
34. LOTS 2-4 WILL UTILIZE A USE-IN-COMMON DRIVEWAY. A SHARED DRIVEWAY ACCESS AND MAINTENANCE OBLIGATION AGREEMENT FOR THE SHARED DRIVEWAY WHICH SERVES LOTS 2-4 AND OPEN SPACE LOT 5 HAS BEEN RECORDED IN THE LAND RECORDS OFFICE OF HOWARD COUNTY SIMULTANEOUS WITH THE RECORDATION OF THE F-16-002 PLAT.
35. FLAG AND PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE FOR LOTS 1-4 ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
36. A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES. THE R1-1 (STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
37. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
38. SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (12 GAUGE) 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
39. CERTIFIED TEST PITS HAVE BEEN PROVIDED TO VERIFY THE LOCATIONS OF GROUNDWATER AND/OR ROCK. OPEN TEST PITS WERE OBSERVED BY ROBERT H. VOGEL ENGINEERING ON APRIL 20, 2015.
40. IN ACCORDANCE WITH SECTION 16.121(A)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE OPEN SPACE REQUIREMENTS FOR THIS R-SC PROJECT IS 25% OF GROSS AREA (1.84 AC. GROSS AREA x 25% = 0.46 AC.).
    -OPEN SPACE LOT 5 PROVIDES ADDITIONAL AREA OVER THE MINIMUM REQUIRED AND IS 1.06 AC.
    -OPEN SPACE LOT 5 SHALL BE OWNED AND MAINTAINED BY THE PINEHURST HOMEOWNERS' ASSOCIATION, INC.
41. A PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON MARCH 31, 2015 AT 6:00 PM AT THE MEETING ROOM AT NORTH LAUREL COMMUNITY CENTER.
42. MIHU'S ARE REQUIRED FOR THIS PROJECT. IN ACCORDANCE WITH SECTION 108.0.E OF THE 10/06/13 COMPREHENSIVE ZONING REGULATIONS, THIS SUBDIVISION IS SUBJECT TO MODERATE INCOME HOUSING UNITS. THE MIHU OBLIGATION FOR THIS DEVELOPMENT WILL BE PROVIDED BY A PAYMENT OF FEE-IN-LIEU TO THE HOWARD COUNTY HOUSING DEPARTMENT FOR EACH UNIT OR PORTION OF THE UNITS REQUIRED BY THE DEVELOPMENT.
43. VISITOR AND GUEST PARKING SHALL BE RESTRICTED WITHIN THE SHARED DRIVEWAY. INDIVIDUAL HOUSE SITES SHALL PROVIDE THAT PRIVATE DRIVEWAYS HAVE A MINIMUM 18' DEPTH FROM THE FACE OF GARAGE TO THE EDGE OF THE USE-IN-COMMON DRIVEWAY SO THAT A CAR, IF PARKED IN THE DRIVEWAY, WILL NOT OVERHANG INTO THE PAVED AREA OF THE SHARED DRIVEWAY. THE SHARED DRIVEWAY SHALL PROVIDE ADEQUATE UNOBSTRUCTED ACCESS TO ALL DWELLINGS AT ALL TIMES AS REQUIRED BY HOWARD COUNTY DEPARTMENT OF FIRE AND RESCUE.
44. THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 RESIDENTIAL INFILL DEVELOPMENT OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPER OF THIS PROJECT SHALL CREATE COMPABILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES.
45. THE FOLLOWING STANDARDS (CONSTRUCTION AND TEMPORARY TRAFFIC CONTROL) ARE REQUIRED FOR THIS PROJECT:
    a. MD-104.02-02 - SHOULDER WORK/2 LANE, 2 WAY - EQL/LESS THAN 40 MPH
    b. MD-104.02-10 - RIGHT LANE CLOSURE/2 LANE, 2 WAY - EQL/LESS THAN 40 MPH

    -FOR ALL STANDARDS REFERRED TO ON THIS PLAN THE CONTRACTOR MUST GO TO THE BOOK OF STANDATDS WHICH WILL HAVE THE MOST CURRENT VERSION. THE BOOK OF STANDARDS CAN BE ACCESSED AT:
    http://apps.roads.maryland.gov/businesswithsha/bizzStdSpecs/desManualStdPub/%%upublicationsonline/ohd/bookstd/index.asp
    -ALL ITEMS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VERSION OF THE REFERENCED STANDARD AT THE AT THE TIME OF CONSTRUCTION.
46. THIS PROJECT IS SUBJECT TO WP-16-083. ON FEBRUARY 18, 2016; THE PLANNING DIRECTOR CONSIDERED AND ACTED ON FOUR (4) OF THE EIGHT (8) REQUESTED WAIVERS FROM THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE PLANNING DIRECTOR APPROVED THE REQUEST TO WAIVE 1) SECTION 16.132.(A).(2).(I).(A) - PROVIDE REQUIRED ROAD FRONTAGE IMPROVEMENTS AND 2) SECTION 16.136 - PROVIDE STREET TREES SUBJECT TO THE FOLLOWING CONDITIONS:.
    1. COMPLIANCE WITH ANY SUBDIVISION REVIEW COMMITTEE (SRC) COMMENTS BASED ON THE REVIEW AND APPROVAL OF THE ASSOCIATED FINAL SUBDIVISION PLAN (F-16.002).
    2. COMPLIANCE WITH THE ATTACHED COMMENTS FROM THE DEVELOPMENT ENGINEERING DIVISION DATED FEBRUARY 4, 2016. SPECIFICALLY:
        A. DED COMMENT #4 WHICH REQUIRES THE DEVELOPER TO PAY A FEE-IN-LIEU FOR THE CONSTRUCTION OF THE FRONTAGE IMPROVEMENTS. A COMPLETED COST ESTIMATE MUST BE SUBMITTED AND APPROVED BY DPZ AND DPW REGARDING THE FINAL COSTS. THE ESTIMATE SHOULD INCLUDE ALL FRONTAGE IMPROVEMENTS, MOBILIZATION, MOT, SEDIMENT CONTROL, UTILITY RELOCATION, GRADING, ETC. THE FINAL PLANS AND PLAT WILL NOT BE SIGNED UNTIL THE ASSOCIATED FEE HAS BEEN PAID.
        B. DED COMMENT #5 WHICH REQUIRES THAT THE COST OF SIDEWALK CONSTRUCTION TO BE INCLUDED IN THE FEE-IN-LIEU ESTIMATE.
        C. DED COMMENT #7 WHICH REQUIRES THE DEVELOPER TO INSTALL THREE(3) REQUIRED STREET TREES WITHIN THE SITE (OUTSIDE OF THE POWER LINES) BETWEEN THE HOUSE AND THE RIGHT-OF-WAY.
    3. THE APPLICANT SHALL REDESIGN LOT 1 TO REDUCE THE LOT SIZE AND ADJUST THE EASTERN LOT LINE TO EXCLUDE THE 24' WIDE PRIVATE USE-IN-COMMON DRIVEWAY EASEMENT AND THE PRIVATE 18' WIDE USE-IN-COMMON DRIVEWAY PAVEMENT FROM WITHIN LOT 1. THE APPLICANT SHALL ALSO EXCLUDE THE DRIVEWAY PAVEMENT FOR LOT 2 FROM WITHIN LOT 1.

    THE PLANNING DIRECTOR DENIED YOUR REQUEST TO WAIVE 1) SECTION 16.134.(C).(1) - PROVIDE SIDEWALKS AND 2) SECTION 16.120(C)(2)(II) LOT LAYOUT - SHARED DRIVEWAY EASEMENT.

    THE DIVISION OF LAND DEVELOPMENT HAS DETERMINED THE FOLLOWING FOUR (4) REQUESTED WAIVERS ARE NOT REQUIRED:
    A. SECTION 16.116.(A) - PROTECTION OF WETLANDS - DETERMINED TO BE "ESSENTIAL DISTURBANCE".
    B. SECTION 16.120.(B).(4) - LOTS SHOULD BE REGULAR, GENERALLY RECTANGULAR, IN SHAPE.
    C. SECTION 16.121.(E) OPEN SPACE ACCESS AND FRONTAGE
    D. SECTION. 16.135.(A) PROVIDE STREET LIGHTING
47. THE DEVELOPER HAS OBTAINED THE NECESSARY STATE PERMIT FOR THE PROPOSED ENVIRONMENTAL IMPACTS.
    - THE AUTHORIZATION NUMBER IS 16-NT-3055 / 201660474, EFFECTIVE APRIL 19, 2016.
    - ALL WORK IN THE NONTIDAL WETLAND BUFFER SHALL BE COMPLETED PER THE BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS. SEE SHEET 5

SITE DATA

DEED REFERENCE: PARCEL 162: L.12468 F.00469
ELECTION DISTRICT: 6TH
LOCATION: STANSFIELD ROAD
WEST OF OLD SCAGGSVILLE ROAD
EXISTING ZONING:
R-SC

GROSS AREA:	1.84 AC
AREA OF 100 YEAR FLOODPLAIN:	N/A
AREA OF STEEP SLOPES:	0.00 AC
AREA OF WETLANDS & BUFFERS:	0.89 AC.
NET AREA (GROSS-STEEP SLOPES & FLOODPLAIN):	1.84 AC.
BASE DENSITY:	
4 LOTS PER NET ACRE :	7 LOTS
NUMBER OF PROPOSED RESIDENTIAL LOTS:	4 LOTS
AREA OF PROPOSED RESIDENTIAL LOTS (SFD):	0.78 AC
AREA OF ROAD RIGHT OF WAY:	0.00 AC
OPEN SPACE REQUIRED: 25% OF GROSS AREA	= 0.46 AC
TOTAL AREA OF OPEN SPACE PROPOSED:	1.06 AC
LIMIT OF DISTURBANCE:	1.10 AC
EXISTING USE OF SITE:	RESIDENTIAL, SFD
PROPOSED USE OF SITE:	SINGLE FAMILY DETACHED
PROPOSED WATER SYSTEM:	PUBLIC
PROPOSED SEWER SYSTEM:	PUBLIC
MINIMUM LOT AREA:	6,000 SF

MINIMUM LOT SIZE CHART

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
1	7,456 SF	N/A	7,456 SF	6,000 SF
2	8,952 SF	995 SF	7,957 SF	6,000 SF
3	8,445 SF	829 SF	7,616 SF	6,000 SF
4	8,676 SF	1,053 SF	7,623 SF	6,000 SF

NOTE:
- HOUSES MAY NOT BE BUILT USING THIS PLAN.

BENCHMARKS

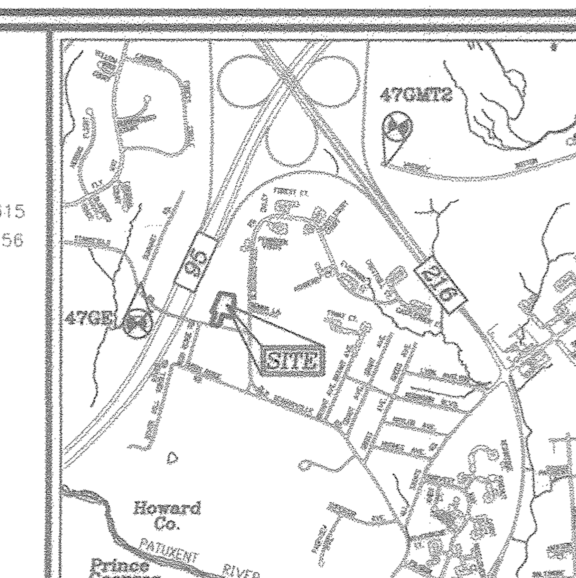
COORDINATES BASED ON NAD 83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 47MT2, 47GE.

HOWARD COUNTY BENCHMARK

47GD	N 530494.447	E 1350872.301	ELEV. 312.315
47GE	N 529044.964	E 1350854.953	ELEV. 335.756

COORDINATE TABLE

NO.	NORTH	EAST
201	529525.5913	1350490.3315
202	529548.8151	1350375.5344
203	529678.6524	1350412.1442
204	529684.7858	1350381.8268
205	529958.8127	1350503.0003
206	529907.6721	1350829.1634
207	529893.5302	1350828.9385
208	529740.0197	1350659.8291
209	529680.0244	1350659.0783
210	529676.9933	1350678.8473
211	529624.8296	1350678.1945
1002	529655.4286	1350526.9413
1006	529736.9886	1350679.5981
1009	529916.5937	1350681.8457
1010	529817.7579	1350444.5948



VICINITY MAP
SCALE: 1"=2000'
ADC MAP COORDINATE: 5169 B1

SHEET INDEX

DESCRIPTION	SHEET NO.
COVER SHEET & LAYOUT PLAN	1 OF 9
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GRADING, SOIL EROSION & SEDIMENT CONTROL PLAN NOTES AND DETAILS	4 OF 9
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LANDSCAPE AND FOREST CONSERVATION PLAN	6 OF 9
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STORM WATER MANAGEMENT NOTES AND DETAILS	9 OF 9

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING UTILITY POLE
- EXISTING TREELINE
- EXISTING TREES
- EXISTING WETLANDS
- 24' PRIVATE USE IN COMMON ACCESS EASEMENT FOR LOTS 2-4 & OPEN SPACE LOT 5
- PUBLIC VARIABLE WIDTH SEWER, WATER AND UTILITY EASEMENT
- PRIVATE STORMWATER MANAGMENT, DRAINAGE & UTILITY EASEMENT
- FOREST CONSERVATION EASEMENT - RETENTION
- EXISTING PUBLIC 25' SEWER EASEMENT FOR LOT 20 PLAT #6111
- EXISTING CHAIN LINK / METAL FENCE
- EXISTING WOOD FENCE
- P-4 TEST PIT LOCATION SEE SHEET 9
- TEST PIT 50' RADIUS

COVER SHEET & LAYOUT PLAN
SCALE: 1"=40'
40' 0 40' 80' 120'

SWM PRACTICE CHART

ESD PRACTICES BY LOT

LOT #	ADDRESS	ESD PRACTICE
#1	10122 STANSFIELD ROAD	DISCONNECT ROOFTOP RUNOFF (N-1), (2) RAIN BARREL (M-1)
#2	10109 LILY POND DRIVE	DISCONNECT ROOFTOP RUNOFF (N-1), (2) RAIN BARREL (M-1) RAIN GARDEN (M-7)
#3	10110 LILY POND DRIVE	DISCONNECT ROOFTOP RUNOFF (N-1), (2) RAIN BARREL (M-1)
#4	10106 LILY POND DRIVE	(2) RAIN BARREL (M-1)

ADDRESS CHART

UNIT/BUILDING	STREET ADDRESS
LOT 1	10122 STANSFIELD ROAD
LOT 2	10109 LILY POND DRIVE
LOT 3	10110 LILY POND DRIVE
LOT 4	10106 LILY POND DRIVE

MIHU AGREEMENT

PLEASE NOTE THAT ALL NEW LOTS/RESIDENTIAL UNITS IN THIS SUBDIVISION (LOTS 1-4) ARE SUBJECT TO THE MIHU FEE-IN-LIEU REQUIREMENT THAT IS TO BE CALCULATED AND PAID TO THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE BY THE PERMIT APPLICANT.

NOTES:

1. ALL WATER CONNECTIONS SHALL BE 1-1/2" WITH 1" OUTSIDE METER SETTINGS, UNLESS OTHERWISE NOTED. REFER TO HOWARD COUNTY DETAILS W-3.28 OUTSIDE METER SETTINGS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 7-28-16
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 7-29-16

OWNER
JAMES J. HERBERSON
15 HERITAGE FARM DRIVE
NEW FREEDOM, PA 17349
(410) 480-0023

DEVELOPER
TRINITY HOMES MARY LAND, LLC
3675 PARK AVE., SUITE 301
ELLICOTT CITY, MD 21043
(410) 480-0023

NO.	REVISION	DATE

FINAL SUPPLEMENTAL PLAN
COVER SHEET & LAYOUT PLAN
PINEHURST
LOTS 1-4 AND OPEN SPACE LOT 5
A RE-SUBDIVISION OF LOT 20, HIGH RIDGE, PLAT# 6111

TAX MAP 47 BLOCK 19
6TH ELECTION DISTRICT
DPZ FILES: PLAT 8 F. 53., VP-84-129, F-85-041 PLAT#6111, ECP-15-038, WP-16-083

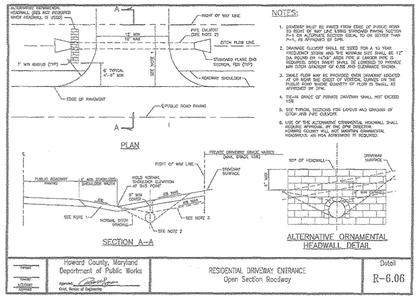
ZONED: R-SC
PARCEL 162
HOWARD COUNTY, MARYLAND

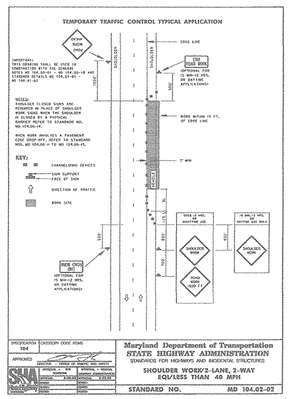
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961

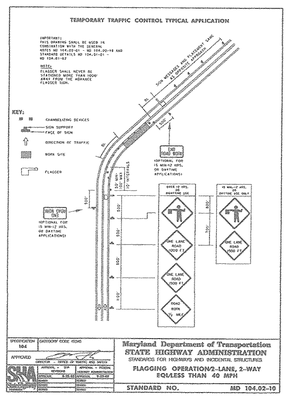
STATE OF MARYLAND ROBERT HARRIS VOGEL No 16193 REGISTERED PROFESSIONAL ENGINEER 7/13/16
ROBERT H. VOGEL, PE No.16193

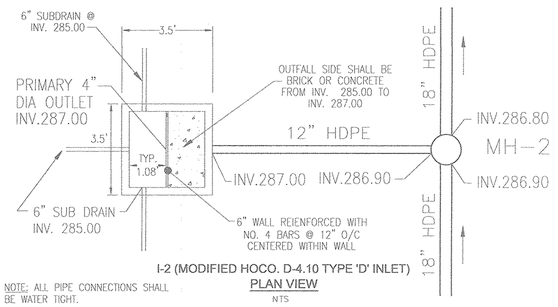
DESIGN BY:	RVE
DRAWN BY:	KG/RVE
CHECKED BY:	RHV
DATE:	JULY 2016
SCALE:	AS SHOWN
W.O. NO.:	14-34

PROFESSIONAL CERTIFICATE
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. 16193 EXPIRATION DATE: 09-27-2016

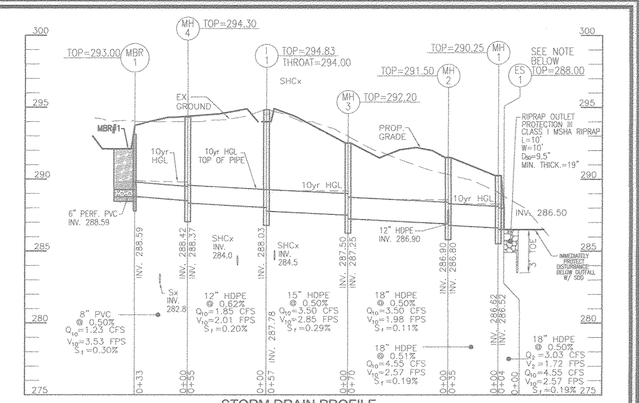








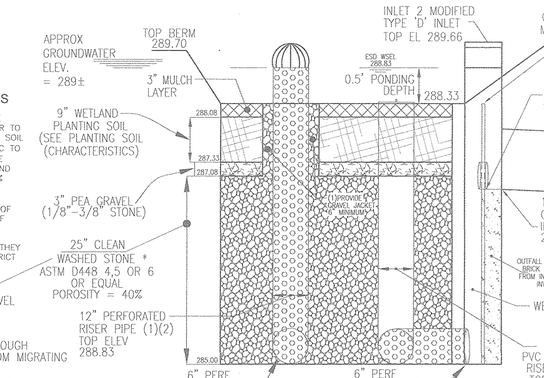
NOTE: ALL PIPE CONNECTIONS SHALL BE WATER TIGHT.



STORM DRAIN PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'

NOTE:
THE DEVELOPER HAS OBTAINED THE NECESSARY STATE PERMIT FOR THE PROPOSED ENVIRONMENTAL IMPACTS.
- THE AUTHORIZATION NUMBER IS 16-NT-3055 / 201660474, EFFECTIVE APRIL 19, 2016.
- ALL WORK IN THE NONTIDAL WETLAND BUFFER SHALL BE COMPLETED PER THE BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS.
SEE SHEET 5

IMPERVIOUS LINER:
IF NATIVE A LOW HYDRAULIC CONDUCTIVITY NATIVE SOIL IS NOT PRESENT BELOW THE GRAVEL LAYER, A LOW PERMEABILITY LINER OR SOIL SHOULD BE USED TO:
- MINIMIZE INFILTRATION
- PRESERVE HORIZONTAL FLOW IN THE GRAVEL.
- MAINTAIN THE WETLAND PLANTS.
IF GEOTECHNICAL TESTS CONFIRM THE NEED FOR A LINER, ACCEPTABLE OPTIONS INCLUDE:
(A) 6 TO 12 INCHES (15 – 30 CM) OF CLAY SOIL (MINIMUM 15% PASSING THE #200 SIEVE AND A MINIMUM PERMEABILITY OF 1 X 10^5 CM/SEC).
(B) A 30 ML HDPE LINER,
(C) BENTONITE,
(D) USE OF CHEMICAL ADDITIVES (SEE NRCS AGRICULTURAL HANDBOOK NO. 386, DATED 1961, OR ENGINEERING FIELD MANUAL).
(E) A DESIGN PREPARED BY A PROFESSIONAL ENGINEER.



* WASHED STONE ROUNDED BANK RUN GRAVEL RECOMMENDED

GRAVEL WETLAND TYPICAL SECTION - M-2
NOT TO SCALE

WETLAND SOIL SPECIFICATIONS

THE SURFACE INFILTRATION RATES OF THE GRAVEL WETLAND SOIL SHOULD BE SIMILAR TO A LOW HYDRAULIC CONDUCTIVITY WETLAND SOIL (0.1–0.01 FT/DAY = 3.5 X 10^5 CM/SEC TO 3.5 X 10^6 CM/SEC)). THIS SOIL CAN BE MANUFACTURED USING COMPOST, SAND, AND SOME FINE SOILS TO BLEND TO A HIGH % ORGANIC MATTER CONTENT SOIL (>15% ORGANIC MATTER). AVOID USING CLAY CONTENTS IN EXCESS OF 15% BECAUSE OF POTENTIAL MIGRATION OF FINES INTO SUBSURFACE GRAVEL LAYER . DO NOT USE GEOTEXTILES BETWEEN THE HORIZONTAL LAYERS OF THIS SYSTEM AS THEY WILL CLOG DUE TO FINES AND MAY RESTRICT ROOT GROWTH.

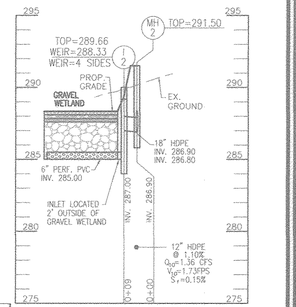
NOTES:
(1) PROVIDE "GRAVEL JACKET" THROUGH SOIL LAYER TO KEEP SOIL FROM MIGRATING IN TO GRAVEL LAYER.
(2) SLOTTED RIGID PVC OR HDPE OR PERFORATED SCH 40 PVC PIPE TO BE WRAPPED W/ 1/4" GALVANIZED HARDWARE CLOTH OR EQUAL MATERIAL, SEE APPENDIX B.4.C. SHEET 9

GRAVEL WETLAND FACILITY - DESIGN ELEVATION CHART										
WETLAND FACILITY #	ESD WSEL A	TOP MULCH B	TOP PLANT SOIL C	BOTTOM PLANT SOIL D	BOTTOM PEA GRAVEL E	INV PIPE (1) F	INV STONE G	SURFACE AREA SF	APPROX DIM
1	288.83	288.33	288.08	287.33	287.08	285.00	285.00	450	SEE PLAN

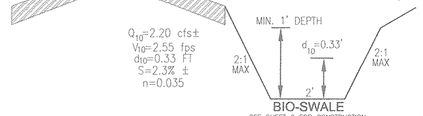
PIPE SCHEDULE

Size	Class	Total Length *
8"	HDPE	90
12"	HDPE	81
15"	HDPE	57
18"	HDPE	109

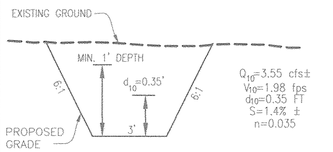
STORM DRAIN PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'



USE IN COMMON DRIVEWAY BIO-SWALE
NOT TO SCALE



SEE SHEET 9 FOR CONSTRUCTION SPECIFICATIONS AND DETAILS



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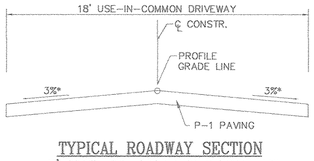
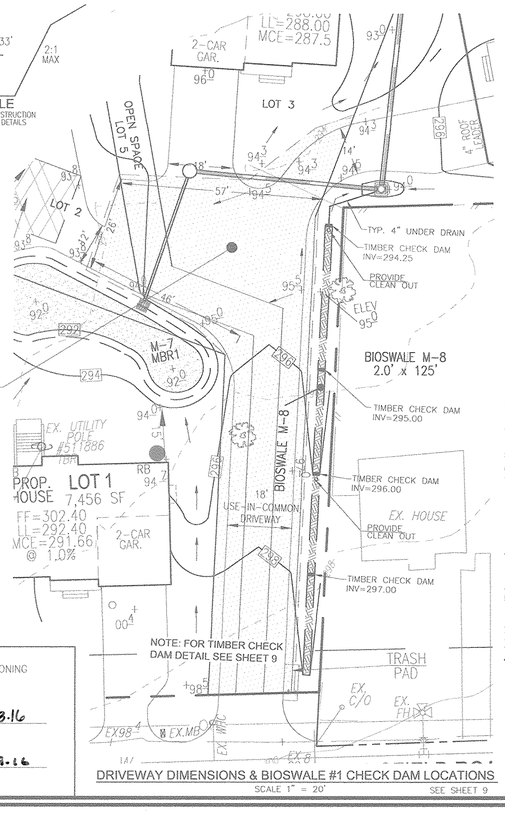
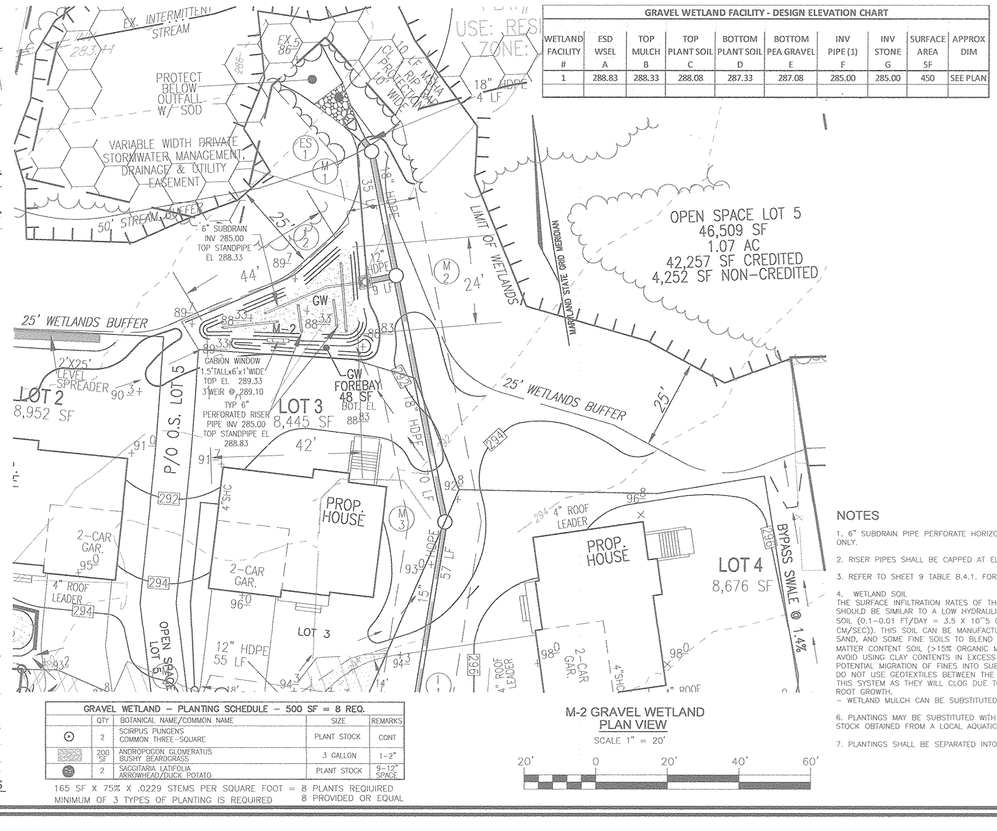


SECTION NOT TO SCALE





GRAVEL WETLAND – PLANTING SCHEDULE – 500 SF = 8 REQ.				
	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	2	SCIRPUS PUNGENS COMMON THREE-SQUARE	PLANT STOCK	CONT
	200 SF	ANDROPOGON GLOMERATUS BUSHY BEARDGRASS	3 GALLON	1–2"
	2	SAGGITARIA LATIFOLIA ARROWHEAD/DUCK POTATO	PLANT STOCK	9–12" SPACE

165 SF X 75% X .0229 STEMS PER SQUARE FOOT = 8 PLANTS REQUIRED
MINIMUM OF 3 TYPES OF PLANTING IS REQUIRED 8 PROVIDED OR EQUAL

NOTES

1. 6" SUBDRAIN PIPE PERFORATE HORIZONTAL SECTIONS OF PIPE ONLY.
2. RISER PIPES SHALL BE CAPPED AT ELEV 288.33
3. REFER TO SHEET 9 TABLE B.4.1. FOR PIPE SPECIFICATIONS
4. WETLAND SOIL
THE SURFACE INFILTRATION RATES OF THE GRAVEL WETLAND SOIL SHOULD BE SIMILAR TO A LOW HYDRAULIC CONDUCTIVITY WETLAND SOIL (0.1–0.01 FT/DAY = 3.5 X 10^5 CM/SEC TO 3.5 X 10^6 CM/SEC)). THIS SOIL CAN BE MANUFACTURED USING COMPOST, SAND, AND SOME FINE SOILS TO BLEND TO A HIGH % ORGANIC MATTER CONTENT SOIL (>15% ORGANIC MATTER). AVOID USING CLAY CONTENTS IN EXCESS OF 15% BECAUSE OF POTENTIAL MIGRATION OF FINES INTO SUBSURFACE GRAVEL LAYER . DO NOT USE GEOTEXTILES BETWEEN THE HORIZONTAL LAYERS OF THIS SYSTEM AS THEY WILL CLOG DUE TO FINES AND MAY RESTRICT ROOT GROWTH.
– WETLAND MULCH CAN BE SUBSTITUTED FOR WETLAND SOIL.
6. PLANTINGS MAY BE SUBSTITUTED WITH NATIVE WETLAND PLANT STOCK OBTAINED FROM A LOCAL AQUATIC PLANT NURSERY.
7. PLANTINGS SHALL BE SEPARATED INTO 3 PLANTING ZONES

STRUCTURE SCHEDULE

STR #	TYPE	INV. IN	INV. OUT	TOP ELEV	DETAIL	LOCATION	REMARKS
I-1	D	288.03	287.78	294.83	D-4.10	E=1350538.33 N=529657.98	
I-2	D *	285.00	287.00	289.66	D-4.10	E=1350540.78 N= 529781.24	SEE DETAIL HEREON
M-1	48" MANHOLE	286.62	286.52	290.25	G 5.12	E=1350554.29 N=529816.66	(1)
M-2	48" MANHOLE	286.90/286.90	286.80	291.50	G 5.12	E=1350555.16 N=529781.45	(1)
M-3	48" MANHOLE	287.50	287.25	292.20	G 5.12	E=1350556.88 N=529711.58	(1)
M-4	48" MANHOLE	288.42	288.37	294.30	G 5.12	E=1350473.36 N=529675.83	(1)
ES-1	18" END SEC.	-	286.50	288.00	HDPE	E=1350552.52 N=529820.17	(2) 18" End Section

(1) Coordinate for Proposed Structure = Centerline of Structure
(2) Coordinate for End Section = Centerline of Pipe @ Downstream Face
* Modified per Details Hereon

OWNER	DEVELOPER
JAMES J. HERBERSON 15 HERITAGE FARM DRIVE NEW FREEDOM, PA 17349 (410) 480–0023	TRINITY HOME'S MARY LAND, LLC 3675 PARK AVE., SUITE 301 ELLICOTT CITY, MD 21043 (410) 480–0023

NO.	REVISION	DATE

FINAL SUPPLEMENTAL PLAN

SITE DETAILS AND STORM DRAIN PROFILES
PINEHURST
LOTS 1–4 AND OPEN SPACE LOT 5
A RE–SUBDIVISION OF LOT 20, HIGH RIDGE, PLAT# 6111

TAX MAP 47 BLOCK 19 ZONED: R–SC
6TH ELECTION DISTRICT PARCEL 162
DPZ FILES: PLAT # F. 53., VP–84–129, HOWARD COUNTY, MARYLAND
F–85–041 PLAT#6111, ECP–15–038, WP–16–083

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7-28-16

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-29-16

STATE OF MARYLAND ROBERT HARRIS VOGEL No.16193 REGISTERED PROFESSIONAL ENGINEER 7/13/16

ROBERT H. VOGEL, PE No.16193

PROFESSIONAL CERTIFICATE
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. 16193 EXPIRATION DATE: 09-27-2016

DESIGN BY:	RVE
DRAWN BY:	KG/RVE
CHECKED BY:	RHV
DATE:	JULY 2016
SCALE:	AS SHOWN
W.O. NO.:	14–34

SHEET 2 OF 9

F-16-002

Standard Stabilization Note

Following initial soil disturbance or re-disturbance, permanent or temporary stabilization must be completed within:

a.) Three (3) calendar days as to the surface of all perimeter dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and

b.) Seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading.

NOTE:
EITHER PERMANENT OR TEMPORARY STABILIZATION IS TO BE APPLIED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR REGARDLESS OF DAYS/DATES IN THE STANDARD SEDIMENT CONTROL NOTES AND/OR SEEDING SPECIFICATIONS.

NOTE:

AN ANALYSIS OF THE EXISTING CULVERT STRUCTURE WAS COMPLETED TO ASSESS THE IMPACTS OF THE POST-DEVELOPMENT RUNOFF. THE ANALYSIS SHOWS A MINIMAL INCREASE IN 100 YEAR HEADWATER AT THE CULVERT. THE IMPACTS TO THE OFFSITE PROPERTIES SHOULD BE CONSIDERED MINIMAL TO NONE.

MR. KEANE, DEVELOPER FOR TRINITY HOMES MARY LAND, LLC MET WITH MR. HERR APRIL 26, 2016 TO DISCUSS THE OFFSITE DISCHARGE DUE TO POST DEVELOPMENT RUNOFF FOR F-16-002. IN THE MEETING MR. HERR STATED THAT HIS YARD ELEVATION IS WELL ABOVE THE DRAINAGE PIPE AND HAS NEVER EXPERIENCE ANY SIGN OF EXCESS WATER IN HIS YARD, AND FURTHERMORE EXPRESSED NO CONCERN FOR THE ADDITION RUNOFF.

CULVERT ANALYSIS SHOWS:
0.08' INCREASE IN LOW POINT OVERTOPPING IN 10 YR STORM
0.20' INCREASE IN LOW POINT OVERTOPPING IN 100 YR STORM

NOTE: EX. SHED MAY REQUIRE RELOCATION FOR SEWER MAIN CONSTRUCTION.

BYPASS SWALE
BOTTOM = 3.0'
SIDE SLOPES = 6:1
SLOPE = 1.4%
Q10=3.55 CFS*
V10=1.98 FPS
d10=0.35'
LINE W/ SOD.

BIO-SWALE / DRIVEWAY SWALE
BOTTOM = 2.0'
SIDE SLOPES = 2:1
SLOPE = 2.3%
Q10=2.2 CFS*
V10=2.55 FPS
d10=0.33'
LINE W/ SOD,
TO BE REPLACED WITH BIO-SWALE

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- STORM DRAIN
- STORM DRAIN INLET
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- EXISTING WETLANDS
- 24' PRIVATE USE IN COMMON ACCESS EASEMENT FOR LOTS 2-4 & OPEN SPACE LOT 5
- PUBLIC VARIABLE WIDTH SEWER, WATER AND UTILITY EASEMENT
- PRIVATE STORMWATER MANAGEMENT, DRAINAGE & UTILITY EASEMENT
- FOREST CONSERVATION EASEMENT - RETENTION
- SOILS BOUNDARY
- SUPER SILT FENCE
- DIVERSION FENCE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- EXISTING CHAIN LINK / METAL FENCE
- EXISTING WOOD FENCE

NOTE

THE DEVELOPER HAS OBTAINED THE NECESSARY STATE PERMIT FOR THE PROPOSED ENVIRONMENTAL IMPACTS.
- THE AUTHORIZATION NUMBER IS 16-NT-3055 / 201660474, EFFECTIVE APRIL 19, 2016.
- ALL WORK IN THE NONTIDAL WETLAND BUFFER SHALL BE COMPLETED PER THE BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS. SEE SHEET 5

NOTE: LOCATE STOCKPILE AS SHOWN HEREON OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. ANY STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED.

NOTE:
- SILT FENCE IS TO BE REPLACED WITH SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- SILT FENCE SHALL BE CURLED UPHILL NO MORE THAN 35 FEET APART
- DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

NOTE:
- HOUSES MAY NOT BE BUILT USING THIS PLAN.
-THE HOWARD SCD STANDARD SEDIMENT CONTROL PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR THIS PROJECT.

OWNER
JAMES J. HERBERSON
15 HERITAGE FARM DRIVE
NEW FREEDOM, PA 17349
(410) 480-0023

DEVELOPER
TRINITY HOMES MARY LAND, LLC
3675 PARK AVE., SUITE 301
ELLICOTT CITY, MD 21043
(410) 480-0023

NO.	REVISION	DATE

FINAL SUPPLEMENTAL PLAN

GRADING, SOIL EROSION & SEDIMENT CONTROL PLAN AND SOILS MAP

PINEHURST

LOTS 1-4 AND OPEN SPACE LOT 5
A RE-SUBDIVISION OF LOT 20, HIGH RIDGE, PLAT# 6111

TAX MAP 47 BLOCK 19
6TH ELECTION DISTRICT
DPZ FILES: PLAT 8 F. 53, VP-84-129,
F-85-041 PLAT#6111, ECP-15-038, WP-16-083

ZONED: R-SC
PARCEL 162
HOWARD COUNTY, MARYLAND

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STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 7/13/16

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RVE
DRAWN BY:	KG/RVE
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DATE:	JULY 2016
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W.O. NO.:	14-34

PROFESSIONAL CERTIFICATE

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SHEET 3 OF 9

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7.28.16

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7.29.16

BY THE DEVELOPER:
"TRINITY HOMES MARY LAND LLC
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
SIGNATURE OF DEVELOPER — DATE 07-13-16

BY THE ENGINEER:
"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 ENGINEER — DATE 7/13/16

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. — DATE 7/22/16

GRADING PLAN

SCALE: 1"=30'

30' 0 30' 60' 90'

MAPPED SOILS TYPES - LAUREL NW - MAP #28

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	HYDRIC	HYDRIC INCLUSIONS	FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
Fa	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	0.02	YES		FARMLAND OF STATEWIDE IMPORTANCE	NO
SrB	SASSAFRAS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	0.24	NO		PRIME FARMLAND	NO
SrD	SASSAFRAS AND CROOM SOILS, 10 TO 15 PERCENT SLOPES	B	0.37	NO		NOT PRIME FARMLAND	YES
UcB	URBAN LAND CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	D	0.37	NO		NOT PRIME FARMLAND	YES

NOTE:
TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

F-16-002

HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
   A. PRIOR TO THE START OF EARTH DISTURBANCE,
   B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,
   C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
   D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

   OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

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 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
5. 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 CID.

6. SITE ANALYSIS:

TOTAL AREA OF SITE:	2.02	ACRES
AREA DISTURBED:	1.10	ACRES
AREA TO BE ROOFED OR PAVED:	0.31	ACRES
AREA TO BE VEGETATIVELY STABILIZED:	0.80	ACRES
TOTAL CUT:	TBD	CU. YDS.
TOTAL FILL:	TBD	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION:	**	

* ESTIMATE ONLY; CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION.
** TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, WITH AN APPROVED AND ACTIVE GRADING PERMIT

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

8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
   - INSPECTION DATE
   - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
   - NAME AND TITLE OF INSPECTOR
   - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
   - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
   - EVIDENCE OF SEDIMENT DISCHARGES
   - IDENTIFICATION OF PLAN DEFICIENCIES
   - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
   - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
   - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
   - PHOTOGRAPHS
   - MONITORING/SAMPLING
   - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
   - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ~~CID~~ HSCD. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
   - USE I AND IP MARCH 1 - JUNE 15
   - USE III AND IIIP OCTOBER 1 - APRIL 30
   - USE IV MARCH 1 - MAY 31
16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

REV. 8/2015

BY THE DEVELOPER:
TRINITY HOMES MARYLAND LLC
"I/WE CERTIFY THAT ALL DEVELOPEMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

Michael Pfau (MEMBER) — 07-13-16
SIGNATURE OF DEVELOPER — DATE

BY THE ENGINEER:

"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] — 7/13/16
SIGNATURE OF ENGINEER — DATE

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

John R. Robertson — 7/22/16
HOWARD S.C.D. — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] — 7.28.16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Kent Sheubrooks — 7.29.16
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS

DEFINITION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION
   A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
   B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
   C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
2. PERMANENT STABILIZATION
   A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
      i. SOIL PH BETWEEN 6.0 AND 7.0.
      ii. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
      iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      iv. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
   B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
   C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
   D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
   E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCEM HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
   A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
   B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
   C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
   D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
   A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
   B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
   C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
   A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
   B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
   C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
   1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
   2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
   3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
   4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
   5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION
A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.
PURPOSE
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.
CONDITIONS WHERE PRACTICE APPLIES
STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.
CRITERIA
1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE
THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.
PURPOSE
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.
CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.
CRITERIA
A. SEED MIXTURES
1. GENERAL USE
   A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
   B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
   C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
   D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
2. TURFGRASS MIXTURES
   A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
   B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
      I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/ CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
      IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE

   C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

   - WESTEM MD: MARCH 15 TO JUNE 1, AUGUST ITO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
   - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
   - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

   D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
   E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
1. GENERAL SPECIFICATIONS
   A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
   B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
   C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
   D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
   E. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
2. SOD INSTALLATION
   A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
   B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
   C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
   D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
3. SOD MAINTENANCE
   A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
   B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
   C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

PERMANENT SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b
SEED MIXTURE (FROM TABLE B.3): 9

NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20) N	P_2O_5	K_2O	LIME RATE
1	COOL SEASON TALL FESCUE & KENTUCKY BLUEGRASS OR EQUAL	T.F. 60 LB / AC K.B. 40 LB / AC	MAR 1 TO MAY 15 AUG 15 TO OCT 15	1/4-1/2 IN.	45 LB/AC (1 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b
SEED MIXTURE (FROM TABLE B.1):

NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
1	COOL SEASON ANNUAL RYEGRASS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	1/2 IN.		

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.
PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.
CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.
CRITERIA
A. SEEDING
1. SPECIFICATIONS
   A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
   B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
   C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
   D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
2. APPLICATION
   A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
      I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 8.1, PERMANENT SEEDING TABLE 8.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
      II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
   B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
      I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
      II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
   C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
      I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P2O5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
      II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
      III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
      IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING
1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
   A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
   B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

2. APPLICATION
   A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
   B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
   C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. ANCHORING
   A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:

I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (1 DAY)
2. DEVELOPER / CONTRACTOR SHALL REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO BEGINNING CONSTRUCTION. (1 DAY)
3. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (410-313-1880) AT LEAST 24 HOURS BEFORE STARTING ANY WORK. (1 DAY)
4. STAKEOUT LIMITS OF DISTURBANCE. (3 DAYS)

PHASE 1
1. IINSTALL STABILIZED CONSTRUCTION ENTRANCE, AS SHOWN HEREON. (1 DAY)
2. CLEAR AND GRUB ONSITE AREA FOR THE INSTALLATION OF PERIMETER CONTROLS (1 DAY)
3. INSTALL PERIMETER SUPER SILT FENCE AS SHOWN HEREON OR AS DIRECTED BY SEDIMENT CONTROL INSPECTOR. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, BEGIN CONSTRUCTION OF ES-1 TO I-1, DRIVEWAY SWALE TO I-1 AND THE BYPASS SWALE AROUND THE REAR OF LOT 4. BYPASS STORM DRAIN SYSTEMS SHALL CAPTURE AND CONVEY CLEAN OFFSITE WATER THROUGH OR AROUND THE PROJECT. SWALES SHALL BE IMMEDIATELY STABILIZED WITH SOD. PPROVIDE INLET PROTECTION ON I-1 (1 WEEK)

THE DEVELOPER HAS OBTAINED THE NECESSARY STATE PERMIT FOR THE PROPOSED ENVIRONMENTAL IMPACTS.
- THE AUTHORIZATION NUMBER IS 16-NT-3055 / 201660474, EFFECTIVE APRIL 19, 2016.
- ALL WORK IN THE NONTIDAL WETLAND BUFFER SHALL BE COMPLETED PER THE BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS. SEE SHEET 5.

4. UPON COMPLETION OF ABOVE, AND WWITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, CCLEAR & GRUB SITE TO INCLUDE REMOVAL OF EXISTING BUILDINGS AND DRIVEWAY AREA (3 DAYS)
5. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROLS SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS (1 DAY)
6. PLACE USE-IN-COMMON DRIVEEWAY TO SUBGRADE AND CONSTRUCT USE-IN-COMMON DRIVEWAY SWALE TO CONVEY OFFSITE CLEAN WATER TO I-1. PLACE SSF ALONG THE DRIVEWAY SIDE OF THE USE-IN-COMMON DRIVEEWAY AND STABILIZE WITH PPERMANENT SEEDING MIXTURE AND STRAW MULCH. THIS SWALE SHALL BE CONVERTED UPON THE COMPLETION OF PHASE 2 (DAILY)
7. WITH THE ABOVE COMPLETE AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, PROCEED TO PHASE 2.

PHASE 2

8. COMPLETE THE IINSTALLATION OF THE SEWER AND WATER EXTENSIONS TO SERVICE THE PROJECT SITE.

-ACCESS TO LOT 22 SHALL BE MAINTAINED AT ALL TIMES. ONLY THAT PORTION OF SEWER WORK THAT CAN BE COMPLETED, BACKFILLED AND STABILIZED AT THE END OF EACH WORKING DAY MAY BE EXCAVATED. (DAILY)

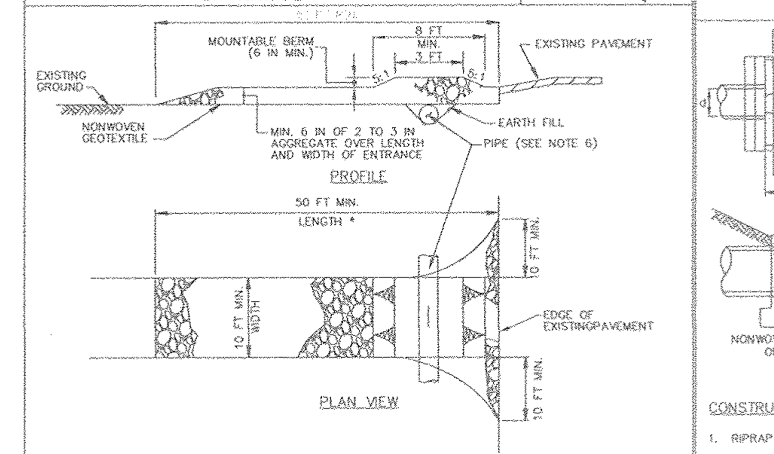
NOTE:
PERIMETER DEVICES, SUPER SILT FENCE, EARTH DIKE, ETC SHALL BE INSPECTED AND REPAIRED AS REQUIRED ON A DAILY BASIS.

9. COMPLETE STORM DRAIN SYSTEMS (5 DAYS)
10. WITH ITEM #9 COMPLETE SITE GRADING AS SHOWN HEREON, BRINGING SITE TO USE-IN-COMMON DRIVEWAY SUBGRADE AND HOME COMPACTED PAD GRADE ELEVATIONS. STABILIZE THOSE AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH OR AS DIRECTED BY THE SEDIMENT CONTROL IINSPECTOR. (1 WEEK)
11. INSTALL USE-IN-COMMON DRIVEWAY STONE SUBBASE AND BASE COURSE PAVING. (2 DAYS)
12. INSTALL TRASH PAD. (1 DAY)
13. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, COMPLETE ANY REMAINING FINE GRADING IN ACCORDANCE WITH STORMWATER MANAGEMENT CRITERIA. ADD TOPSOIL PER THE SPECIFICATIONS SHOWN HEREON, AND STABILIZE DISTURBED AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH (1 WEEK)
14. INSTALL LANDSCAPING AND FOREST CONSERVATION SIGNAGE (5 DAYS)
15. WITH ALL CONTRIBUTING AREAS STABILIZED, INSTALL GRAVEL WETLAND, LEVEL SPREADERS, MICRO-BIORETENTION, BIOSWALE AND RAIN GARDEN. ALL STORMWATER FEATURES SHALL BE PROTECTED FROM RECEIVING HOUSE CONSTRUCTION RUNOFF. (3WEEKS)
16. AFTER PERMISSION HAS BEEN GIVEN BY SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING PERIMETER E/S CONTROLS AND STABILIZE THESE DISTURBED AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH. (1 WEEK)

NOTE: ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

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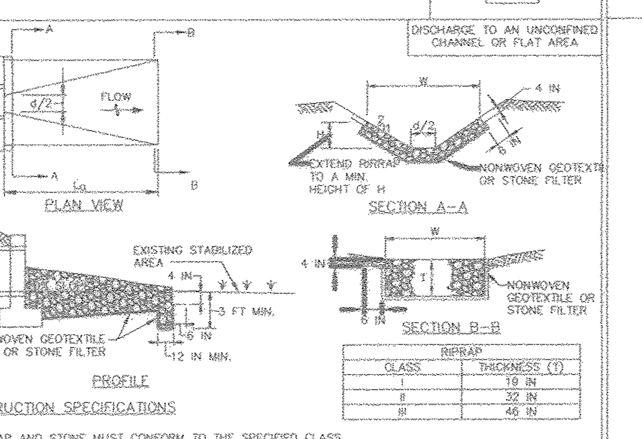
DETAIL D-4-1-C ROCK OUTLET PROTECTION III

STANDARD SYMBOL: ROPIII



RIPRAP CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIPRAP DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

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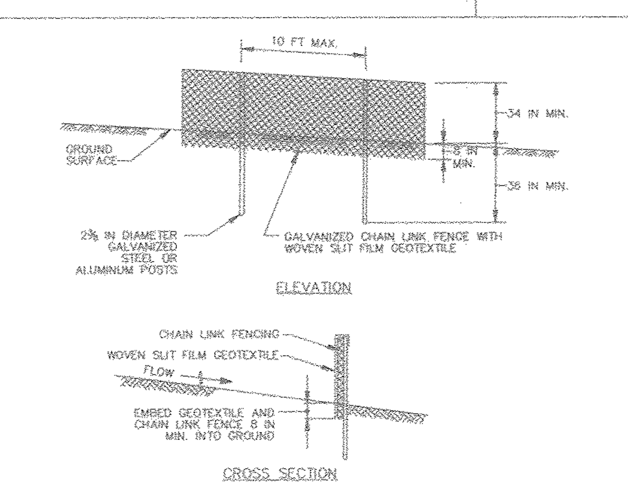
DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

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DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅟₁₆ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

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MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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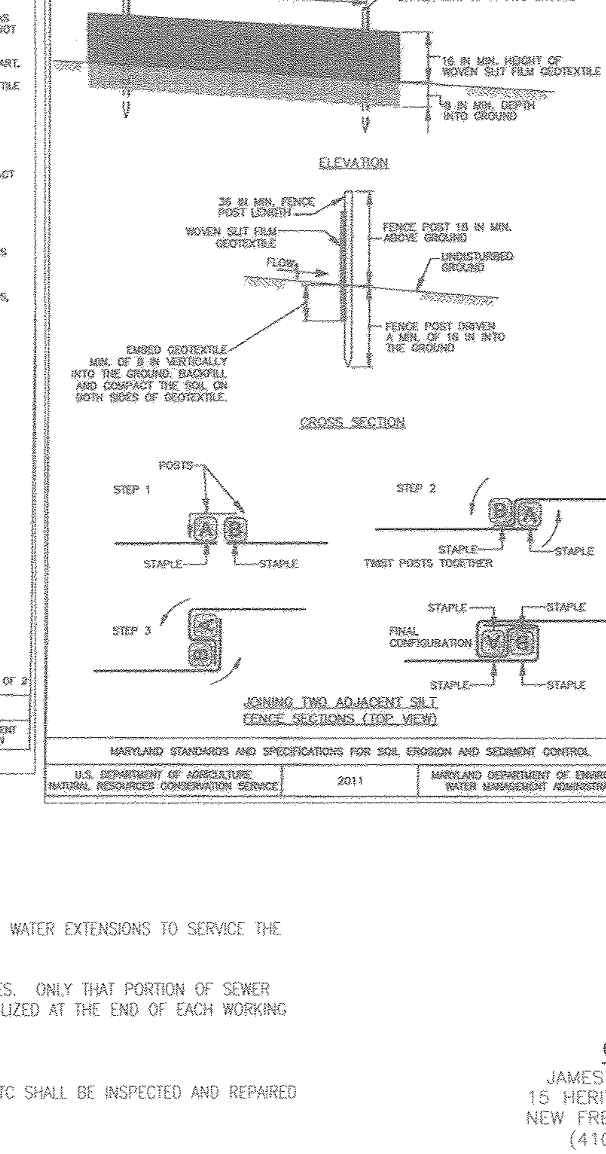
B.3

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



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MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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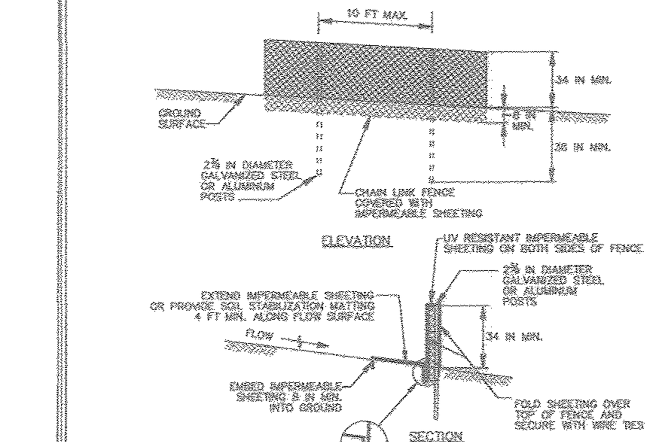
DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: DF

MAXIMUM DRAINAGE AREA = 2 ACRES



CONSTRUCTION SPECIFICATIONS

1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

OWNER	DEVELOPER
JAMES J. HERBERSON 15 HERITAGE FARM DRIVE NEW FREEDOM, PA 17349 (410) 480-0023	TRINITY HOMES MARY LAND, LLC 3675 PARK AVE., SUITE 301 ELLICOTT CITY, MD 21043 (410) 480-0023

NO.	REVISION	DATE

FINAL SUPPLEMENTAL PLAN

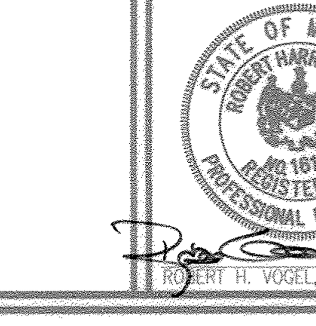
GRADING AND SOIL EROSION, AND SEDIMENT CONTROL PLAN - DETAILS
PINEHURST

LOTS 1-4 AND OPEN SPACE LOT 5
A RE-SUBDIVISION OF LOT 20, HIGH RIDGE, PLAT# 6111

TAX MAP 47 BLOCK 19
6TH ELECTION DISTRICT
DPZ FILES: PLAT 8 F. 53., VP-84-129, F-85-041 PLAT#6111, ECP-15-038, WP-16-083

ZONED: R-SC
PARCEL 162
HOWARD COUNTY, MARYLAND

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



ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RVE
DRAWN BY:	KG/RVE
CHECKED BY:	RHV
DATE:	JULY 2016
SCALE:	AS SHOWN
W.O. NO.:	14-34

PROFESSIONAL CERTIFICATE

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. 16193 EXPIRATION DATE: 09-27-2016

F-16-002

NOTE:
- HOUSES MAY NOT BE BUILT USING THIS PLAN.

CULVERT ANALYSIS

EX COND. — 6.2 AC, RCN=75, R-SC, 31% IMP
Q2 = 8.7 cfs
Q10 = 20.7 cfs

PROP. COND. — 6.6 AC, RCN=76, R-SC, 41% IMP
Q2 = 9.8 cfs
Q10 = 22.8 cfs

FOREST CONSERVATION
RETENTION - 0.40 ACRES

OPEN SPACE LOT 5
43,559 SF
43,559 SF CREDITED
4,258 SF NON-CREDITED

0.38 AC, C=0.42 — 2 — R-SC, 39% IMP

0.07 AC, C=0.68 — RG 2 — R-SC, 74% IMP

0.29 AC, C=0.50 — MBR 1 — R-SC, 57% IMP

1.10 AC, C=0.38 — BYPASS SWALE — R-SC, 44% IMP

BYPASS SWALE
BOTTOM = 3.0'
SIDE SLOPES = 6:1
SLOPE = 1.4%
Q10=3.55 CFS*
V10=1.98 FPS
d10=0.35'

TOTAL
0.64 AC, C=0.39 — 1 — R-SC, 45% IMP
BIO-SWALE / DRIVEWAY SWALE

BIO-SWALE / DRIVEWAY SWALE
BOTTOM = 2.0'
SIDE SLOPES = 2:1
SLOPE = 2.3%
Q10=2.2 CFS*
V10=2.55 FPS
d10=0.33'

LOT 4 SIDE SWALE
0.22 AC, C=0.38 — 1 — R-SC, 45% IMP

LOT 4 SIDE YARD SWALE
BOTTOM = 0.5'
SIDE SLOPES = 3:1
SLOPE = 4.2%
Q10= 0.71 CFS
V10=2.93 FPS
d10=0.22'

STORM DRAIN - DRAINAGE AREA MAP

SCALE: 1"=30'

30' 0 30' 60' 90'

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- STORM DRAIN
- STORM DRAIN INLET
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- EXISTING WETLANDS
- 24' PRIVATE USE IN COMMON ACCESS EASEMENT FOR LOTS 2-4 & OPEN SPACE LOT 5
- PUBLIC VARIABLE WIDTH SEWER, WATER AND UTILITY EASEMENT
- PRIVATE STORMWATER MANAGMENT, DRAINAGE & UTILITY EASEMENT
- FOREST CONSERVATION EASEMENT - RETENTION
- SOILS BOUNDARY

DRAINAGE AREA / 'C' FACTOR — INLET # — ZONING / % IMPERVIOUS

THE DEVELOPER HAS OBTAINED THE NECESSARY STATE PERMIT FOR THE PROPOSED ENVIRONMENTAL IMPACTS.
- THE AUTHORIZATION NUMBER IS 16-NT-3055 / 201660474, EFFECTIVE APRIL 19, 2016.
- ALL WORK IN THE NONTIDAL WETLAND BUFFER SHALL BE COMPLETED PER THE BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS.

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

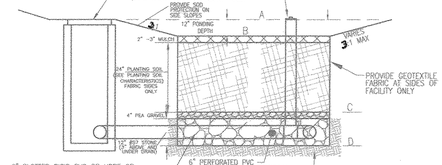
1) NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
2) PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3) DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4) PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5) REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100 YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6) RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7) ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.), AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
8) AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9) TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:
   USE I WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
   USE III WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
   USE IV WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.
10) STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11) CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

MAPPED SOILS TYPES - LAUREL NW - MAP #28

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	HYDRIC	HYDRIC INCLUSIONS	FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
Fa	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	0.02	YES		FARMLAND OF STATEWIDE IMPORTANCE	NO
SrB	SASSAFRAS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	0.24	NO		PRIME FARMLAND	NO
SrD	SASSAFRAS AND CROOM SOILS, 10 TO 15 PERCENT SLOPES	B	0.37	NO		NOT PRIME FARMLAND	YES
UcB	URBAN LAND CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	D	0.37	NO		NOT PRIME FARMLAND	YES

NOTE:
TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

NOTE
4" CAPPED/SOLID RIGID PVC OR HDPE OBSERVATION / CLEAN OUT PIPE
1 FOOT DEEP PER 1,000 SF OF SURFACE AREA



MICRO-BIORETENTION (MBR 1) - TYPICAL DETAIL
NOT TO SCALE

OWNER
JAMES J. HERBERSON
15 HERITAGE FARM DRIVE
NEW FREEDOM, PA 17349
(410) 480-0023

DEVELOPER
TRINITY HOMES MARY LAND, LLC
3675 PARK AVE., SUITE 301
ELLICOTT CITY, MD 21043
(410) 480-0023

NO.	REVISION	DATE

FINAL SUPPLEMENTAL PLAN

STORM DRAIN DRAINAGE AREA MAP

PINEHURST

LOTS 1-4 AND OPEN SPACE LOT 5
A RE-SUBDIVISION OF LOT 20, HIGH RIDGE, PLAT# 6111

TAX MAP 47 BLOCK 19
6TH ELECTION DISTRICT
DPZ FILES: PLAT 8 F. 53, VP-84-129, F-85-041 PLAT#6111, ECP-15-038, WP-16-083
ZONED: R-SC
PARCEL 182
HOWARD COUNTY, MARYLAND

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ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7.28.16

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-29-16

NOTES:
1. WORST CASE 5 MIN. TC ASSUMED THROUGHOUT DESIGN.
2. PERCENT IMPERVIOUS SHOWN, IGNORES ESD STORMWATER MANAGEMENT "CREDITS".
3. DESIGN ASSUMES COMPLETE FAILURE OF PROPOSED ESD / MICRO-SCALE PRACTICES

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO.16193 — REGISTERED PROFESSIONAL ENGINEER — 7/28/16
ROBERT H. VOGEL, PE No.16193

DESIGN BY: RVE
DRAWN BY: KG/RVE
CHECKED BY: RHV
DATE: JULY 2016
SCALE: AS SHOWN
W.O. NO.: 14-34

PROFESSIONAL CERTIFICATE

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. 16193 EXPIRATION DATE: 09-27-2018

SHEET 5 OF 9

F-16-002

PLAN VIEW
SCALE: 1"=30'
SCALE 1"=30'
15' 0' 30'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7-23-16

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7-29-16

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 CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER — DATE 07-13-16

BG&E NOTES:

1. BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
2. THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OR A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BGE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONSTELLATION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLE WITHHOLD PERMISSION.
3. CALL MISS UTILITY TO MARK UP THE LOCATION OF EXISTING GAS LINE BEFORE PLANTING STREET TREES ALONG HANOVER ROAD & PLANT STREET TREES 10' AWAY FROM EXISTING GASLINE AS REQUIRED.

DPZ'S POLICIES GOVERNING THE PLACEMENT OF LANDSCAPING AND STREET TREES IN PROXIMITY TO BGE'S POWER LINES OR TRANSMISSION RIGHT-OF-WAY ARE BASED ON BGE'S PUBLISHED "PLANTING ZONE CONCEPT" WHICH STIPULATES THE MAXIMUM ALLOWABLE SIZE OF PLANT MATERIALS FOR THREE DEFINED ZONES. AS THE DISTANCE FROM BGE EQUIPMENT INCREASES, SO DOES THE SIZE OF THE ALLOWABLE PLANT MATERIALS. THESE THREE ZONES AREA DEFINED AS FOLLOWS:

ZONE	DISTANCE FROM THE BGE POWER LINE OR TRANSMISSION RIGHT-OF-WAY	MAXIMUM HEIGHT OF VEGETATION
GREEN	UP TO 20 FEET	25 FEET
YELLOW	BETWEEN 20 FEET AND 45 FEET	40 FEET
RED	BEYOND 45 FEET	ABOVE 40 FEET

OWNER
JAMES J. HERBERSON
15 HERITAGE FARM DRIVE
NEW FREEDOM, PA 17349
(410) 480-0023

DEVELOPER
TRINITY HOMES MARY LAND, LLC
3675 PARK AVE., SUITE 301
ELLICOTT CITY, MD 21043
(410) 480-0023

NO.	REVISION	DATE

FINAL SUPPLEMENTAL PLAN

LANDSCAPE & FOREST CONSERVATION PLAN

PINEHURST

LOTS 1-4 AND OPEN SPACE LOT 5
A RE-SUBDIVISION OF LOT 20, HIGH RIDGE, PLAT# 6111

TAX MAP 47 BLOCK 19
6TH ELECTION DISTRICT
DPZ FILES: PLAT # F 53, VP-84-129, F-85-041 PLAT#6111, ECP-15-038, WP-16-083

ZONED: R-SC
PARCEL 182
HOWARD COUNTY, MARYLAND

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STATE OF MARYLAND
ROBERT HARRIS VOGEL
NO. 16193
REGISTERED
PROFESSIONAL ENGINEER
7/29/16

ROBERT H. VOGEL, PE No.16193

PROFESSIONAL CERTIFICATE

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DESIGN BY:	RVE
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SHEET 6 OF 9

F-16-002

FOREST CONSERVATION PLAN

SCALE: 1"=50'

50' 0 50' 100' 150'

NOTE:
- HOUSES MAY NOT BE BUILT USING THIS PLAN.

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5006 Glen Arm, Maryland 21057 Telephone (410) 833-2488 Fax (410) 833-2488

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD0610044B2
John P. Canoles

1. NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITAT WERE OBSERVED ON THE PROPERTY
2. SURROUNDING LAND USE CONSISTS OF MEDIUM TO HIGH DENSITY RESIDENTIAL DEVELOPMENT.
3. PROJECT SITE IS APPROXIMATELY 1.84 ACRES IN SIZE.
4. NO HISTORIC ELEMENTS ARE KNOWN TO BE PRESENT ON THIS SITE.
5. A WETLAND/FOREST COMPLEX IS PRESENT ON THE PROPERTY AND IS APPROXIMATELY 0.5 ACRE IN SIZE.
6. NO SPECIMEN TREES ARE PRESENT ON THE SUBJECT PROPERTY.

7/13/16
JOHN CANOLES
DNR QUALIFIED PROFESSIONAL

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7.28.16

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7.29.16

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING EDGE OF PAVING
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREELINE
- EXISTING TREES
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS (SnE, StC2)
- FOREST CONSERVATION SIGN
- FOREST CONSERVATION EASEMENT – RETENTION
- 24' PRIVATE USE IN COMMON ACCESS EASEMENT FOR LOTS 2-4 & OPEN SPACE LOT 5
- PUBLIC VARIABLE WIDTH SEWER, WATER AND UTILITY EASEMENT
- PRIVATE STORMWATER MANAGMENT, DRAINAGE & UTILITY EASEMENT

FOREST STAND DATA

KEY	COMMUNITY TYPE	ACREAGE	DOMINANT VEGETATION	GENERAL CONDITION	PRIORITY ACREAGE
F1	SUCCESSIONAL	0.5	FRAXINUS PENNSYLVANICA, SALIX NIGRA, ACER SACCHARINUM, PRUNUS SEROTINA, JUGLANS NIGRA	GOOD	0.5 WETLANDS AND BUFFERS

WETLAND DATA

WETLAND SYSTEM	COWARDIN CLASSIFICATION	DOMINANT VEGETATION	SIZE
A	PFO/EM1C	FRAXINUS PENNSYLVANICA, SALIX NIGRA, ACER SACCHARINUM, NYSSA SYLVATICA, CORNUS AMOMUM, SAMBUCUS CANADENSIS, JUNCUS EFFUSUS, ONOCLEA SENSIBILIS, CAREX LURIDA	0.4± AC

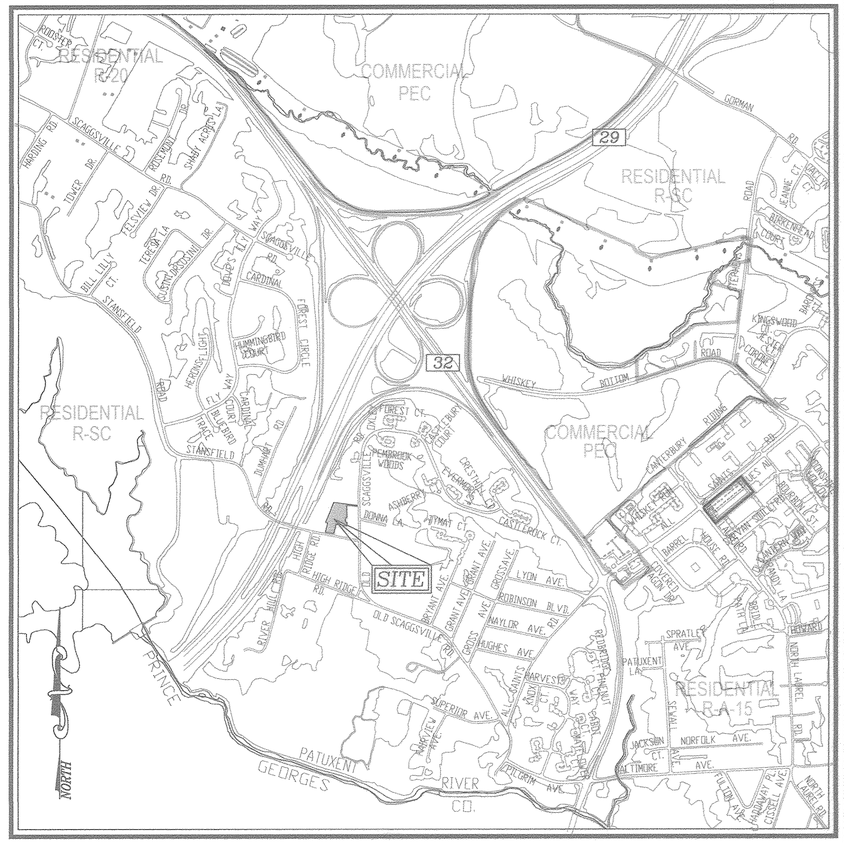
SFSD NOTES:

1. NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR APPROPRIATE HABITAT WERE OBSERVED ON THE PROPERTY.
2. SURRONDING LAND USE IS MEDIUM-HIGH DENSITY RESIDENTIAL DEVELOPMENT.
3. ALL FOREST ON THE SITE IS WITHIN STAND F-1.
4. NO SPECIMEN TREES ARE PRESENT ON THE SUBJECT PROPERTY.

MAPPED SOILS TYPES - LAUREL NW - MAP #28

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	HYDRIC	HYDRIC INCLUSIONS	FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
Fa	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	0.02	YES		FARMLAND OF STATEWIDE IMPORTANCE	NO
SfB	SASSAFRAS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	0.24	NO		PRIME FARMLAND	NO
SrD	SASSAFRAS AND CROOM SOILS, 10 TO 15 PERCENT SLOPES	B	0.37	NO		NOT PRIME FARMLAND	YES
UcB	URBAN LAND CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	D	0.37	NO		NOT PRIME FARMLAND	YES

NOTE:
TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT



VICINITY MAP

SCALE: 1"=1,000'
ADC MAP COORDINATE: 5169 B1/5169 B2
5169 C1/5169 C2

BENCHMARKS

HOWARD COUNTY BENCHMARK 47H2 (CONC. MON.)
N 529706.4221 E 1355445.3364 ELEV. 256.068
LOCATION: ALL SAINTS ROAD, 240'+/- SOUTH OF NORTH LAUREL ROAD 2.89 FEET FROM STORM DRAIN INLET, 1' EAST OF CURB, 0.6 BELOW SURFACE

HOWARD COUNTY BENCHMARK 47GC (CONC. MON.)
N 528939.7281 E 1354223.5536 ELEV. 226.272
LOCATION: MEDIAN ISLAND 29 FEET WEST OF ALL SAINTS RD RT 216 INTERSECTION; 1.4 FEET WEST OF SOUTHWEST INLET CORNER

OWNER
JAMES J. HERBERSON
15 HERITAGE FARM DRIVE
NEW FREEDOM, PA 17349
(410) 480-0023

DEVELOPER
TRINITY HOMES MARY LAND, LLC
3675 PARK AVE., SUITE 301
ELLICOTT CITY, MD 21043
(410) 480-0023

NO.	REVISION	DATE

GENERAL NOTES

WATERSHED NAME: PATUXENT RIVER UPPER
WATERSHED NUMBER: 2131104

A. GROSS SITE AREA:	1.84 AC.
NET SITE AREA:	1.84 AC.
B. AREA OF 100-YEAR FLOODPLAIN:	0.00 AC.
C. AREA OF WETLANDS AND BUFFERS(ONSITE):	0.98 AC.
AREA OF STREAM AND BUFFERS(ONSITE):	0.00 AC.
D. AREA OF > 25% STEEP SLOPES:	0.00 AC.
E. EXISTING FOREST (FSD):	0.50 AC.
F. ZONED:	R-SC
G. EXISTING USE:	RESIDENTIAL
H. PROPOSED USE:	RESIDENTIAL

FINAL SUPPLEMENTAL PLAN

FOREST CONSERVATION PLAN

PINEHURST

LOTS 1-4 AND OPEN SPACE LOT 5
A RE-SUBDIVISION OF LOT 20, HIGH RIDGE, PLAT# 6111

TAX MAP 47 BLOCK 19
6TH ELECTION DISTRICT
DPZ FILES: PLAT # F. 53., WP-84-129, F-85-041 PLAT#6111, ECP-15-038, WP-16-083

ZONED: R-SC
PARCEL 102
HOWARD COUNTY, MARYLAND

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STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 7/13/16

ROBERT H. VOGEL, PE No.16193

DESIGN BY: RVE
DRAWN BY: KG/RVE
CHECKED BY: RHV
DATE: JULY 2016
SCALE: AS SHOWN
W.O. NO.: 14-34

PROFESSIONAL CERTIFICATE

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. 16193 EXPIRATION DATE: 09-27-2016

SHEET 7 OF 9

F-16-002

LANDSCAPE NOTES

1. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING, ANY DEVIATION FROM THE 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 THE APPLICABLE PLANS.
2. 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.
3. SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE 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 HOWARD COUNTY LANDSCAPE MANUAL.
4. PLANTINGS SHOWN HEREON ARE THE RESPONSIBLITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCITON OF THE FINAL PLAN.

SCHEDULE 'A' PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES					TOTAL
PERIMETER/FRONTAGE DESIGNATION LANDSCAPE TYPE	1 NONE	2 A	3 A	4 A	5 A	6 A	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	100'	289'	332'	187'	268'	197'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	YES 272'	YES 95'	YES 52'	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	– – –	289' 1:60 5 – –	60' 1:60 1 – –	92' 1:60 2 – –	216' 1:60 4 – –	197' 1:60 4 – –	16 – –
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION) DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	– – – –	– 2 – 40	1 – – –	2 – – –	– 8 – –	– 8 – –	3 18 – 40

TRASH PAD LANDSCAPING

SYMBOL	QTY.	DESCRIPTION	SIZE	REMARKS
⊗	5	DWARF JAPANESE YEW	3'–4' HT	B & B

GENERAL NOTE:

1. LANDSCAPING FOR LOTS 1–4 IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF $ 5,850.00 FOR THE REQUIRED 16 SHADE TREES, 5 SHRUBS (TRASH PAD) AND 3 SHADE (WP16–083) SHALL BE POSTED WITH THE DEVELOPER AGREEMENT FOR THIS PLAN.

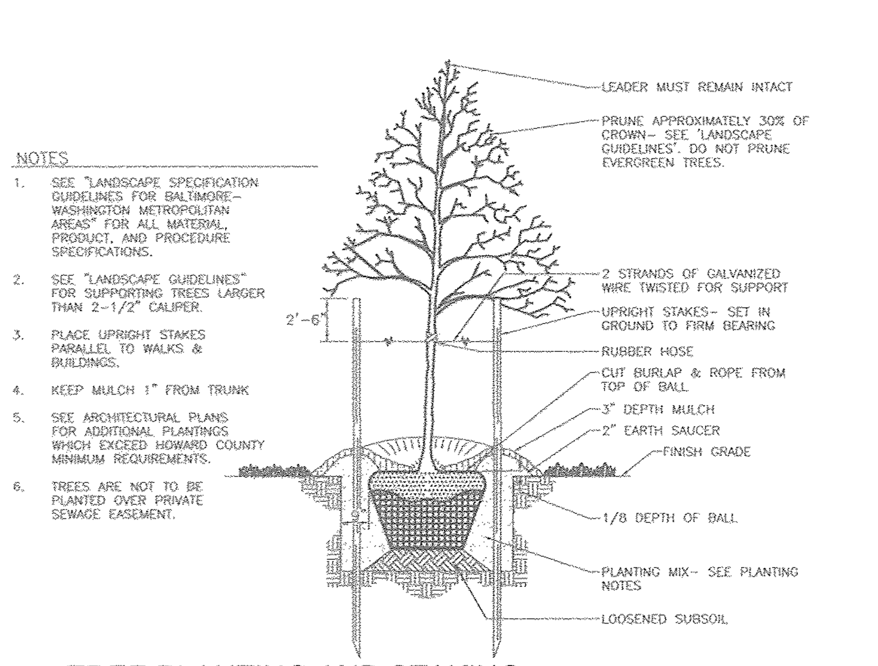
PERIMETER LANDSCAPE SCHEDULE - REQUIRED PLANTING

SYM	KEY	QUAN.	BOTANICAL NAME	SIZE	CAT
SHADE					
	GT	2	GLEDITSIA TRIACANTHOS INERMIS 'IMPERIAL' /IMPERIAL THRONLESS HONEY LOCUST	2 1/2"–3" CAL.	B & B
	LL	1	TILIA CORDATA 'GREENSPIRE' LITTLELEAF LINDEN	2 1/2"–3" CAL.	B & B
EVERGREENS					
	PS	4	PINUS STROBUS EASTERN WHITE PINE	6'–8' HT.	B & B
	AH	2	ILEX OPACA AMERICAN HOLLY (BGE COMPLIANT)	5–6' HT.	B & B
	RC	4	JUNIPERUS VIRGINIANA CULTIVARS RED CEDAR (BGE COMPLIANT)	6'–8' HT.	B & B
	NS	5	ILEX 'NELLIE R. STEVENS' NELLIE R. STEVENS HOLLY (BGE COMPLIANT)	5'–6' HT.	B & B
	PT	3	PINUS THUNBERGIANA JAPANESE BLACK PINE	6'–8' HT.	B & B
SHRUBS					
	NB	25	MYRICA PENNSYLVANICA NORTHERN BAYBERRY	2'–2 1/2' HT.	B & B
	TD	15	TAXUS MEDIA 'DENSIFORMIS' DENSIFORMIS YEW	2 1/2'–3' HT.	B & B
WP 16-083 - STREET TREE REQUIREMENT - PLANTING SCHEDULE (1)					
	KD	3	CORNUS KOUSA KOUSA DOGWOOD (BGE COMPLIANT)	6'–8' HT.	B & B
	CM	3	LAGERSTROEMIA TUSCARORA TUSCARORA CRAPE MYRTLE (BGE COMPLIANT)	6'–8' HT.	B & B

(1) WP 16–083 STREET TREES ARE TO BE SUBSTITUTED WITH SMALLER TREES AT 2:1 AS REQUIRED BY THE BGE PLANTING ZONES

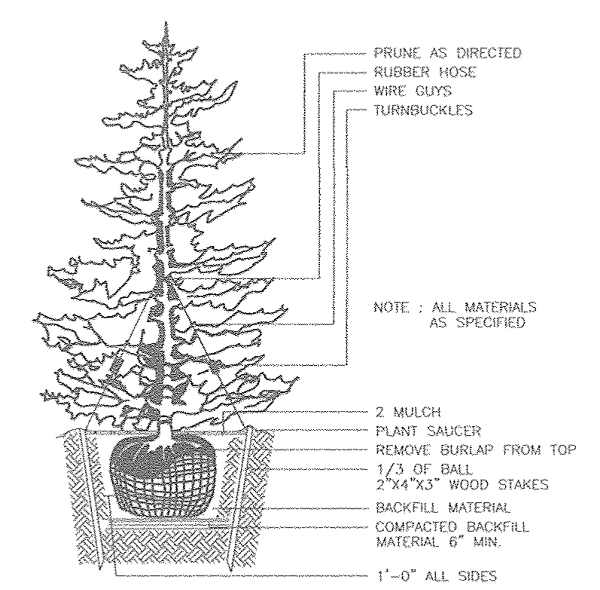
LANDSCAPE SCHEDULE NOTE:

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

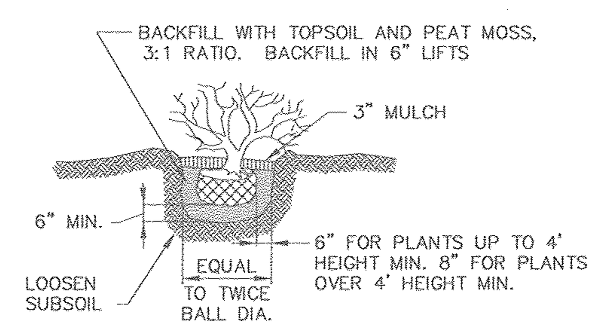


NOTES
1. SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE–WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2–1/2" CALIPER.
3. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
4. KEEP MULCH 1" FROM TRUNK.
5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.

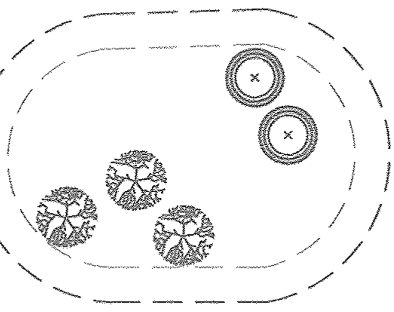
TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2–1/2" CALIPER — NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

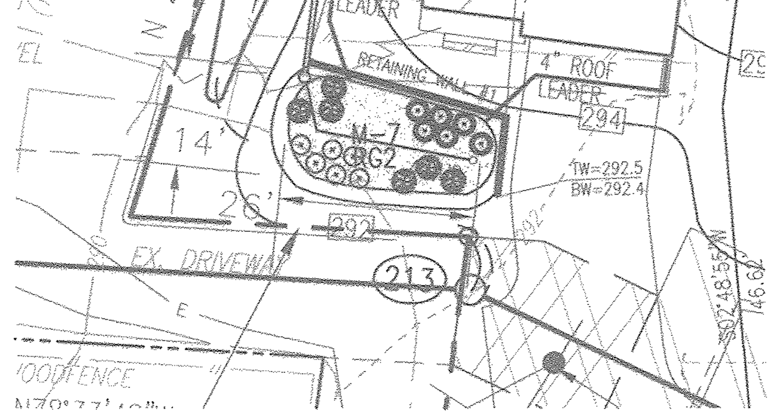


TYPICAL PLANTING DETAIL FOR MICRO-BIORETENTION / RAINGARDENS
NTS

"MICRO-BIORETENTION/RAINGARDEN" PLANTING SCHEDULE NOTES:

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
5. MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (.0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDv SUMMARY.
6. FILTER AREA SHALL BE 50% COVERED BY PLANTINGS AT FULL GROWTH

GRAVITY RETAINING WALL #1 * AND RG-1 - PLANTING DETAIL (320 SF)
* 2.9' MAXIMUM HEIGHT — SCALE: 1"=20'



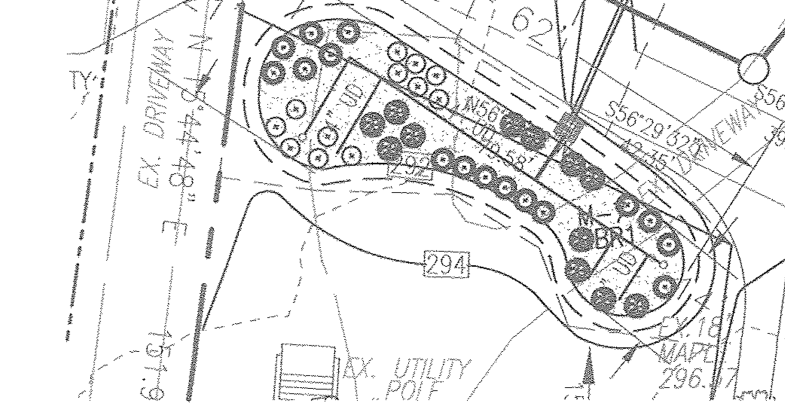
RAINGARDEN PLANTING SCHEDULE – 320 SF = 6 REQ.

	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	6	LINDERA BENZOIN SPICEBUSH	5 GALLON	CONT
◉	6	ILEX GLABRA INKBERRY	3 GALLON	CONT
●	6	VIBURNUM TRILOBUM AMERICAN HIGHBUSH CRANBERRY	3 GALLON	CONT

SF X 75% X .0229 STEMS PER SQUARE FOOT = PLANTS REQUIRED
50% OF BIO–RETENTION SURFACE SHALL BE COVERED WITH PLANT MATERIAL

20' 0 20' 40' 60'

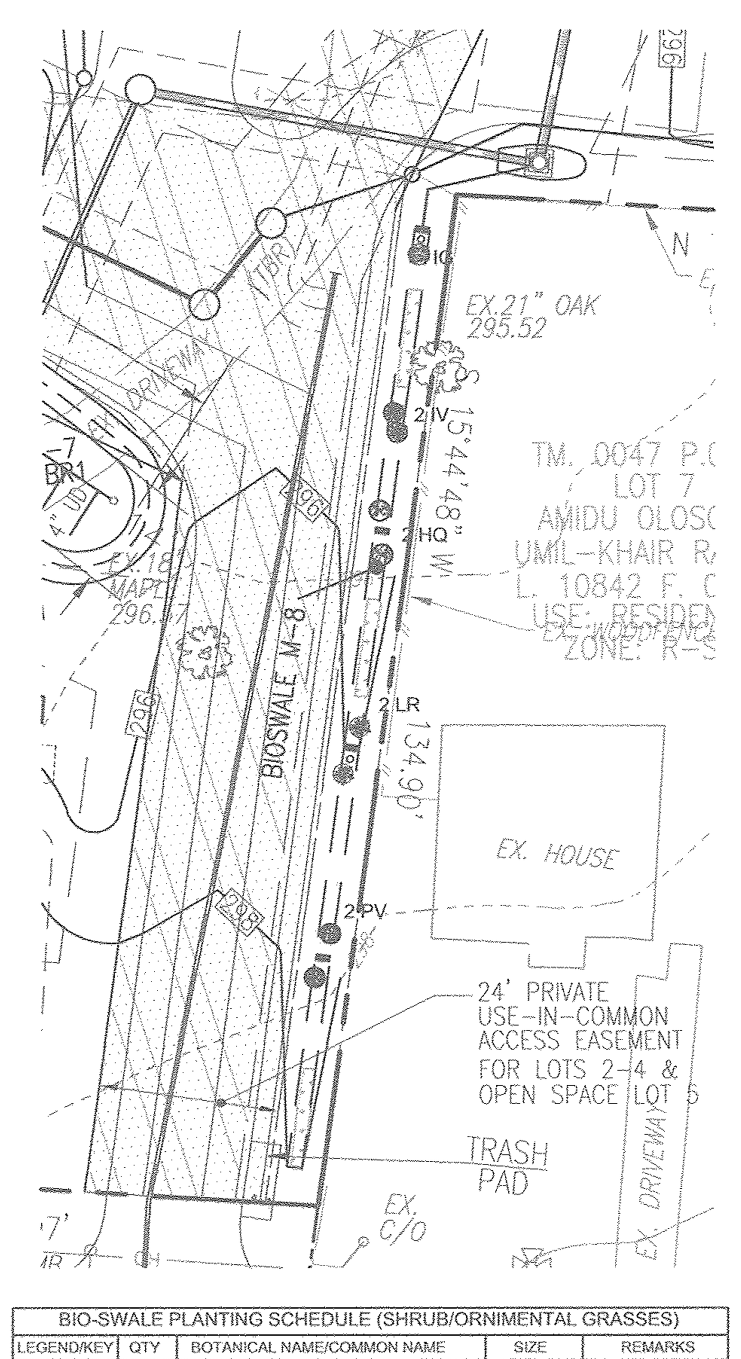
MBR-1 - PLANTING DETAIL (840 SF)
SCALE: 1"=20'



MICRO–BIORETENTION PLANTING SCHEDULE – 840 SF – 14 REQ.

	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊙	12	LINDERA BENZOIN SPICEBUSH	5 GALLON	CONT
◉	16	ILEX GLABRA INKBERRY	3 GALLON	CONT
●	12	VIBURNUM TRILOBUM AMERICAN HIGHBUSH CRANBERRY	3 GALLON	CONT

SF X 75% X .0229 STEMS PER SQUARE FOOT = PLANTS REQUIRED
50% OF BIO–RETENTION SURFACE SHALL BE COVERED WITH PLANT MATERIAL



BIO-SWALE PLANTING SCHEDULE (SHRUB/ORNIMENTAL GRASSES)

LEGEND/KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
IG	1	ILEX GLABRA 'SHAMROCK' INKBERRY HOLLEY	1 GALLON	18" O.C.
IV	2	ITEA VIRGINICA 'HENRY'S GARNETT' VIRGINIA SWEETSPIRE	1 GALLON	18" O.C.
HQ	2	HYDRANGEA QUERCIFOLIA OAKLEAF HYDRANGEA	1 GALLON	30" O.C.
LR	2	LEUCOTHEO RACEMOSA FETTERBUSH	1 GAL.	30" O.C.
PV	2	PANICUM VIRGATUM SWITCHGRASS	1 GAL.	36" O.C.

PERENNIALS/GROUNDCOVER PLANTING SCHEDULE

LEGEND	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
(stipple)	12	BAPTISIA AUSTRALIS FALSE INDIGO	4" POT	12"–15" O.C. FOR SIDES AND BOTTOM OF BIOSWALE. MIX ALL VARIETIES IN A NATURALIZED RANDOM PATTERN THROUGHOUT. PLANT IN GROUPS OF NO LESS THAN 9 PLANTS PER CLUMP
	12	ACORUS GRAMINEUS 'OGON' GOLDEN VARIEGATED SWEET FLAG	1 QT.	

SF X 75% X .0229 STEMS PER SQUARE FOOT = PLANTS REQUIRED

50% OF BIO–SWALE SURFACE SHALL BE COVERED WITH PLANT MATERIAL

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 7-28-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[signature] 7-29-16
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

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 CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[signature] (MEMBER) 07-13-16
SIGNATURE OF DEVELOPER — DATE

FOREST CONSERVATION NOTES

PRE–CONSTRUCTION ACTIVITIES

1. PRIOR TO THE START OF ANY CONSTRUCTION DEFINE THE LIMITS OF DISTURBANCE AND THE SOIL PROTECTION ZONE (CRITICAL ROUT AREA) FOR THE FOREST RETENTION AREAS. (SEE APPENDIX 'G' OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL).
2. PRIOR TO THE START OF ANY CONSTRUCTION (INCLUDING CLEARING) ADJACENT TO THE SOIL PROTECTION ZONE, INSTALL BLAZE ORANGE FENCE.
3. INSTALL ALL FOREST CONSERVATION AREA SIGNS AS SHOWN ON THIS SDP.
4. ALL SEDIMENT CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION TO PREVENT SEDIMENT FROM ENTERING THE FOREST CONSERVATION AREAS. SUPER SILT FENCE SHALL BE INSTALLED ON THE UPHILL SIDE OF ALL FOREST RETENTION AREAS, AND ALSO IF THE LOD IS WITH 50 FEET OR LESS OF RETENTION AREA.
5. ALL FENCING, BLAZE–ORANGE OR "SUPER" SILT, SHALL BE CLEANED AND MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS SITUATION WARRANTS ON A REGULAR BASIS THROUGH THE CONSTRUCTION PERIOD.
6. A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNE TREES AS REQUIRED. WATER ANY ROOT –PRUNED TREES IMMEDIATELY AFTER ROOT–PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.

CONSTRUCTION PHASE

1. DURING CONSTRUCTION, MONITOR ANY UNAUTHORIZED USE OF FOREST RETENTION AREAS. ANY USE OF FOREST RETENTION AREAS FOR THE FOLLOWING ACTIVITIES OR OTHER INTRUSIONS SHALL BE A VIOLATION OF THE APPROVED FOREST CONSERVATION PLAN:
   - STORAGE OF EQUIPMENT AND MATERIALS
   - DISPOSAL OF CONSTRUCTION MATERIALS
   - WASHING OF EQUIPMENT, DISPOSAL OF WASTEWATER FROM CONCRETE OPERATIONS, ETC.
   - EMPLOYEE PARKING
   - TEMPORARY STRUCTURES SUCH AS TRAILERS, SANITARY FACILITIES, ETC.
   - SOIL COMPACTION
   - ROOT INJURY
   - FLOODED CONDITIONS
   - DROUGHT CONDITIONS
2. DURING CONSTRUCTION, INSPECT AND ENFORCE THE LIMITS OF DISTURBANCE AND REQUIRED PROTECTION MEASURES.
3. IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.
4. ANY DAMAGES TO RETAINED TREES DUE TO CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT THE DIRECTION OF THE QUALIFIED PROFESSIONAL.
5. FOREST CONSERVATION AREAS TO BE INSPECTED AND CERTIFIED FOR COMPLETION OF THE FOREST CONSERVATION PLAN REQUIREMENTS BY A QUALIFIED PROFESSIONAL.

POST CONSTRUCTION

1. POST CONSTRUCTION ACTIVITIES TO BE PROVIDED FOR A MINIMUM OF 2 YEARS.
2. INSPECTIONS SHALL BE CARRIED OUT AT THE BEGINNING AND END OF THE GROWING SEASON TO PINPOINT ANY PROBLEMS, MONITOR SURVIVAL RATES, AND SPECIFY REMEDIAL ACTIONS NEEDED TO CORRECT EXISTING PROBLEMS.
3. POST CONSTRICTION MANAGEMENT PROGRAMS OF FOREST CONSERVATION AREAS MUST BE ESTABLISHED AND INCLUDE MAINTENANCE OF ALL FENCES, SIGNS AND OTHER DEVICES DELINEATING FOREST CONSERVATION AREAS, AS WELL AS THE FOLLOWING OTHER MEASURES:
   STRESS REDUCTION:
   - ROOT PRUNING – CROWN REDUCTION OR PRUNING
   - WATERING
   - FERTILIZATION
   - MULCHING
   - PEST CONTROL
   - CONTROL OF UNDESIRABLE COMPETING SPECIES
   - THINNING AND PRUNING TO ENCOURAGE PROPER GROWTH REPAIR OF TREE DAMAGES:
   - ROOT REPAIR
   - REMOVAL OF DEAD OR DAMAGED MATERIAL/LIMBS
   - SOIL AERATION
   - REMOVAL OF DEAD OR DYING TREES POSING AN IMMEDIATE SAFETY HAZARD
4. AS PER THE SEDIMENT CONTROL PLAN, AND UNDER THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE TEMPORARY SEDIMENT CONTROL MEASURES AND FENCING. FOREST CONSERVATION SIGNS SHALL NOT BE REMOVED.
5. AN INSPECTION SHALL TAKE PLACE AT THE END OF YEAR ONE OR BEFORE THE SECOND ENROLLING SEASON TO EVALUATE SURVIVAL RATES AND APPROPRIATE ACTIONS TAKEN TO ACHIEVE REQUIRED SURVIVAL RATES.
6. AT THE CONCLUSION OF THE POST–CONSTRUCTION PERIOD, THE QUALIFIED PROFESSIONAL SHALL CERTIFY ALL FOREST CONSERVATION AREAS, SUPPLY SURVIVAL RATE DATA, AND VERIFY ALL PERTINENT PROTECTION MEASURES AND IN PLACE. UPON INSPECTION BY LOCAL STATE PROJECT INSPECTOR APPROVAL, THE DEVELOPER SHALL BE RELEASE OF ALL SURETIES AND FUTURE OBLIGATIONS.
7. EDUCATION MATERIAL MUST BE PROVIDED TO OWNERS AND/OR OCCUPANTS ABOUT PROPER USE OF FOREST CONSERVATION AREAS. SUCH EDUCATION MATERIAL SHOULD INCLUDE A PLAN LOCATING ALL PROTECTED AREAS ON–SITE AND A DESCRIPTION OF PERMITTED AND PROHIBITED ACTIVITIES WITHIN OR ACTIVITIES SUCH AREAS.

SEQUENCE OF CONTRUCTION-FOREST CONSERVATION

1. PRECONSTRUCTION MEETING /SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
2. STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.
3. INSTALL TREE PROTECTION FENCING: FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
4. PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN – TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
5. TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

HOWARD COUNTY FOREST CONSERVATION WORKSHEET

ZONED R–SC
NET TRACT AREA:

A. TOTAL TRACT AREA (PROJECT TOTAL)	1.84 AC.
B. AREA WITHIN 100 YEAR FLOODPLAIN	0.00 AC
C. AREA TO REMAIN IN AG. PRODUCTION	0.00 AC
D. NET TRACT AREA	1.84 AC

LAND USE CATEGORY
INPUT THE NUMBER "1" UNDER THE APPROPIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. ZONED R–SC

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

E. AFFOREST THRESHOLD	15% X 1.84 = 0.28 AC
F. CONSERVATION THRESHOLD	20% X 1.84 = 0.37 AC

EXISTING FOREST COVER:

G. EXISTING FOREST COVER	= 0.50 AC (FSD REPORT)
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	= 0.22 AC
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	= 0.13 AC

BREAK EVEN POINT:
(.2 X I) + F = BREAK EVEN POINT (0 AC)

J. FOREST RETENTION WITH NO MITIGATION	= 0.39 AC
K. CLEARING PERMITTED WITHOUT MITIGATION	= 0.11 AC

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED	= 0.10 AC
M. TOTAL AREA OF FOREST TO BE RETAINED	= 0.40 AC (IN FCE)

PLANTING REQUIREMENTS:

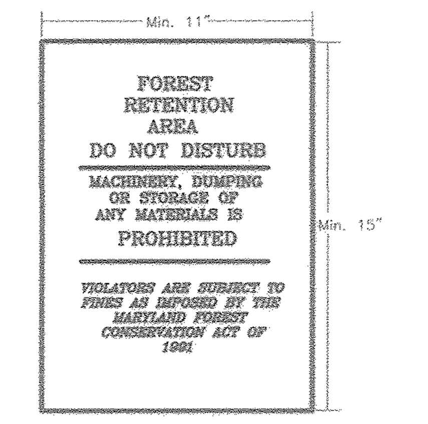
N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X.25)	= 0.03 AC
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD	= 0.00 AC
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M–F)	= 0.03 AC
R. TOTAL REFORESTATION REQUIRED (N+P–Q)	= 0.00 AC
S. TOTAL AFFORESTATION REQUIRED	= 0.00 AC
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED	= 0.00 AC

FOREST CONSERVATION:

FOREST CONSERVATION REQUIREMENTS AS SET FORTH IN SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

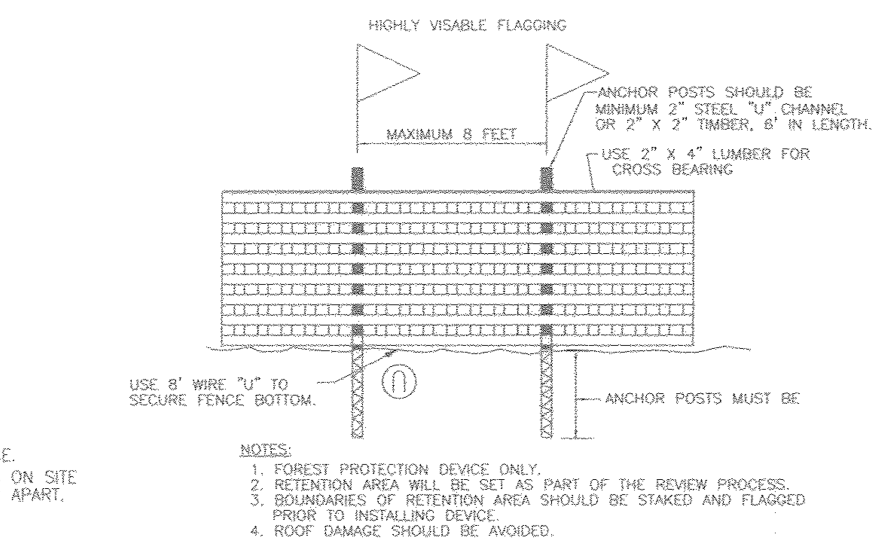
THE FOREST CONSERVATION OBLIGATION TO BE FULFILLED BY THE PLACEMENT OF 0.40 AC. INTO A RETENTION EASEMENT.
– NO SURETY IS REQUIRED.

JOHN CANOLES
DNR QUALIFIED PROFESSIONAL



NOTE:
1. BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
2. SIGNS TO BE PLACED APPROXIMATELY 50–100' FEET APART. CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART. WHERE SIGNS ARE TO BE PLACED AT THE REAR OF PROPOSED LOTS, SPACING SHAL BE APPROX. 25–30'+/–
3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
4. ALL FOREST CONSERVATION SIGNAGE SHALL BE IN PLACE FOR PERPETUITY.
5. SIGN LOCATION SYMBOL = ●

FOREST CONSERVATION AREA SIGNS

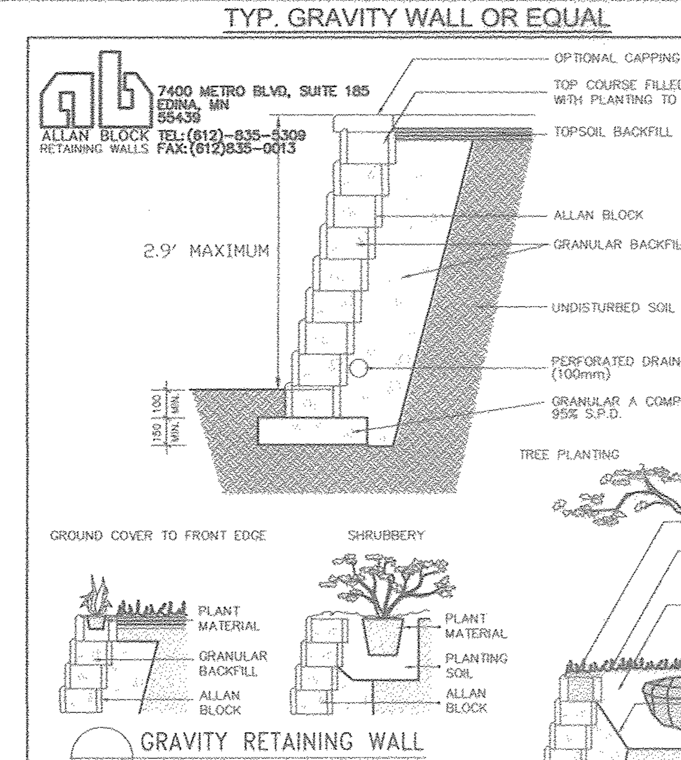


NOTES:
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOF DAMAGE SHOULD BE AVOIDED.

BLAZE ORANGE PLASTIC MESH
TYPICAL TREE PROTECTION FENCE DETAIL

OWNER	DEVELOPER
JAMES J. HERBERSON 15 HERITAGE FARM DRIVE NEW FREEDOM, PA 17349 (410) 480–0023	TRINITY HOMES MARY LAND, LLC 3675 PARK AVE., SUITE 301 ELLICOTT CITY, MD 21043 (410) 480–0023

TYP. GRAVITY WALL OR EQUAL



GRAVITY RETAINING WALL

SPECIFICATIONS:
1. EXCAVATE AREA TO LINE AND GRADES AS SHOWN ON CONSTRUCTION DRAWINGS
2. SUBGRADE TO BE FIRM AND UNDISTURBED AND COMPACTED TO 95% S.P.D.
3. BASE MATERIAL SHALL BE GRANULAR A COMPACTED TO 95% S.P.D. AND GRADED TO PROVIDE LEVEL HARD SURFACE ON WHICH TO PLACE THE FIRST COURSE OF UNITS, MIN. THICKNESS – 6" (150mm)
4. PLACE FIRST COURSE A MINIMUM OF 4" (100mm) BELOW FINISHED GRADE, WITH THE RAISED LIP FACING OUT AND THE FRONT EDGES TIGHT TOGETHER. FILL CAVITYS WITH SAND OR CLEAR CRUSHED STONE AND COMPACT. SWEEP CLEAN AND CHECK THE UNITS FOR LEVEL AND ALIGNMENT. BACKFILL FRONT AND BACK OF ENTIRE BASE ROW TO FIRMLY LOCK IN PLACE.
5. INSTALL SUBSEQUENT COURSES IN SIMILAR FASHION PROVIDING A MIN. 3" (76mm) OVERLAP OF SEAMS AND A MIN. OF 12" (305mm) GRANULAR BACKFILL.
6. ALLAN BLOCKS COME IN 3 STYLES : STANDARD BLOCK, ANGLE BLOCK, AND CORNER BLOCK AS WELL AS A STANDARD CAPPING STONE. THE BLOCKS HAVE A COMPRESSIVE STRENGTH OF OVER 4000 psi (28MPa)
7. A WIDE VARIETY OF DESIGNS CAN BE ACHIEVED INCLUDING INSIDE AND OUTSIDE CORNERS, CURVES AND STEPS. BLOCKS COME IN 5 STANDARD COLORS :NATURAL, BUFF, BROWN, EARTH RANGE, SMOKE BLEND.
8. WALLS HIGHER THAN 6' REQUIRE GEOGRIDS OR REBAR AND MASONRY CONSTRUCTION–CONSULT MANUF.

NO.	REVISION	DATE

FINAL SUPPLEMENTAL PLAN

LANDSCAPE AND FOREST CONSERVATION NOTES AND DETAILS

PINEHURST

LOTS 1–4 AND OPEN SPACE LOT 5
A RE–SUBDIVISION OF LOT 20, HIGH RIDGE, PLAT# 6111

TAX MAP 47 BLOCK 19
6TH ELECTION DISTRICT
DPZ FILES: PLAT 8 F. 53., VP–84–129, F–85–041 PLAT#6111, ECP–15–038, WP–16–083
ZONED: R–SC
PARCEL 162
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
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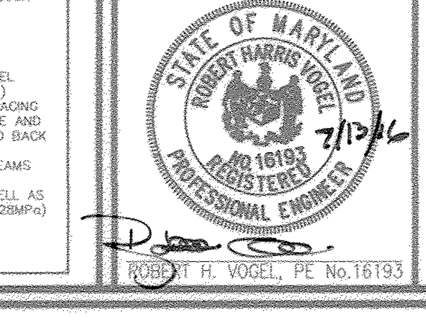


ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RVE
DRAWN BY:	KG/RVE
CHECKED BY:	RHV
DATE:	JULY 2016
SCALE:	AS SHOWN
W.O. NO.:	14–34

PROFESSIONAL CERTIFICATE
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. 16193 EXPIRATION DATE: 09–27–2016

F-16-002

APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION. RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS

1. MATERIAL SPECIFICATIONS

THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

2. FILTERING MEDIA OR 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 MICRO-BIORETENTION PRACTICE 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:

* SOIL COMPONENT – LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
* ORGANIC CONTEN – MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
* CLAY CONTENT – MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
* PH RANGE – SHOULD BE BETWEEN 5.5 – 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.

THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. 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.

3. COMPACTION

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND 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 CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE 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 FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENION 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 OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE 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.

4. PLANT MATERIAL

RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE 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.

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES 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" BY 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 THIS 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.

6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

* PIPE – SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).
* PERFORATIONS – IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4x4) GALVANIZED HARDWARE CLOTH.
* GRAVEL – THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
* THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
* A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
* A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

THIS 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).

7. MISCELLANEOUS

THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

OPERATION AND MAINTENANCE SCHEDULE FOR MICROBIORETENTION / BIO-SWALE AREAS

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.

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

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

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

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Table B.4.1 Materials Specifications for Micro-Bioretention, 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] SEE O&M NOTE 5	loamy sand (60 - 65%) & compost (35 – 40%) or sandy loam (30%), coarse sand (30%) & 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 1 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 underneath pipes. Perforated pipe shall be wrapped with ¼-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 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 Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

PINEHURST

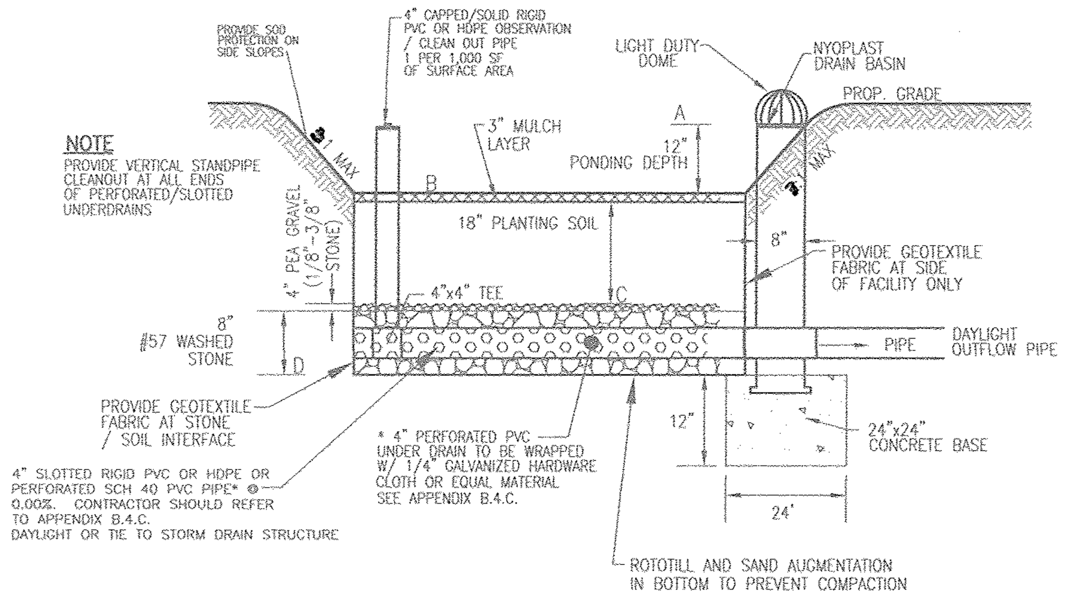
STORMWATER TEST PITS

TEST PIT PIT	SURFACE ELEVATION	BORING DEPTH PROPOSED	BORING DEPTH DUG	CONDITION
P-1	292.5	10.5	9.5	WATER @ 283
P-2	294.5	9.7	5	Water @ 289.5
P-3	296.5	9.5	4	Water @ 292.5

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 7-28-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[signature] 7-29-16
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

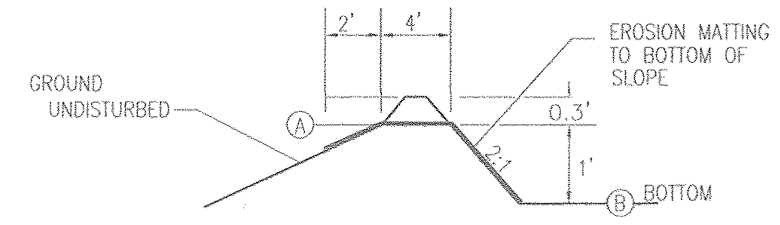


TYPICAL SMALL MICRO-BIORETENTION - LOT 2

NOT TO SCALE
MDE CLASSIFICATION: M-7

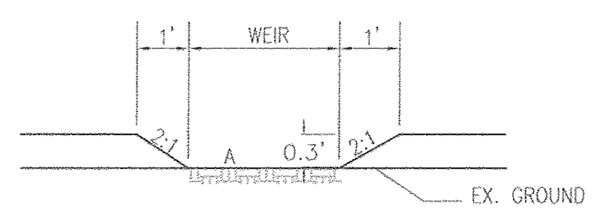
FACILITY	A	B	C	D	SURFACE AREA	APPROX. DIMENSIONS	
MBR LOT#1	293.00	292.00	289.75	288.42	770 SF	SEE PLAN	DETAIL SHT 5
RG LOT#2	292.20	291.20	289.45	288.45	300 SF	SEE PLAN	DETAIL HEREON

WEIR OUTLET MICRO-BIORETENTION/RAINGARDEN



TYPICAL SPILLWAY SECTION

NOT TO SCALE



TYPICAL SPILLWAY PROFILE

NOT TO SCALE

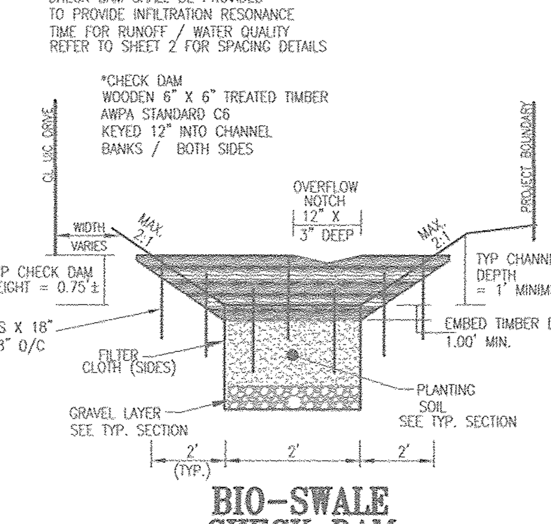
PINEHURST - ESDv COMPUTATIONS

SITE DEVELOPABLE AREA: 1.00 AC 43560 SF
TARGET Pe: 1.61 IN
SITE IMPERVIOUS: 32.05 PERCENT
SITE Rv: 0.3385
SITE ESDv: 1978 CF +/-

Rv=0.05+0.009XI
V min=1.0" rainfall (1.0x0.95xA)/12
Vmax= 1yr rainfall=2.6" (2.6x0.95xA)/12

DA #	% IMPERV	Rv	DA (SF)	DA (AC)	MINIMUM VOLUME	MAXIMUM VOLUME	1.61" VOLUME	VOLUME PROVIDED*	IMPERV (SF)	IMPERV (AC)	GREEN AREA	REMARKS
LOT 4 House								54				MICROSCALE RAIN BARREL 27 CF PER 205 GAL RAIN BARREL 2 PROVIDED
LOT 3 REAR	100.00	0.9500	740	0.02	59	152	94	62	740	0.02	0.00	NON STRUCTURAL (N-1) - ROOFTOP DISCONNECT 8 7.92 CF EA 15' DISCON 1 PROVIDED; MICROSCALE RAIN BARREL 27 CF PER 205 GAL RAIN BARREL 2 PROVIDED
LOT 2, 3 & 4 GRAVEL WETLAND	35.23	0.3671	14800	0.34	453	1177	729	300	5214	0.12	0.22	MICROSCALE GRAVEL WETLAND @ 0.5' PONDING 300 450 SF FOOTPRINT G.W.
LOT 2 REAR LT	100.00	0.9500	360	0.01	29	74	46	27	360	0.01	0.00	MICROSCALE RAIN BARREL 27 CF PER 205 GAL RAIN BARREL 1 PROVIDED
LOT 2 REAR RT	100.00	0.9500	375	0.01	30	77	48	35	375	0.01	0.00	MICROSCALE RAIN BARREL 27 CF PER 205 GAL RAIN BARREL 1 PROVIDED; NON STRUCTURAL (N-1) - ROOFTOP DISCONNECT 8 7.92 CF EA 15' DISCON 1 PROVIDED
LOT 2 FRONT	57.19	0.5647	3200	0.07	151	392	242	425	1830	0.04	0.03	MICROSCALE RAINGARDEN @ 1.0' PONDING 425 320 SF MICRO RG
LOT 1 HALF UIC D/W	48.01	0.4821	12790	0.29	514	1336	827	1174	6140	0.14	0.15	MICROSCALE MICRO-BIORETENTION @ 1.0' PONDING 1120 840 SF MICRO RG; MICROSCALE RAIN BARREL 27 CF PER 205 GAL RAIN BARREL 2 PROVIDED
HALF UIC D/W	37.15	0.3844	3230	0.07	2435	269	167	165	1200	0.03	0.05	MICROSCALE BIOSWALE 165 250 SF SWALE @ 0.5' PONDING
PROJECT TOTALS	44.7	0.4521	35495	0.81	1337	3477	2153	2242	15859	0.36	0.45	

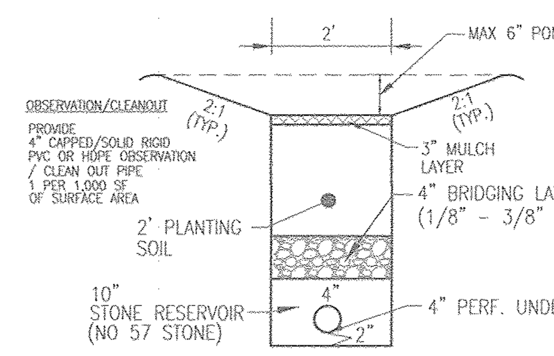
NOTE
CHECK DAM SHALL BE PROVIDED TO PROVIDE INFILTRATION RESONANCE TIME FOR RUNOFF / WATER QUALITY REFER TO SHEET 2 FOR SPACING DETAILS



BIO-SWALE CHECK DAM

TYPICAL CROSS SECTION
(NOT TO SCALE)

NOTE:
LOCATE OBSERVATION/CLEANOUT UPSTREAM OF DAM



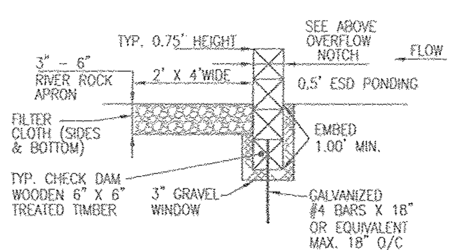
TYP. BIO-SWALE SECTION

TYPICAL CROSS SECTION
(NOT TO SCALE)
MDE CLASSIFICATION: M-8

BIO-SWALE PLANTING REQUIREMENTS					PLANTINGS PROVIDED					PERRENIALS/GROUND COVER PROVIDED		
MBR #	LF	AREA	STEMS REQUIRED (0.0229)	STEMS PROVIDED	IG	IV	HQ	LR	PV	BA	AG	TOTAL
1	125	250	6	6	1	2	2	2	2	12	12	24
TOTALS:	125	250	6	6	1	2	2	2	2	12	12	24

BIO SWALE AREA TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0.0229 STEMS PER SQUARE FOOT).

REFER TO PLANTINGS ON SHEET 8



BIO-SWALE CHECK DAM

TYPICAL CROSS SECTION

N-1. DISCONNECTION OF ROOFTOP RUNOFF

CONSTRUCTION CRITERIA:

THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING THE CONSTRUCTION OF PROJECTS WITH PLANNED ROOFTOP DISCONNECTIONS:

– EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN VEGETATED AREAS RECEIVING DISCONNECTED RUNOFF

– SITE DISTURBANCE: CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF TO MINIMIZE DISTURBANCE AND COMPACTION. SHOULD AREAS RECEIVING DISCONNECTED RUNOFF BECOME COMPACTED, SCARIFYING THE SURFACE OR ROTOTILLING THE SOIL TO A DEPTH OF FOUR TO SIX INCHES SHALL BE PERFORMED TO ENSURE PERMEABILITY. ADDITIONALLY, AMENDMENTS MAY BE NEEDED FOR TIGHT, CLAYEY SOILS.

INSPECTION:

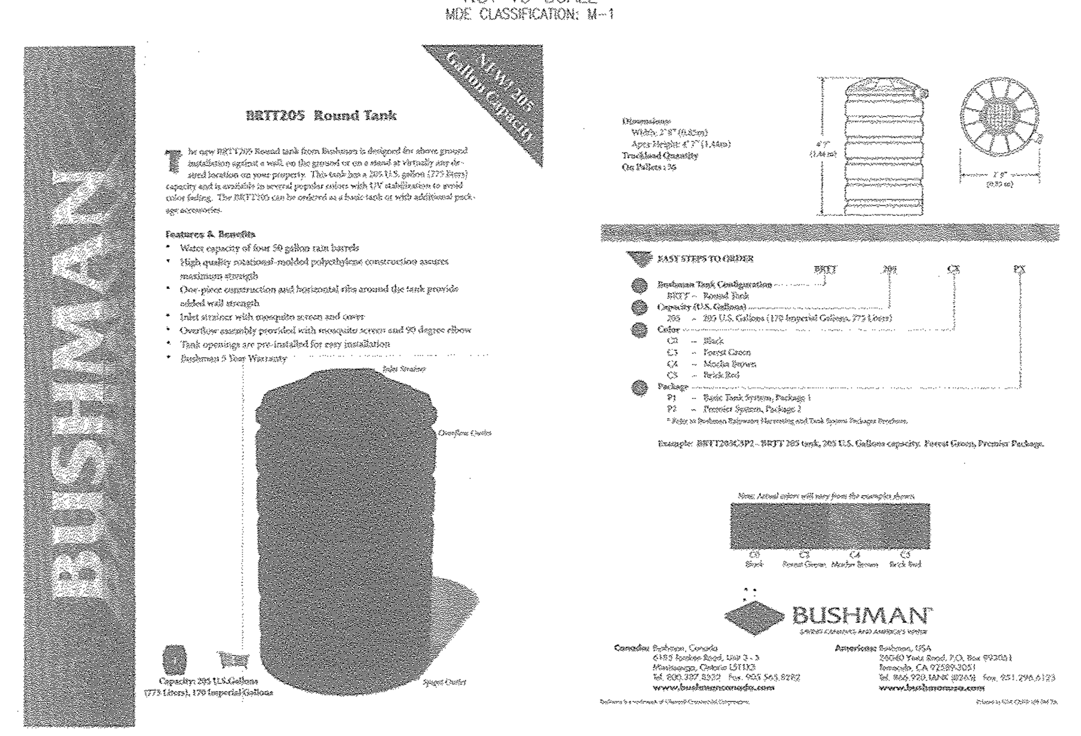
A FINAL INSPECTION SHALL BE CONDUCTED BEFORE USE AND OCCUPANCY APPROVAL TO ENSURE THAT SIZING FOR TREATMENT AREAS HAVE BEEN MET AND PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

MAINTENANCE CRITERIA:

MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION (E.G., BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER). IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

BUSHMAN BRTT205 (205 GALLON) RAIN HARVESTING SYSTEM OR EQUIVALENT RAIN BARREL DETAIL

NOT TO SCALE
MDE CLASSIFICATION: M-1



TYPICAL RAIN BARREL DESIGN

205 GAL / 7.48 GAL/CUFT = 27.41 CUFT

500 SF X (X") / 12 = 27.41 CUFT

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RAINWATER HARVESTING (M-1)

A. THE OWNER SHALL EMPTY BARRELS ON A MONTHLY BASIS AND CLEAN BARREL WITH A HOSE.
B. THE OWNER SHALL VERIFY INTEGRITY OF LEAF SCREENS, GUTTERS, DOWNSPOUTS, SPIGOTS, AND MOSQUITO SCREENS, AND CLEAN AND REMOVE ANY DEBRIS.
C. THE OWNER SHALL REPLACE DAMAGED COMPONENTS AS NEEDED.
D. THE OWNER SHALL ALLOW THE BARREL TO DRAIN BY BOTTOM SPIGOT DURING THE WINTER SEASON.

M-2. SUBMERGED GRAVEL WETLANDS

CONSTRUCTION CRITERIA:

THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING THE CONSTRUCTION OF PROJECTS WITH SUBMERGED GRAVEL WETLANDS:

1. SITE DISTURBANCE: ALL ON-SITE DISTURBED AREAS SHOULD BE STABILIZED PRIOR TO ALLOWING RUNOFF TO ENTER THE NEWLY CONSTRUCTED WETLAND.

2. EROSION AND SEDIMENT CONTROL: THE PROPOSED LOCATION OF A SUBMERGED GRAVEL WETLAND SHALL BE PROTECTED DURING CONSTRUCTION. SURFACE RUNOFF SHALL BE DIVERTED AWAY FROM THE PRACTICE DURING GRADING OPERATIONS. FLOW SPLITTERS AND OTHER CONVEYANCE INFRASTRUCTURE SHALL BE BLOCKED.

WETLAND CONSTRUCTION SHALL BE PERFORMED WITH LIGHTWEIGHT, WIDE-TRACKED EQUIPMENT TO MINIMIZE DISTURBANCE AND COMPACTION. EXCAVATED MATERIALS SHALL BE PLACED IN A CONTAINED AREA. ANY PUMPING OPERATIONS SHALL DISCHARGE FILTERED WATER TO A STABLE OUTLET.

3. GRAVEL MEDIA: THE AGGREGATE SHALL BE COMPOSED OF AN 18 TO 48 INCH LAYER OF CLEAN WASHED, UNIFORMLY GRADED MATERIAL WITH A POROSITY OF 40%. ROUNDED BANK RUN GRAVEL IS RECOMMENDED (E.G., ASTM D448 4,5, OR 6 STONE OR EQUAL).

INSPECTION:

REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION:

A. DURING EXCAVATION TO SUBGRADE.
B. DURING PLACEMENT OF BACKFILL OF PERFORATED INLET PIPE AND OBSERVATION WELLS.
C. DURING PLACEMENT OF GEOTEXTILES AND ALL FILTER MEDIA.
D. DURING CONSTRUCTION OF ANY APPURTENANT CONVEYANCE SYSTEMS SUCH AS DIVERSION STRUCTURES, INLETS, OUTLETS, AND FLOW DISTRIBUTION STRUCTURES.
E. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION, AND BEFORE ALLOWING RUNOFF TO ENTER THE WETLAND.

STORMWATER MANAGEMENT DRAINAGE AREA MAP

SCALE: 1"=50'
50' 0 50' 100' 150'

N-3. SHEET FLOW TO CONSERVATION AREA

CONSTRUCTION CRITERIA:

THE FOLLOWING SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH SHEETFLOW TO CONSERVATION AREAS:

EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PLANS SHALL CLEARLY INDICATE WHERE CONSERVATION AREAS ARE LOCATED AND WHAT MEASURES WILL BE USED FOR PROTECTION DURING CONSTRUCTION. THESE AREAS SHALL BE CLEARLY MARKED IN THE FIELD AND NOT RECEIVE SEDIMENT-LADEN RUNOFF PRIOR TO PROJECT COMPLETION. EROSION AND SEDIMENT CONTROL PRACTICES SHALL NOT BE LOCATED WITHIN BUFFERS.

SITE DISTURBANCE: BUFFERS SHALL NOT BE DISTURBED (I.E., CLEARED OR GRADED) DURING CONSTRUCTION EXCEPT FOR TEMPORARY IMPACTS ASSOCIATED WITH INCIDENTAL UTILITY CONSTRUCTION OR MITIGATION AND AFFORESTATION PROJECTS. ANY TEMPORARY IMPACTS SHALL BE IMMEDIATELY REPAIRED AND STABILIZED.

INSPECTION:

REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION: DURING INITIAL GRADING OPERATIONS TO ENSURE THAT BUFFERS ARE CLEARLY MARKED IN THE FIELD.
BEFORE USE AND OCCUPANCY APPROVAL TO VERIFY AREA MEASUREMENTS ANDENSURE THAT PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

MAINTENANCE CRITERIA:

CONSERVATION AREAS SHALL REMAIN UNMANAGED OTHER THAN ROUTINE DEBRIS REMOVAL AND REPAIRING AREAS OF CONCENTRATED FLOW. INVASIVE AND NOXIOUS PLANT REMOVAL AND BI-ANNUAL MOWING FOR MEADOW AREAS MAY BE NEEDED. SIGNS SHOULD BE MAINTAINED AND SUPPLEMENTAL PLANTINGS PERFORMED AS NEEDED.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SUBMERGED GRAVEL WETLANDS (M-2)

1. DURING THE FIRST YEAR OF OPERATION, THE OWNER SHALL INSPECT THE FACILITY AFTER EVERY HEAVY STORM AND REPLACE VEGETATION AS NEEDED.
2. THE OWNER SHALL REMOVE SEDIMENT ACCUMULATED IN THE PRETREATMENT AREAS AS NECESSARY.
3. AS SIGNS OF UNEVEN FLOW WITHIN THE WETLAND MAY MEAN THAT THE GRAVEL OR UNDERDRAIN IS CLOGGED. THE GRAVEL OR UNDERDRAIN SHALL BE REMOVED, CLEANED, AND REPLACED, AS NEEDED.
4. THE OWNER SHALL ENSURE A DENSE STAND OF WETLAND VEGETATION IS MAINTAINED THROUGH THE LIFE OF THE FACILITY AND REPLACE VEGETATION AS NEEDED.
5. THE OWNER SHALL ENSURE THE INLETS AND OUTLETS TO EACH GRAVEL WETLAND CELL AND INLET (I-2) ARE FREE FROM DEBRIS. PIPE CONNECTIONS SHALL REMAIN WATERTIGHT.
6. THE OWNER SHALL REPAIR EROSION AT INFLOW POINTS AND ENSURE FLOW SPLITTERS ARE FUNCTIONAL TO PREVENT STORM WATER FROM BYPASSING THE FACILITY.

OWNER
JAMES J. HERBERSON
15 HERITAGE FARM DRIVE
NEW FREEDOM, PA 17349
(410) 480-0023

DEVELOPER
TRINITY HOMES MARY LAND, LLC
3675 PARK AVE., SUITE 301
ELLICOTT CITY, MD 21043
(410) 480-0023

NO.	REVISION	DATE

FINAL SUPPLEMENTAL PLAN

STORMWATER MANAGEMENT NOTES AND DETAILS

PINEHURST

LOTS 1-4 AND OPEN SPACE LOT 5
A RE-SUBDIVISION OF LOT 20, HIGH RIDGE, PLAT# 6111

TAX MAP 47 BLOCK 19
6TH ELECTION DISTRICT
DPZ FILES: PLAT 8 F. 53., VP-84-129, F-85-041 PLAT#6111, ECP-15-038, WP-16-083

ZONED: R-SC
PARCEL 162
HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — REGISTERED PROFESSIONAL ENGINEER — 7/13/16

ROBERT H. VOGEL, PE No.16193

DESIGN BY: RVE
DRAWN BY: KG/RVE
CHECKED BY: RHV
DATE: JULY 2016
SCALE: AS SHOWN
W.O. NO.: 14-34

PROFESSIONAL CERTIFICATE

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. 16193 EXPIRATION DATE: 09-27-2016

F-16-002