

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: 1-410-954-8281
 HOWARD COUNTY BUREAU OF UTILITIES: 410-313-2063
 AT&T CABLE LOCATION DIVISION: 1-800-393-3553
 B.G.E. CO. CONTRACTOR SERVICES: 410-850-4620
 B.G.E. CO. UNDERGROUND DAMAGE CONTROL: 410-787-4620
 STATE HIGHWAY ADMINISTRATION: 410-531-5533
- THIS PRELIMINARY EQUIVALENT SKETCH PLAN IS SUBJECT TO THE FOLLOWING DRP FILES: ECP-14-089 (APPROVED 09/18/2014), CONT. 330-3056-D, AND CONT. 34-4275-D, WP-15-093.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RAIN TOPOGRAPHIC SURVEY WITH 2-FOOT CONTOUR INTERVALS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED APRIL 08, 2014.
- THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED APRIL 08, 2014.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- 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 OWNERS KNOWLEDGE, THERE ARE NO CEMETERIES OR GRAVE SITES LOCATED ON THE SUBJECT PROPERTY.
- STORM WATER MANAGEMENT IS TO BE PROVIDED FOR THIS DEVELOPMENT BY ENVIRONMENTAL SITE DESIGN UTILIZING MICRO-BIORETENTION FACILITIES (M-6), ROOFTOP DISCONNECTS (N-1), SHEETFLOW TO LEVEL SPREADERS (N-3), AND DRY WELLS (M-5). ON LOT LEVEL SPREADERS, DRY WELLS, AND MBR-3 THROUGH MBR-9 ARE TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNERS THEMSELVES. MICRO-BIORETENTION FACILITIES MBR-1, MBR-2, AND MBR-10 ARE TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION. REFERENCE 2010 MDE STORMWATER DESIGN MANUAL (CHAPTER 5).
- PUBLIC WATER AVAILABLE THROUGH CONTRACT NO. 34-4275-D AND PUBLIC SEWER AVAILABLE THROUGH CONTRACT NO. 30-3056-D. WATER AND SEWER SERVICE WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.1226 OF THE HOWARD COUNTY CODE.
- 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 DEVELOPMENT PLAN, WALKER PETITION, OR BUILDING AND GRADING PERMITS.
- THE SUBJECT PROPERTY IS ZONED "R-ED" IN ACCORDANCE WITH THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN. 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 CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- 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. 350A AND 350B WERE USED FOR THIS PROJECT.
- NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITATS WERE OBSERVED ON THE PROPERTY.
- THERE IS NO 100-YR FLOOD ZONE WITHIN THE LIMITS OF THIS SITE.
- SEDMIMENT AND EROSION CONTROL WILL BE PROVIDED FOR THIS SITE.
- WETLANDS SHOWN ON-SITE ARE BASED ON A FIELD INVESTIGATION PERFORMED BY JOHN CANNOLAS OF ECO-SCIENCE PROFESSIONALS, INC. DATED MAY 2014. THERE ARE NO PROPOSED DISTURBANCES TO THE WETLANDS OR ASSOCIATED BUFFERS.
- A FOREST STAND DELINEATION AND ENVIRONMENTAL RESOURCES ASSESSMENT WAS CONDUCTED BY JOHN CANNOLAS OF ECO-SCIENCE PROFESSIONALS, INC. DATED MAY 2014. AN FSD PLAN WAS SUBMITTED/APPROVED IN SEPTEMBER, 2014 AND UPDATED/RE-SIGNED ON 1/30/15.
- A TOTAL OF 8 RESIDENTIAL LOTS AND 4 OPEN SPACE LOTS ARE PROPOSED UNDER THIS PLAN.
- NO GRADING, REMOVAL OF VEGETATIVE COVER, TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- WETLANDS AND THEIR BUFFERS WILL NOT BE IMPACTED BY THE CONSTRUCTION OF THE SITE.
- A NOISE STUDY IS NOT REQUIRED FOR THIS SITE.
- FOREST CONSERVATION REQUIREMENTS AS SET FORTH IN SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- THE FOREST CONSERVATION OBLIGATION TO BE FULFILLED BY THE PLACEMENT OF 2.32 AC. INTO RETENTION EASEMENT. NO SURETY IS REQUIRED.
- UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6.06 FOR THE USE-IN-COMMON DRIVEWAY ENTRANCE AT TROTTER ROAD.
- DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 a) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).
 b) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING.
 c) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% CHANGE AND MINIMUM OF 45-FOOT DEPTH TURNING RADII.
 d) STRUCTURES (DRIVEWAY BRACKETS) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
 e) BRANCHED ELEMENTS-CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 f) STRUCTURE CLEARANCES-MINIMUM 12 FEET.
 g) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- THE EXISTING HOUSE LOCATED ON THIS PROPERTY IS TO BE RAZED. ALL EXISTING FEATURES SUCH AS SIDEWALKS AND DRIVEWAYS SHALL ALSO BE REMOVED. THE EXISTING DWELLING AND ALL OUT BUILDINGS MUST BE REMOVED PRIOR TO PLAT RECORDATION AND PHOTOGRAPHIC PROOF MUST BE SUBMITTED TO PROVE THE STRUCTURES HAVE BEEN REMOVED.
- TROTTER ROAD IS A SCENIC ROAD.
- LOTS 1-8 & OPEN SPACE LOT 11 & 12 WILL UTILIZE A USE-IN-COMMON DRIVEWAY. A USE-IN-COMMON MAINTENANCE AGREEMENT FOR THE SHARED DRIVEWAY SHALL BE RECORDED SIMULTANEOUSLY WITH THE FINAL PLAN. A DESIGN MANUAL WAIVER TO ALLOW MORE THAN 6 USERS ON A USE-IN-COMMON WAS APPROVED ON JANUARY 14, 2015.
- PERIMETER LANDSCAPING AND TRASH ENCLOSURE SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL. POSTING OF FINANCIAL SURETY IS DEFERRED UNTIL THE FINAL LANDSCAPE PLAN AND FINAL PLAT SUBMISSION.
- LANDSCAPING FOR LOTS 1-12 IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$10,000 FOR THE REQUIRED 20 SHADES, 8 EVERGREEN TREES, 45 SHRUBS (40 PERIMETER 1, 5 TRASH PAD), AND 211 LINEAR FEET OF FENCING SHALL BE POSTED AT THE TIME OF FINAL PLAT SUBMISSION.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH 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 LANDSCAPE MANUAL.
- DEED REFERENCE L 2306/F 517
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, INC., DATED OCTOBER 2, 2014, AND WAS APPROVED ON FEBRUARY 03, 2015.
- THIS PROPERTY IS NOT WITHIN THE METROPOLITAN DISTRICT.
- FLAG AND PIPESTEM LOTS, BEFORE CONSTRUCTION, SNOW REMOVAL AND ROAD MAINTENANCE FOR LOTS 1-8 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 RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DRIVEWAY ACCESS POINT ONTO TROTTER ROAD AT THE DEVELOPER'S/OWNER'S EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5750 FOR DETAILS AND COST ESTIMATES. THE 911-(STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
- CERTIFIED TEST PITS HAVE BEEN PROVIDED TO VERIFY THAT GROUNDWATER AND ROCK ARE NOT PRESENT AT RAIN GARDEN AND MICRO-RETENTION LOCATIONS. OPEN TEST PITS WERE OBSERVED BY ROBERT H. VOGEL ENGINEERING ON NOVEMBER 03, 2014 AND INFORMATION REGARDING THE FINDINGS IS LOCATED IN THE SWM REPORT.
- REFERENCE DESIGN MANUAL VOLUME III, SECTION 2.6.A WAIVER, APPROVED JANUARY 14, 2015, TO ALLOW MORE THAN 6 USERS ON A USE-IN-COMMON DRIVEWAY. THIS APPROVAL REQUIRED THE DRIVEWAY WIDTH TO BE 18 FEET FOR THE TOTAL LENGTH, HAVE FLUSH CURBS ALONG BOTH SIDES, AND A VEHICLE TURN-AROUND AT THE END. THE DRIVEWAY SHALL BE WITHIN A 40' PRIVATE USE-IN-COMMON DRIVEWAY EASEMENT.
- B.G.E. HAS APPROVED PERIMETER LANDSCAPING FOR THIS PROJECT.
- IN ACCORDANCE WITH SECTION 16.121(A)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE OPEN SPACE REQUIREMENTS FOR THIS R-ED PROJECT IS 50% OF GROSS AREA (5.67 AC. x 50% = 2.84 AC. REQUIRED).
 - OPEN SPACE LOTS 9-11 ARE TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
 - OPEN SPACE LOT 12 IS TO BE OWNED AND MAINTAINED BY THE HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS.
 - TOTAL OPEN SPACE PROVIDED IS 2.94 ACRES.
- SITE DEVELOPMENT PLAN APPROVAL BY THE DEPARTMENT OF PLANNING AND ZONING IS REQUIRED PRIOR TO BUILDING PERMITS BEING ISSUED FOR THE CONSTRUCTION OF RESIDENTIAL DWELLINGS ON THESE LOTS.
- THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 RESIDENTIAL INFILL DEVELOPMENT OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPER OF THIS PROJECT SHALL CREATE COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES.
- A PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON APRIL 28, 2014 AT 6:00 PM AT THE MEETING ROOM AT RIVER HILL POOL.
- EXISTING WELL AND SEPTIC MUST BE PROPERLY ABANDONED AND DOCUMENTATION SENT TO HEALTH DEPARTMENT PRIOR TO HEALTH SIGNATURE TO FINAL PLAT.
- MHU'S ARE REQUIRED FOR THIS PROJECT. THE DEVELOPER WILL PAY A FEE-IN-LIEU TO ADDRESS THIS REQUIREMENT.
- REFERENCE WP-15-093 TO WAIVE SECTION 16.1205(a)(7) AND 16.1205(a)(10) WHICH REQUIRES THE RETENTION OF SPECIMEN TREES (3" DBH OR GREATER) THAT ARE NOT CONTAINED WITHIN OTHER PRIORITY FOREST RETENTION AREAS AS OUTLINED IN SECTION 16.1205(a)(10), APPROVED MARCH 16, 2015. WAIVER APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
 1. WAIVER APPROVAL IS LIMITED TO THE REMOVAL OF SPECIMEN TREES #1 THROUGH #3, #13 AND #14, AND #16 AS DEPicted ON THE WAIVER EXHIBIT. ANY PROPOSAL TO REMOVE ADDITIONAL SPECIMEN TREES WILL REQUIRE A NEW WAIVER REQUEST OR AN AMENDMENT TO THIS WAIVER REQUEST.
 2. A MINIMUM OF 12 ADULT, NATIVE, 2-3" CALIPER TREES SHALL BE PROVIDED ON SITE AS PART OF THE MITIGATION OF THE SPECIMEN TREE REMOVAL. THIS MITIGATION WILL BE ADDRESSED WITH THE PROJECT KNOWN AS "THE PRESERVE AT RIVER HILL" AND WILL BE IN ADDITION TO ANY REQUIRED LANDSCAPE OR FOREST CONSERVATION PLANTINGS. THE MITIGATION WILL BE SHOWN ON THE ASSOCIATED LANDSCAPE PLAN AND SURETY FOR THESE ADDITIONAL TREES WILL BE REQUIRED AS PART OF THE FINAL PLAN.
 3. SOME OR ALL OF THE MITIGATION PLANTINGS SHOULD BE PLACED WITHIN THE REAR YARDS OF THE PROPOSED LOTS AFTER GRADING AND FILL OCCURS BUT PRIOR TO SALES OF INDIVIDUAL LOTS.
 4. INDIVIDUAL TREE PROTECTIVE DEVICES (TREE FENCING) SHALL BE PLACED COMPLETELY AROUND SPECIMEN TREE #11 AND SPECIMEN TREE #4 PRIOR TO THE COMMENCEMENT OF ANY GRADING. THIS SHALL BE OUTLINED IN THE PRE-CONSTRUCTION MANAGEMENT PLAN OF THE FINAL FOREST CONSERVATION PLAN (FCP) AND WITHIN THE SEQUENCE OF CONSTRUCTION PROVIDED ON THE FINAL PLAN FOR "THE PRESERVE AT RIVER HILL".

SITE DATA

LOCATION: TAX MAP 35, BLOCK 14
 PARCEL: 64
 5TH ELECTION DISTRICT
 PRESENT ZONING: R-ED
 GROSS AREA OF PROJECT: 5.67 AC.
 AREA OF RIGHT-OF-WAY DEDICATION: 0.71 AC.
 LIMIT OF DISTURBANCE: 2.65 AC.
 PROPOSED USE OF SITE: RESIDENTIAL (STD)
 NUMBER OF RESIDENTIAL LOTS PROPOSED: 8 LOTS
 AREA OF RESIDENTIAL LOTS PROPOSED: 2.02 AC.
 OPEN SPACE REQUIRED: 2.84 AC.
 OPEN SPACE PROVIDED: 2.94 AC.
 CREDITED OPEN SPACE PROVIDED: 2.87 AC.
 NON-CREDITED OPEN SPACE PROVIDED: 0.07 AC.
 IMPERVIOUS AREA: 0.84 AC.
 AREA OF STREAM/BUFFER: 1.33 AC.
 AREA OF WETLANDS/BUFFER: 0.39 AC.
 AREA OF MODERATE SLOPES (15% - 24.99%): 2.02 AC.
 AREA OF STEEP SLOPES (25% OR GREATER): 1.27 AC.
 AREA OF FLOOD PLAIN: 0.00 AC.
 NET PROJECT AREA: 4.40 AC.
 AREA OF EXISTING FOREST COVER: 4.40 AC.
 AREA OF ERODIBLE SOILS: 3.52 AC.
 AREA MANAGED BY ESH (THIS PLAN): 2.65 AC.
 *IMPERVIOUS AREA: 0.84 AC.
 *GREEN AREA: 1.81 AC.
 WATER AND SEWER WILL BE PUBLIC

PRELIMINARY EQUIVALENT SKETCH PLAN

THE PRESERVE AT RIVER HILL

LOTS 1-8 AND OPEN SPACE LOTS 9 - 12

PARCEL 64 (L. 2326 / F. 517)
 6281 TROTTER ROAD
 CLARKSVILLE, MD 21029

BENCHMARKS

HOWARD COUNTY BENCHMARK 35DA (CONC. MON.)
 N 558918.62 E 1333137.33 ELEV. 350.98
 LOCATION: 420' SOUTH OF TIDES TERRACE
 HOWARD COUNTY BENCHMARK 350B (CONC. MON.)
 N 557696.15 E 1333974.58 ELEV. 400.99
 LOCATION: CORNER OF GREAT STAR DR. & SUMMER SUNRISE DR.

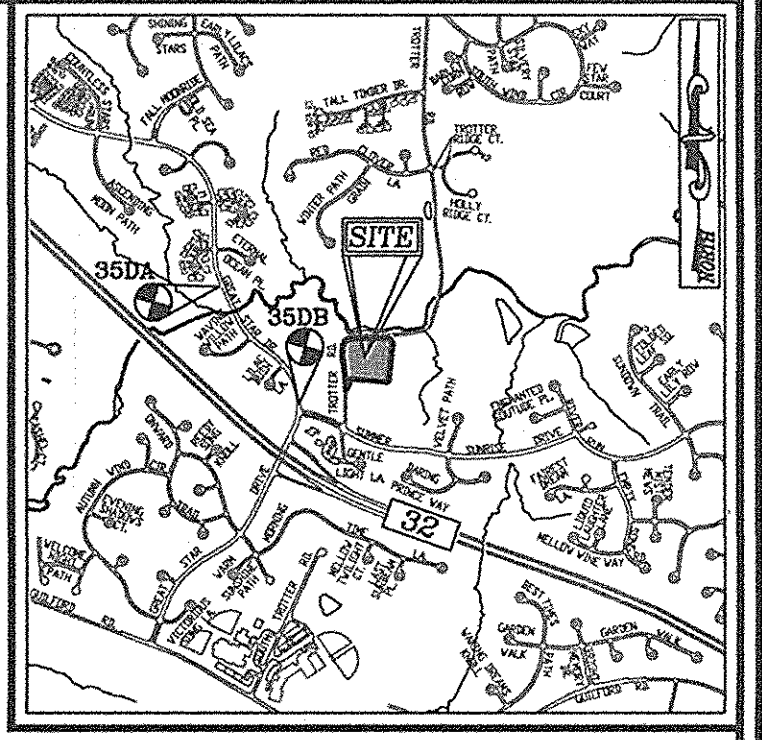
LOT TABULATION

TOTAL NO. OF PROPOSED LOTS: 12
 TOTAL NO. OF DWELLING UNITS: 8
 NO. OF SINGLE FAMILY DETACHED: 8
 NO. OF OPEN SPACE LOTS: 4

DENSITY CALCULATION:
 5.67 AC. - 0.0 AC. (FLOODPLAIN) = 1.27 AC. (STEEP SLOPES) = 4.4 AC.
 4.4 AC. x 2 = 8.8 (8 LOTS PERMITTED BY-RIGHT)

COORDINATE TABLE

NO.	NORTH	EAST
99	557928.23	1334899.51
101	557958.82	1334513.11
102	557964.19	1334444.06
207	558456.19	1334389.44
208	558341.21	1334944.11
301	557819.61	1334450.26
302	557965.54	1334427.04
303	558313.78	1334351.99
304	558409.66	1334886.60

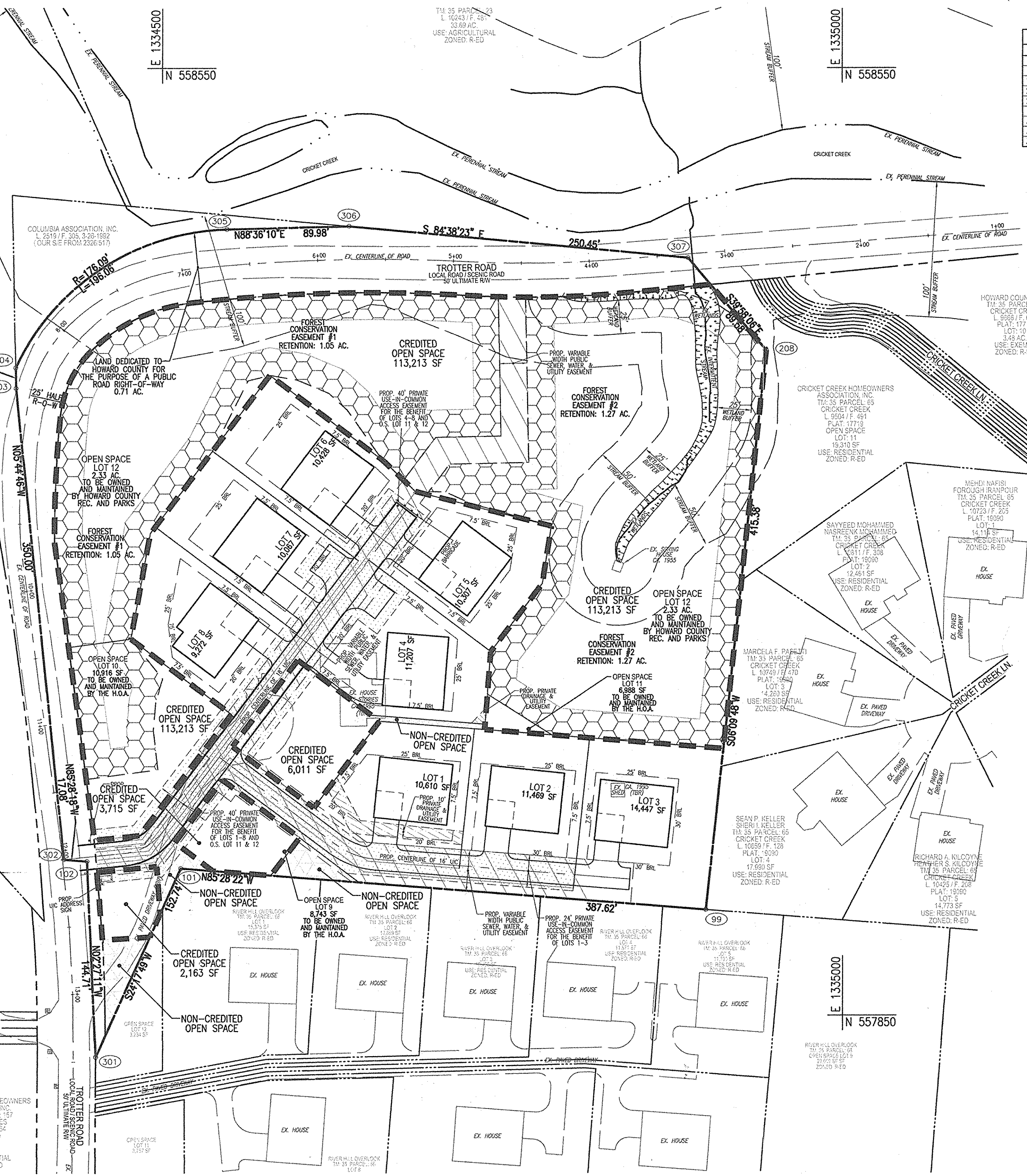


LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING EDGE OF PAVING
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- EXISTING STREAM BUFFER
- EXISTING STREAM
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANDIRT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREELINE
- EXISTING TREES
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- PROPOSED TREELINE
- PROP. PRIVATE USE-IN-COMMON ACCESS EASEMENT
- PROP. FOREST CONSERVATION EASEMENT (PERCENTAGE)
- PROP. VARIABLE WIDTH PUBLIC SEWER, WATER & UTILITY EASEMENT
- PROP. 10' PRIVATE DRAINAGE & UTILITY EASEMENT
- CREDITED OPEN SPACE
- NON-CREDITED OPEN SPACE

LOT AREA TABULATION

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
1	10,610 SF	1,003 SF	9,607 SF	6,000 SF
2	11,469 SF	1,967 SF	9,502 SF	6,000 SF
3	14,447 SF	2,643 SF	11,804 SF	6,000 SF
4	11,207 SF	657 SF	10,550 SF	6,000 SF
5	10,307 SF	921 SF	9,386 SF	6,000 SF
6	10,428 SF	898 SF	9,530 SF	6,000 SF
7	10,657 SF	680 SF	9,977 SF	6,000 SF
8	9,272 SF	441 SF	8,831 SF	6,000 SF



OWNER
 PETER D. CONGEDO
 CHERIE B. CONGEDO
 6281 TROTTER RD.
 CLARKSVILLE, MD 21029
 (410) 480-0023

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

PRELIMINARY EQUIVALENT SKETCH PLAN
COVER SHEET
THE PRESERVE AT RIVER HILL
LOTS 1-8 AND OPEN SPACE LOTS 9 - 12
 PARCEL 64 (L. 2326 / F. 517)
 6281 TROTTER ROAD
 CLARKSVILLE, MD 21029

TAX MAP: 35 GRID: 14
 5TH ELECTION DISTRICT
 DRP REF'S: SEE GENERAL NOTE #4

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.9961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: JULY 2015
 SCALE: AS SHOWN
 W.O. NO.: 13-38

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

1 SHEET OF 7

APPROVED
 PLANNING BOARD OF HOWARD COUNTY

6/23/15
 DATE

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

8-4-15
 DATE

COVER SHEET

SCALE: 1"=50'

SHEET INDEX

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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 PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOODS KEYS AS SPECIFIED UNDER COMAR 15.08.01.05.
THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
* SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
* ORGANIC 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 LOAM TO 40% OR SANDY LOAM (LOVE), COARSE SAND (LOVE), AND COMPOST (LOVE).
* CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
* PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.
THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.
- 3. COMPACTION**
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHESEL PLOW, 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 REMOVE 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 LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
- 4. PLANT MATERIAL**
RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
- 5. PLANT INSTALLATION**
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.
ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOST 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 PH 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. INDIVIDUALLY 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 DEFERS, OR AT A MINIMUM, DEFERS 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 F756, TYPE PS 28, OR AHS10-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (E.G., PVC OF HOPE).
* 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 1/4" (NO. 4) OR 1/2" (NO. 10) 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.

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, SCRAPING 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.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SHEETFLOW TO CONSERVATION AREA (N-3)

CONSERVATION AREAS SHALL REMAIN UNDISTURBED AND UNMANAGED OTHER THAN ROUTINE DEBRIS REMOVAL AND REPAIRING AREA OF CONCENTRATED FLOW. WALKWAYS AND KNOWNS PLANT REMOVAL AND BI-ANNUAL MOWING FOR MEADOW AREAS MAY BE NEEDED. SIGNS DELINEATING THE LIMITS OF THE CONSERVATION AREA SHOULD BE MAINTAINED AND SUPPLEMENTAL PLANTINGS PERFORMED AS NEEDED.

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE 6/23/15

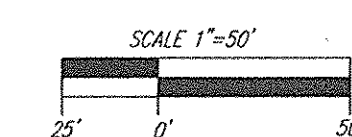
TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

DATE 8-4-15

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
GdB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
GcC	GLADSTONE LOAM, 8 TO 15 PERCENT SLOPES	C	.20	NO
GmC	GLENVILLE SILT LOAM, 8 TO 15 PERCENT SLOPES	C	.37	YES
Hs	HARBORO-CODDINS SILT LOAMS, 0 TO 3 PERCENT SLOPES	D	.37	NO
Msd	MANSOR-BANNERTOWN SANDY LOAMS, 15 TO 25 PERCENT SLOPES, ROCKY	B	.24	YES

-SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE
-HOWARD COUNTY SOILS MAP NUMBER 17 - CLARKSVILLE NE
NOTE:
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

GRADING 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 BUFFER
- EXISTING STREAM
- 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
- PROPOSED TREELINE
- PRIVATE USE-IN-COMMON ACCESS EASEMENT
- PROP. FOREST CONSERVATION EASEMENT (RETENTION)
- PROP. VARIABLE WIDTH PUBLIC SERVICE, WATER & UTILITY EASEMENT
- PROP. 10' PRIVATE DRAINAGE & UTILITY EASEMENT
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING STEEP SLOPES (25% SLOPES OR GREATER)
- EXISTING MODERATE SLOPES (15% TO 24.99% SLOPES)
- PROPOSED SUPER SALT FENCE
- PROPOSED DIVERSION FENCE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED EROSION CONTROL MATTING
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED TREE PROTECTION FENCE
- PROPOSED MICRO-BIORETENTION FACILITY (M-6)
- PROPOSED DRY WELL (M-5)

OWNER
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DEVELOPER
TRINITY QUALITY HOMES, INC.
3675 PARK AVE., SUITE 301
ELLCOTT CITY, MD 21043
(410) 480-0023

NO.	REVISION	DATE

**PRELIMINARY EQUIVALENT SKETCH PLAN
SOILS MAP, GRADING, EROSION, AND
SEDIMENT CONTROL PLAN**

**THE PRESERVE AT RIVER HILL
LOTS 1-8 AND OPEN SPACE LOTS 9-12**

PARCEL 64 (L. 2326 / F. 517)

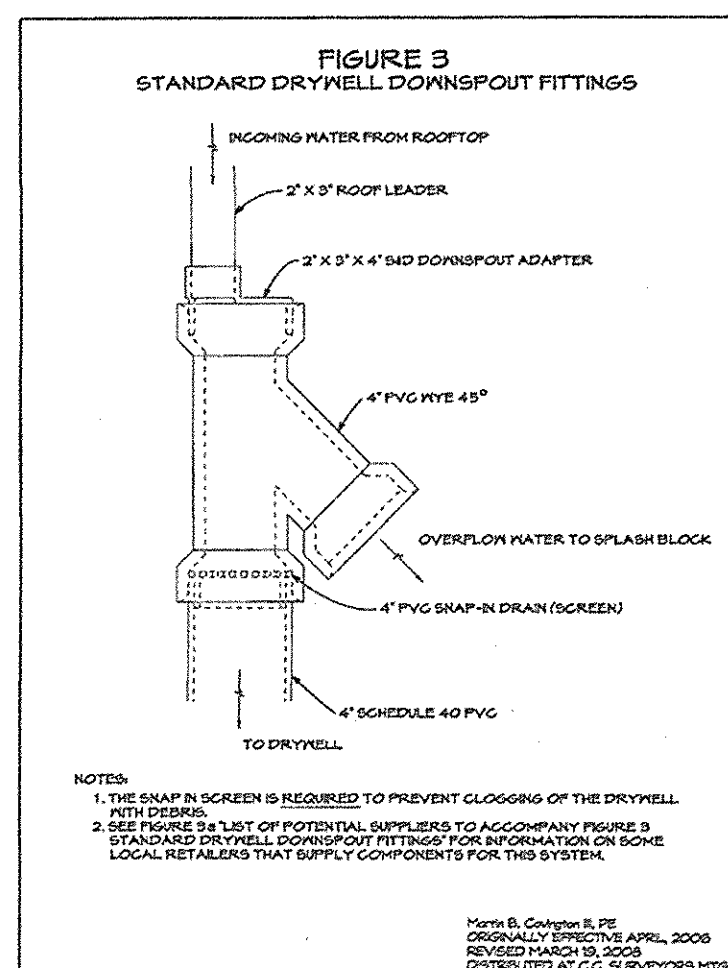
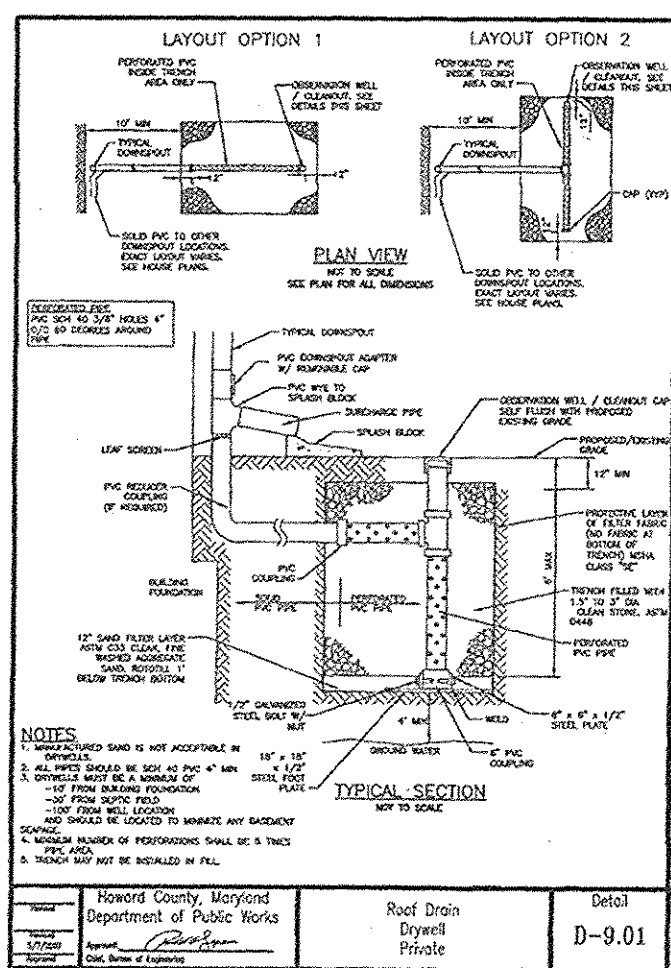
6281 TROTTER ROAD, CLARKSVILLE, MD 21029
TAX MAP: 35 GRID: 14 ZONED: R-63
SPZ REF'S: SEE GENERAL NOTE #4 PARCELS: 64 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET, ELLCOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8966

PROFESSIONAL CERTIFICATE
DESIGN BY: RHY
DRAWN BY: JMR
CHECKED BY: RHY
DATE: JULY 2015
SCALE: AS SHOWN
W.O. NO.: 13-38

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A SOIL LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE 09-27-2016

3 SHEET OF 7



HOWARD COUNTY - OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRYWELL (M-5)

A. THE OWNER SHALL INSPECT & CLEAN ANNUALLY, INCLUDING PIPES CUTTERS DOWNSPOUTS AND FILTERS.

B. PONDING STANDING WATER OR ALGAL GROWTH ON THE TOP OF A DRYWELL MAY INDICATE FAILURE DUE TO SEDIMENTATION IN THE GRAVEL MEDIA. IF WATER PONDING FOR MORE THAN 48 HOURS AFTER A MAJOR STORM OR MORE THAN SIX INCHES OF SEDIMENT HAS ACCUMULATED, THE GRAVEL MEDIA SHOULD BE EXCAVATED AND REPLACED.

PROJECT CONGEDO PROPERTY
 DESIGNER RHV
 DATE 05/23/14

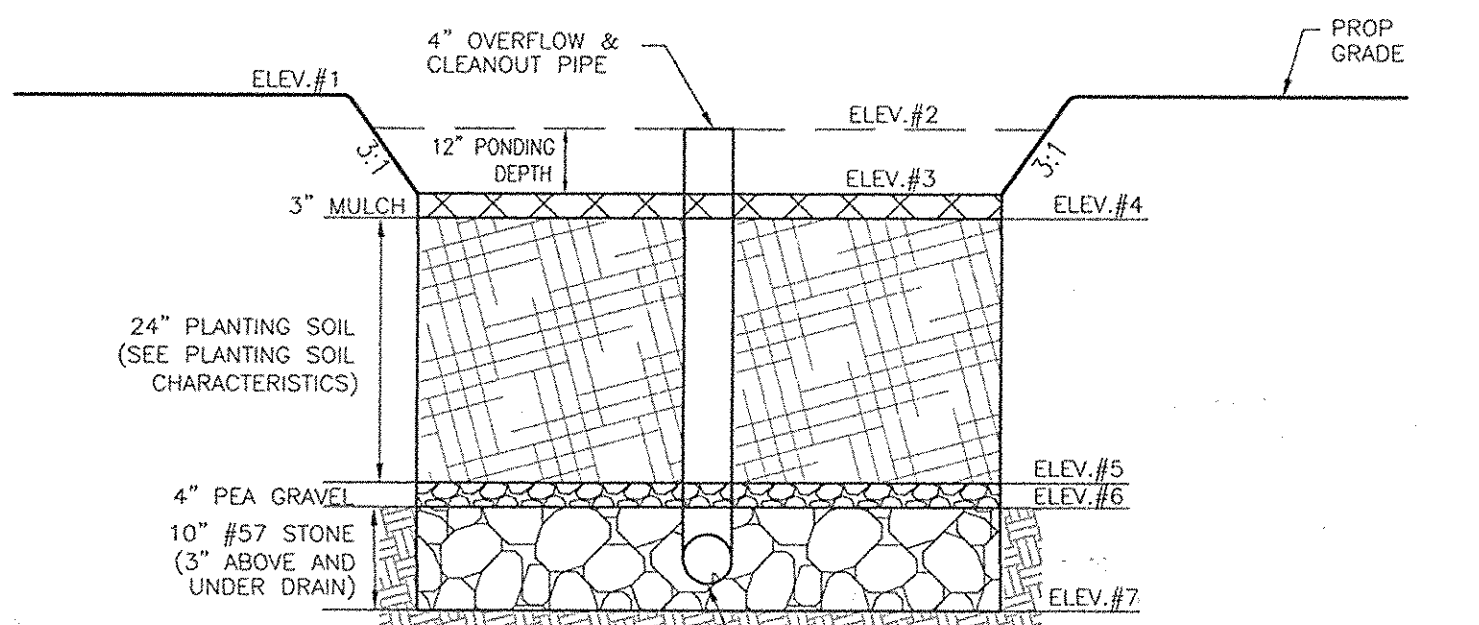
ROBERT H. VOGEL ENGINEERING, INC.

DRAINAGE AREA #	AREA TREATED	FACILITY	PERMEABLE PAVEMENT	MICRO BIO SHEET FLOW DRY WELLS	DISCONNECT	ESD	ESD VOLUME
DA-A	16690	MBR-1	0	689	0	0	689
DA-B	17442	MBR-2	0	1029	0	0	1029
DA-C	15529	MBR-4	0	125	0	0	125
		LEVEL SPREADER	0	96	0	0	96
		MBR-5	0	296	0	0	296
DA-D	14198	MBR-6	0	254	0	0	254
		LEVEL SPREADER	0	96	0	0	96
		DRY WELL LOT 7A	0	0	0	0	135
		DRY WELL LOT 5A	0	0	0	0	270
DA-E	26259	MBR-7	0	432	0	0	432
		MBR-8	0	288	0	0	288
		MBR-9	0	144	0	0	144
		DRY WELL LOT 6	0	0	0	0	125
		DRY WELL LOT 7	0	0	0	0	625
		DISCONNECTIONS	0	0	0	0	59
DA-F	9271	MBR-10	0	465	0	0	465
DA-G	4857	MBR-3	0	288	0	0	288
			0	0	0	0	0

TOTAL AREA 104646 SF
 2.40 AC
 TOTAL ESD PROVIDED 5541

NOTE: MICRO BIORETENTION VOLUMES ARE BASED FULL ESD AND DO NOT REPRESENT THE REQUIRED STORAGE RATIO OF 75%

LOT #	FACILITY #	1	2	3	4	5	6	7	4" INV.	4" OUTFALL
LOT 9	MBR-1	366.00	365.60	364.60	364.35	362.35	362.02	361.19	361.44	361.00
LOT 11	MBR-2	382.00	381.60	380.60	380.35	378.35	378.02	377.19	377.44	377.22
LOT 3	MBR-3	390.00	389.60	388.60	388.35	386.35	386.02	385.19	385.44	385.14
LOT 2	MBR-4	380.00	379.60	378.60	378.35	376.35	376.02	375.19	375.44	375.30
LOT 1	MBR-5	380.00	379.60	378.60	378.35	376.35	376.02	375.19	375.44	375.26
LOT 4	MBR-6	382.00	381.60	380.60	380.35	378.35	378.02	377.19	377.44	377.19
LOT 6	MBR-7	372.00	371.60	370.60	370.35	368.35	368.02	367.19	367.44	367.33
LOT 7	MBR-8	376.00	375.60	374.60	374.35	372.35	372.02	371.19	371.44	371.33
LOT 8	MBR-9	376.00	375.60	374.60	374.35	372.35	372.02	371.19	371.44	371.32
LOT 10	MBR-10	377.40	377.00	376.00	375.75	373.75	373.42	372.59	372.84	372.68



MICROBIORETENTION NOTES:

- 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 MBR TO FAIL AND THEREFORE SHALL NOT BE INSTALLED.
- WRAP THE PERFORATED UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.

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

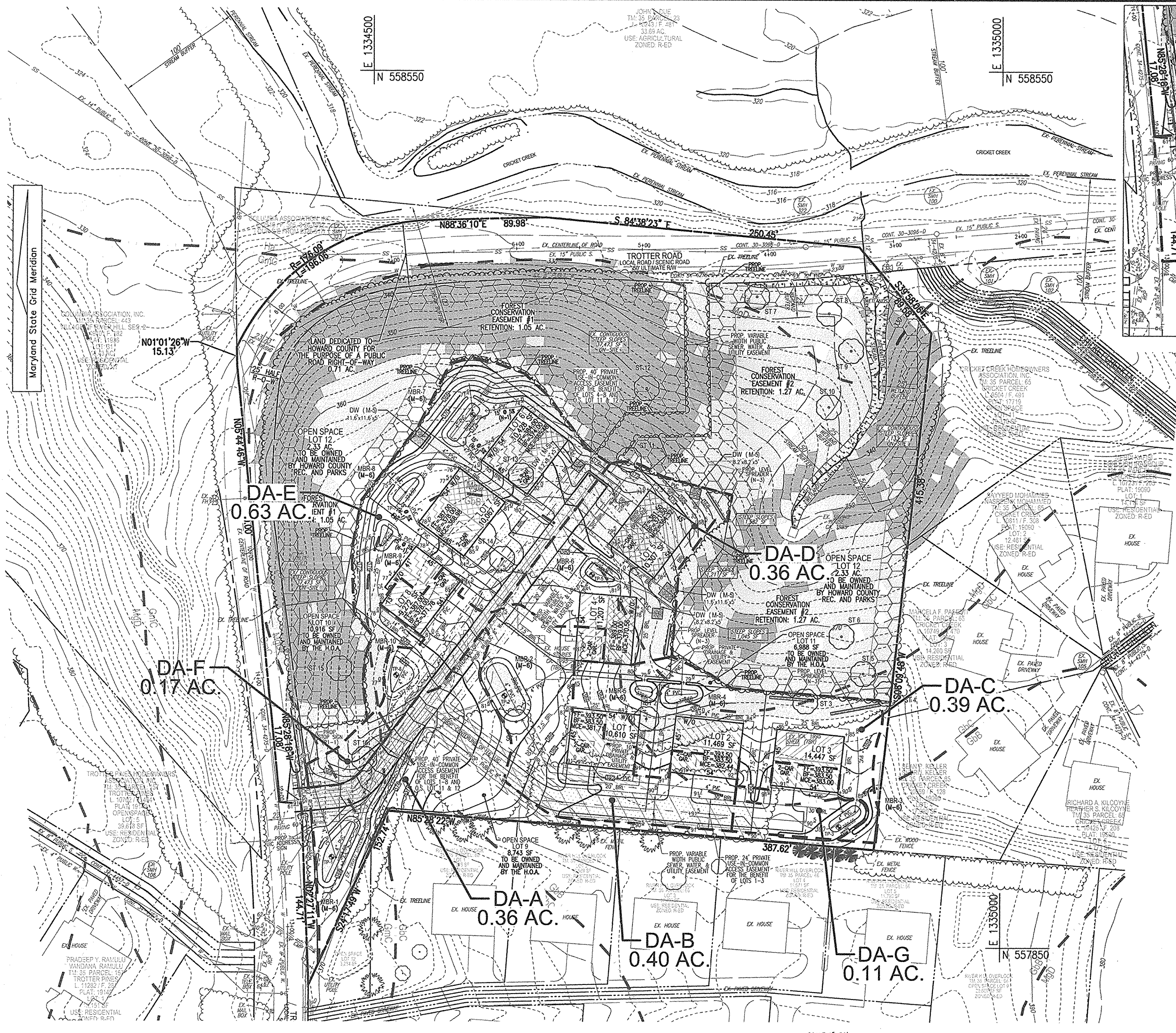
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- 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.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

APPROVED
 PLANNING BOARD OF HOWARD COUNTY
 PB #113
 6/23/15
 DATE

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY
 Planning Director
 8-4-15
 DATE

SWM PRACTICE CHART
 ESD PRACTICES BY LOT

LOT #	ESD PRACTICE
#1	MICRO BIO-RETENTIONS (M-6)
#2	MICRO BIO-RETENTIONS (M-6)
#3	SHEETFLOW TO LEVEL SPREADERS (N-3) AND MICRO-BIORETENTIONS (M-6), AND DRY WELL (M-5)
#4	SHEETFLOW TO LEVEL SPREADER (N-3), MICRO-BIORETENTIONS (M-6), AND DRY WELL (M-5)
#5	DISCONNECT ROOFTOP RUNOFF (N-1), MICRO BIO-RETENTION (M-6), AND DRY WELL (M-5)
#6	DISCONNECT ROOFTOP RUNOFF (N-1), MICRO BIO-RETENTION (M-6), AND DRY WELL (M-5)
#7	DISCONNECT ROOFTOP RUNOFF (N-1), MICRO BIO-RETENTION (M-6), AND DRY WELL (M-5)
#8	DISCONNECT ROOFTOP RUNOFF (N-1), AND MICRO BI-RETENTIONS (M-6), UIC DRIVE



SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
Gsb	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	20	NO
Gsc	GLADSTONE LOAM, 8 TO 15 PERCENT SLOPES	B	20	NO
Gnc	GLENNVILLE SILT LOAM, 8 TO 15 PERCENT SLOPES	C	37	YES
Ho	HARBOR-CODORUS SILT LOAMS, 0 TO 3 PERCENT SLOPES	D	37	NO
Mqd	MANOR-BANNERTOWN SANDY LOAMS, 15 TO 25 PERCENT SLOPES, ROCKY	B	24	YES

-SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE
 -HOWARD COUNTY SOILS MAP NUMBER 17 - CLARKSVILLE, MD

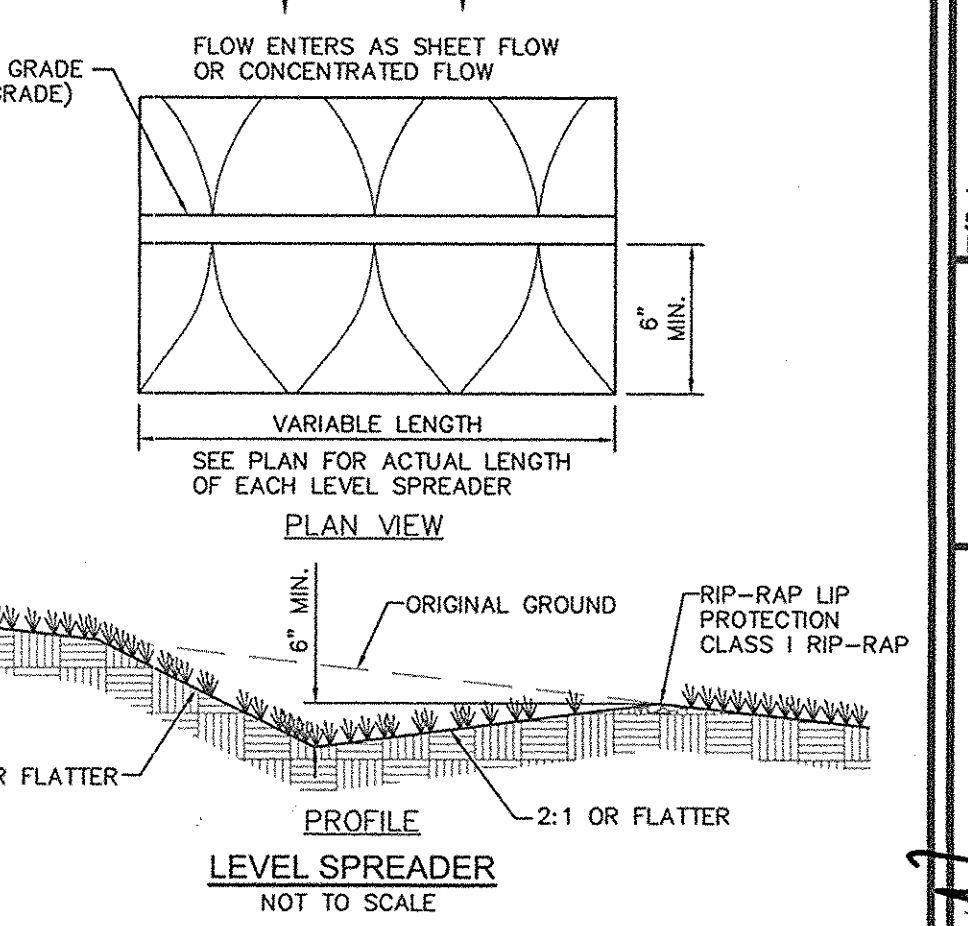
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT



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

Table B-4.1 Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration:

Material	Specification	Notes
Plantings	See Appendix A, Table A.4	Use native or non-invasive plants
Filter fabric (12" x 48")	loamy sand (90-95%) & compost (5-10%)	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2972)	
Mulch	aged 6 months, minimum 10 pieces or wood chips	
Pea gravel diaphragm	pea gravel, ASTM D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")
Curb/drain	monolithic stone, washed cobble	size: 2" to 3"
Grid/cells	ASAFIT0 M-3	NO. 57 OR NO. 6 AGGREGATE (1 1/2" TO 3/4")
Underdrain piping	7.75" Type PS 28 or ASAFIT0 M-3	4" to 6" rigid schedule 40 PVC or SDR15
Found in place concrete (if required)	MISHA Mix No. 3; F _c = 3500 psi @ 28 days normal weight, air-entrained, conforming to most ASTM-610-60	3/4" to 1" mesh; 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved form or load standard requires design drawings sealed and approved by a professional structural engineer. Installed on the base of filter drain design to include meeting ACT Code 250.809; vertical loading (10 to 140); allowable horizontal loading based on soil parameters; and analysis of potential cracking.
Soil	ASAFIT0 M-6 w/ ASTM C-3	0.075" to 0.04"



LEGEND:

PROPERTY LINE	PROPR. VARIABLE WIDTH PUBLIC SEWER, WATER, & UTILITY EASEMENT
RIGHT-OF-WAY LINE	PROPR. 10' PRIVATE DRAINAGE & UTILITY EASEMENT
ADJACENT PROPERTY LINE	EXISTING 10' CONTOUR
EXISTING CURB AND GUTTER	EXISTING 2' CONTOUR
EXISTING EDGE OF PAVING	PROPOSED 10' CONTOUR
EXISTING WETLANDS	PROPOSED SPOT ELEVATION
EXISTING WETLAND BUFFER	EXISTING STEEP SLOPES (25% SLOPES OR GREATER)
EXISTING STREAM BUFFER	EXISTING MODERATE SLOPES (15% TO 24.99% SLOPES)
EXISTING STREAM	DRAINAGE AREA DIVIDE
EXISTING UTILITY POLE	PROPOSED MICRO-BIORETENTION FACILITY (M-6)
EXISTING LIGHT POLE	PROPOSED DRY WELL (M-5)
EXISTING MAILBOX	AREA OF ROOFTOP DRAINAGE TO GO TO DRY WELL (M-5)
EXISTING SIGN	AREA OF ROOFTOP DRAINAGE TO SHEETFLOW TO LEVEL SPREADER (N-3)
EXISTING SANITARY MANHOLE	AREA OF ROOFTOP DRAINAGE TO GO TO MICRO BI-RETENTION FACILITY (M-6)
EXISTING SANITARY LINE	AREA OF ROOFTOP DRAINAGE TO MICRO BI-RETENTION FACILITY (M-6) AND ROOFTOP DISCONNECT (N-1)
EXISTING CLEANOUT	ROOFTOP DISCONNECT (N-1)
EXISTING FIRE HYDRANT	PROPOSED TEST PIT
EXISTING WATER LINE	EXISTING SPECIMEN TREE
EXISTING TREELINE	
EXISTING TREES	
EXISTING WOOD FENCE	
EXISTING METAL FENCE	
PROPOSED TREELINE	
PRIVATE USE-IN-COMMON ACCESS EASEMENT	
PROP. FOREST CONSERVATION EASEMENT (RETENTION)	

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DEVELOPER
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 3675 PARK AVE., SUITE 301
 ELLICOTT CITY, MD 21043
 (410) 480-0023

NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH PLAN

DRAINAGE AREA MAP

THE PRESERVE AT RIVER HILL
 LOTS 1-8 AND OPEN SPACE LOTS 9-12
 PARCEL 64 (L. 2328 F.F. 517)
 6281 TROTTER ROAD
 CLARKSVILLE, MD 21029

TAX MAP: 35-08-14
 5TH ELECTION DISTRICT
 DPZ REF'S: SEE GENERAL NOTE #4

PARCELS: 64
 ZONED: R-2
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
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 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: JULY 2015
 SCALE: AS SHOWN
 W.O. NO.: 13-38

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

4 SHEET OF 7

SCHEDULE A: PERIMETER LANDSCAPE EDGE					
CATEGORY	ADJACENT TO		SCENIC ROAD SCREEN	SPECIMEN TREE MITIGATION	TOTAL
	PERIMETER PROPERTIES	ROADWAYS			
PERIMETER / FRONTAGE DESIGNATION	1	2	3**	INTERNAL LANDSCAPE	
LANDSCAPE TYPE					
LINEAR FEET OF ROADWAY FRONTAGE / PERIMETER	523'	479'	981'		
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	YES 359'	YES 981'		
CREDIT FOR WALL FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES 211'	NO	NO		
NUMBER OF PLANTS REQUIRED (IF REMAINING)	312'	120'		3	12
SHADE TREES	1:60	5	2		22
EVERGREEN TREES					
SHRUBS					
NUMBER OF PLANTS PROVIDED					
SHADE TREES	5			3	12
EVERGREEN TREES					
OTHER TREES (2:1 SUBSTITUTION)		8**			8**
SHRUBS (10:1 SUBSTITUTION)					
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED	40*				40*

NOTE:
 * 40 SHRUBS ARE TO BE PROVIDED BETWEEN THE PROPOSED USE-IN-COMMON DRIVEWAY FOR LOTS 1-3 AND THE PROPOSED PRIVACY FENCE LOCATED ALONG THE SOUTHERN PROPERTY LINE.
 ** 4 EVERGREENS ARE BEING SUBSTITUTED FOR 2 SHADE TREES AND 4 EXTRA EVERGREENS ARE BEING PROVIDED FOR EXTRA SCREENING ALONG PERIMETER 2.
 *** NO PERIMETER PLANTINGS ARE BEING PROVIDED ALONG TROTTER ROAD DUE TO THE FACT THAT NO HIGHWAYS FRONT ON THE ROAD, THERE ARE NO PROPOSED ROAD IMPROVEMENTS, AND FOREST CONSERVATION IS BEING PROVIDED ALONG THIS ENTIRE PERIMETER.

TRASH PAD LANDSCAPING				
SYMBOL	QTY.	DESCRIPTION	SIZE	REMARKS
	5	DWARF JAPANESE YEW	3'-4" HT	B & B

LANDSCAPE SCHEDULE					
SYMBOL	KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
	AR	4	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2"-3"	B & B
	QP	4	QUERCUS PHELLOS WILLOW OAK	2 1/2"-3" CAL.	B & B
	CL	8	CUPRESSOCYPARIS LEYLANDI LEYLAND CYPRESS	5'-6" HEIGHT	B & B
	-	40	AZALEA 'HINO CRIMSON' HINO CRIMSON AZALEA	18"-24" SPREAD	B & B
	CK	12	CLADRASTIS KENTUKEA (LUTEA) YELLOWWOOD	2 1/2"-3" CAL.	B & B

GENERAL NOTES:

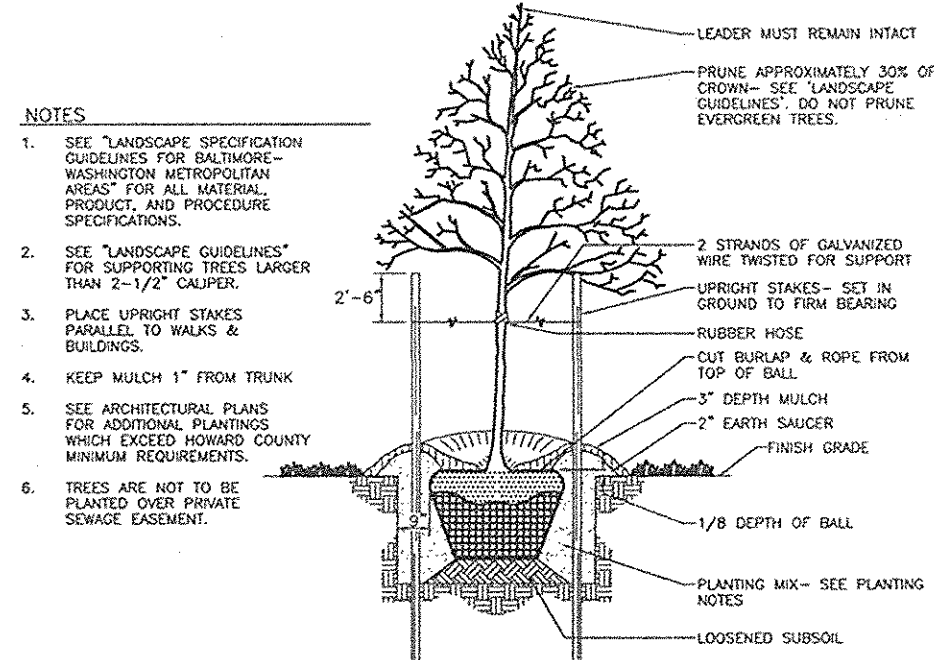
1. LANDSCAPING FOR LOTS 1-12 IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$10,660.00 FOR THE REQUIRED 20 SHADE TREES, 8 EVERGREEN TREES, 45 SHRUBS (40 PERIMETER, 1:5 TRASH PAD), AND 211 LINEAR FEET OF FENCING SHALL BE POSTED AT THE TIME OF FINAL PLAN SUBMISSION.

LANDSCAPE NOTES

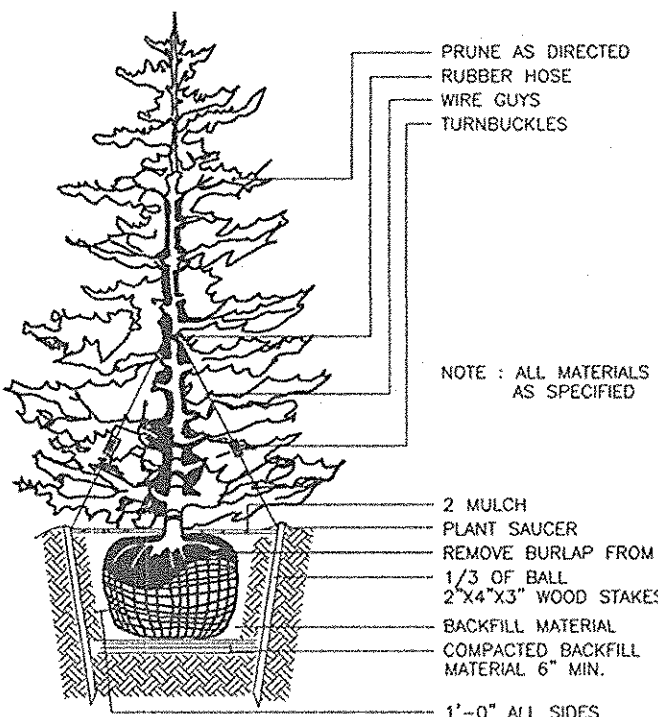
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR 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.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BENCHES, FENCES AND WELLS. 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.
- 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 1 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
- PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.

LANDSCAPE SCHEDULE NOTE:

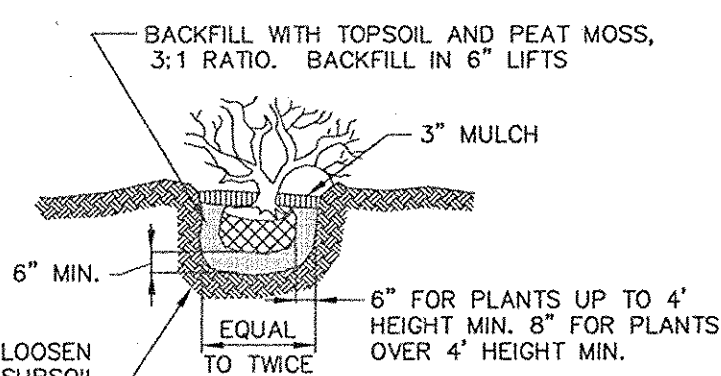
- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AND SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HED PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL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



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



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

APPROVED
PLANNING BOARD OF HOWARD COUNTY

Valerie Jones
PLANNING DIRECTOR

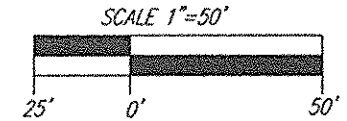
8-4-15
DATE

PB # 413

6/23/15
DATE



LANDSCAPE 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 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
- PROPOSED TREELINE
- PRIVATE USE-IN-COMMON ACCESS EASEMENT
- PROP. FOREST CONSERVATION EASEMENT (RETENTION)
- PROP. VARIABLE WIDTH PUBLIC SEWER, WATER, & UTILITY EASEMENT
- PROP. 10' PRIVATE DRAINAGE & UTILITY EASEMENT
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING STEEP SLOPES (25% SLOPES OR GREATER)
- EXISTING MODERATE SLOPES (15% TO 24.99% SLOPES)
- PROPOSED MICRO-BIORETENTION FACILITY (M-6)
- PROPOSED DRY WELL (M-5)

OWNER
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 CHERIE B. CONGEDO
 6281 TROTTER RD
 CLARKSVILLE, MD 21029
 (410) 480-0023

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

NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH PLAN

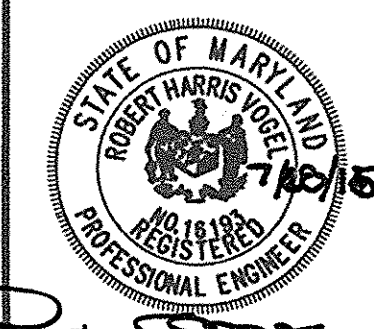
LANDSCAPE PLAN

THE PRESERVE AT RIVER HILL
 LOTS 1-8 AND OPEN SPACE LOTS 9 - 12
 PARCEL 64 (L. 2326 / F. 517)
 6281 TROTTER ROAD
 CLARKSVILLE, MD 21029

TAX MAP: 35 GRD: 14
 5TH ELECTION DISTRICT
 DPZ REF: SEE GENERAL NOTE #4

PARCELS: 64
 ZONED: R-ED
 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: 09-27-2016

DESIGN BY: RHY
 DRAWN BY: JMR
 CHECKED BY: RHY
 DATE: JULY 2015
 SCALE: AS SHOWN
 W.O. NO.: 13-38

5 SHEET OF 7



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
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- 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
- EXISTING STEEP SLOPES (25% SLOPES OR GREATER)
- EXISTING MODERATE SLOPES (15% TO 24.99% SLOPES)
- PROPOSED FOREST CONSERVATION SIGN
- PROPOSED SUPER SILT FENCE
- PROPOSED TREE PROTECTION FENCE
- EXISTING SPECIMEN TREE TO BE REMOVED



VICINITY MAP
SCALE: 1"=1,000'
ADC MAP COORDINATE: MAP 31, GRID F3

SITE DATA

LOCATION: TAX MAP 35, BLOCK 14
PARCEL: 64
5TH ELECTION DISTRICT
PRESENT ZONING: R-ED
CROSS AREA OF PROJECT: 5.67 AC.
AREA OF STREAM/BUFFER: 1.33 AC.
AREA OF WETLANDS/BUFFER: 0.39 AC.
AREA OF MODERATE SLOPES (15% - 24.99%): 2.02 AC.
AREA OF STEEP SLOPES (25% OR GREATER): 1.27 AC.
AREA OF FLOOD PLAIN: 0.00 AC.
NET PROJECT AREA: 4.40 AC.
EXISTING USE: RESIDENTIAL
PROPOSED USE: RESIDENTIAL

FOREST STAND DATA					
KEY	COMMUNITY TYPE	ACREAGE (±0.1)	DOMINANT VEGETATION	GENERAL CONDITION	RETENTION PRIORITY
F1	OAK/POPLAR	4.1	LIRIODENDRON TULIPIFERA QUERCUS ALBA, QUERCUS RUBRA, CARYA GLABRA, NYSSA SYLVATICA	GOOD	HIGH BUFFERS AND SLOPES

FSD NOTES

- NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITATS WERE OBSERVED ON THE PROPERTY.
- SURROUNDING LAND USE IS MEDIUM DENSITY RESIDENTIAL AND HIGHWAY RIGHT OF WAY.
- WETLANDS, STREAMS AND BUFFERS ARE PRESENT ON THE SUBJECT PROPERTY. THE PROPERTY IS WITHIN THE USE IV WATERSHED OF THE MIDDLE PATUXENT RIVER.
- THERE IS NO 100-YR FLOODPLAIN WITHIN THE LIMITS OF THIS SITE.
- NO HISTORIC ELEMENTS ARE KNOWN TO OCCUR ON THIS PROPERTY.
- THERE IS APPROXIMATELY 1.6 ACRES OF FOREST WITHIN 100 FEET OF THE PROPERTY LIMITS.
- STEEP SLOPES ARE LOCATED AND SHOWN HEREON.
- THERE ARE NO KNOWN STATE CHAMPION TREES OR TREES 75% OF THE SIZE OF STATE CHAMPION TREES PRESENT ON SITE.
- WATERSHED NAME: MIDDLE PATUXENT RIVER
DNR LISTING: 2131106
- A FOREST STAND DELINEATION AND ENVIRONMENTAL RESOURCES ASSESSMENT WAS PERFORMED BY JOHN CANOLES OF ECO-SCIENCE PROFESSIONALS, INC., DATED MAY 2014.

NOTE:

THE EXISTING DRIVEWAY CUTS THROUGH A PORTION OF THE FOREST STAND IN THE SOUTHWEST CORNER OF THE PROPERTY. THERE IS A 0.20 ACRE PATCH THAT IS SEPARATED FROM THE BALANCE OF THE FOREST BY THE EXISTING DRIVEWAY. THOUGH FRAGMENTED, THIS AREA WAS CONSIDERED PART OF THE FOREST BASED ON ITS CANOPY CONNECTION/PROXIMITY TO THE LARGER FOREST RESOURCES ON SITE.

WETLAND DESCRIPTIONS		
WETLAND SYSTEM	COWARDIN CLASSIFICATION	DOMINANT VEGETATION
A	RAUB3/PFO1A	SYMPLOCARPUS FOETIDUS, IMPATIENS CAPENSIS, BOEHMERIA CYLINDRICA
B	PEM1C	SYMPLOCARPUS FOETIDUS, IMPATIENS CAPENSIS, BOEHMERIA CYLINDRICA, ONOCLEA SENEGALENSIS

SPECIMEN TREE CHART											
NO.	SIZE (IN. DBH/FEET HEIGHT)	CRZ	COMMON NAME	CONDITION	COMMENTS	NO.	SIZE (IN. DBH/FEET HEIGHT)	COMMON NAME	CONDITION	COMMENTS	
ST 1	36.5"	54.75'	TULIP POPLAR	GOOD CONDITION	TO BE REMOVED	ST 9	33"	49.5'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 2	45"	67.5'	TULIP POPLAR	TWIN STEMS	TO BE REMOVED	ST 10	32"	48'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 3	34"	51'	TULIP POPLAR	GOOD CONDITION	TO BE REMOVED	ST 11	30.5"	45.75'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 4	46"	69'	TULIP POPLAR	GOOD CONDITION	TO REMAIN	ST 12	34"	51'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 5	33.5"	50.25'	TULIP POPLAR	GOOD CONDITION	TO REMAIN	ST 13	32"	48'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 6	30"	45'	TULIP POPLAR	GOOD CONDITION	TO REMAIN	ST 14	33"	49.5'	TULIP POPLAR	GOOD CONDITION	TO BE REMOVED
ST 7	37"	55.5'	TULIP POPLAR	GOOD CONDITION	TO REMAIN	ST 15	33"	49.5'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 8	33"	49.5'	TULIP POPLAR	GOOD CONDITION	TO REMAIN	ST 16	34.5"	51.75'	WHITE OAK	GOOD CONDITION	TO BE REMOVED

PRELIMINARY FOREST CONSERVATION PLAN
SCALE: 1"=50'

NOTE:
FOR CLEAR DEFINITION OF LOTS AND OPEN SPACE REFER TO SHEET 7.

SOILS LEGEND				
SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
Gbr	GLAUCONITE LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
Gbc	GLAUCONITE LOAM, 8 TO 15 PERCENT SLOPES	B	.20	NO
GmC	CLEVELAND SILT LOAM, 8 TO 15 PERCENT SLOPES	C	.37	YES
Hg	HATBORO-CODORUS SILT LOAMS, 0 TO 3 PERCENT SLOPES	D	.37	NO
Mqd	MANOR-BANNERTOWN SANDY LOAMS, 15 TO 25 PERCENT SLOPES, ROCKY	B	.24	YES

-SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE
-HOWARD COUNTY SOILS MAP NUMBER 17 - CLARKSVILLE NE
NOTE:
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
PLANNING BOARD OF HOWARD COUNTY

P.B. case # 413
DATE: 6/23/15

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

PLANNING DIRECTOR

FSD PLAN PREPARED BY
John Canoles
JOHN CANOLES
DNR QUALIFIED PROFESSIONAL

OWNER
PETER D. CONGEDO
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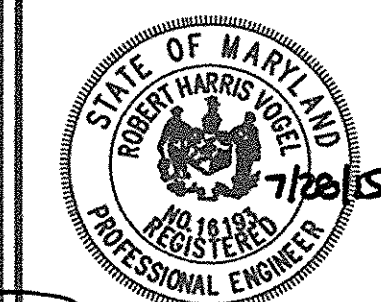
NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH PLAN
PRELIMINARY FOREST CONSERVATION PLAN

THE PRESERVE AT RIVER HILL
LOTS 1-8 AND OPEN SPACE LOTS 9-12

PARCEL 64 (L. 2326 / F. 517)
6281 TROTTER ROAD
CLARKSVILLE, MD 21029
PARCELS: 64
5TH ELECTION DISTRICT
DPZ REF: SEE GENERAL NOTE #4
HOWARD COUNTY, MARYLAND

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DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: JULY 2015
SCALE: AS SHOWN
W.O. NO.: 13-38

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE 09-27-2016

**HOWARD COUNTY
FOREST CONSERVATION WORKSHEET**

ZONED R-ED
NET TRACT AREA:

A. TOTAL TRACT AREA 5.67 AC.
B. AREA WITHIN 100 YEAR FLOODPLAIN 0.00 AC.
C. AREA IN PRESERVATION PARCEL 0.00 AC.
D. NET TRACT AREA 5.67 AC.

LAND USE CATEGORY
INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. ZONED R-ED

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

E. AFFOREST THRESHOLD 15% X 5.67 = 0.85 AC.
F. CONSERVATION THRESHOLD 20% X 5.67 = 1.13 AC.

EXISTING FOREST COVER:
G. EXISTING FOREST COVER = 4.10 AC. (FSD REPORT)
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD = 3.25 AC.
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 2.97 AC.

BREAK EVEN POINT:
(2 X I) + F = BREAK EVEN POINT (0 AC)
J. FOREST RETENTION WITH NO MITIGATION = 1.73 AC.
K. CLEARING PERMITTED WITHOUT MITIGATION = 2.37 AC.

PROPOSED FOREST CLEARING:
L. TOTAL AREA OF FOREST TO BE CLEARED = 2.08 AC.
M. TOTAL AREA OF FOREST TO BE RETAINED = 2.02 AC.

PLANTING REQUIREMENTS:
N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X 25) = 0.52 AC.
O. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD = 0.00 AC.
P. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F) = 0.89 AC.
R. TOTAL REFORESTATION REQUIRED (N+P-O) = 0.00 AC.
S. TOTAL AFFORESTATION REQUIRED = 0.00 AC.
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED = 0.00 AC.

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

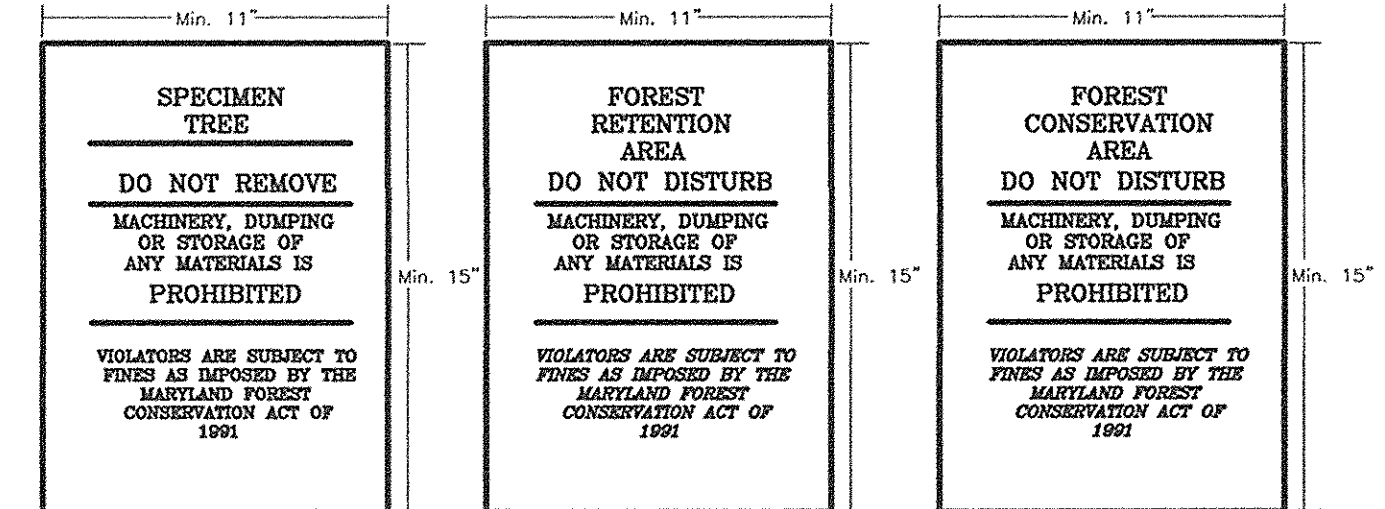
THE FOREST CONSERVATION OBLIGATION TO BE FULFILLED BY THE PLACEMENT OF 2.32 AC. INTO A RETENTION EASEMENT. - NO SURETY IS REQUIRED.

CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT NOTES FOR FOREST CONSERVATION

PRE-CONSTRUCTION PHASE
1. FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE, SUPER SILT FENCE, AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
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 PRUNE TREES AS REQUIRED. WATER ANY ROOT-PRUNED TREES 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 INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
3. IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.

POST-CONSTRUCTION PHASE
1. AT THE DIRECTION 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. DO NOT REMOVE SIGNS.

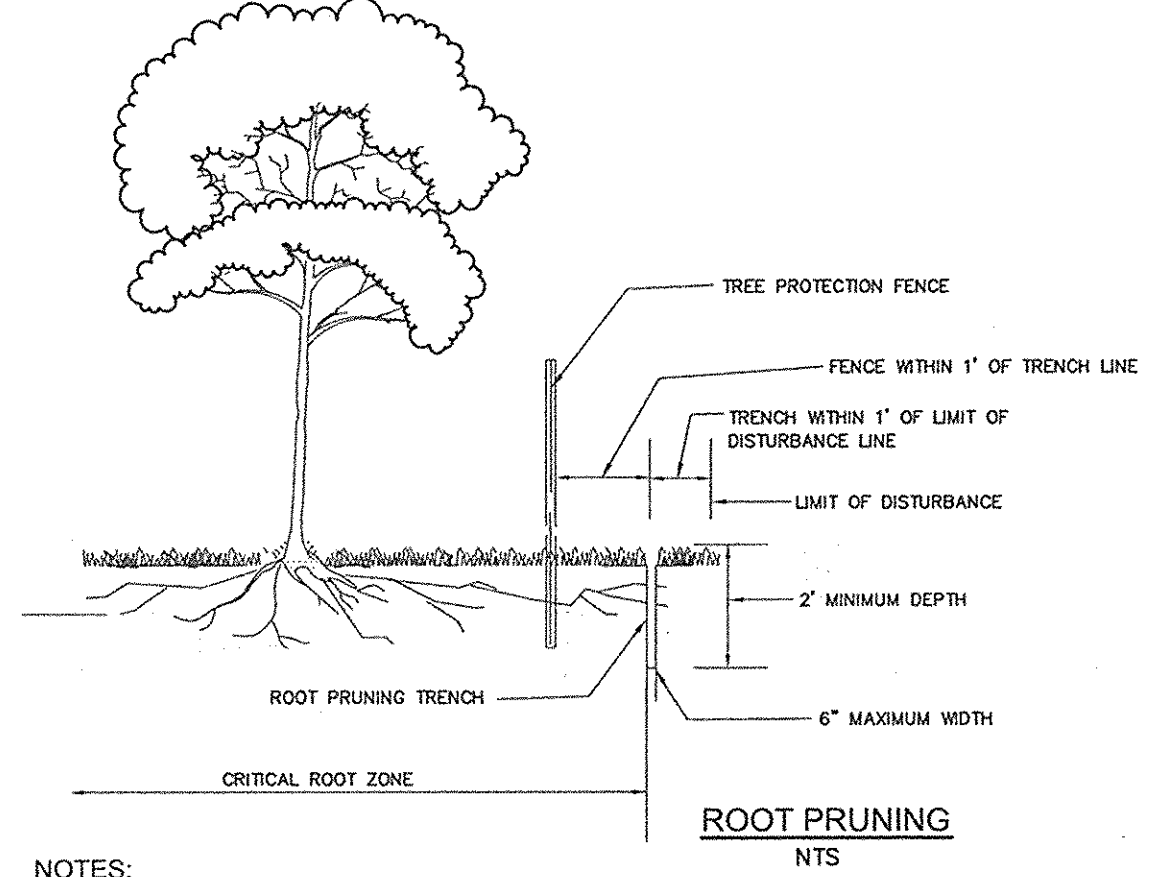


- NOTE:**
- BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
 - SIGNS TO BE PLACED APPROXIMATELY 50-100' FEET APART. CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
 - WHERE SIGNS ARE TO BE PLACED AT THE REAR OF PROPOSED LOTS, SPACING SHALL BE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

FOREST CONSERVATION AREA SIGNS

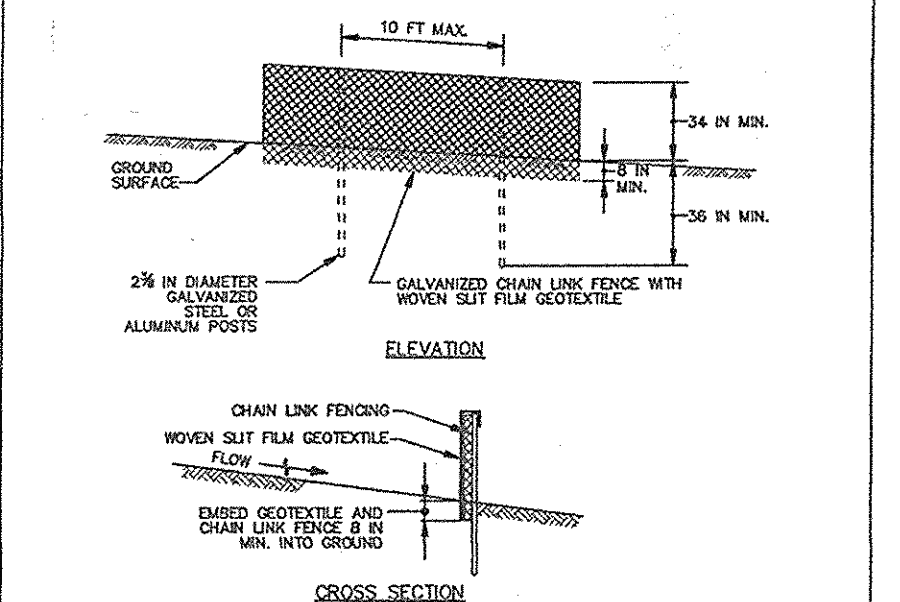
SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION

- 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; 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 OCCURED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.



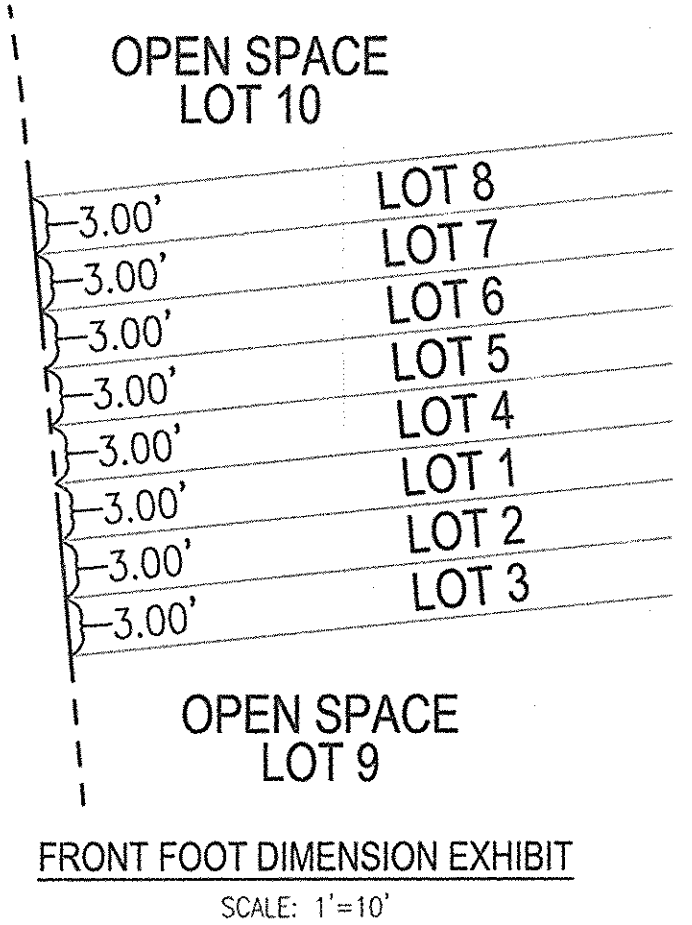
- NOTES:**
- RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREAS TO BE STAKED, FLAGGED AND/OR FENCED PRIOR TRENCHING.
 - EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
 - TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR ORGANIC SOIL.
 - ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.
- ST-4 - PROVIDE TREE PROTECTION FENCING PRIOR TO ANY GRADING OPERATIONS.
ST-11 - PROVIDE TREE PROTECTION FENCING AND CARRY OUT REQUIRED ROOT PRUNING PRIOR TO ANY GRADING OPERATIONS AND INSTALLATION OF UTILITIES.

DETAIL E-3 SUPER SILT FENCE



- CONSTRUCTION SPECIFICATIONS**
- INSTALL 2# 16 DIAMETER GALVANIZED STEEL POSTS OF 1/2" THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
 - FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2# MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
 - FASTEN WOVEN SIFT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSIDE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
 - WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
 - EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
 - REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES TOP OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.
 - REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES TOP OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT
NATURAL RESOURCES CONSERVATION SERVICE 6.7 WATER MANAGEMENT ADMINISTRATION



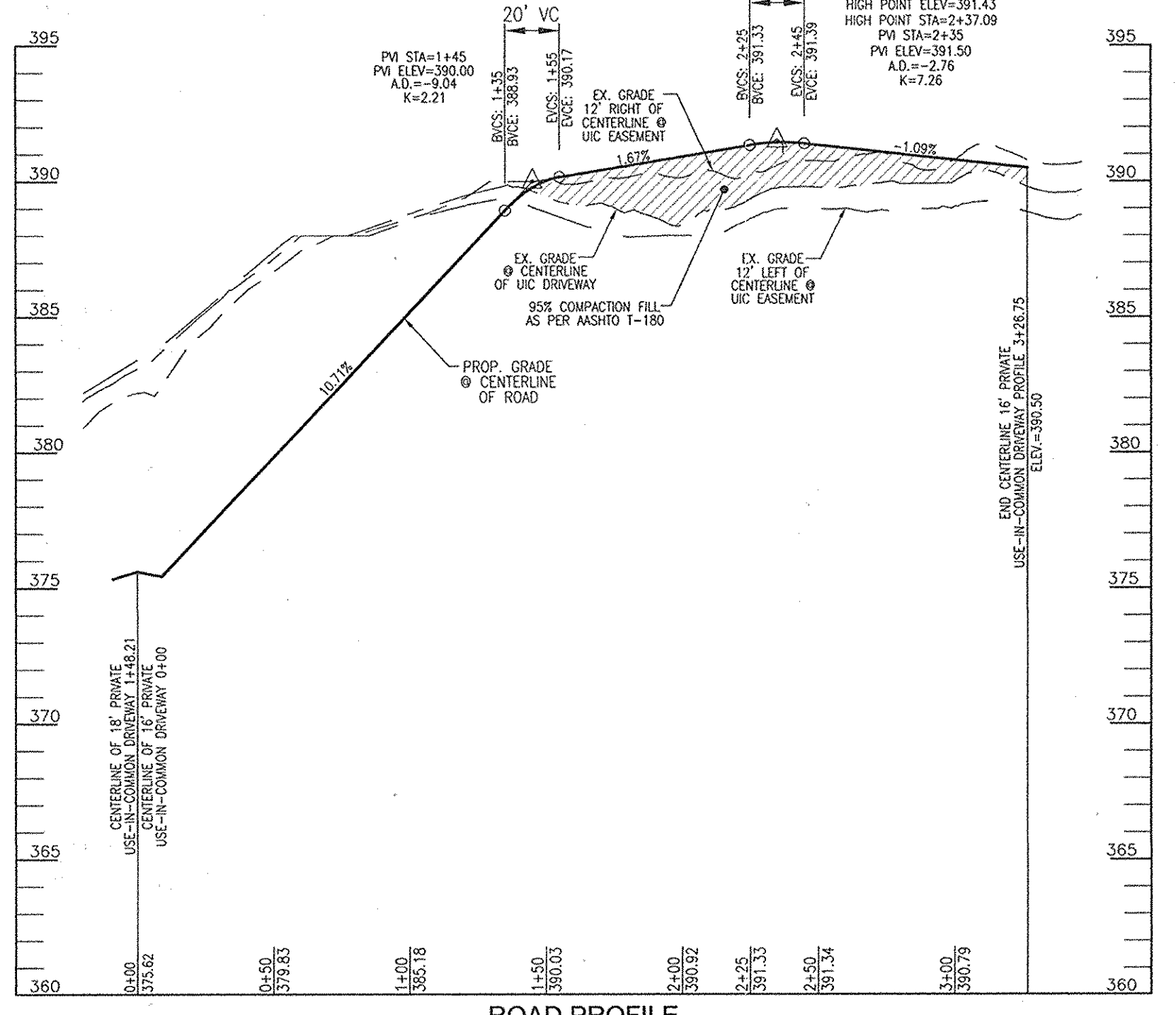
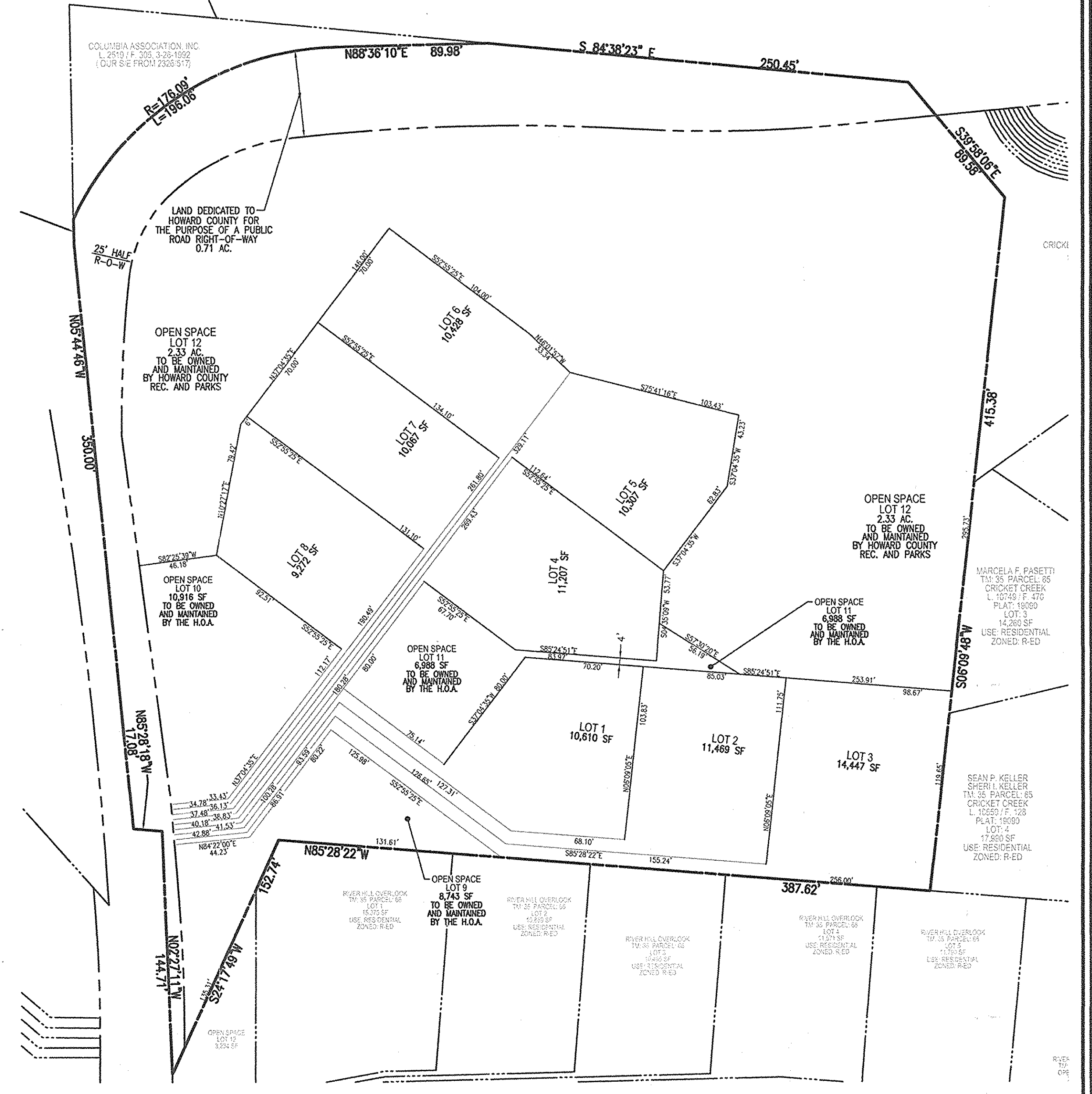
Proposed Forest Clearing Justification Note

The site contains approximately 4.10 acres of existing woods and there is approximately 1.65 acres of woods to be cleared in order to accommodate 8 proposed single family detached homes and the use-in-common driveway network. The development envelope was established by utilizing the previously cleared areas and avoiding the other environmental resources (steep slopes, wetlands and streams) to the greatest extent possible. There are six tulip poplar (specimen trees) to be removed and ten specimen trees to be retained (including a white oak). The tulip poplars are not considered to be a high value tree. In addition, the development area was designed to be buffered from Trotter Road (scenic road) to the greatest extent possible by the retention of existing trees.

The lots and driveways were designed to keep the development envelope as compact as possible. The outfall for the public sewer is also design to minimize clearing and avoid specimen trees. The use-in-common driveway/grades have been designed to minimize grading and to conform to the existing topography to the greatest extent possible.

SPECIMEN TREE CHART

NO.	SIZE (IN DBH/FEET RADII)	CRZ (IN DBH/FEET RADII)	COMMON NAME	CONDITION	COMMENTS	NO.	SIZE (IN DBH/FEET RADII)	CRZ (IN DBH/FEET RADII)	COMMON NAME	CONDITION	COMMENTS
ST 1	36.5"	54.75'	TULIP POPLAR	GOOD CONDITION	TO BE REMOVED	ST 9	33"	49.5'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 2	45"	67.5'	TULIP POPLAR	TWIN STEMS	TO BE REMOVED	ST 10	32"	48'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 3	34"	51'	TULIP POPLAR	GOOD CONDITION	TO BE REMOVED	ST 11	30.5"	45.75'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 4	46"	69'	TULIP POPLAR	GOOD CONDITION	TO REMAIN	ST 12	34"	51'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 5	33.5"	50.25'	TULIP POPLAR	GOOD CONDITION	TO REMAIN	ST 13	32"	48'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 6	30"	45'	TULIP POPLAR	GOOD CONDITION	TO REMAIN	ST 14	33"	49.5'	TULIP POPLAR	GOOD CONDITION	TO BE REMOVED
ST 7	37"	55.5'	TULIP POPLAR	GOOD CONDITION	TO REMAIN	ST 15	33"	49.5'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 8	33"	49.5'	TULIP POPLAR	GOOD CONDITION	TO REMAIN	ST 16	34.5"	51.75'	WHITE OAK	GOOD CONDITION	TO BE REMOVED



ROAD PROFILE
16' PRIVATE USE-IN-COMMON DRIVEWAY
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

LOT EXHIBIT
SCALE: 1"=50'

OWNER
PETER D. CONGEDO
CHERIE B. CONGEDO
6281 TROTTER ROAD
CLARKSVILLE, MD 21029
(410) 480-0023

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

NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH PLAN
PRELIMINARY FOREST CONSERVATION
AND SITE NOTES AND DETAILS
THE PRESERVE AT RIVER HILL
LOTS 1-8 AND OPEN SPACE LOTS 9 - 12
PARCEL 64 (L. 2326 / F. 517)
6281 TROTTER ROAD
CLARKSVILLE, MD 21029
HOWARD COUNTY, MARYLAND

TAX MAP: 35 GRID: 14
5TH ELECTION DISTRICT
DPZ REP'S: SEE GENERAL NOTE #4
PARCELS: 64
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8966

PROFESSIONAL CERTIFICATE
DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: JULY 2015
SCALE: AS SHOWN
W.O. NO.: 13-38

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2016.

7 SHEET OF 7

FSD PLAN PREPARED BY
John Canoles
JOHN CANOLES
DNR QUALIFIED PROFESSIONAL

APPROVED
PLANNING BOARD OF HOWARD COUNTY
PB case # 413
6/23/15
DATE

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
Nancy J. ...
PLANNING DIRECTOR
DATE: 6/23/15