

MICRO-BIORETENTION DETAIL (M-6)
NOT TO SCALE

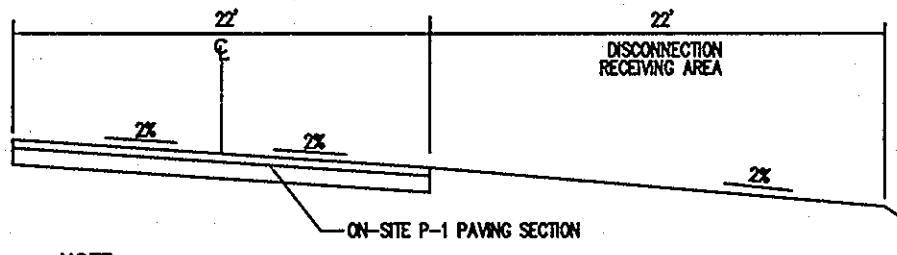
MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE

QUANTITY	NAME	MAXIMUM SPACING (FT.)
25	MIXED PERENNIALS	1.5 TO 3.0 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

MICRO-BIORETENTION									
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I
LOT 8	475.00	475.00	474.00	473.83	471.83	471.50	471.17	470.77	471.00

OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

- 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 AND PROVIDE 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 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.



DRIVEWAY CROSS SLOPE SECTION WITH NON-ROOFTOP DISCONNECTION
NOT TO SCALE

SPECIMEN TREE TABLE			
KEY	SPECIES, SIZE (DBH)	CONDITION	STATUS
T1	Black Cherry, 6"	-	TO BE REMOVED
T2	Black Cherry, 5.5"	-	-
T3	White Oak, 22"	FAIR CONDITION	-
T4	Black Oak, 29"	FAIR CONDITION-SOME LIMB DIEBACK	-
T5	Flowering Dogwood, 3"	-	-
T6	White Oak, 27"	-	-
T7	Japanese Maple, 6"	MULTI-STEM	-
T8	Black Oak, 17.18"	FAIR. LIMB DIEBACK	-
*ST9	Black Oak, 33"	POOR CONDITION-TRUNK ROT	-
T10	White Oak, 19.5"	-	-
T11	Black Oak, 3"	-	-
T12	Tulip Poplar, 20"	-	-
T13	Black Oak, 6"	-	-
T14	Black Gum, 11"	-	-
T15	White Oak, 22.5"	-	-
T16	White Oak, 15.5"	FAIR CONDITION-LIMB DIEBACK	-
T17	Mockernut Hickory, 17"	-	-
T18	Black Oak, 3"	OFFSITE	-
T19	Black Oak, 6"	OFFSITE	-
T20	Black Oak, 3"	OFFSITE	-
T21	Hemlock, 6"	OFFSITE	-

NOTE: Critical root zone shall be 1.5x1" DBH
* ONLY SPECIMEN TREE ON-SITE.

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED, DISCONNECTION OF NONROOFTOP RUNOFF (N-2)

- MAINTENANCE OF AREAS RECEIVING DISCONNECTION RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTOR OR DEVELOPMENT OF IMPERVIOUS AREA IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

LEGEND

- EXISTING 2' CONTOURS
- EXISTING 10' CONTOURS
- EXISTING TREE LINE
- SOIL LINES AND TYPES
- STABILIZED CONSTRUCTION ENTRANCE
- SILT FENCE
- SUPER SILT FENCE
- TREE PROTECTION FENCE
- LIMIT OF DISTURBANCE

BENCH MARKS

FCC TR-100
N. 569,151.969
E. 1,372,638.230

TRAV PK NAIL
N. 569,208.379
E. 1,372,936.210

GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-315-1890 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY (MISS UTILITY) AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY FREDERICK WARD ASSOCIATES DATED OCTOBER 25, 2013. TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY FREDERICK WARD ASSOCIATES ON OCTOBER 25, 2013 AND SUPPLEMENTED WITH HOWARD COUNTY GIS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED FOR 2' CONTOUR INTERVAL. 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. 31QC AND 31GD WERE USED FOR THIS PROJECT.
- PREVIOUS OPZ FILE NUMBERS: N/A.
- STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE H.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5 ARE BEING UTILIZED.
- THIS PROPERTY IS LOCATED IN THE METROPOLITAN DISTRICT. LOT IS TO BE SERVED PUBLIC WATER AND PRIVATE SEWERAGE.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- THE SUBJECT PROPERTY IS ZONED R-20 (PER DATE 10/06/2013 COMPREHENSIVE ZONING PLAN, 10. NO 100 YEAR FLOODPLAIN, STEEP SLOPES, FOREST, WETLANDS, STREAMS) AND/OR THESE UTILITIES EXIST ON-SITE.
- FOREST CONSERVATION OBLIGATIONS WILL BE MET AT THE SITE DEVELOPMENT PLAN STAGE OF THIS PROJECT. LOT IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202(b)(1)(i), SINCE THIS IS A DEVELOPMENT OF LAND THAT IS LESS THAN 40,000 SQUARE FEET.
- A SOIL BORING WILL BE REQUIRED FOR THIS PROJECT.
- APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBMISSION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FROM SUBMISSION WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED-LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
- AN ADMINISTRATIVE ADJUSTMENT HAS BEEN APPROVED FOR THE REDUCTION IN ZONING SETBACKS FROM 50' FRONT TO 40' FRONT. DECISION & ORDER DATED OCTOBER 17, 2013.

DESIGN NARRATIVE

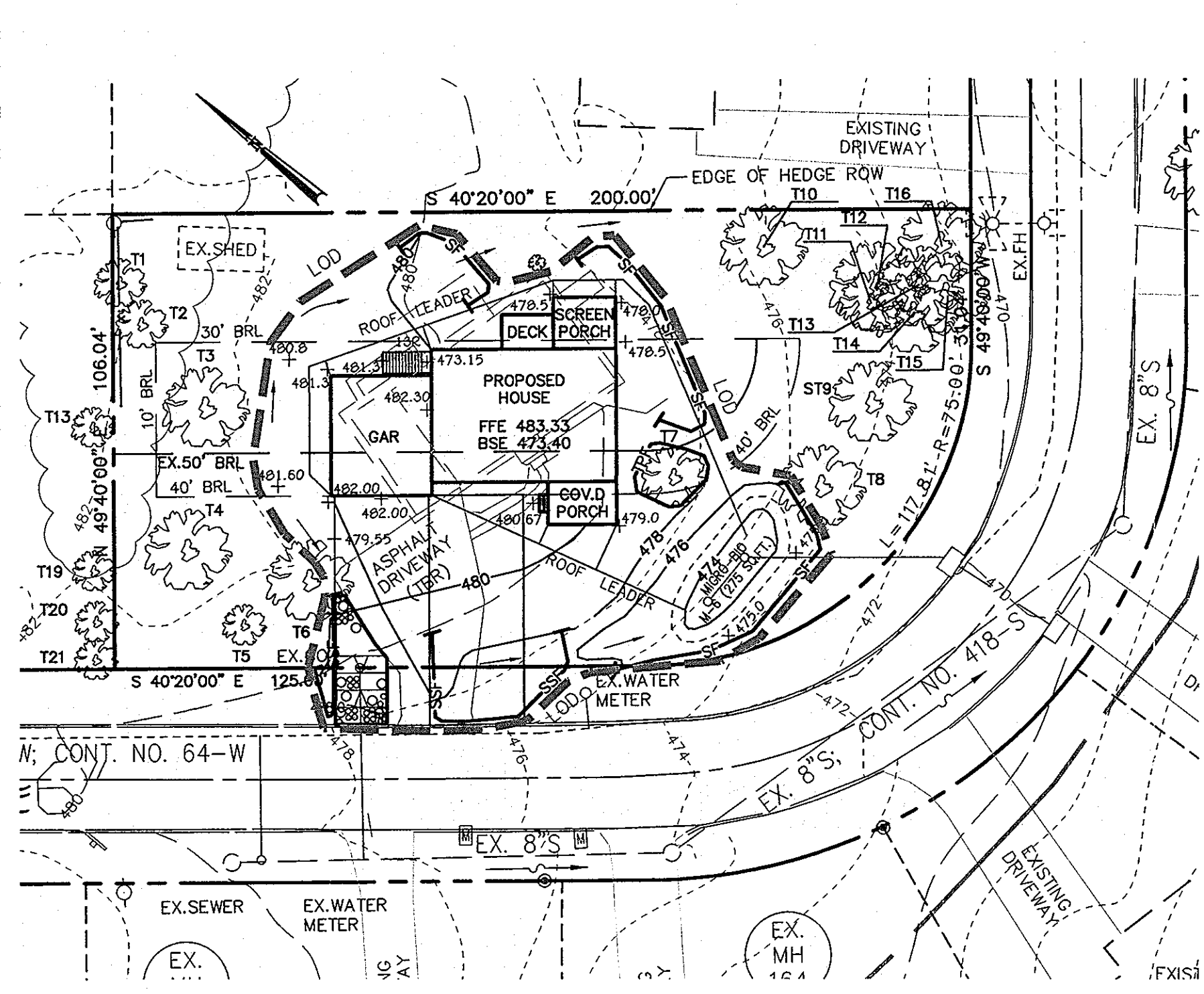
INTRODUCTION:
THIS REPORT PRESENTS HOW THE REDEVELOPMENT CRITERIA CAN BE MET ONSITE TO SATISFY THE SWM REQUIREMENTS PUT FORTH IN CHAPTER 5 OF THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S SWM DESIGN MANUAL.

GENERAL SITE CONDITIONS:
BONNIE ACRES, LOT 8 IS NEW DEVELOPMENT ON A SINGLE LOT THAT IS ZONED R-20. IT IS LOCATED ON TAX MAP 31, GRID 15, PARCEL NO. 413 OF THE HOWARD COUNTY, MARYLAND TAX MAP DATABASE SYSTEM. THE PROPERTY IS PART OF A LARGER SUBDIVISION RECORDED IN 1959 WHICH WAS ONE OF SEVERAL PLATS RECORDED FOR LOTS IN THE SUBDIVISION "BONNIE ACRES". THIS PLAT CONSISTED OF ELEVEN (11) BUILDABLE LOTS. THE EXISTING HOUSE ON LOT 8 IS TO BE REMOVED AND REPLACED WITH A NEW HOUSE. EXISTING PUBLIC WATER AND SEWER HOUSE CONNECTIONS WILL BE UTILIZED. THE PROPERTY IS LOCATED IN THE ELLICOTT CITY AREA OF HOWARD COUNTY IN THE WATERSHED OF BONNIE BRANCH OF THE LOWER NORTH BRANCH OF THE PATAPSCO RIVER (02130806). THIS PROPERTY IS RECTANGULAR IN SHAPE AND RUNOFF FROM THE SITE IS FROM NORTHWEST TO SOUTHEAST WHERE RUNOFF DRAINS TO AN EXISTING INLET IN BONNIE ACRES DRIVE WHERE IT TRAVELS THRU THE STORM DRAIN SYSTEM AND EVENTUALLY OUTFALLS TO GROUND THEN TO AN UNNAMED TRIBUTARY OF BONNIE BRANCH. ONE (1) SPECIMEN TREE EXISTS ON-SITE, AND ALTHOUGH NOT PROPOSED TO BE REMOVED, IS IN POOR CONDITION. ALSO, ACCORDING TO A FIELD INSPECTION CONDUCTED BY ECO-SCIENCE PROFESSIONALS (ESP) DATED OCTOBER 31, 2013, NO WETLANDS ARE PRESENT ON-SITE. THE WEB SOIL SURVEY SHOWS SOILS ON THE SITE CONSIST OF URBAN LAND-CHILLUM-BELTSVILLE COMPLEX (UCB), TYPE "D" SOILS. THE RUNOFF FROM THE ROOF OF THE PROPOSED HOUSE IS TO BE DIRECTED THROUGH ROOF LEADERS TO A MICRO-BIORETENTION WHICH WILL OUTFALL INTO THE EXISTING INLET IN BONNIE ACRES DRIVE. RUNOFF FROM THE PROPOSED DRIVEWAY WILL FLOW OVERLAND AND BE TREATED BY NON-ROOFTOP DISCONNECTION.

- NATURAL RESOURCE PROTECTION:**
ENVIRONMENTALLY SENSITIVE AREAS DO NOT EXIST ON-SITE, THEREFORE NO EFFORTS TO PROTECT NATURAL RESOURCES ON-SITE WILL BE REQUIRED.
- MAINTENANCE OF NATURAL FLOW PATTERNS:**
IT IS THE INTENT OF THE PROPOSED DESIGN TO DISCHARGE RUNOFF SIMILAR TO THE CHARACTERISTICS AND DIRECTION OF THIS SITE PRIOR TO ANY OF THE PROPOSED IMPROVEMENTS.
- REDUCTION OF IMPERVIOUS AREAS THROUGH BETTER SITE DESIGN, ALTERNATIVE SURFACES AND NONSTRUCTURAL PRACTICES:**
THE DESIGN OF THIS PROJECT UTILIZES A SINGLE DRIVEWAY IN CLOSE PROXIMITY TO THE EXISTING DRIVEWAY. NON-STRUCTURAL PRACTICES AS PERMITTED IN CHAPTER 5, ONE (1) MICRO-BIORETENTION AREA (M-6) AND NON-ROOFTOP DISCONNECTION (N-2) WILL BE USED TO ADDRESS ESD TO THE MEP REQUIREMENTS.
- INTEGRATION OF EROSION AND SEDIMENT CONTROLS INTO STORMWATER STRATEGY:**
SINCE THIS IS A SMALL DRAINAGE AREA (SITE IS 0.5 ACRES), SUPER SILT FENCE, AND EROSION CONTROL MATTING WILL BE UTILIZED FOR EROSION & SEDIMENT CONTROL. THERE IS NO DIRECT DISCHARGE OF RUNOFF TO A STREAM. ALL SITE RUNOFF WILL DISCHARGE TO THE EXISTING GROUND OR DIRECTLY TO THE EXISTING INLET PRIOR CONSTRUCTION. ALSO, ACCORDING TO A FIELD INSPECTION CONDUCTED BY ECO-SCIENCE PROFESSIONALS (ESP) DATED OCTOBER 31, 2013, NO WETLANDS ARE PRESENT ON-SITE. THE WEB SOIL SURVEY SHOWS SOILS ON THE SITE CONSIST OF URBAN LAND-CHILLUM-BELTSVILLE COMPLEX (UCB), TYPE "D" SOILS. THE RUNOFF FROM THE ROOF OF THE PROPOSED HOUSE IS TO BE DIRECTED THROUGH ROOF LEADERS TO A MICRO-BIORETENTION WHICH WILL OUTFALL INTO THE EXISTING INLET IN BONNIE ACRES DRIVE. RUNOFF FROM THE PROPOSED DRIVEWAY WILL FLOW OVERLAND AND BE TREATED BY NON-ROOFTOP DISCONNECTION.
- IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES TO THE MAXIMUM EXTENT PRACTICABLE (MEP):**
THE FULL REQUIRED ESD VOLUME IS BEING PROVIDED.
- REQUEST FOR A WAIVER TO FOREST CONSERVATION:**
NO WAIVERS RELATED TO STORMWATER MANAGEMENT ARE BEING REQUESTED IN THIS PROJECT.

SOILS LEGEND		
SOIL	NAME	CLASS
UCB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes	D

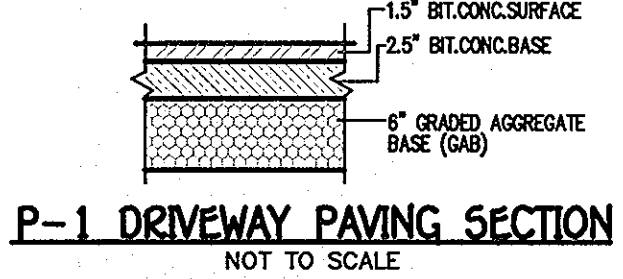
NOTES:
* Hydric soils and/or contains hydric inclusions
** May contain hydric inclusions
† Generally only within 100-year floodplain areas



SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 0.46 AC.±
- LIMIT OF DISTURBED AREA = 0.25 AC.±
- PRESENT ZONING DESIGNATION = R-20 (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- PROPOSED USE: RESIDENTIAL
- PREVIOUS HOWARD COUNTY FILES: N/A.
- TOTAL AREA OF FLOODPLAIN LOCATED ON SITE = 0.00 AC.±
- TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0.00 AC.±
- TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC.±
- TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0.00 AC.±
- TOTAL AREA OF EXISTING FOREST = 0.00 AC.±
- TOTAL AREA OF FOREST TO BE RETAINED = 0.00 AC.±
- TOTAL AREA OF LOTS / BUILDABLE PARCELS = 0.46(1) AC.±
- TOTAL GREEN OPEN AREA = 0.38 AC.±
- TOTAL IMPERVIOUS AREA = 0.09 AC.±
- TOTAL AREA OF ERODIBLE SOILS = 0.00 AC.±

PRELIMINARY SEDIMENT CONTROL PLAN
SCALE: 1"=30'



PROFESSIONAL CERTIFICATION

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. 38386, EXPIRATION DATE: 01/12/2016.

Stephanie Jantz 2/17/14
Signature Of Professional Engineer DATE



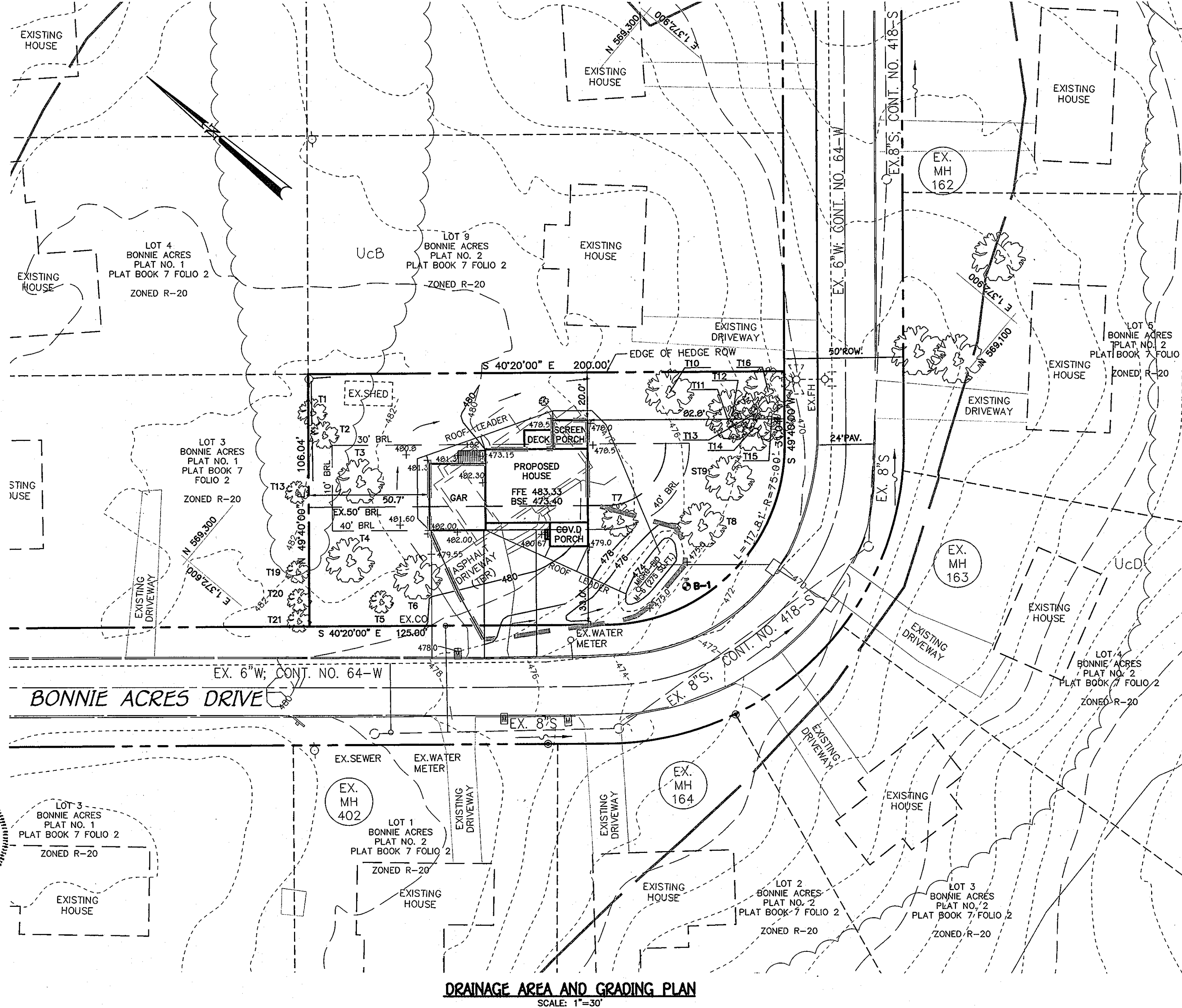
FISHER, COLLINS & CARTER, INC.
CONSULTING ENGINEERS, ARCHITECTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE: SUITE 10072 BALTIMORE NATIONAL PLACE
ELICOTT CITY, MARYLAND 21114
(410) 461-2899

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kate Danahoe 2/26/14
Chief, Division of Land Development Date

Chad Enoch 2-27-14
Chief, Development Engineering Division Date

DEVELOPER/OWNER
JASON SCOTT STEINHORN & CAROL JEAN SCOTT
5148 BONNIE ACRES DRIVE
ELICOTT CITY, MARYLAND 21143
770-906-6358



DRAINAGE AREA AND GRADING PLAN
SCALE: 1"=30'

ENVIRONMENTAL CONCEPT PLAN
LOT 8
BONNIE ACRES
5148 BONNIE ACRES DRIVE

Zoned: R-20
Tax Map No. 31; Grid No. 15; Parcel No. 413
Second Election District - Howard County, Maryland
Date: December 23, 2013 Scale: As Shown
Sheet 1 of 1