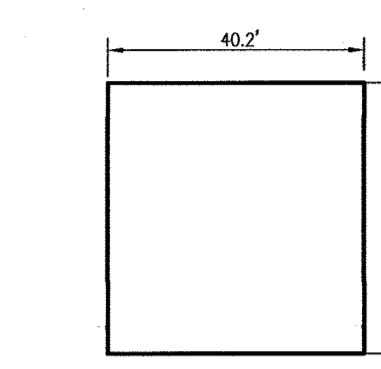


MODEL 'A'

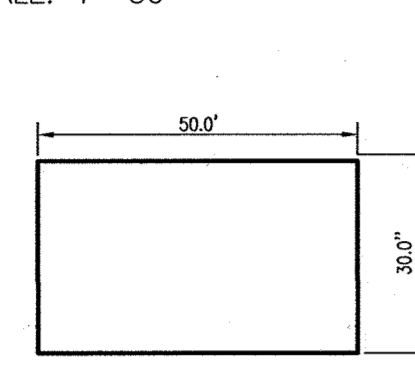
MODEL 'B'

MODEL 'C'

HOUSE TYPES
SCALE: 1"=30'

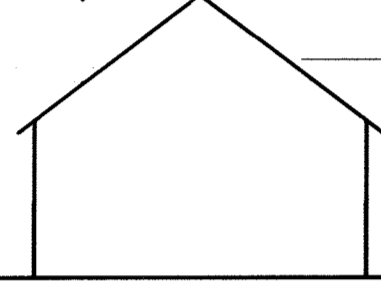


GENERIC BOX 'A'
(FITS HOUSE MODELS 'A' & 'B')



GENERIC BOX 'C'
(FITS HOUSE MODEL 'C')

MATRIX
SCALE: 1"=30'



TYPICAL HOUSE MODEL
ELEVATION DETAIL
SCALE: 1"=30'

NOTE:
1. MODEL ELEVATION SHALL NOT EXCEED 34' MEAN HEIGHT AS ALLOWED BY R-12 ZONE.
2. IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS. PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT FRONT OR REAR YARD SETBACK.

LEGEND

	RIGHT-OF-WAY		PERIMETER AND STREET TREE LANDSCAPING PER F12-095
	BOUNDARY LINE		FOREST CONSERVATION SIGNS PER F12-095
	ADJACENT BOUNDARY LINE		
	EX. PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION) PLAT # 22502		
	EXISTING PRIVATE DRAINAGE AND UTILITY EASEMENT PLAT # 22502		
	EXISTING 24' PRIVATE USE-IN-COMMON ACCESS AND MAINTENANCE EASEMENT FOR LOTS 2-6 AND OPEN SPACE LOT 8 PLAT # 22502		
	EXISTING 30' PUBLIC WATER SEWER & UTILITY EASEMENT PLAT # 22502		

MBR NOTE:
FINAL DESIGN ELEVATIONS & MBR FACILITY LOCATION ARE SUBJECT TO ADJUSTMENT BASED UPON HOUSE MODEL CHOSEN

NOTE:
1. GENERIC HOUSE BOX MODEL FIT SHOWN HEREON
2. HOUSE BOXES ARE GENERIC AND SHOULD NOT BE CONSIDERED LIMITING. ADDITIONAL HOUSE TYPES AND OPTIONS MAY FIT ON ANY GIVEN LOT.
3. THE STAKING OF FOUNDATIONS PRIOR TO CONSTRUCTION TO ENSURE COMPLIANCE WITH REGULATORY BUILDING RESTRICTION LINES IS RECOMMENDED.

N/F HOWARD COUNTY, MD P/O TM PARCEL 641 DRAINAGE & UTILITY EASEMENT HANOVERVILLE LOTS 58 - 63 LIBER 11257 / FOLIO 513 PLAT 9668 ZONED R-12

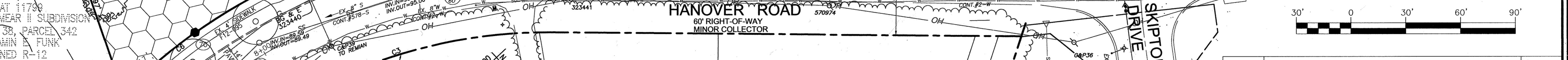
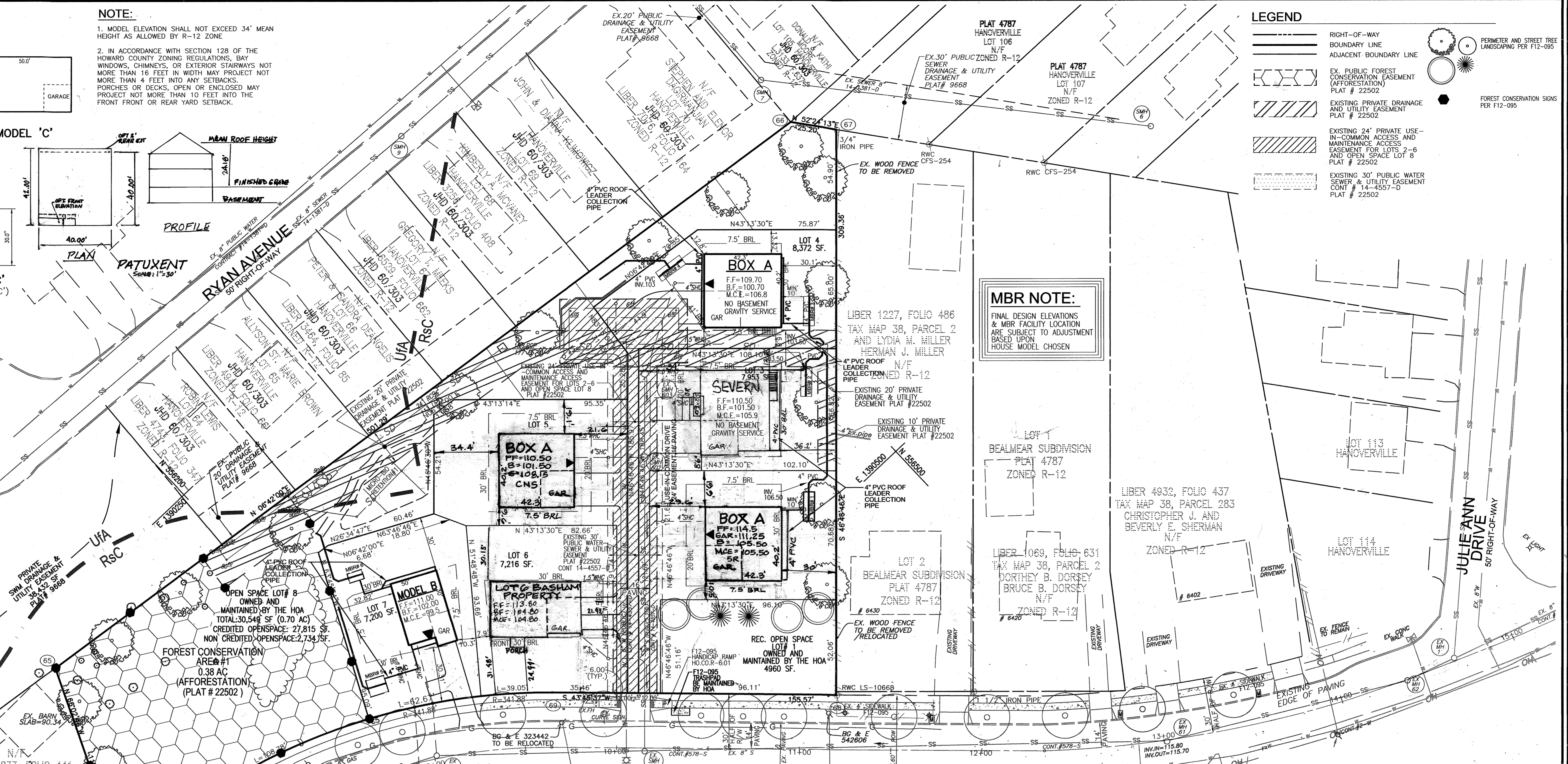
N/F LIBER 10833, FOLIO 441 PLAT 11790 LOT 1, BEALHEAR #1 SUBDIVISION TAX MAP 38, PARCEL 342 BENJAMIN B. FUNK ZONED R-12

N/F LIBER 1069, FOLIO 631 TAX MAP 38, PARCEL 2 DORTNEY B. DORSEY BRUCE B. DORSEY N/F ZONED R-12

N/F LIBER 4832, FOLIO 437 TAX MAP 38, PARCEL 283 CHRISTOPHER J. AND BEVERLY E. SHERMAN N/F ZONED R-12

N/F LIBER 1227, FOLIO 486 TAX MAP 38, PARCEL 2 AND LYDIA M. MILLER HERMAN J. MILLER N/F ZONED R-12

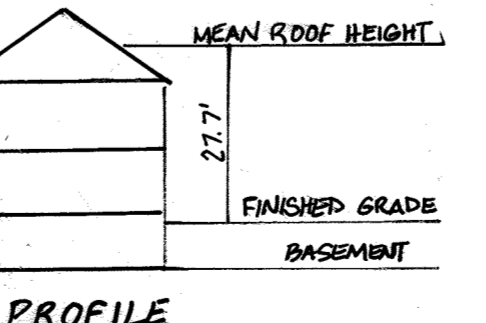
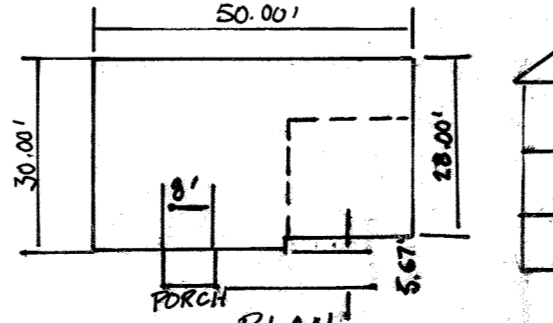
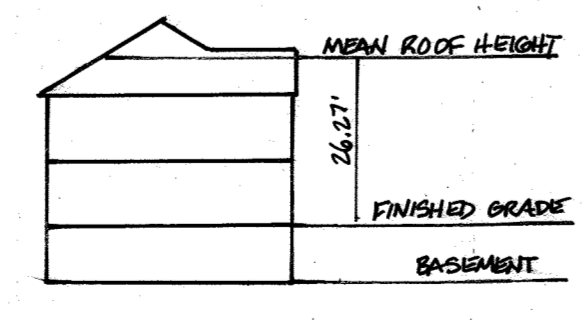
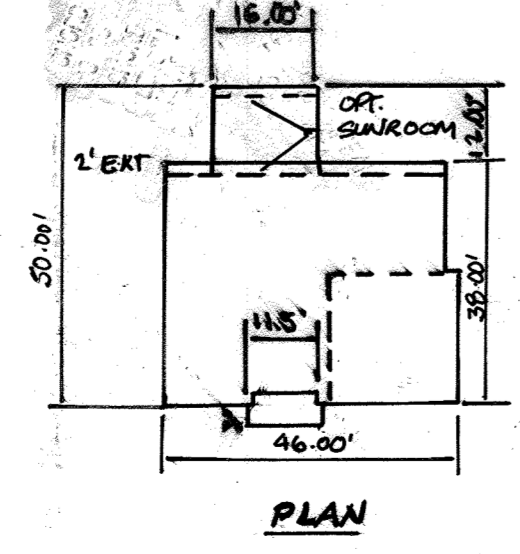
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director



LAYOUT PLAN
SCALE: 1"=30'

DRIVEWAY NOTE - LOTS 2-6:
1. INDIVIDUAL HOUSE SITES SHALL PROVIDE PRIVATE DRIVEWAYS A MINIMUM 18 FOOT DEPTH FROM THE FACE OF GARAGE TO THE EDGE OF THE USE-IN-COMMON DRIVEWAY SO THAT A CAR, IF PARKED IN THE DRIVEWAY, WILL NOT OVERHANG INTO THE PAVED AREA OF THE SHARED DRIVEWAY. THE SHARED DRIVEWAY SHALL PROVIDE ADEQUATE UNOBSTRUCTED ACCESS TO ALL DWELLINGS AT ALL TIMES AS REQUIRED BY HOWARD COUNTY DEPARTMENT OF FIRE & RESCUE.
2. AS PART OF THE FINAL HOUSE SITE, DRIVEWAY BUMP-OUTS ARE ADVISED ON LOTS 2 - 6 TO PROVIDE ADDITIONAL VISITOR PARKING

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



SEVERN
SCALE: 1"=30'

LOT 6 BASHAM PROPERTY
SCALE: 1"=30'

3	ADD SEVERN TO LOT 3	JAN 2022
2	ADD HOUSE MODELS	NOV 2021
1	ADD PATUXENT HOUSE MODEL	3/2021
NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
LAYOUT SHEET

BASHAM PROPERTY
LOTS 2-7

1ST ELECTION DISTRICT TAX MAP: 38 GRID: 14 DPZ REF'S: SP-08-010, F-12-095, W/S CONTRACT 14-4557-D

ZONING: R-12 PARCEL: 342 HOWARD COUNTY, MARYLAND

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

DESIGN BY: EDS
DRAWN BY: JER
CHECKED BY: RHY
DATE: SEPTEMBER 2013
SCALE: 1" = 30'
W.O. NO.: 04-33

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. 15193 EXPIRATION DATE: 09-27-2014

BUILDER AND DEVELOPER/OWNER
MAIN STREET BUILDERS
5705 LANDING ROAD
ELKRIDGE, MARYLAND 21075-5742

SEQUENCE OF CONSTRUCTION

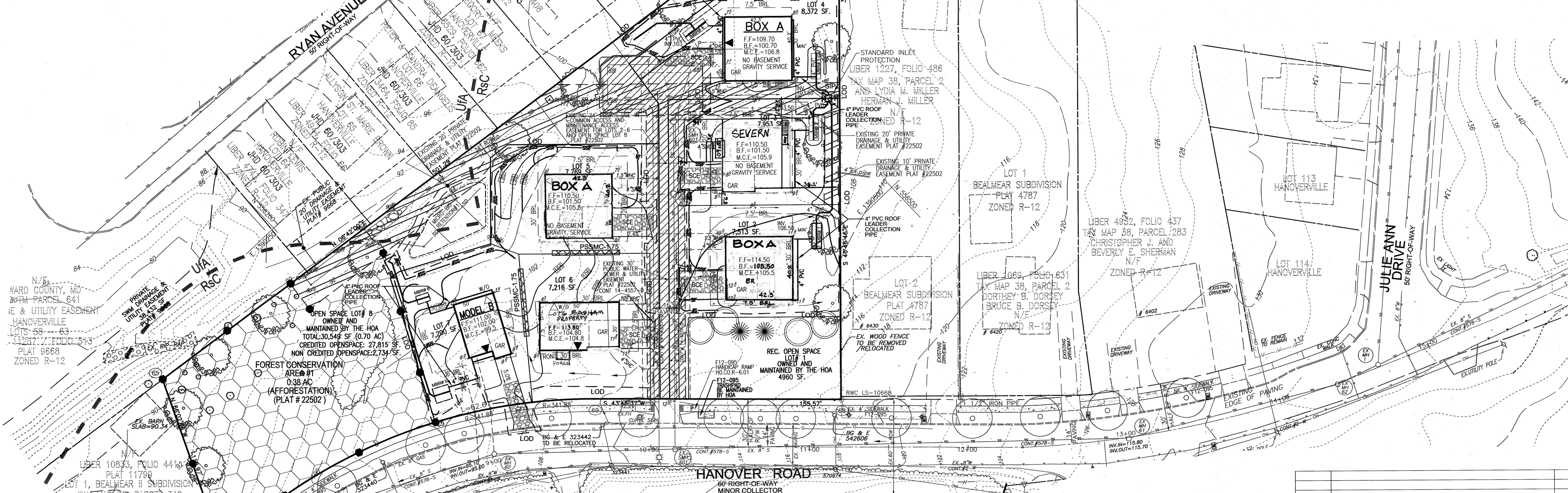
- OBTAIN GRADING PERMIT. (1 DAY)
- NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (410-313-1880) AT LEAST 24 HOURS BEFORE STARTING ANY WORK. (5 DAYS)
- IN ACCORDANCE WITH DETAILS, INSTALL SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN OR AS DIRECTED BY SEDIMENT CONTROL INSPECTOR. (2 WEEKS)
- DRY UTILITIES (CABLE, GAS ELECTRIC) MUST BE INSTALLED AFTER ROAD AND USE-IN-COMMON DRIVEWAY CONSTRUCTION AND PRIOR TO THE INSTALLATION OF THE F-12-095 MICRO BIO RETENTION FACILITIES. (2 MONTHS)
- AFTER OBTAINING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED, ROUGH GRADE SITE FOR HOUSE CONSTRUCTION. (2 DAYS)
- CONSTRUCT HOUSES. THE FIRST FLOOR ELEVATIONS CANNOT BE MORE THAN 1' HIGHER OR 0.2' LOWER THAN THE ELEVATIONS SHOWN ON THIS PLAN. (2 MONTHS)
- FINE GRADE LOT AS DETAILED HEREIN AND PER SPOT ELEVATIONS SHOWN. (2 DAYS)
- ONCE FINAL GRADING AND STABILIZATION IS COMPLETE INSTALL ONLOT MICRO-BIORETENTION FACILITIES IN ACCORDANCE WITH DETAILS AND SPECIFICATIONS SHOWN ON SHEET 7 AND F-12-095. BOTTOM OF EXCAVATION SHALL BE SCARIFIED TO PROMOTE INFILTRATION. FACILITIES SHALL BE CONSTRUCTED NO CLOSER THAN 10 FEET TO A FOUNDATION. (2 DAYS)
- UPON STABILIZATION OF ALL DISTURBED AREAS AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE. (2 DAYS)

NOTE: SILT FENCE IS TO BE REPLACED WITH SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

NOTE: STOCKPILING WILL BE PERMITTED ON EACH LOT ONLY.

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- 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 STREET TREES (F-12-095)
- EXISTING FENCE
- STANDARD INLET PROTECTION
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION
- SOILS BOUNDARY



GRADING PLAN
SCALE: 1"=30'

SOILS LEGEND

SOIL	NAME	K-VALUE	SOIL GROUP
Rsc	RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES	.24	C
UJA	URBAN LAND-FALLSINGTON COMPLEX, 0 TO 2 PERCENT SLOPES	N/A	D

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.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edwards 10/21/13
CHIEF DEVELOPMENT ENGINEERING DIVISION

Vest DeLoraine 10/23/13
CHIEF, DIVISION OF LAND DEVELOPMENT

Mark A. Cagle 10/23/13
DIRECTOR

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

John P. Blanton 9/12/13
HOWARD S.C.D. DATE

BY THE DEVELOPER:

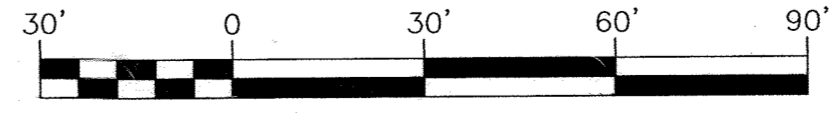
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

Joseph S. ... 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."

Robert H. Vogel 9/17/13
SIGNATURE OF ENGINEER DATE



BUILDER AND DEVELOPER/OWNER
MAIN STREET BUILDERS
5705 LANDING ROAD
ELKRIDGE, MARYLAND 21075-5742

NO.	REVISION	DATE
2	ADD SEVERN TO LOT 3	JAN 2002
1	ADD HOUSE MODELS	NOV 2001

SITE DEVELOPMENT PLAN
GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN AND SOILS MAP
BASHAM PROPERTY
LOTS 2-7

ZONING: R-12
PARCEL: 342
HOWARD COUNTY, MARYLAND

1ST ELECTION DISTRICT
TAX MAP: 38 GRID: 14
DPZ REF'S: SP-08-010, F-12-095, W/S CONTRACT 14-4557-D

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

PROFESSIONAL CERTIFICATE

DESIGN BY: EDS.
DRAWN BY: JER.
CHECKED BY: RHV.
DATE: SEPTEMBER 2013.
SCALE: 1" = 30'.
W.O. NO.: 04-33.

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, EXPIRATION DATE: 09-27-2014.

3 SHEET OF 6

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

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

2. FILTERING MEDIA OR PLANTING SOIL
THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HURDLE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERBERIS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOxious WEEDS AS SPECIFIED UNDER COMAR 15.06.02.05.
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% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
• CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
• PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.
THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOLUBLE SALTS. A TEXTURE ANALYSIS IS REQUIRED FROM THE SITE STOCKPILE TOPSOIL, IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

3. COMPACTION
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL WHEN POSSIBLE. USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO RESTRUCTURE THE SOIL PROFILE THROUGHOUT 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 POUNDING WATER BEFORE PREPARING (ROTOTILLING) BASE.
WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.
WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPORT 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.

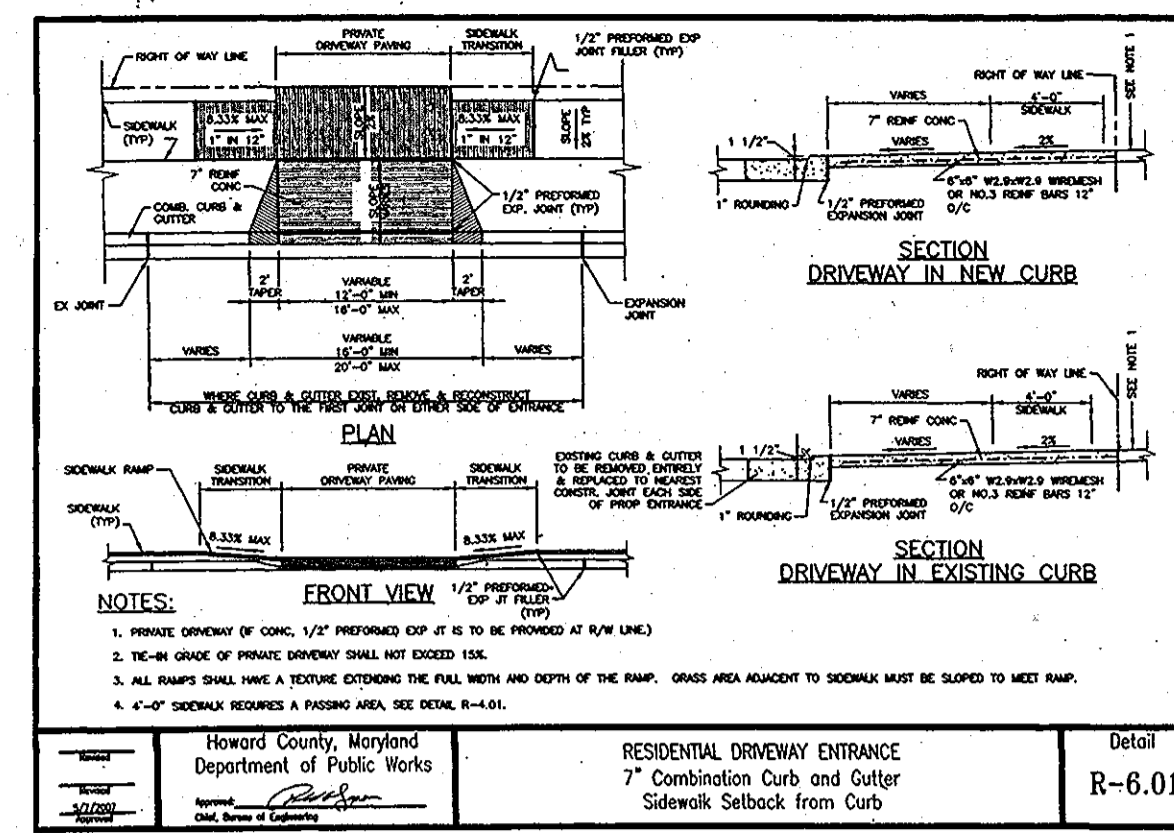
5. PLANT INSTALLATION
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIPHERY OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.
ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/3RD 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.

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 ASTM-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).
• PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4A) GALVANIZED HARDWARE CLOTH.
• GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
• THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
• A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
• A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".
THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

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

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 types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)	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 cobbles	stone: 2" to 5"	
Geotextile	n/a	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")	
Undrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 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 pressures); and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Gneystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

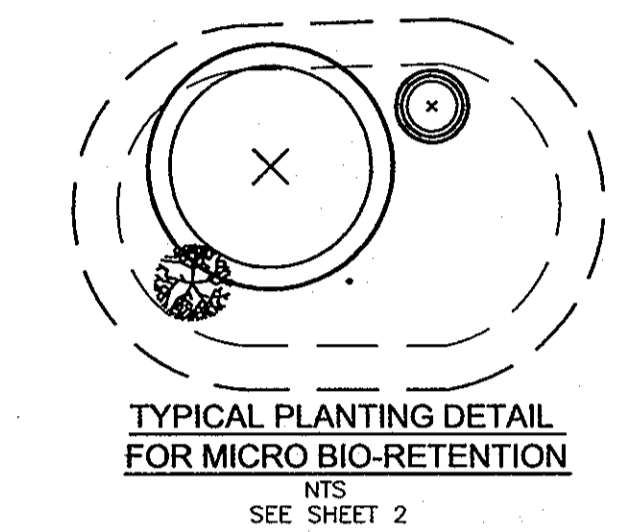


"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLANT DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
5. SEE SHEET 10 FOR TYPICAL PLANTING SPECIFICATIONS AND DETAILS.
6. MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (.0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATES ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDV SUMMARY.

QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
6	GLADASTIS LUTEA SWEETSHADE SWEETSHADE YELLOWWOOD	1 1/2"-2" CAL	B & B
2	KALMIA LATIFOLIA MOUNTAIN LAUREL	5 GALLON	CONT
3	RHOODODENDRON HY 'GLACIER' OR 'WHITE ROSEBUD' GLACIER OR WHITE ROSEBUD HYBRID AZALEA	3 GALLON	CONT

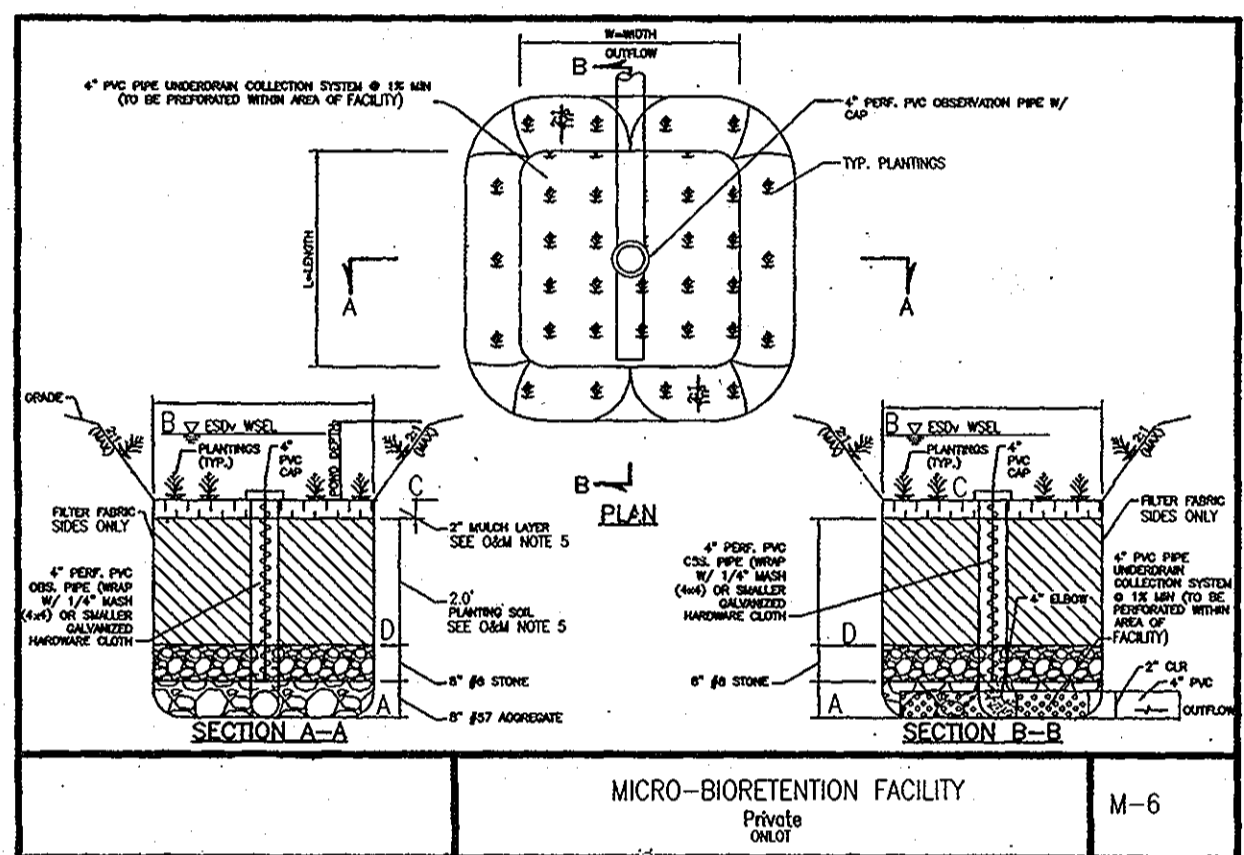
TYP. 100 SF X 75% X .0229 STEMS PER SQUARE FOOT = 2 PLANTS



MBR FACILITY	SURFACE AREA	REQUIRED PLANTINGS	PLANTINGS
MBR #1	100 SF	2	1 SWEETSHADE YELLOWWOOD, 1 GLACIER OR WHITE ROSEBUD HYBRID AZALEA
MBR #2	100 SF	2	1 SWEETSHADE YELLOWWOOD, 1 MOUNTAIN LAUREL
MBR #3	100 SF	2	1 SWEETSHADE YELLOWWOOD, 1 GLACIER OR WHITE ROSEBUD HYBRID AZALEA
MBR #4	100 SF	2	1 SWEETSHADE YELLOWWOOD, 1 MOUNTAIN LAUREL
MBR #5	90 SF	2	1 SWEETSHADE YELLOWWOOD, 1 GLACIER OR WHITE ROSEBUD HYBRID AZALEA
MBR #6	40 SF	1	1 SWEETSHADE YELLOWWOOD

OPERATION AND MAINTENANCE SCHEDULE FOR (M-6) MICROBIORETENTION AREAS

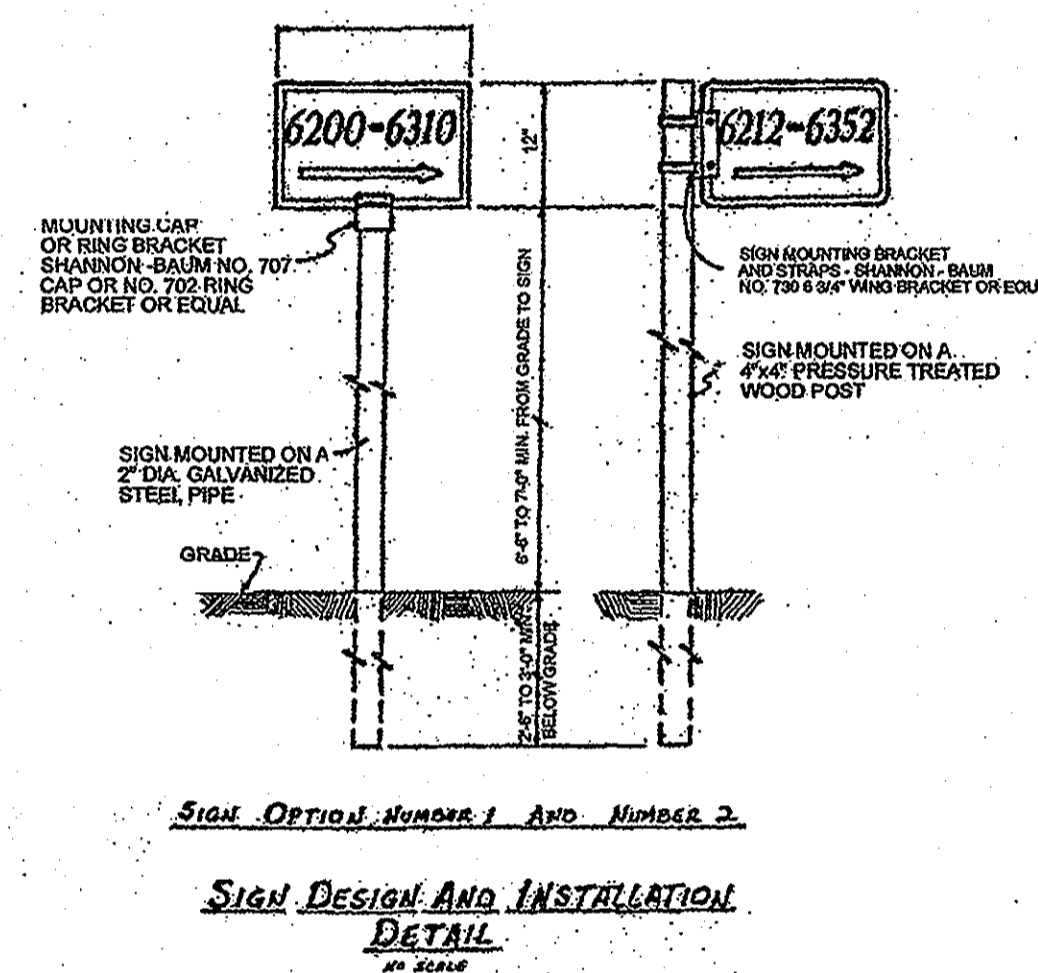
1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFUNCT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



MBR FACILITY	A	B	C	D	SURFACE AREA	APPROX. DIMENSIONS
MBR #1	106.5	111.0	110.0	107.83	100 SF	6.3' X 16'
MBR #2	103.5	108.0	107.0	104.83	100 SF	6.3' X 16'
MBR #3	103.5	108.0	107.0	104.83	100 SF	6.3' X 16'
MBR #4	102.5	107.5	106.5	104.33	100 SF	6.3' X 16'
MBR #5	98.3	103.0	102.0	99.83	90 SF	9' X 10'
MBR #6	95.0	99.8	98.8	96.63	40 SF	5' X 8'

NOTE:
FINAL DESIGN ELEVATIONS & MBR FACILITY LOCATION ARE SUBJECT TO ADJUSTMENT BASED UPON HOUSE MODEL CHOSEN

A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *Chad Edwards* 10/21/13
 Chief, Division of Land Development: *Kate DeLuca* 10/23/13
 Director: *Frankie A. Long Jr.* 10/23/13

**SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT
NOTES & DETAILS**

**BASHAM PROPERTY
LOTS 2-7**

1ST ELECTION DISTRICT: TAX MAP: 38 GRID: 14
 DPZ REF'S: SP-08-010, F-12-095, W/S CONTRACT 14-4557-D

ZONING: R-12
 PARCEL: 342
 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

DESIGN BY: EDS
 DRAWN BY: JER
 CHECKED BY: RHV
 DATE: SEPTEMBER 2013
 SCALE: 1" = 30'
 W.O. NO.: 04-33

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. 18193 EXPIRATION DATE: 09-27-2014

5 SHEET OF 6

X:\PROJECTS\04-33\DWG\04-33\DWG\BASHAM-WECKER\BASHAM_SDP2.DWG SUBMISSION US SWM DETAILS.DWG

AASCD/MAA VEGETATIVE ESTABLISHMENT DETAILS AND SPECIFICATIONS FOR THE PROJECT WITHIN 4 MILES OF BWI AIRPORT

SEEDING
ITEM NO. 903-1.1

DESCRIPTION
903-1.1 GENERAL. This item provides specifications for seeding of areas as designated on plans or as directed by the MAA Engineer.

SEED MIXTURES
903-1.1.1 APPLIED SPECIES. The following table contains species that are approved by MAA for use in seed mixtures.

SEED MIXTURE NO. 1, 2, 3
903-1.1.1.1, 1.2, 1.3

Table with columns: SEEDING SEASONS, Rate of Application (lbs of PLS/acre)

SEEDING SEASONS
Permanent Seed Season (Grass) March 1 to April 30 and August 1 to October 30, inclusive

RESTRICTIONS
903-1.1.2 FERTILITY. All seed shall be free of all state-designated noxious weeds listed in Paragraph 903-2.1.1 and conform to MAA specifications.

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Table with columns: MAA SEED MIXTURES, Not Exceeds %

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CONSTRUCTION METHODS AND EQUIPMENT
903-3.1 GENERAL. This section provides approved methods for the application of and includes standards for seedbed preparation, methods of application, and equipment to be used during the process.

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MULCHING
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AASCD/MAA NOTES

THE PROPOSED PROJECT IS LOCATED IN HOWARD COUNTY, MARYLAND ON TAX MAP 38, BLOCK 14, PARCEL 342. THE PROPOSED PROJECT IS LOCATED NEAR THE BALTIMORE WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT (BWI), APPROXIMATELY 12,300 FEET NORTHWEST OF RUNWAY 10.

- 1. SEDIMENT BASINS AND TRAPS ARE PROPOSED FOR SEDIMENT AND EROSION CONTROL DURING CONSTRUCTION. F-12-095
2. SEDIMENT TRAPS AND BASINS MUST BE DRAINED COMPLETELY THROUGH A FILTERING DEVICE TO A CLEAN WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT. F-12-095
LANDSCAPING & STORM WATER POND LANDSCAPING ON SITE:
3. ANY DEVIATION TO PLANT SPECIES AND VEGETATION USED ON THESE PLANS NEED APPROVAL FROM AASCD/MAA. THE PLANT SPECIES USED ON THIS SITE ARE TO AVOID ITS POTENTIAL TO ATTRACT WILDLIFE THAT COULD POSE STRIKE HAZARD TO AIRCRAFT. BWI AIRPORT NOISE ZONE.
4. THE SITE FOR THIS PROJECT IS LOCATED OUTSIDE THE BOUNDARIES OF THE AIRPORT NOISE ZONE.
5. THE ALLOWABLE HEIGHT FOR ANY PERMANENT OR TEMPORARY STRUCTURES TALLER THAN 255 FEET ABOVE MEAN SEA LEVEL NEED OBSTRUCTION ANALYSIS REVIEW AND PERMIT FOR THE AIRPORT ZONE.
6. THE STORM WATER MANAGEMENT FACILITIES WITHIN 10,000 FEET OF ACTIVE RUNWAYS OR WITHIN 5 MILES OF AN APPROACH/DEPARTURE SURFACE MUST DRAIN WITHIN 24 HOURS FOLLOWING A 1 OR 2 YEAR STORM EVENT AND WITHIN 48 HOURS FOLLOWING A 10 YEAR STORM EVENT

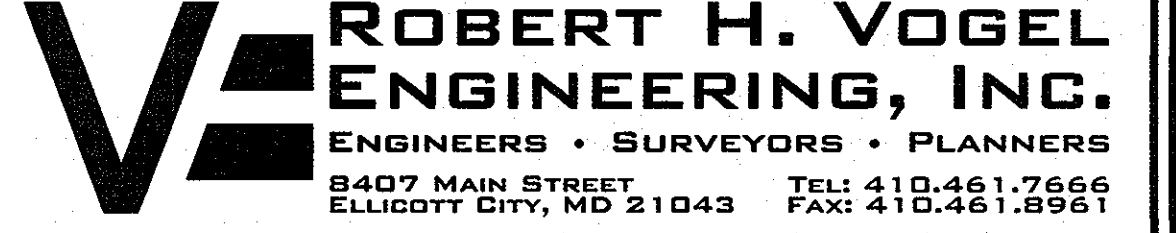
BUILDER AND DEVELOPER/OWNER
MAIN STREET BUILDERS
5705 LANDING ROAD
ELKRIDGE, MARYLAND 21075-5742

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division
Date: 10/21/13
Chief, Division of Land Development
Date: 10/23/13
Director
Date: 10/23/13

Table with columns: NO., REVISION, DATE

SITE DEVELOPMENT PLAN
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TAX MAP: 38 GRID: 14
HOWARD COUNTY, MARYLAND
DPZ REF'S: SP-08-010, F-12-095, W/S CONTRACT 14-4557-D

10/23/13



DESIGN BY: EDS
DRAWN BY: JER
CHECKED BY: RHY
DATE: SEPTEMBER 2013
SCALE: 1" = 30'
W.O. NO.: 04-33
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 EXPIRES DATE: 07-31-2014
6 SHEET OF 6