

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, PERFORMED IN DECEMBER, 2021 AND HOWARD COUNTY GIS.
3. THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY VOGEL ENGINEERING+TIMMONS GROUP, DATED OCTOBER 2022.
4. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM, HOWARD COUNTY MONUMENT NOS. 25DMT6 AND 25DMT2 WERE USED FOR THIS PROJECT. HORIZONTAL DATUM (BEARINGS AND COORDINATES AS SHOWN HEREON) ARE BASED ON THE MARYLAND COORDINATE SYSTEM NAD 83.
5. THE SUBJECT PROPERTY IS ZONED "R-20", IN ACCORDANCE WITH THE 10/6/13 ZONING REGULATIONS, AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003.
6. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS, 100 YR FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
7. WATER SERVICE TO BE PUBLIC SERVICE CONNECTIONS FROM CONTRACT NO. 10-W.
8. SEWER SERVICE TO BE PUBLIC SERVICE CONNECTIONS FROM CONTRACT NO. 31-S.
9. SAINT JOHNS LANE IS A MINOR COLLECTOR/NEIGHBORHOOD STREET 2.
-PROJECT ACCESS PER A PRIVATE USE-IN-COMMON DRIVEWAY - LOTS 1&3.
-THE OWNER REQUESTS PERMISSION FOR CONTINUED USE OF THEIR EXISTING DRIVEWAY. AN ALTERNATIVE COMPLIANCE REQUEST SHALL BE FORWARDED UNDER THE FUTURE PLAN SUBMISSION.
-SIDEWALK REQUIREMENT WILL BE ADDRESSED WITH THE FUTURE FINAL PLAN.
10. THIS PROJECT IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
11. THERE ARE NO 100 -YEAR FLOODPLAINS ON THE PROPERTY.
12. THERE ARE NO STEEP SLOPES WITH A CONTIGUOUS AREA OF 20,000 SF LOCATED ON THE PROPERTY.
13. THERE ARE NO WETLANDS, STREAMS OR BUFFERS LOCATED WITHIN THE PROJECT BOUNDARY.
14. IN ACCORDANCE WITH SECTION 16.121(b)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE OPEN SPACE REQUIREMENTS FOR THIS R-20 PROJECT IS TO SATISFY BY PAYMENT OF FEE-IN-LIEU DURING FUTURE PLAN.
15. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES ON THIS PROPERTY. THE SITE IS NOT LISTED ON THE HISTORIC SITES INVENTORY.
16. THERE ARE SPECIMEN TREES ON THE SITE. REFER TO NOTE 24.
17. THE FOREST CONSERVATION OBLIGATION WILL BE ADDRESSED WITH THE FUTURE FINAL PLAN.
18. GEOTECHNICAL TEST PITS SHALL BE PROVIDED WITH THE FUTURE FINAL PLAN.
19. A SIMPLIFIED FOREST STAND DELINEATION AND ASSOCIATED LETTER DATED JULY 27, 2022 WAS COMPILED BY J. BRODY MCALLISTER CA #MA6471A, MD DNR QUALIFIED PROFESSIONAL OF ECO-SCIENCE PROFESSIONALS INC.
20. PROPOSED USE: SINGLE FAMILY DETACHED.
21. STORMWATER MANAGEMENT FOR THE PROJECT SHALL BE MET THROUGH THE USE OF MICRO-BIORETENTION FACILITIES (M-6). IN ACCORDANCE WITH COUNCIL RESOLUTION NO. 123-2019 AND THE HOWARD COUNTY DESIGN MANUAL VOLUME 1 CHAPTER 5, SECTION 5.2.1 THE PROJECT MUST MANAGE THE 10-YEAR, 100-YEAR AND 3.55-HOUR / 6.6-INCH "FLOOD OF RECORD" STORM AS THE SITE DRAINS TOWARD
1) THE PLUMTREE BRANCH WATERSHED
2) THE CAT ROCK RUN AND ONTO THE TIBER HUDSON BRANCH OF THE PATAPSCO RIVER.
QUANTITY MANAGEMENT SHALL BE ACHIEVED IN THE OVERSIZED MICRO-BIORETENTION FACILITIES (M-6). THE RESULT BEING MANAGED "WOODS IN GOOD CONDITION".
-THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
22. 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 RED-LINE 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 RED-LINE 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.
23. 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 SEDIMENT CONTROL WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.
24. AT THIS CONCEPT STAGE OF DEVELOPMENT:
- AN ALTERNATIVE COMPLIANCE REQUEST IS REQUIRED FOR REMOVAL OF SPECIMEN TREES
- NO DESIGN MANUAL WAIVERS ARE REQUIRED FOR THE STORMWATER MANAGEMENT DESIGN
- LOT 2 PROVIDES A 20 FEET WIDE PIPESTEM PROVIDING ROAD FRONTAGE. THE OWNER REQUESTS PERMISSION FOR CONTINUED USE OF THEIR EXISTING DRIVEWAY. AN ALTERNATIVE COMPLIANCE REQUEST SHALL BE FORWARDED UNDER THE FUTURE PLAN SUBMISSION.

ENVIRONMENTAL SITE DESIGN NARRATIVE

IN ACCORDANCE WITH CHECKLIST ITEM III.K.

1. THE PROJECT SITE IS ZONED R-20, LOCATED IN ELLICOTT CITY, MARYLAND ON THE EAST SIDE OF SAINT JOHNS LANE. THE TOTAL PROPERTY AREA IS +/-2 ACRES. INGRESS AND EGRESS WILL BE PROVIDED THROUGH A PROPOSED USE-IN-COMMON DRIVEWAY. THE OWNER/DEVELOPER REQUESTS THE CONTINUED USE OF HIS ACCESS VIA THE EXISTING COMMON USE DRIVEWAY ALONG THE EASTERN BOUNDARY.
 - NO NATURAL AREAS EXIST ON THE SUBJECT PROPERTY. SEE NOTE 19.
 2. NO NATURAL AREAS EXIST ON THE SUBJECT PROPERTY. OFFSITE NATURAL RESOURCES WILL REMAIN UNDISTURBED. NO DISTURBANCE TO THE NATURAL DRAINAGE PATTERNS ARE PROPOSED.
 3. CONCEPTUAL REDUCTION IN IMPERVIOUS AREA THROUGH BETTER SITE DESIGN IS ACHIEVED THROUGH ENVIRONMENTAL SITE DESIGN (ESD) FOR THE PROJECT. THE PE FOR THE PROJECT IS REDUCED TO 1" DUE TO THE QUANTITY REQUIREMENTS ASSOCIATED WITH COUNCIL RESOLUTION NO. 123-2019.
-ESD CONCEPT PROPOSES THE USE OF MICRO-BIORETENTION FACILITIES (M-6).
-QUANTITY MANAGEMENT IS ACHIEVED IN THE OVERSIZED MICRO-BIORETENTION FACILITIES (M-6).
-ALL PRACTICES WILL BE PRIVATELY OWNED AND MAINTAINED.
 4. SEDIMENT CONTROL FOR THIS SPECIFIC SITE PLAN WILL BE PROVIDED THROUGH THE USE OF PERIMETER SILT FENCE AND/OR SUPER SILT FENCE CONTROLS. SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH THE CURRENT REQUIREMENTS AND SHALL BE APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.
 5. STORMWATER MANAGEMENT FOR THE PROJECT SHALL BE MET THROUGH THE USE OF MICRO-BIORETENTION FACILITIES (M-6). IN ACCORDANCE WITH COUNCIL RESOLUTION NO. 123-2019 AND THE HOWARD COUNTY DESIGN MANUAL VOLUME 1 CHAPTER 5, SECTION 5.2.1 THE PROJECT MUST MANAGE THE 10-YEAR, 100-YEAR AND 3.55-HOUR / 6.6-INCH "FLOOD OF RECORD" STORM AS THE SITE DRAINS TOWARD 1) THE PLUMTREE BRANCH WATERSHED AND 2) THE CAT ROCK RUN AND ONTO THE TIBER HUDSON BRANCH OF THE PATAPSCO RIVER. QUANTITY MANAGEMENT SHALL BE ACHIEVED IN THE OVERSIZED MICRO-BIORETENTION FACILITIES (M-6). THE RESULT BEING MANAGED "WOODS IN GOOD CONDITION".
- THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
- TARGET PE = 1.00" PROVIDED PE = 1.44"
TARGET ESDV = 989 CUFT PROVIDED = 1428 CUFT
6. AT THIS CONCEPT STAGE OF DEVELOPMENT:
- AN ALTERNATIVE COMPLIANCE REQUEST IS REQUIRED FOR REMOVAL OF SPECIMEN TREES
- NO DESIGN MANUAL WAIVERS ARE REQUIRED FOR THE STORMWATER MANAGEMENT DESIGN
- LOT 2 PROVIDES A 20 FEET WIDE PIPESTEM PROVIDING ROAD FRONTAGE. THE OWNER REQUESTS PERMISSION FOR CONTINUED USE OF THEIR EXISTING DRIVEWAY. AN ALTERNATIVE COMPLIANCE REQUEST SHALL BE FORWARDED UNDER THE FUTURE PLAN SUBMISSION.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Paul D. Moore 4/26/23
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
[Signature] 4/26/23
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

ENVIRONMENTAL CONCEPT PLAN

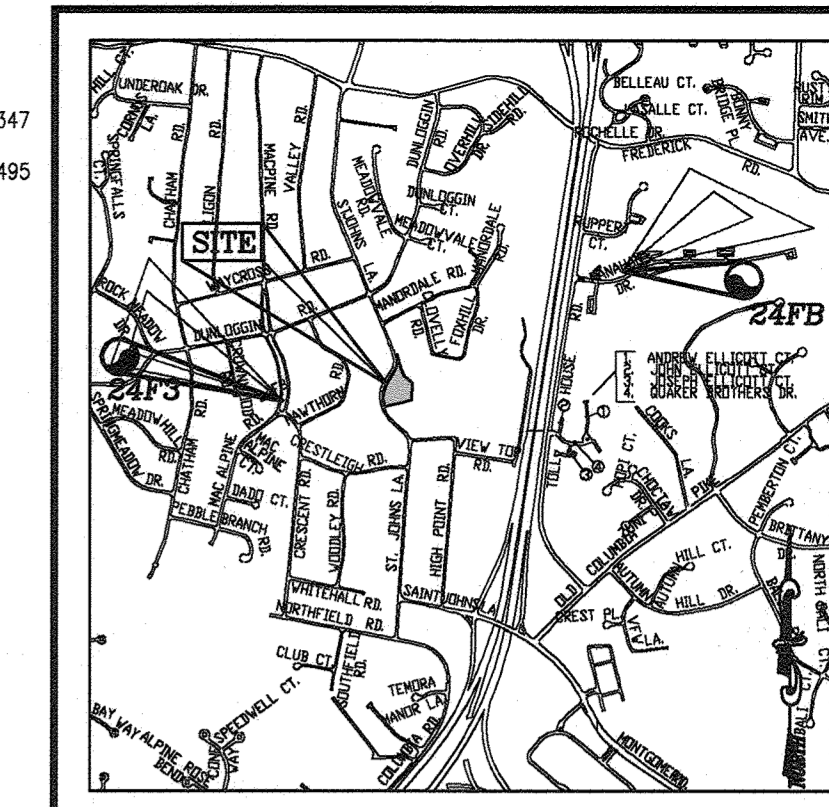
SEIDEL PROPERTY

PARCEL 459

3933 ST JOHNS LN, ELLICOTT CITY 21042
HOWARD COUNTY, MD

BENCHMARKS

HOWARD COUNTY BENCHMARK
24F3 N 581,299.858 E 1,360,713.774 NAVD88 ELEV. 365.347
HOWARD COUNTY BENCHMARK
24F8 N 582,652.119 E 1,364,255.979 NAVD88 ELEV. 422.495



VICINITY MAP
SCALE: 1"=2000'
ADC MAP/GRID NO. 4815/J8

SHEET INDEX	
DESCRIPTION	SHEET NO.
COVER SHEET AND LOCATION MAP	1 OF 6
LAYOUT PLAN	2 OF 6
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ESD STORMWATER MANAGEMENT DRAINAGE AREA MAP NOTES & DETAILS	4 OF 6
STORMWATER MANAGEMENT AND SITE NOTES & DETAILS	5 OF 6
CR-123-2019 QUANTITY MANAGEMENT EXISTING AND PROPOSED CONDITION DRAINAGE AREA MAPS	6 OF 6

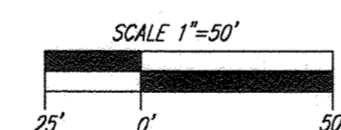
LEGEND:

	EXISTING CONTOUR		PROPOSED RIGHT-OF-WAY LINE
	PROPERTY LINE		PROPOSED LOT LINE
	ADJACENT PROPERTY LINE		PROPOSED EDGE OF PAVE
	PROPOSED LOT LINE		PROPOSED LANDSCAPE WALL
	EXISTING EDGE OF PAVING		PROPOSED CURB & GUTTER
	EXISTING TREES		
	EXISTING TREELINE		
	UNDERGROUND WATER LINE		
	UNDERGROUND SANITATION LINE		
	FIRE HYDRANT		
	WATER VALVE		
	SEWER MANHOLE		
	EXISTING EDGE OF PAVING		



LOCATION MAP

SCALE: 1"=50'



OWNER/DEVELOPER

EDWARD SEIDEL
3933 SAINT JOHNS LANE
ELLICOTT CITY MD 21042

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
COVER SHEET AND LOCATION MAP

SEIDEL PROPERTY

3933 ST. JOHNS LN
DEED L.10998 F.00045

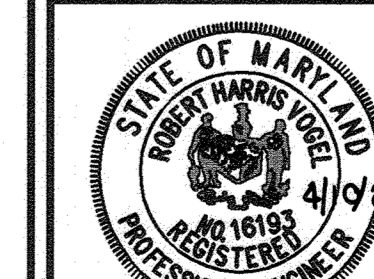
TAX MAP 24 GRID 17
2-12 ELECTION DISTRICT

ZONED R-20
PARCEL 459

VOGEL ENGINEERING

TIMMONS GROUP

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
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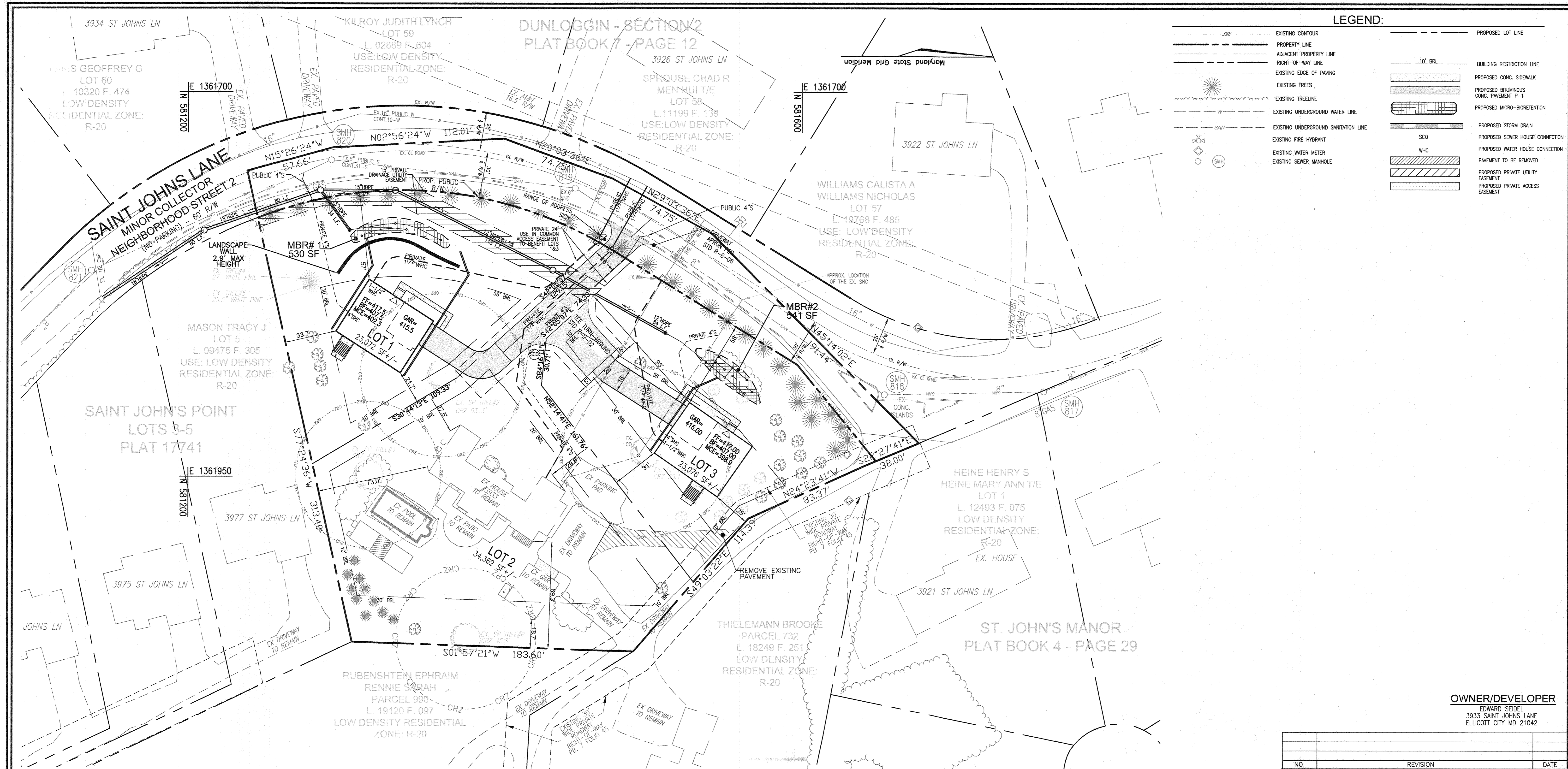
DESIGN BY: RHV
DRAWN BY: ONB
CHECKED BY: RHV
DATE: MARCH 2023
SCALE: AS SHOWN
W.O. NO.: 48978

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. EXPIRATION DATE: 08-31-2024

1 SHEET OF 6

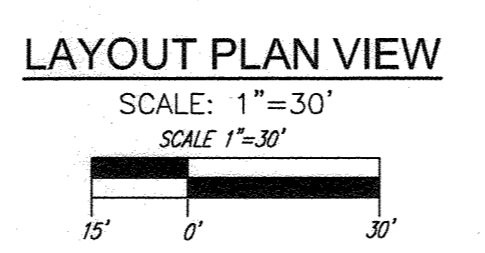
SITE DATA:

- A. TOTAL PROJECT AREA: 2.22 AC.
- B. AREA OF PLAN SUBMISSION: 2.22 AC.
- C. AREA OF WETLANDS AND BUFFERS: 0.00 AC.
- D. AREA OF 100 YEAR FLOODPLAIN: 0.00 AC (WITHIN PROJECT SITE)
- E. AREA OF FOREST: 0.00 AC (WITHIN PROJECT SITE)
- F. AREA OF STEEP SLOPES (15% OR GREATER): 0.00 AC (WITHIN PROJECT SITE)
- G. AREA OF ERODIBLE SOILS: 0.00 AC.
- H. AREA OF LIMITS OF DISTURBANCE: 1.14 AC
- I. PROPOSED USES FOR SITE AND STRUCTURES: SINGLE FAMILY DETACHED
- J. GREEN OPEN AREA: 0.88 AC. (WITHIN PROJECT SITE)
- K. PROPOSED IMPERVIOUS AREA: 0.26 AC. (WITHIN PROJECT SITE)
- L. PRESENT ZONING DESIGNATION: R-20 (RESIDENTIAL SINGLE)
- M. DPZ FILE REFERENCES:



LEGEND:

	EXISTING CONTOUR		PROPOSED LOT LINE
	PROPERTY LINE		BUILDING RESTRICTION LINE
	ADJACENT PROPERTY LINE		PROPOSED CONC. SIDEWALK
	RIGHT-OF-WAY LINE		PROPOSED BITUMINOUS CONC. PAVEMENT P-1
	EXISTING EDGE OF PAVING		PROPOSED MICRO-BORETENTION
	EXISTING TREES		PROPOSED STORM DRAIN
	EXISTING TREELINE		PROPOSED SEWER HOUSE CONNECTION
	EXISTING UNDERGROUND WATER LINE		PROPOSED WATER HOUSE CONNECTION
	EXISTING UNDERGROUND SANITATION LINE		PROPOSED PRIVATE UTILITY EASEMENT
	EXISTING FIRE HYDRANT		PROPOSED PRIVATE ACCESS EASEMENT
	EXISTING WATER METER		
	EXISTING SEWER MANHOLE		



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Paul Sheno for E
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 4/26/23

[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 4/26/23

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
LAYOUT PLAN

SEIDEL PROPERTY
3933 ST. JOHN'S LN
DEED L.10998 F.00045

TAX MAP 24 GRID 17
2-12 ELECTION DISTRICT

ZONED R-20
PARCEL 459
HOWARD COUNTY, MARYLAND

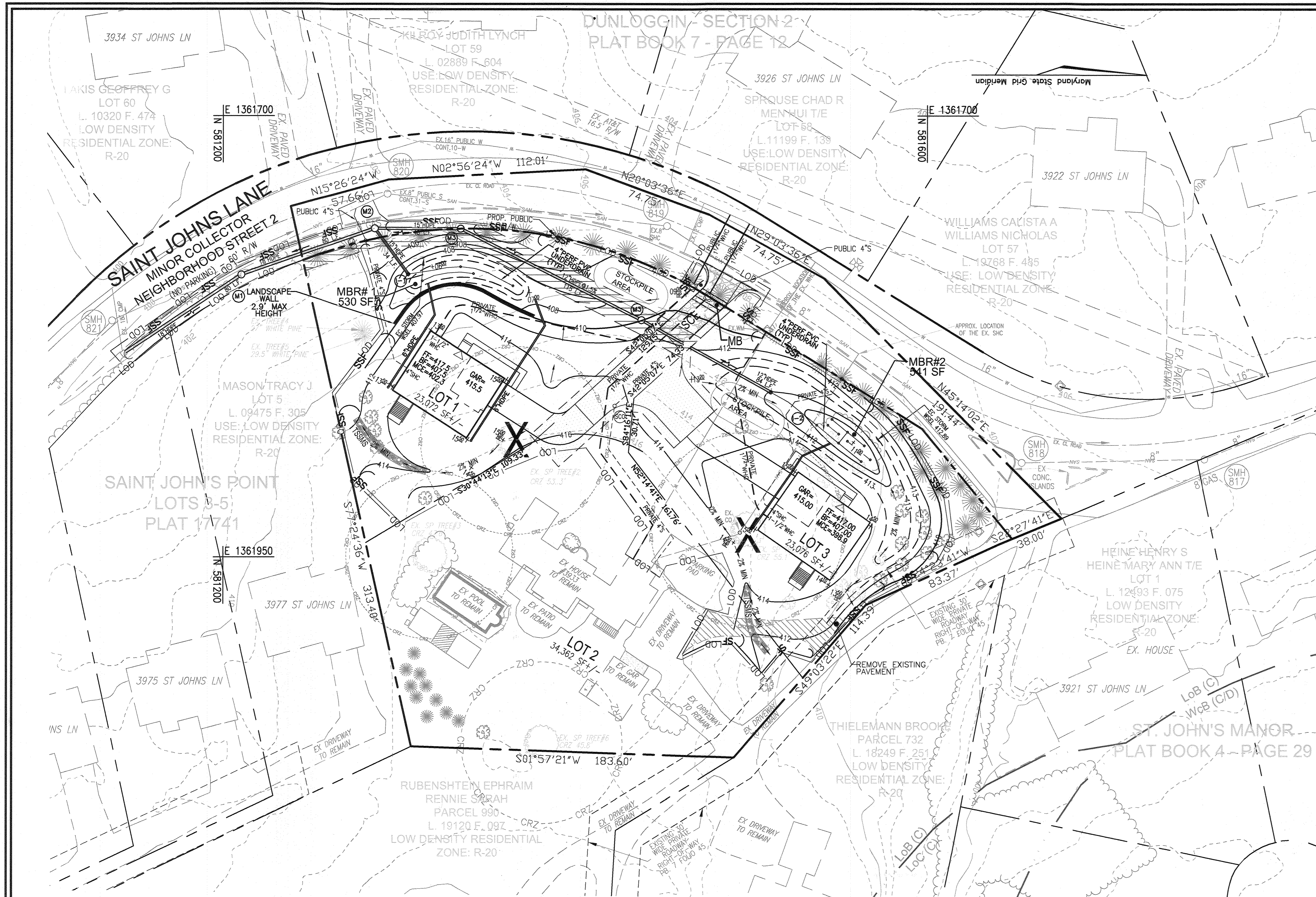
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TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLCOTT CITY, MD 21043
P: 410-461.7666 F: 410-461.8961 www.timmons.com

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I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 11613 EXPIRATION DATE: 09-27-2024

DESIGN BY: RHV
DRAWN BY: ONB
CHECKED BY: RHV
DATE: MARCH 2023
SCALE: AS SHOWN
W.O. NO.: 48978

ROBERT H. VOGEL, PE No.16193

2 SHEET OF 6



LEGEND:

	EXISTING CONTOUR		PROPOSED CONTOUR
	PROPERTY LINE		PROPOSED SPOT ELEVATION
	ADJACENT PROPERTY LINE		PAVEMENT TO BE REMOVED
	RIGHT-OF-WAY LINE		PROPOSED CONC. SIDEWALK
	EXISTING EDGE OF PAVING		PROPOSED PAVEMENT
	EXISTING TREES		PROPOSED SEWER HOUSE CONNECTION
	EXISTING TREELINE		PROPOSED ROOF DRAIN
	UNDERGROUND WATER LINE		PROPOSED WATER HOUSE CONNECTION
	UNDERGROUND SANITATION LINE		PROPOSED MICRO-BIORETENTION
	FIRE HYDRANT		PROPOSED STORM DRAIN
	WATER VALVE		STABILIZED CONSTRUCTION ENTRANCE
	SEWER MANHOLE		LIMIT OF DISTURBED AREA
	SOIL TYPE		SILT FENCE
	SOIL TYPE		SUPER SILT FENCE
	CRITICAL ROOT ZONE		TEMPORARY SOIL STABILIZATION MATTING ON SLOPE
	SPECIMEN TREE TO REMOVE		MOUNTABLE BERM

HSCD NOTES:

- APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME.
1. THE FINAL OR SITE DEVELOPMENT PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL EROSION AND SEDIMENT CONTROLS AND PHASING.
 2. THE PROJECT SHALL ADDRESS ANY TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.
 3. THE FINAL OR SITE DEVELOPMENT PLAN SUBMISSION SHALL PROVIDE A DRAINAGE AREA MAP SPECIFIC TO CHOSEN SEDIMENT CONTROLS.
 4. THE FINAL OR SITE DEVELOPMENT PLAN SUBMISSION SHALL PROVIDE COMPUTATIONS TO VERIFY VELOCITIES ALONG DIKES, SWALES AND AT DIKES OUTLET LOCATIONS.

OWNER/DEVELOPER

EDWARD SEIDEL
3933 SAINT JOHNS LANE
ELLCOTT CITY MD 21042

NO.	REVISION	DATE

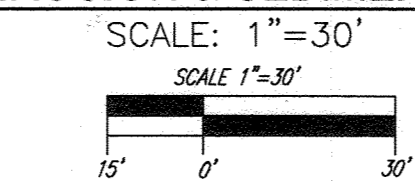
ENVIRONMENTAL CONCEPT PLAN
GRADING EROSION AND SEDIMENT CONTROL PLAN

SEIDEL PROPERTY
3933 ST. JOHNS LN
DEED L.10998 F.00045 ZONED R-20
TAX MAP 24 GRID 17 PARCEL 459
2-12 ELECTION DISTRICT HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING
⊕
TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410.461.7666 F: 410.461.8961 www.timmons.com

	DESIGN BY: RHV	<p>PROFESSIONAL CERTIFICATE</p> <p>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 03-27-2024</p>
	DRAWN BY: ONB	
	CHECKED BY: RHV	
	DATE: MARCH 2023	
SCALE: AS SHOWN	W.D. NO.: 48978	3 SHEET OF 6

GRADING, SOIL EROSION & SEDIMENT CONTROL PLAN



MAPPED SOILS TYPES - HOWARD COUNTY, MARYLAND

SYMBOL NAME / DESCRIPTION	GROUP	HYDRIC	K. FACTOR	HIGHLY ERODIBLE
LsR LEGGERS-MONTAIGU-URBAN LAND COMPLEX - 0 TO 8 PERCENT SLOPE	C	NO	NO	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

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

NOTE:
LOCATE STOCKPILE AS SHOWN HEREON OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED.

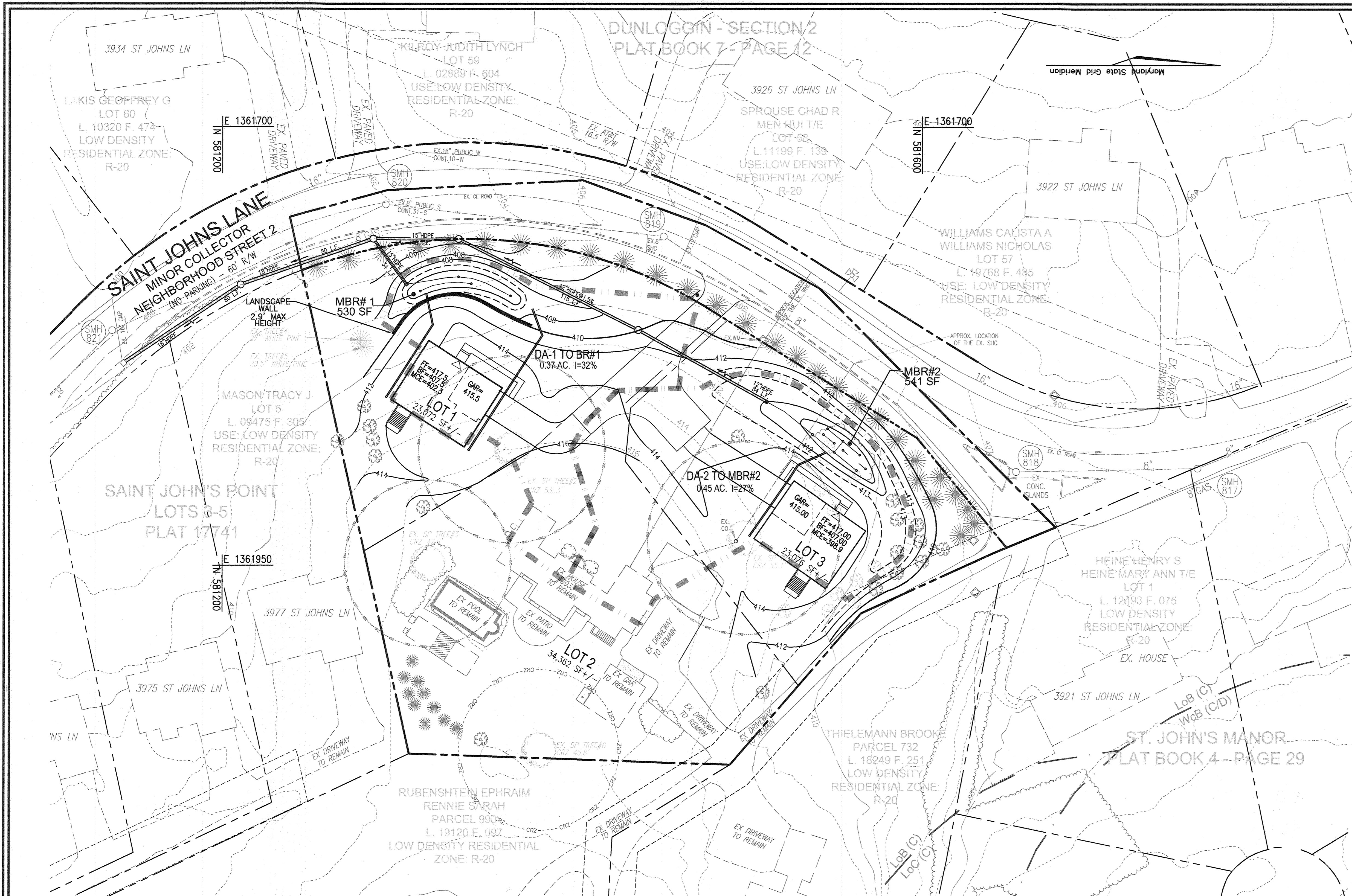
NOTE:
- SILT FENCE IS TO BE REPLACED WITH SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- SILT FENCE SHALL BE CURLED UPHILL NO MORE THAN 35 FEET APART
- DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

NOTE:
EITHER PERMANENT OR TEMPORARY STABILIZATION IS TO BE APPLIED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR REGARDLESS OF DAYS/DATES IN THE STANDARD SEDIMENT CONTROL NOTES AND/OR SEEDING SPECIFICATIONS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Paul Stone For G
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 4/20/23

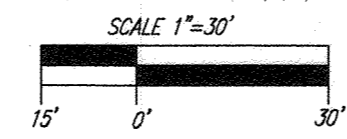
[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 4/20/23



LEGEND:

- EXISTING CONTOUR
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- RIGHT-OF-WAY LINE
- EXISTING TREES
- EXISTING TREETRINE
- UNDERGROUND WATER LINE
- UNDERGROUND SANITATION LINE
- FIRE HYDRANT
- WATER VALVE
- SEWER MANHOLE
- PROPOSED LOT LINE
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PAVEMENT TO BE REMOVED
- PROPOSED STORM DRAIN
- DRAINAGE AREA DIVIDE
- SOIL TYPE
- CRITICAL ROOT ZONE

ESD STORMWATER MANAGEMENT DRAINAGE AREA MAP
SCALE: 1"=30'



OWNER/DEVELOPER
EDWARD SEIDEL
3933 SAINT JOHNS LANE
ELLICOTT CITY MD 21042

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
ESD STORMWATER MANAGEMENT
DRAINAGE AREA MAP, NOTES & DETAILS

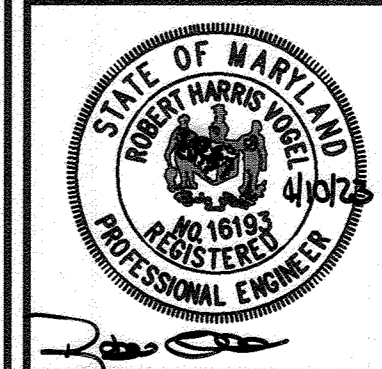
SEIDEL PROPERTY
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DEED L.10998 F.00045

TAX MAP 24 GRID 17
2-12 ELECTION DISTRICT

ZONED R-20
PARCEL 459
HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING
TIMMONS GROUP

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410.461.7666 F: 410.461.8961 www.timmons.com



PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
DRAWN BY: ONB
CHECKED BY: RHV
DATE: MARCH 2023
SCALE: AS SHOWN
W.O. NO.: 48978

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 161819, EXPIRATION DATE: 09-27-2024

ST JOHNS LANE - ESDv PER AREA COMPUTATIONS

DA	% IMPERV	Rv	DA (SQ)	DA (AC)	MINIMUM VOLUME	MAXIMUM VOLUME	1.0" PROVISION	VOLUME IMPERV	IMPERV AREA	GREEN AREA	REMARKS	
MBR1	31.74	0.396	36000	0.37	448	1164	448	706	5078	0.12	0.25	MS-MICRO-BIORETENTION 706 500 SF FILTER
MBR2	26.29	0.2866	19400	0.45	463	1205	463	721	5100	0.12	0.31	MS-MICRO-BIORETENTION 721 541 SF FILTER
MEASURED PROJECT TOTALS	28.75	0.3088	35400	0.81	-	-	911	1427	10178	0.23	0.56	-

MAPPED SOILS TYPES - HOWARD COUNTY, MARYLAND

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	Kw RANGE*	INHERIT ERODIBLE
LoC	LEGORE-MONTALTO-URBAN LAND COMPLEX - 0 TO 8 PERCENT SLOPE	C	NO	0.02/0.32	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

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: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Paul J. ... 4-26-23
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

... 4/20/23
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

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 DAMPED WITHIN THE MICRO-BIORETENTION PRACTICE. IT MAY BE NECESSARY TO PLANT GROUND, OR PROVIDE 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 15.08.01.05. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

- SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
 - ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (20% 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.
- THESE 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 FOR EACH 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 LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE 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, TIEPICKER, OR SUBSOILER. THESE TOOLS SHOULD BE USED TO REFRACTURE 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 PONDING WATER BEFORE PREPARING (ROTOTILLING) BASE. WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

4. PLANT MATERIAL

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

5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE APPLIED TO A UNIFORM THICKNESS OF 2" TO 3" SHREDDED OR CHIPPED. HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE. ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT 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 GRADING 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 FILTERERS DEFLECTS, 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

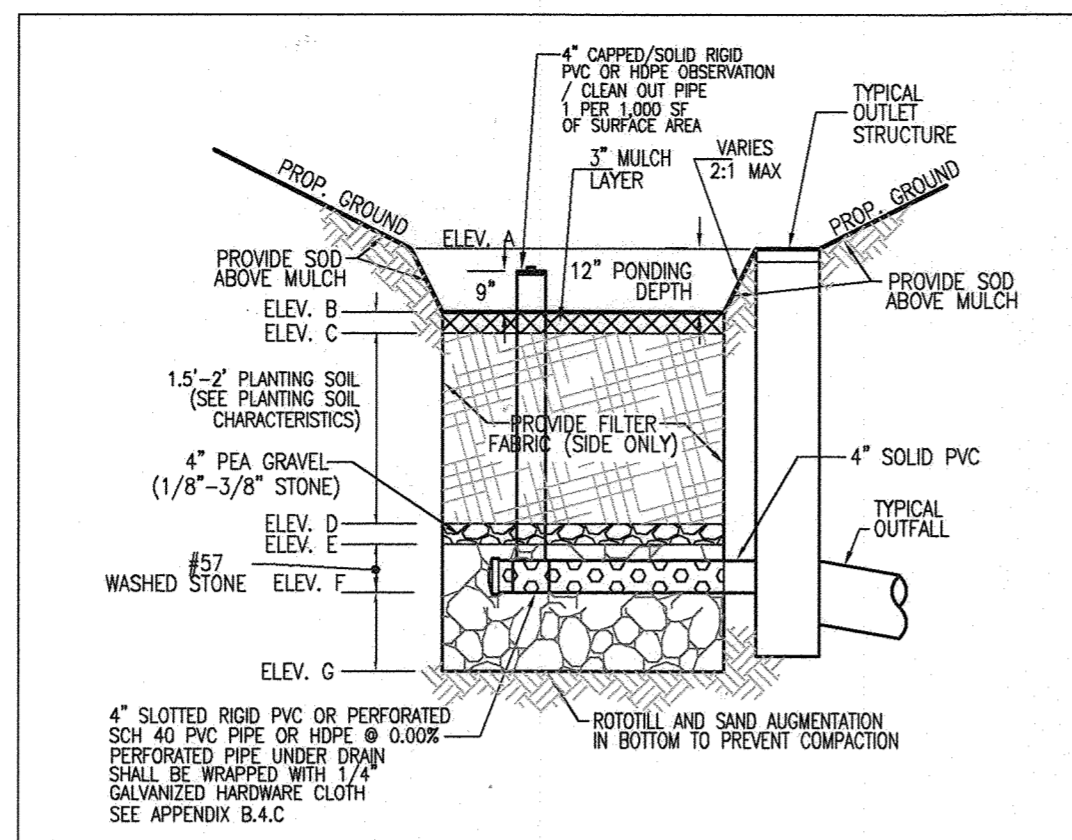
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

- PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F756, 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 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
- A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

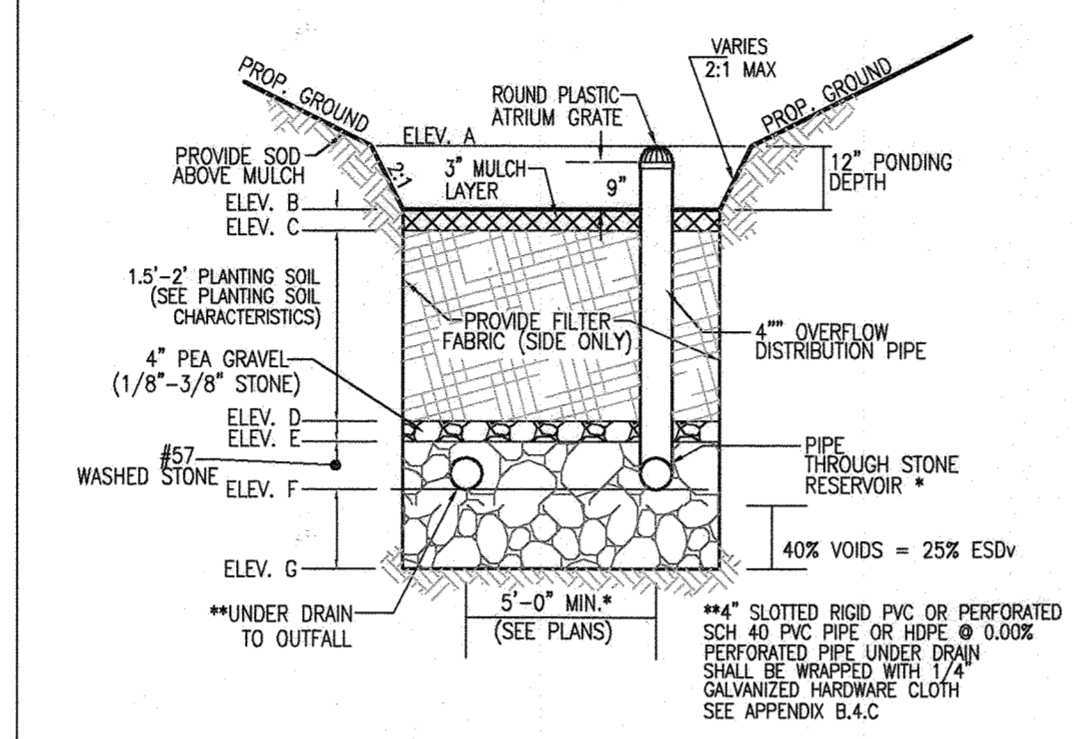
THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

7. MISCELLANEOUS

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



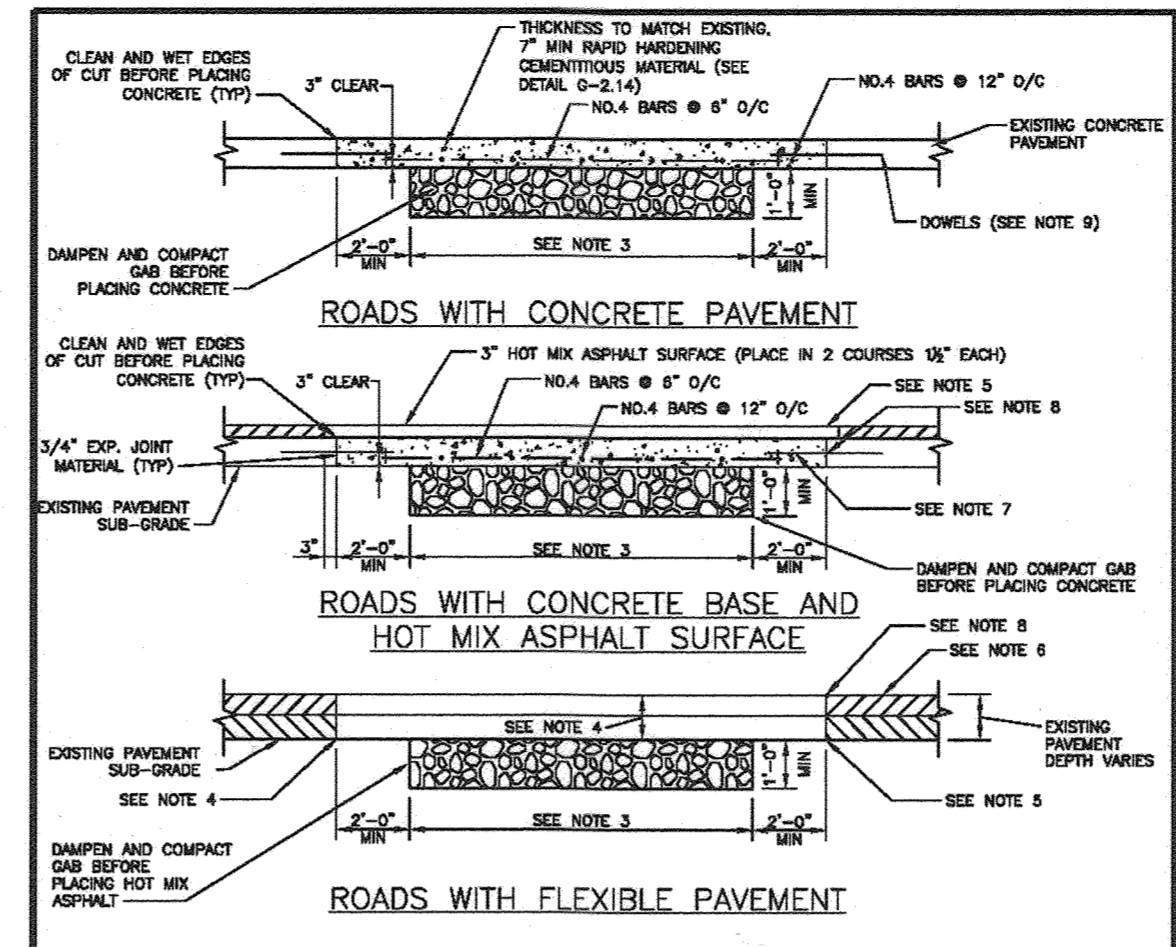
MICRO-BIORETENTION (UNDERDRAIN) (M-6)
NOT TO SCALE



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

MICRO-BIORETENTION NOTES:

1. ONLY THE SIDES OF MICRO-BIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICRO-BIORETENTION WILL CAUSE THE MBR 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 UNDERDRAIN SLOTTED OR PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLANS)



- NOTES:**
1. INTERSECT A TRENCH CROSSES A CONCRETE ROADWAY THAT HAS JOINT INSTALLATIONS THE ENTIRE SPAN BETWEEN THE EDGE OF THE TRENCH AND THE NEAREST JOINT SHALL BE REMOVED IF THE DISTANCE IS LESS THAN 10 FEET.
 2. CLEAN AND WET EDGES OF CUT AND SUBGRADE BEFORE PLACING CONCRETE.
 3. AGGREGATE SUB-BASE WIDTH SHALL BE 6 FT MINIMUM OR ACTUAL TRENCH WIDTH WHICH EVER IS GREATER.
 4. HOT MIX ASPHALT PAVEMENT PATCH THICKNESS SHALL BE EQUAL TO THE EXISTING PAVING SECTION OR AS APPROVED BY DPW. THE MINIMUM PAVING PATCH SHALL CONSIST OF 2" MIN SUBGRADE COURSE OVER 4" MIN BASE COURSE, GRADED AGGREGATE BASE (GAB) SHALL BE PLACED AND COMPACTED IN 6" MAXIMUM COMPACTED THICKNESS LAYERS.
 5. CLEAN EXPOSED VERTICAL SURFACE OF ADJACENT PAVEMENT AND PLACE TACK COAT ON ALL VERTICAL SURFACES PRIOR TO PAVING NEW.
 6. IF THE REMAINING EXISTING PAVEMENT IS LESS THAN 4" WIDE, THE RESIDUAL PAVEMENT SHALL BE REMOVED IN ITS ENTIRETY AND REPLACED.
 7. CONCRETE REPLACEMENT SHALL BE 10" MINIMUM MIX NO. 6.
 8. SAW CUT FULL DEPTH ALL JOINTS OF EXISTING CONCRETE, BITUMINOUS, AND BASE PAVEMENTS.
 9. REINFORCEMENT OF CONCRETE PAVING SHALL BE ACCOMPLISHED BY DOWNING. COWLS SHALL BE CENTERED IN PAVEMENT THICKNESS. NEW REINFORCING SHALL BE TIED TO DOWNING.
 10. TOTAL REPAIR WIDTH SHALL BE EQUAL TO THE LAKE WIDTH IN ACCORDANCE WITH THE SPECIFICATIONS.

5/20/2017 5/20/2017 5/20/2017 5/20/2017	Howard County, Maryland Department of Public Works Approved: <i>Thomas J. Smith</i> Chief, Bureau of Engineering	Utility Trench Roadway Repairing	Detail G-4.01
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* PUBLIC WATER AND SEWER HOUSE CONNECTION PAVEMENT REPAIR.

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)				
		3 TO <5	5 TO <7	7 TO <10	10 TO <15	
P-1	PARKING BAYS, RESIDENTIAL AND NON-RESIDENTIAL PARKING DRIVE ASILES, RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	SUPERFINE ASPHALT MIX FINAL SURFACE 9.5 MM PG 64-22S, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5
		SUPERFINE ASPHALT MIX INTERMEDIATE SURFACE (ESAL)	NA	NA	NA	NA
		SUPERFINE ASPHALT MIX BASE 18.0 MM PG 64-22S, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.0
P-2	PARKING DRIVE ASILES, RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY, LOCAL ROADS, ACCESS PLACE, ACCESS STREET, CUL-DE-SACS, RESIDENTIAL	SUPERFINE ASPHALT MIX FINAL SURFACE 9.5 MM PG 64-22S, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5
		SUPERFINE ASPHALT MIX INTERMEDIATE SURFACE 9.5 MM PG 64-22S, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5
		SUPERFINE ASPHALT MIX BASE 18.0 MM PG 64-22S, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.0
P-3	PARKING DRIVE ASILES, RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY, LOCAL ROADS, ACCESS PLACE, ACCESS STREET, CUL-DE-SACS, RESIDENTIAL	SUPERFINE ASPHALT MIX FINAL SURFACE 9.5 MM PG 64-22S, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5
		SUPERFINE ASPHALT MIX INTERMEDIATE SURFACE 9.5 MM PG 64-22S, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0
		SUPERFINE ASPHALT MIX BASE 18.0 MM PG 64-22S, LEVEL 1 (ESAL)	3.0	3.0	3.0	4.0
P-4	MINOR COLLECTORS, RESIDENTIAL MAJOR COLLECTORS	SUPERFINE ASPHALT MIX FINAL SURFACE 12.5 MM PG 64-22S, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0
		SUPERFINE ASPHALT MIX INTERMEDIATE SURFACE 12.5 MM PG 64-22S, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0
		SUPERFINE ASPHALT MIX BASE 18.0 MM PG 64-22S, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	5.0
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0

- NOTES:**
1. HEAVY TRUCKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING GARBAGE TRUCKS.
 2. SUPERFINE ASPHALT MIX LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS: 18.0 MM BASE (2.0" MIN TO 4.0" MAX), 12.5 MM SURFACE (1.2" MIN TO 3.0" MAX), AND 9.5 MM SURFACE (1.0" MIN TO 2.0" MAX).
 3. GRADED AGGREGATE BASE (GAB) TO BE PLACED AND COMPACTED IN 6" MAX COMPACTED THICKNESS LAYERS.
 4. THE INTERMEDIATE SURFACE COURSE LAYER MUST BE PLACED WITHIN 2 WEEKS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSTANTIAL COMPLETION INSPECTION AND BOND REDUCTION.
 5. IN LIEU OF PLACING THE INTERMEDIATE SURFACE COURSE LAYER FOR COMMERCIAL/INDUSTRIAL ENTRANCE AREAS WITHIN THE COUNTY RIGHT-OF-WAY WHERE AUXILIARY LANES ARE NOT REQUIRED, THE THICKNESS OF THE INTERMEDIATE PAVEMENT LAYER CAN BE ADDED TO THE REQUIRED THICKNESS OF THE BASE ASPHALT LAYER.
 6. THE CONSTRUCTION DRAWINGS SHALL SHOW THE PAVING SECTION, ROAD CLASSIFICATION AND CBR VALUE FOR EACH ROADWAY.

5/20/2017 5/20/2017 5/20/2017 5/20/2017	Howard County, Maryland Department of Public Works Approved: <i>Thomas J. Smith</i> Chief, Bureau of Engineering	PAVING SECTIONS P-1 to P-4	Detail R-2.01
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Appendix B.4. Construction Specifications for Environmental Site Design Practices

Material	Specification	Size	Notes
Planting soil	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 (60%)	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 (18" TO 38")	
Curtain drain	ornamental stone: washed cobble	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F758, 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 pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; F _c = 3500 psi @ 28 days, normal weight, air-entrained conforming to meet ASTM-A-610-60	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 530.8.209; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressure); and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.075" to 0.04"	Sand substitutions such as Durbane and Graystone (AASHTO #10) are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Paul P. ... 4-26-23
CHIEF, DEVELOPMENT ENGINEERING DIVISION

... 4/20/23
CHIEF, DIVISION OF LAND DEVELOPMENT

OWNER/DEVELOPER
EDWARD SEIDEL
3933 SAINT JOHNS LANE
ELLICOTT CITY MD 21042

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
STORMWATER MANAGEMENT AND SITE NOTES & DETAILS

SEIDEL PROPERTY
3933 ST. JOHNS LN
DEED L.10998 F.00045

ZONED R-20
PARCEL 459
TAX MAP 24 GRID 17
2-12 ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

TIMMONS GROUP

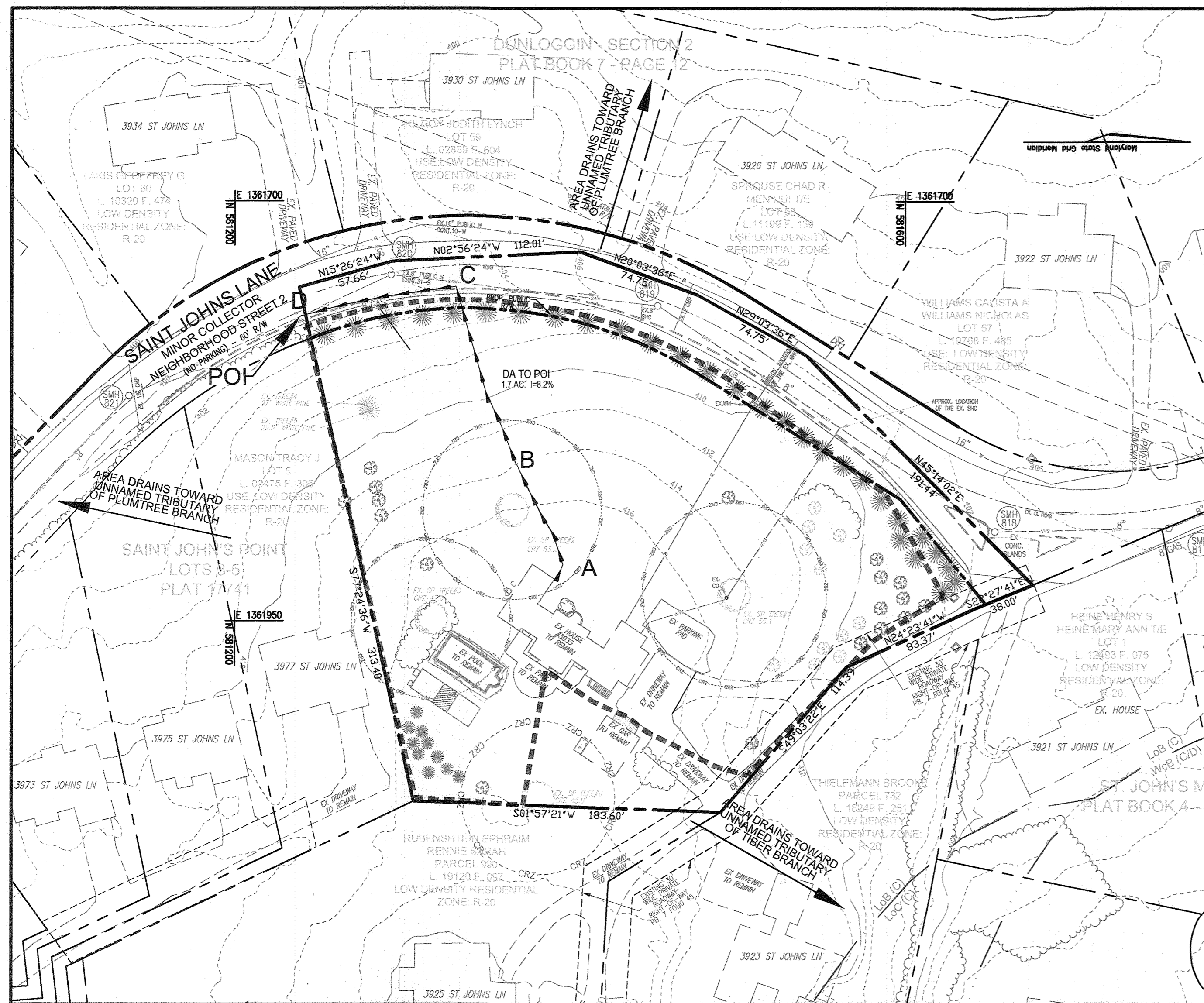
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410.461.7666 F: 410.461.8961 www.timmons.com

PROFESSIONAL CERTIFICATE

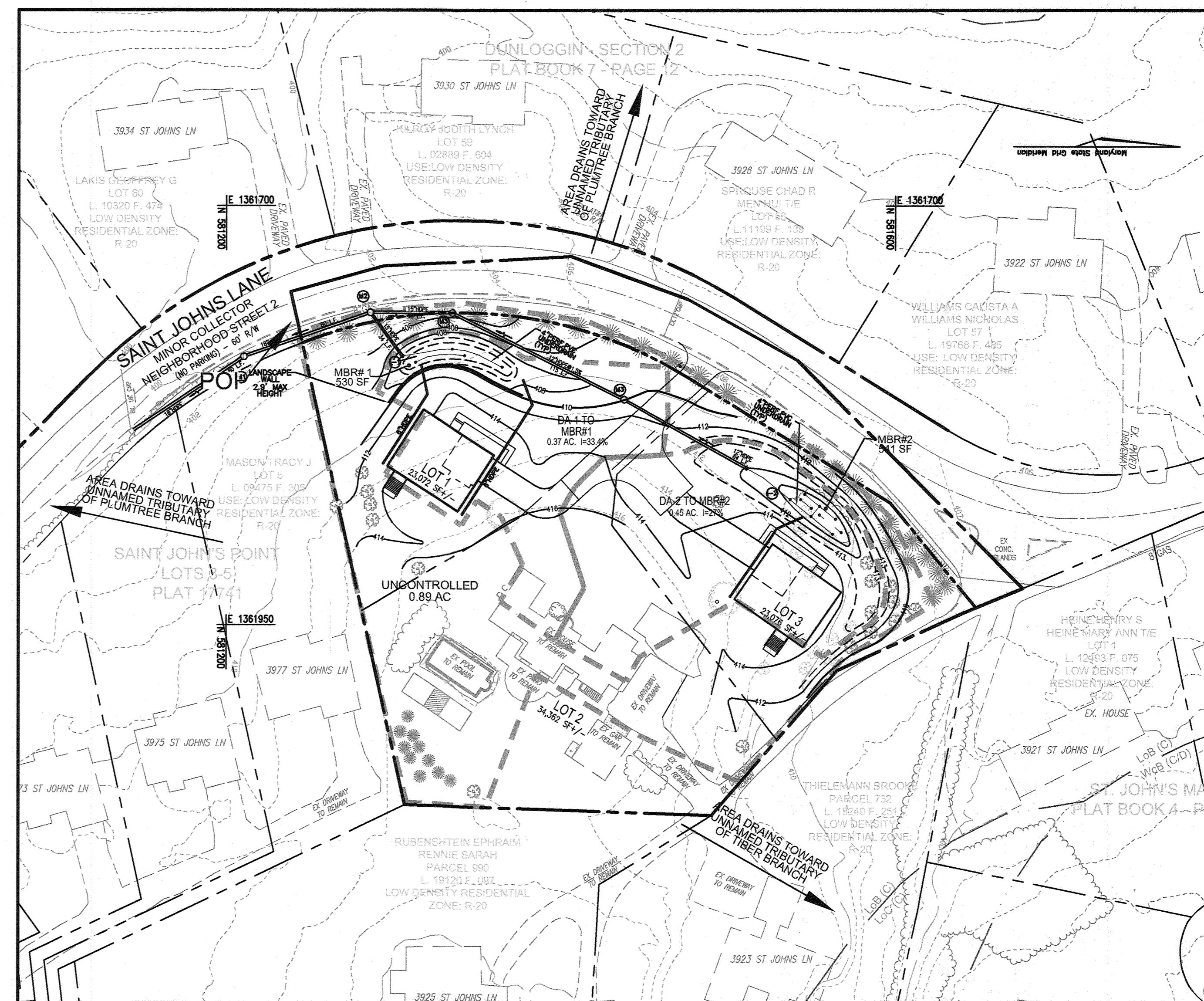
DESIGN BY: RHV
DRAWN BY: ONB
CHECKED BY: RHV
DATE: MARCH 2023
SCALE: AS SHOWN
W.O. NO.: 48978

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 17433. EXPIRATION DATE: 09-27-2024.

ROBERT H. VOGEL, PE No.16193



EXISTING DRAINAGE AREA MAP
SCALE: 1"=50'



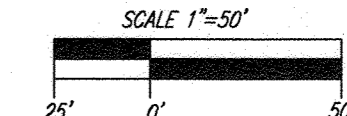
PROPOSED DRAINAGE AREA MAP
SCALE: 1"=50'

LEGEND:

- EXISTING CONTOUR
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- RIGHT-OF-WAY LINE
- EXISTING EDGE OF PAVING
- EXISTING TREES
- EXISTING TREELINE
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED MICRO-BORETENTION
- PROPOSED STORM DRAIN
- DRAINAGE AREA DIVIDE
- SOIL TYPE
- SOIL TYPE
- POINT OF INVESTIGATION

PEAK DISCHARGE SUMMARY
Study Point

	Existing Conditions cfs	Ultimate Uncontrolled cfs	Ultimate Controlled MBR-1 cfs	MBR-1 Pond Release cfs	Ultimate Controlled MBR-2 cfs	MBR-2 Pond Release cfs	Ultimate Conditions w/ SWM cfs
10 YEAR	5.4	3.4	1.7	0.6	1.9	0.6	4.1
100 YEAR	9.4	5.5	2.5	1.8	2.9	1.7	8.7
FLOOD	15.2	9.2	4.3	3.1	5.0	2.7	13.3



OWNER/DEVELOPER
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ELLCOTT CITY MD 21042

MAPPED SOILS TYPES - HOWARD COUNTY, MARYLAND

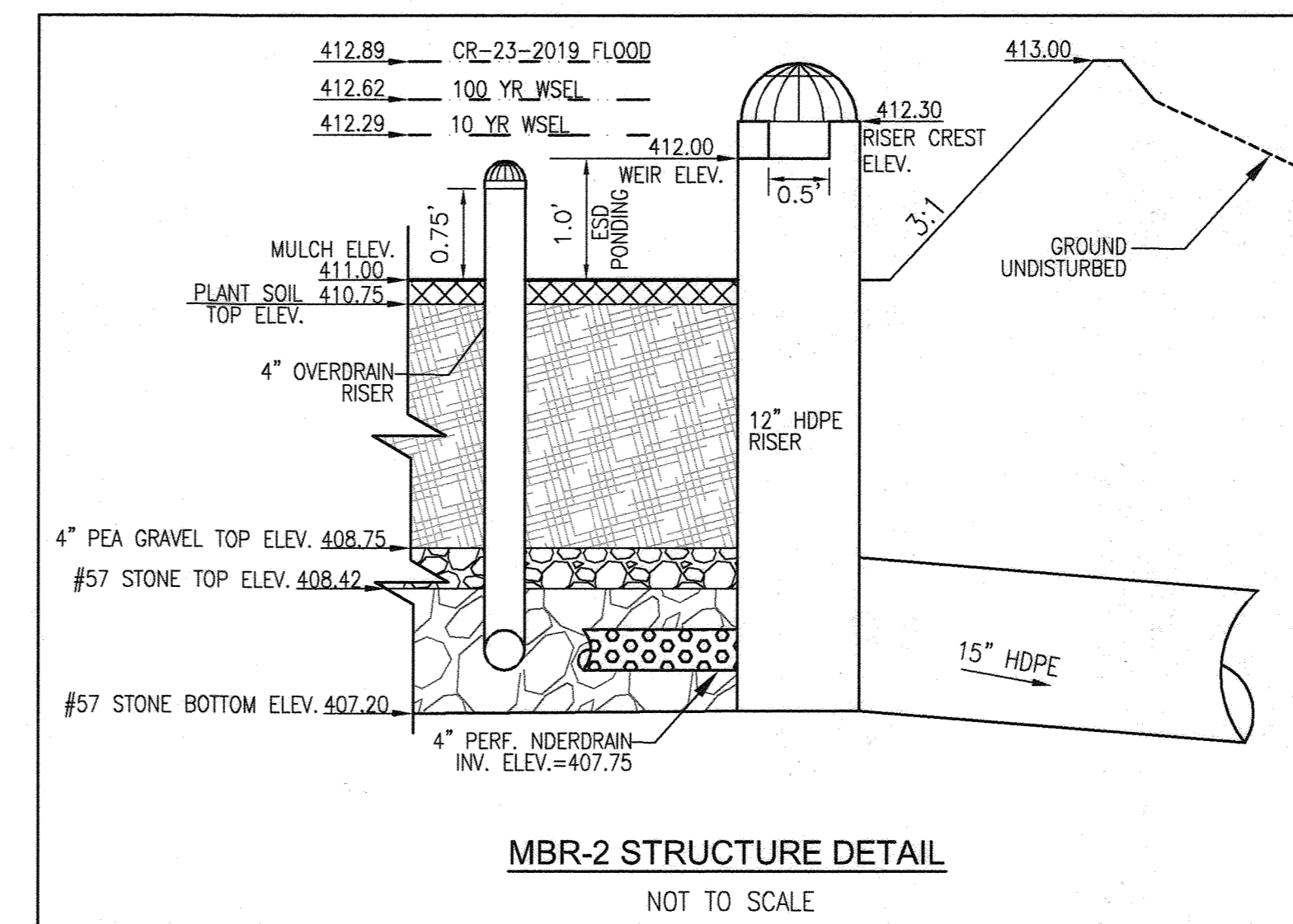
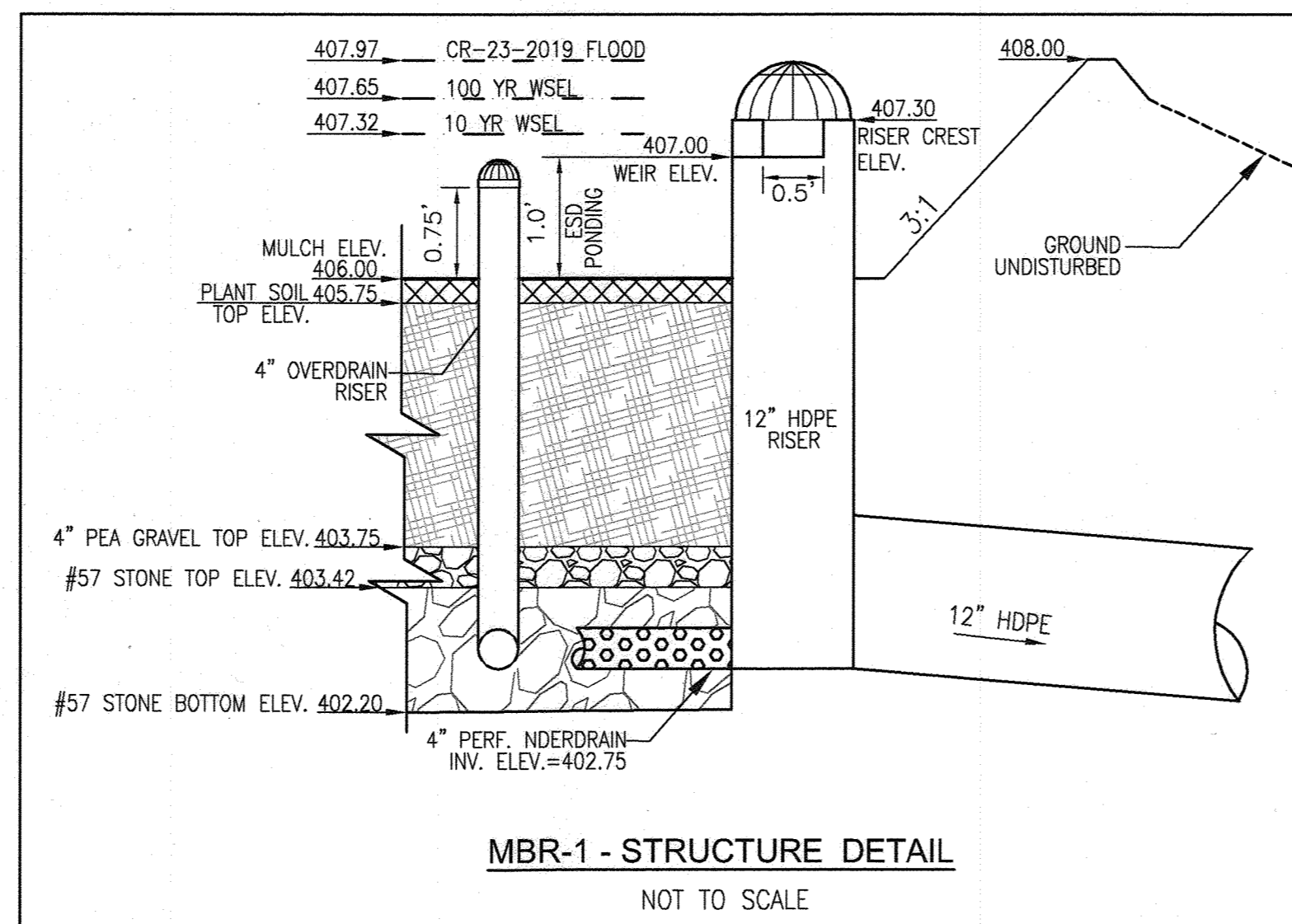
SYMBOL NAME / DESCRIPTION	GROUP	HYDRIC	K FACTOR	HIGHLY ERODIBLE
L8B (LEGOSSE-HONTALO-URBAN LAND COMPLEX - 8 TO 8 PERCENT SLOPE)	C	NO	-	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

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: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Paul J. Forgie 4.26.23
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE
CHIEF, DIVISION OF LAND DEVELOPMENT 4/26/23 DATE



NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
CR-123-2019 QUANTITY MANAGEMENT
EXISTING AND PROPOSED CONDITION
DRAINAGE AREA MAPS

SEIDEL PROPERTY
3933 ST. JOHNS LN
DEED L.10998 F.00045 ZONED R-20
TAX MAP 24 GRID 17 2-12 ELECTION DISTRICT HOWARD COUNTY, MARYLAND PARCEL 459

VOGEL ENGINEERING
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3300 NORTH RIDGE ROAD, SUITE 110, ELLCOTT CITY, MD 21043
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PROFESSIONAL CERTIFICATE
DESIGN BY: RHV
DRAWN BY: ONB
CHECKED BY: RHV
DATE: MARCH 2023
SCALE: AS SHOWN
W.O. NO.: 48978

STATE OF MARYLAND
ROBERT H. VOGEL
REGISTERED PROFESSIONAL ENGINEER
No. 18193

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. 18193, EXPIRATION DATE 08-27-2024

6 SHEET OF 6