

**GENERAL NOTES**

- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS OTHERWISE SPECIFIED.
- 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: 1-410-994-4021
  - HOWARD COUNTY BUREAU OF UTILITIES: 410-313-2366
  - AT&T CABLE LOCATION DIVISION: 1-800-393-3553
  - B.G.A.E. CO. CONTRACTOR SERVICES: 410-480-4620
  - B.G.A.E. CO. UNDERGROUND DAMAGE CONTROL: 410-787-4620
  - STATE HIGHWAY ADMINISTRATION: 410-311-5533
- THIS FINAL PLAN IS SUBJECT TO THE FOLLOWING DPZ FILES:
  - WP-99-139, WP-04-096, F-05-040, CONTRACT NO. 14-3529-D, EOP-15-030, AND WP-16-160.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING INC., DATED JANUARY 2014 AND ENGINEERING DRAWINGS OF RECORDED OFFSITE TOPOGRAPHY AND HOWARD COUNTY ZONING, DATED JANUARY 2014.
- THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED JANUARY 2014.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THE SUBJECT PROPERTY.
- STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDE MICRO-BIORETENTION (M-B) FACILITIES, BIO-SWALES (M-B) AS WELL AS GRAVEL TRENCHES ALONG THE USE-IN-COMMON DRIVEWAY. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
  - WATER FOR THIS PROJECT SHALL BE FROM AN EXTENSION OF CONTRACT NO. 14-3529-D.
  - SEWER FOR THIS PROJECT SHALL BE FROM THE EXTENSION OF CONTRACT NO. 14-3529-D.
  - WATER AND SEWER SERVICE WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 16.122.9 OF THE HOWARD COUNTY CODE. ALLOCATIONS WILL BE GRANTED AT THE TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION OF THIS PROJECT MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WORKER PETITION, OR BUILDING AND GRADING PERMITS.
- THE SUBJECT PROPERTY IS ZONED "R-20" IN ACCORDANCE WITH THE OCTOBER 2013 COMPREHENSIVE ZONING PLAN AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNTY BILL 75-2003.
- THIS SITE IS NOT LOCATED IN A 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 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 ON THE HOWARD COUNTY COORDINATE CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 37C3 & 38A4 WERE USED FOR THIS PROJECT.
- NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITATS WERE OBSERVED ON THE PROPERTY.
- THERE IS NO "FLOODPLAIN" LOCATED ON SITE AS PER FEMA DIRM MAPS APPROVED BY FEMA AND EFFECTIVE FOR COUNTY DEVELOPMENT RESTRICTIONS AS OF MAY 6, 2013.
- SEDMIMENT AND EROSION CONTROL SHALL BE PROVIDED FOR THIS SITE.
- THERE ARE TWO AREAS OF WETLANDS PRESENT ON THE SITE. SYSTEM "A" RUNS THROUGH THE CENTER OF THE SITE AND SYSTEM "B" ENCROACHES ON THE EASTERN SIDE OF THE PROPERTY. PER ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANALES, AUGUST 2014.
- FOREST STAND DELINEATION PLAN PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANALES, IN AUGUST 2014. MR. CANALES NOTED 4 SPECIMEN TREES ON THE PROJECT SITE. THIS PLAN PROPOSAL REQUIRES THE REMOVAL OF SPECIMEN TREE #1.
- A TOTAL OF 3 RESIDENTIAL LOTS AND 1 OPEN SPACE LOT, AS WELL AS 1 NON-BUILDABLE BULK PARCEL ARE PROPOSED UNDER THIS PLAN.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, OR IN FOREST CONSERVATION EASEMENT AREAS UNTIL THE PROPER PERMITS AND PERMITS HAVE BEEN OBTAINED.
- APPROXIMATELY 0.15 AC. OF WETLANDS AND THEIR BUFFERS WILL BE IMPACTED BY THE CONSTRUCTION OF THE SITE.
- A NOISE STUDY HAS BEEN PROVIDED WITH THIS PLAN.
- A TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THIS PROJECT IS EXEMPT FROM AN ADEQUATE ROADS FACILITIES TEST STUDY, AS IT IS A MINOR SUBDIVISION.
- THERE ARE NO AREAS OF 25% STEEP SLOPES OR 15% - 24.99% MODERATE SLOPES GREATER THAN 20,000 S.F. LOCATED ON SITE.
- FOREST CONSERVATION REQUIREMENTS AS SET FORTH IN SECTION 16.102 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 A RETENTION EASEMENT. THE REMAINING FOREST CONSERVATION OBLIGATIONS FOR THIS FINAL PLAN WILL BE MET BY A FEE-IN-LIEU PAYMENT OF \$2,614.00 MADE OUT TO HOWARD COUNTY FOREST CONSERVATION FUND FOR THE 0.08 ACRE RESTORATION TREATMENT FOR THE PROJECT. FEE-IN-LIEU (0.08 AC. OR 3,485 S.F.) @ \$31.75 = \$2,614.00.
- A LANDSCAPE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$7,950.00 FOR THE REQUIRED TO SHADE TREES, 32 EVERGREEN TREES AND 5 SHRUBS, SHALL BE POSTED WITH THE GRADING PERMIT.
- UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6-1 TO ADDRESS THE REQUIREMENTS OF SECTION 16.124.4.00.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
  - a) WIDTH - 10 FEET (SEE NOTE 39)
  - b) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1 1/2" MIN.)
  - c) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% CHANGE AND MINIMUM OF 45' TURNING RADII.
  - d) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
  - e) DRAINAGE 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 RESERVE ALL WEATHER USE.
- RUXTON DRIVE IS CLASSIFIED AS A LOCAL ROAD. SITE ACCESS SHALL BE VIA A USE-IN-COMMON DRIVEWAY. EXISTING DRIVEWAY ENTRANCE SHALL BE UTILIZED.
- LOTS 5&6 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.
- FLAG AND PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE FOR LOTS 5&6 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 RUXTON DRIVE AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES. THE R1-1 (STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DRIVEWAY MUST BE INSTALLED BEFORE THE BASE PAVEMENT IS COMPLETED.
- A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DRIVEWAY ACCESS POINT ONTO RUXTON DRIVE AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES. THE R1-1 (STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DRIVEWAY MUST BE INSTALLED BEFORE THE BASE PAVEMENT IS COMPLETED.
- SCAM POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST. CERTIFIED TEST PITS HAVE BEEN PROVIDED TO VERIFY THAT GROUNDWATER AND ROCK ARE NOT PRESENT AT ROAD GARDEN AND MICRO-BIORETENTION LOCATIONS. OPEN TEST PITS WERE OBSERVED BY ROBERT H. VOGEL ENGINEERING ON JULY, 2015 AND INFORMATION REGARDING THE FINDINGS IS LOCATED IN THE SWM REPORT AND ON THE TEST PIT PLAN.
- IN ACCORDANCE WITH SECTION 16.121(2)(C) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE OPEN SPACE REQUIREMENTS FOR THIS R-20 PROJECT (20,000 SF LOT) IS 6% OF GROSS AREA (4.20 AC. GROSS AREA x 6% = 0.252 AC.).
- A FIRE-SUBMISSION COMMUNITY MEETING WAS HELD ON AUGUST 24, 2015 AT THE ELKBRIDGE LIBRARY MEETING ROOM.
- MINI'S ARE REQUIRED FOR THIS PROJECT. THE BUILDER WILL PAY A FEE-IN-LIEU TO ADDRESS THIS REQUIREMENT.
- THIS PROJECT IS SUBJECT TO WP-16-160. ON AUGUST 3, 2016, THE PLANNING DIRECTOR APPROVED THE REQUEST TO WAIVE SECTION 16.120(a)(7) TO ALLOW FOR THE REMOVAL OF ONE (1) SPECIMEN TREE WHICH HAS BEEN IDENTIFIED TO BE LOCATED WITHIN THE BOUNDARY OF THIS SITE AND SECTION 16.116(a)(1) WHICH PROHIBITS GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES WITHIN 25 FEET OF A WETLAND AND THEIR BUFFERS. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
  - REMOVAL OF ONE SPECIMEN TREE AND PROVIDE TWO (2) 3" CALIPER NATIVE TREES ALONG THE NORTHERN PROPERTY LINE IN THE WOODY OF RANSON PROPERTY SUBDIVISION 29 (SECTION 16.120 (a)(7)).
  - THE DEVELOPER IS REQUIRED TO OBTAIN ALL REQUIRED AUTHORIZATIONS AND PERMITS FROM THE U.S. ARMY CORPS OF ENGINEERS AND/OR THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
  - NO DISTURBANCE IS PERMITTED BEYOND THE LIMIT OF DISTURBANCE AS SHOWN ON THE ALTERNATIVE COMPLIANCE EXHIBIT UNLESS IT CAN BE DEMONSTRATED BY THE APPLICANT TO BE JUSTIFIED. BEST MANAGEMENT PRACTICES FOR GRADING AND DRIVEWAY CONSTRUCTION SHALL BE USED BY THE CONTRACTOR TO LIMIT THE DISTURBANCE (SECTION 16.116(a)(1)).
- THIS PROJECT IS SUBJECT TO WP-17-019. ON OCTOBER 11, 2016, THE PLANNING DIRECTOR APPROVED THE REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.127(c)(4)(i) WHICH REQUIRES A SHARED USE-IN-COMMON DRIVEWAY FOR ALL PROPOSED RESIDENTIAL INFILL LOTS, AND FROM SECTIONS 16.144(i)(3) WHICH REQUIRES THE SUBMISSION OF ADDITIONAL INFORMATION WITHIN 45 DAYS OF THE REQUEST. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
  - THE REVISED PLANS MUST BE SUBMITTED WITHIN 30-DAYS, ON OR BEFORE NOVEMBER 10, 2016.
  - ON THE FINAL PLAN (F-16-085) AND ALL SUBSEQUENT PLANS AND/OR PLATS, PROVIDE A BRIEF DESCRIPTION OF ALTERNATIVE COMPLIANCE, WP-17-019, AS A GENERAL NOTE TO INCLUDE REQUESTS, SECTIONS OF REGULATIONS, GENERAL ACTION AND DATE.

**SITE ANALYSIS DATA CHART**

A. TOTAL PROJECT AREA:	4.20 AC.
B. AREA OF PLAN SUBMISSION:	4.20 AC.
C. AREA OF WETLANDS AND BUFFERS:	56,594 S.F. OR 1.30 AC.
D. AREA OF STREAMS AND THEIR BUFFERS:	19,394 S.F. OR 0.45 AC.
E. NET PROJECT AREA:	4.20 AC.
F. AREA OF FLOODPLAIN:	0 S.F. OR 0.00 AC.
G. AREA OF FOREST:	4.20 AC. (REFER TO PSD)
H. AREA OF STEEP SLOPES (25% & GREATER):	0 S.F. OR 0.00 AC.
I. AREA OF MODERATE SLOPES (15% - 24.99%):	23,037 S.F. OR 0.53 AC.
J. ERODIBLE SOILS:	0 S.F. OR 0.00 AC.
K. LIMIT OF DISTURBED AREA:	2.08 AC.
L. PROPOSED USES FOR SITE AND STRUCTURES:	
M. RESIDENTIAL SINGLE FAMILY DETACHED (SFD) HOMES	
N. GREEN OPEN AREA:	3.85 AC.
O. PROPOSED IMPERVIOUS AREA:	0.35 AC.
P. PRESENT ZONING DESCRIPTION:	R-20
Q. OPEN SPACE REQUIRED:	0.90 ACRES (30%)
R. TOTAL NUMBER OF UNITS ALLOWED:	8
S. TOTAL NUMBER OF UNITS PROPOSED:	3
T. DPZ FILE REFERENCES:	WP-99-139, WP-04-095, F-05-040, CONT. 14-3529-D, EOP-15-030

# FINAL PLAN

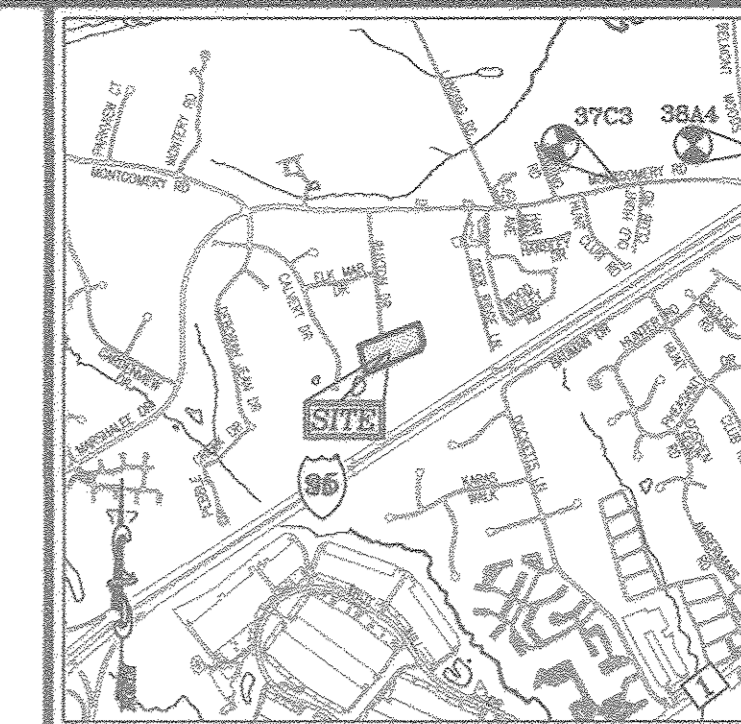
## FERRON PROPERTY

### LOTS 5 - 7, OPEN SPACE LOT 8 AND NON-BUILDABLE BULK PARCELS 'A' AND 'B' HOWARD COUNTY, MD

NOTE:  
- HOUSES MAY NOT BE BUILT USING THIS PLAN.  
- HOWARD SCD STANDARD SEDIMENT CONTROL PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR THIS PROJECT.

**BENCHMARKS**

HOWARD COUNTY BENCHMARK 37C3  
N 562916.003 E 1384856.679 ELEV.: 258.497'  
HOWARD COUNTY BENCHMARK 38A4  
N 562977.621 E 1386288.112 ELEV.: 224.176'



VICINITY MAP  
SCALE: 1"=2000'  
ADC MAP COORDINATE: 35/B2

**LEGEND:**

PROPERTY LINE	RIGHT-OF-WAY LINE	EX. PUBLIC GRADING & RESTORATION EASEMENT
ADJACENT PROPERTY LINE	EXISTING CURB AND GUTTER	EX. PRIVATE SWM DRAINAGE & UTILITY EASEMENT
EXISTING EDGE OF PAVING	EXISTING WETLANDS	EX. PUBLIC TREE MAINTENANCE EASEMENT
EXISTING WETLAND BUFFER	EXISTING STREAM BUFFER	EX. PUBLIC SEWER & UTILITY EASEMENT
EXISTING STREAM	EXISTING UTILITY POLE	EX. 18" R/W FOR ACCESS AND EGRESS TO STATE R/W FOR ACCESS, WATER, SEWER, SWM DRAINAGE & UTILITY EASEMENT FOR LOTS 5 & 6
EXISTING LIGHT POLE	EXISTING SANITARY MANHOLE	PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 5-7, OPEN SPACE LOT 8 AND THE FUTURE RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'B' AND LOT 4 FERRON PROPERTY
EXISTING TREE	EXISTING WATER LINE	PUBLIC SEWER & UTILITY EASEMENT
EXISTING TREE	EXISTING TREE LINE	PRIVATE DRAINAGE & UTILITY EASEMENT
SPECIMEN TREES	EXISTING METAL FENCE	PUBLIC FOREST CONSERVATION EASEMENT
PROPOSED TREE LINE	EX. PUBLIC WATER SEWER STREAM DRAINAGE & UTILITY EASEMENT	PROP. WETLAND DISTURBANCE
EX. FOREST CONSERVATION EASEMENT	EX. FOREST CONSERVATION EASEMENT	PROP. BUFFER DISTURBANCE
EX. PUBLIC WATER SEWER & UTILITY EASEMENT	EX. PRIVATE USE-IN-COMMON DRIVEWAY EASEMENT	

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

**OWNER/DEVELOPER**

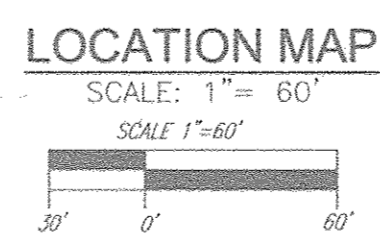
DONALD FERRON  
5864 DEER RIDGE LANE  
ELKBRIDGE, MARYLAND 21075

**MINIMUM LOT SIZE CHART**

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
5	25,170 SF	2,159 SF	23,011 SF	20,000 SF
6	26,532 SF	1,962 SF	24,570 SF	20,000 SF
7	41,853 SF	N/A	N/A	20,000 SF

**COORDINATE TABLE**

NO.	NORTH	EAST
1745	560946.3447	1382163.2286
1746	561194.1981	1382729.2956
10026	561239.1848	1382095.2354
10036	561469.1743	1382704.3873
10038	561267.1802	1382759.1626



**SHEET INDEX**

DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 7
SITE LAYOUT AND LANDSCAPE PLAN	2 OF 7
SITE DETAILS	3 OF 7
SOILS MAP, GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN	4 OF 7
STORM WATER MANAGEMENT DRAINAGE AREA MAP	5 OF 7
FOREST CONSERVATION PLAN, NOTES, AND DETAILS	6 OF 7
FOREST CONSERVATION NOTES AND DETAILS	7 OF 7

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 3/8/2017  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 3-20-17  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 3-20-17  
CHIEF, DIVISION OF LAND DEVELOPMENT

**NOTES:**  
1. ALL WATER CONNECTIONS SHALL BE 1-1/2" WITH 3" OUTSIDE METER SETTINGS, UNLESS OTHERWISE NOTED. REFER TO HOWARD COUNTY DETAILS W-3.28 OUTSIDE METER SETTINGS.

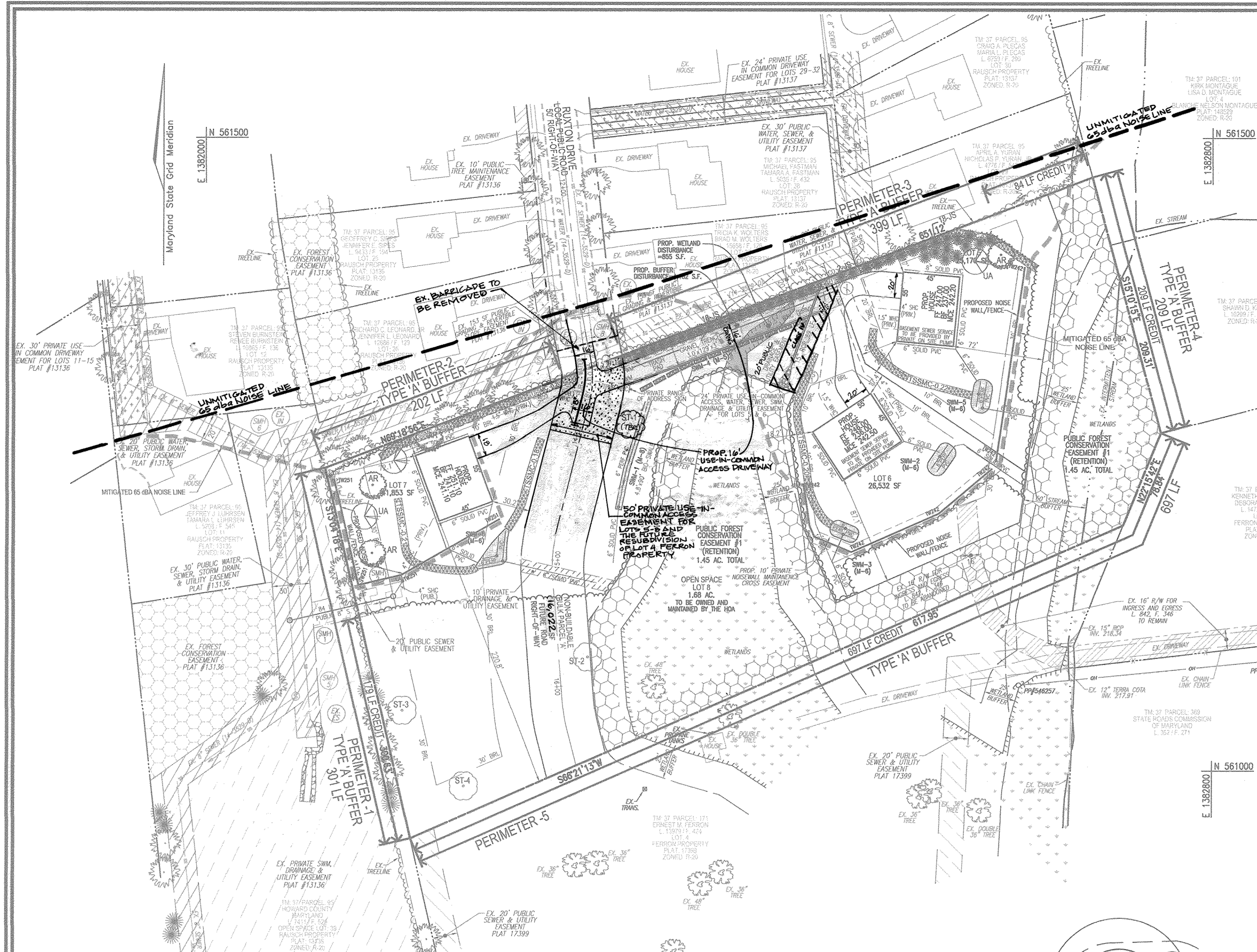
**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET, ELLICOTT CITY, MD 21043  
TEL: 410.461.7666  
FAX: 410.461.8961

DESIGN BY: RHV  
DRAWN BY: KC  
CHECKED BY: RHV  
DATE: DECEMBER 2016  
SCALE: AS SHOWN  
W.O. NO.: 13-28

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. 16183, EXPIRATION DATE: 09-27-2016

1 OF 7





### SCHEDULE A: PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES AND ROADWAYS					TOTAL
	1	2	3	4	5	
PERIMETER/FRONTAGE DESIGNATION	A	A	B	A	A	
LANDSCAPE TYPE						
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	301'	202'	399'	209'	697'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES 179'	NO	YES 84'	YES 209'	YES 697'	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED (LF REMAINING)	122'	202'	315'	0'	0'	10
SHADE TREES	1:60 2	-	1:60 5	1:60 0	1:60 0	32
EVERGREEN TREES	-	-	1:10 32	-	-	7
SHRUBS	-	-	-	-	-	38*
NUMBER OF PLANTS PROVIDED						
SHADE TREES	2	3	2	0	0	7
EVERGREEN TREES	-	-	-	-	-	38*
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-	-	-
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-	-	-

NOTE: \* 6 ADDITIONAL EVERGREENS ARE BEING SUBSTITUTED FOR 3 SHADE TREES ALONG PERIMETER 3

### TRASH PAD LANDSCAPING

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

### LANDSCAPE NOTES

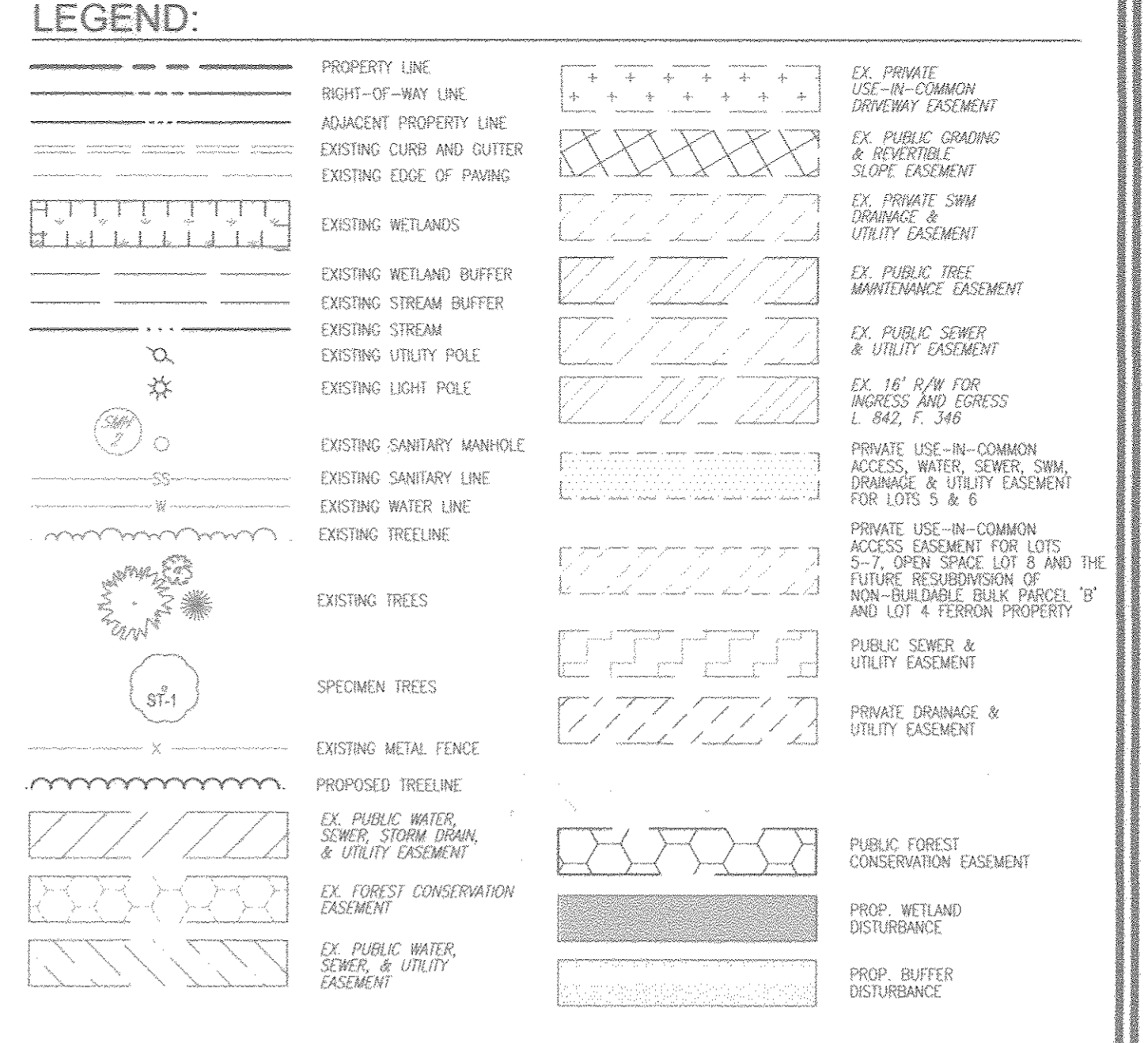
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR 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 BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
- PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.

### GENERAL NOTES:

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 18.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED FOR THIS SUBMISSION.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED WITH THE GRADING PERMIT, IN THE AMOUNT OF \$7,550.00 FOR THE REQUIRED 10 SHADE TREES, 32 EVERGREEN, AND 5 SHRUBS.

### LANDSCAPE SCHEDULE NOTE:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD 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.



### LANDSCAPE SCHEDULE

SYMBOL	KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
☼	AR	4	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2"-3" CAL.	B & B
☼	UA	3	ULMUS AMERICANA 'VALLEY FORGE' VALLEY FORGE AMERICAN ELM	2 1/2"-3" CAL.	B & B
☼	JS	38	JUNIPERUS SCOPULARUM 'BLUE ARROW' JUNIPER 'BLUE ARROW'	10" HGT.	B & B

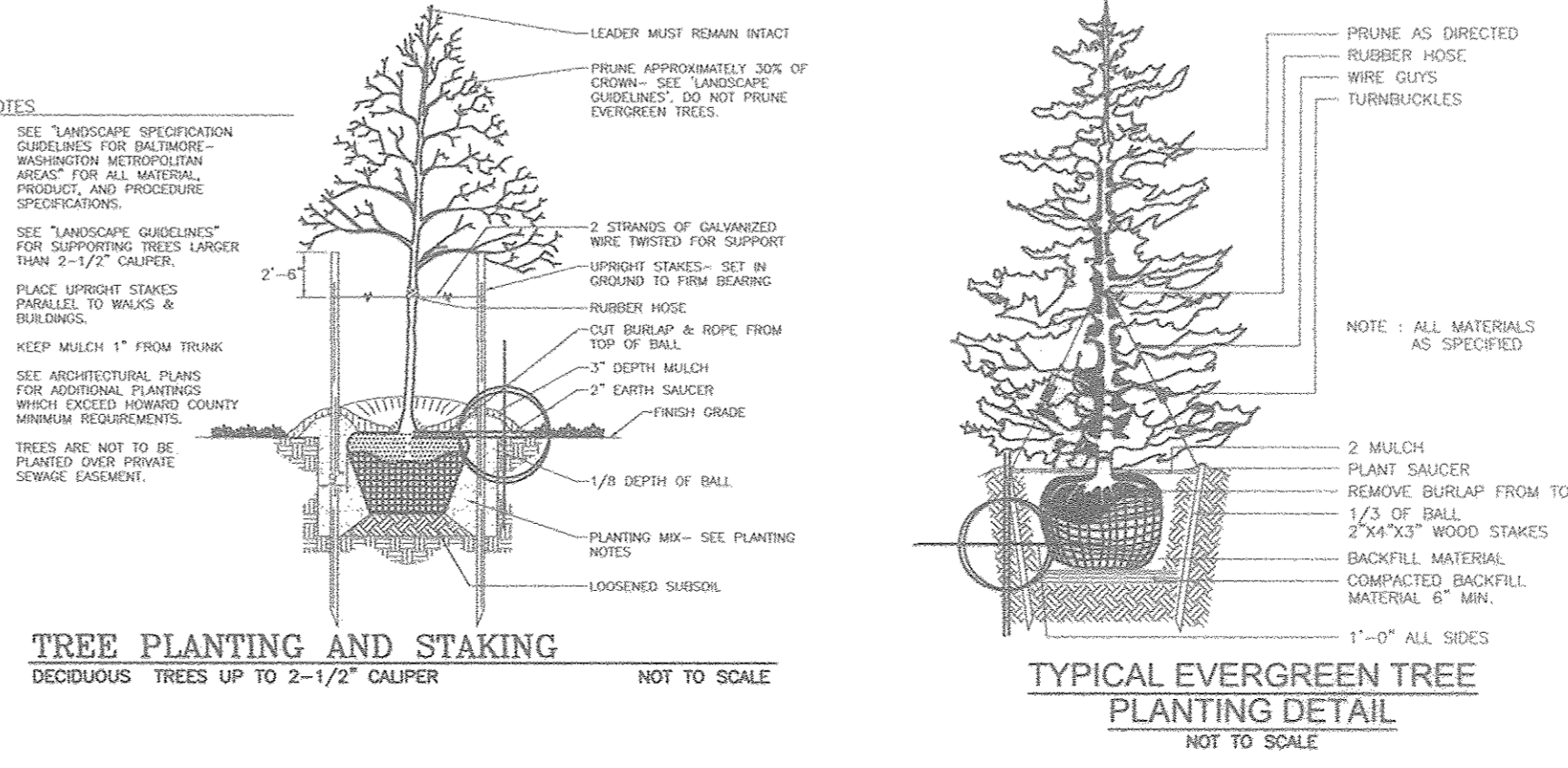
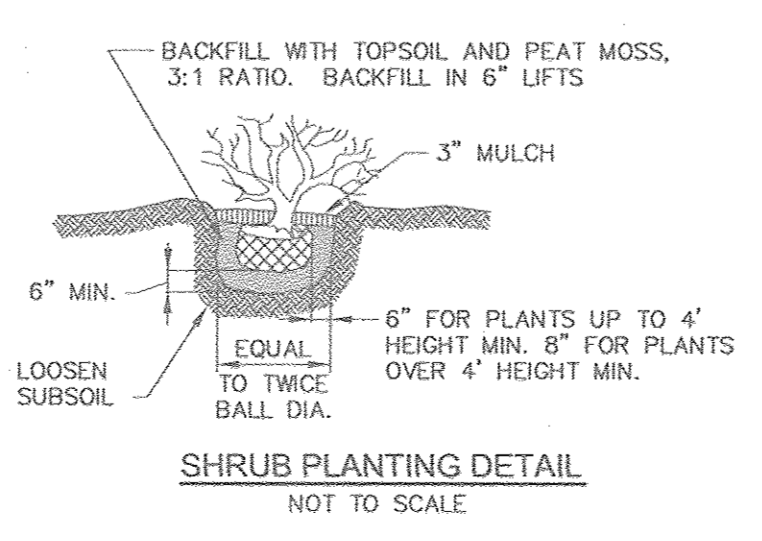
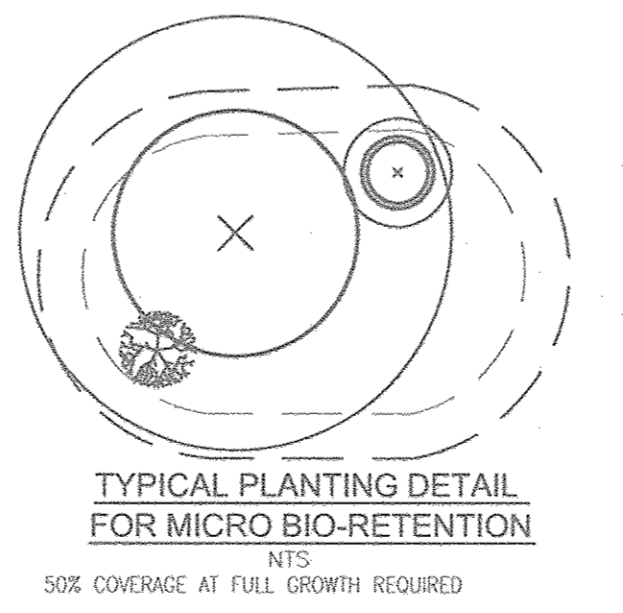
### SPECIMEN TREE CHART

NO.	SIZE	CRZ	COMMON NAME	CONDITION	COMMENTS
ST 1	30"	45'	RED MAPLE	FAIR CONDITION, LIMB DIEBACK OBSERVED	TO BE REMOVED
ST 2	35.5"	53.25'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 3	40"	60'	TULIP POPLAR	ESTIMATED SIZED, COVERED IN GREEN BRUSH	TO REMAIN
ST 4	30.5"	45.75'	TULIP POPLAR	GOOD CONDITION	TO REMAIN

### "MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY 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.
- MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0.229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDV SUMMARY.

MBR FACILITY	SURFACE AREA	REQUIRED PLANTINGS	PLANTINGS
SWM #2	370 SF	7	1 SPICEBUSH 2 INKBERRY 3 AMERICAN HIGHBUSH CRANBERRY
SWM #3	273 SF	5	1 SPICEBUSH 2 INKBERRY 2 AMERICAN HIGHBUSH CRANBERRY
SWM #5	355 SF	6	1 SPICEBUSH 2 INKBERRY 3 AMERICAN HIGHBUSH CRANBERRY
SWM #6	419 SF	7	1 SPICEBUSH 2 INKBERRY 3 AMERICAN HIGHBUSH CRANBERRY



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

M. Munnis  
 CHIEF, BUREAU OF HIGHWAYS  
 3/8/2017  
 DATE

J. E. ...  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 3-20-17  
 DATE

OWNER/DEVELOPER  
 DONALD FERRON  
 5864 DEER RIDGE LANE  
 ELKBRIDGE, MARYLAND 21075

NO. 1 REVISION: REVISE PUBLIC 50' EASEMENT TO PRIVATE USE IN COMMON, REVISE NOTES 06/18/18

FINAL PLAN  
 SITE LAYOUT AND LANDSCAPE PLAN  
 FERRON PROPERTY  
 LOTS 5 - 7, OPEN SPACE LOT 8 AND  
 NON-BUILDABLE BULK PARCELS 'A' AND 'B'  
 A RESUBDIVISION OF FERRON PROPERTY LOT 3, PLAT 17399

TAX MAP 37 BLOCK 12  
 1ST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

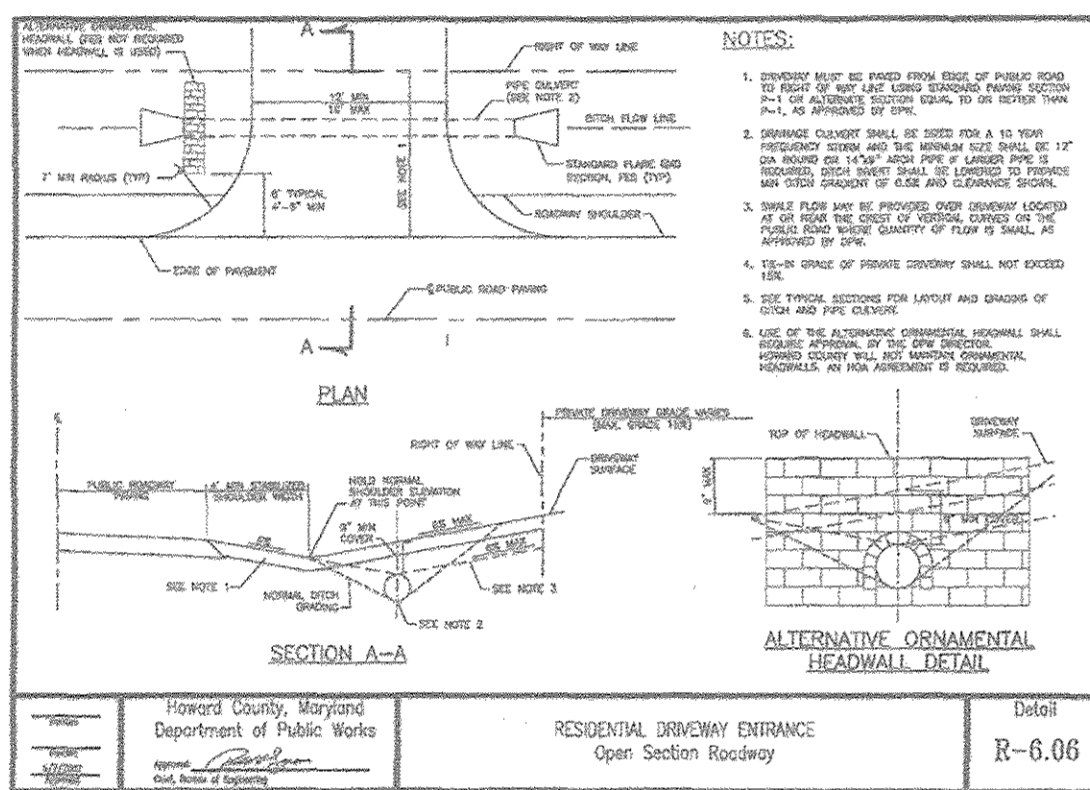
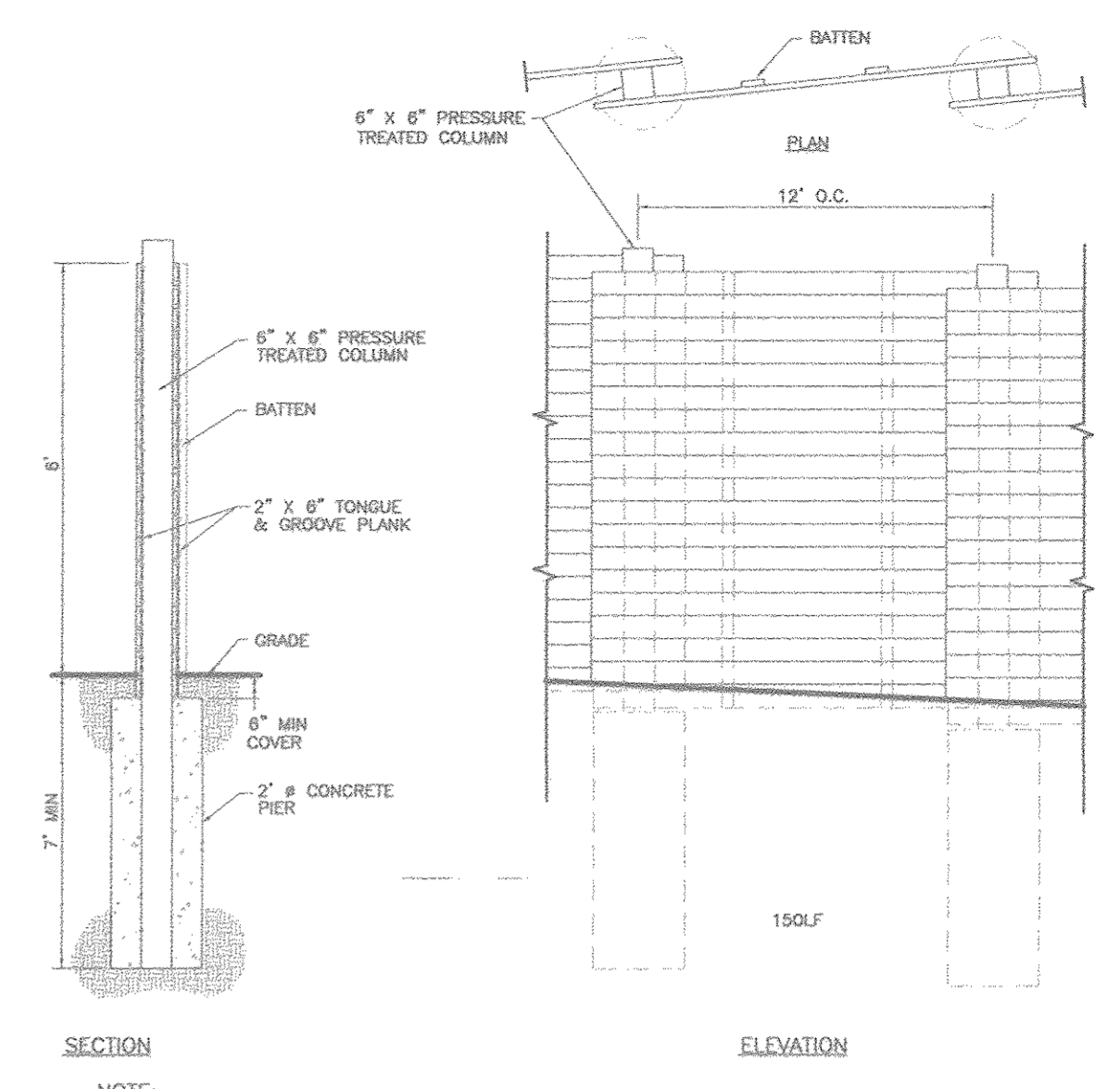
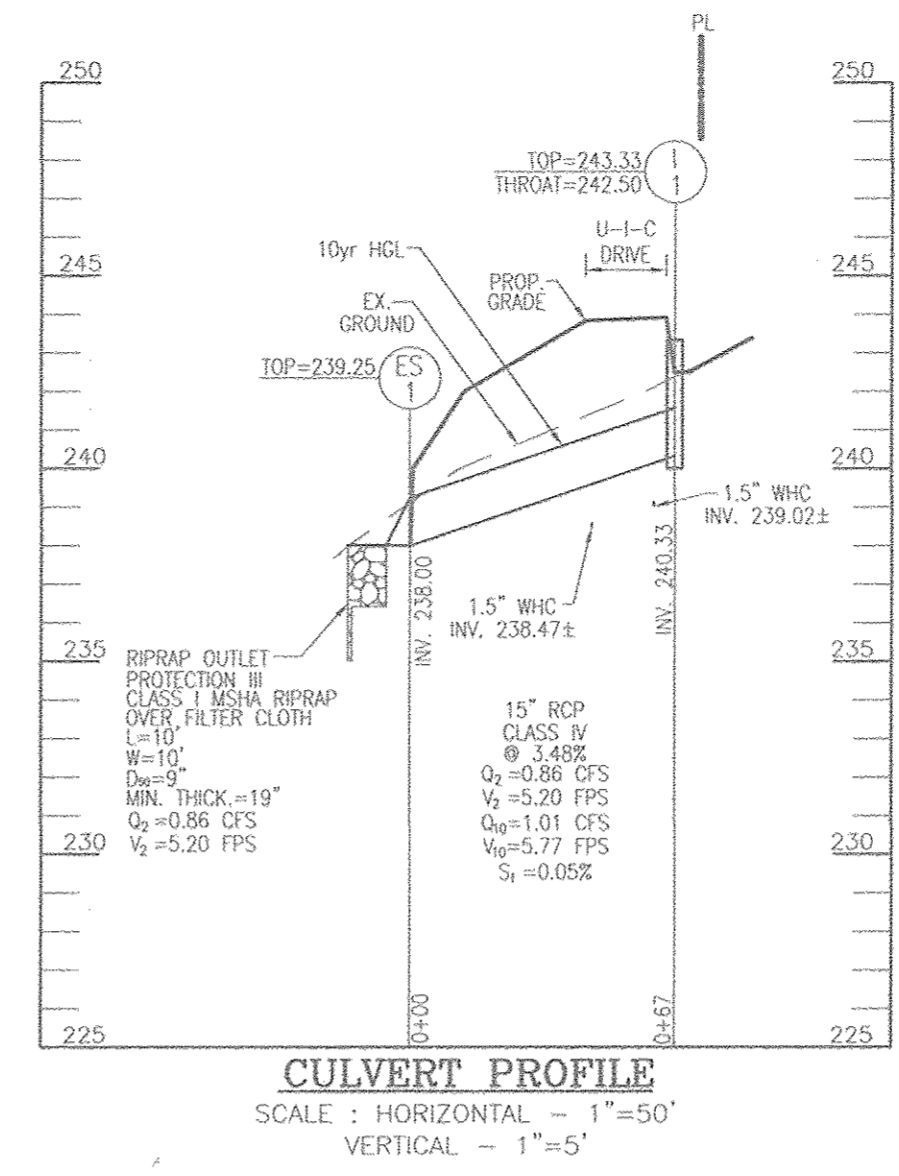
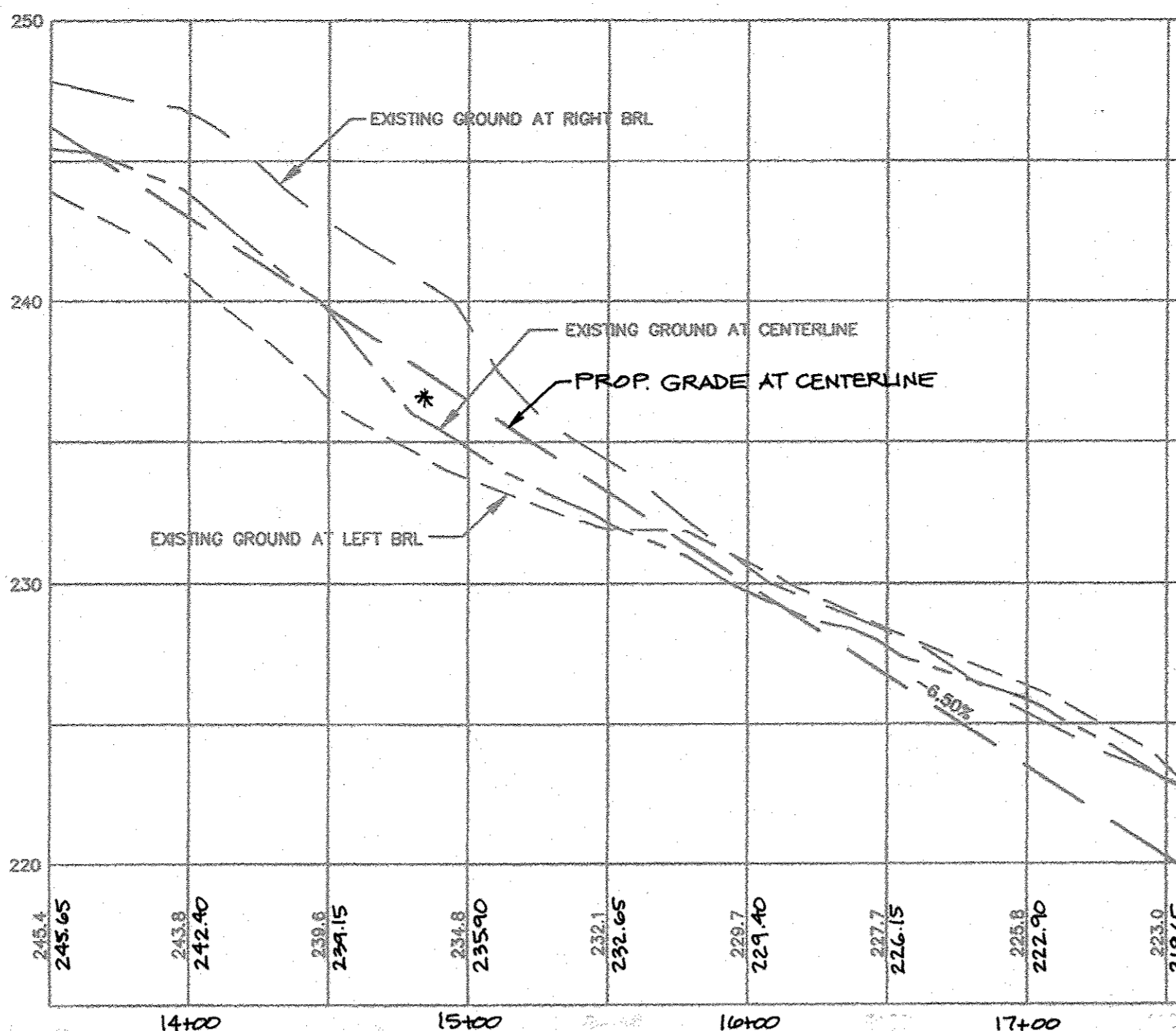
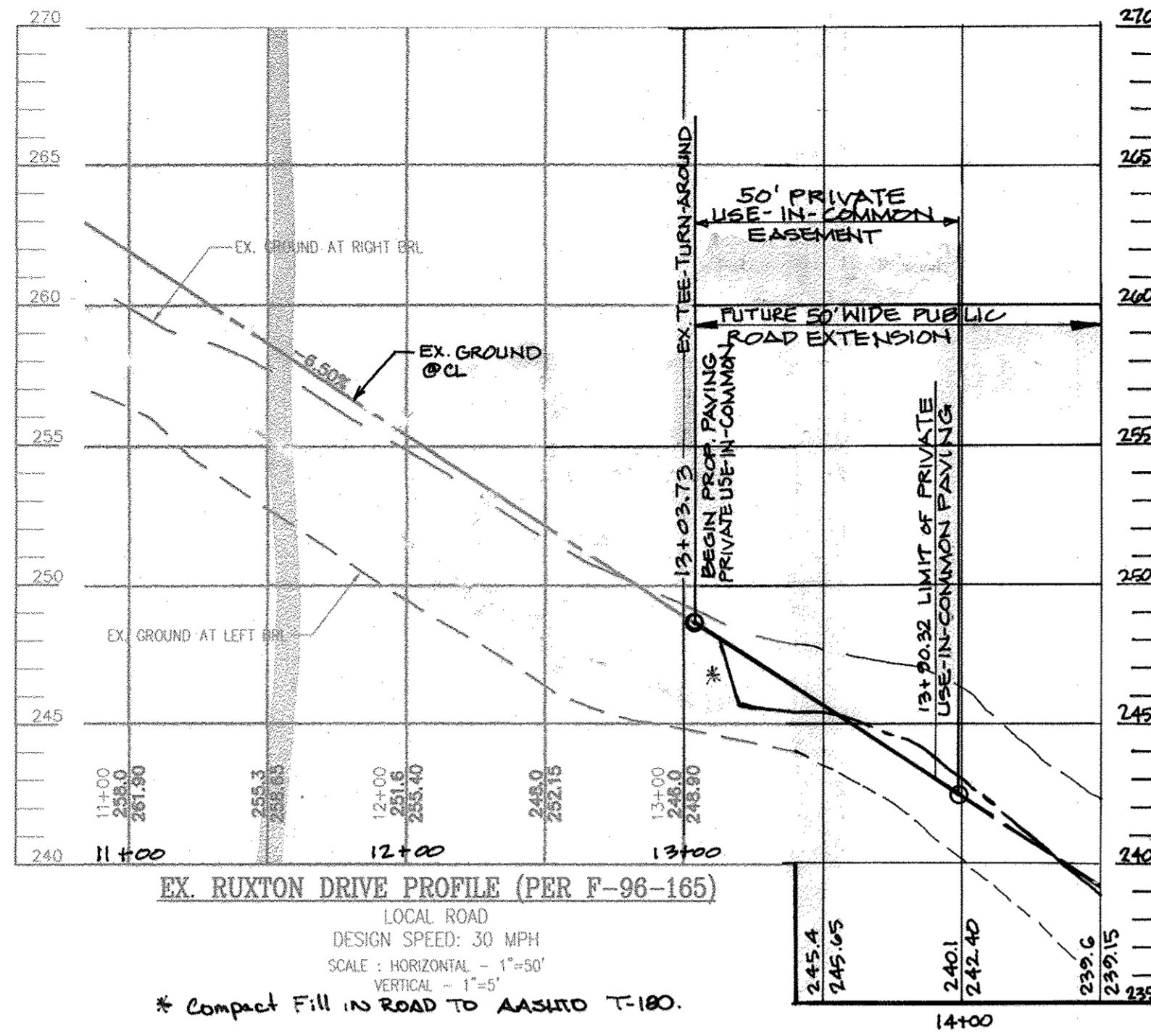
**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 TEL: 410.461.7666  
 FAX: 410.461.8961

DESIGN BY: RHY  
 DRAWN BY: KG  
 CHECKED BY: RHY  
 DATE: DECEMBER 2016  
 SCALE: AS SHOWN  
 W.O. NO.: 13-28

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

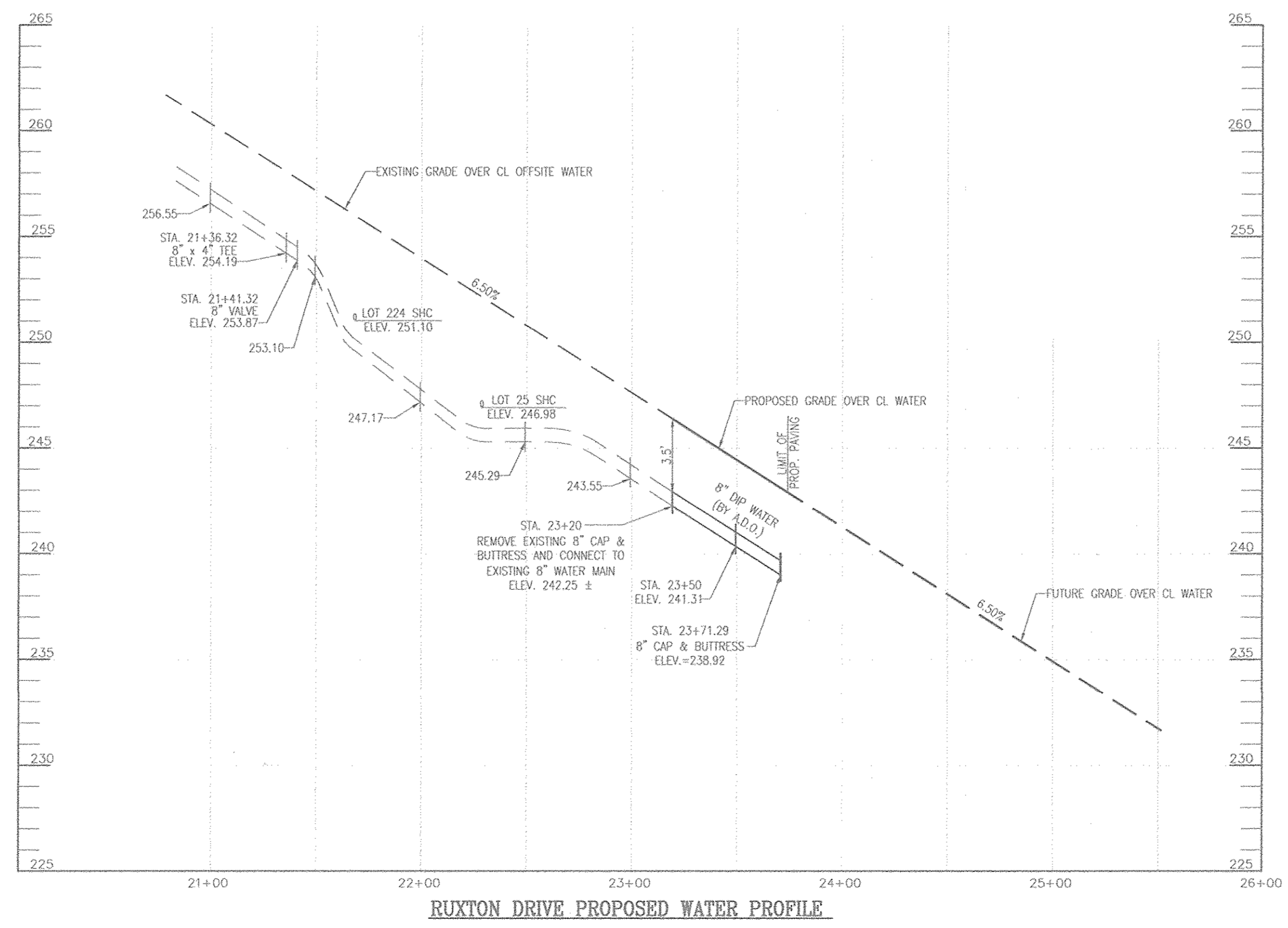
2 SHEET OF 7





SECTION NUMBER	NO. AND SIZE OF PIPES	OUTLETING METHOD (SLOPE)	MIN. MAX. MIN. G.S.	MIN. MAX. MIN. G.S.	MIN. MAX. MIN. G.S.
P-1	15" RCP CLASS IV	0.5% SLOPE	1.0	1.0	1.0
P-2	6" PERF. PVC	0.5% SLOPE	0.5	0.5	0.5
P-3	6" PERF. PVC CLEANOUT	0.5% SLOPE	0.5	0.5	0.5
P-4	6" SOLID PVC	0.5% SLOPE	0.5	0.5	0.5

**PAVING SECTIONS**  
 Detail  
 R-2.01



STR #	STRUCTURE	NORTHING	EASTING	TOP	THROAT	INV. IN #1	INV. OUT	REMARKS/DETAIL #
I-1	TYPE 'D' INLET	N 561,383.91	E 1,382,487.65	243.33	242.50	240.33	-	HO. CO. DET. D-4.11
ES-1	15" CONC. END SECTION	N 561,319.49	E 1,382,465.05	-	-	238.00	-	HO. CO. DET. D-5.41

PIPE SIZE	TYPE	TOTAL LENGTH
15"	RCP CLASS IV	69 LF
6"	PERF. PVC	840 LF
6"	SOLID PVC	290 LF
6"	PERF. PVC CLEANOUT	20 VF
6"	SOLID PVC CLEANOUT	20 VF

**OWNER/DEVELOPER**  
 DONALD FERRON  
 5864 DEER RIDGE LANE  
 ELK RIDGE, MARYLAND 21075

**1 REVERSE LIMITS OF PRIVATE USE-IN-COMMON EASEMENT + FUTURE PUB. ROW 06/18/18**

**FINAL PLAN**  
**SITE DETAILS**  
**FERRON PROPERTY**  
 LOTS 5 - 7, OPEN SPACE LOT 8 AND  
 NON-BUILDABLE BULK PARCELS 'A' AND 'B'  
 A RESUBDIVISION OF FERRON PROPERTY LOT 3, PLAT 17399

TAX MAP 37, BLOCK 12  
 1ST ELECTION DISTRICT  
 ZONED: R-20  
 PARCEL 171  
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
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DESIGN BY: RHY  
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**3 SHEET OF 7**

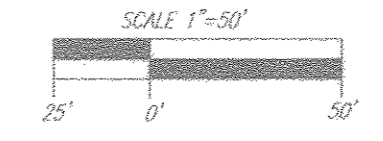
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*Melvin* 3/8/2017  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chad Clark* 3-20-17  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Kevin L. Lough* 3-20-17  
 CHIEF, DIVISION OF LAND DEVELOPMENT





TEST PIT DATA						
TEST PIT #	APPROX EXIST GROUND ELEV	APPROX PROP GROUND ELEV	INVERT FACILITY / PRACTICE	MIN. DEPTH TO GROUNDWATER	BOTTOM PIT	REQ PIT DEPTH*
B-1	246.50	246.00	242.00	4	238.0	8.5
B-2	236.60	236.00	234.00	4	230.0	6.5
B-3	237.00	235.00	231.00	4	227.0	10.0
B-4	235.00	234.00	230.00	4	226.0	9.0

\*\* PLEASE NOTE DEPTH OF ROCK REFUSAL / GROUNDWATER, IF ENCOUNTERED

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



HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTOR (CEN 200), 401-311-8879, PRIOR TO THE START OF CONSTRUCTION. THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOURS NOTICE TO BE GIVEN AT THE FOLLOWING STAGES:
  - PROTECT TO THE START OF EARTH DISTURBANCE.
  - UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
  - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING LINE.
  - PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
- OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THE APPROVAL OF THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED TO, ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THEREOF.
- TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. PERMANENT STABILIZATION (SEC. 8-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >1% OF CUT AND/OR FILL STOCKPILES (SEC. 8-4-8) IN EXCESS OF 20 FT. MUST BE SEEDING WITH STABLE MULCH. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. 8-4-6). ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CSD.
- SITE ANALYSIS:
 

TOTAL AREA OF SITE:	4.20 ACRES
AREA TO BE GRADED OR PAVED:	2.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED:	1.20 ACRES
TOTAL CUT:	114' CU. YDS.
TOTAL FILL:	4113' CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION:	**
- ESTIMATE ONLY. CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION. TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, WITH AN APPROVED AND ACTIVE GRADING PERMIT.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CSD. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY, AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHALL INCLUDE:
  - INSPECTION DATE
  - INSPECTION TIME (DURING, PRE-STORM EVENT, DURING RAIN EVENT)
  - NAME AND TITLE OF INSPECTOR
  - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
  - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE)
  - PROBLEMS/ISSUES
  - EVIDENCE OF SEDIMENT DISCHARGES
  - IDENTIFICATION OF PLANT SPECIES
  - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
  - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
  - PHOTOGRAPHS
  - MONITORING/SAMPLING
  - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
  - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (MDES, MDE).
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY. WHENEVER IS SHOWN AND APPROVED BY THE CSD. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE CSD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CSD PER THE LIST OF H20-APPROVED FIELD CHANGES.
- DISBURSANCE SHALL NOT OCCUR OUTSIDE THE LOD. A PROJECT IS TO BE DISBURSED SO THAT GRADING ACTIVITIES BEGINS ON ONE GRADING UNIT (MAXIMUM ACRES OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA OF THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CSD. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CSD, THE LOD SHALL BE 50 FEET CONSECUTIVELY FROM THE DISTURBED AREA. THE LOD SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. WASH WATER FROM ALL EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
- TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
- ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON THE CONTOUR, AND BE INTERSPACED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURVED UPHILL BY 2' IN ELEVATION.
- STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
  - APRIL 1 - APRIL 15
  - APRIL 15 - APRIL 30
  - USE IN AND UP OCTOBER 1 - APRIL 30
  - USE IN MARCH 1 - MAY 31
- A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

**LEGEND:**

[Symbol]	PROPERTY LINE	[Symbol]	EX. PUBLIC SEWER & UTILITY EASEMENT
[Symbol]	RIGHT-OF-WAY LINE	[Symbol]	EX. 16" R/W FOR INGRESS AND EGRESS (L 242 F 346)
[Symbol]	ADJACENT PROPERTY LINE	[Symbol]	PRIVATE USE-IN-COMMON ACCESS, WATER, SEWER, SLM, DRAINAGE & UTILITY EASEMENT FOR LOTS 3 & 5
[Symbol]	EXISTING CURB AND GUTTER	[Symbol]	PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 5-7 OPEN SPACE LOT 8 AND THE FUTURE RESUBDIVISION OF NON-BUILDABLE BULK PARCEL AND LOT 4 FERROU PROPERTY
[Symbol]	EXISTING EDGE OF PAVING	[Symbol]	PUBLIC SEWER & UTILITY EASEMENT
[Symbol]	EXISTING WETLANDS	[Symbol]	PRIVATE DRAINAGE & UTILITY EASEMENT
[Symbol]	EXISTING WETLAND BUFFER	[Symbol]	PRIVATE DRAINAGE & UTILITY EASEMENT
[Symbol]	EXISTING STREAM BUFFER	[Symbol]	PRIVATE DRAINAGE & UTILITY EASEMENT
[Symbol]	EXISTING STREAM	[Symbol]	PRIVATE DRAINAGE & UTILITY EASEMENT
[Symbol]	EXISTING UTILITY POLE	[Symbol]	PRIVATE DRAINAGE & UTILITY EASEMENT
[Symbol]	EXISTING LIGHT POLE	[Symbol]	PRIVATE DRAINAGE & UTILITY EASEMENT
[Symbol]	EXISTING SANITARY MANHOLE	[Symbol]	PRIVATE DRAINAGE & UTILITY EASEMENT
[Symbol]	EXISTING SANITARY LINE	[Symbol]	PRIVATE DRAINAGE & UTILITY EASEMENT
[Symbol]	EXISTING WATER LINE	[Symbol]	PRIVATE DRAINAGE & UTILITY EASEMENT
[Symbol]	EXISTING TREELINE	[Symbol]	PRIVATE DRAINAGE & UTILITY EASEMENT
[Symbol]	EXISTING TREES	[Symbol]	PUBLIC FOREST CONSERVATION EASEMENT
[Symbol]	SPECIMEN TREES	[Symbol]	EXISTING 10' CONTOUR
[Symbol]	EXISTING METAL FENCE	[Symbol]	EXISTING 2' CONTOUR
[Symbol]	PROPOSED TREELINE	[Symbol]	SOILS
[Symbol]	EX. PUBLIC WATER SEWER, STORM DRAIN, & UTILITY EASEMENT	[Symbol]	PROPOSED 10' CONTOUR
[Symbol]	EX. FOREST CONSERVATION EASEMENT	[Symbol]	PROPOSED 2' CONTOUR
[Symbol]	EX. PRIVATE USE-IN-COMMON DRIVEWAY EASEMENT	[Symbol]	EXISTING MODERATE SLOPES (15% TO 24.99% SLOPES)
[Symbol]	EX. PUBLIC WATER SEWER & UTILITY EASEMENT	[Symbol]	PROPOSED SUPER SILT FENCE
[Symbol]	EX. PRIVATE USE-IN-COMMON DRIVEWAY EASEMENT	[Symbol]	PROPOSED LIMIT OF DISTURBANCE
[Symbol]	EX. PUBLIC TREE MAINTENANCE EASEMENT	[Symbol]	PROPOSED STABILIZATION ENTRANCE
[Symbol]	PROP. WETLAND DISTURBANCE	[Symbol]	EX. PRIVATE SWM DRAINAGE & UTILITY EASEMENT
[Symbol]	PROP. BUFFER DISTURBANCE	[Symbol]	PROPOSED MICRO-BIOTRETENTION FACILITY (4-6')
[Symbol]		[Symbol]	TEMPORARY STOCKPILE

**SEQUENCE OF CONSTRUCTION**

- OBTAIN HOWARD COUNTY GRADING PERMIT. (1 WEEK)
- NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. (2 WEEKS)
- CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE. (1 WEEK)
- INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM. (1 DAY)
- WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB FOR INSTALLATION OF PERIMETER CONTROLS ONLY. (2 DAYS)
- INSTALL TEMPORARY CLEAN WATER DIVERSION Dikes #1 AND #2 AND CLEAN WATER DIVERSION SWALES #1 AND #2. INSTALL SEDIMENT RIP RAP OUTFALL PAD AND END SECTION IS-1 AND CONSTRUCT THE 1ST VENT, WORKING FROM DOWNSTREAM END TO UPTREAM END. INSTALL INLET 1-1 AND FLOW-THRU INLET PROTECTION (NOT BLOCKING) TO ALLOW FLOW OF WATER BUT PREVENT SEDIMENT FROM ENTERING CULVERT. (2 WEEKS)
- WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMOVAL OF SITE. (5 WEEKS)
- BEGIN SITE GRADING FOR USE-IN-COMMON DRIVEWAY AND LOTS AS SHOWN ON GRADING PLAN. BRUSH HOUSE PADS TO GRADE. (2 WEEKS)
- INSTALL WATER, SEWER AND OTHER UTILITIES. (2 WEEKS)
- CONSTRUCT BASE COURSE PAVING FOR USE-IN-COMMON AND PRIVATE DRIVEWAYS. (3 WEEKS)
- AFTER ALL MAJOR SITE GRADING AND CONSTRUCTION ARE STABILIZED, AND WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, BEGIN INSTALLATION OF BIOTRETENTION FACILITIES AND PIPE SYSTEM, INCLUDING ROOF DRAIN LEADERS AND UNDERDRAINS. PROTECT BIOTRETENTION FACILITIES FROM SEDIMENTATION WITH SILT FENCE ON THE UPHILL SIDE. (4 WEEKS)
- INSTALL LANDSCAPING. (2 WEEKS)
- FINE GRADE AND PERMANENTLY STABILIZE ALL DISTURBED AREAS WITHIN 7 DAYS, INCLUDING ANY EXPOSED EARTH AREAS OUTSIDE THE LOD. REMOVE ALL TRASH JUNK AND DEBRIS FROM ENTIRE PROJECT. (12 WEEKS)
- REMOVE ALL SEDIMENT CONTROL MEASURES AFTER RECEIVING APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR. (4 WEEKS)

**NOTES:**

- DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RESTABILIZATION PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL.
  - 5 CALENDAR DAYS FOR ALL OTHER DISTURBED AREAS.
- PROPOSED HOMES ARE NOT TO BE CONSTRUCTED USING THIS DRAWING.

**OWNER/DEVELOPER**  
DONALD FERRON  
5864 DEER RIDGE LANE  
ELKRIE, MARYLAND 21075

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*Michael*  
CHIEF, BUREAU OF HIGHWAYS  
DATE: 3/8/2017

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chad Edwards*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 3-20-17

*Keith Leach*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 3-20-17

**GRADING, SEDIMENT AND EROSION CONTROL PLAN**

SCALE: 1" = 50'  
SCALE: 1" = 50'

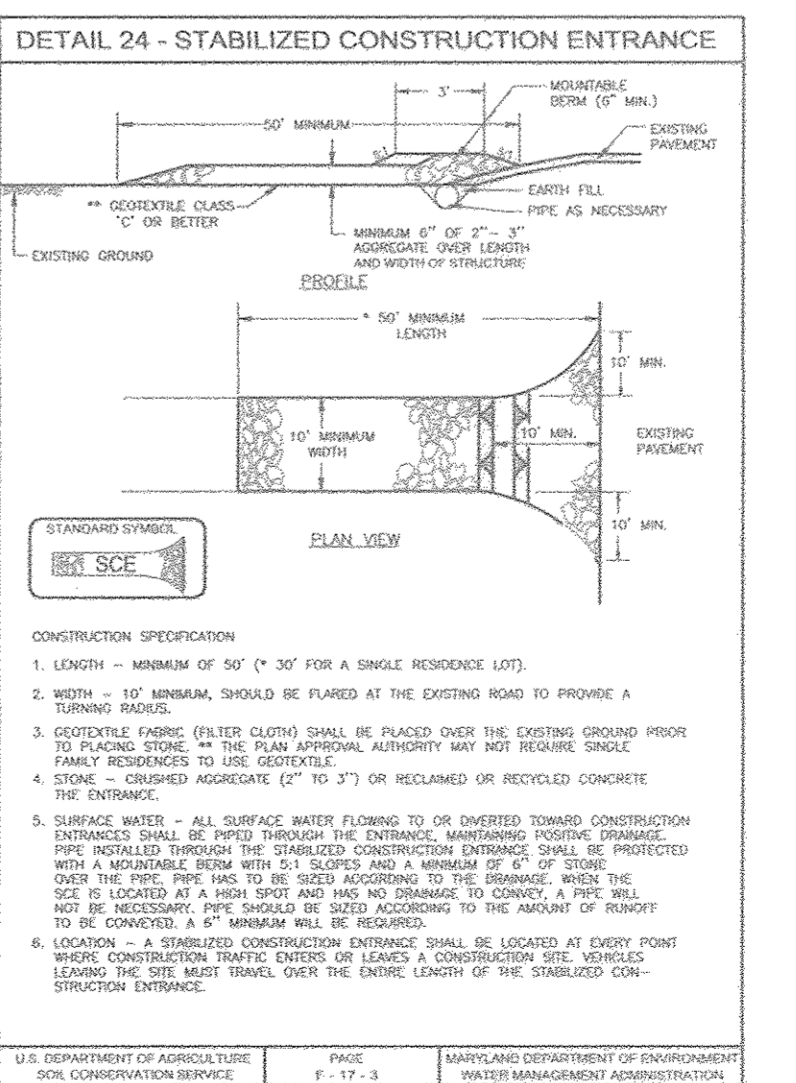
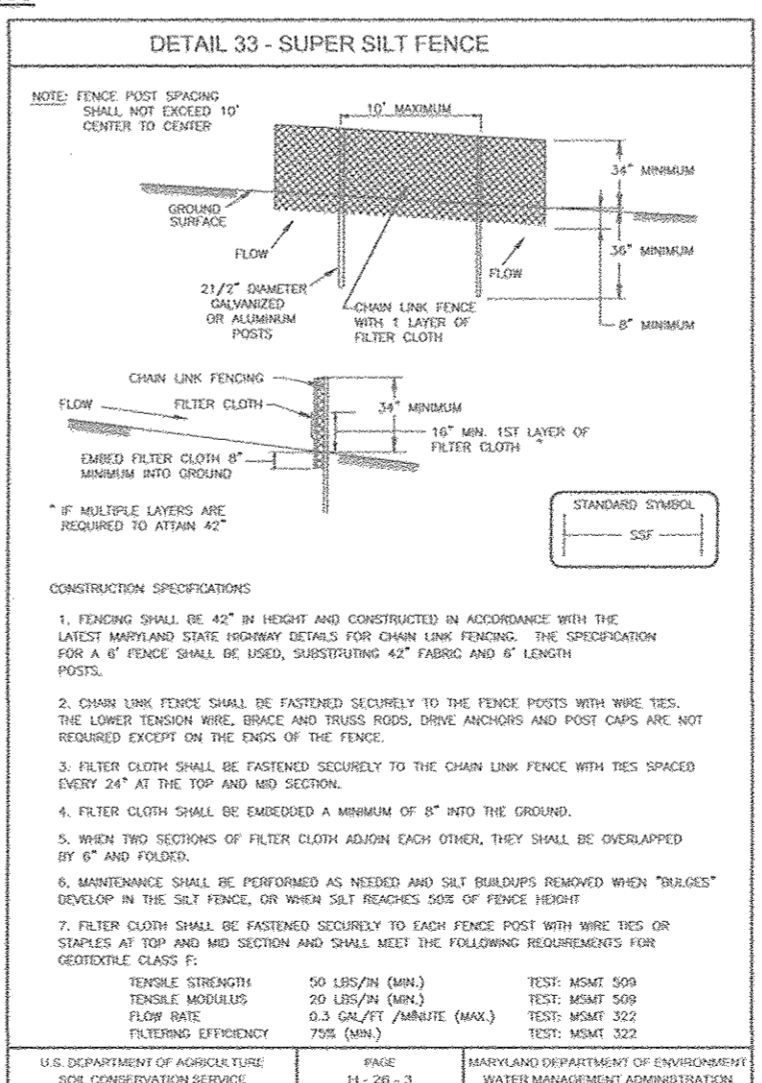
NOTE: STOCKPILING WILL BE PERMITTED ON EACH LOT ONLY.

**NOTE:**

- SILT FENCE IS TO BE REPLACED WITH SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- SILT FENCE SHALL BE CURLED UPHILL. NO MORE THAN 35 FEET APART
- DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- DIVERSION FENCE SHALL BE INSTALLED AS SHOWN HEREON OR AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR
- STABILIZATION IS TO BE DONE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE INTERVALS REQUIRED BY THE 2011 STDS. & SPECS. WHICHEVER IS MORE RESTRICTIVE.

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

*John L. Roberts*  
HOWARD S.C.D.  
DATE: 4/17



**MAPPED SOIL TYPES - SAVAGE NE MAP #19**

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRO	PERCENT SAND	K FACTOR	PERCENT SILT	PERCENT CLAY
ENC	EVERBROOK LOAMY SAND, 2 TO 10 PERCENT SLOPES	A	NO	NO	0.15	NO	NO
EG	FALLINGHAM SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	YES	YES	0.22	YES	NO
EBE	RUSSETT THE SANDY LOAM, 2 TO 5 PERCENT SLOPES	C	NO	NO	0.24	YES	NO
RSC	RUSSETT THE SANDY LOAM, 5 TO 10 PERCENT SLOPES	C	NO	NO	0.24	YES	NO
RUB	RUSSETT AND BELLEVILLE SANDS, 2 TO 5 PERCENT SLOPES	C	NO	NO	0.37	YES	NO
RUC	RUSSETT AND BELLEVILLE SANDS, 5 TO 10 PERCENT SLOPES	C	NO	NO	0.24	YES	NO

**REVISIONS**

NO.	REVISION	DATE
1	REVISE PUBLIC USE IN COMMON DRIVEWAY TO PRIVATE USE-IN-COMMON DRIVEWAY	06/18/18

**FINAL PLAN**  
SOILS MAP, GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN  
**FERRON PROPERTY**  
LOTS 5 - 7, OPEN SPACE LOT 8 AND NON-BUILDABLE BULK PARCELS 'A' AND 'B' A RESUBDIVISION OF FERRON PROPERTY LOT 3, PLAT 17399

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET  
ELICOTT CITY, MD 21043  
TEL: 410.461.6666  
FAX: 410.461.8961

DESIGN BY: RHV  
DRAWN BY: KG  
CHECKED BY: RHV  
DATE: DECEMBER 2016  
SCALE: AS SHOWN  
W.O. NO.: 13-28

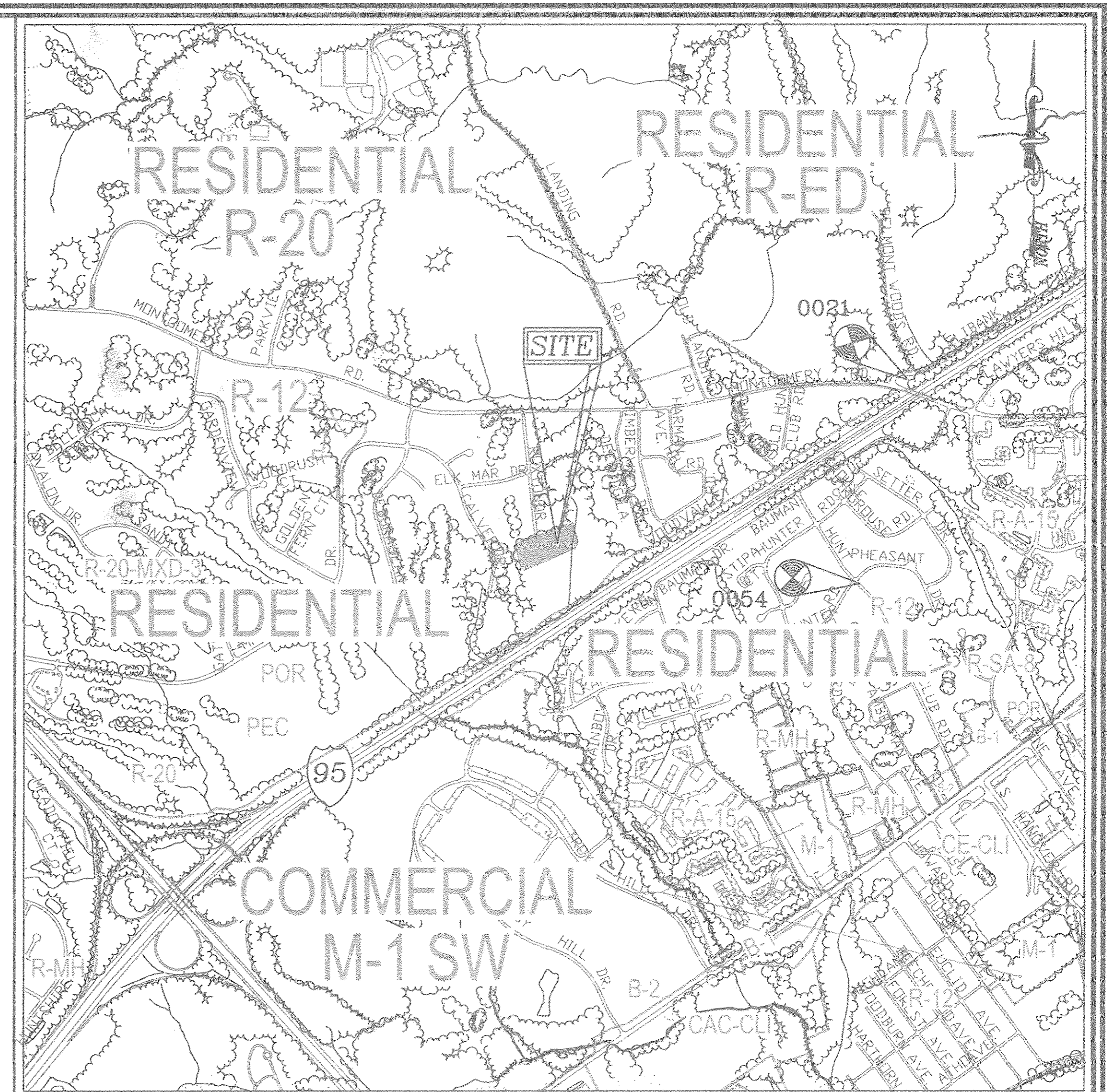
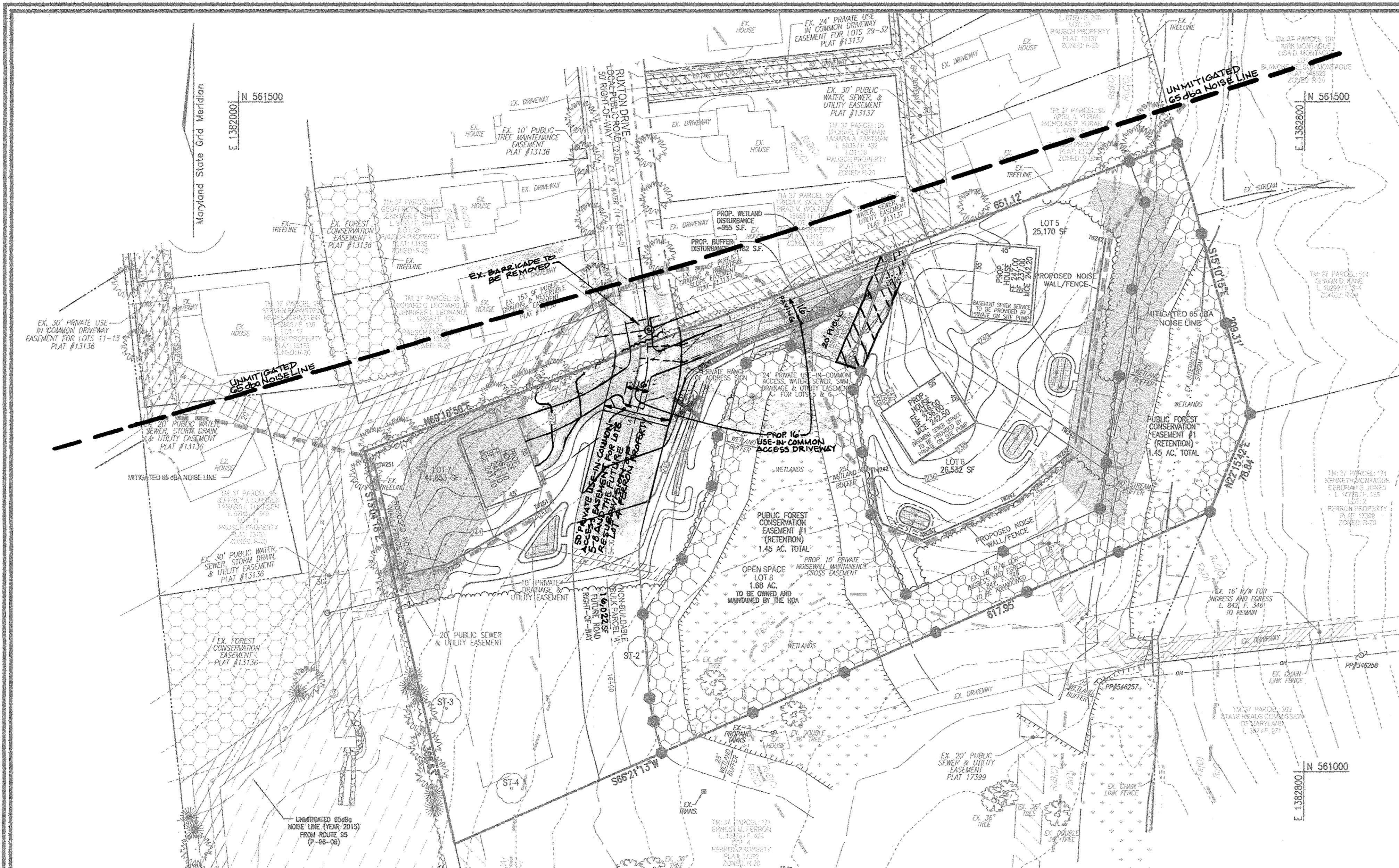
PROFESSIONAL CERTIFICATE  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193  
EXPIRATION DATE: 09-27-2018

4 SHEET OF 7









VICINITY MAP  
SCALE: 1"=1,000'  
ADC MAP COORDINATE: 35/82

**MAPPED SOILS TYPES - SAVAGE NE MAP #19**

SYMBOL NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT ORGANIC	K FACTOR	PERCENT SAND	PERCENT SILT	PERCENT CLAY
ESD Evesboro Loam, 2 to 10 percent slopes	A	NO	NO	0.15	NO	NO	NO
FE Fallston Sandy loam, 0 to 7 percent slopes	D	YES	YES	0.02	YES	NO	NO
RNB Bussett Fine sandy loam, 2 to 5 percent slopes	C	NO	NO	0.24	NO	NO	NO
RSC Bussett Fine sandy loam, 5 to 10 percent slopes	C	NO	NO	0.24	YES	NO	NO
RUB Bussett and Beltsville soils, 2 to 5 percent slopes	C	NO	NO	0.37	YES	NO	NO
RVC Bussett and Beltsville soils, 5 to 10 percent slopes	C	NO	NO	0.24	YES	NO	NO

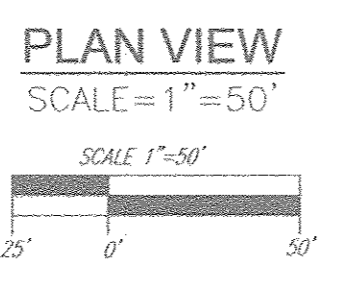
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

**SITE DATA**  
LOCATION: TAX MAP 37, BLOCK 12  
PARCEL: 171  
1ST ELECTION DISTRICT  
PRESENT ZONING: R-20  
GROSS AREA OF PROJECT: 4.20 AC.  
AREA OF STREAM/BUFFER: 0.45 AC.  
AREA OF WETLANDS/BUFFER: 1.30 AC.  
AREA OF MODERATE SLOPES (15% - 24.99%): 0.53 AC.  
AREA OF STEEP SLOPES (25% OR GREATER): 0.00 AC.  
AREA OF FLOOD PLAIN: 0.00 AC.  
NET PROJECT AREA: 4.20 AC.  
EXISTING USE: VACANT LAND  
PROPOSED USE: RESIDENTIAL

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Michael...* 3/8/2017  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Michael...* 3-20-17  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Michael...* 3-20-17  
CHIEF, DIVISION OF LAND DEVELOPMENT



**SPECIMEN TREE CHART**

NO.	SIZE (IN. DBH/FEET BRUSH)	COMMON NAME	CONDITION	COMMENTS
ST 1	30" 45'	RED MAPLE	FAIR CONDITION, LIMB DIEBACK OBSERVED	TO BE REMOVED
ST 2	35.5" 53.25'	TULIP POPLAR	GOOD CONDITION	TO REMAIN
ST 3	40" 60'	TULIP POPLAR	ESTIMATED SIZED, COVERED IN GREEN BRAGG	TO REMAIN
ST 4	30.5" 45.75'	TULIP POPLAR	GOOD CONDITION	TO REMAIN

**FOREST STAND DATA**

KEY	COMMUNITY TYPE	ACREAGE (NTA)	DOMINANT VEGETATION	GENERAL CONDITION	RETENTION PRIORITY
F1	MAPLE/POPLAR	4.20	ACER RUBRUM, FRAXINUS PENNSYLVANICA, LIRIODENDRON TULIPIFERA, NYSSA SYLVATICA, PRUNUS SEROTINA, FRAXINUS PENNSYLVANICA	GOOD	1.5 ACRES ± WETLANDS AND BUFFERS

SEE ACCOMPANYING REPORT FOR COMPLETE STAND DESCRIPTIONS

**WETLAND DESCRIPTIONS**

WETLAND SYSTEM	COWARD CLASSIFICATION	DOMINANT VEGETATION
A	PF01A	ACER RUBRUM, FRAXINUS PENNSYLVANICA, SYMPLOCARPUS FOETIDUS, BOEHMERA CYLINDRICA, CINNA ARUNDINACEA, IMPATIENS CAPENSIS, ONOCLEA SENSIBILIS
B	PF01C R4UB1	ACER RUBRUM, QUERCUS PALustris, SYMPLOCARPUS FOETIDUS, BOEHMERA CYLINDRICA, CINNA ARUNDINACEA, IMPATIENS CAPENSIS, ONOCLEA SENSIBILIS

SEE REPORT FOR COMPLETE WETLAND DESCRIPTION

- FSD NOTES**
- NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITATS WERE OBSERVED ON THE PROPERTY.
  - SURROUNDING LAND USE INCLUDES HIGH DENSITY RESIDENTIAL DEVELOPMENT.
  - THE WETLANDS AND STREAMS ARE PART OF THE PATUXENT RIVER WATERSHED (02-13-11) AND ARE CLASSIFIED AS USE 1-P. PERENNIAL STREAMS WILL REQUIRE 75' BUFFERS, INTERMITTENT STREAMS WILL REQUIRE 50' BUFFERS, AND WETLANDS WILL REQUIRE 25' BUFFERS.
  - 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 2.1 ACRES OF FOREST WITHIN 100 FEET OF THE PROPERTY LIMITS.
  - THERE ARE NO STEEP SLOPES LOCATED ON THE SUBJECT PROPERTY.
  - THERE ARE NO KNOWN STATE CHAMPION TREES OR TREES 20% OF THE SIZE OF STATE CHAMPION TREES PRESENT ON SITE.
  - WATERSHED NAME: PATUXENT RIVER
  - DNR LISTING: 021309
  - A FOREST STAND DELINEATION AND ENVIRONMENTAL RESOURCES ASSESSMENT WAS PERFORMED BY JOHN CANOLES OF ECO-SCIENCE PROFESSIONALS, INC., DATED OCTOBER 15, 2014.

**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 UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING WATER LINE
- EXISTING TREENE
- EXISTING TREES
- SPECIMEN TREES
- EXISTING METAL FENCE
- PROPOSED TREENE
- EX. PUBLIC WATER SEWER STORM DRAIN & UTILITY EASEMENT
- EX. FOREST CONSERVATION EASEMENT
- EX. PUBLIC WATER SEWER & UTILITY EASEMENT
- EX. PRIVATE USE-IN-COMMON DRIVEWAY EASEMENT
- EX. PUBLIC GRADING & RETENTION SLOPE EASEMENT
- PROP. WETLAND DISTURBANCE
- PROP. BUFFER
- PROPOSED MICRO-BIORETENTION FACILITY (M-6)
- PROPOSED FOREST CONSERVATION EASEMENT SIGN

**NET TRACT AREA:**

A. Total tract area	=	4.20
B. Area within 100 year floodplain	=	0.00
C. Area to remain in agricultural production	=	0.00
D. Net tract area	=	4.20

**LAND USE CATEGORY:** (from table 3.2.1, page 40, Manual)

Input the number "1" under the appropriate land use zoning, and limit to only one entry.

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

**EXISTING FOREST COVER:**

G. Existing forest cover (excluding floodplain)	=	4.20
H. Area of forest above afforestation threshold	=	3.57
I. Area of forest above conservation threshold	=	3.36

**BREAK EVEN POINT:**

J. Forest retention above threshold with no mitigation	=	1.51
K. Clearing permitted without mitigation	=	2.69

**PROPOSED FOREST CLEARING:**

L. Total area of forest to be cleared	=	2.75
M. Total area of forest to be retained	=	1.45

**PLANTING REQUIREMENTS:**

N. Reforestation for clearing above conservation threshold	=	0.69
P. Reforestation for clearing below conservation threshold	=	0.00
Q. Credit for retention above conservation threshold	=	0.61
R. Total reforestation required	=	0.08
S. Total afforestation required	=	0.00
T. Total reforestation and afforestation required	=	0.08

**NOTE**  
REMAINING 0.08 AFFORESTATION OBLIGATION WILL BE MET BY A FEE-IN-LIEU PAYMENT IN THE AMOUNT OF \$0.75/SQ' FOR A TOTAL OF \$2,614.00

**FOREST CONSERVATION WORKSHEET**  
VERSION 1.0  
(Enter in Yellow Cells)

19/19/16

NO. 1 REVISE PUBLIC SO' EASEMENT TO PRIVATE USE-IN-COMMON, REVISE 06/18/18

NO. REVISION NOTES DATE

**OWNER/DEVELOPER**  
DONALD FERRON  
5864 DEER RIDGE LANE  
ELK RIDGE, MARYLAND 21075

**FCP PLAN PREPARED BY**  
*John Canoles* 12/16/16  
JOHN CANOLES  
DNR QUALIFIED PROFESSIONAL

**FINAL PLAN**  
**FOREST CONSERVATION PLAN,**  
**NOTES, AND DETAILS**  
**FERRON PROPERTY**  
LOTS 5 - 7 OPEN SPACE LOT 8 AND  
NON-BUILDABLE BULK PARCELS 'A' AND 'B'  
A RESUBDIVISION OF FERRON PROPERTY LOT 3, PLAT 17399  
TAX MAP 37, BLOCK 12, 1ST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
ZONED: R-20  
PARCEL: 171

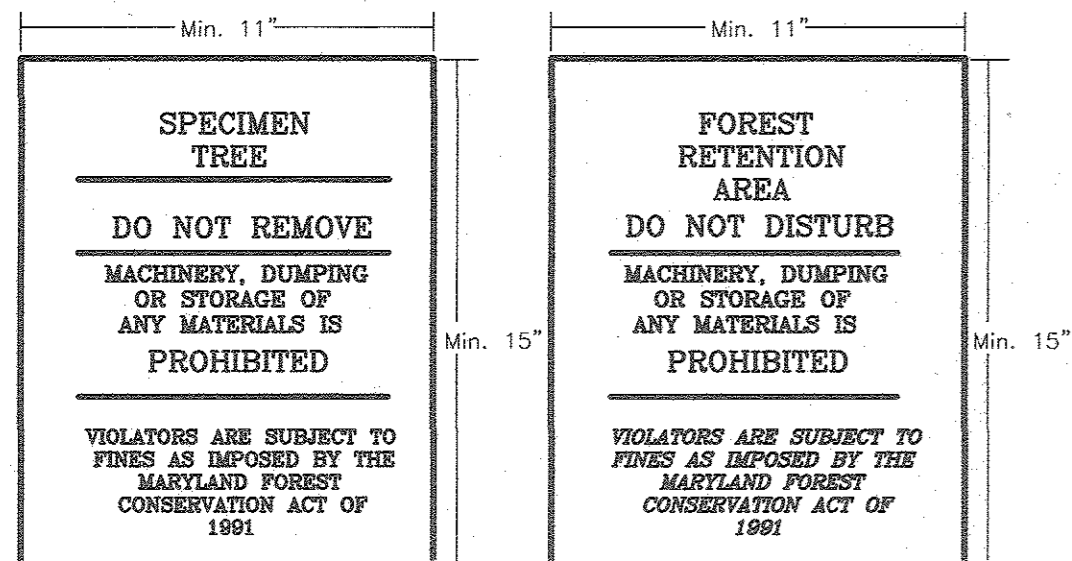
**ROBERT H. VOGEL ENGINEERING, INC.**  
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8407 MAIN STREET  
ELIGOTT CITY, MD 21043  
TEL: 410.461.7666  
FAX: 410.461.8961

**PROFESSIONAL CERTIFICATE**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. MY LICENSE NO. IS 16193 AND MY EXPIRATION DATE IS 03-27-2018.

DESIGN BY: RHV  
DRAWN BY: KG  
CHECKED BY: RHV  
DATE: DECEMBER 2016  
SCALE: AS SHOWN  
W.O. NO.: 13-28

6 SHEET OF 7





- 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.
  - ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
  - ALL FOREST CONSERVATION SIGNAGE SHALL BE IN PLACE FOR PERPETUITY.
  - SIGN LOCATION SYMBOL = ●

**FOREST CONSERVATION AREA SIGNS**

**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 IN PART BY THE PLACEMENT OF 1.45 AC. INTO A RETENTION EASEMENT.

THE REMAINING FOREST CONSERVATION OBLIGATIONS FOR THIS FINAL PLAN WILL BE MET BY A FEE-IN-LIEU PAYMENT OF \$2,613.75 MADE OUT TO HOWARD COUNTY FOREST CONSERVATION FUND FOR THE 0.08 ACRE REFORESTATION REQUIREMENT FOR THIS CONSTRUCTION PROJECT. FEE-IN-LIEU -  
 - (0.08 ac. @ 3,485 \$/SF) x \$0.75 = \$2,613.75

**CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT NOTES FOR FOREST CONSERVATION**

- PRE-CONSTRUCTION PHASE**
- FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
  - FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
  - 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**
- NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
  - NO EQUIPMENT SHALL BE OPERATED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
  - IN THE EVENT OF ANEMIA, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.
- POST-CONSTRUCTION PHASE**
- A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
  - FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
  - DO NOT REMOVE SIGNS.

**SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION**

- PRECONSTRUCTION MEETING/SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE USED AND POINT OUT PARTICULAR TREES TO BE SAVED.
- SPECIMEN TREE #2 #3 AND #4 ARE TO BE SAVED. STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS (TPF). SEE DETAIL THIS SHEET.
- INSTALL TREE PROTECTION FENCING (TPF). SEE DETAIL THIS SHEET. FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
- SPECIMEN TREES #2, #3 AND #4 ARE OUTSIDE THE LIMITS OF DISTURBANCE. PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AND APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
- TEMPORARY TREE PROTECTION DEVICES (TPF) SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

**PROPOSED FOREST CLEARING JUSTIFICATION NOTE**

THIS SITE CONTAINS APPROXIMATELY 4.20 ACRES OF EXISTING WOODS AND THERE IS APPROXIMATELY 1.98 ACRES OF WOODS TO BE CLEARED IN ORDER TO ACCOMMODATE 3 SINGLE FAMILY DETACHED HOMES AND THEIR USE IN COMMON DRIVEWAYS. THE DEVELOPMENT ENVELOPE WAS ESTABLISHED IN SUCH A WAY AS TO AVOID OR MINIMIZE DISTURBANCE TO WETLANDS AND OTHER ENVIRONMENTAL FEATURES TO THE MAXIMUM EXTENT POSSIBLE. THERE IS ONE SPECIMEN TREE TO BE REMOVED AND THREE TO BE RETAINED OUTSIDE THE LIMIT OF DISTURBANCE.

THE LOTS AND DRIVEWAYS HAVE BEEN DESIGNED TO UTILIZED EXISTING TOPOGRAPHY AND KEEP THE DEVELOPMENT ENVELOPE AS COMPACT AS POSSIBLE WHILE STILL MAINTAINING ADEQUATE DRAINAGE PATHS AROUND THE PROPOSED HOMES.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

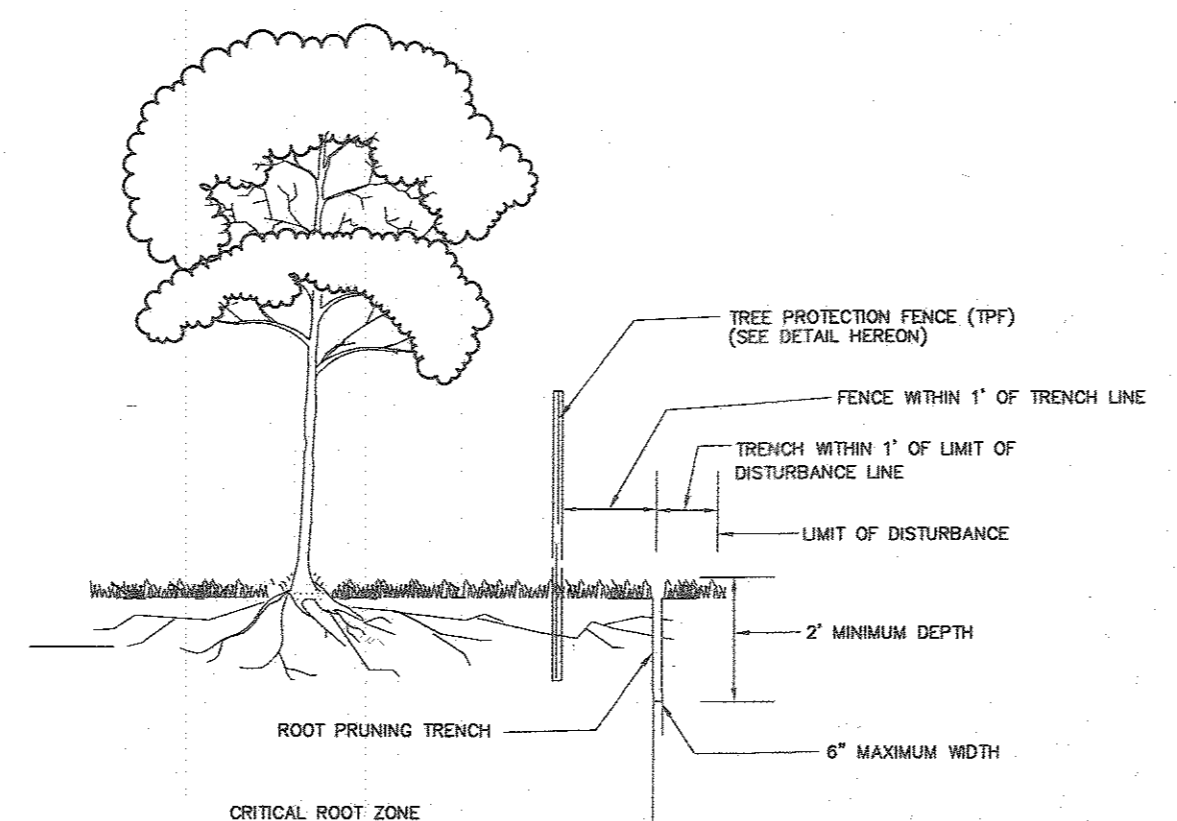
*(Signature)*  
 CHIEF, BUREAU OF HIGHWAYS  
 3/8/2011  
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

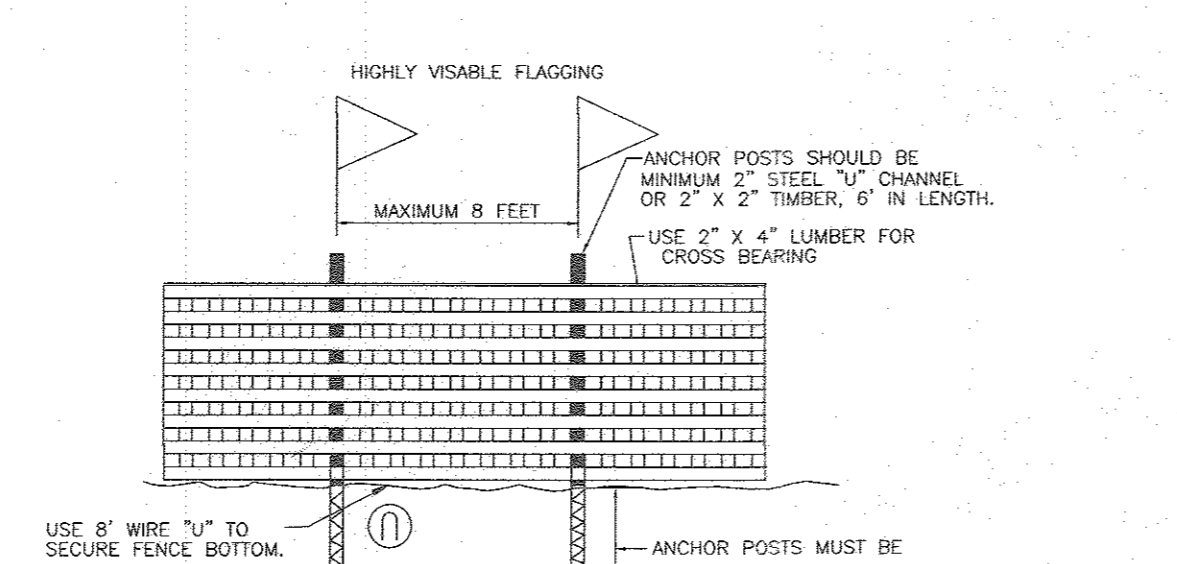
*(Signature)*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 3-20-11  
 DATE

*(Signature)*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 3-20-11  
 DATE

FCP PLAN  
 PREPARED BY  
*(Signature)*  
 JOHN CANOLES  
 DNR QUALIFIED PROFESSIONAL



- 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 MOVED OR ORGANIC SOIL.
  - ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.



- NOTES:**
- FOREST PROTECTION DEVICE ONLY.
  - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
  - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
  - ROOT DAMAGE SHOULD BE AVOIDED.

**B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA**

**DEFINITION**  
 A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

**PURPOSE**  
 TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

**CONDITIONS WHERE PRACTICE APPLIES**  
 STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

**CRITERIA**

- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
- THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3-3 LAND GRADING.
- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
- ACCESS TO THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE FLOW.
- STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
- IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO PREVENT SEEPAGE. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

**MAINTENANCE**

ALL STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4-9 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. STOCKPILE AREAS MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3-3 LAND GRADING.

**B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION**

**DEFINITION**  
 TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

**PURPOSE**  
 TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

**CONDITIONS WHERE PRACTICE APPLIES**  
 EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

**CRITERIA**

**A. SEED MIXTURES**

**I. GENERAL USE**

- ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
- ADDITIONAL PLANTING SPECIFICATIONS FOR SPECIAL SITUATIONS SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE USED IN USDA-NRCS TECHNICAL FIELD GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
- LOW FERTILITY DISTURBED AREAS OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
- FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

**II. TURFGRASS MIXTURES**

- AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH REQUIRE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
- KENTUCKY BLUEGRASS:** FULL SUN MIXTURE; FOR USE IN AREAS THAT RECEIVE INTENSIVE MAINTENANCE. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS TO 5 PERCENT.
- TURFGRASS MIXTURES:** FULL SUN MIXTURE; FOR USE IN AREAS WITH RECEIVE INTENSIVE MAINTENANCE. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS TO 5 PERCENT, ONE OR MORE CULTIVARS MAY BE BLEND.
- KENTUCKY BLUEGRASS/PERENNIAL RYE:** FULL SUN MIXTURE; FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHICH WILL RECEIVE MEDIUM TO INTENSIVE MAINTENANCE. CERTIFIED PERENNIAL RYEGRASS CULTIVARS 50 TO 60 PERCENT, RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 40 TO 50 PERCENT, RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 40 TO 50 PERCENT, RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 40 TO 50 PERCENT, ONE OR MORE CULTIVARS MAY BE BLEND.
- KENTUCKY BLUEGRASS/TALL FESCUE:** SHADE MIXTURE; FOR USE IN AREAS WITH SHADY TURF AREAS. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED TALL FESCUE CULTIVARS TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

**NOTES:**

- SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT PUBLICATION OF MARYLAND AGRICULTURE, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND". ONLY CERTIFIED MATERIALS ARE TO BE USED. THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.
- IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES** - WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 15 TO OCTOBER 1 (HARDINESS ZONES: SB, 6A) - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 6B) - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

- I. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND MAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1/4 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL NOT BE DIFFICULT.**
- E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN UNUSUALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.**
- B. SOIL TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).**
- I. GENERAL SPECIFICATIONS**
- A CLASS OF TURFGRASS SOO MUST BE MARYLAND STATE CERTIFIED. SOO LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
  - SOO MUST BE MACHINING CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 3/8 INCH. AT THE TIME OF CUTTING, MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PASS AND TOM OR UNDEVELI ENDS WILL NOT BE ACCEPTABLE.
  - STANDARD SIZE SECTIONS OF SOO MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
  - SOO MUST NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
  - SOO MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOO NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST.
- 2. SOO INSTALLATION**
- A BURNING PERIOD OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL. LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOO.
  - LAY THE FIRST ROW OF SOO IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOO IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
  - FIBER BUNDLES SHOULD BE PLACED AT AN ANGLE OF 45 DEGREES TO FOLLOW THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOO WITHIN EIGHT HOURS.
  - WATER THE SOO IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOO PAD AND SOIL SURFACE BELOW THE SOO ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOO WITHIN EIGHT HOURS.
- 3. SOO MAINTENANCE**
- A BURNING PERIOD OF ADEQUATE RAINFALL WATER DAILY DURING THE FIRST WEEK OR AS SOON AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOO DURING THE HEAT OF THE DAY TO PREVENT WILTING.
  - AFTER THE FIRST WEEK, SOO WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
  - DO NOT MOW UNTIL THE SOO IS FIRMLY ROOTED. NO MORE THAN 1/2 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

**B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA**

**DEFINITION**  
 A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

**PURPOSE**  
 TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

**CONDITIONS WHERE PRACTICE APPLIES**  
 STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

**CRITERIA**

- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
- THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3-3 LAND GRADING.
- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
- ACCESS TO THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE FLOW.
- STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
- IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO PREVENT SEEPAGE. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

**MAINTENANCE**

ALL STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4-9 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. STOCKPILE AREAS MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3-3 LAND GRADING.

**OWNER/DEVELOPER CERTIFICATION:**  
 I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT IS BEING PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROPOSED CONSTRUCTION OF THE ENVIRONMENTAL IMPACT STATEMENT. THIS CERTIFICATION IS VALID FOR PERIODS ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.  
 1-12-17  
 DATE  
 DONALD T. FERRO, OWNER  
 OWNER/DEVELOPER SIGNATURE  
 DONALD T. FERRO, OWNER  
 PRINTED NAME & TITLE

**DESIGN CERTIFICATION:**  
 I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN RECOMMENDATIONS AND STANDARDS, AND THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON ADEQUATE KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 1/12/17  
 DATE  
 ROBERT H. VOGEL  
 PRINTED NAME  
 ROBERT H. VOGEL  
 NO REGISTRATION NO. 15193  
 (P.E., R.L.S., OR R.L.A. (Gr. Lic. 086))  
 HOWARD S.C.D.  
 DATE

**B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING**

**DEFINITION**  
 THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

**PURPOSE**  
 TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

**CONDITIONS WHERE PRACTICE APPLIES**  
 TO THE SURFACE OF ALL PERMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

**CRITERIA**

**A. SEEDING**

**I. SPECIFICATIONS**

- ALL SEEDS MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT REFER TO TABLE B.3 REGARDING THE QUALITY OF SEED.
- SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
- MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAW.
- INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA. PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANTS AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
- SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISAPPEARANCE OF PHITTO-CIDE MATERIALS.

**2. APPLICATION**

**A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.**

- INOCUPATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING LABELS & I. PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARY.
- APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDING AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- DRILL OR CULTRIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
- CULTRIPACKER SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDS MUST BE FIRM AFTER PLANTING.
- APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
- FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING. THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHORUS), 200 POUNDS PER ACRE TOTAL OF SOLUBLE PHOSPHORUS; K2O (POTASSIUM), 200 POUNDS PER ACRE TOTAL OF SOLUBLE POTASSIUM.
- LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (2 TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS PER ACRE SHOULD BE APPLIED BY HYDROSEEDING AT ANYONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
- MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
- WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

**B. MULCHING**

**I. MULCH MATERIALS (IN ORDER OF PREFERENCE)**

- A STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT OR EARLY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT FEWELY MOLLY, CAVED, DENGED, OR EXCESSIVELY DUSTY.
- NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
- WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS MATERIAL. SPECIALLY PREPARED WCFM MUST CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORM SPREAD SLURRY.
- WCFM INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH-INHIBITING FACTORS.
- WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH WATER AND MULCH MIXTURE WILL BE IN CONTACT WITH COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDINGS.
- WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
- WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 3 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

**2. APPLICATION**

- APPLY MULCH TO ALL SEEDING AREAS IMMEDIATELY AFTER SEEDING.
- WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDING AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LODGE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
- WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

**3. ANCHORING**

- PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND. MULCH ANCHORING TO BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
  - A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 4 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE ABLATION HAZARDS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, SIDE SLOPES SHOULD FOLLOW THE CONTOUR.
  - IF WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING, STRAW, APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 150 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
  - SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AKRO-TACK), DCA-70, PETERSOL, TERRA TACK L, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN WALLS AND ON CRISTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
  - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

**B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING**

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