

GENERAL NOTES

- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- 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: 1-410-954-4281
 - HOWARD COUNTY BUREAU OF UTILITIES: 410-313-2288
 - 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: 410-850-4620
 - STATE HIGHWAY ADMINISTRATION: 410-511-5533
- THIS FINAL PLAN IS SUBJECT TO THE FOLLOWING DPZ FILES:
 - PLAT # 53, WP-84-129, EC-15-041 (PLAT#161), CO-15-038, WP16-083.
 - THE EXISTING TOPOGRAPHY SHOWN HEREIN IS BASED ON A TOPOGRAPHIC SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED SEPTEMBER 2014, OFFSITE TOPOGRAPHY FROM HOWARD COUNTY GIS.
 - THE PROJECT BOUNDARY SHOWN HEREIN IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED DECEMBER 2014.
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 - 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.
 - ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
 - TO THE BEST OF THE OWNER'S KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THE SUBJECT PROPERTY.
 - 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 INCLUDE THE USE OF RAIN BARRELS, RAIN GARDENS, MICRO-BIORETENTION, GRAVEL WETLAND AND A BIODIVALE. NON-STRUCTURAL PRACTICES INCLUDE ROOFTOP CONNECTIONS, THESE PRACTICES WILL BE PRIVATELY OWNED AND MAINTAINED.
 - 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 THE DISCRETION OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
 - 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, WATER PETITION, OR BUILDING AND GRADING PERMITS.
 - THE SUBJECT PROPERTY IS ZONED "R-SC" IN ACCORDANCE WITH THE 10/6/2013 COMPREHENSIVE ZONING PLAN AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003.
 - THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
 - EXISTING UTILITIES ARE BASED ON ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S 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.
 - 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. 4700 AND 4702 WERE USED FOR THIS PROJECT.
 - PER E.C.O. SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITATS WERE OBSERVED ON THE PROPERTY.
 - NO FLOODPLAIN IS LOCATED ON-SITE.
 - SEDMENT AND EROSION CONTROL WILL BE PROVIDED FOR THIS SITE.
 - WETLANDS AND STREAMS SHOWN ON-SITE ARE BASED ON E.C.O. SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, NOVEMBER 26, 2014.
 - FOREST STANDING DELINEATION PLAN PREPARED BY E.C.O. SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, NOVEMBER 26, 2014.
 - A TOTAL OF 4 RESIDENTIAL LOTS AND 1 OPEN SPACE LOT ARE PROPOSED UNDER THIS PLAN.
 - NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
 - PER 16-083 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 WATER 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 SHELTER 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 PROJECT.
 - A NOISE STUDY IS NOT REQUIRED. NOISE WILL MITIGATE CURRENTLY EXISTING ALONG INTERSTATE 95.
 - 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.
 - THERE ARE NO STEEP SLOPES LOCATED ON THE SUBJECT SITE.
 - 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 REED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THE FOREST CONSERVATION OBLIGATION TO BE FULFILLED BY THE PLACEMENT OF 0.40 AC INTO RETENTION EASEMENT.
 - NO SURVEY IS REQUIRED.
 - 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.
 - UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6.06 FOR THE USE-IN-COMMON DRIVEWAY ENTRANCE AT STANSFIELD ROAD.
 - DRIVEWAYS SHALL BE PROVIDED TO INSURE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY SERVICES WITH THE FOLLOWING MINIMUM REQUIREMENTS:
 - A) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).
 - B) SURFACE - 6 INCHES OF COMPACTED CRUISER RIM BASE WITH TAR AND CHIP COATING. (1-1 1/2" MIN.)
 - C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10' OF 45-FOOT TURNING RADIUS.
 - D) STRUCTURES (COURTYARD/POSSIBLE) - CAPABLE OF SUPPORTING 25,000 LBS. (GROSS TONS LOADING).
 - E) DRAINAGE ELEMENTS - CAPABLE OF 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.
 - THE EXISTING DWELLING AND STRUCTURES SHALL BE RAZED. THE EXISTING HOUSE AND GARAGE WILL BE REMOVED PRIOR TO RECONSTRUCTION OF THE FINAL PLAT, F-16-002.
 - STANSFIELD ROAD IS CLASSIFIED AS A MINOR COLLECTOR.
 - SITE ACCESS SHALL BE VIA A USE-IN-COMMON DRIVEWAY.
 - 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 SIMULTANEOUSLY WITH THE RECONSTRUCTION OF THE F-16-002 PLAT.
 - 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.
 - A PRIVATE BRANCH OF ADDRESS SIGN SHALL BE FABRICATED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE AT THE DEVELOPER/OWNER'S EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES. THE R-1-1 (STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
 - 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 AN ASPHALT. 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 (1 1/2" DIA) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (1 1/2" DIA) 3" LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
 - 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 APR. 20, 2015.
 - IN ACCORDANCE WITH SECTION 16.121(A)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE PLANNING DIRECTOR APPROVED THE REQUEST TO WAIVE 1) SECTION 16.132(A)(2)(A) - PROVIDE REQUIRED ROAD FRONTAGE IMPROVEMENTS AND 2) SECTION 16.136 - PROVIDE STREET TREES SUBJECT TO THE FOLLOWING CONDITIONS:
 - COMPLIANCE WITH ANY SUBDIVISION REVIEW COMMITTEE (SRC) COMMENTS BASED ON THE REVIEW AND APPROVAL OF THE ASSOCIATED FINAL SUBDIVISION PLAN (F-16-002).
 - COMPLIANCE WITH THE ATTACHED COMMENTS FROM THE DEVELOPMENT ENGINEERING DIVISION DATED FEBRUARY 4, 2016. SPECIFICALLY:
 - 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, MDT, SEDIMENT CONTROL, UTILITY RELIEF, GRADING, ETC. THE FINAL PLANS AND PLAT WILL NOT BE SIGNED UNTIL THE ASSOCIATED FEE HAS BEEN PAID.
 - DED COMMENT #5 WHICH REQUIRES THAT THE COST OF SIDEWALK CONSTRUCTION TO BE INCLUDED IN THE FEE-IN-LIEU ESTIMATE.
 - 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.
 - THE APPLICANT SHALL REDUCE 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)(D) LAYOUT - SHARED DRIVEWAY EASEMENT.
 - THE DIVISION OF LAND DEVELOPMENT HAS DETERMINED THE FOLLOWING FOUR (4) REQUESTED WAIVERS ARE NOT REQUIRED:
 - SECTION 16.116(A) - PROTECTION OF WETLANDS AND FOREST CONSERVATION "DISTURBANCE".
 - SECTION 16.120(B)(4) - LOTS SHOULD BE REGULAR, GENERALLY RECTANGULAR, IN SHAPE.
 - SECTION 16.121(E) OPEN SPACE ACCESS AND FRONTAGE
 - SECTION 16.135(A) PROVIDE STREET LIGHTING

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: 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 REQUIRED: 1.06 AC
 LIMIT OF DISTURBANCE: 11.0 AC
 EXISTING USE OF SITE: RESIDENTIAL, SFD
 PROPOSED USE OF SITE: SINGLE FAMILY DETACHED PUBLIC

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

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	8,876 SF	1,053 SF	7,823 SF	6,000 SF

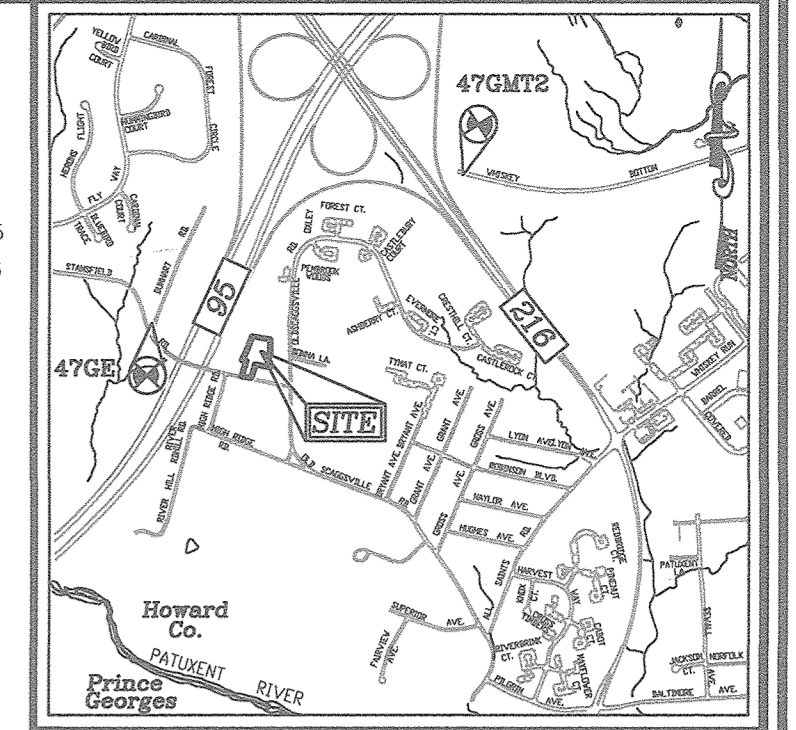
BENCHMARKS

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	529525.913	1350490.315
202	529548.815	1350375.534
203	529678.6524	1350412.1442
204	529584.7883	1350361.8258
205	529958.8127	1350503.0003
206	529907.6721	1350829.1634
207	529893.5302	1350826.9365
208	529740.0197	1350859.8291
209	529680.0244	1350859.0783
210	529676.9933	1350878.8473
211	529624.9298	1350878.1965
1002	529655.4286	1350826.9413
1008	529736.9888	1350878.5981
1009	529816.8517	1350881.8457
1010	529817.7579	1350444.5948



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

SHEET INDEX

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LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING UTILITY POLE
- EXISTING TREELINE
- EXISTING TREES
- EXISTING WETLANDS
- 24" PRIVATE USE 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
- EXISTING PUBLIC 25' SEWER EASEMENT FOR LOT 20 PLAT #6111
- EXISTING CHAIN LINK / METAL FENCE
- EXISTING WOOD FENCE
- TEST PIT LOCATION
- TEST PIT 50' RADIUS



AS-BUILT CERTIFICATION FOR PSMVM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH ALL APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY UNDEVELOPED TO PREVENT CLOGGING OF THIS UNDERGROUND SWM FACILITY.

E. NAME: 16193 DATE: 5-20-20 P.#

OWNER
 JAMES J. HERBERSON
 3875 PARK AVE., SUITE 3011
 NEW FREEDOM, MD 17349
 (410) 480-0023

DEVELOPER
 TRINITY HOMES MARY LAND, LLC
 3875 PARK AVE., SUITE 3011
 ELLICOTT CITY, MD 21043
 (410) 480-0023

MODIFICATION OF DRAINAGE AREAS TO SWM DEVICES

NO.	REVISION	DATE
1		12-2-19

**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 WITH ELECTION DISTRICT 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

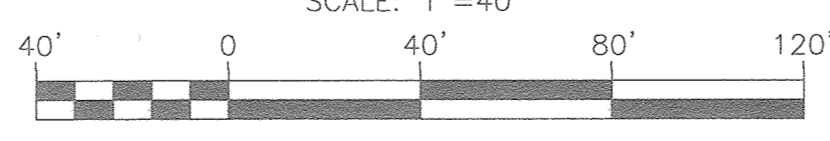
PROFESSIONAL CERTIFICATE

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. MY LICENSE NO. IS 16193. EXPIRATION DATE: 08-27-2018

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

1 SHEET OF 9

COVER SHEET & LAYOUT PLAN



NO AS-BUILT INFORMATION ON THIS SHEET

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

**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)
#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)

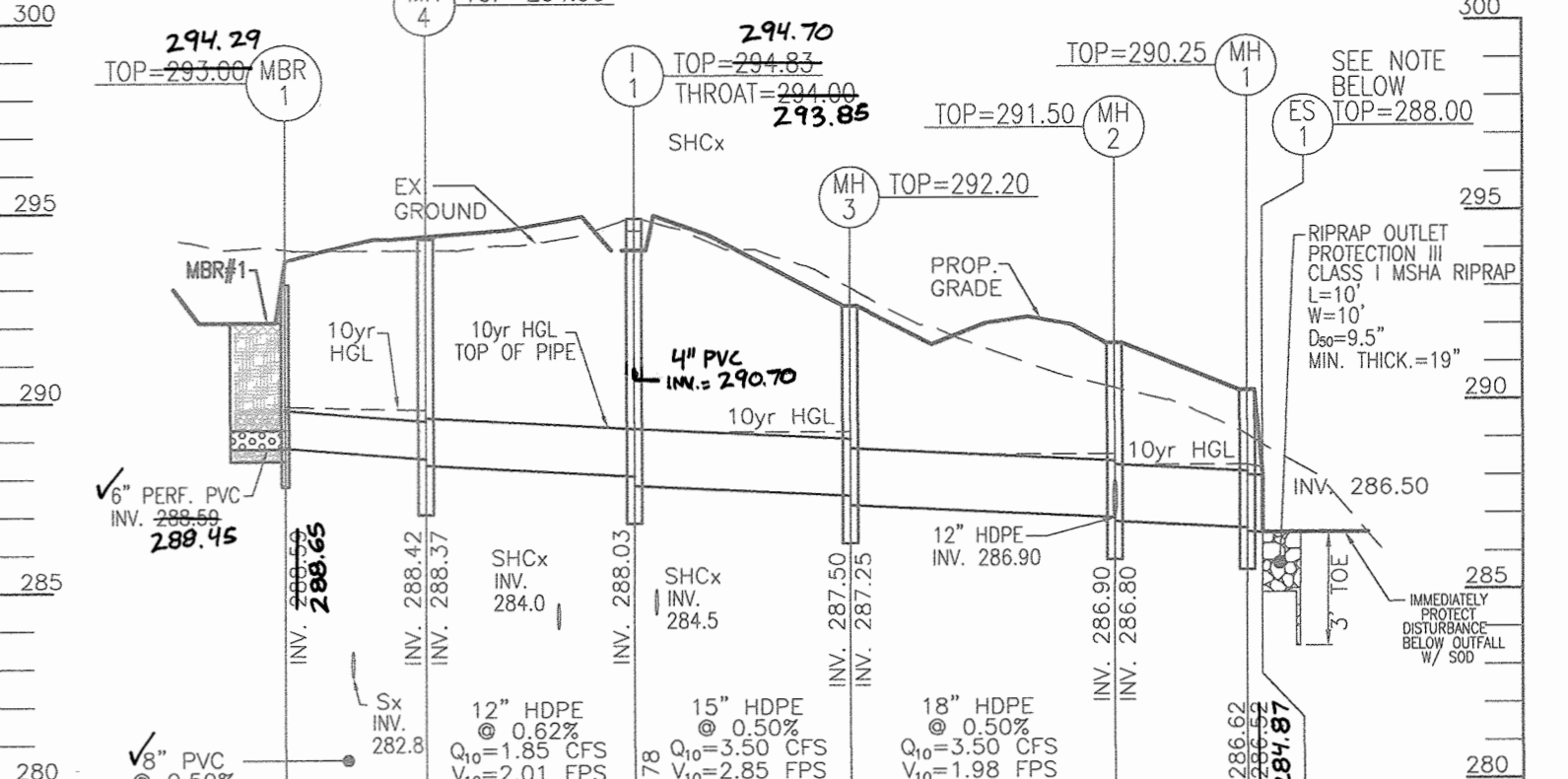
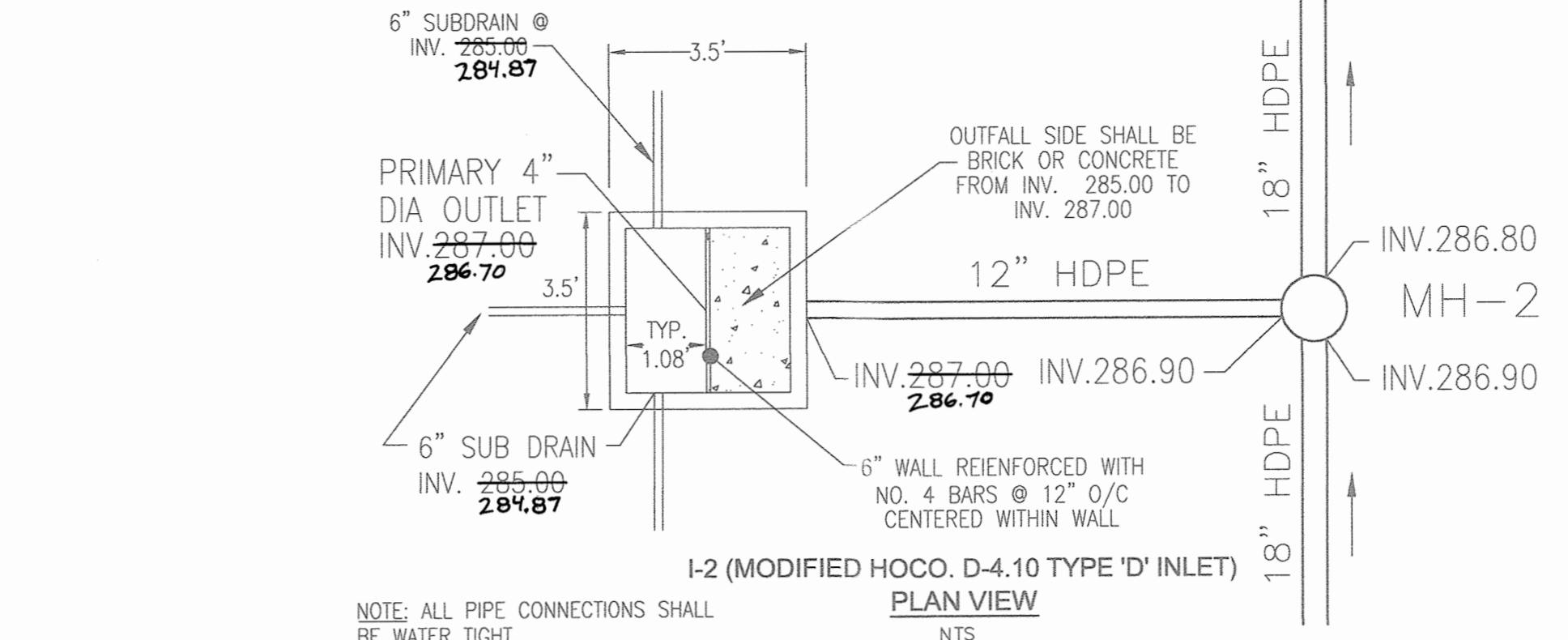
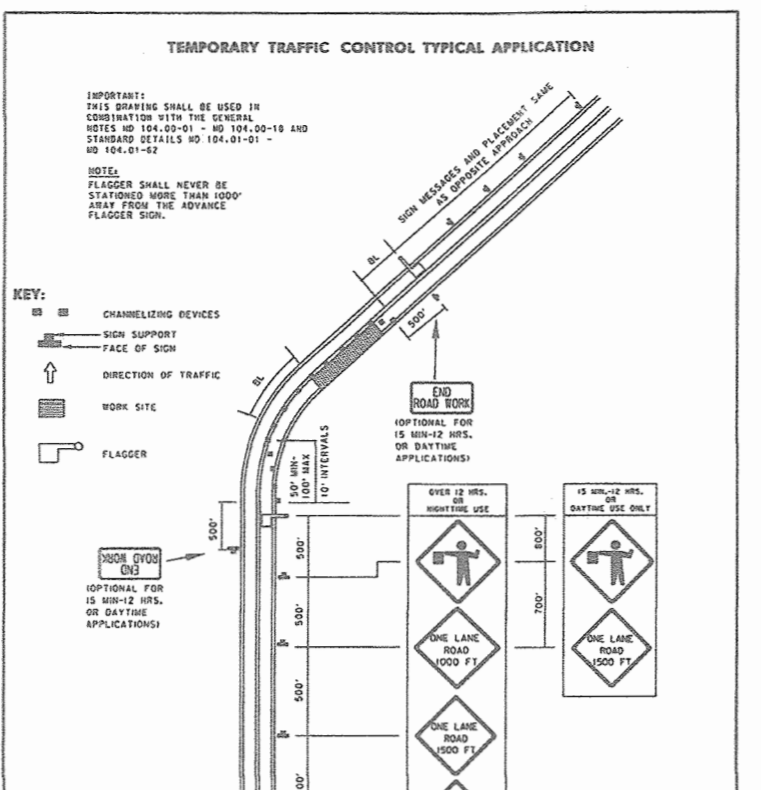
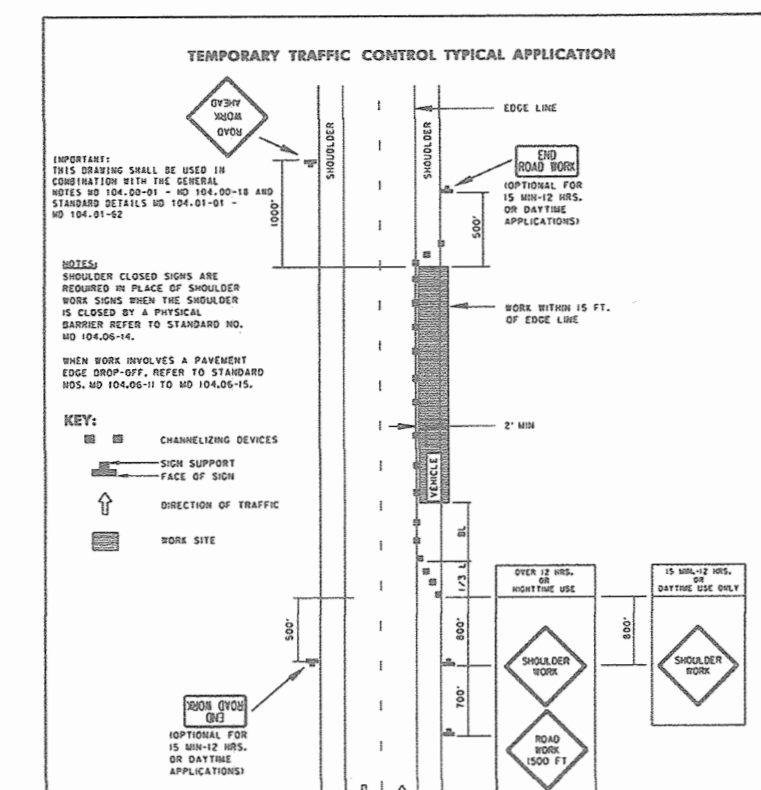
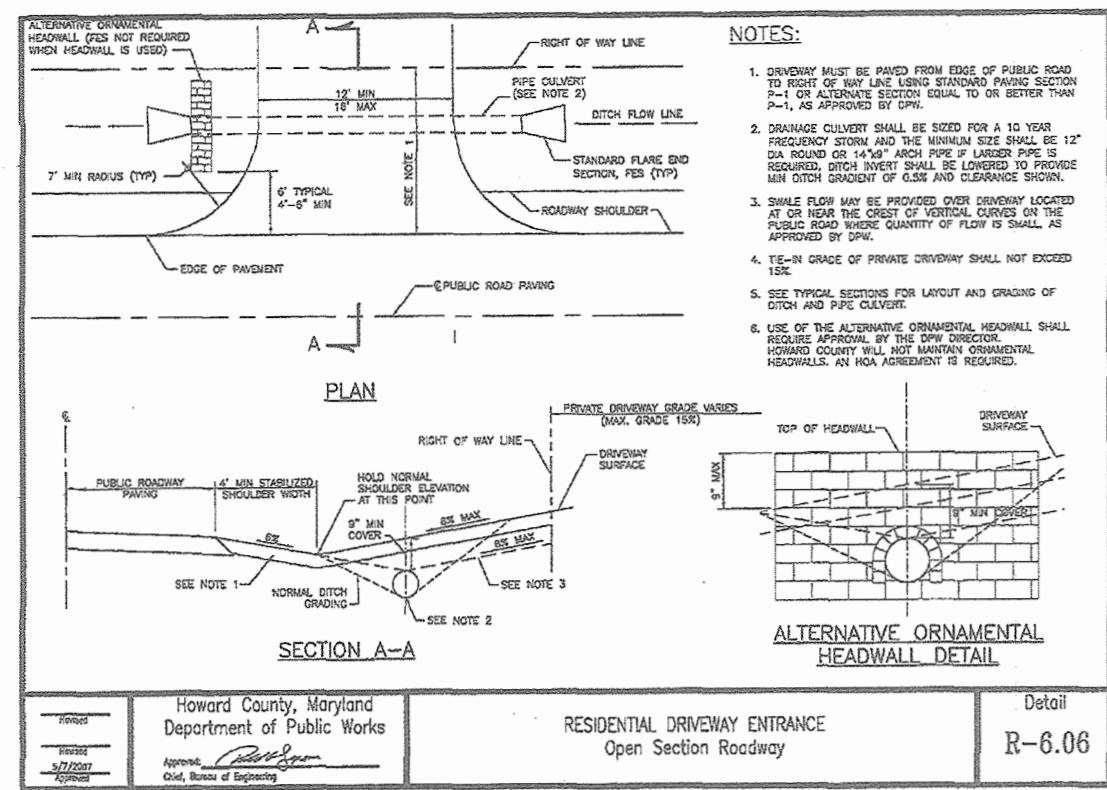
MIHU AGREEMENT
 PLEASE NOTE THAT ALL NEW LOTS/RESIDENTIAL UNITS IN THIS SUBDIVISION (LOTS 1-4) ARE SUBJECT TO THE MIHU FEE-IN-LIEU REQUIREMENT THAT IS TO BE CALCULATED AND PAID TO THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE BY THE PERMIT APPLICANT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division DATE: 7-29-16
Chief, Division of Land Development DATE: 7-29-16

NOTES:

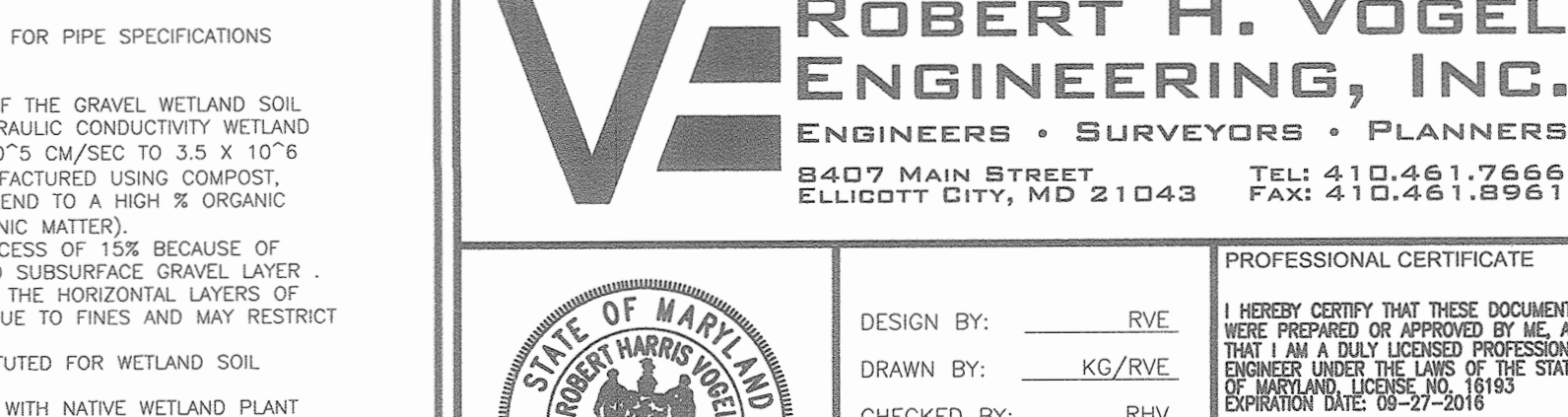
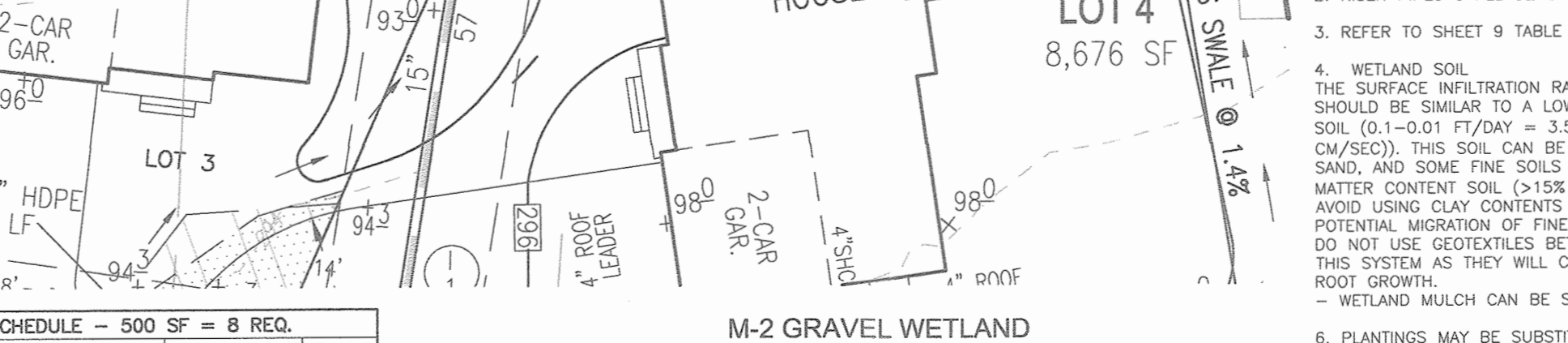
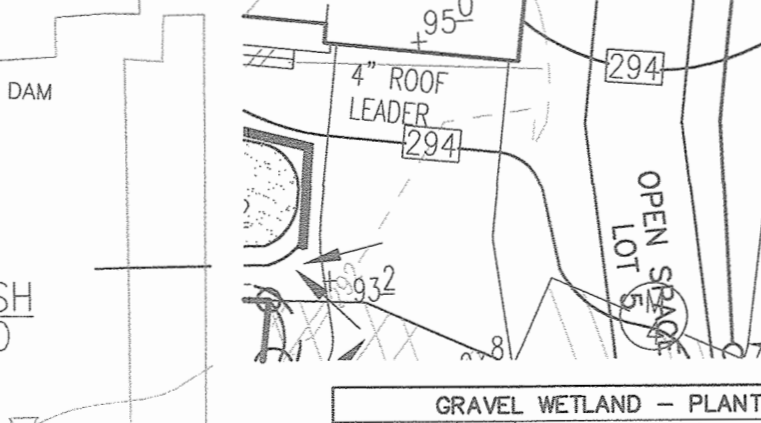
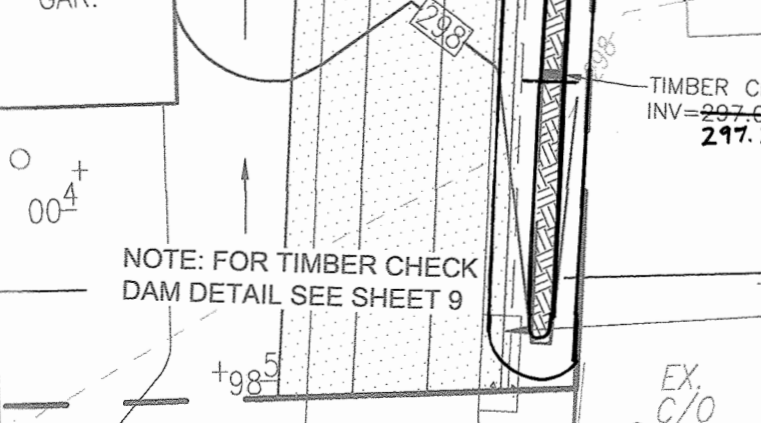
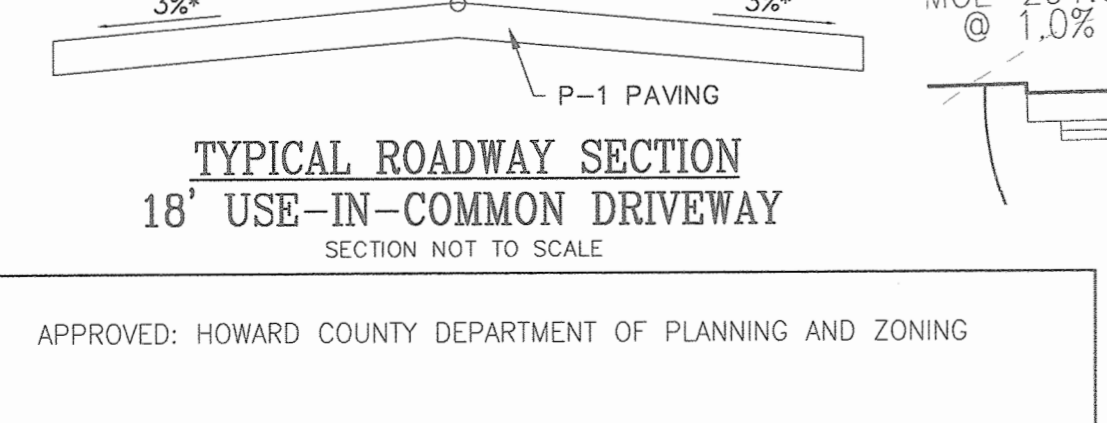
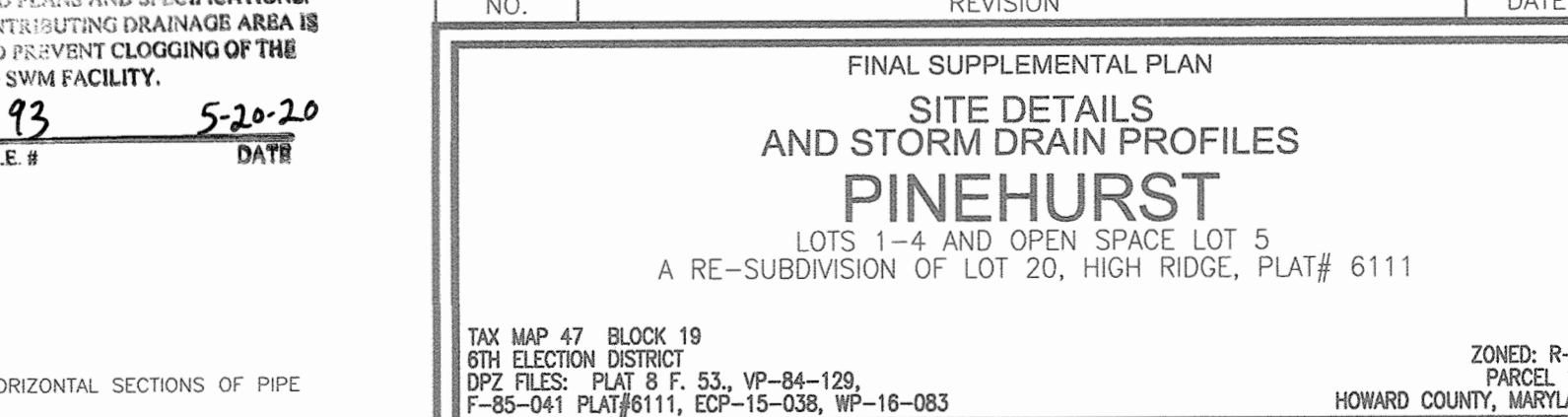
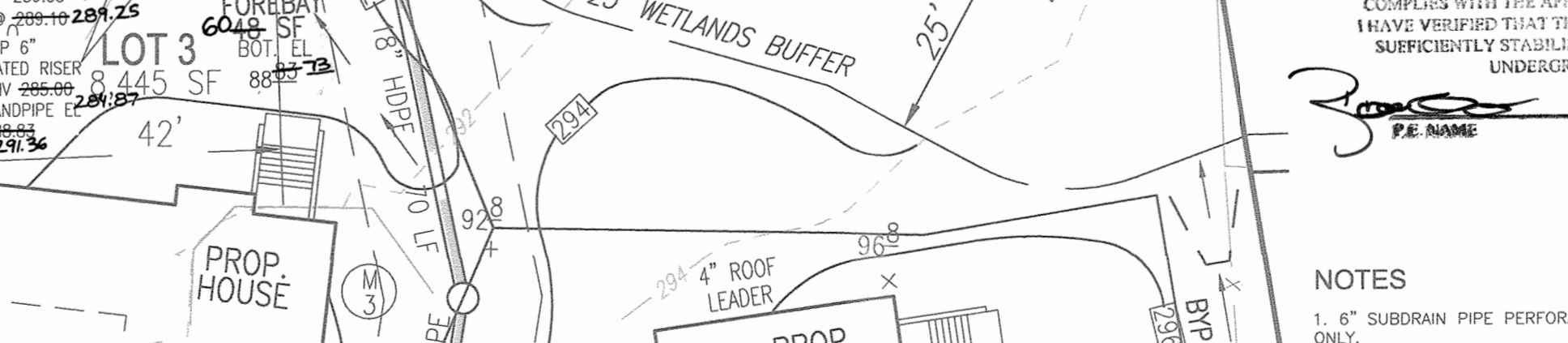
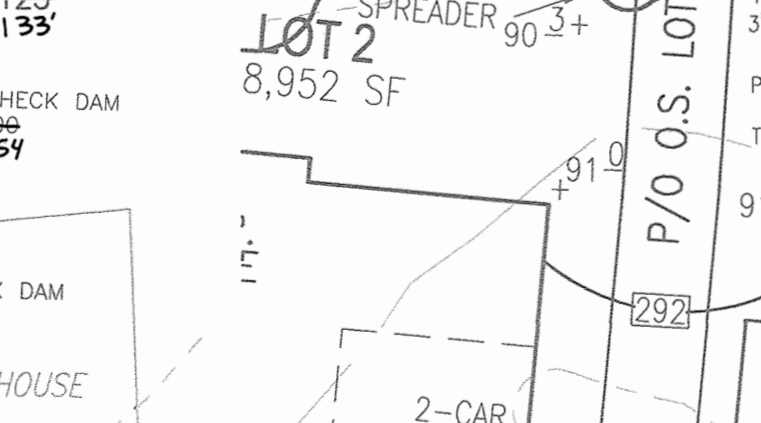
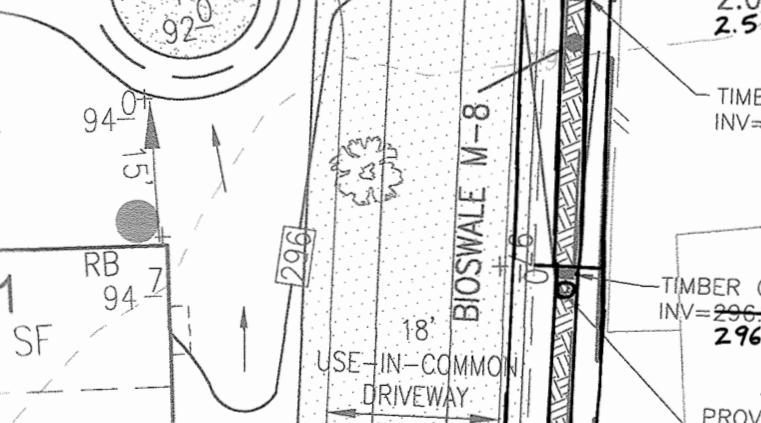
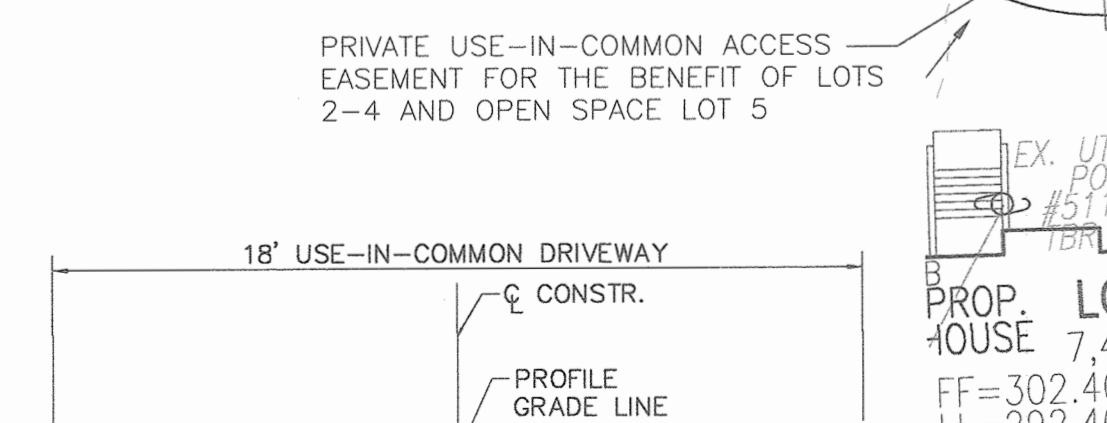
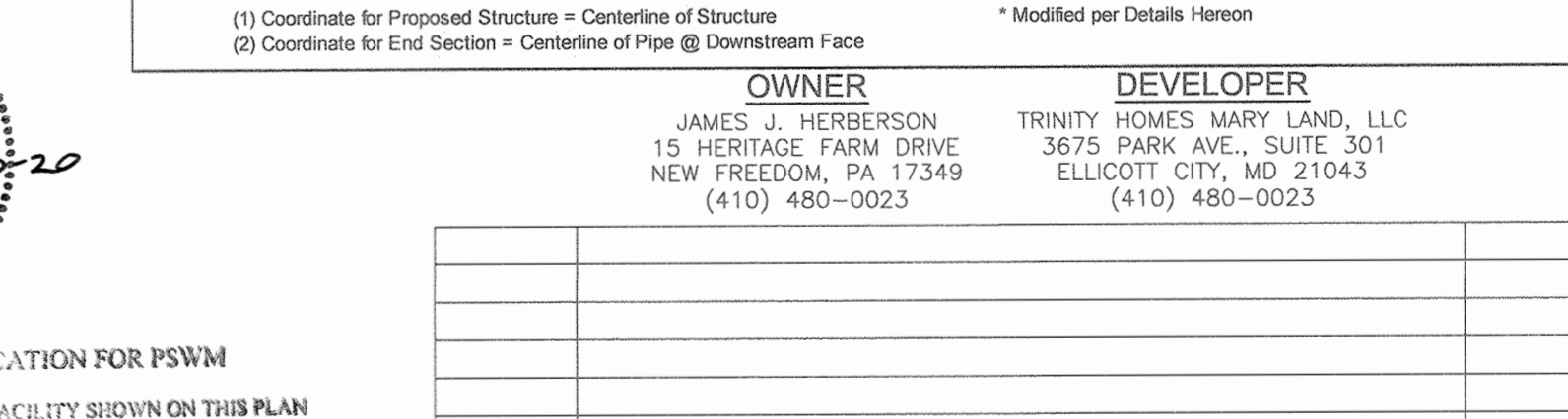
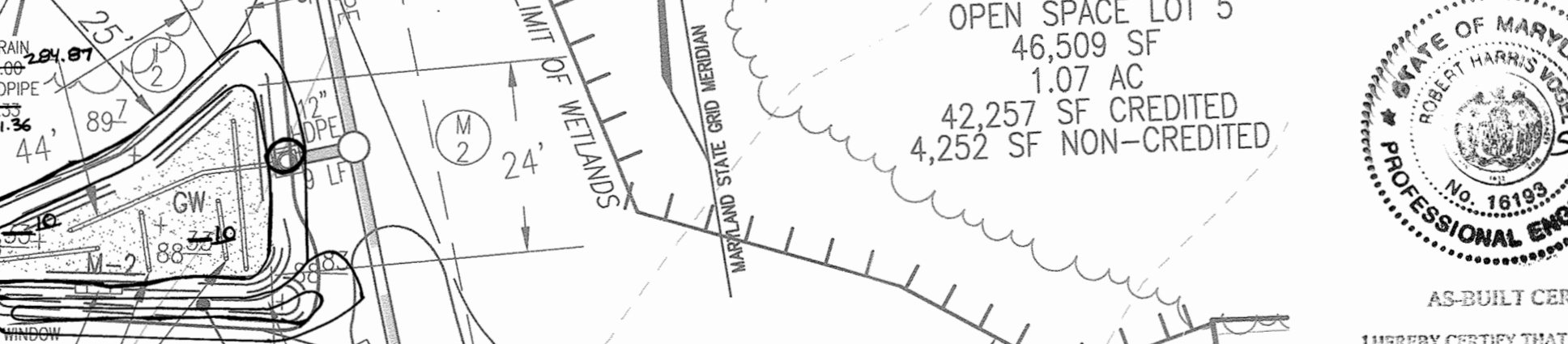
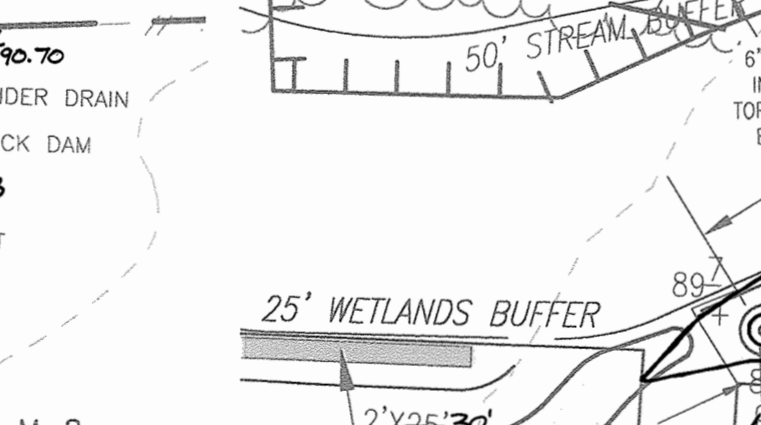
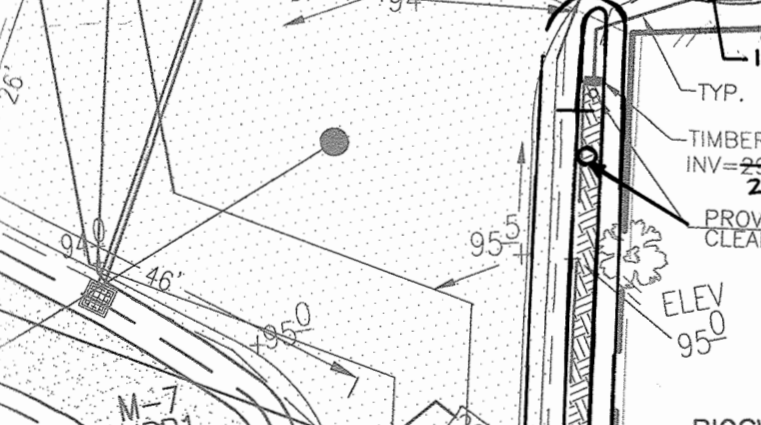
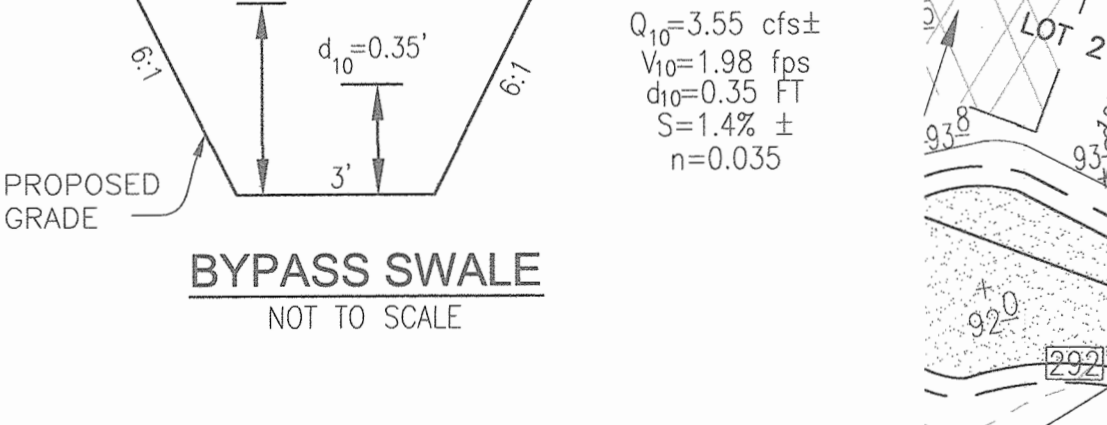
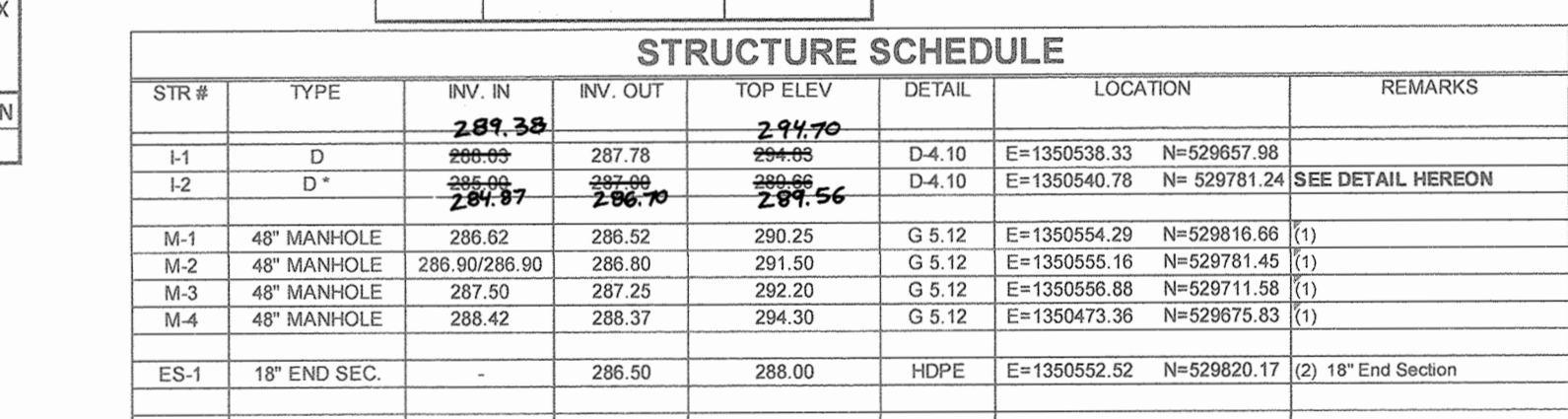
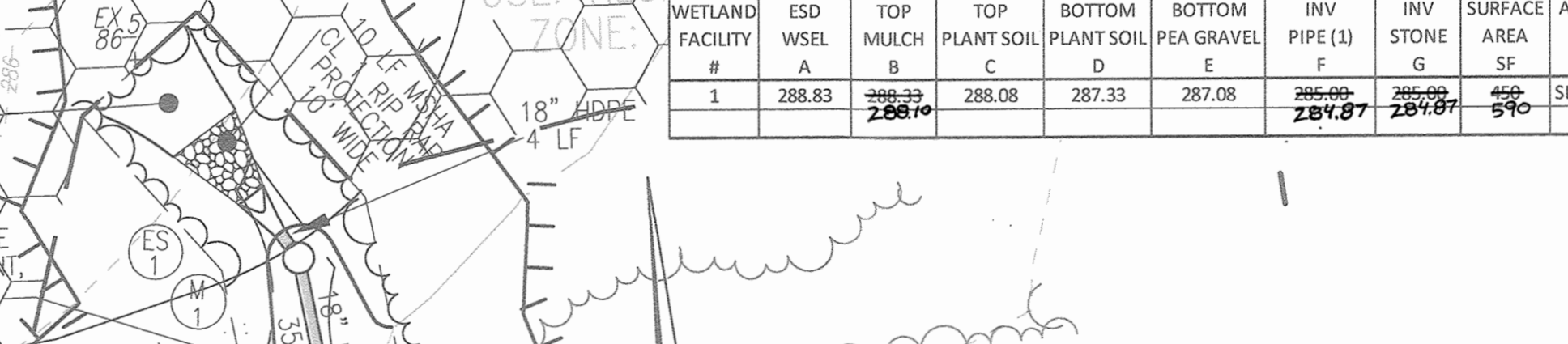
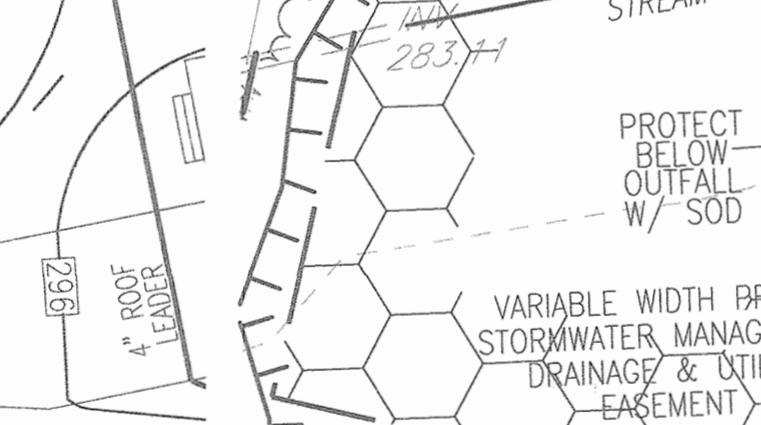
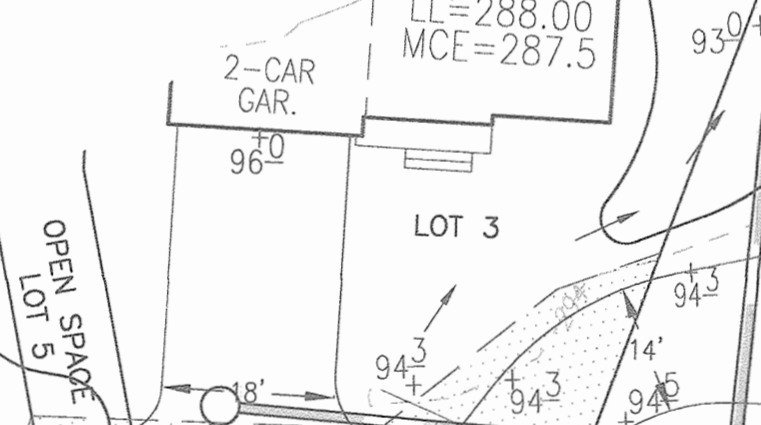
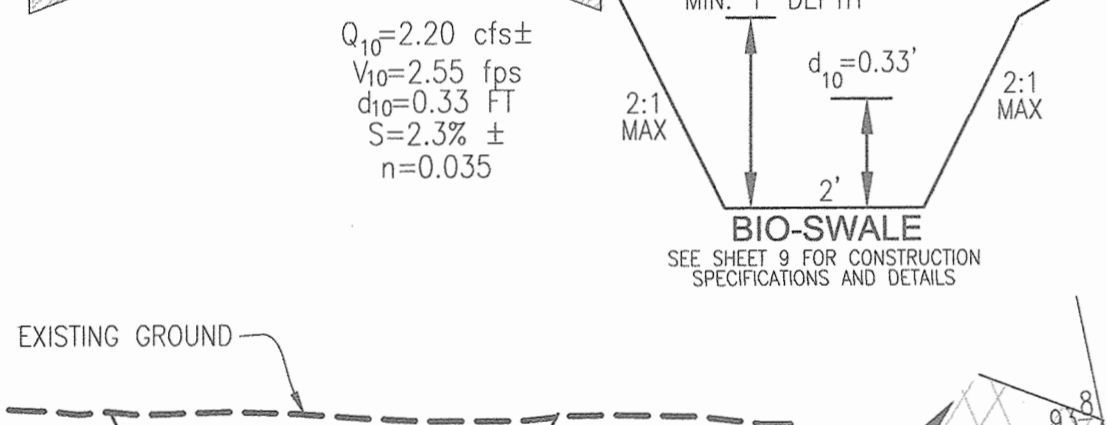
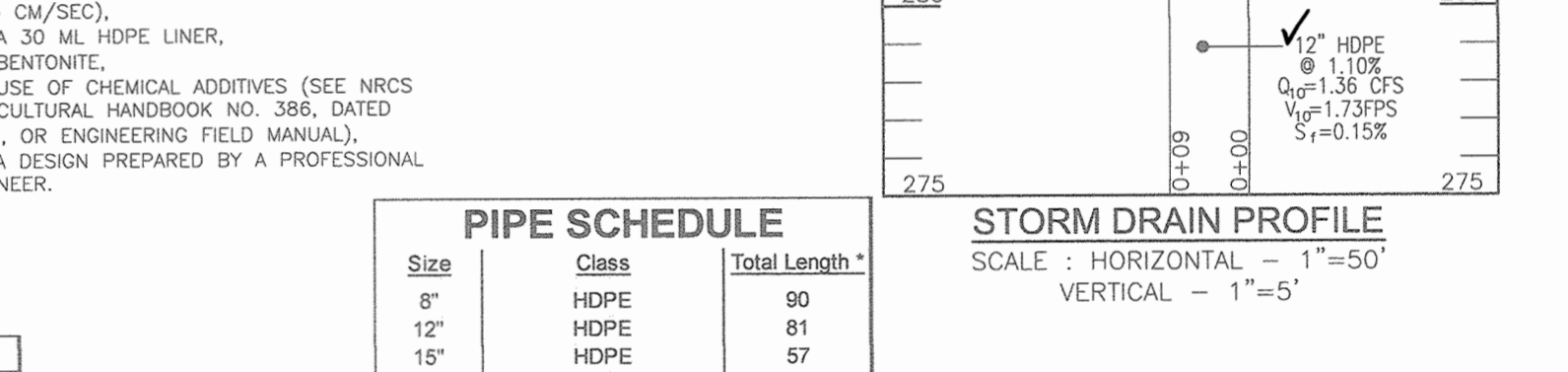
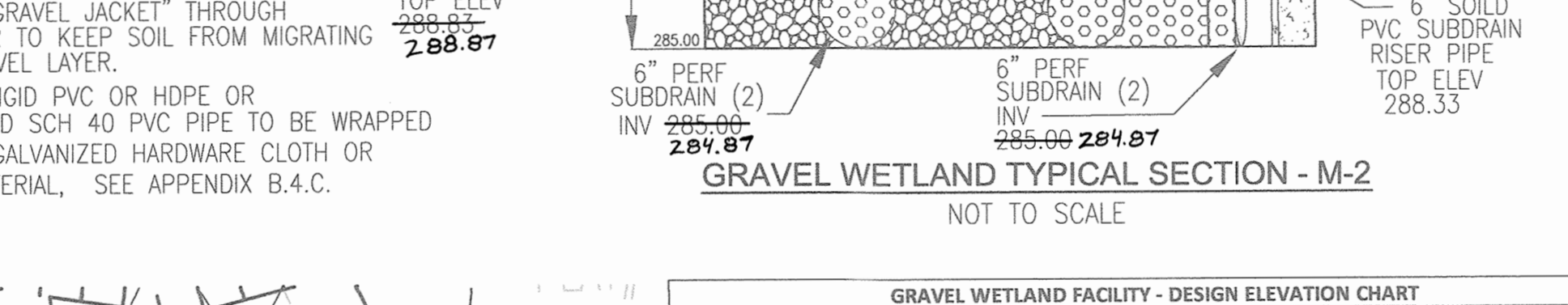
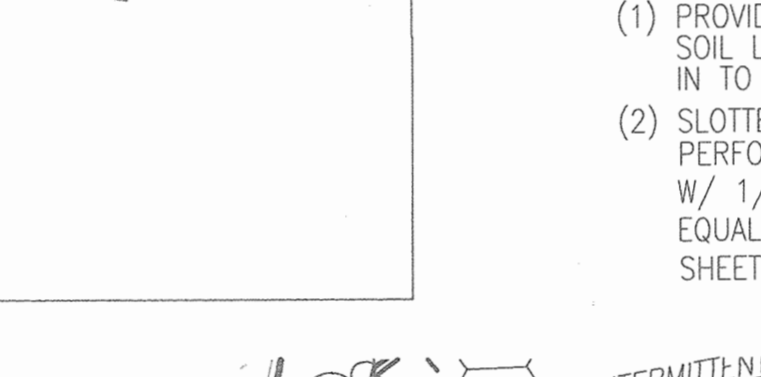
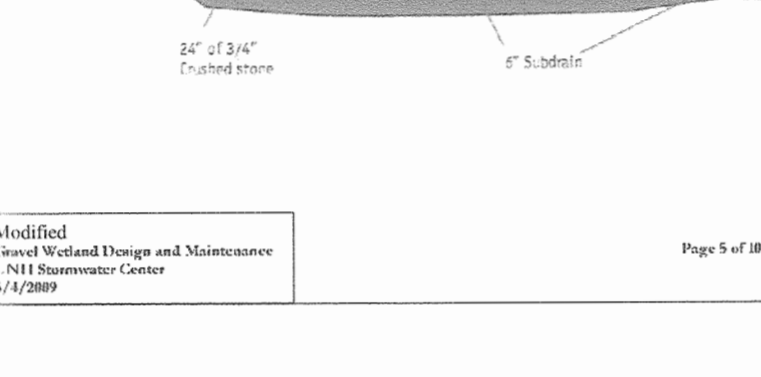
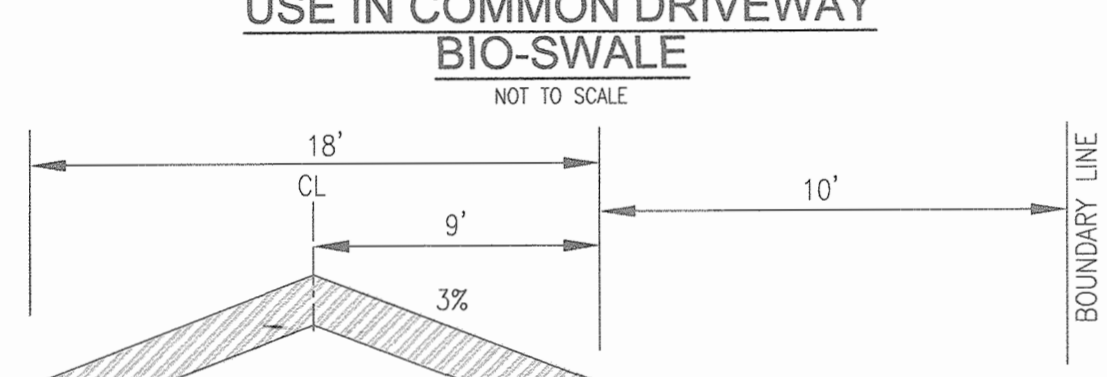
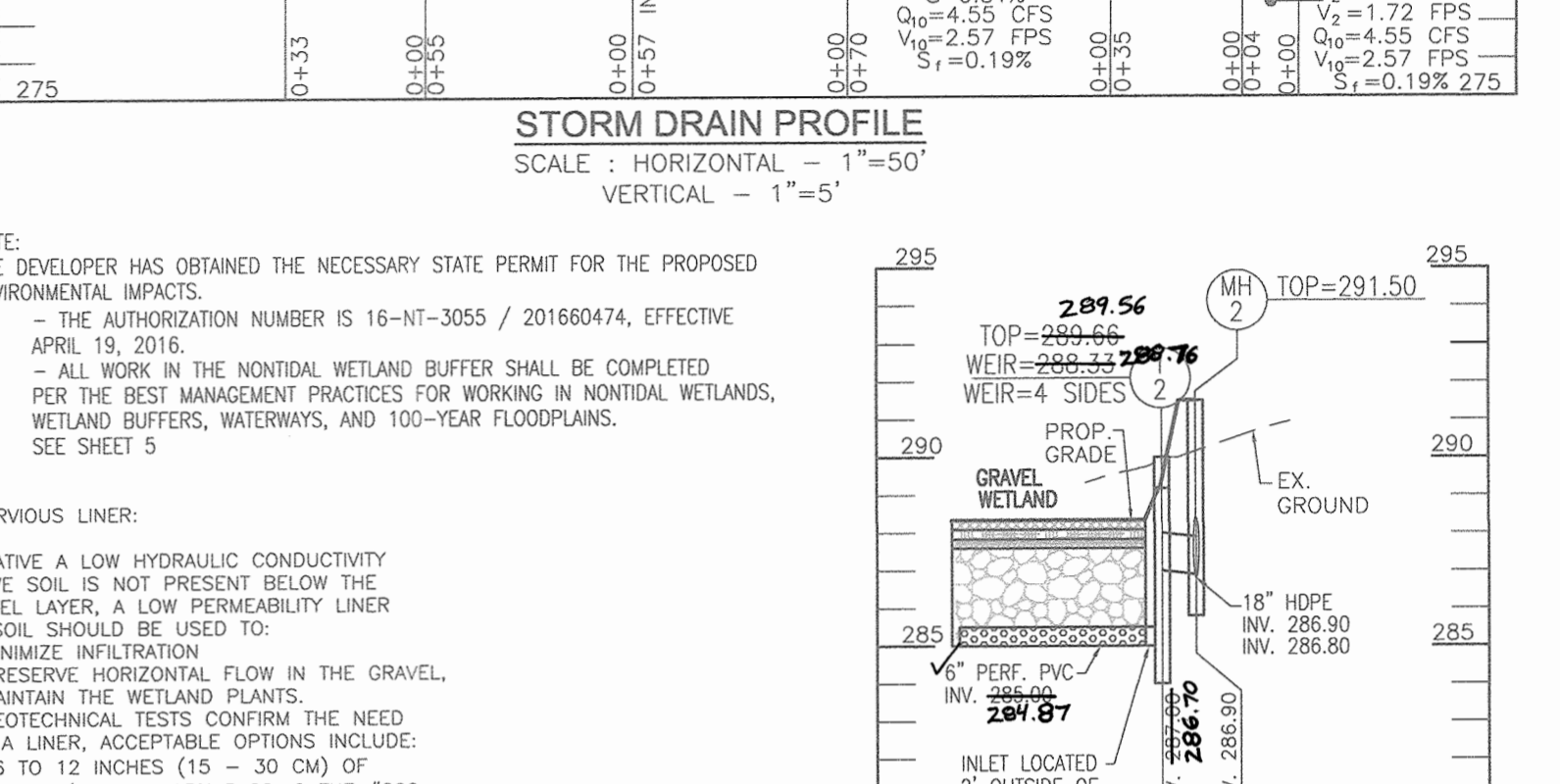
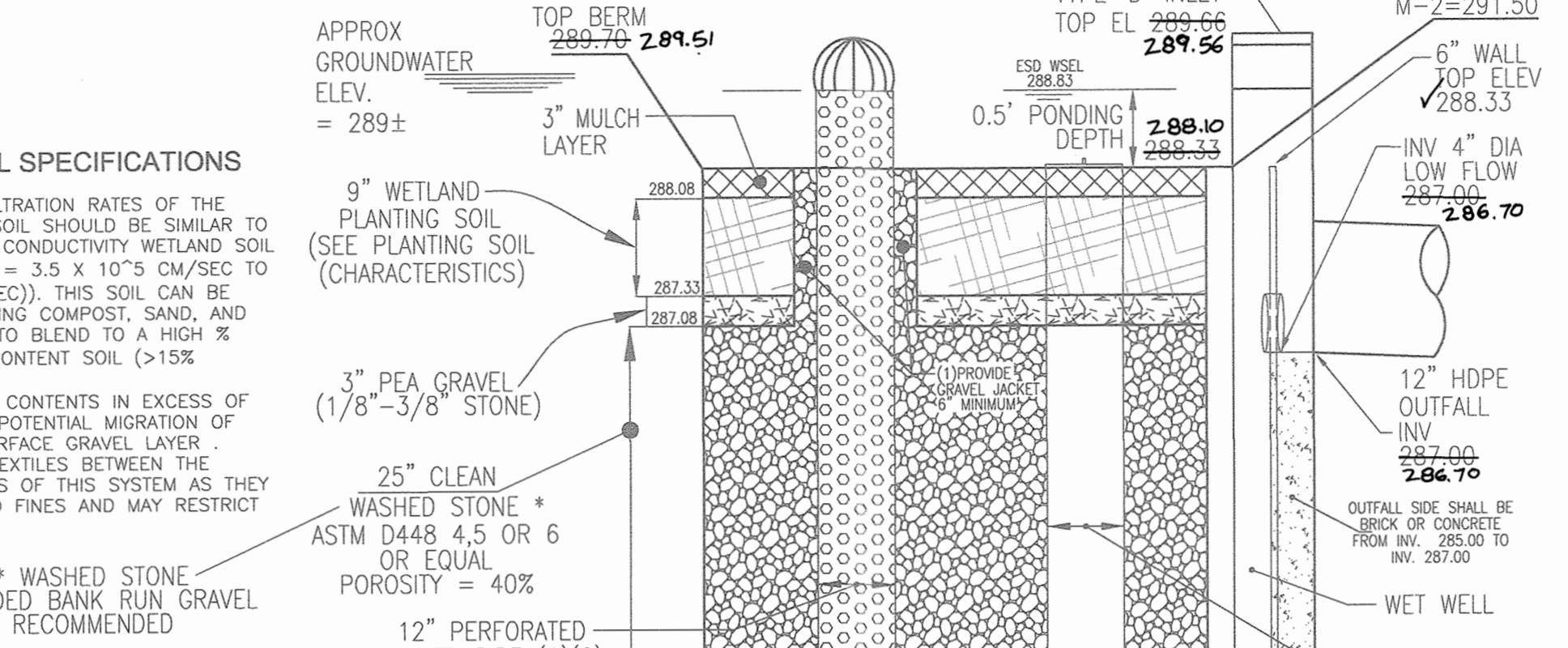
- ALL WATER CONNECTIONS SHALL BE 1-1/2" WITH 1" OUTSIDE METER SETTINGS, UNLESS OTHERWISE NOTED. REFER TO HOWARD COUNTY DETAILS W-3.28 OUTSIDE METER SETTINGS.



SECTION	NO.	DESCRIPTION	DATE	BY	CHKD.	APP'D.
P-1	1	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE
P-2	2	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE
P-3	3	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE
P-4	4	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE

SECTION	NO.	DESCRIPTION	DATE	BY	CHKD.	APP'D.
P-1	1	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE
P-2	2	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE
P-3	3	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE
P-4	4	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE

SECTION	NO.	DESCRIPTION	DATE	BY	CHKD.	APP'D.
P-1	1	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE
P-2	2	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE
P-3	3	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE
P-4	4	USE IN COMMON DRIVEWAY BIO-SWALE	7-29-16	KE	KE	KE



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development

DATE: 7-29-16
 DATE: 7-29-16

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DATE: 7-29-16
 DATE: 7-29-16

Standard Stabilization Note

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

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

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 EXPERIENCED ANY SIGN OF EXCESS WATER IN HIS YARD, AND FURTHERMORE EXPRESSED NO CONCERN FOR THE ADDITION RUNOFF.

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.

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-NI-3055 / 201660474, EFFECTIVE APRIL 19, 2016.

ALL WORK IN THE WETLAND BUFFER SHALL BE COMPLETED PER THE BEST MANAGEMENT PRACTICES FOR WORKING IN 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.

AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREAS ARE SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

DATE: 5-20-20
P.E. NAME: 16193

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.

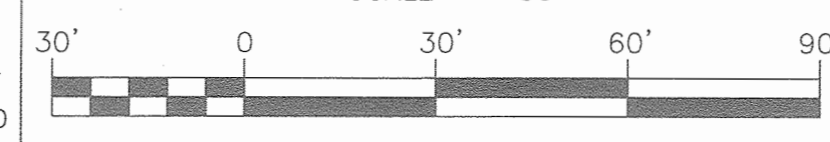
OWNER
JAMES J. HERBERSON
15 HERITAGE FARM DRIVE
NEW FREEDOM, PA 17349
(410) 480-0023

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



GRADING PLAN

SCALE: 1"=30'



MAPPED SOILS TYPES - LAUREL NW - MAP #28

SMBL NAME / DESCRIPTION	GROUP	FACTOR	HYDRIC	HYDRIC INCLUSIONS	FARMLAND OF STATEWIDE IMPORTANCE	PRIME FARMLAND	NOT PRIME FARMLAND	NOT PRIME FARMLAND
Fd FALLINGSTONE SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	0.02	YES		NO	NO	NO	NO
S1B SASSAFRAS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	0.24	NO		NO	NO	NO	NO
Sd SASSAFRAS AND CROOK SOILS, 10 TO 15 PERCENT SLOPES	B	0.37	NO		NO	NO	NO	NO
UcR URBAN LAND CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	D	0.37	NO		NO	NO	NO	NO

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* 7-28-16
Chief, Division of Land Development: *[Signature]* 7-29-16

BY THE DEVELOPER:
TRINITY HOMES MARY LAND LLC
I HEREBY 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] 7/13/16
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.

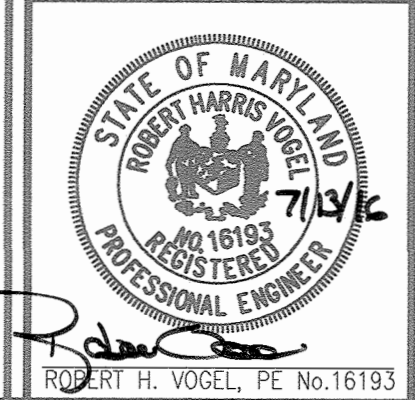
[Signature] 7/12/16
HOWARD S.C.D. DATE

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
07Z FLES: PLAT F. 53, VP-84-129, PARCEL 182
F-85-041 PLAT#6111, ECP-15-038, WP-16-083

ZONED: R-SC
HOWARD COUNTY, MARYLAND

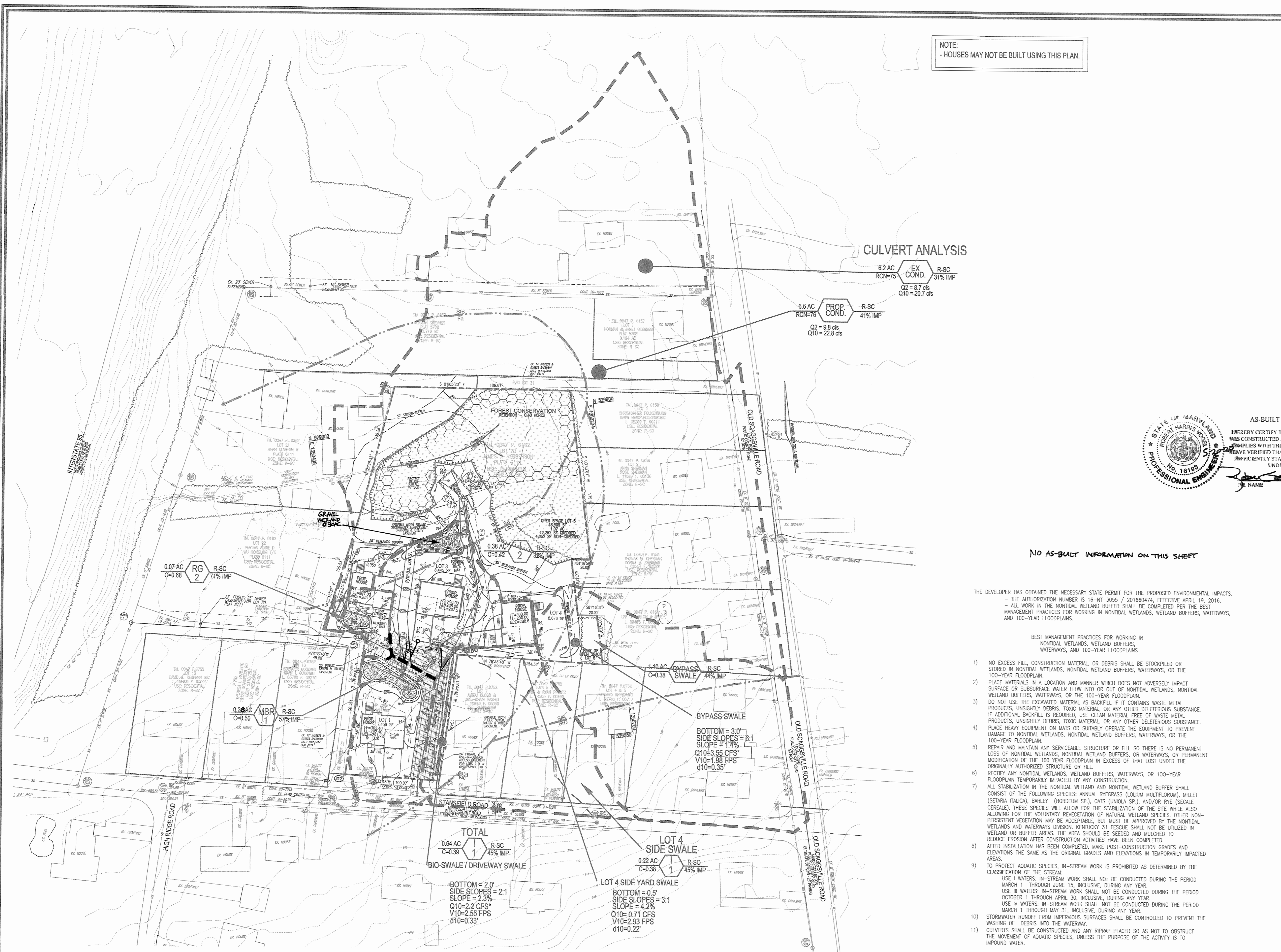
ROBERT H. VOGEL ENGINEERS, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT CITY, MD 21043
TEL: 410.461.7656
FAX: 410.461.1961



DESIGN BY: RVE
DRAWN BY: KG/RVE
CHECKED BY: RHY
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 FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
EXPIRATION DATE: 08-29-2018

3 SHEET OF 9



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

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 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 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

DRAINAGE AREA INLET ZONING
 'C' FACTOR # % IMPERVIOUS

CULVERT ANALYSIS

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

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



AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

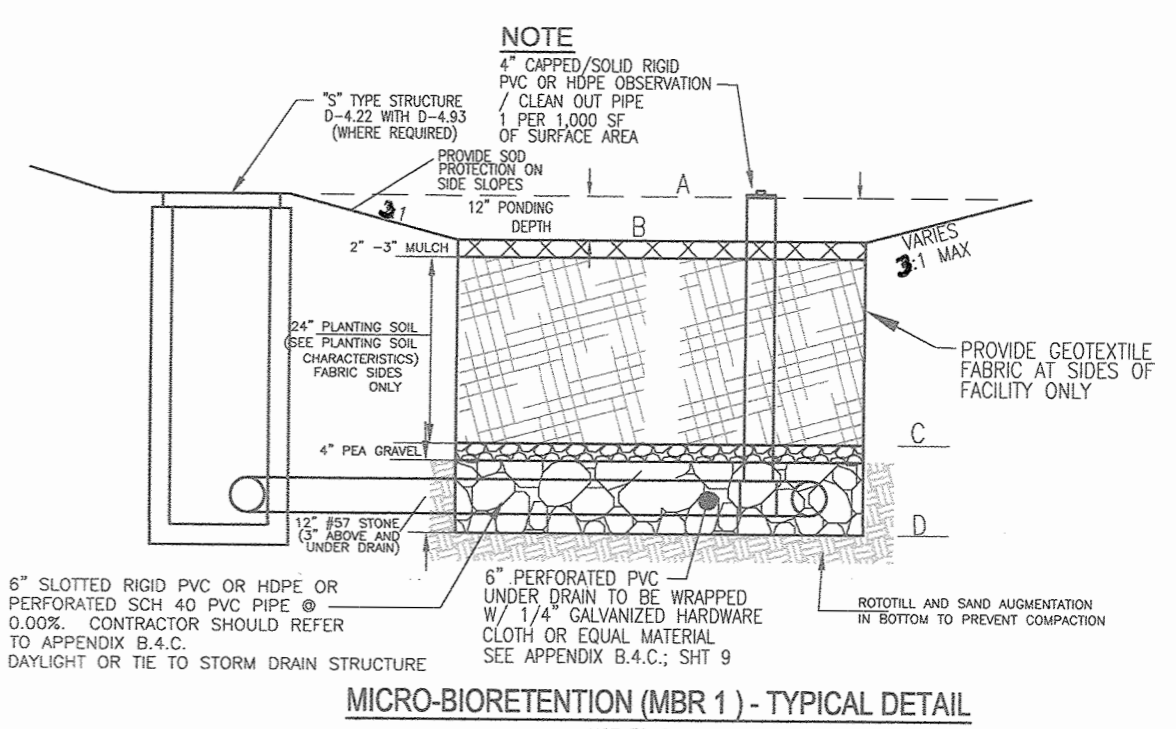
16193 5-20-20
R.H.V. NAME P.E.# DATE

NO AS-BUILT INFORMATION ON THIS SHEET

THE DEVELOPER HAS OBTAINED THE NECESSARY STATE PERMIT FOR THE PROPOSED ENVIRONMENTAL IMPACTS.
- THE AUTHORIZATION NUMBER IS 16-NR-3055 / 20160474, 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 (UNIOIA 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 II WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
USE III 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 BIPAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.



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

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

NO.	REVISION	DATE
1	MODIFICATION OF DRAINAGE AREAS TO SWM DEVICES	12-2-19

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, DP2 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

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

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: 08-27-2018

DESIGN BY: R.V.E.
DRAWN BY: K.G./R.V.E.
CHECKED BY: R.H.V.
DATE: JULY 2016
SCALE: AS SHOWN
W.O. NO.: 14-34

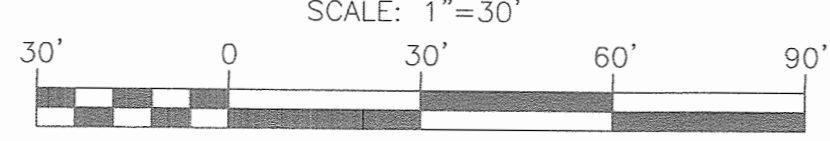
5 SHEET OF 9

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

7-28-16
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

STORM DRAIN - DRAINAGE AREA MAP



MAPPED SOILS TYPES - LAUREL NW - MAP #28

SYMBOL	NAME / DESCRIPTION	GROUP/K-FACTOR	HYDRO	HYDRO INCLUSIONS	FARMLAND	<1% SLOPE W/ EROSION POTENTIAL
Fo	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
Sd	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



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 TREE LINE
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	EXISTING WETLANDS
	ACCESS EASEMENT FOR BENEFIT OF LOT 22
	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
	PROPOSED SHADE TREE
	PERIMETER 3
	BGE GREEN ZONE
	BGE YELLOW ZONE

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

AS-BUILT CERTIFICATION FOR PSWM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT FLOODING OF THE UNDERGROUND SWM FACILITY.
 J. NAME: [Signature] 16193
 DATE: 5-20-20

NO AS-BUILT INFORMATION ON THIS SHEET

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

DEVELOPER
 TRINITY HOMES MARYLAND, 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 6 F. EX. VP-84-129
 F-85-041 PLAT#6111; ECP-15-038, WP-16-083

ZONED: R-SC
 PRCEL: 182
 HOWARD COUNTY, MARYLAND

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

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

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 EXPIRES 06-27-2018

6 SHEET OF 9

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad P. [Signature] 7-28-16
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

Neil [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.

Neil P. [Signature] (MEMBER) 07-13-16
 SIGNATURE OF DEVELOPER
 DATE

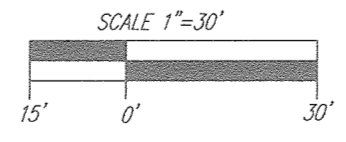
B & G E NOTES:

- 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.
- 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 OF 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 CONSTITUTIONAL PROPERTY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNDERTAKE UNREASONABLE WITHHOLD PERMISSION.
- 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

PLAN VIEW
 SCALE: 1"=30'





FOREST CONSERVATION EASEMENT
0.40 ACRES RETENTION

FOREST CONSERVATION PLAN
SCALE: 1"=50'

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
- 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 MANAGEMENT, DRAINAGE & UTILITY EASEMENT

FOREST STAND DATA

KEY	COMMUNITY TYPE	ACREAGE	DOMINANT VEGETATION	GENERAL CONDITION	PRIORITY ACREAGE
F1	SUCCESIONAL	0.5	FRAXINUS PENNSYLVANICA, SALIX NIGRA, ACER SACHCHARINUM, 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 SACHCHARINUM, NYSSA SYLVATICA, CORNUS AMOMUM, SAMBUCUS CANADENSIS, JUNCUS EFFUSUS, ONOCLEA SENSIBILIS, CAREX LURIDA	0.4± AC

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



VICINITY MAP
SCALE: 1"=1,000'
ADC MAP COORDINATE: 5169 B1/5169 B2 E 1355445.3364 ELEV: 256.068
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 218 INTERSECTION; 1.4 FEET WEST OF SOUTHWEST INLET CORNER

OWNER
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DEVELOPER
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ELLICOTT CITY, MD 21043
(410) 480-0023



AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

DATE: 5-20-20
P.E. # 16193

GENERAL NOTES

- WATERSHED NAME: PATUXENT RIVER UPPER
WATERSHED NUMBER: 2131104
- A. GROSS SITE AREA: 1.84 AC.
 - B. NET SITE AREA: 1.84 AC.
 - C. AREA OF 100-YEAR FLOODPLAIN: 0.00 AC.
 - D. AREA OF WETLANDS AND BUFFERS(ONSITE): 0.98 AC.
 - E. AREA OF STREAM AND BUFFERS(ONSITE): 0.00 AC.
 - F. AREA OF > 25% STEEP SLOPES: 0.00 AC.
 - G. EXISTING FOREST (FSF): 0.50 AC.
 - F. ZONED: R-SC
 - G. EXISTING USE: RESIDENTIAL
 - H. PROPOSED USE: RESIDENTIAL

NO AS-BUILT INFORMATION ON THIS SHEET

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5006 Glen Arm, Maryland 21057
Telephone (410) 832-2488 Fax (410) 832-2488

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD061004432
John P. Canoles

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

JOHN CANOLES
DNR QUALIFIED PROFESSIONAL

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division
7-23-16
Chief, Division of Land Development
7-29-16

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
Sb1 SASSAFRAS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	0.24	NO		PRIME FARMLAND	NO
Sd1 SASSAFRAS AND CROOM SOILS, 10 TO 15 PERCENT SLOPES	B	0.37	NO		NOT PRIME FARMLAND	YES
Uk-B 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

NO.	REVISION	DATE

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, VP-84-128
F-85-041 PLAT#6111; ECP-15-038, WP-16-083

ZONED: R-SC
PARCEL 182
HOWARD COUNTY, MARYLAND

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

7 SHEET OF 9

AS-BUILT DECEMBER 2019 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 MOVED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVIDE A HINDERANCE 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 15.08.02.05. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
* SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
* ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35-40%) OR SANDY LOAM (50%), COMPOST SAND (50%), 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 PH 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 STOCKPILE TEST. 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 TIRE TRES. 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 ALLEVATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL FLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO RESTRUCTURE 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 BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.
WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL 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 LOTS 12" TO 18" DEEP. 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 HEAVY (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, DEFOLIANTS, 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 (ASTM F 758, TYPE PS 28, OR AASHTO M-278) IN A GRAVEL LAYER. THE PERFORATED MATERIAL IS SLOTTED, 4" RIGID PIPE (PVC OR HDPE).
* PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER FOOT. PIPE SHALL BE WRAPPED WITH 1/4" GALVANIZED HARDWARE CLOTH OR SOIL MATERIAL. SEE APPENDIX B.4.C.
* 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 6" DIA. NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT POINT AND MONITOR PERFORMANCE OF THE FILTER.
* A 4" LAYER OF PE# GRAVEL (1/2" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER BED WITHIN THE UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN THICKNESS EXCEEDS 2".
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-SWALES AREAS

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYERS 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.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED SECOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONLY EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

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

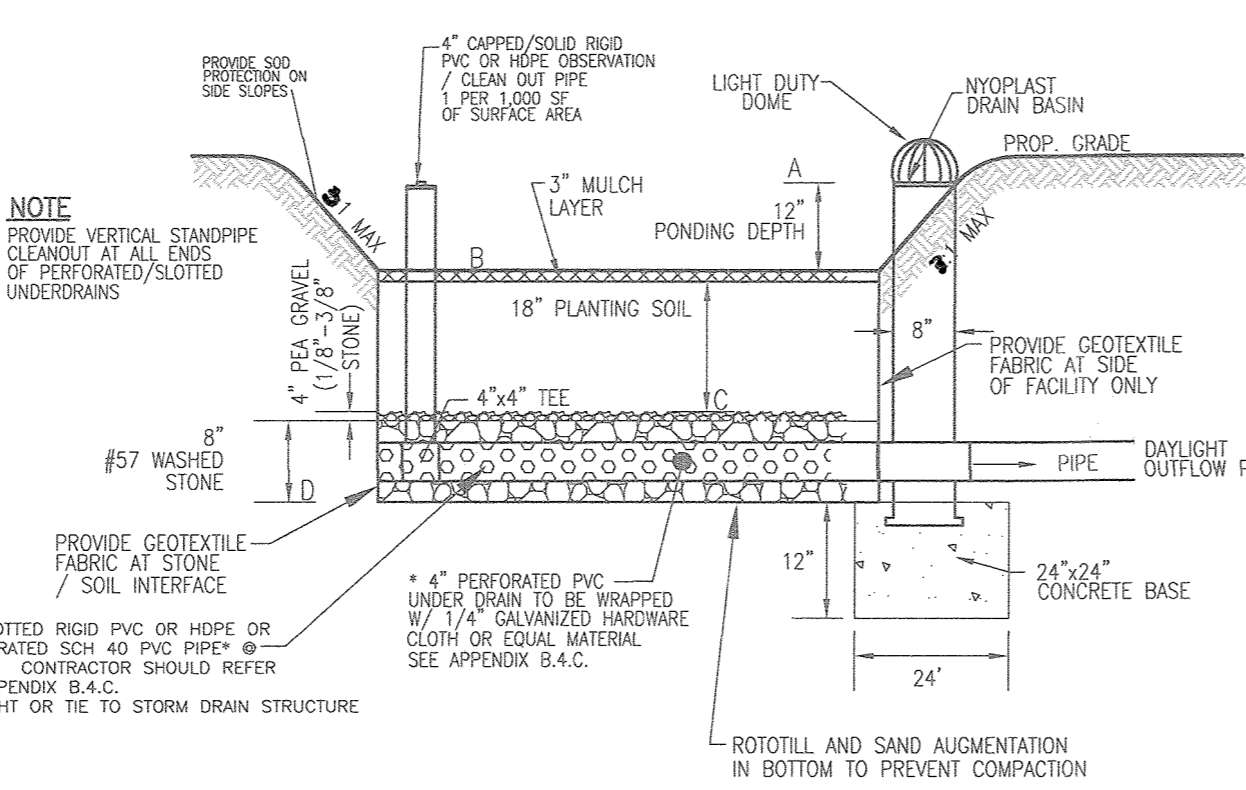
Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2" to 4" deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil type loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)	n/a	
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	AASHTO M-43	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 pipe; not necessary undercatch pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f _c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required; 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.8(R); vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil properties); and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.025" to 0.04"	Sand substitutions such as Diabase and Gyrstone (AASHTO #10) are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

PINEHURST STORMWATER TEST PITS				
TEST PIT	SURFACE ELEVATION	BORING DEPTH	DIAG	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

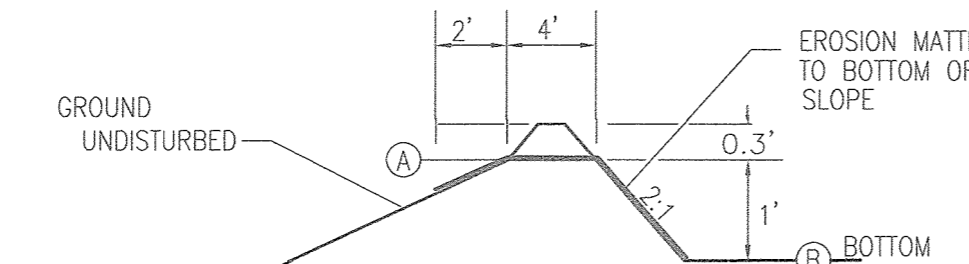
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 7-28-16

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

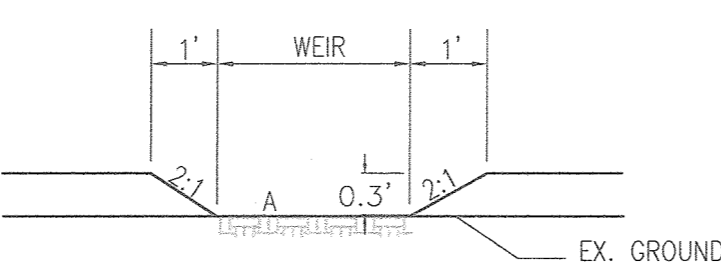


TYPICAL SMALL MICRO-BIORETENTMENT - LOT 2

WEIR OUTLET MICRO-BIORETENTMENT/RAINGARDEN



TYPICAL SPILLWAY SECTION



TYPICAL SPILLWAY PROFILE

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.

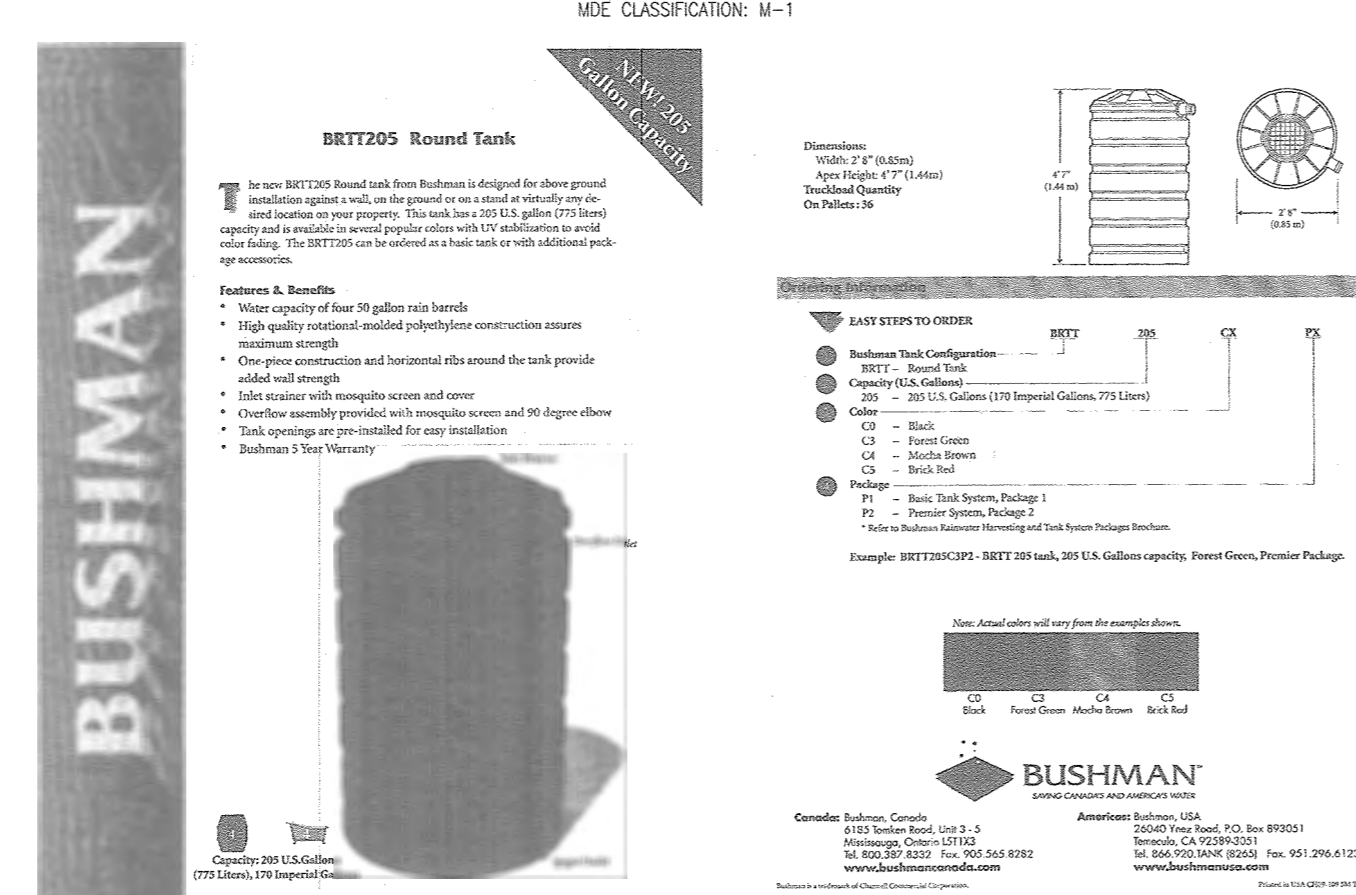
INSPECTION:

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 BRT205 (205 GALLON) RAIN HARVESTING SYSTEM OR EQUIVALENT RAIN BARREL DETAIL



TYPICAL RAIN BARREL DESIGN
 205 GAL = 27.41 CUFT
 7.48 GAL/CUFT
 500 SF X (X") = 27.41 CUFT
 12

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.

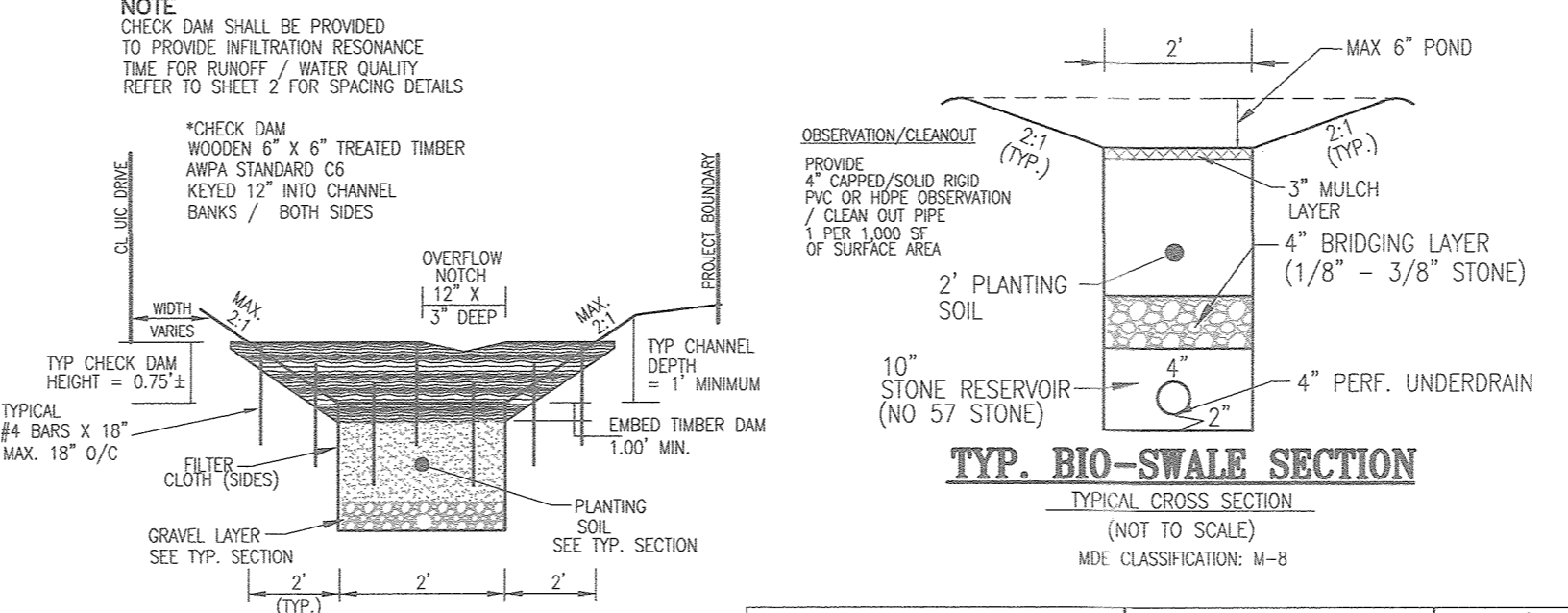
FACILITY	A	B	C	D	SURFACE AREA	APPROX. DIMENSIONS
MBR LOT#1	294.06	291.59	289.75	288.42	779 SF	SEE PLAN
RG LOT#2	292.09	290.63	289.45	288.45	808 SF	SEE PLAN

PINEHURST - ESDV COMPUTATIONS

SITE DEVELOPABLE AREA: 1.00 AC
 TARGET PVI: 1.81 IN
 SITE IMPERVIOUS: 32.25 PERCENT
 SITE RSV: 0.3885
 SITE ESDV: 1978 CF +/-

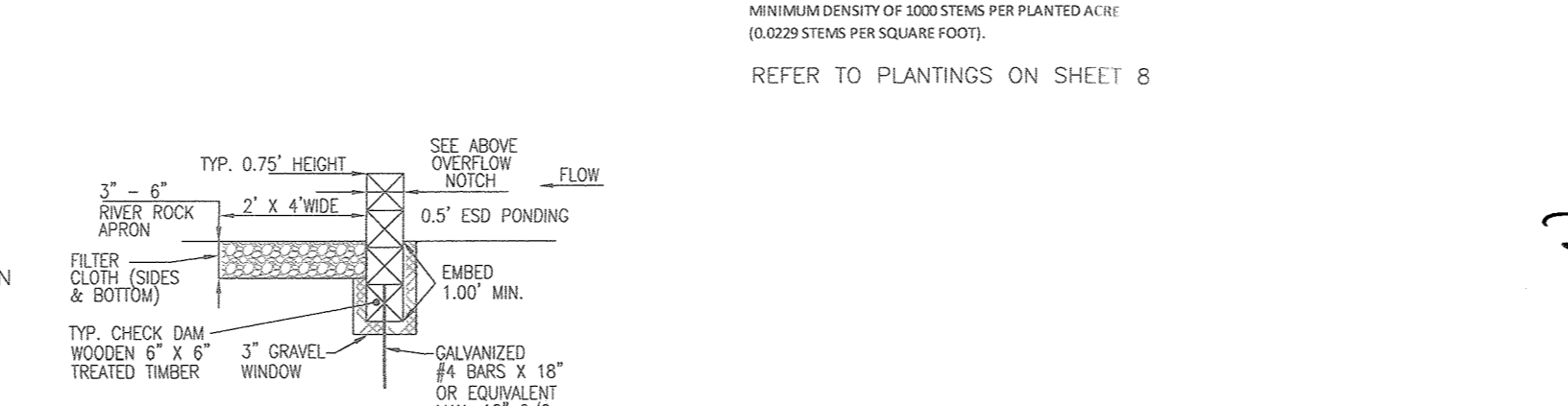
R=0.05+0.0090
 V min=1.0' rainfall
 V max=1.5' rainfall=2.6'

DA	% IMPERV	Rv	DA (SF)	DA (AC)	MINIMUM VOLUME	MAXIMUM VOLUME	1.61' PROVIDER	VOLUME IMPERV (SF)	IMPERV (AC)	GREEN AREA	REMARKS	
LOT 4								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 MICROSCALE RAIN BARREL 1 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
LOT 2 FRONT	57.19	0.5647	3200	0.07	151	392	242	425	1800	0.04	0.03	MICROSCALE RAINGARDEN @ 1.0' PONDING 425 300 SF MICRO RG
LOT 1 HALF U/D W	48.01	0.4821	12790	0.29	514	1386	827	1174	6140	0.14	0.15	MICROSCALE MICRO-BIORETENTION @ 1.0' PONDING 1120 800 SF MICRO RG
HAIF U/D W	37.15	0.3844	3330	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	



BIO-SWALE CHECK DAM

TYP. CHECK DAM HEIGHT = 0.75' x 1.0' MINIMUM
 TYP. CHANNEL DEPTH = 12" x 18" DEEP
 TYP. CHECK DAM WIDTH = 12" x 18" DEEP
 TYP. CHECK DAM MATERIAL = 1/4" GALVANIZED HARDWARE CLOTH OR SOIL MATERIAL. SEE APPENDIX B.4.C.



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.
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).

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.

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 APPURTENANCE 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.



AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREAS ARE SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

P.E. NAME: [Signature] P.E. # 16193 DATE: 5-20-20

STATE OF MARYLAND PROFESSIONAL ENGINEER
 NO. 16193 EXPIRES 5-20-20

OWNER: JAMES J. HERBERSON, 3875 PARK DRIVE, NEW FREEDOM, PA 17349, (410) 480-0023
DEVELOPER: TRINITY HOMES MARY LAND, LLC, SUITE 301, ELLICOTT CITY, MD 21043, (410) 480-0023

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:
 1. DURING INITIAL GRADING OPERATIONS TO ENSURE THAT BUFFERS ARE CLEARLY MARKED IN THE FIELD.
 2. BEFORE USE AND OCCUPANCY APPROVAL TO VERIFY AREA MEASUREMENTS AND ENSURE 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 WATER-TIGHT.
 6. THE OWNER SHALL REPAIR EROSION AT INFLOW POINTS AND ENSURE FLOW SPLITTERS ARE FUNCTIONAL TO PREVENT STORM WATER FROM BYPASSING THE FACILITY.

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

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16193 EXPIRES 05-20-2016.

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

9 SHEET OF 9

AS-BUILT DECEMBER 2019 F-16-002