ENVIRONMENTAL CONCEPT PLAN
O'DONNELL PROPERTIES
BINDER LANE

GENERAL NOTES

1. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
2. THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PREPARED BY VOGEL ENGINEERING+TIMMONS GROUP DATED FEBRUARY 2021. OFFSITE TOPOGRAPHY IS BASED ON HOWARD COUNTY GIS.
3. THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PREPARED BY VOGEL ENGINEERING+TIMMONS GROUP DATED FEBRUARY 2021.
4. THE SUBJECT PROPERTY IS ZONED "TOD" IN ACCORDANCE WITH THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
5. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
6. PUBLIC WATER IS PROVIDED BY CONTRACT 24-W&S. PUBLIC SEWER IS PROVIDED BY CONTRACT 24-W&S.
7. THERE IS NO 100-YEAR FLOODPLAIN ON-SITE.
8. THERE ARE NO STEEP SLOPES WITH A CONTIGUOUS AREA OF 20,000SF LOCATED ONSITE.
9. THERE ARE WETLANDS, STREAMS AND BUFFERS ON-SITE.
10. THERE ARE NO SPECIMEN TREES ON-SITE.
11. ENVIRONMENTAL AND FOREST STAND DELINEATION REPORTS FOR LOTS 1, 2, 8-11, AND 13 PREPARED BY ECO-SCIENCE PROFESSIONALS, INC.; BOTH DATED MARCH 2021.
11. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
12. BINDER LANE IS CLASSIFIED AS A LOCAL ROAD.
13. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES ON THIS PROPERTY. THERE ARE NO HISTORIC HOUSES LOCATED ON THIS PROPERTY.
14. STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THREE MICRO-BIORETENTION FACILITIES (M-6). THIS FACILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED.
15. APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR REDLINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR REDLINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
16. APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME. THE FINAL PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.

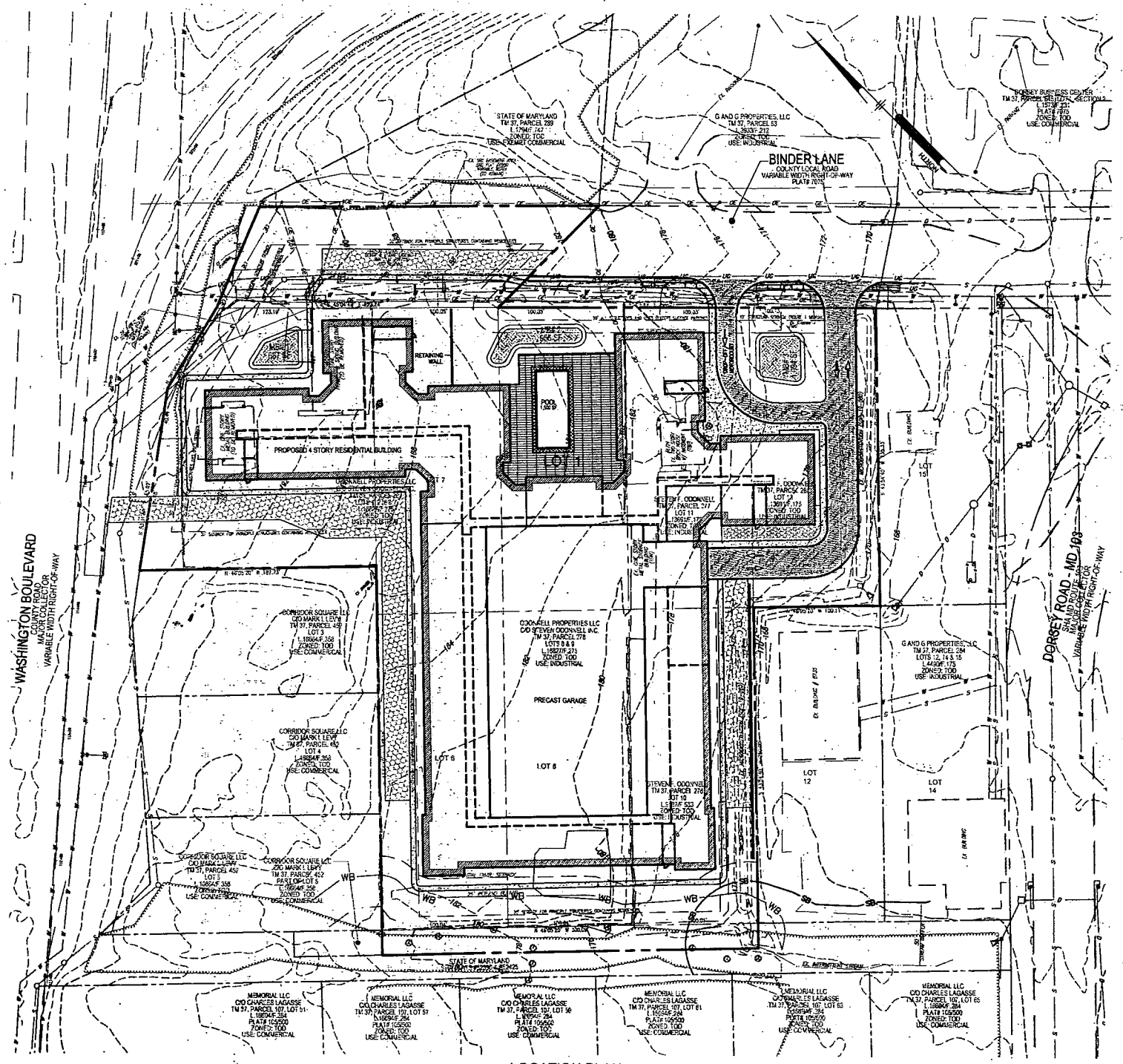
ENVIRONMENTAL SITE DESIGN NARRATIVE:

1. THE SITE NATURALLY SLOPES FROM NORTH TO SOUTH. THE SITE HAS BEEN DESIGNED TO MAINTAIN THE NATURAL DRAINAGE PATTERNS, WITH NO DRAMATIC CHANGES TO THE NATURAL DRAINAGE.
2. THE CONCEPTUAL REDUCTION IN IMPERVIOUS AREA THROUGH BETTER SITE DESIGN IS ACHIEVED THROUGH THE ENVIRONMENTAL SITE DESIGN (ESD) FOR THE PROJECT TO THE MAXIMUM EXTENT PRACTICABLE (MEP). THIS PROJECT QUALIFIES FOR REDEVELOPMENT. EXISTING IMPERVIOUS AREA ON SITE IS 100% WHICH IS ABOVE THE 40% THRESHOLD FOR REDEVELOPMENT. THE ESD CONCEPT INCLUDES THE USE OF THREE MICRO-BIORETENTION FACILITIES (M-6). THE TARGET Pe=1.0" AND THE TARGET SITE ESDv REQUIRED IS 4,242 CF. THIS PLAN PROVIDES 5,588 CF ESDv. THE 100-YR STORM HAS DECREASED BY REDUCING THE IMPERVIOUS AREA ON SITE, AND BY REDUCING THE 100 YEAR PEAK DISCHARGE FROM THIS SITE FROM 94.24 cfs TO 92.78 cfs. PROPOSED IMPERVIOUS AREA IS 62% OF THE PROJECT AREA.
3. SEDIMENT CONTROL FOR THIS SPECIFIC SITE PLAN WILL BE PROVIDED THROUGH THE USE OF SUPER SILT FENCE AND DIVERSION FENCE. SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH CURRENT REQUIREMENTS AND SHALL BE APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT DURING THE FUTURE SITE DEVELOPMENT PLAN PHASE OF THE PROJECT.
4. STORMWATER MANAGEMENT FOR THE PROJECT SHALL BE MET THROUGH THE USE OF THREE MICRO-BIORETENTION FACILITIES (M-6). THE PROPOSED PRACTICES HAVE BEEN MAXIMIZED TO THE EXTENT PRACTICAL.

SITE DATA:

LOCATION: COLUMBIA, MD.; TAX MAP 37, BLOCK 23, PARCELS 276-278, 280, 283
1ST ELECTION DISTRICT
PRESENT ZONING: TOD
PROJECT AREA: 5.20 AC.
- 0.38 AC. LOT 1
- 0.43 AC. LOT 2
- 0.57 AC. LOT 6
- 0.55 AC. LOT 7
- 0.57 AC. LOT 8
- 0.55 AC. LOT 9
- 0.57 AC. LOT 10
- 0.55 AC. LOT 11
- 0.54 AC. LOT 13
- 0.45 AC. COUNTY ROW (TO BE ACQUIRED)
- 0.14 AC. SHA ROW (TO BE ACQUIRED)

DPZ REFERENCES: L.9167/F.536, L.13691/F.175
USE OF PROPOSED STRUCTURE: RESIDENTIAL
TOTAL BUILDING COVERAGE: 105,022 SF (2.41 AC. OR 45.56% OF GROSS AREA)
PAVED PARKING LOT/AREA ON SITE: 9,454 SF (0.22 AC. OR 4.16% OF GROSS AREA)
AREA OF LANDSCAPE ISLAND: 0 SF (0.00 AC. OR 0% OF GROSS AREA)
LIMIT OF DISTURBED AREA: 5.23 AC
WETLANDS WITHIN LOD: 0.00 AC.
WETLAND BUFFERS WITHIN LOD: 0.00 AC.
STREAMS AND THEIR BUFFERS WITHIN LOD: 0.00 AC
AREA OF ON-SITE 100 YEAR FLOODPLAIN WITHIN LOD: 0.00 AC
AREA OF EXISTING FOREST WITHIN LOD: 0.00 AC.
AREA OF ON-SITE NRCS/MDE/HSCD STEEP SLOPES (20% OR GREATER): 0.00 AC
AREA OF ON-SITE STEEP SLOPES (25% OR GREATER): 0.00 AC
AREA OF ERODIBLE SOILS: 0.00 AC.
AREA MANAGED BY ESDv (THIS PLAN): 1.22 AC.
IMPERVIOUS AREA (MANAGED BY ESDv): 1.08 AC.
GREEN AREA (MANAGED BY ESDv): 0.14 AC.

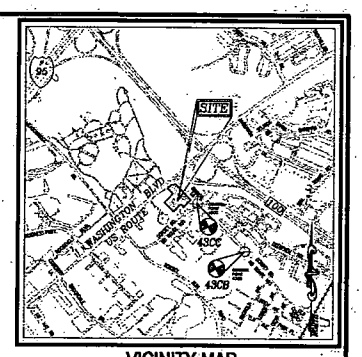


LOCATION PLAN
SCALE: 1"=50'

BENCHMARKS

BENCHMARK NO. 1: HOWARD COUNTY CONTROL #43CB
N. 552084.214, E. 1382282.508 ELEV. = 144.435

BENCHMARK NO. 2: HOWARD COUNTY CONTROL #43CC
N. 553201.436, E. 1381152.910 ELEV. = 163.897



VICINITY MAP
SCALE: 1"=2000'
ADC MAP, COORDINATE: 35-A5

SHEET INDEX	
DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 3
ESDv CONCEPT PLAN	2 OF 3
STORMWATER MANAGEMENT DRAINAGE AREA MAP AND DETAILS	3 OF 3

RECEIVED
FEB 28 2025
BY: .....

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 3/10/22 DATE

DATE	NO.	REVISION	BY

DEVELOPER
OLD TOWN CONSTRUCTION
5304 DORSEY HALL DRIVE
ELLICOTT CITY, MD 21042
ATTN: JARED SPAHN
PHONE: 410-730-3725

OWNER
O'DONNELL PROPERTIES LLC
5 LONGWOOD ROAD
BALTIMORE, MD 21210
ATTN: STEVE O'DONNELL
PHONE: 410-796-7968

PROJECT
O'DONNELL PROPERTIES

AREA
TAX MAP 37 PARCELS 276, 277; 278, 280 & 283 LOTS1, 2, 6-11 & 13
ZONED TOD GRID NO 23 1ST ELECTION DISTRICT
6724 W, 6728 DORSEY ROAD AND 6718 BINDER LANE
ELKRIDGE, MARYLAND 21075
HOWARD COUNTY, MARYLAND

TITLE
COVER SHEET

Pennoni Associates Inc.
Engineers • Surveyors • Planners
Landscape Architects
8890 McGaw Road, Suite 100 Columbia, MD 21045
T 410.997.8900 F 410.997.9282

SEAL

STATE OF MARYLAND — PAUL A. INGRAM — LICENSED PROFESSIONAL ENGINEER — No. 29886

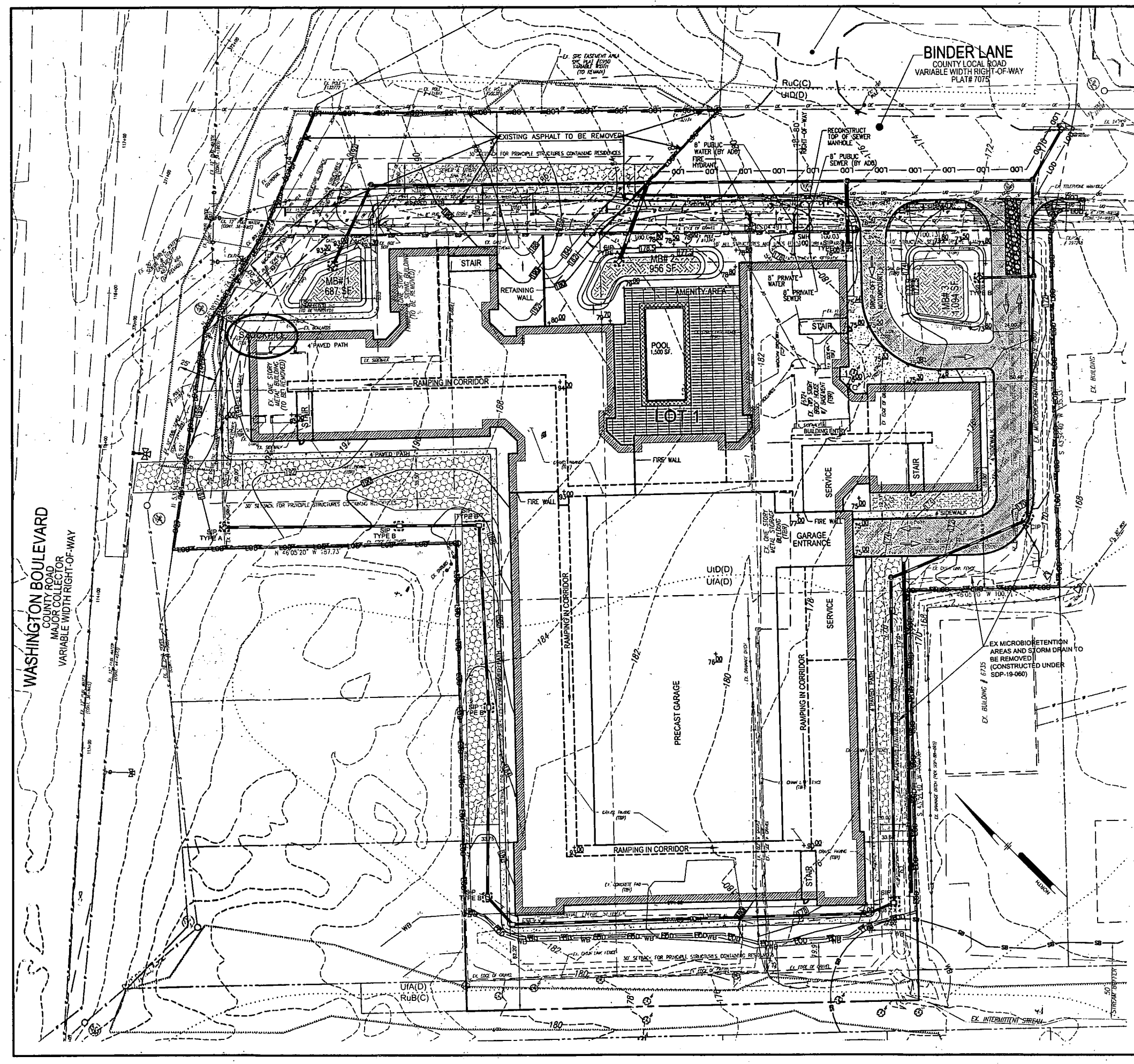
BY: 3-7-22

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3996, EXPIRATION DATE 10-10-2022

DESIGNED BY: PAI	
DRAWN BY: ALC	
PROJECT NO: ODONN21001	
DATE: MARCH 7, 2022	
SCALE: 1" = 50'	
DRAWING NO. 1 OF 3	

0 50' 100'

ECP-21-038



LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- EX. PROPERTY LINE AND RIGHT OF WAY
- ADJACENT PROPERTY LINE
- EXISTING BUILDING
- EXISTING STREAM
- EXISTING WETLANDS
- EXISTING WETLANDS BUFFER — WB
- EXISTING TREELINE
- EXISTING WATER — W
- EXISTING SEWER — S
- EXISTING STORM DRAIN — D
- EXISTING CURB & GUTTER
- EXISTING FIRE HYDRANT
- SOILS BOUNDARY — UfA(D) RuB(C)
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR
- LIMIT OF DISTURBANCE — LOD
- PROPOSED WATER — W
- PROPOSED FIRE HYDRANT
- PROPOSED SEWER — S
- PROPOSED STORM DRAIN
- PROPOSED BUILDING
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- PROPOSED FIRE LANE
- STABILIZED CONSTRUCTION ENTRANCE
- MICRO-BIORETENTION
- STANDARD INLET PROTECTION — SP TYPE C
- SUPER SILT FENCE — SF
- DIVERSION FENCE — DF

0 30' 60'

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3-16-22

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/16/22

DATE	NO.	REVISION	BY

DEVELOPER: OLD TOWN CONSTRUCTION
5304 DORSEY HALL DRIVE
ELLICOTT CITY, MD 21042
ATTN: JARED SPAHN
PHONE: 410-730-3725

OWNER: O'DONNELL PROPERTIES LLC
5 LONGWOOD ROAD
BALTIMORE, MD 21210
ATTN: STEVE O'DONNELL
PHONE: 410-798-7968

PROJECT
O'DONNELL PROPERTIES

AREA
TAX MAP 37 PARCELS 276, 277, 278, 280 & 283 LOTS1, 2, 6-11 & 13
ZONED TOD GRID NO. 23 1ST ELECTION DISTRICT
6724 W, 6728 DORSEY ROAD AND 6718 BINDER LANE
ELKRIDGE, MARYLAND 21075
HOWARD COUNTY, MARYLAND

TITLE
ESDv CONCEPT PLAN

Pennoni
Pennoni Associates Inc.
Engineers • Surveyors • Planners
Landscape Architects
8890 McGaw Road, Suite 100 Columbia, MD 21045
T 410.997.8900 F 410.997.9282

SEAL

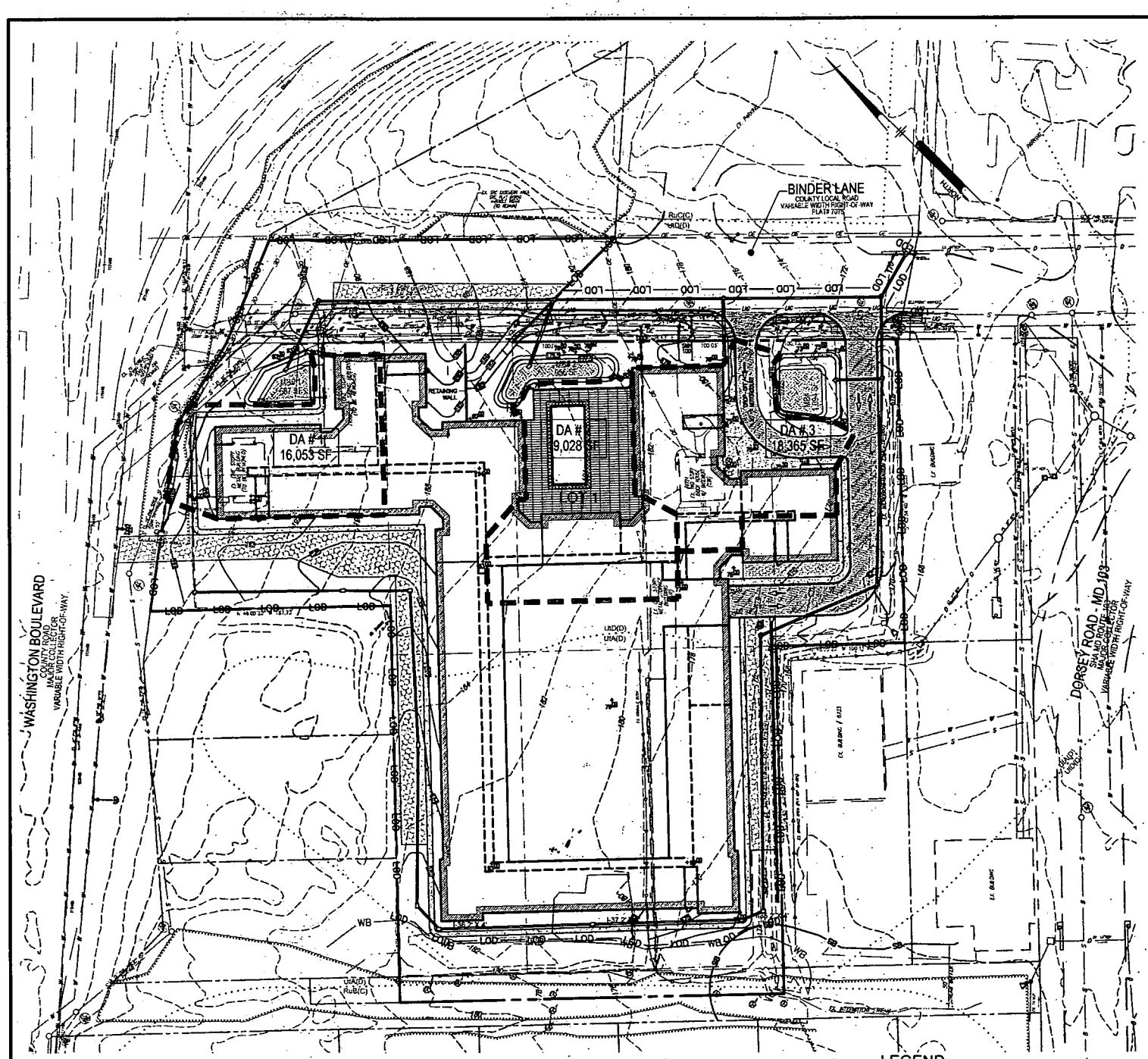
STATE OF MARYLAND — ANDREW L. CUNNINGHAM — LANDSCAPE ARCHITECT — No. 3886

BY: 3-7-22

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3886, EXPIRATION DATE 10-10-2022

DESIGNED BY :	PAI
DRAWN BY:	ALC
PROJECT NO :	ODONN21001
DATE :	MARCH 7, 2022
SCALE :	1" = 30'
DRAWING NO.	2 OF 3

ECP-21-038



STORMWATER DRAINAGE AREA MAP

SCALE: 1"=50'

0 50' 100'

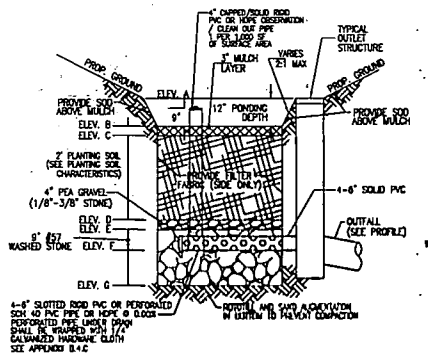
LEGEND

MICRO-BIORETENTION

DRAINAGE AREA

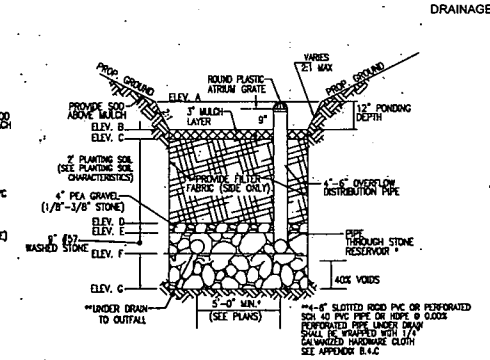
MICROBIORETENTION NOTES:

1. ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICROBIORETENTION WILL CAUSE THE MRR TO FAIL AND THEREFORE SHALL NOT BE INSTALLED.
2. WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.
3. PROVIDE 5" MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFERATED PIPE THROUGH STONE RESWOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLANS)



MICRO-BIORETENTION (UNDERDRAIN) (M-6)

NOT TO SCALE



MICRO-BIORETENTION (OVERFLOW) (M-6)

NOT TO SCALE

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

1. MATERIAL SPECIFICATIONS

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

2. FILTERING MEDIA OR PLANTING SOIL

THE SOIL SHALL BE A UNIFORM MIX FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR LAYERED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.06.01.05. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

- SOIL COMPONENT – LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
- ORGANIC CONTEN – MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (80%–85%) AND COMPOST (15% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
- CLAY CONTENT – MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
- PH RANGE – SHOULD BE BETWEEN 5.5 – 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.

THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

3. COMPACTION

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO FRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE. WHEN BACKFILLING THE TOPSOIL LIKE THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

4. PLANT MATERIAL

RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (8 TO 12 MONTHS) FOR ACCEPTANCE.

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL. GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS. THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

- PIPE – SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM# 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).
- PERFORATIONS – IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4x4) GALVANIZED HARDWARE CLOTH.
- GRAVEL – THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
- THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
- A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000O SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
- A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

7. MISCELLANEOUS

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

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

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

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil (2' to 4' deep)	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type I nonwoven
Gravel (underdrains and infiltration beams)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe, 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipe; not necessary underneath pipe. Perforated pipe shall be wrapped with 4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; F_c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 318.R.09; vertical loading (30-50 or 55-225); allowable horizontal loading (based on soil parameters); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO #10 are not acceptable. No calcium carbonated or dolomite sand substitutions are acceptable. No "rock dust" can be used for sand.

ESDv SUMMARY TABLE

ESDv REQUIRED	ESDv REQUIRED TO MEET Cpv	ESDv REQUIRED TO MEET Wqv	ESDv PROVIDED
4,242 cf	N/A	4,242 cf	5,588 cf

THIS SITE IS A REDEVELOPMENT SITE AND IS REQUIRED TO PROVIDE 1.0 INCH OF TREATMENT FOR 2.82 ACRES BY STORMWATER MANAGEMENT OR IMPERVIOUS AREA REDUCTION. TREATMENT FOR THIS SITE IS PROVIDED BY REDUCING IMPERVIOUS AREAS BY 0.76 ACRES AND TREATING 1.22 ACRES IN THREE MICROBIO RETENTION FACILITIES. THESE NUMBERS MAY BE ADJUSTED AS THE PLAN IS REFINED, BUT THE MINIMUM TREATMENT REQUIREMENTS WILL BE MET REGARDLESS.

ESDv DEVICE SUMMARY TABLE

TREATMENT	ESDv REQUIRED TO MEET Cpv	ESDv REQUIRED TO MEET Wqv	ESDv PROVIDED
MICRO-BIORETENTION 1	N/A	962 cf	1,415 cf
MICRO-BIORETENTION 2	N/A	1,457 cf	2,000 cf
MICRO-BIORETENTION 3	N/A	1,321 cf	2,173 cf
TOTAL			5,588 cf

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

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULTCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.

2. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.

3. 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.

4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

ENVIRONMENTAL CONCEPT PLAN NOTES:

1. APPROVAL OF THIS SIMPLIFIED ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED BUILDING AND/OR GRADING PERMIT
2. REVIEW OF THIS PLAN FOR COMPLETE COMPLIANCE WITH ZONING AND SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE SITE DEVELOPMENT STAGE AND THEREFORE, THIS PLAN IS SUBJECT TO ADDITIONAL AND MORE DETAILED COMMENTS AS THE PLAN PROGRESSES THROUGH THE SITE DEVELOPMENT PROCESS.

SOILS LEGEND

HOWARD COUNTY SOILS MAP #25

SYMBOL	NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBLE
UfA	URBAN LAND – FALLSINGTON COMPLEX, 0 TO 2 PERCENT SLOPES	D	–	NO
UtD	URBAN LAND – UDORTHENTS COMPLEX, 0 TO 15 PERCENT SLOPES	D	0.28	NO

SOILS NOTE:

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

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/16/22

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/16/22

DATE	NO.	REVISION	BY

DEVELOPER: OLD TOWN CONSTRUCTION, 5304 DORSEY HALL DRIVE, ELLICOTT CITY, MD 21042, ATTN: JARED SPAHN, PHONE: 410-730-3725

OWNER: O'DONNELL PROPERTIES LLC, 5 LONGWOOD ROAD, BALTIMORE, MD 21210, ATTN: STEVE O'DONNELL, PHONE: 410-796-7968

PROJECT: O'DONNELL PROPERTIES

AREA: TAX MAP 37 PARCELS 276, 277, 278, 280 & 283 LOTS1, 2, 8-11 & 13, ZONED TOD GRID NO. 23 1ST ELECTION DISTRICT, 6724 W, 6728 DORSEY ROAD AND 6718 BINDER LANE, ELKRIDGE, MARYLAND 21075, HOWARD COUNTY, MARYLAND

TITLE: STORMWATER DRAINAGE AREA MAP AND DETAILS

Pennoni Associates Inc.
Engineers • Surveyors • Planners
Landscape Architects
8890 McGaw Road, Suite 100 Columbia, MD 21045
T 410.997.8900 F 410.997.9282

SEAL: STATE OF MARYLAND, ALAN L. CRAMER, No. 36365, PROFESSIONAL ENGINEER

BY: 3.7.22

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 1098, EXPIRES 06/04/2022"

DESIGNED BY : PAI	
DRAWN BY: ALC	
PROJECT NO : ODONN21001	
DATE : MARCH 7, 2022	
SCALE : 1" = 50'	
DRAWING NO. 3 OF 3	

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ECP-21-038