

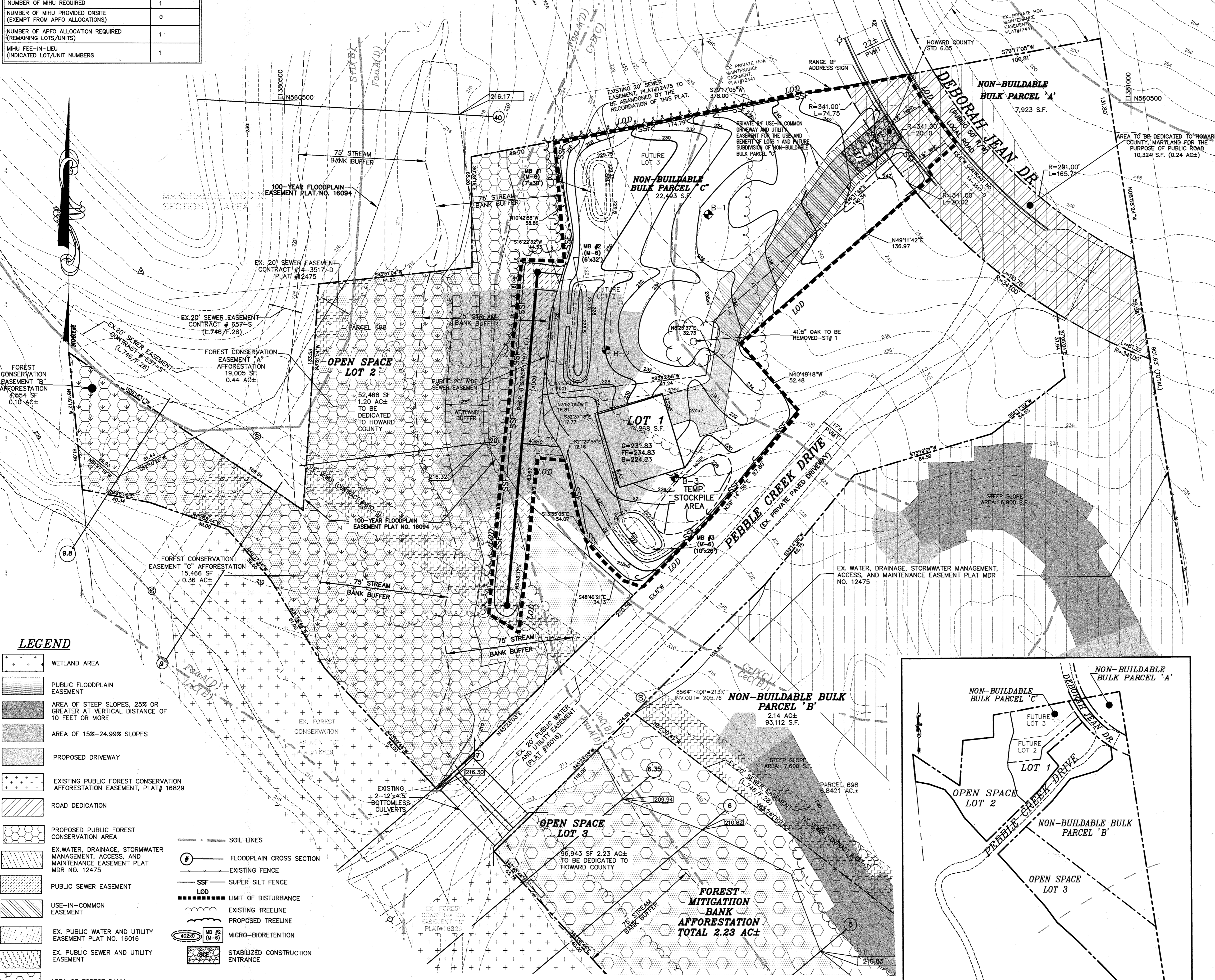
18-009 DOUGLAS WOODS\DWG\FINAL PLAN\Final plan-101.1 & Bulk Parcel-2nd sub\18-009-Final plan-101.1 & Bulk Parcel Dec 2021.dwg, 12/18/2021, 10:39:30 AM

INDEX OF DRAWINGS

Table with 2 columns: DESCRIPTION, NUMBER. Includes Supplemental Plan, Forest Conservation and Landscape Plan, Stormwater Management Details and Specifications.

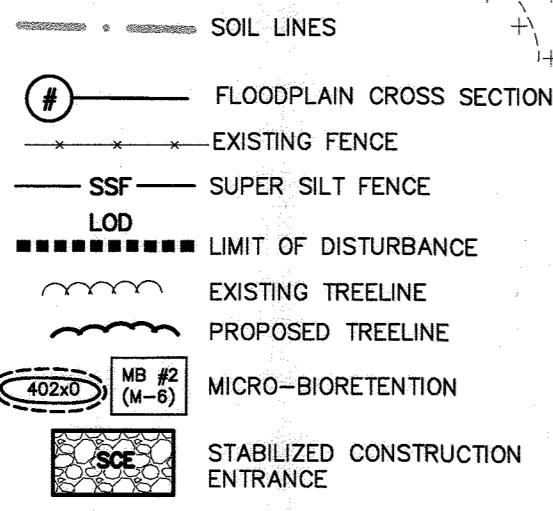
MIHU TRACKING CHART table with columns: TOTAL NUMBER OF LOTS/UNITS, NUMBER OF MIHU REQUIRED, NUMBER OF MIHU PROVIDED ON-SITE, NUMBER OF APFO ALLOCATION REQUIRED.

SOILS TABLE with columns: SYMBOL, RATING, NAME, K FACTOR, MAP NO., COMMENTS. Lists soil types like Chillum Loam, Croom and Evesboro Soils, etc.

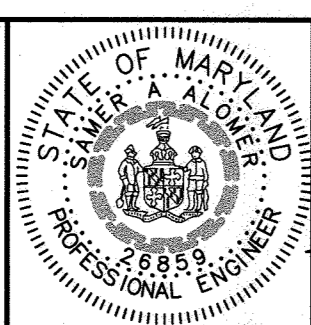


LEGEND

- WETLAND AREA
PUBLIC FLOODPLAIN EASEMENT
AREA OF STEEP SLOPES, 25% OR GREATER AT VERTICAL DISTANCE OF 10 FEET OR MORE
AREA OF 15%-24.99% SLOPES
PROPOSED DRIVEWAY
EXISTING PUBLIC FOREST CONSERVATION AFFORESTATION EASEMENT, PLAT# 16829
ROAD DEDICATION
PROPOSED PUBLIC FOREST CONSERVATION AREA
EX. WATER, DRAINAGE, STORMWATER MANAGEMENT, ACCESS, AND MAINTENANCE EASEMENT PLAT MDR NO. 12475
PUBLIC SEWER EASEMENT
USE-IN-COMMON EASEMENT
EX. PUBLIC WATER AND UTILITY EASEMENT PLAT NO. 16016
EX. PUBLIC SEWER AND UTILITY EASEMENT
AREA OF FOREST BANK

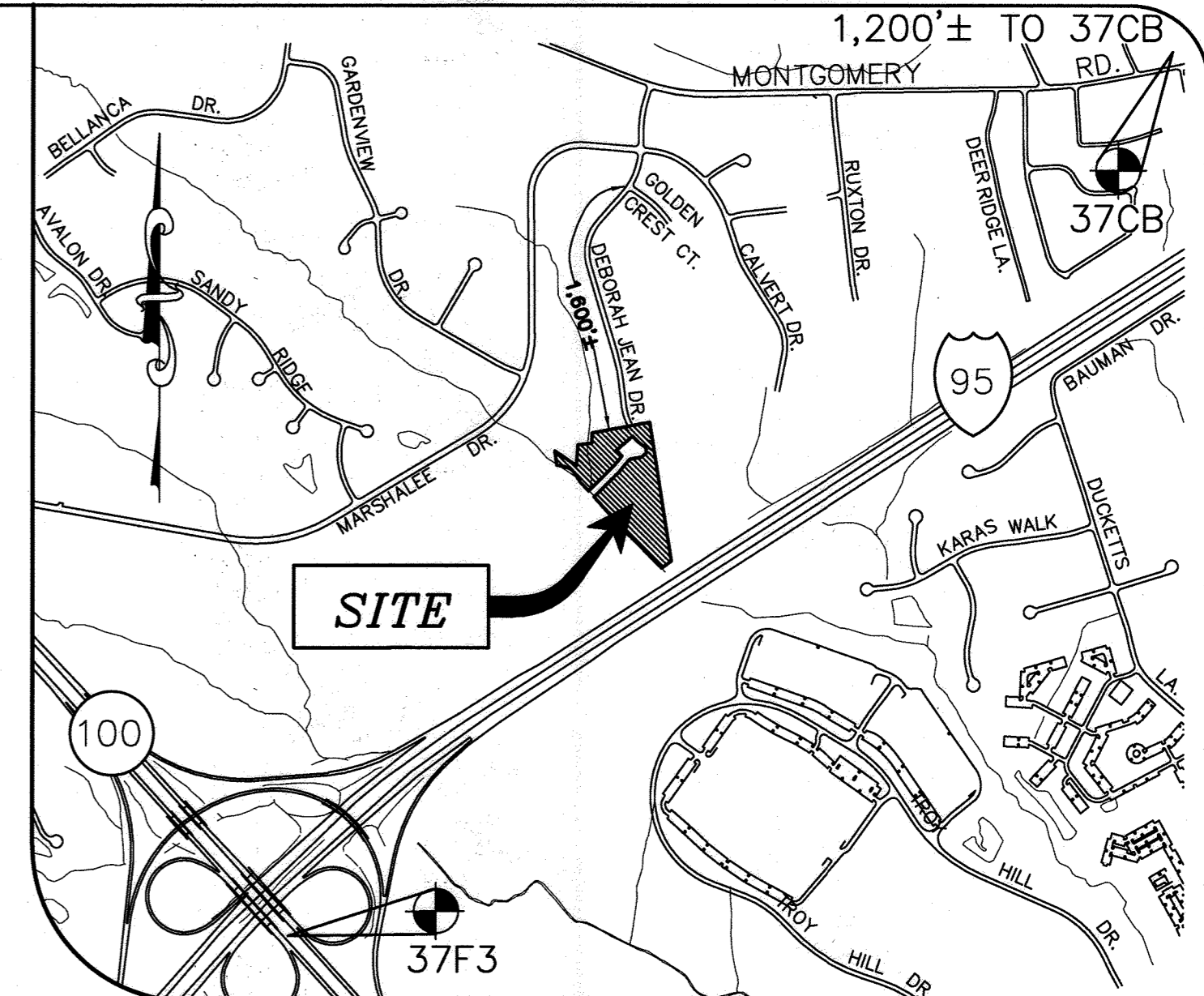
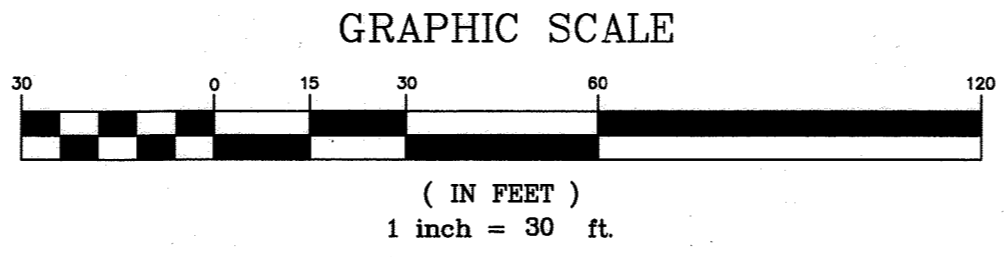


APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division
12/22/2021



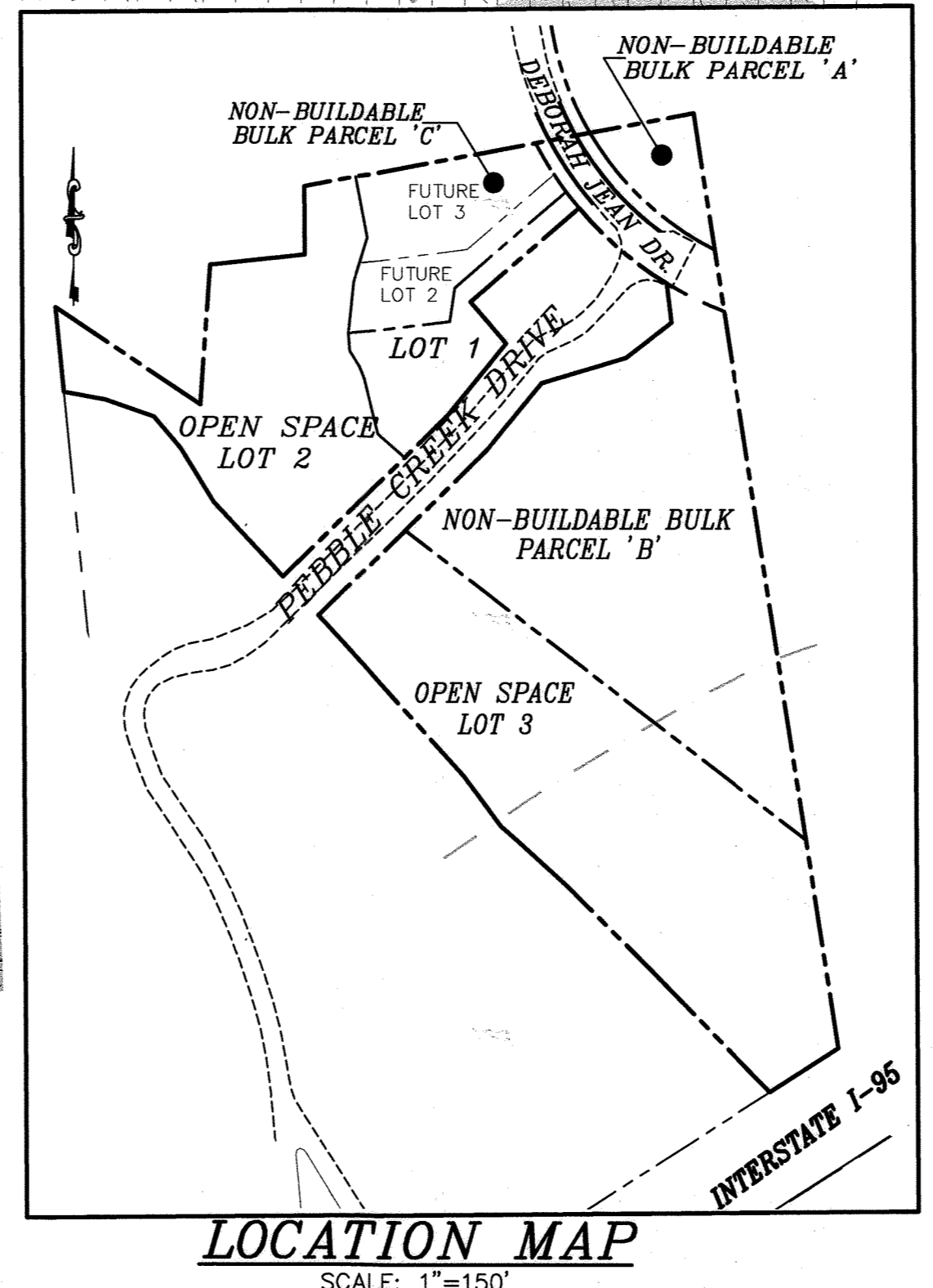
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 26859, EXP DATE 08/08/23

OWNER/DEVELOPER
GP NORTH LLC.
7350-B GRACE DRIVE, COLUMBIA, MARYLAND 21044
410-997-0296



GENERAL NOTES: VICINITY MAP

- 1. THIS SUBJECT PROPERTY IS ZONED R-ED PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
2. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
3. PROJECT BACKGROUND: LOCATION: TAX MAP : 37 PARCEL: 698 ELECTION DISTRICT : FIRST ZONING : R-ED DEED REFERENCE : 14540/293 PREVIOUS PROJECT NUMBERS: ECP-19-003, F-20-074, WP-21-035
4. PROJECT BACKGROUND: TOTAL TRACT AREA = 6.84± AC± TYPE OF PROPOSED UNIT: SFD PROPOSED USE FOR SITE: RESIDENTIAL. AREA OF ROAD DEDICATION = 0.24 AC± (10,324 S.F.) AREA OF WETLANDS AND ITS BUFFERS = 0.94 AC± (41,162 S.F.) AREA OF 100 YR FLOODPLAIN = 2.71 AC± AREA OF STREAM BUFFER = 2.11 AC± (91,912 S.F.) AREA OF 15%-24.99% SLOPES = 0.47 AC± (20,270 S.F.) AREA OF 25% AND GREATER SLOPES = 0.33 AC± (14,500 S.F.) AREA OF FOREST = 0.4 AC± (17,424 S.F.) ONE (1) SINGLE FAMILY DETACHED RESIDENTIAL UNIT IS PROPOSED.
5. ON-SITE TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD RUN SURVEY PERFORMED ON OR ABOUT JANUARY 2001 BY MILDENBERG, BOENDER & ASSOC., INC.
6. PROJECT BOUNDARY IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT JANUARY, 2001 BY MILDENBERG, BOENDER & ASSOC., INC.
7. HORIZONTAL AND VERTICAL DATUMS ARE RELATED TO THE MARYLAND STATE PLANE COORDINATE SYSTEM AS PROJECTED FROM HOWARD COUNTY CONTROL STATIONS NO. 37C3 & 37F3 STA. No. 37C3 EL. 256,488 N 562,916.003 E 1,384,856.679 STA. No. 37F3 EL. 446,036 N 557,289.093 E 1,378,631.096
8. PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER WILL BE UTILIZED UNDER CONTRACT #14-3517-D (WATER) AND #657-S (SEWER).
9. NO CEMETERIES EXIST ON SITE.
10. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE 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 (1-1/2").
C) GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE AND MIN. OF 45 FOOT TURNING RADIUS.
D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD PLAIN WITH NO MORE THAN 1 FOOT OF DRIVEWAY SURFACE.
F) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
11. THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
12. FOREST STAND AND WETLAND DELINEATION PERFORMED BY ECO-SCIENCE, INC. IN JULY 2018
13. 100-YEAR FLOODPLAIN DELINEATION IS BASED ON A STUDY PREPARED BY MILDENBERG, BOENDER, & ASSOCIATES, INC. IN APRIL 2002.
14. SLOPES GREATER THAN 25% EXIST ON SITE.
15. LANDSCAPING FOR THIS SUBDIVISION IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. SURETY FOR THE REQUIRED 10 SHADE AND 7 EVERGREEN TREES AND AN ADDITIONAL 2 SHADE TREES PER THE CONDITION OF THE APPROVED WP-21-035 IN THE AMOUNT OF \$4,650.00 WILL BE PROVIDED WITH THE AFFORESTMENT AGREEMENT.
16. STORMWATER MANAGEMENT IS PROVIDED BY (M-6) MICRO-BIORETENTION FACILITY IN ACCORDANCE WITH THE 2007 MARYLAND STORM WATER DESIGN MANUAL. MICRO-BIORETENTION FACILITIES (M-6) WILL BE PRIVATELY OWNED AND MAINTAINED.
17. WETLANDS SURVEY AND ITS BUFFER EXIST ON SITE AS CERTIFIED IN THE WETLAND REPORT PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. IN JUNE 2015.
18. APFO ROAD TEST IS NOT REQUIRED FOR THIS PROJECT.
19. FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION WILL BE FULFILLED BY ON-SITE AFFORESTATION OF 0.90 ACRES (39,204 SQ. FT.) ON EASEMENTS "A", "B", "C", "D", "E", "F", "G", "H", "I", "J", "K", "L", "M", "N", "O", "P", "Q", "R", "S", "T", "U", "V", "W", "X", "Y", "Z". 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. FINANCIAL SURETY IN THE AMOUNT OF \$19,602 FOR THE REQUIRED AFFORESTATION WILL BE POSTED WITH THIS PLAN.
20. A COMMUNITY MEETING FOR THIS PROJECT WAS HELD ON JUNE 4, 2019 AT THE ELK RIDGE LIBRARY.
21. DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT OR CONSTRUCTION ON LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE BUILDING / GRADING PERMIT.
22. ALL LOTS/RESIDENTIAL UNITS IN THIS SUBDIVISION ARE SUBJECT TO THE MIHU 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.
23. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
24. 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 THE START OF WORK.
25. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
26. A PRIVATE RANGE OF ADDRESS SIGN SHALL BE FABRICATED AND INSTALLED BY THE HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER'S / OWNER'S EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATE.
27. RESIDENTIAL DRIVEWAY ENTRANCE, HOWARD COUNTY STANDARDS R-6.05 IS TO BE USED.
28. A FOREST MITIGATION BANK IS BEING CREATED WITH THIS PROJECT. THE AREA OF THIS AFFORESTATION BANK IS 2.23 ACRES. NO SURETY IS REQUIRED.
29. THE 65dba NOISE CONTOUR LINE DRAWN ON THIS SUBDIVISION PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISION FEBRUARY, 1991 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE 65 dba NOISE LINE ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVEL ESTABLISHED BY THE U.S. DEPT. OF HOUSING AND URBAN DEVELOPMENT.
30. THIS PLAN IS SUBJECT TO WP-21-035, SEEKING AN ALTERNATIVE COMPLIANCE TO SECTIONS 16.1205(a)(7) WHICH STATES THAT STATE CHAMPION TREES, TREES 75% OF THE DIAMETER OF STATE CHAMPION TREES AND TREES 30" IN DIAMETER OR LARGER SHALL BE LEFT IN AN UNDISTURBED CONDITION DURING CONSTRUCTION. THE PURPOSE IS TO ALLOW THE REMOVAL OF ONE (1) SPECIMEN TREE. THIS ALTERNATIVE COMPLIANCE WAS APPROVED ON NOVEMBER 5, 2020, SUBJECT TO THE FOLLOWING CONDITIONS:
1. THE ALTERNATIVE COMPLIANCE APPROVAL IS LIMITED TO THE REMOVAL OF SPECIMEN TREE #1, AS IDENTIFIED ON THE EXHIBIT. ANY PROPOSAL TO REMOVE ANY OTHER SPECIMEN TREE WILL REQUIRE A NEW ALTERNATIVE COMPLIANCE REQUEST OR AN AMENDMENT TO THIS ALTERNATIVE COMPLIANCE REQUEST.
2. A MINIMUM OF TWO (2), NATIVE 3" DBH, SHADE TREES SHALL BE PROVIDED AS MITIGATION FOR THE REMOVAL OF THE ONE (1) SPECIMEN TREE FROM THE PROPERTY. LANDSCAPING SURETY IN THE AMOUNT OF \$300.00 PER TREE SHALL BE PROVIDED WITH THE DEVELOPER'S AGREEMENT.

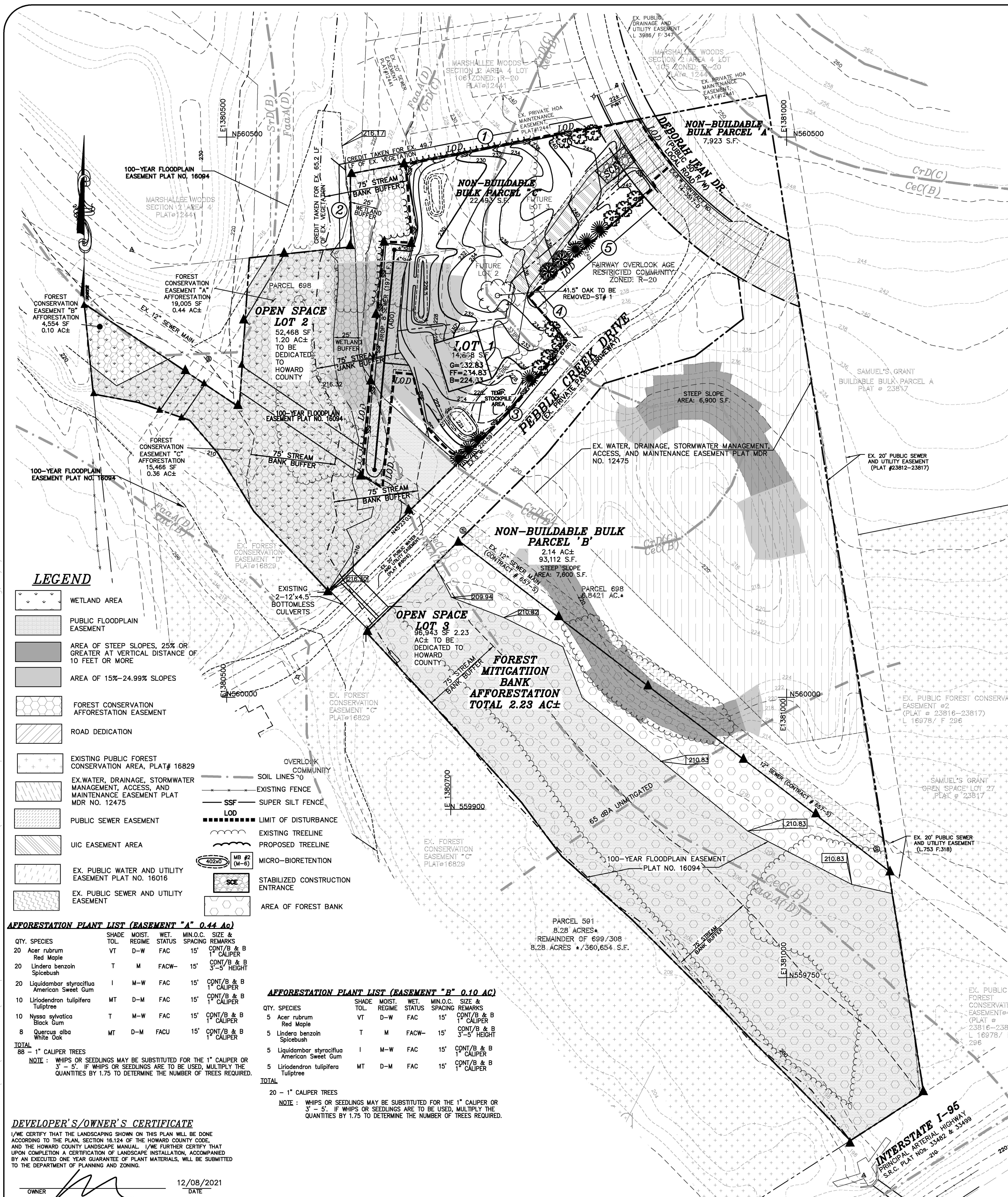


Project information table: date DEC. 2021, project 18-009, illustration MMT, scale AS SHOWN, approval SAA.

Table with columns: description, date, revision number.

DOUGLAS WOODS
LOT 1, OPEN SPACE LOTS 2, 3 AND NON-BUILDABLE BULK PARCELS A, B & C
TAX MAP: 37, PARCEL 698, GRID: 11
HOWARD COUNTY, MARYLAND
SUPPLEMENTAL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Tel. (410) 997-0296 Fax.



**SCHEDULE A - PERIMETER LANDSCAPED EDGE**

CATEGORY	ADJACENT TO PERIMETER PROPERTIES	TOTAL
LANDSCAPE TYPE	A (PERIMETER 1) 224.49 LF B (PERIMETER 2) 65.20 LF C (PERIMETER 3) 145.81 LF D (PERIMETER 4) 52.48 LF E (PERIMETER 5) 136.97 LF	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) OR # OF TREES	49.70 LF NO NO NO NO	
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO NO NO NO NO	
NUMBER OF PLANTS REQUIRED	3 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	10 SHADE TREES 7 EVERGREEN TREES 0 SHRUBS
NUMBER OF PLANTS PROVIDED	3 SHADE TREES 0 EVERGREEN TREES 0 OTHER TREES (2:1 SUBSTITUTION) 0 SHRUBS	10 SHADE TREES 7 EVERGREEN TREES 0 SHRUBS

**SPECIMEN TREE**

KEY	SPECIES	SIZE	CRZ	COMMENTS
ST 1	BLACK OAK	41.5	62.25	POOR, TRUNK ROT NOTABLE (TO BE REMOVED)

**POST CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT PROGRAM**

- ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
- ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
- VOLUNTEER SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THE EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
- REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
- REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
- A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

**SUPERVISION**  
ALL FOREST CONSERVATION ACTIVITIES SHALL BE DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER QUALIFIED PROFESSIONAL AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

**STANDARD SPECIMEN TREE NON-DISTURBANCE NOTE:**  
"THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, SOIL COMPACTION OR EXCAVATION, INTRODUCTION OF TOXIC CHEMICALS OR OTHER DISTURBANCES DETRIMENTAL TO THE LIVE SPECIMEN TREES OR CRITICAL ROOT ZONES FOR THESE TREES EXCEPT AS PERMITTED BY HOWARD COUNTY"

**PLANTING SPECIFICATIONS AND NOTES**

**SITE PREPARATION AND SOILS**

- PROTECTION FENCING AND SILT FENCES FOR SEDIMENT AND EROSION CONTROL ARE TO BE INSTALLED AS A FIRST ORDER OF BUSINESS. SEE PLAN FOR LOCATIONS.
- DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT, AS SHOWN ON THE DETAIL VIEW. PLANTING FIELD OF RADIUS = 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
- SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
- SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
- ALL MIXING IN LIME AND S SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

**CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT PROGRAM**

- ALL FOREST RETENTION AREAS AND ISOLATED POTENTIAL SPECIMEN TREES SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED, BLAZE ORANGE PLASTIC MESH FENCING AND SIGNAGE AS INDICATED ON THE PLANS. FENCING SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY AND AROUND ISOLATED POTENTIAL SPECIMEN TREES PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
- SUPER SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE PLAN. BLAZE ORANGE PLASTIC MESH FENCING SHALL BE INSTALLED ALONG THE REFORESTATION BOUNDARY WHERE THERE IS NO SUPER SILT FENCE PROPOSED. THAT THE INSTALLATION OF THE FENCING IN THIS MANNER WILL CREATE AN IRREGULAR EDGE.
- THE FOREST PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
- ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THE PROTECTED AREAS.
- INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
- THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
- REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS.
- ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL FORESTED AREAS. PLEASE REFER TO ROOT PRUNING DETAIL THIS SHEET.

**PLANT STORAGE AND INSPECTION**

- FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
- FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
- PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
- UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT.

**PLANT INSTALLATION**

- THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE SHOULDED SOIL SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER, GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
- PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
- CARE SHALL BE TAKEN TO AVOID PLANTING PLANTS TO CHOP THRU LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2 INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
- CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES.
- FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL 1" BACK BURLAP TO EXPOSE ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
- FOR TREES PLANTED IN THE AFFORESTATION AREA, CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FOUR (4), PER SPECIES, OVER THE ENTIRE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT 2' PROPER SPACING INDICATED ON PLANT LIST.
- AVOID PLANTING IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.
- NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONE WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE WELL DRAINED NATIVE SOILS FOUND ON THIS SITE, COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. AN WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

**FERTILIZING**

- DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
- NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE ITS NEEDS.
- IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO INTRINSIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALY AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

**CONSTRUCTION MONITORING**

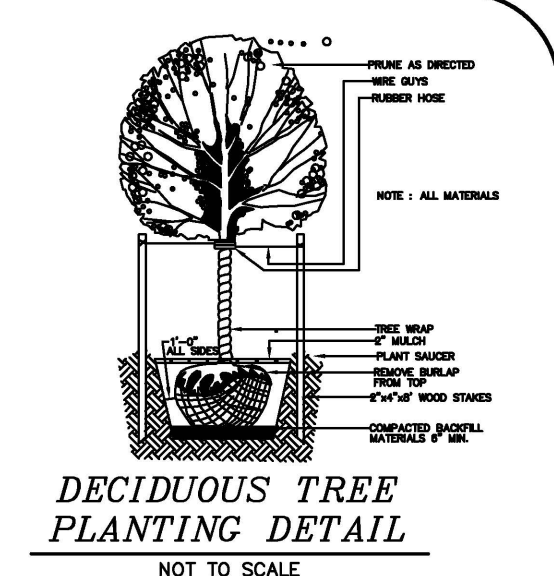
THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY LOGGING OR BROUGHT CONDITIONS. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIATED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.

THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

**MITIGATION TREE PLANTING SCHEDULE (WP-21-035)**

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
2		ACER RUBRUM 'RED SUNSET' OR EQUIVALENT	RED SUNSET RED MAPLE OR EQUIVALENT	3" CAL.
TOTAL		2 SHADE TREES AS PER WP-21-035 REQUIREMENT		

NOTE - AN ADDITIONAL 2 SHADE TREES HAVE BEEN PROVIDED IN LIEU OF 1 SPECIMEN TREE REMOVED.



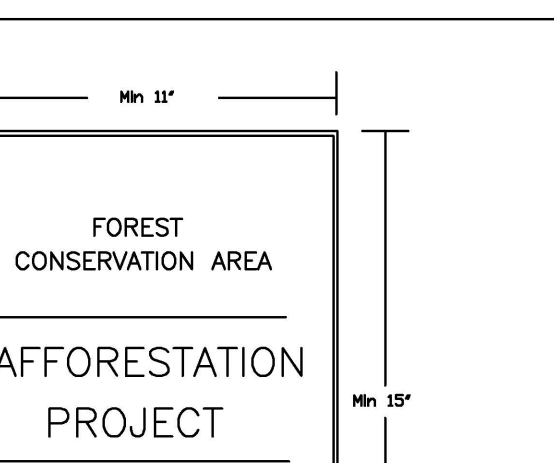
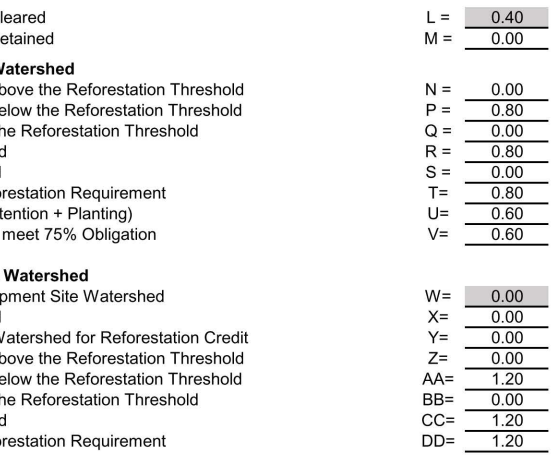
**PERIMETER LANDSCAPE REQUIREMENT PLANTING SCHEDULE**

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
10		RUBRUM 'RED SUNSET' OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL	RED SUNSET RED MAPLE OR EQUIVALENT	2.5"-3" CAL.
7		OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL	GREEN GRANT OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL	6'-8" HEIGHT
TOTAL		17 TREES TO SHADE AND 7 EVERGREEN TREES		

**FOREST CONSERVATION DATA**

FOREST CONSERVATION WORKSHEET FOR DOUGLAS WOODS

Net Tract Area	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	
Total (Gross) Tract Area	6.90																														
Area within 100-year Floodplain	0.23																														
Other Deductions (Identify)	0.32																														
Net Tract Area	6.35																														
Land Use Category																															
Insert the number "1" under the appropriate land use (limit to only one entry)																															
Rural/LD	0																														
Rural/MD	0																														
Rural/UD	0																														
Office	0																														
PUD	0																														
Forest	0																														
Forest Clearing Permitted without Mitigation	0																														
Proposed Forest Clearing																															
L. Total Area of Forest to be Cleared	0.40																														
M. Total Area of Forest to be Retained	5.95																														
Planting Requirements Inside Watershed																															
N. Reforestation for Clearing above the Reforestation Threshold	0.00																														
O. Reforestation for Clearing below the Reforestation Threshold	0.00																														
P. Credit for Reforestation above the Reforestation Threshold	0.00																														
Q. Total Reforestation Required	0.00																														
R. Total Afforestation Required	0.00																														
S. Total Afforestation Required	0.00																														
T. Total Afforestation and Reforestation Requirement	0.00																														
U. Forest Clearing (Retention + Planting)	0.40																														
V. Planting Required (Onsite to meet 75% Offset Goal)	0.60																														
Planting Requirements Outside Watershed																															
W. Total Planting within Development Site Watershed	0.00																														
X. Total Afforestation Required	0.00																														
Y. Reforestation for Clearing above the Reforestation Credit	0.00																														
Z. Remaining Planting within Watershed for Reforestation Credit	0.00																														
AA. Reforestation for Clearing below the Reforestation Threshold	0.00																														
BB. Credit for Reforestation above the Reforestation Threshold	0.00																														
CC. Total Reforestation Required	0.00																														
DD. Total Afforestation and Reforestation Requirement	0.00																														



**AFFORESTATION PLANT LIST (BANK) (FCR 2.23 AC)**

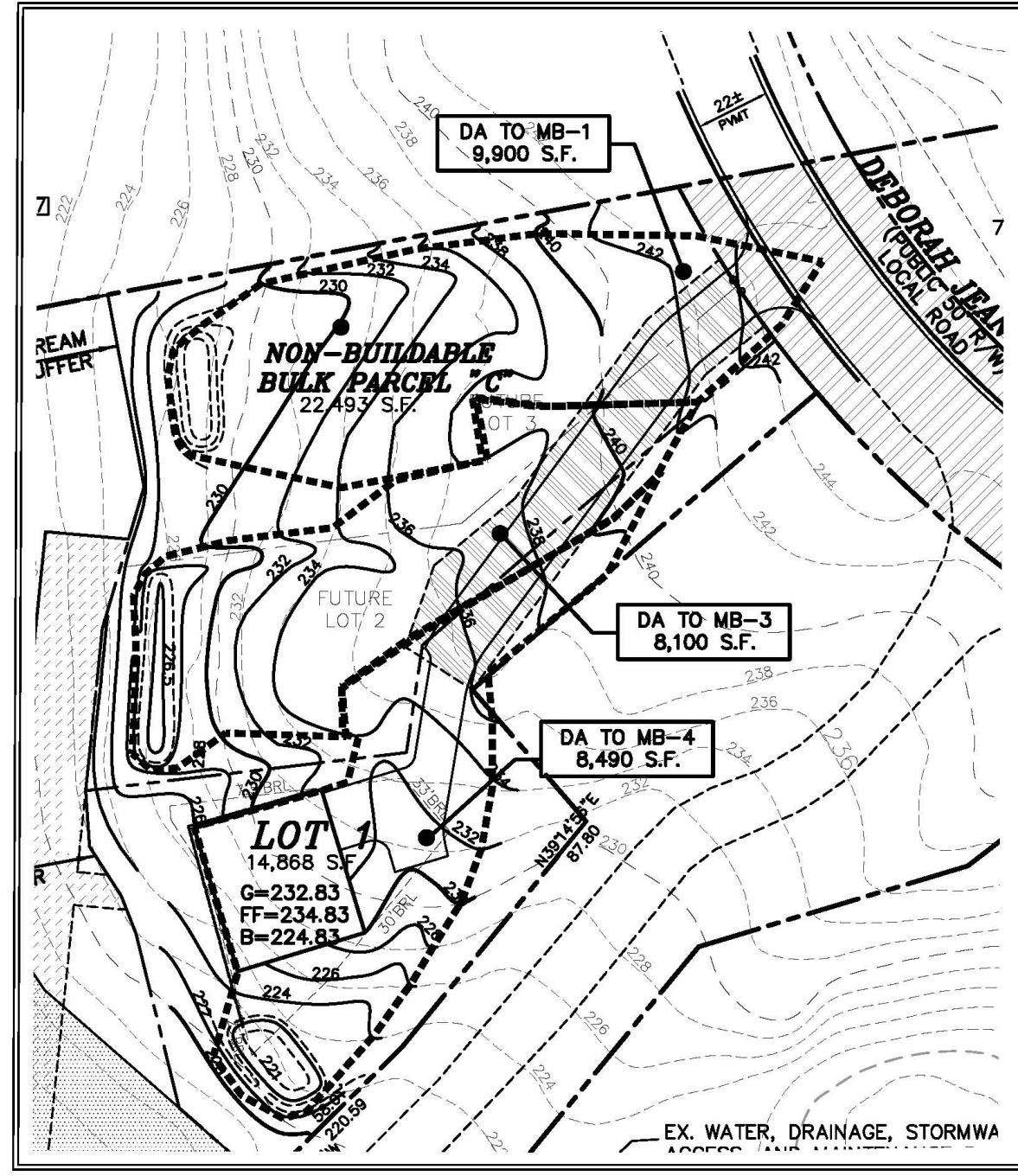
QTY.	SPECIES	SHADE	MOIST.	WET.	MIN.O.C.	SIZE	SPACING	REMARKS
100	Acer rubrum	VT	D-W	FAC	15'	CONT/B & B	15'	CONT/B & B
40	Lindera benzoin	T	M	FACW-	15'	CONT/B & B	15'	CONT/B & B
100	Liquidambar styraciflua	I	M-W	FAC	15'	CONT/B & B	15'	CONT/B & B
46	Liriodendron tulipifera	MT	D-M	FAC	15'	CONT/B & B	15'	CONT/B & B
80	Nyssa sylvatica	T	M-W	FAC	15'	CONT/B & B	15'	CONT/B & B
80	Quercus alba	MT	D-M	FACU	15'	CONT/B & B	15'	CONT/B & B
	White Oak					1" CALIPER		
TOTAL								446 - 1" CALIPER TREES

NOTE: WHIPS OR SEEDLINGS MAY BE SUBSTITUTED FOR THE 1" CALIPER OR 3" - 5" IF WHIPS OR SEEDLINGS ARE TO BE USED. MULTIPLY THE QUANTITIES BY 1.75 TO DETERMINE THE NUMBER OF TREES REQUIRED.

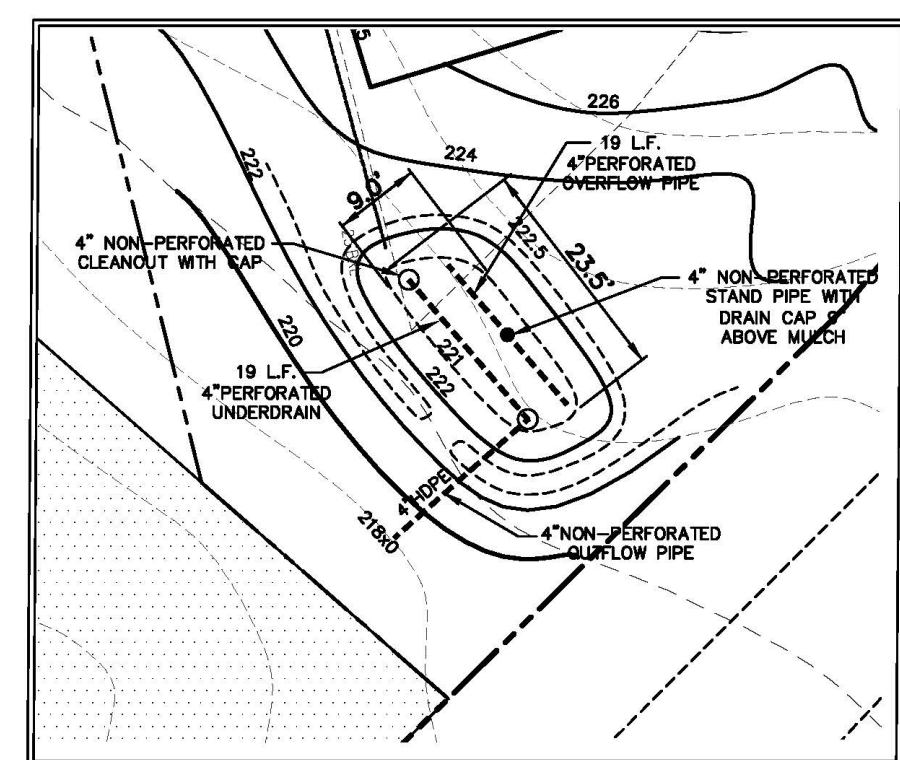
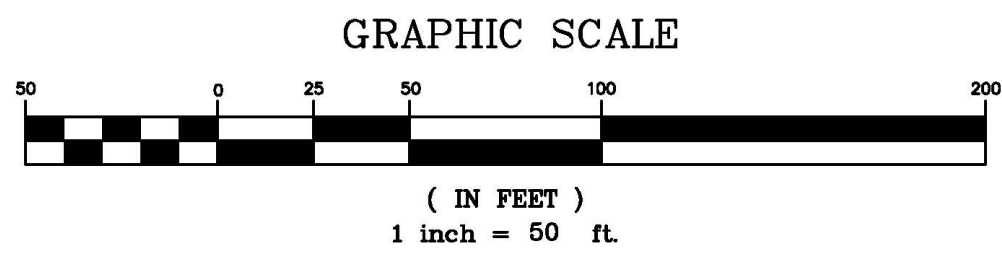
**AFFORESTATION PLANT LIST (BASEMENT "C" 0.36 AC)**

QTY.
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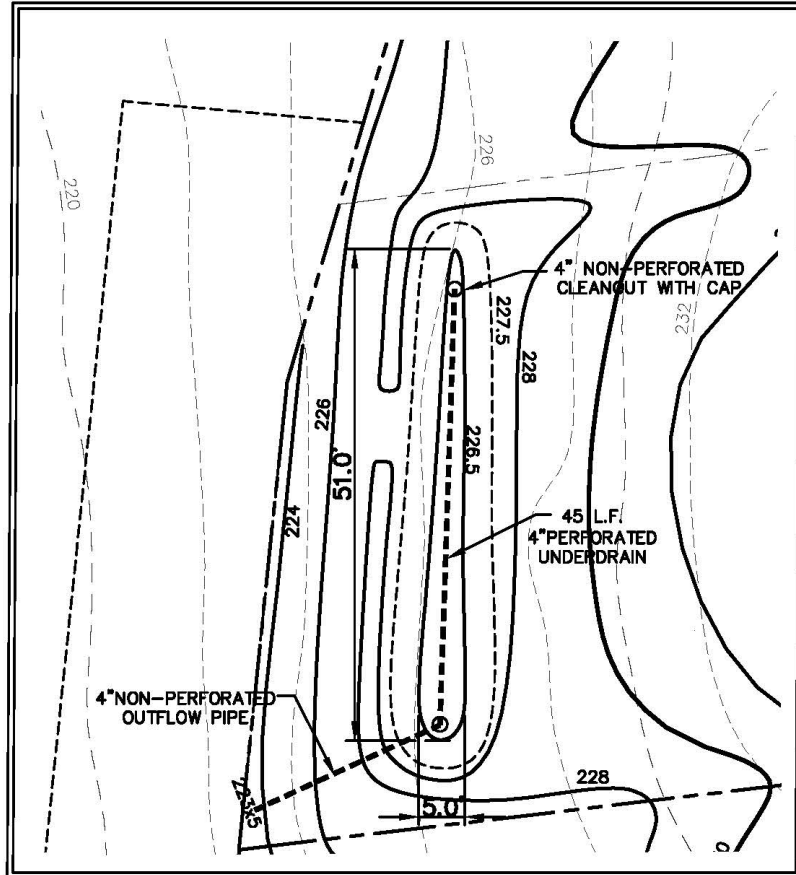
M:\2018\18-009 DOUGLAS WOODS\DWG\FINAL\_Plan\Final\_Plan-Lot 1 & Bulk Parcel-2nd sub\18-009-Final\_Plan-Lot 1 & Bulk Parcel Dec 2021.dwg, 12/8/2021 11:09:23 AM



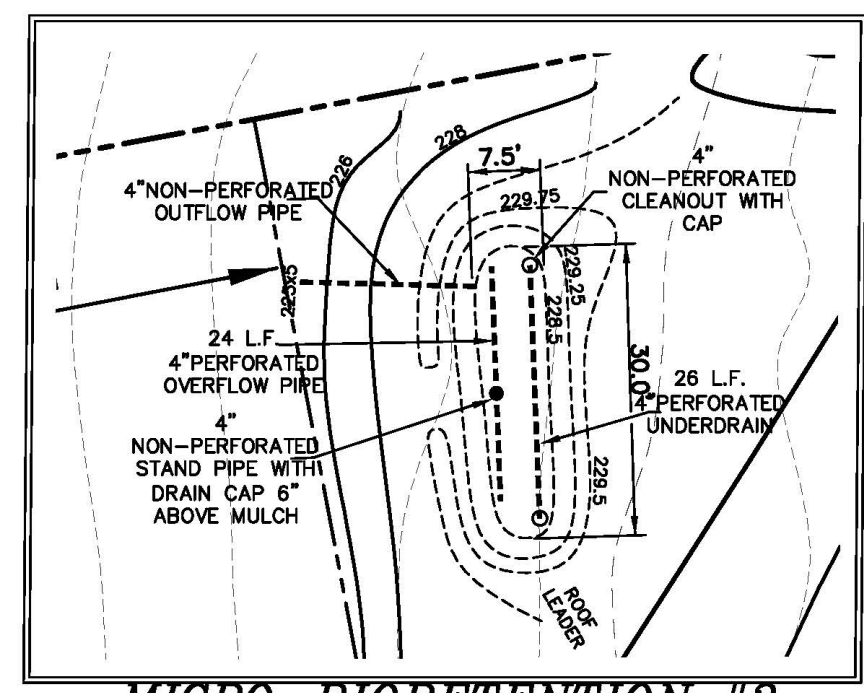
**SWM DRAINAGE AREA MAP**  
SCALE: 1"=50'



**MICRO-BIORETENTION #1**  
SCALE: 1"=20'



**MICRO-BIORETENTION #2**  
SCALE: 1"=20'



**MICRO-BIORETENTION #3**  
SCALE: 1"=20'

**SOILS TABLE**

SYMBOL	RATING	NAME	K FACTOR	MAP NO.	COMMENTS
CeC	(B)	CHILLUM LOAM, 5-10% SLOPES	.37	19	HIGHLY ERODIBLE
CrD	(C)	CROOM AND EVESBORO SOILS, 10-15%	.37	19	HIGHLY ERODIBLE
FoaA	(D)	FALLSINGTON SANDY LOAM, 0-2% SLOPES	.24	19	
LoC	(B)	LEGORE SILT LOAM, 8-15% SLOPES	.37	19	
LmB	(B)	LEGORE-MONTALTO SILT LOAMS, 3-8% SLOPES	.17	19	
SdD	(B)	SASSAFRAS AND CROOM SOILS, 10-15% SLOPES	.37	19	HIGHLY ERODIBLE

**GEOTECHNICAL ENVIRONMENTAL TESTING CONSULTANTS, INC.**  
P.O. Box 2071  
Columbia, MD 21045-2071  
Phone: (410) 381-5330  
Fax: (410) 381-1064  
e-mail: mounir54@yahoo.com

October 16, 2018

Mildenberg, Boender & Associates, Inc.  
7350-B Grace Drive  
Columbia, Maryland 21044

Attn: Ms. Maya M. Mildenberg  
Vice President

Ref: Limited Subsurface Exploration  
Proposed Development  
Douglas Woods  
Tax MAP 37, Parcel 698  
7209 Pebble Creek Drive  
Elkridge, Maryland 21075  
GE&T Project No. G-255

Dear Ms. Mildenberg:

On October 15th, 2018, GE&T Consultants, Inc. utilized a Simco Earthprobe 200. Geoprobe to bore three (3) soil borings (B-1 through B-3) to depths of 11.0 ft to 13.0 ft below existing site grades at the locations shown on the attached Borings Location Map. The purpose of the study was to evaluate the presence/absence of bedrock and local groundwater at the locations shown, within the depth explored. The location and depth of the borings was determined by others and the borings were staked-out in the field by others.

Our field observations are summarized in Table 1 below:

Boring No.	Depth to Groundwater (ft)	Depth to Geoprobe Refusal (ft)	Boring Termination Depth (ft)	Remarks
B-1	N/A	N/A	13.0	
B-2	N/A	N/A	11.0	
B-3	N/A	N/A	11.0	

Note: All depths are below existing site grades

It should be noted that the actual level of groundwater and the amount and level of perched water should be anticipated to fluctuate through the year, depending on variations in precipitation, surface run-off, infiltration, site topography, drainage, and other factors not evident at the time of our exploration. GE&T can not be responsible for changes in groundwater conditions at the site due to seasonal variations and changes caused by other factors such as grading operations at the site.

GE&T appreciates the opportunity to provide this geotechnical engineering service to you. Should you have any questions regarding this letter report, or require additional services, please feel free to contact our office.

Sincerely,  
GE&T Consultants, Inc.  
Mounir Abouzakhm, PE

**OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)**

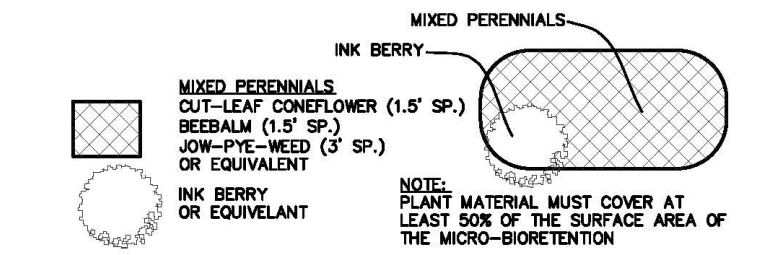
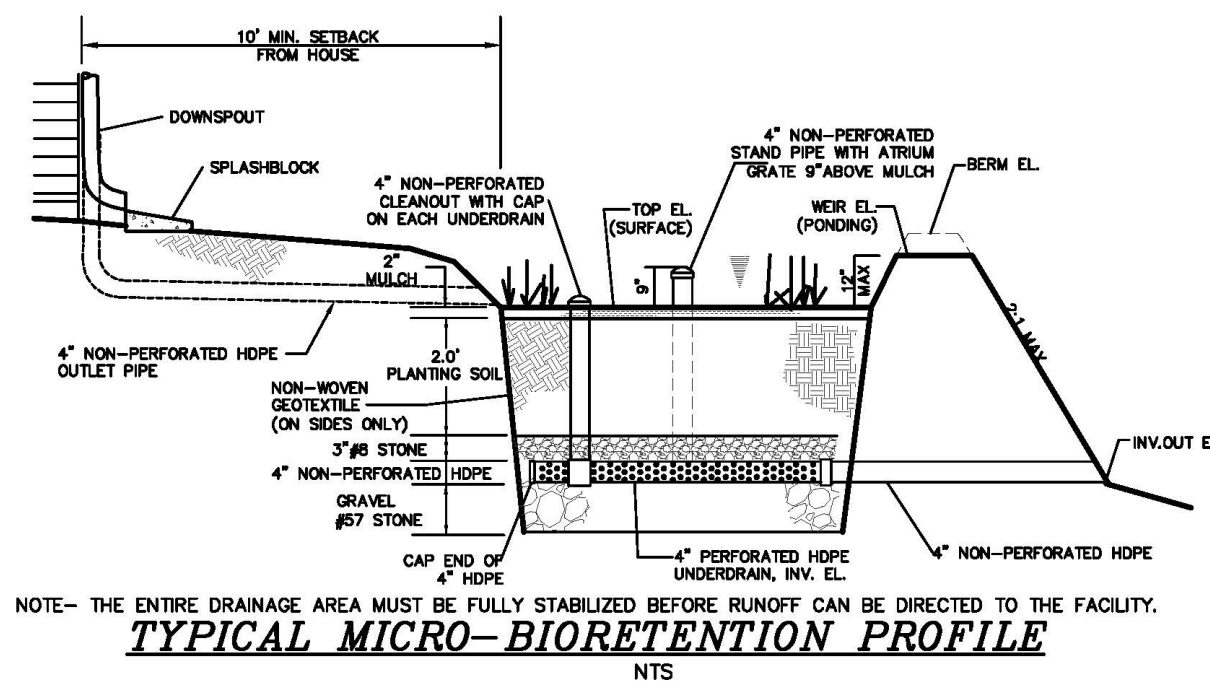
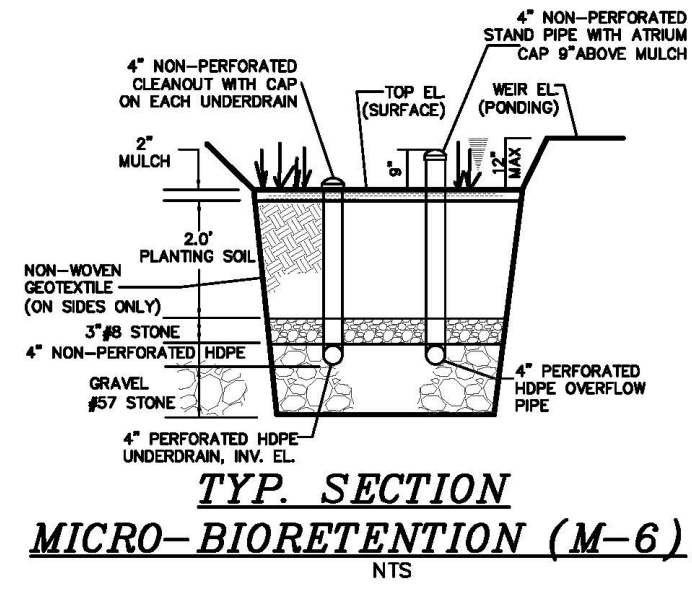
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND 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 INSPECTION 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.

**LEGEND**

- WETLAND AREA
- FLOODPLAIN AREA
- AREA OF STEEP SLOPES, 25% OR GREATER AT VERTICAL DISTANCE OF 10 FEET OR MORE
- AREA OF 15%-24.99% SLOPES
- PROPOSED IMPERVIOUS AREA TREATED BY MICRO-BIORETENTION (M-6)
- ROAD DEDICATION
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- EXISTING TREELINE
- PROPOSED TREELINE
- MICRO-BIORETENTION
- DRYWELL
- STABILIZED CONSTRUCTION ENTRANCE
- STREAM
- STREAM BANK BUFFER

**MICRO-BIORETENTION SCHEDULE**

FACILITY	TOP EL. (SURFACE)	WEIR EL. (SURFACE)	BERM EL.	INV. IN.	INV. OUT.	SURFACE AREA	PONDING AREA	PONDING DEPTH	GRAVEL DEPTH BELOW UNDERDRAIN
MB-1	221.00	222.00	222.5	218.25	218.00	180 S.F.	380 S.F.	12"	15"
MB-2	226.50	227.50	228.00	223.50	223.50	165 S.F.	500 S.F.	12"	16"
MB-3	228.50	229.25	229.75	225.75	225.50	200 S.F.	370 S.F.	9"	12"



**SWM PRACTICES SCHEDULE**

AREA	PROPOSED PRACTICES	REQUIRED ESDV	PROVIDED ESDV
LOT 1	M-6, MICRO-BIORETENTION (MB-1)	268 C.F.	294 C.F.
FUTURE LOT 2	M-6, MICRO-BIORETENTION (MB #2)	333 C.F.	424 C.F.
FUTURE LOT 3	M-6, MICRO-BIORETENTION (MB #3)	311 C.F.	370 C.F.
TOTAL		912 C.F.	1,088 C.F.

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Development Engineering Division  
12/22/2021  
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Division of Land Development  
12/28/2021  
DATE

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. 26859, EXP. DATE 08/08/23

12/08/2021  
DATE

**OWNER/DEVELOPER**

GP NORTH LLC.  
7350-B GRACE DRIVE, COLUMBIA,  
MARYLAND 21044  
410-997-0296

SAMER A. ALOMER P.E.

Project: 18-009  
Date: DEC. 2021  
Illustration: MAM  
Scale: 1"=50'  
Approval: RJH

DOUGLAS WOODS  
LOT 1, OPEN SPACE LOTS 2, 3 AND NON-BUILDABLE BULK PARCELS A, B & C  
TAX MAP: 37, PARCEL 698, GRID: 11  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
STORMWATER MANAGEMENT DETAILS AND SPECIFICATIONS

**MILDENBERG, BOENDER & ASSOC., INC.**  
Engineers Planners Surveyors  
7350-B Grace Drive, Columbia, Maryland 21044  
(410) 997-0296 Tel. (410) 997-0298 Fax.