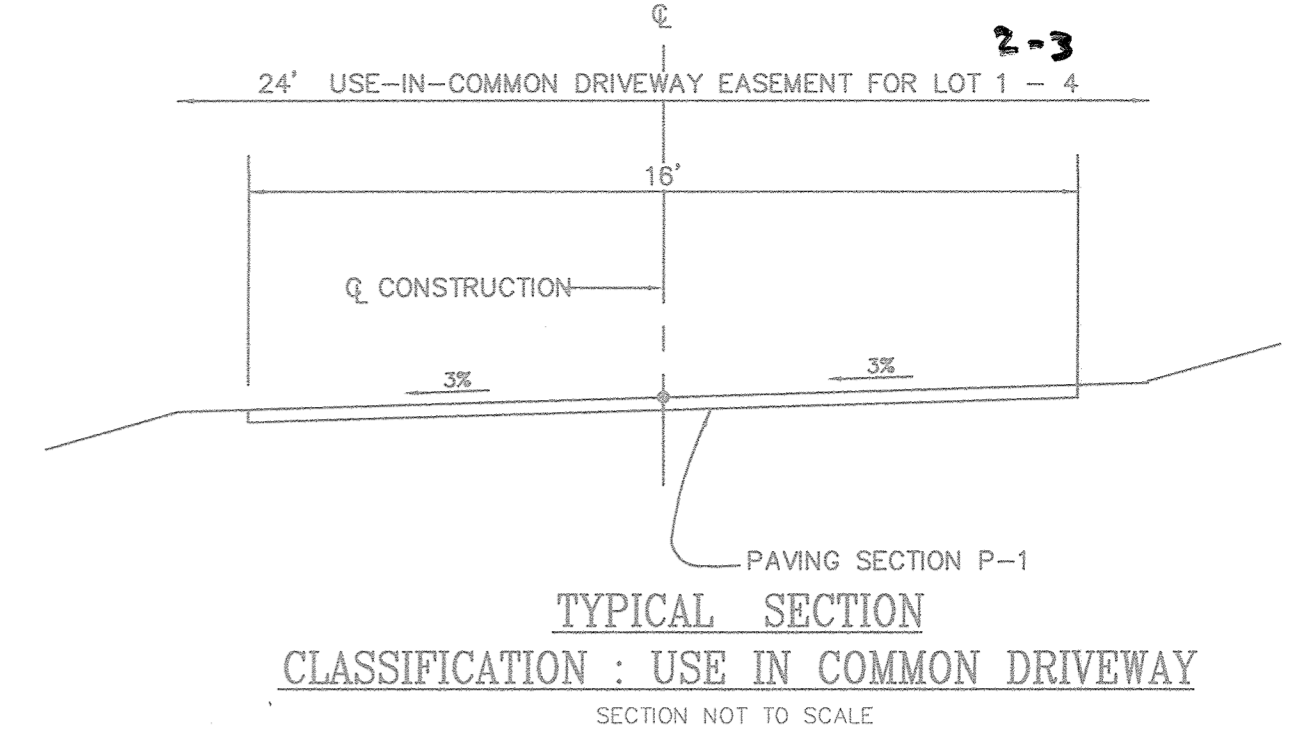
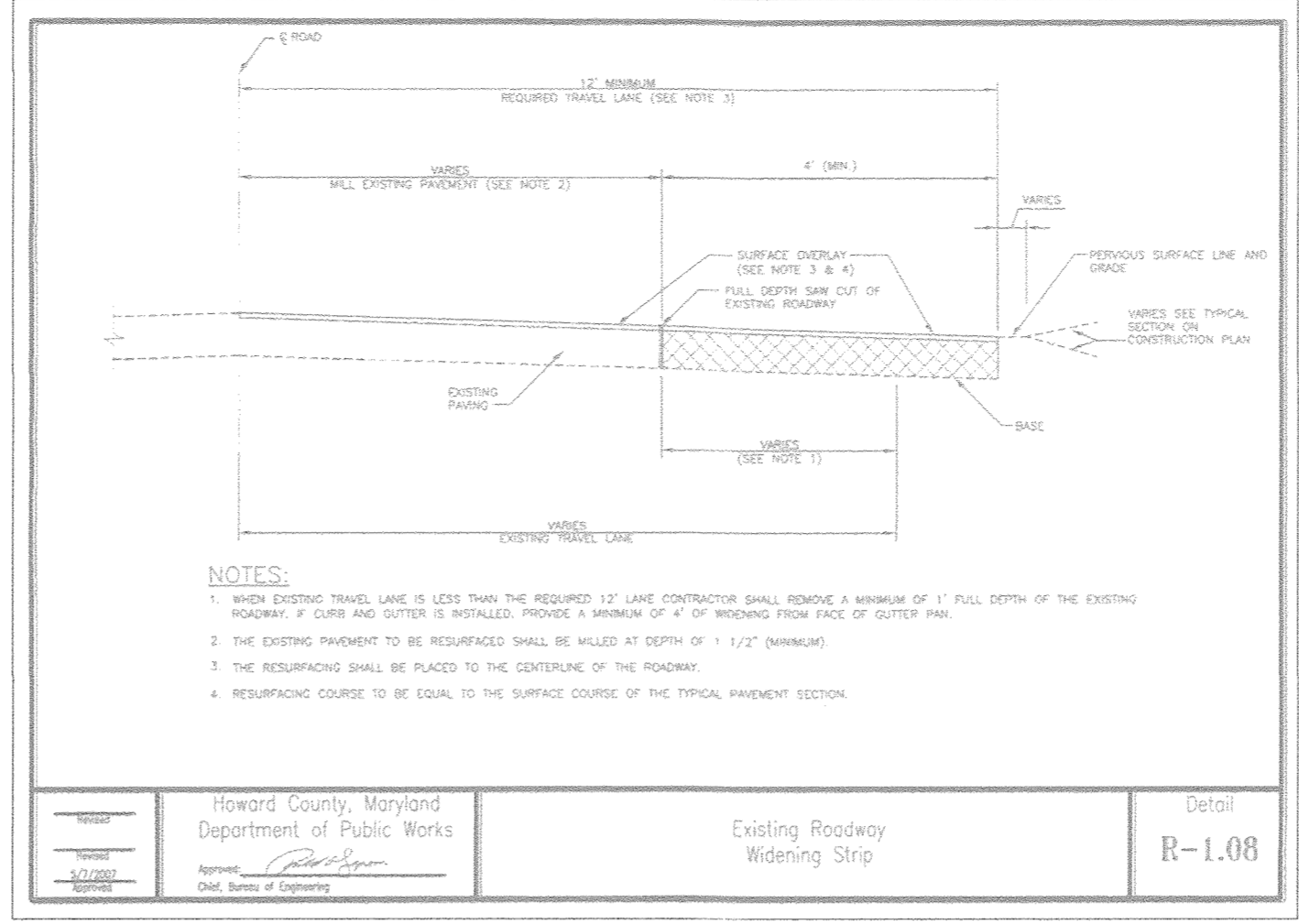


SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIAL (INCHES)	3 TO 4.5	5 TO 6	7	8 TO 10	11 TO 15	16 TO 20	21 TO 25
P-1	RESIDENTIAL AND NON-RESIDENTIAL PAVING WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	1/2" HMA SUPERFINE FINE SURFACE 1/2" HMA SUPERFINE INTERMEDIATE SURFACE (SMA) 1/2" HMA SUPERFINE BASE (SMA) 1/2" HMA SUPERFINE SUB-BASE (SMA)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P-2	PRIVATE DRIVEWAYS RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	1/2" HMA SUPERFINE FINE SURFACE 1/2" HMA SUPERFINE INTERMEDIATE SURFACE (SMA) 1/2" HMA SUPERFINE BASE (SMA) 1/2" HMA SUPERFINE SUB-BASE (SMA)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P-3	PRIVATE DRIVEWAYS RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	1/2" HMA SUPERFINE FINE SURFACE 1/2" HMA SUPERFINE INTERMEDIATE SURFACE (SMA) 1/2" HMA SUPERFINE BASE (SMA) 1/2" HMA SUPERFINE SUB-BASE (SMA)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P-4	PRIVATE DRIVEWAYS RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	1/2" HMA SUPERFINE FINE SURFACE 1/2" HMA SUPERFINE INTERMEDIATE SURFACE (SMA) 1/2" HMA SUPERFINE BASE (SMA) 1/2" HMA SUPERFINE SUB-BASE (SMA)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P-5	PRIVATE DRIVEWAYS RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	1/2" HMA SUPERFINE FINE SURFACE 1/2" HMA SUPERFINE INTERMEDIATE SURFACE (SMA) 1/2" HMA SUPERFINE BASE (SMA) 1/2" HMA SUPERFINE SUB-BASE (SMA)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P-6	PRIVATE DRIVEWAYS RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	1/2" HMA SUPERFINE FINE SURFACE 1/2" HMA SUPERFINE INTERMEDIATE SURFACE (SMA) 1/2" HMA SUPERFINE BASE (SMA) 1/2" HMA SUPERFINE SUB-BASE (SMA)	1.0	1.0	1.0	1.0	1.0	1.0	1.0

NOTES:

- HEAVY TRUCKS ARE DEFINED AS THOSE WITH GV (G) WEIGHTS OR MORE INCLUDING GROSS WEIGHTS.
- HMA SUPERFINE FINE SURFACE SHALL BE PLACED IN APPROXIMATE 1/2" INCHES. 1/2" HMA SUPERFINE INTERMEDIATE SURFACE SHALL BE PLACED AND COMPACTED IN 1" INCHES.
- GRANDED AGGREGATE BASE (SMA) TO BE PLACED AND COMPACTED IN 1" INCHES.
- THE MINIMUM SURFACE COURSE SHALL BE 1/2" INCHES. A MINIMUM OF 1/2" INCHES OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSEQUENT COMPLETION INSPECTION AND ROAD OPENING.
- THE ORDER OF PLACING THE INTERMEDIATE SURFACE COURSE LAYER FOR COMMERCIAL/INDUSTRIAL PURPOSES SHOULD BE APPROVED BY THE COUNTY ENGINEER PRIOR TO CONSTRUCTION. THE THICKNESS OF THE INTERMEDIATE SURFACE LAYER MAY BE ADJUSTED TO THE REQUIRED THICKNESS OF THE BASE COURSE LAYER.
- BY THE CONSTRUCTION CONTRACTOR SHALL BE THE RESPONSIBILITY TO OBTAIN THE CORRECT CLASSIFICATION AND CMAA VALUE FOR EACH ROADWAY.

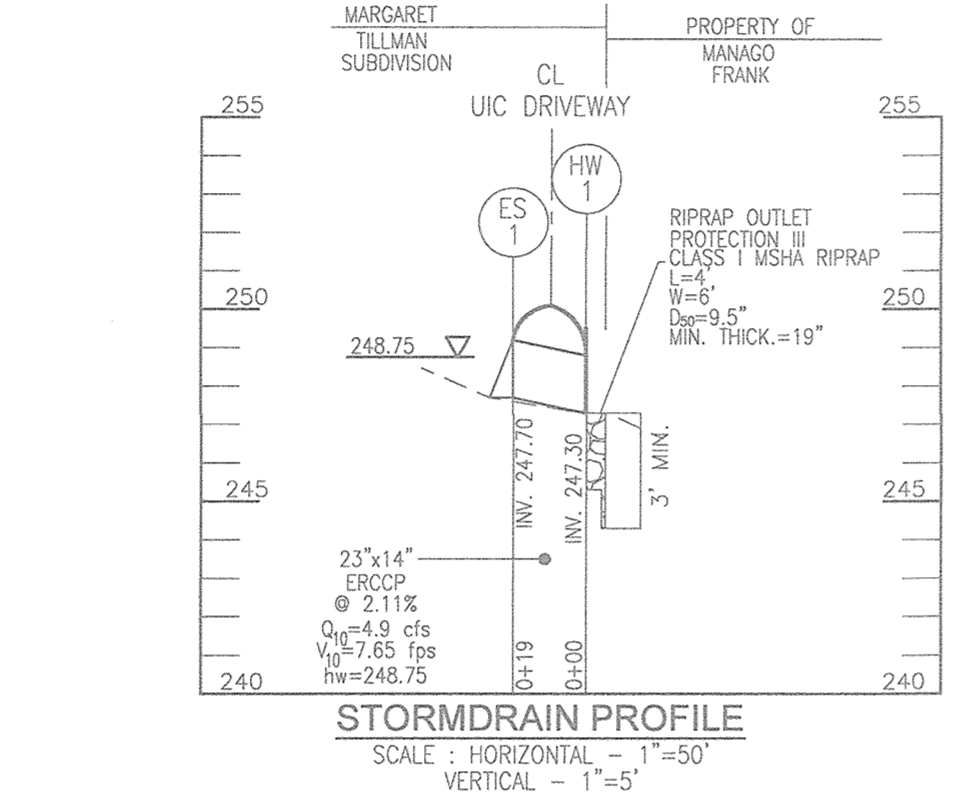
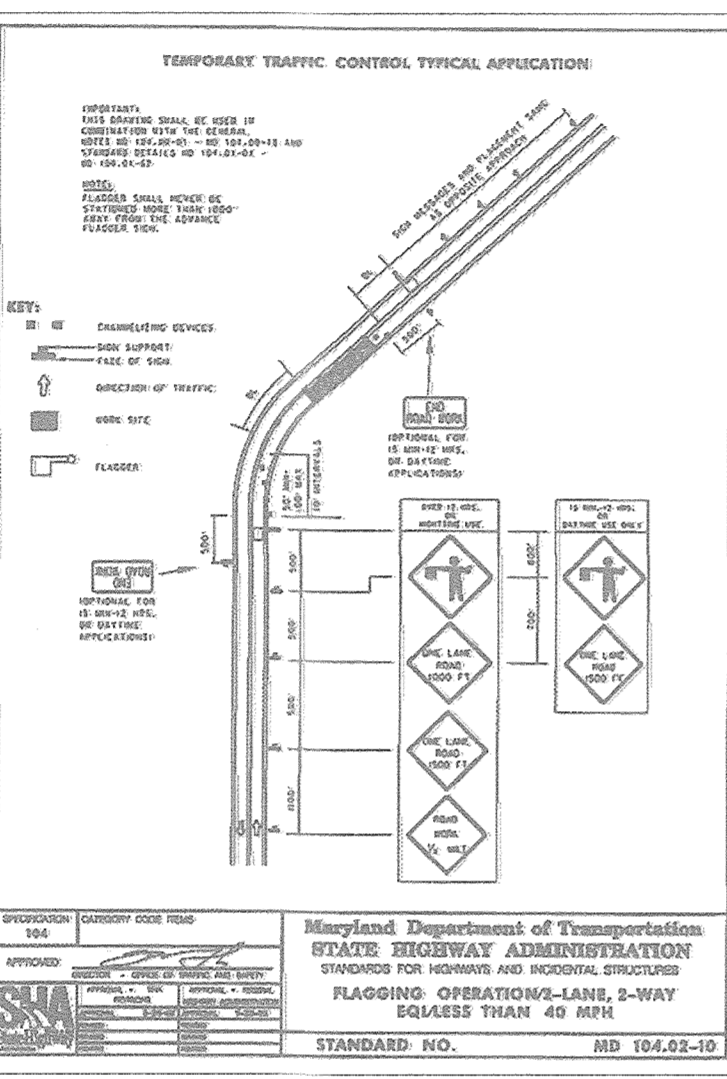
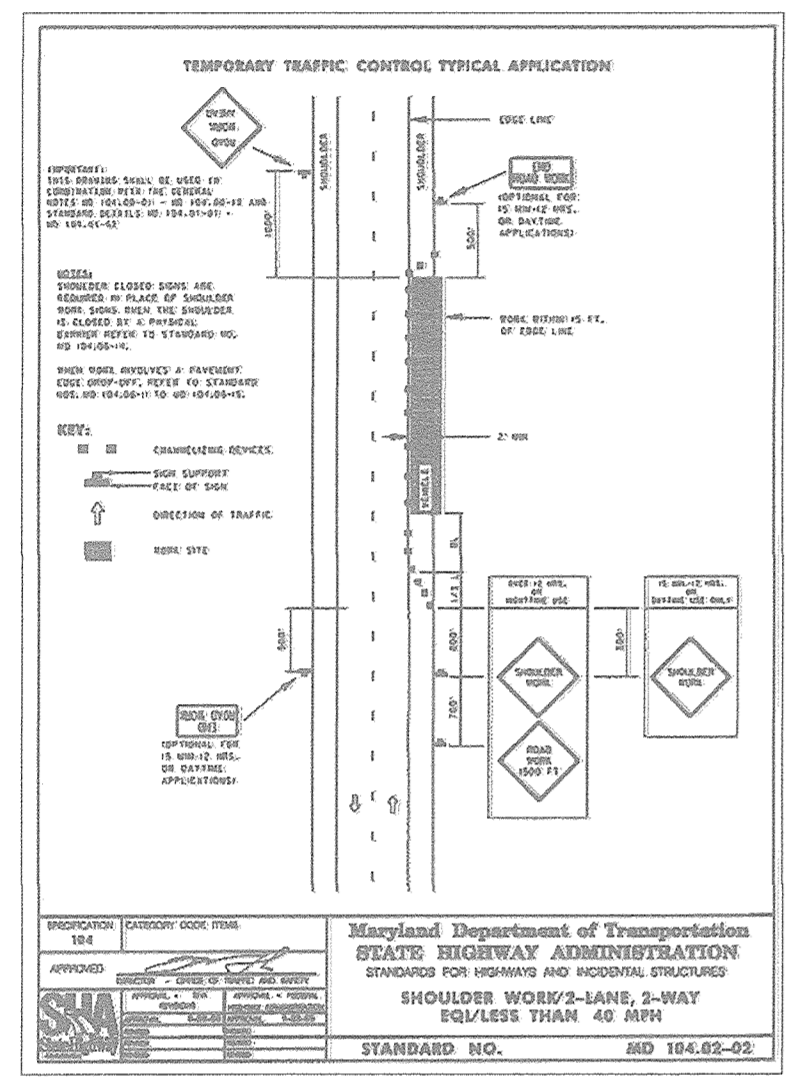
Howard County, Maryland
Department of Public Works
PAVING SECTIONS
P-1 to P-6
Detail
R-2.01



NOTE:

-ROAD IMPROVEMENTS, PAVEMENT WIDENING, CURB & GUTTER, SIDEWALK (WP-15-098) AND STREET LIGHTING SHALL BE INSTALLED UNDER S-17-005 GREENWOOD VILLAGE

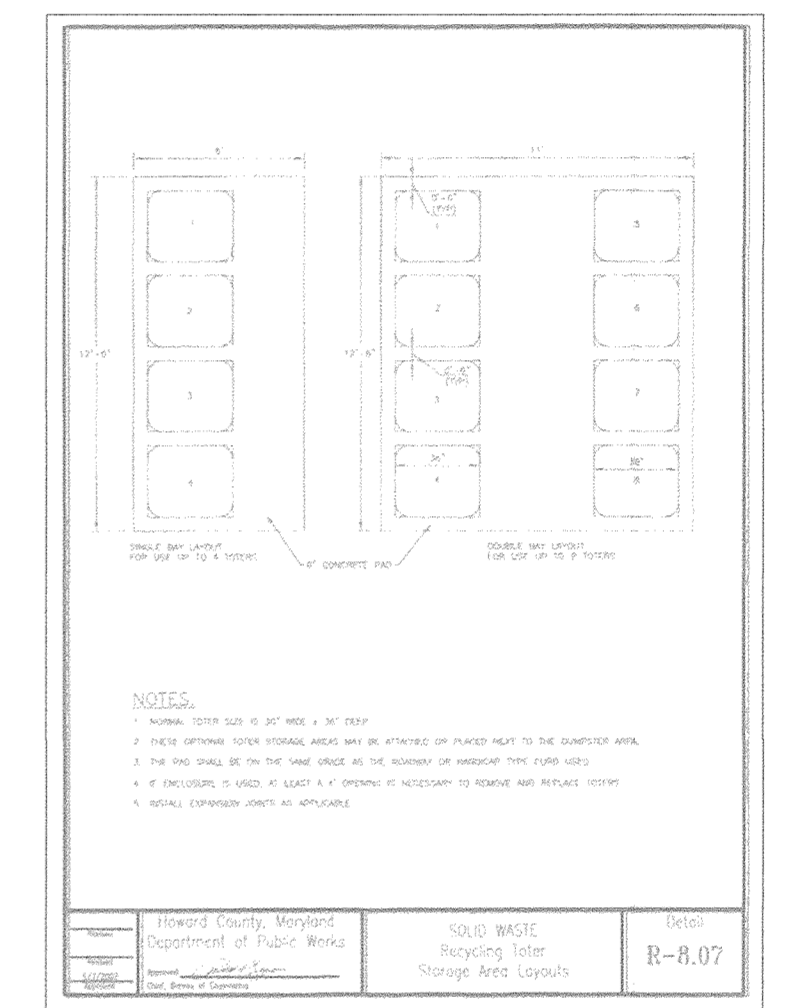
P-18-003



STR #	TYPE	INV. IN	INV. OUT	TOP OR UPPER/LOWER	DETAIL	LOCATION	REMARKS
ES-1	23"x14" ERCCP	-	247.70	249.20	D-5.43	N 541366.4175 E 1365300.5225	
HW-1	23"x14" ERCCP	247.30	-	249.55	D-5.21	N 541383.6328 E 1365291.0073	USE 18"EW

SIZE	CLASS	TOTAL LENGTH*
23"x14"	ERCCP	19

*THE TOTAL LENGTH OF PIPE IS LINEAR FEET ONLY



OWNER LOT 6
FORSTER W. HARMON
MARGARET T. HARMON
8660 PINE ROAD
JESSUP, MD, 20794
(301) 776-9412

DEVELOPER
FORSTER W. HARMON
8660 PINE ROAD
JESSUP, MD, 20794
(301) 776-9412

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Chubb 10.10.18
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

Kevin Leonard 10-16-18
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

REVISION _____ DATE _____

FINAL SUPPLEMENTAL PLAN
SITE DETAILS
AND CULVERT PROFILE

MARGARET TILLMAN SUBDIVISION

LOT 1-3 AND OPEN SPACE LOT 4
A RESUBDIVISION OF
LOT 6, BLOCK E-4 "NOROUA SUBDIVISION"
PLAT BOOK 3, FOLIO 51
LIBER: 9475 FOLIO: 537

TAX MAP: 42 PARCEL: 180
6TH ELECTION DISTRICT

BLOCK: 24 ZONING: R-12
HOWARD COUNTY, MARYLAND

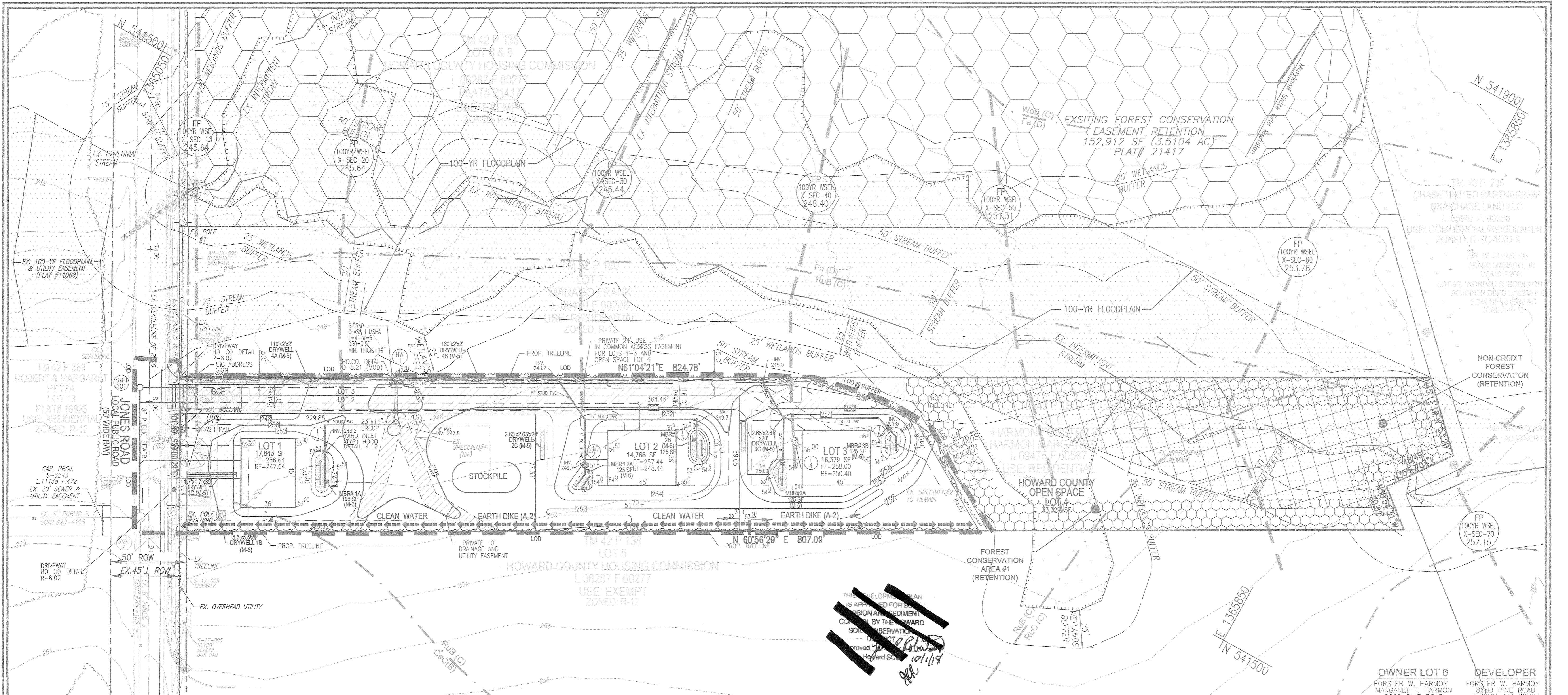
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
3300 N. RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: _____ RHV
DRAWN BY: _____ KG
CHECKED BY: _____ RHV
DATE: _____ AUGUST 2018
SCALE: _____ AS SHOWN
W.O. NO.: _____ 12-05

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. 18193 EXPIRATION DATE: 08-27-2018

2 SHEET OF 7



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.

NOTE:
 1. 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.
 2. SILT FENCE SHALL BE CURLED UPHILL NO MORE THAN 35 FEET APART
 3. DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
 4. LOCATE STOCKPILE AS SHOWN HEREON OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. ANY STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED.

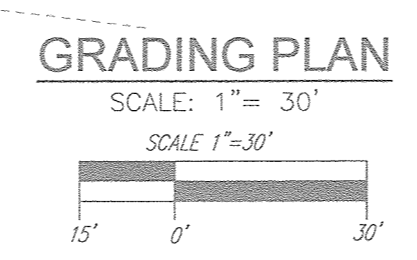
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Ch. Ch...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 10-10-18

Robert H. Vogel
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 10-11-18

SOILS LEGEND HOWARD COUNTY SOILS MAP #24						
SYMBOL	NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBLE	HYDRIC	FARMLAND
Fa	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES, NORTHERN COASTAL PLAIN	D	0.02	NO	YES	NO
CeC	CHILLUM LOAM, 5 TO 10 PERCENT SLOPES	B	0.37	YES	NO	NO
RuB	RUSSETT AND BELTSVILLE SOILS, 2 TO 5 PERCENT SLOPES	C	0.40	YES	NO	YES
RuC	RUSSETT AND BELTSVILLE SOILS, 5 TO 10 PERCENT SLOPES	C	0.24	YES	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.

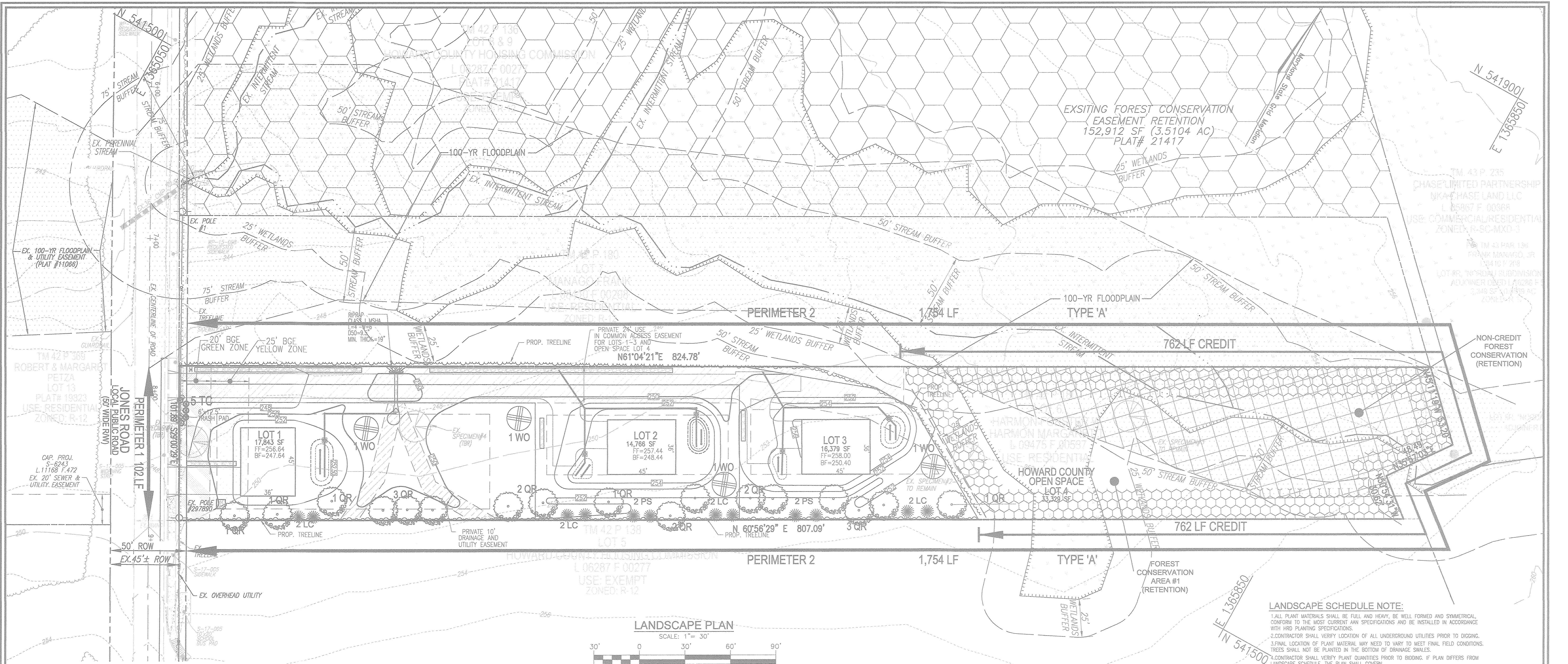


Handwritten signature and date: 10/11/18

LEGEND:

	EXISTING CONTOUR		EXISTING FENCE
	PROPOSED CONTOUR		PROPERTY LINE
	PROPOSED SPOT ELEVATION		RIGHT-OF-WAY LINE
	EXISTING SPOT ELEVATION		SOILS BOUNDARY
	EXISTING CURB AND GUTTER		EXISTING FOREST CONSERVATION EASEMENT (RETENTION)
	CURB AND GUTTER		EXISTING WETLAND
	EXISTING UTILITY POLE		24' PRIVATE USE IN COMMON ACCESS EASEMENT FOR LOTS 1-3 AND OPEN SPACE LOT 4
	EXISTING LIGHT POLE		10' PRIVATE DRAINAGE AND UTILITY EASEMENT
	EXISTING MAILBOX		EXISTING 100 YEAR FLOOD PLAIN
	EXISTING SIGN		EARTH DIKE
	EXISTING SANITARY MANHOLE		SUPER SILT FENCE
	EXISTING SANITARY LINE		LIMIT OF DISTURBANCE
	EXISTING CLEANOUT		STABILIZED CONSTRUCTION ENTRANCE
	EXISTING FIRE HYDRANT		FOREST CONSERVATION EASEMENT (RETENTION)
	EXISTING WATER LINE		FOREST CONSERVATION EASEMENT (NON-CREDITED RETENTION)
	STORM DRAIN		EXISTING TREES (FIELD LOCATED)
	STORM DRAIN INLET		EXISTING TREELINE (FIELD LOCATED)
	EXISTING TREES (FIELD LOCATED)		EX. SPECIMEN TREE

REVISION		DATE
FINAL SUPPLEMENTAL PLAN SOILS MAP, GRADING, SOIL EROSION & SEDIMENT CONTROL PLAN MARGARET TILLMAN SUBDIVISION LOT 1-3 AND OPEN SPACE LOT 4 A RESUBDIVISION OF LOT 6, BLOCK E-4, "NORDAL SUBDIVISION" PLAT BOOK 3, FOLIO 51 LIBER: 9475 FOLIO: 537 BLOCK: 24 ZONING: R-12 HOWARD COUNTY, MARYLAND		
TAY MAP: 42 PARCEL: 180 6TH ELECTION DISTRICT		BLOCK: 24 ZONING: R-12 HOWARD COUNTY, MARYLAND
 ROBERT H. VOGEL ENGINEERS • SURVEYORS • PLANNERS 3300 N. RIDGE ROAD, SUITE 110, ELLIDOTT CITY, MD 21043 TEL: 410-461-7666 FAX: 410-461-8961		
DESIGN BY: RHY DRAWN BY: KG CHECKED BY: RHY DATE: AUGUST 2018 SCALE: AS SHOWN W.O. NO.: 12-05		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. 18193, EXPIRATION DATE: 08-27-2018. 3 SHEET OF 7



GENERAL NOTE:
THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

LANDSCAPING SHOWN HEREIN 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 \$250 FOR THE REQUIRED 17 SHADE TREES (\$ 5,100), 12 EVERGREEN TREES (\$ 1,800), 3 SHRUBS (\$ 150) AND 4 SHADE TREES (\$ 1,200 - SPECIMEN TREE REPLACEMENT) SHALL BE POSTED WITH THE BUILDERS GRADING PERMIT. FINAL REVIEW AND APPROVAL OF THE LANDSCAPE PLAN SHALL BE ISSUED WITH THE FUTURE SITE DEVELOPMENT PLAN.

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 ARE 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

B & 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 DETERMINED TO BE A HAZARD TO THE SAFE AND RELIABLE OPERATION 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 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 CONSULTATION LENGTHS ARE REQUIRED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLY WITHHOLD PERMISSION.
3. CALL MISS UTILITY TO MARK UP THE LOCATION OF EXISTING GAS LINE BEFORE PLANTING STREET TREES ALONG JONES ROAD IN PLANT STREET TREES 10' AWAY FROM EXISTING GASLINE AS REQUIRED.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Phil Edinger 10-10-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kate Schuler 10-11-18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

SCHEDULE 'A' PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER AND ROADWAYS	P-1	P-2	TOTAL
PERIMETER/FRONTAGE DESIGNATION	NONE			
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER		102'	1,754'	1,856'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No	762'		762'
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No	No		
NUMBER OF PLANTS REQUIRED		992*		992*
SHADE TREES	N/A	1:50 = 17		17
EVERGREEN TREES	N/A	1:12 = 12		12
SHRUBS	N/A	1:12 = 12		12
CREDIT FOR EX. INDIVIDUAL TREES	N/A	0		0
SHADE TREES TO REMAIN	N/A			
EVERGREEN TREES TO REMAIN	N/A			
SHRUBS TO REMAIN	N/A			
NUMBER OF PLANTS PROVIDED		17	12	29
SHADE TREES	N/A			
EVERGREEN TREES	N/A			
SHRUBS	N/A			

LANDSCAPE SCHEDULE - REQUIRED PLANTING

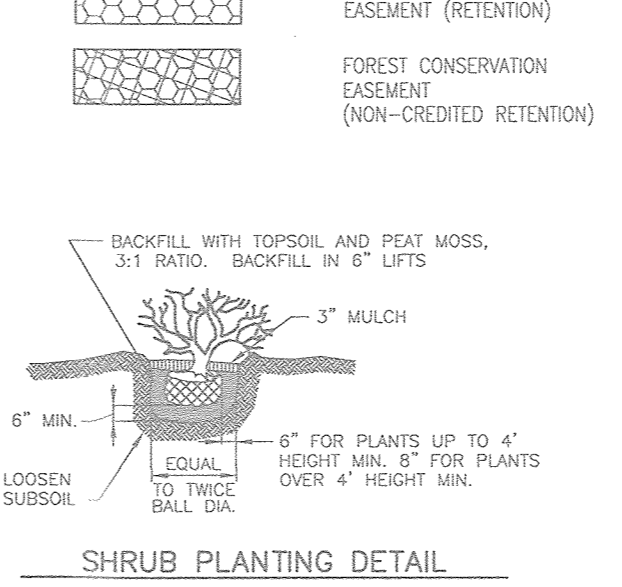
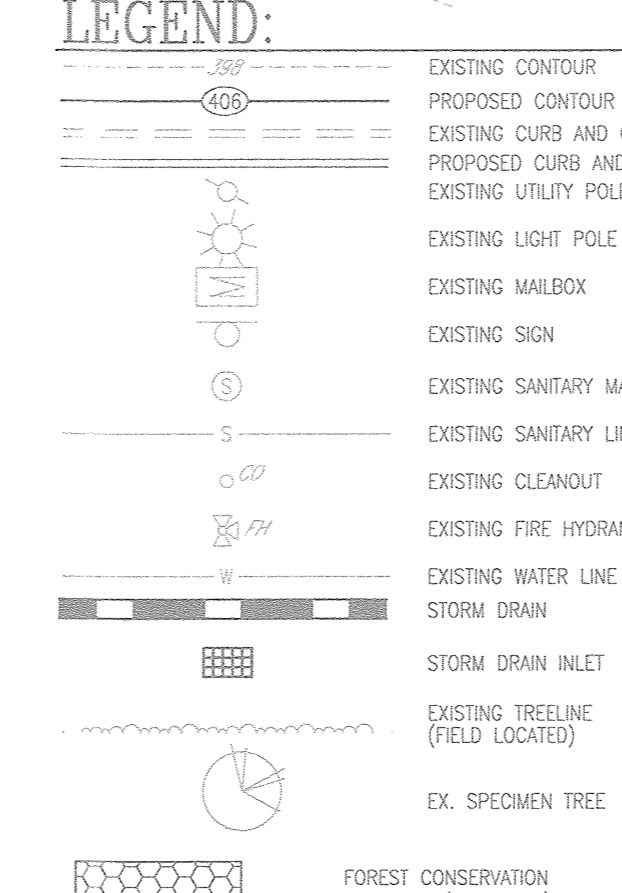
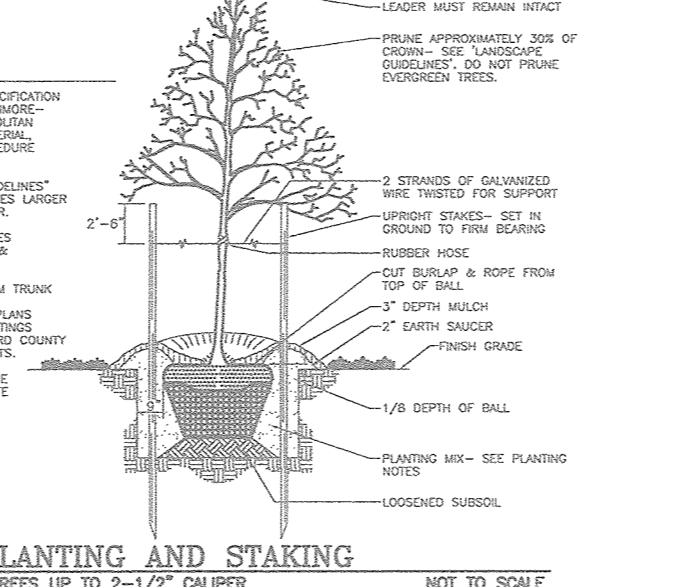
KEY	QUAN.	BOTANICAL NAME	SIZE	CAT
SHADE				
QR	17	QUERCUS RUBRA NORTHERN RED OAK	2.5"-3" CAL	B & B
EVERGREENS				
LC	8	CUPRESSOCYPRUS LEYLANDI LEYLAND CYPRESS	5'-6" HT.	B & B
PS	4	PINUS STROBUS EASTERN WHITE PINE	5'-6" HT.	B & B

SPECIMEN TREE REPLACEMENT - PLANTING SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
WO	4	QUERCUS PHELLOS WILLOW OAK	2.5"-3" CAL	B & B

NOTE:
- REPLACEMENT TREES REQUIRED PER THE APPROVED REMOVAL OF SPECIMEN TREES #1 & #4. REFER TO WP-17-122. THIS PLAN IS SUBJECT TO WP-17-122. ON JUNE 19, 2017, THE PLANNING DIRECTOR APPROVED THE REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.120(a)(7) - ON-SITE FOREST RETENTION WHICH REQUIRES STATE CHAMPION TREES, TREES 75% OF THE DIAMETER OF STATE CHAMPION TREES, AND TREES 30" IN DIAMETER OR LARGER ARE CONSIDERED PRIORITY FOR ON-SITE RETENTION AND PROTECTION IN THE COUNTY. APPROVALS SUBJECT TO THE FOLLOWING CONDITIONS:
1. ALTERNATIVE COMPLIANCE APPROVAL IS LIMITED TO THE REMOVAL OF SPECIMEN TREE #1 AND #4 AS DEPICTED ON THE EXHIBIT. ANY PROPOSAL TO REMOVE THE REMAINING SPECIMEN TREES WILL REQUIRE A NEW ALTERNATIVE COMPLIANCE REQUEST.
2. A MINIMUM OF FOUR, NATIVE, 2.5"-3" CALIPER, SHADE TREES SHALL BE PROVIDED AS MITIGATION FOR THE REMOVAL OF THE TWO SPECIMEN TREES FROM THE PROPERTY. LANDSCAPING SURETY, IN THE AMOUNT OF \$300.00 PER TREE, SHALL BE PROVIDED WITH THE APPLICANTS GRADING PERMIT.

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 RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.



LEGEND:

EXISTING CONTOUR	PROPOSED CONTOUR	EXISTING CURB AND GUTTER	PROPOSED CURB AND GUTTER	EXISTING UTILITY POLE	EXISTING LIGHT POLE	EXISTING MAILBOX	EXISTING SANITARY MANHOLE	EXISTING SANITARY LINE	EXISTING CLEANOUT	EXISTING FIRE HYDRANT	EXISTING WATER LINE	STORM DRAIN	STORM DRAIN INLET	EXISTING TREELINE (FIELD LOCATED)	EX. SPECIMEN TREE	PROPERTY LINE	RIGHT-OF-WAY LINE	EXISTING FOREST CONSERVATION EASEMENT (RETENTION)	EXISTING WETLAND	24" PRIVATE USE IN COMMON ACCESS EASEMENT FOR LOTS 1-3 AND OPEN SPACE LOT 4	10' PRIVATE DRAINAGE AND UTILITY EASEMENT	EXISTING 100 YEAR FLOOD PLAN	BGE GREEN ZONE	BGE YELLOW ZONE	TREE PROTECTION FENCE	SHADE TREE	EVERGREEN TREE
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TRASH PAD LANDSCAPING

SYMBOL	QTY.	DESCRIPTION	SIZE	REMARKS
⊗	5	TAXUS CUSPIDATA 'NANA' DWARF JAPANESE YEW	18"-24" SPREAD	B & B

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

OWNER LOT 6
FORSTER W. HARMON
MARGARET T. HARMON
8660 PINE ROAD
JESSUP, MD, 20794
(301) 776-9412

DEVELOPER
FORSTER W. HARMON
8660 PINE ROAD
JESSUP, MD 20794
(301) 776-9412

REVISION	DATE

FINAL SUPPLEMENTAL PLAN
LANDSCAPE PLAN
MARGARET TILLMAN SUBDIVISION
LOT 1-3 AND OPEN SPACE LOT 4
A RESUBDIVISION OF
LOT 6, BLOCK E-4 "NORADA SUBDIVISION"
PLAT BOOK 3, FOLIO 31
LIBER 1475 FOLIO 337
BLOCK 24 ZONING: R-12
HOWARD COUNTY, MARYLAND

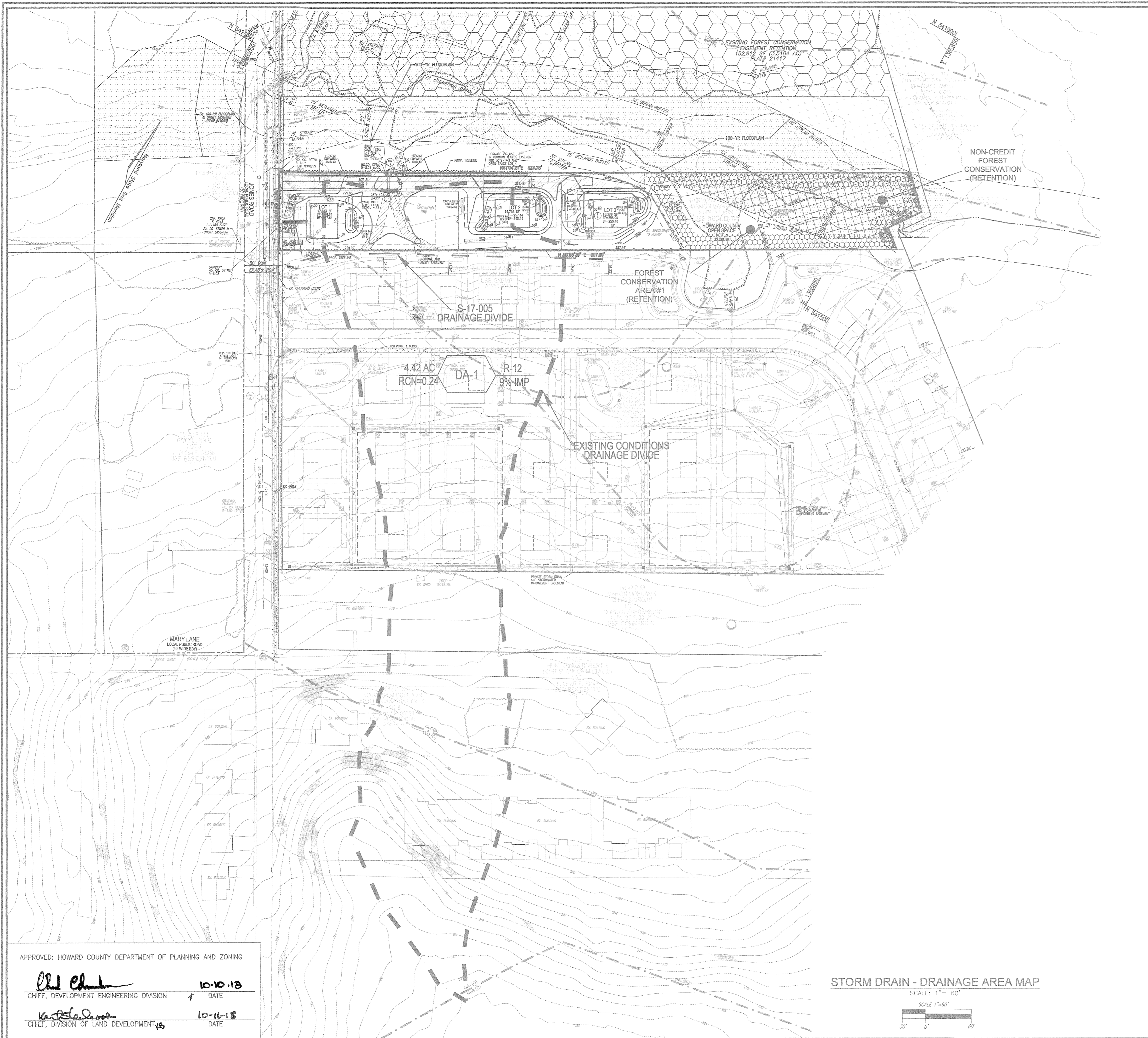
TAX MAP: 42 PARCEL: 180
6TH ELECTION DISTRICT

ROBERT H. VOGEL, INC.
ENGINEERS • SURVEYORS • PLANNERS
3300 N. RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
DESIGN BY: RHV
DRAWN BY: KG
CHECKED BY: RHV
DATE: AUGUST 2018
SCALE: AS SHOWN
W.O. NO.: 12-05

STATE OF MARYLAND
ROBERT H. VOGEL, PE No. 16193
PROFESSIONAL ENGINEER

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



LEGEND:

	EXISTING CONTOUR		EXISTING FENCE
	PROPOSED CONTOUR		PROPERTY LINE
	PROPOSED SPOT ELEVATION		RIGHT-OF-WAY LINE
	EXISTING SPOT ELEVATION		SOILS BOUNDARY
	EXISTING CURB AND GUTTER		EXISTING FOREST CONSERVATION EASEMENT (RETENTION)
	CURB AND GUTTER		EXISTING WETLAND
	EXISTING UTILITY POLE		24' PRIVATE USE OR COMMON ACCESS EASEMENT FOR LOTS 1-3 AND OPEN SPACE LOT 4
	EXISTING LIGHT POLE		10' PRIVATE DRAINAGE AND UTILITY EASEMENT
	EXISTING MAILBOX		EXISTING 100 YEAR FLOOD PLAIN
	EXISTING SIGN		DRAINAGE DIVIDE
	EXISTING SANITARY MANHOLE		STORM DRAIN
	EXISTING SANITARY LINE		STORM DRAIN INLET
	EXISTING CLEANOUT		FOREST CONSERVATION EASEMENT (RETENTION)
	EXISTING FIRE HYDRANT		FOREST CONSERVATION EASEMENT (NON-CREDITED RETENTION)
	EXISTING WATER LINE		
	EXISTING TREES (FIELD LOCATED)		
	EXISTING TREE LINE (FIELD LOCATED)		
	EX. SPECIMEN TREE		

SOILS LEGEND HOWARD COUNTY SOILS MAP #24						
SYMBOL	NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBLE	HYDRIC	PRISMIC
Fa	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES, NORTHERN COASTAL PLAIN	D	0.02	NO	YES	NO
CeC	CHILLUM LOAM, 5 TO 10 PERCENT SLOPES	B	0.37	YES	NO	NO
RuB	RUSSETT AND BELTSVILLE SOILS, 2 TO 5 PERCENT SLOPES	C	0.40	YES	NO	YES
RuC	RUSSETT AND BELTSVILLE SOILS, 5 TO 10 PERCENT SLOPES	C	0.24	YES	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.

OWNER LOT 6
FORSTER W. HARMON
MARGARET T. HARMON
8660 PINE ROAD
JESSUP, MD, 20794
(301) 776-9412

DEVELOPER
FORSTER W. HARMON
8660 PINE ROAD
JESSUP, MD 20794
(301) 776-9412

REVISION	DATE

FINAL SUPPLEMENTAL PLAN
STORM DRAIN - DRAINAGE AREA MAP

MARGARET TILLMAN SUBDIVISION
LOT 1-3 AND OPEN SPACE LOT 4
A RESUBDIVISION OF
LOT 6, BLOCK E-4 "NORDAU SUBDIVISION"
PLAT BOOK 5, FOLIO 51
LIBER: 9475 FOLIO: 537

TAX MAP: 42 PARCEL: 180
6TH ELECTION DISTRICT

BLOCK: 24 ZONING: R-12
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
3300 N. RIDGE ROAD, SUITE 110, 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. 18183 EXPIRATION DATE: 03-27-2018

DESIGN BY: RHV
DRAWN BY: KG
CHECKED BY: RHV
DATE: AUGUST 2018
SCALE: AS SHOWN
W.O. NO.: 12-05

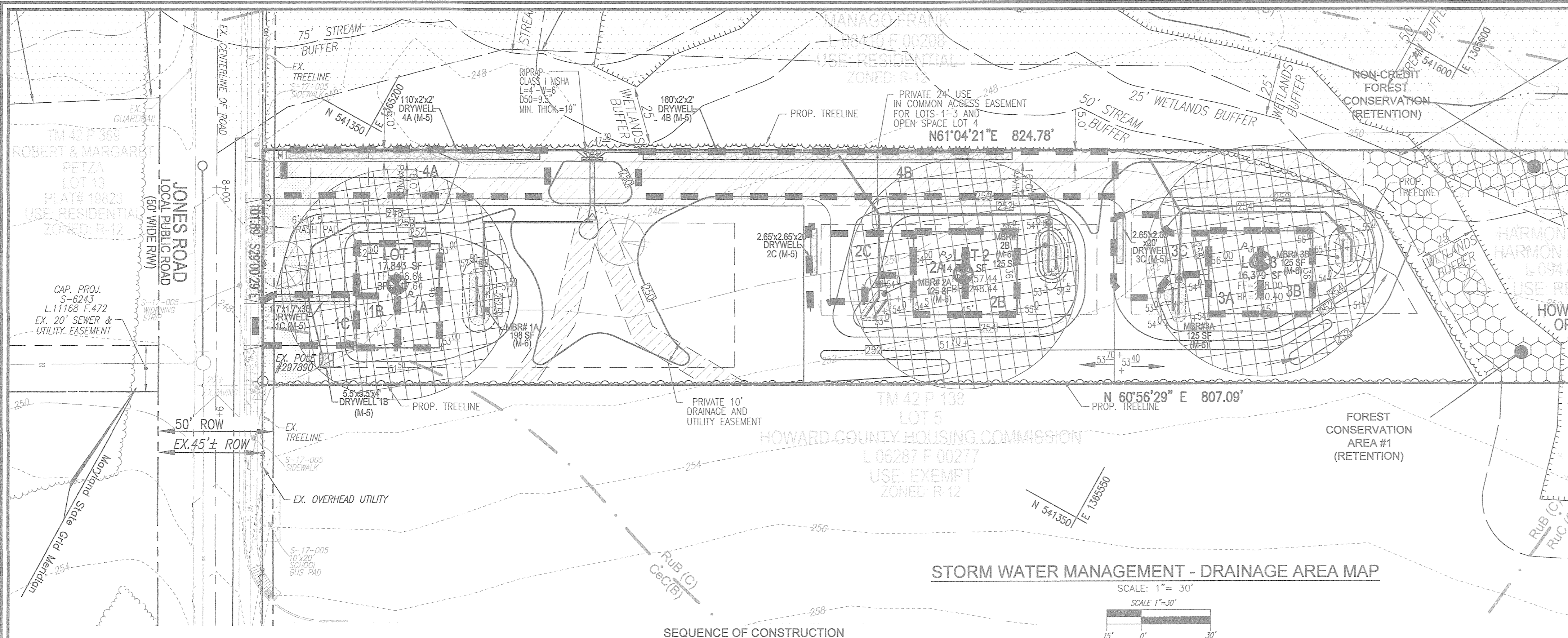
5 SHEET OF 7

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Phil Elmer 10-10-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kathleen 10-11-18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

STORM DRAIN - DRAINAGE AREA MAP
SCALE: 1" = 60'
30' 0' 60'



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

1. MATERIAL SPECIFICATIONS

2. FILTERING MEDIA OR PLANTING SOIL

3. COMPACTION

4. PLANT MATERIAL

5. PLANT INSTALLATION

6. UNDERDRAINS

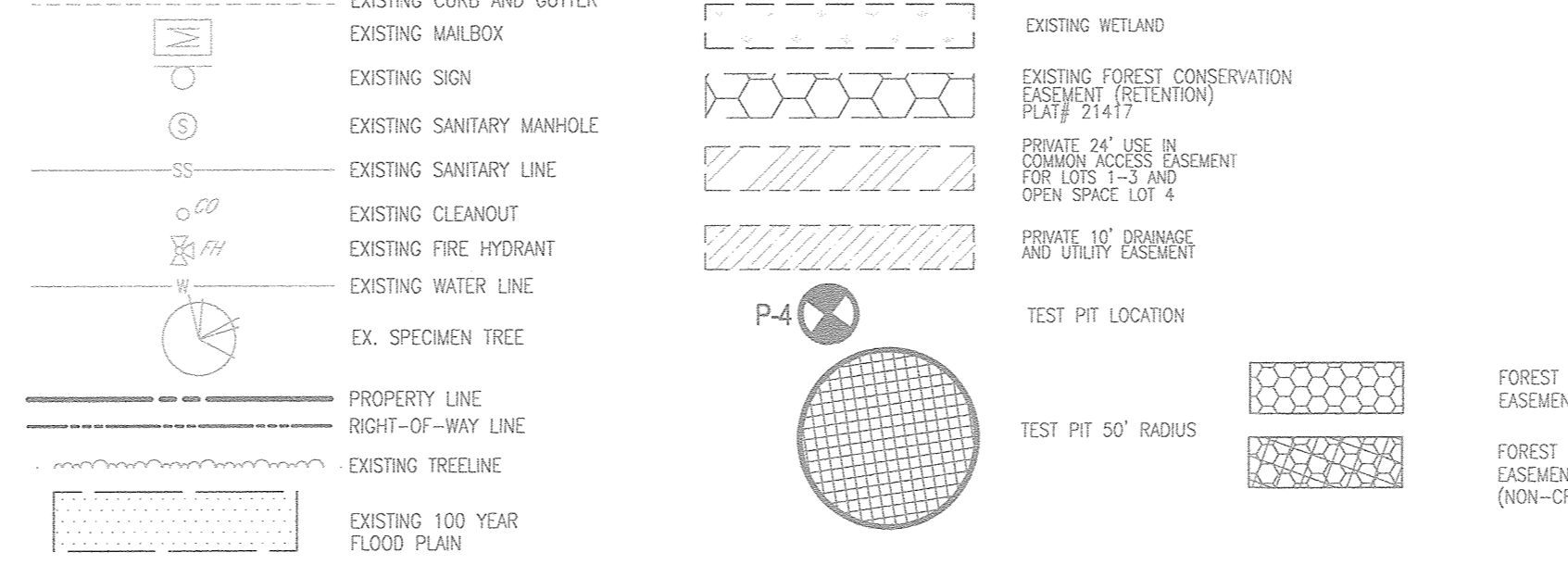
7. MISCELLANEOUS

APPENDIX B.2 CONSTRUCTION SPECIFICATIONS FOR INFILTRATION PRACTICES B.2.A INFILTRATION

SEQUENCE OF CONSTRUCTION

- NOTE: HOUSES MAY NOT BE BUILT USING THIS PLAN.
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)
- SITE WORK
1. INSTALL STABILIZED CONSTRUCTION ENTRANCE, AS SHOWN HEREON. (1 DAY)
 2. CLEAR AND GRUB ON-SITE 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. (1 DAY)
 4. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, BEGIN CONSTRUCTION OF WATER & SEWER EXTENSIONS AND DRIVEWAY CULVERT.
 5. IMMEDIATELY STABILIZE AREA BELOW ES-1 WITH RIP RAP OUTFALL. (1 DAY) UPON COMPLETION OF ABOVE, AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, CLEAR & GRUB SITE TO INCLUDE REMOVAL OF ANY REMAINING EXISTING DRIVEWAY AREA AND PLACE SITE TO GRADE FOR FUTURE HOME CONSTRUCTION. (2 WEEKS)
 6. 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)
 7. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, COMPLETE REMAINING CONSTRUCTION OF WATER & SEWER EXTENSIONS AND DRIVEWAY CULVERT.
 8. WITH ITEM #7 COMPLETED, PLACE USE-IN-COMMUN DRIVEWAY TO SUBGRADE AND INSTALL BASE PAVEMENT (4 DAYS)
 9. INSTALL TRASH PAD. (1 DAY)
 10. INSTALL LANDSCAPING (3 DAYS)
 11. 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)

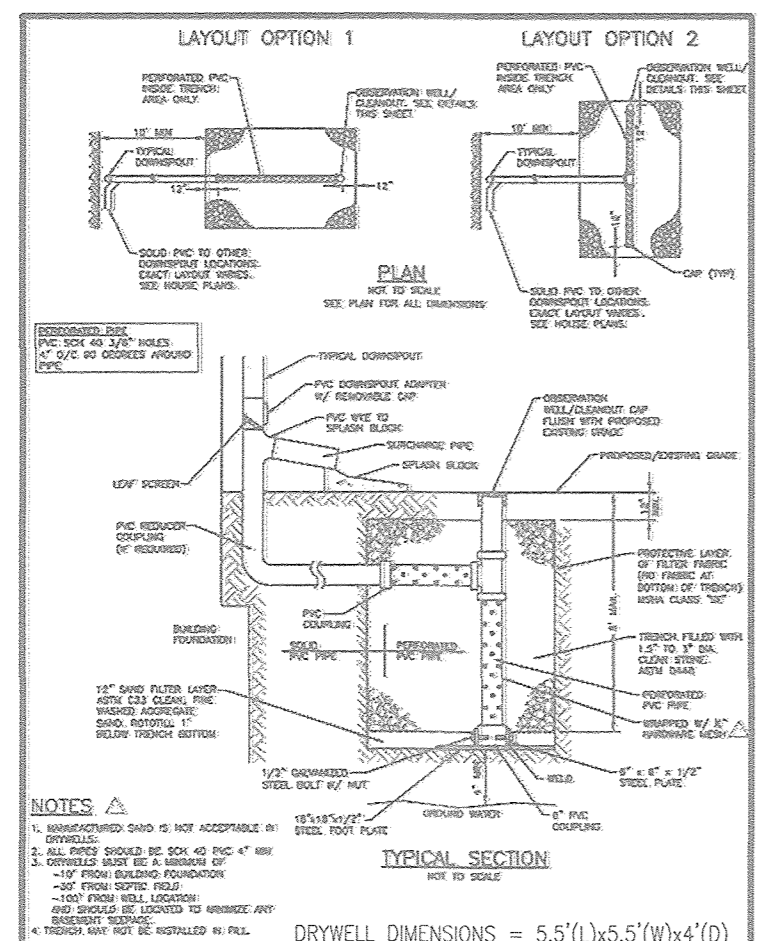
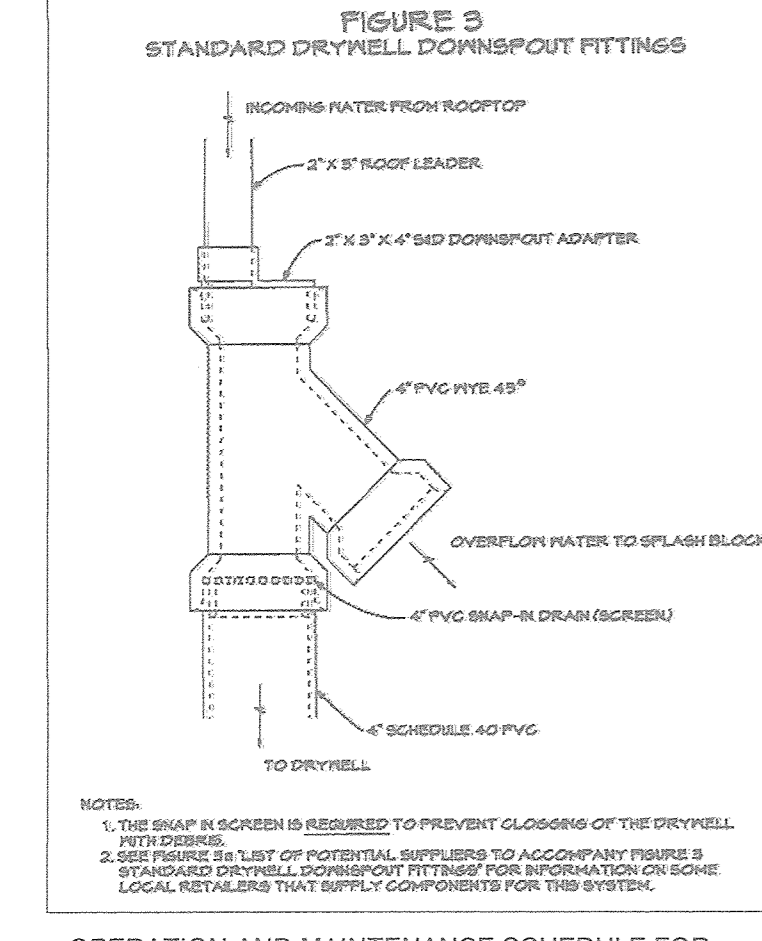
LEGEND



SOILS LEGEND HOWARD COUNTY SOILS MAP #24

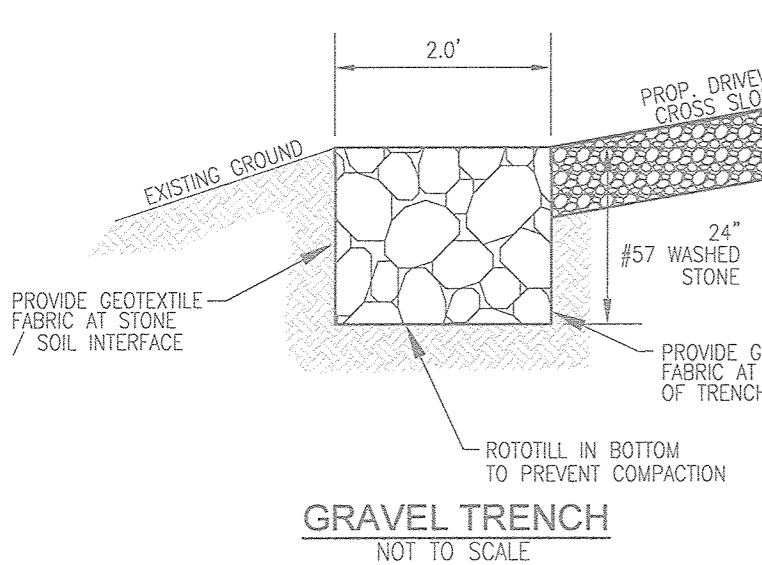
SYMBOL NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBLE	HYD	PRIME FARMLAND
Fc FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES, NORTHERN COASTAL PLAIN	A	0.02	NO	YES	NO
CcC CHILLUM LOAM, 5 TO 10 PERCENT SLOPES	B	0.37	YES	NO	NO
RuB RUSSETT AND BELTSVILLE SOILS, 2 TO 5 PERCENT SLOPES	C	0.40	YES	NO	YES
RuC RUSSETT AND BELTSVILLE SOILS, 5 TO 10 PERCENT SLOPES	C	0.24	YES	NO	NO

NOTE: TAKEN FROM USDA, SCS-WE8 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.



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

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



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 10-10-18 DATE

[Signature] 10-11-18 DATE

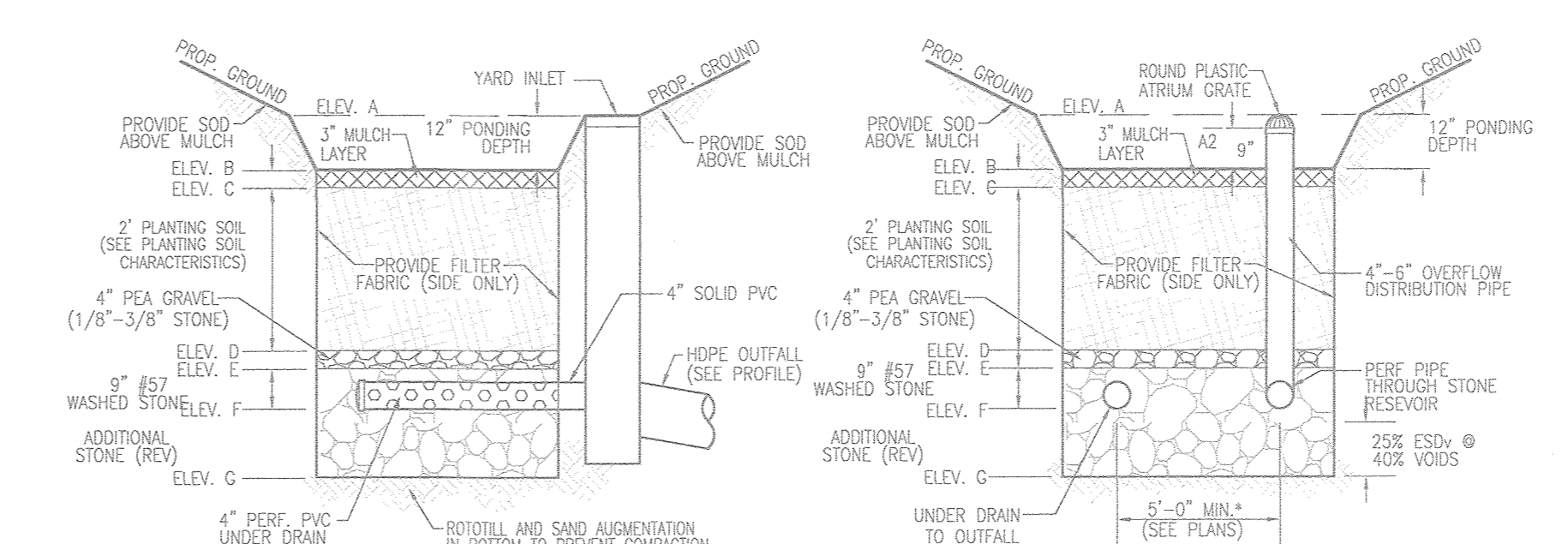
Appendix B.4. Construction Specifications for Environmental Site Design Practices

Table B.4.1 Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration-

Material	Specification	Size	Notes
Planting soil	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 types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2274)	n/a	
Mulch	shredded hardwood	n/a	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 cobble	stone: 2" to 5"	
Geotextile	n/a	n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 37 OR NO. 6 AGGREGATE 5/8" to 3/4"	
Underdrain piping	F758, 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 underdrain 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.R/89; verify loading [It-10 or H-20]; allowable horizontal loading (based on soil pressure); and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.075" to 0.04"	Stand 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.

MICRO BIORETENTION DATA CHART

MBR Facility	TOP	REV. A-2	Ponding Depth (ft)	Ponding Elevation (ft)	Top of Mulch (ft)	Bottom of Mulch (ft)	Depth of Plant Mix (ft)	Bottom of Plant Mix (ft)	Bottom of Pea Gravel (ft)	Depth of Stone (ft)	Invert of Underdrain (ft)	Bottom of Stone (ft)
1-A	252.00	252.25	1.00	252.50	251.60	251.25	2.00	249.25	248.92	0.75	248.30	248.17
2-A	254.30	253.75	1.00	254.00	253.00	252.75	2.00	250.75	250.42	0.75	248.89	248.67
3-A	254.30	253.75	1.00	254.00	253.00	252.75	2.00	250.75	250.42	0.75	250.67	250.17
3-B	255.30	254.75	1.00	255.00	254.00	253.75	2.00	251.75	251.42	0.75	251.17	250.67



MICRO-BIORETENTION NOTES:

1. ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICROBIORETENTION WILL CAUSE THE WATER TO FAIL, AND THEREFORE SHALL NOT BE INSTALLED.
2. WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.
3. PROVIDE 5" MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLANS)

OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), AND ENHANCED FILTERS (M-9)

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. 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 PRUNING AND REPLACEMENT. REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
2. THE OWNER SHALL PERFORM A PLAN IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED PLANTS AND CONSIDERED BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIPES.
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

OWNER LOT 6 FORSTER W. HARMON MARGARET T. HARMON 8660 PINE ROAD JESSUP, MD, 20794 (301) 776-9412

DEVELOPER FORSTER W. HARMON 8660 PINE ROAD JESSUP, MD 20794 (301) 776-9412

FINAL SUPPLEMENTAL PLAN

STORM WATER MANAGEMENT - DRAINAGE AREA MAP, NOTES & DETAILS

MARGARET TILLMAN SUBDIVISION

TAX MAP: 42 PARCEL: 180 6TH ELECTION DISTRICT

LOT 1-3 AND OPEN SPACE LOT 4

REVISION OF SUBDIVISION OF LOT 6, BLOCK E-4 "NORMAN SUBDIVISION" PLAT BOOK 3, FOLIO 51 LIBER: 9475 FOLIO: 537

BLOCK: 24 ZONING: R-12 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS • SURVEYORS • PLANNERS

3300 N. RIDGE ROAD, SUITE 110, ELICOTT CITY, MD 21043 TEL: 410-461-7666 FAX: 410-461-8961

DESIGN BY: RHV

DRAWN BY: KC

CHECKED BY: RHV

DATE: AUGUST 2018

SCALE: AS SHOWN

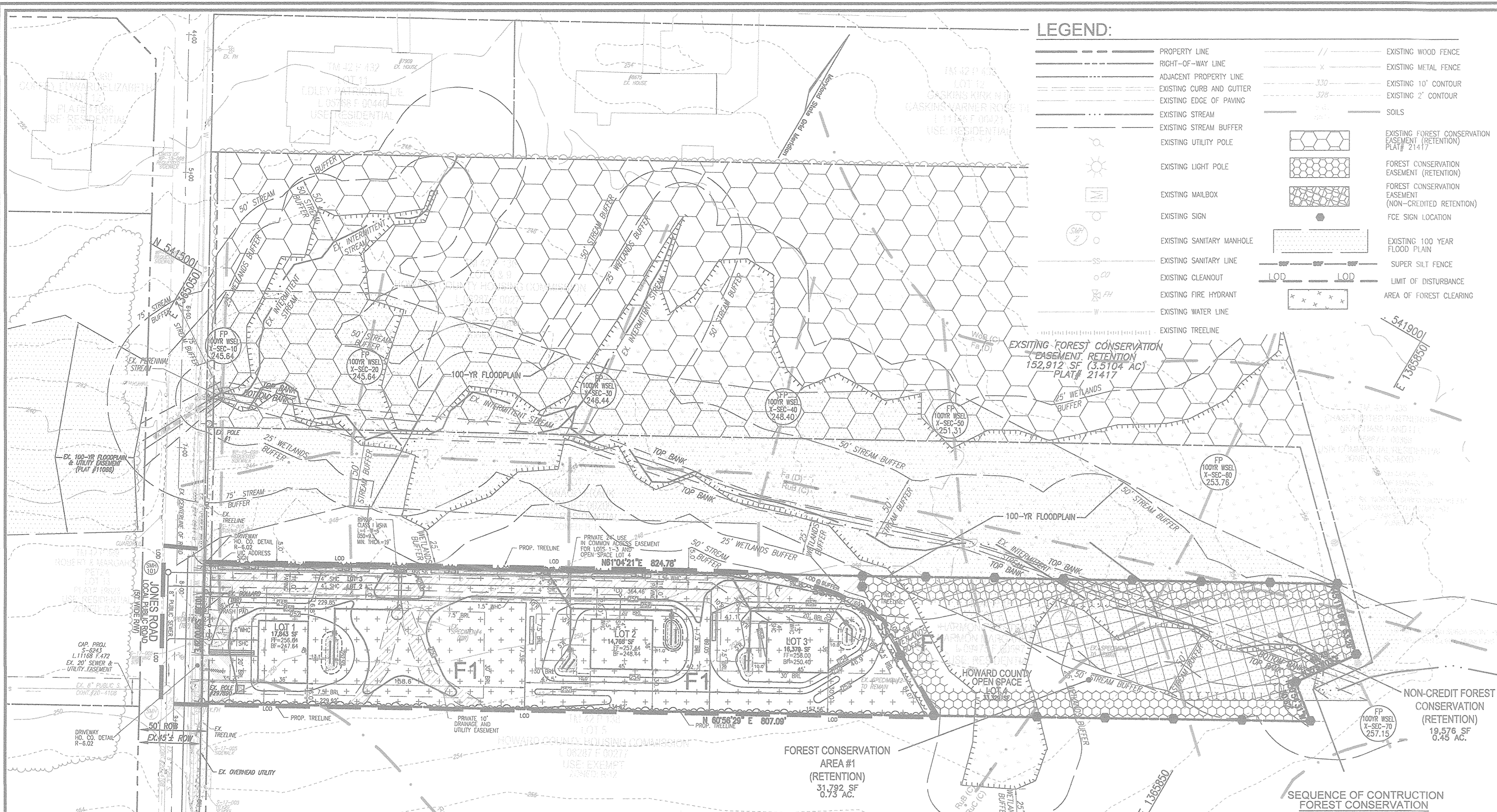
W.O. NO.: 12-05

6 SHEET OF 7

STATE OF MARYLAND PROFESSIONAL ENGINEER

ROBERT H. VOGEL, PE No. 16193

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16193 EXPIRATION DATE: 09-27-2018



LEGEND:

---	PROPERTY LINE	---	EXISTING WOOD FENCE
---	RIGHT-OF-WAY LINE	---	EXISTING METAL FENCE
---	ADJACENT PROPERTY LINE	---	EXISTING 10' CONTOUR
---	EXISTING CURB AND GUTTER	---	EXISTING 2' CONTOUR
---	EXISTING EDGE OF PAVING	---	SOILS
---	EXISTING STREAM	---	EXISTING FOREST CONSERVATION EASEMENT (RETENTION) PLAT # 21417
---	EXISTING STREAM BUFFER	---	FOREST CONSERVATION EASEMENT (RETENTION)
---	EXISTING UTILITY POLE	---	FOREST CONSERVATION EASEMENT (NON-ORIENTED RETENTION)
---	EXISTING LIGHT POLE	---	FEE SIGN LOCATION
---	EXISTING MAILBOX	---	EXISTING 100 YEAR FLOOD PLAN
---	EXISTING SIGN	---	SUPER SILT FENCE
---	EXISTING SANITARY MANHOLE	---	LIMIT OF DISTURBANCE
---	EXISTING SANITARY LINE	---	AREA OF FOREST CLEARING
---	EXISTING CLEANOUT	---	
---	EXISTING FIRE HYDRANT	---	
---	EXISTING WATER LINE	---	
---	EXISTING TREE LINE	---	



VICINITY MAP
SCALE: 1"=1,000'
ADC MAP COORDINATE: 41, A-2

SITE ANALYSIS

WATERSHED NAME:	LITTLE PATUXENT RIVER	
WATERSHED NUMBER:	2131105	
A. GROSS SITE AREA:	1.90 AC.	
NET SITE AREA:	1.45 AC.	
B. AREA OF 100-YEAR FLOODPLAIN:	0.45 AC.	
C. AREA OF WETLANDS AND BUFFERS:	0.61 AC.*	
D. AREA OF > 25% STEEP SLOPES:	0.00 AC.	
E. EXISTING FOREST WITHIN NET AREA:	1.45 AC.	
F. AREA OF STREAMS AND BUFFERS:	0.52 AC. *	
G. CHAMPION TREES:	N/A (FSD REPORT)	
H. ZONED:	R-12	
I. EXISTING USE:	RESIDENTIAL (WOODS)	
J. PROPOSED USE:	RESIDENTIAL	

HOWARD COUNTY FOREST CONSERVATION WORKSHEET

ZONED R-12

NET TRACT AREA:

A. TOTAL TRACT AREA (PROJECT TOTAL)	1.90 AC.
B. AREA WITHIN 100 YEAR FLOODPLAIN	0.45 AC.
C. AREA TO REMAIN IN AG. PRODUCTION	0.00 AC.
D. NET TRACT AREA	1.45 AC.

LAND USE CATEGORY

INPUT THE NUMBER "1" UNDER THE APPROPRIATE 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 1.45 = 0.22 AC
F. CONSERVATION THRESHOLD: 20% X 1.45 = 0.29 AC

EXISTING FOREST COVER:

G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN)	= 1.45 AC (FSD REPORT)
H. AREA OF FOREST ABOVE AFFORESTMENT THRESHOLD	= 1.23 AC
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	= 1.16 AC

BREAK EVEN POINT:

(2 x I) + F = BREAK EVEN POINT (0 AC)

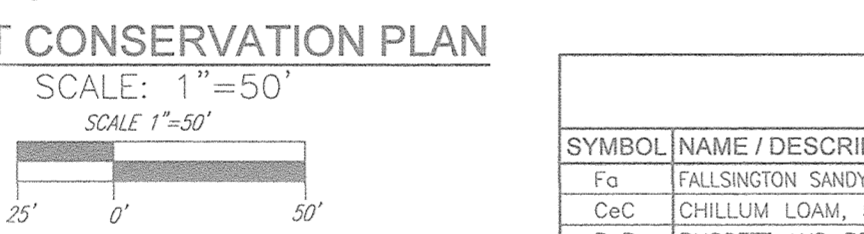
J. FOREST RETENTION WITH NO MITIGATION = 0.52 AC
K. CLEARING PERMITTED WITHOUT MITIGATION = 0.93 AC

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED	= 1.17 AC
M. TOTAL AREA OF FOREST TO BE RETAINED	= 0.28 AC (CREDITED FCE) OUTSIDE FLOODPLAIN

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L x 2.5)	= 0.29 AC
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD	= 0.02 AC
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F)	= 0.00 AC
R. TOTAL REFORESTATION REQUIRED (N+P-Q)	= 0.31 AC
S. TOTAL AFFORESTMENT REQUIRED	= 0.00 AC
T. TOTAL REFORESTATION AND AFFORESTMENT REQUIRED	= 0.31 AC



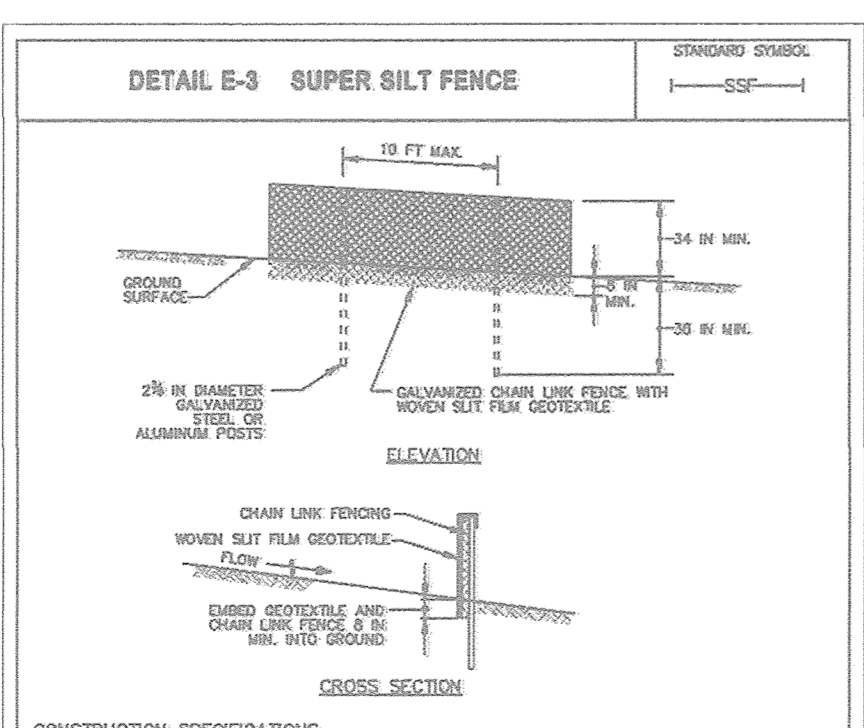
SOILS LEGEND
HOWARD COUNTY SOILS MAP #24

SYMBOL NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBLE	HYDRIC	PRIME FARMLAND
Fa FALLSING SANDY LOAM, 0 TO 2 PERCENT SLOPES, NORTHERN COASTAL PLAIN	D	0.02	NO	YES	NO
Cc CHILLUM LOAM, 5 TO 10 PERCENT SLOPES	B	0.37	YES	NO	NO
RuB RUSSETT AND BELTSVILLE SOILS, 2 TO 5 PERCENT SLOPES	C	0.40	YES	NO	YES
RuC RUSSETT AND BELTSVILLE SOILS, 5 TO 10 PERCENT SLOPES	C	0.24	YES	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.

NOTE:
IN ACCORDANCE WITH THE FOREST CONSERVATION MANUAL, THIS FOREST CONSERVATION PLAN EFFECTIVELY PROTECTS PRIORITY FOREST AREAS; I.E. WETLAND, WETLAND BUFFERS, STREAM, STREAM BUFFERS, FLOODPLAIN AND SPECIMEN TREES

FOREST CLEARING NOTE:
THE WOODS CLEARING PROPOSED IS THE MINIMUM REQUIRED TO ESTABLISH THREE (3) HOUSES, DRIVEWAYS, STORMWATER PRACTICES, GRADING, UTILITIES AND LANDSCAPING. APPROXIMATELY 38% OF THE SITE WILL BE ENCUMBERED WITH A FOREST CONSERVATION EASEMENT.



- CONSTRUCTION SPECIFICATIONS:**
- INSTALL 24 IN MIN DIAMETER GALVANIZED STEEL POSTS OF ALUMINUM WALL THICKNESS AND SIX FOOT LENGTH SPACED TO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
 - FASTEN 6 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (24 IN MIN MAXIMUM OPENING) 45 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR NUG RINGS.
 - FASTEN WOVEN SILT FLEM GEOTEXTILE AS SPECIFIED IN SECTION 81-1 MATERIALS, SECURELY TO THE UPPER EDGE OF CHAIN LINK FENCE WITH THE SPACE BENEATH THE GEOTEXTILE AT THE END OF THE SUPER SILT FENCE.
 - WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
 - ENTIRE BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPWARD AT 45 DEGREES TO THE GROUND TO PREVENT RUNOFF FROM GOING AROUND THE EDGE OF THE SUPER SILT FENCE.
 - PREPARE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS OF SECTION 81-1 MATERIALS.
 - REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN DURING DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REMOVE GEOTEXTILE IF TORN BY UNDERMINING COLLAPSE, UNUSUAL CHAIN LINK FENCING AND GEOTEXTILE.
- MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE 2011 MARYLAND DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES CONSTRUCTION 61-2

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.

STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.

INSTALL TREE PROTECTION FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.

PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.

TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT NOTES FOR FOREST CONSERVATION

PRE-CONSTRUCTION PHASE

1. BEFORE CONSTRUCTION BEGINS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS OR RESTORED AS THE SITUATION WARRANTS.
2. FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
3. A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNING SHALL BE LIMITED TO NECESSARY ROOT PRUNING IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.

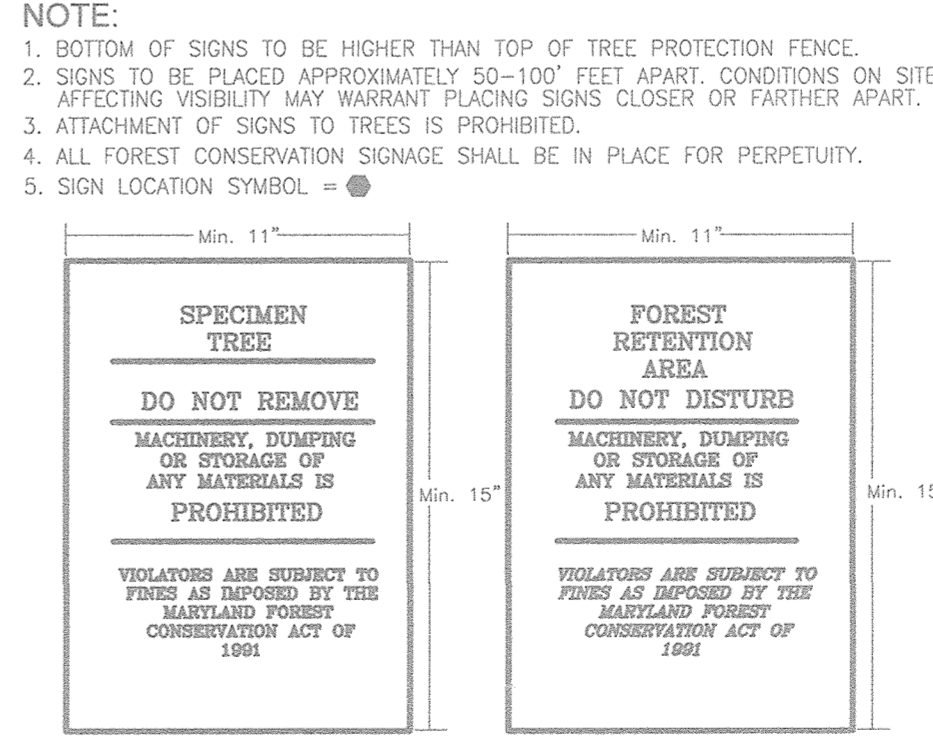
CONSTRUCTION PHASE

1. NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
2. NO EQUIPMENT SHALL BE OPERATED, STAGED OR STORED INSIDE THE TREE RETENTION AREA INCLUDING TREE CAMPIERS.
3. IN THE EVENT OF UNEXPECTED DAMAGE TO PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.

POST-CONSTRUCTION PHASE

1. AT THE DISCRETION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
2. FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
3. POST CONSTRUCTION MANAGEMENT PROGRAM (FOREST CONSERVATION MANUAL)
 - INSPECTION
 - NOTICE OF TWO YEAR GROWING SEASON MANAGEMENT PROGRAM
 - MANAGEMENT OF RETENTION AREAS
 - MANAGEMENT OF REFORESTATION AREAS (WATERING SCHEDULE, FERTILIZING, CONTROL OF INVASIVES AND PROTECTION FROM PESTS, DISEASES AND MECHANICAL INJURY)
 - REPLACEMENT OF DEAD MATERIAL
 - EDUCATION OF NEW RESIDENTS
 - 4. DO NOT REMOVE SIGNS.

FOREST CONSERVATION AREA SIGNS



JOHN CANOLES
DNR QUALIFIED PROFESSIONAL

FOREST STAND ANALYSIS TABLE

Plot #	Species	DBH (in)	Height (ft)	Condition	Notes
1	Willow oak	30	45	good condition	
2	American beech	30.5	45.75	good condition	
3	Willow oak	31	46.5	good condition	
4	Willow oak	32	48	poor condition, trunk rot and limb dieback	

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5066 Glen Arden, Maryland 21097
Tel: (410) 638-2400 Fax: (410) 638-2408

MD DNR Qualified Professional
USACOE Wetland Deliberator
Certification # DCP93MD0651004-032
John P. Carroles

Specimen Tree Chart

Key (X#)	Species	Size (in DBH)	CRZ (feet radius)	Comments
1	Willow oak	30	45	good condition
2	American beech	30.5	45.75	good condition
3	Willow oak	31	46.5	good condition
4	Willow oak	32	48	poor condition, trunk rot and limb dieback

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Robinson
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 10-10-18

Karl Sanderson
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 10-11-18

OWNER LOT 6
FORSTER W. HARMON
MARGARET T. HARMON
8660 PINE ROAD
JESSUP, MD, 20794
(301) 776-9412

DEVELOPER
FORSTER W. HARMON
8660 PINE ROAD
JESSUP, MD 20794
(301) 776-9412

REVISION	DATE

FINAL SUPPLEMENTAL PLAN
FOREST CONSERVATION PLAN

MARGARET TILLMAN SUBDIVISION
LOT 1-3 AND OPEN SPACE LOT 4
A RESUBDIVISION OF
LOT 6, BLOCK E-4 "MORROW" SUBDIVISION
PLAT BOOK 3, FOLIO 51
LIBER: 9475 FOLIO: 537

TAX MAP: 42 PARCEL: 180
5TH ELECTION DISTRICT

BLOCK: 24 ZONING: R-12
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS & SURVEYORS, INC. PLANNERS
3300 N. RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
DRAWN BY: KG
CHECKED BY: RHV
DATE: AUGUST 2018
SCALE: AS SHOWN
W.O. NO.: 12-05

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A QUALIFIED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18183 EXPIRATION DATE 08-27-2018

ROBERT H. VOGEL, PE No. 18183

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