CONCEPT DEVELOPMENT PLAN
FOR
BUMPY OAKS CORPORATION
LEONARDTOWN, MARYLAND

THIRD ELECTION DISTRICT
ST. MARY'S COUNTY, MARYLAND

GENERAL SITE NOTES

1. THE SPECIFICATIONS FOR THIS PROJECT SHALL BE THOSE OF THE MARYLAND STATE HIGHWAY ADMINISTRATION TITLED "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS", JULY 2008 AS CURRENTLY AMENDED.
2. SAMPLING OF MATERIALS (BANK RUN GRAVEL, ETC.) SHALL BE DONE IN ACCORDANCE WITH THE ST. MARY'S COUNTY SUBDIVISION ROAD CONSTRUCTION AND INSPECTION PROCEDURES TO INSURE COMPLIANCE WITH THE CURRENT MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS.
3. STABILIZATION OF ALL DRAINAGE CHANNELS, ROAD SHOULDERS, SLOPES AND OTHER DISTURBED AREAS WILL BE COMPLETED PRIOR TO ACCEPTANCE OF THE ROAD INTO THE ST. MARY'S COUNTY HIGHWAY MAINTENANCE SYSTEM.
4. STANDARD END SECTIONS (SHA STANDARD NO. 370.01 AND 371.01). ALL REINFORCED CONCRETE PIPE SHALL BE MINIMUM CLASS IV. ALL REINFORCED PIPE END SECTIONS SHALL BE IN ACCORDANCE WITH SHA STANDARD NO. 368.03 AND 368.04.
5. STONE OR RIPRAP SHALL BE CLASS I AS PER MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS, SECTION 901.02.01 AS CURRENTLY AMENDED.
6. ALL RIPRAP IS TO BE PLACED ON DRY FILTER CLOTH. FILTER CLOTH SHALL MEET THE REQUIREMENTS OF SECTION 921.09 OF THE MARYLAND SHA SPECIFICATIONS AS CURRENTLY AMENDED.
7. SOD OR SEED MIXTURES USED IN LINING DRAINAGE CHANNELS SHALL BE KENTUCKY 31 TALL FESCUE, UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION, AND SHALL BE IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS SECTION 920.04.
8. SOILS FOUND TO BE UNSUITABLE FOR CONSTRUCTION SHALL BE EXCAVATED AND REMOVED AS ENCOUNTERED DURING CONSTRUCTION OF ROAD.
9. AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT ST. MARY'S COUNTY DEPARTMENT OF PUBIC WORKS AND TRANSPORTATION AT 301-475-4200, EXT *3531
10. ATTENTION IS CALLED TO PUBLIC SERVICE COMMISSION ORDER NUMBER 60838, CHAPTER 863, EFFECTIVE DATE AUGUST 1, 1974, AND SECTION 28A, ARTICLE 78 OF THE ANNOTATED CODE OF MARYLAND, 1994, REGARDING THE PROTECTION OF UNDERGROUND UTILITIES AND THE RESPONSIBILITY OF THE CONTRACTOR CONTAINED THEREIN. THE CONTRACTOR SHALL CONTACT OTHER UTILITY COMPANIES WHICH OPERATE IN THE AREA AND NOT IN THE "MISS UTILITY" PROGRAM.
11. THE CONTRACTOR SHALL USE MIRAFI 140N NON WOVEN FABRIC (FOR PRACTICES THAT REQUIRE INFILTRATION) .
12. ALL HANDICAP SPACES SHALL BE CONSTRUCTED TO MEET THE AMERICAN WITH DISABILITIES ACT REQUIREMENTS.
13. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF ST. MARY'S COUNTY AGENCIES.
14. ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR ANY WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
15. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL/BUILDING PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.
16. DEBRIS SHALL NOT BE BURIED ON SITE AND ALL UNSUITABLE MATERIAL AND SOLID WASTE SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL COUNTY, STATE AND FEDERAL LAWS AND APPLICABLE CODES.
17. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH OSHA STANDARDS) AND ANY ADDITIONAL PROVISIONS TO ASSURE STABILITY OF CONTIGUOUS STRUCTURES, AS FIELD CONDITIONS DICTATE.
18. CONTRACTOR TO EXERCISE EXTREME CARE WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. THAT ARE TO REMAIN. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DAMAGE DONE TO ANY EXISTING ITEM DURING CONSTRUCTION SUCH AS BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURBS, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND REPLACE ALL SIGNAL INTERCONNECT CABLE, CONDUITS, AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION. REPAIR SHALL BE EQUAL TO OR BETTER THAN EXISTING.
19. ALL CONCRETE SHALL HAVE THE MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS INDICATED IN SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS AND/OR GEOTECHNICAL REPORT

INSPECTION AGENCY APPROVALS
A. APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
B. APPROVAL SHALL BE REQUESTED UPON FINAL STABILIZATION OF ALL SITES BEFORE REMOVAL OF SEDIMENT CONTROLS.
C. THE CONTRACTOR SHALL NOTIFY MDE, ENVIRONMENT DIVISION, AT LEAST 48 HOURS PRIOR TO COMMENCING CLEARING OR GRADING AT: (410)537-3510 OR MDE, SEDIMENT AND STORMWATER ADMIN, 1800 WASHINGTON BLVD, BALTIMORE, MD 21230-1708.

GENERAL PERMIT NOTES

UTILIZATION OF ENVIRONMENTAL SITE DESIGN:
Two (2) micro-bioretention areas and a grass swale will be utilized to provide Environmental Site Design Volume treatment as close to the source as possible.

MAINTENANCE OF LIMITS OF DISTURBANCE TO PROTECT NATURAL AREAS:
All erosion and sediment control measures shall be in place prior to any earthwork, and all measures shall be maintained until disturbed areas are stabilized. All erosion control measures shall be inspected and repaired at the end of each work day.

CONTROL OF CONSTRUCTION EQUIPMENT AND VEHICLES:
All construction traffic shall enter and leave the site via the construction entrance. No vehicles are allowed beyond the limits of disturbance.

EVALUATION AND APPROPRIATE LIMITATION OF SITE CLEARING:
It is necessary to clear and grade the entire "site area" in order to excavate the site to assure positive drainage

EVALUATION AND DESIGNATION OF SITE AREA FOR PHASING OR SEQUENCING:
The total disturbed area is 1.15 acres and will be constructed in a single phase.

IDENTIFICATION OF SOILS AT HIGH RISK FOR EROSION AND ADVANCED STABILIZATION TECHNIQUES TO BE USED:
Highly erodible soils have been identified on this site. Steep slopes should be immediatly stabilized sod or erosion control matting.

IDENTIFICATION OF STEEP SLOPES AND DESIGNATION OF LIMITATIONS ON CLEARING THEM:
Steep slopes have been identified on this site. Clearing of steep slopes shall be avoided. When cleared they should be immediatley stabilized with toposoil seed, and curlex erosion control matting.

EVALUATION AND DESIGNATION OF STABILIZATION REQUIREMENTS AND TIME LIMITS AND PROTECTION MEASURES FOR DISCHARGE TO THE CHESAPEAKE BAY, IMPAIRED WATERS, OR WATERS WITH ESTABLISHED TOTAL MAXIMUM DAILY LOAD (TMDL):
Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within:
A) Three calendar days for all perimeter controls, dikes, swales, ditches, perimeter slopes and all slopes greater than 3 horizontal to 1 vertical (3:1), and
B) Seven days as to all disturbed or graded areas in the project site.
All areas are to be stabilized with a minimum of 3" of top soil seed and mulch.

STORMWATER MANAGEMENT NARRATIVE

This Stormwater Management plan is for the construction of 22-unit residential condominium project. Stormwater Management for the site has been evaluated using Environmental Site Design to the Maximum Extent Practicable. The most suitable ESD devices for this project are two (2) micro-bioretention areas and one (1) grass swale. The site consist of soils with a Hydrological Soil Group of 'C'.

NATURAL RESOURCE PROTECTION AND ENHANCEMENT: The site conditions are generally a result of existing development that has occurred around the perimeter of the site.

MAINTENANCE OF NATURAL FLOW PATTERNS: The site in it's current condition drains from the rear of the site to the front of the site along Courthouse Drive. The proposed development drainage for the site will direct runoff into two (2) micro-bioretention areas prior to then discharging to a stormdrain system. Discharge will be to a closed stormdrain system running along Fenwick Avenue.

REDUCTION OF IMPERVIOUS AREAS THROUGH BETTER SITE DESIGN, ALTERNATIVE SURFACES, AND NON STRUCTURAL PRACTICES: The site has been designed such that all impervious surfaces will be directed to an ESD device. Alternative Surfaces have not been proposed. Impervious surfaces have been reduced by minimizing the footprint of the development to the extent practical and removing all un-neccessary impervious surfaces.

INTEGRATION OF EROSION AND SEDIMENT CONTROLS INTO THE STORMWATER STRATEGY:
Sediment control will be accomplished by placing super silt fence and earth dike around the perimeter of the site This will ensure that sediment laden runoff does not leave the site.

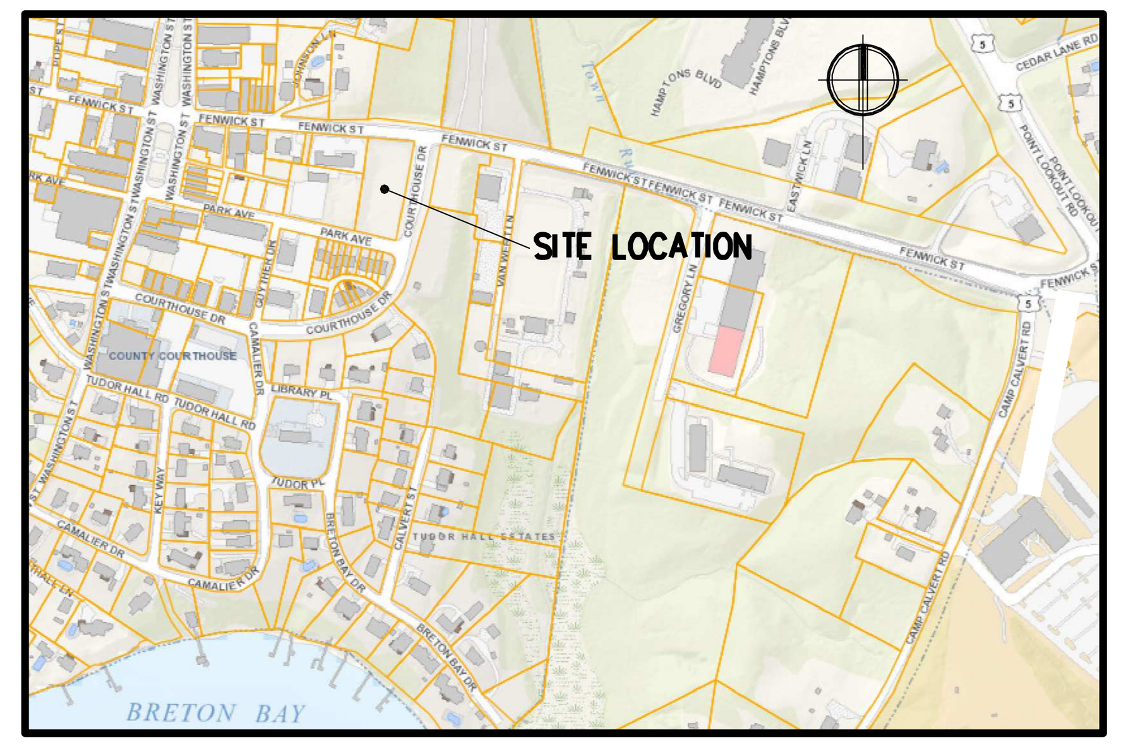
IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES TO THE MEP:
The criteria for sizing ESD practices are based on capturing and retaining enough rainfall so that the runoff leaving the site is reduced to a level equivalent to woods in good condition. The proposed site has 0.58 acres of impervious cover or 50.03% of the "site area". The total ESD volume required for the site is 3,771 cf.

Two (2) micro-bioretetnion areas and one (1) grass swale have been provided to treat the volume for small areas near the source of the runoff. The ESD facilities provide a minimum of 4,251 cf storage volume.

Adequate Outfall:
Outfall Calculations will be provided at the Site Development Phase of the plan.

TOTAL DISTURBED AREA:		1.15 ACRES
AREA TO BE VEGETATIVELY STABILIZED		0.576 ACRES
EARTHWORK:	** CUT	13,036 CUBIC YARDS
	**FILL	15,102 CUBIC YARDS

**EARTHWORK AND ESTIMATED QUANTITIES
EARTHWORK QUANTITIES SHOWN HEREON ARE PROVIDED TO THE OWNER FOR SOIL CONSERVATION DISTRICT APPROVAL AND BONDING PURPOSES ONLY. THE CONTRACTOR SHOULD BE AWARE THAT THESE QUANTITIES SHOULD NOT BE USED FOR BIDDING PURPOSES. QUANTITIES ARE BASED ON ENGINEERING DRAWINGS AND CALCULATIONS AND NO ALLOWANCE HAS BEEN MADE FOR UNSUITABLE SOILS, COMPACTION, SHRINKAGE, HAUL LOSS, OR OTHER SIMILAR ERROR SOURCES.



LOCATION MAP
SCALE: 1" = 600'

CONSULTANT CERTIFICATION:

I CERTIFY THAT THIS CONCEPT EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT PLAN REPRESENTS ALL SIGNIFICANT NATURAL RESOURCES BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE REVIEW AGENCIES. I HAVE REVIEWED THIS CONCEPT EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER.

March 14, 2025

C. JAY HOPSON , P.E. — DATE
MD LICENSE #41325

SHEET INDEX

SEQUENCE OF CONSTRUCTION

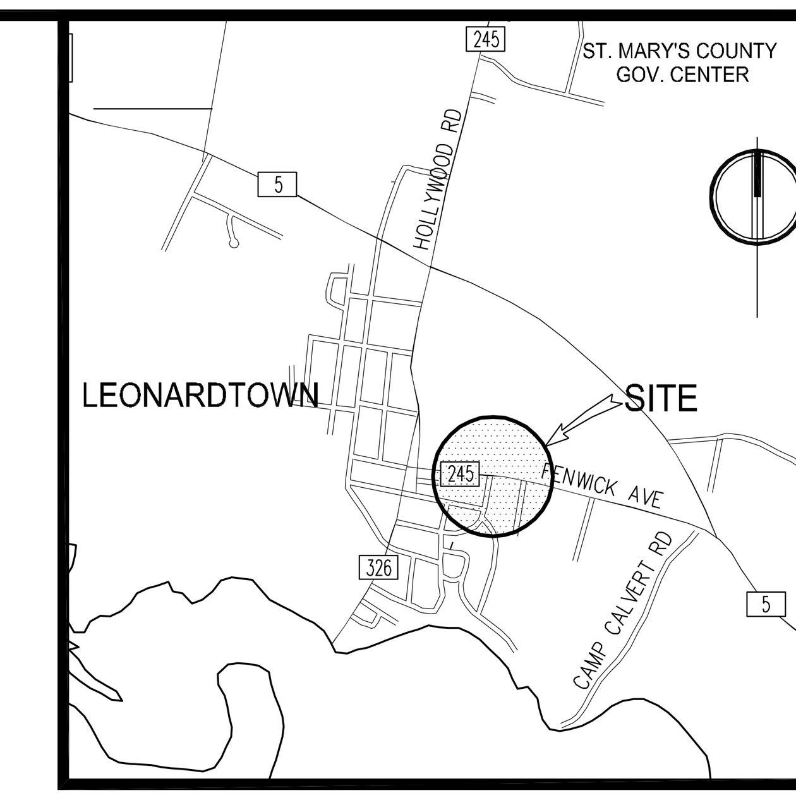
UTILITY INSTALLATION NOTES:
ALL TRENCHES OR HOLES CREATED FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED, AND STABILIZED AT THE END OF EACH WORKING DAY. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH OR HOLE. NO MORE TRENCH/HOLE SHALL BE OPENED THAN CAN BE STABILIZED THE SAME DAY. IF AN AREA MUST BE LEFT UN-STABILIZED OVERNIGHT, SILT FENCE WILL BE PLACED IMMEDIATELY DOWNSTREAM OF ALL DISTURBED AREAS AND STOCKPILES, AND APPROPRIATE SAFETY MEASURES WILL BE INSTALLED AS REQUIRED. IF TRENCHING IS DONE ON SLOPES 3:1 OR GREATER, THE DISTURBED AREA IS TO BE STABILIZED WITH EROSION CONTROL MATTING.

APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.

APPROVAL SHALL BE REQUESTED UPON FINAL STABILIZATION OF ALL SITES BEFORE REMOVAL OF SEDIMENT CONTROLS.

SMART FENCE AS SHOWN IN THE DETAIL MAY BE UTILIZED IIN LIEU OF SUPER SILT FENCE.

1. THE CONTRACTOR SHALL CONTACT ST. MARY'S COUNTY SOIL CONSERVATION DISTRICT, 5 DAYS PRIOR TO THE START OF CONSTRUCTION, TO SCHEDULE A PRE-CONSTRUCTION MEETING. (301-475-8402 X-3)
2. CLEAR AND GRUB AREAS FOR PERIMTER CONTROL INSTALLATION. INSTALL STABILIZED CONSTRUCTION ENTRANCE, GABION OUTLET STRUCTURE, EARTH DIKES, SUPER SILT FENCE. TEMPORARILY STABILIZE ALL DISTURBED AREAS WITH SEED AND MULCH. (5 DAYS)
3. BEGIN ROUGH GRADING ON SITE. TEMPORARILY STABILIZE AREAS NOT BEING WORKED WITH SEED AND MULCH. (30 DAYS)
4. INSTALL UNDERGROUND UTILITIES (STORMDRAIN, WATER AND SEWER). (30 DAYS)
5. CONCURRENTLY WITH ITEM 5 ABOVE CONSTRUCT BUILDING. (6 MONTHS)
6. FINE GRADE SITE. (15 DAYS)
7. INSTALL ROOF DRAINS. (5 DAYS)
8. CONSTRUCT CURBS, SIDEWALKS AND CONCRETE PADS. (40 DAYS)
9. BASE PAVE ROADWAY. (5 DAYS)
10. PERMANENTLY STABILIZE ALL DISTURBED AREAS WITH A MINIMUM OF 4 INCHES TOPSOIL, SEED AND MULCH. (2 DAYS)
11. CONSTRUCT STORMWATER FACILITIES. (20 DAYS)
12. INSTALL LANDSCAPING. (10 DAYS)
13. PERMANENTLY STABILIZE ANY REMAINING DISTURBED AREAS WITH A MINIMUM OF 4 INCHES TOPSOIL, SEED AND MULCH. (2 DAYS)
14. PAVE ROAD WITH SURFACE COURSE. (3 DAYS)
15. REQUEST MDE INSPECTOR'S APPROVAL PRIOR TO REMOVING PERIMETER CONTROL DEVICES. (1 DAY)



VICINITY MAP
SCALE: 1" = 2000'

GENERAL NOTES

OWNER:
HARRY & JANNETTE NORRIS
P.O. BOX 235
LEONARDTOWN, MD 20650

DEVELOPER:
BUMPY OAK CORPORATION
11705 BERRY ROAD, SUITE 302
WALDORF, MD 20630
301.233.4132
CONTACT: STEVE VALENTINE

ENGINEER:
J HOPSON CONSULTING, LLC
P.O. BOX 462
SOLOMONS, MD 20688
410.404.5498 (OFFICE) 240.577.2527 (CELL)
CONTACT: JAY HOPSON, PE

SURVEYOR:
CHESAPEAKE TRAILS SURVEYING
P.O. BOX 957
LEONARDTOWN, MD 20650
301.475.9500
CONTACT: BARRY VUKMER

PROJECT ADDRESS:
COURTHOUSE DRIVE
LEONARDTOWN, MD 20650

CURRENT PROPERTY DESCRIPTIONS:
TAX ID # - 03-000745
TAX MAP 133; BLOCK 11; PARCEL 440
LIBER 3433 FOLIO 579

1. TOTAL SITE ACREAGE: 0.991 ACRES
2. CURRENT ZONING: COMMERCIAL BUSINESS (C-B)
   CRITICAL AREA OVERLAY: IDA
3. BUILDING RESTRICTION LINES
   FRONT 0'
   SIDE 3'
   REAR 3'
4. CURRENT USE: VACANT
   PROPOSED USE: 22 UNIT RESIDENTIAL CONDOMINIUMS
5. BUILDING IINFORMATION:
   FLOOR AREA: 13,725 SF
   HEIGHT: 45' (MAXIMUM PERMISSIBLE)
6. FLOOR AREA RATIO
   PERMITTED = 0.60 (BASE)
   TOTAL FAR: 134,272 SF / (6.97 X 43560) = 0.44
7. PARKING:
   REQUIRED: 2.0 SPACES PER DWELLING UNIT
   22 UNITS x 2 = 44 SPACES REQUIRED
   TOTAL SPACES PROVIDED:
   19 ON-SITE STANDARD SPACES
   23 STANDARD GARAGE SPACES
   2 ADA SPACES (1 IN THE GARAGE)
   44 TOTAL SPACES PROVIDED
9. INTERIOR LANDSCAPE REQUIRED: 10% OF THE NET PARKING FACILITY
   REQUIRED: 5,868 SF FACILITY X 0.1 = 587 SF
   PROVIDED: 679 SF
10 TREES REQUIRED IN SURFACE PARKING FACILITY: 1 TREE/5 SPACES = 5 TREES
   TREES PROVIDED IN PARKING FACILITY: 5 TREES
11. THE DEVELOPMENT WILL BE SERVED BY PUBLIC WATER AND SEWER SERVICE.
13. THE CONTRACTOR SHALL CONTACT THE TOWN OF LEONARDTOWN AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION.
14. THE PROJECT LIES WITHIN THE CHESAPEAKE BAY CRITICAL AREA (IDA OVERLAY).
15. THE ENTIRE PROJECT AREA LIES WITHIN THE FLOOD HAZARD ZONE X PER FIRM PANEL 24037C0167F, 11/19/2014.
16. PREDOMINATE SOIL ON THE PROPERTY ARE CROOM GRAVELY SANDY LOAM (TYPE 'C')
17. THE EXISTING TOPOGRAPHY SHOWN ON-SITE WITH THIS PLAN WAS FIELD RUN BY CHESAPEAKE TRAILS SURVEYING, LLC IN NOVEMBER OF 2024. THE SURVEY DATUM IS NAD 83 / NAVD 88. ADDITIONAL OFF-SITE TOPOGRAPHIC DATA HAS BEEN TAKEN FROM THE COUNTY GIS SYSTEM.
18. EDU COMPUTATIONS
    22 UNITS X 250 = 5,500 GPD / 22 EDU'S
19. THIS SITE WILL GENERATE 12 PEAK HOUT TRIPS (PM)

SUMMARY INFORMATION ON DEVELOPMENT IMPACTS

PROJECT NAME: BUMPY OAK CONDIMUNIUMS PLANNED START OF CONSTRCUTION DATE: SEPTEMBER 2025 PLANNED END OF CONSTRUCTION DATE: OCTOBER 2027	BEFORE DEVELOPMENT	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
DWELLING UNITS	-	22									
NON-RESIDENTIAL DEVELOPMENT SQUARE FOOTAGE	-	0									
(ADT)	-	129									
TOTAL TRIP GENERATION FROM NON-RESIDENTIAL DEVELOPMENT (ADT)	-	0									
SCHOOL POPULATION											
ELEMENTARY		4.7									
MIDDLE		2.3									
HIGH		3.4									
AVERAGE DAILY WATER USAGE (GPD)	-	6,600									
AVERAGE DAILY SEWERAGE USAGE (GPD)	-	5,500									
FIRE SUPPRESSION WATER SUPPLY AND STORMWATER MANAGEMENT		Y									

LEGEND

EXISTING TREELINE		PROPOSED SIDEWALK	
EXISTING CONTOURS	100	PROPOSED PAVEMENT	
PROPOSED CONTOURS	100	EXISTING PAVEMENT	
EXISTING BUILDING		PROPOSED DRAINAGE AREA	
EXISTING WATER		PROPOSED SWM AREA	
PROPOSED WATER	X" WATER LINE	SOIL STOCKPILE AREA	SOIL STOCKPILE AREA
EXISTING SEWER	X" SS FORCEMAIN	PROPOSED STORM DRAIN W/ MANHOLE	
PROPOSED SEWER	SEWER FORCEMAIN		
BUILDING RESTRICTION LINE	XX' BRL	PROPOSED STORM DRAIN W/ INLET	
LIMITS OF DISTURBANCE			
EXPANDED BRL		PROPOSED INLET PROTECTION	SIP
SUBJECT PROPERTY LINE	BEARING DISTANCE	PROPOSED FIRE HYDRANT ASSEMBLY	
ADJACENT PROPERTY LINE		EXISTING SPOT SHOT	+EX XX.XX
PROPOSED BUILDING		PROPOSED SPOT SHOT	XX.XX +
PROPOSED CURB AND GUTTER		NOSE DOWN CURB	NDC
EXISTING WETLAND			
SLOPES 15% OR GREATER			

ABBREVIATIONS

BC	BACK OF CURB
BMP	EST MANAGEMENT PRACTICE
BW	BOTTOM OF WALL
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
D	DEPTH
EL.	ELEVATION
EOP	EDGE OF PAVE
ES	END SECTION
ESMT	EASEMENT
EX.	EXISTING
FF	FINISHED FLOOR
FL	FLOW LINE
FT	FEET
H.P.	HIGH POINT
INV.	INVERT
L	LENGTH
LF	LINEAR FEET
L.O.D.	LIMIT OF DISTURBANCE
MH	MANHOLE
PROP	PROPOSED
R	RADIUS
RCP	REINFORCED CONC. PIPE
ROW	RIGHT OF WAY
SAN.	SANITARY SEWER
SD	STORM DRAIN
S.F.	SQUARE FEET
TC	TOP OF CURB
T/C	TELEPHONE & CABLE
TW	TOP OF WALL
TYP.	TYPICAL
W	WIDTH
W/	WITH

REVISIONS
DATE

MISS UTILITY NOTE:
INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

J HOPSON CONSULTING LLC
Civil Engineering • Construction Management
P.O. Box 462
Solomons, Maryland 20688
443.404.5498 • 240.577.2527 • jayh@jhc-llc.com

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. 41325, EXPIRATION DATE 01/05/26.

STATE OF MARYLAND — PROFESSIONAL ENGINEER
DATE: MARCH 14, 2025

COVER SHEET
CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS CORPORATION
THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

Tax Map / Grid / Parcel: TM 133, GD 11, PCL 440
Zoning: R
Sewer Category: LEONARDTOWN
Water Category: LEONARDTOWN
Liber / Folio: 3433/579
Drawn By: cjh
Date: NOVEMBER 2024
ONE INCH
AS SHOWN
SHEET 1 OF 10

NATURAL RESOURCES TABLE

THE FOLLOWING NATURAL RESOURCES HAVE BEEN IDENTIFIED ON THE EXISTING CONDITIONS PLAN. THOSE RESOURCES NOT INDICATED WITH A MARK ARE NOT PRESENT WITHIN THE DEVELOPMENT AREA

	TIDAL-WETLANDS	+	STEEP SLOPES
	NON-TIDAL WETLANDS		HIGLY ERODIBLE SOILS
	WETLANDS OF SPECIAL STATE CONCERN	+	TOPOGRAPHY
	WETLAND BUFFERS	+	SOILS
	PERENNIAL STREAMS		BEDROCK / GEOLOGY
	INTERMITTENT STREAMS	+	FORESTS
	STREAM BUFFERS		FOREST BUFFERS
	ENHANCED STREAM BUFFERS	+	VEGETATIVE COVER
	SPRINGS / SEEPS	+	CRITICAL AREAS

SOIL BORING LOCATIONS HAVE BEEN SHOWN ON THIS PLAN. THE SOIL BORINGS AND REPORT WILL BE ACCOMPLISHED PRIOR TO THE MAJOR SITE PLAN SUBMITTAL.

THE ENGINEER FIELD VERIFIED THE MAPPED NATURAL RESOURCES IN NOVEMBER 2024

25% SLOPES

15% SLOPES

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REVISIONS

DATE

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HOPSON CONSULTING LLC
Civil Engineering • Construction Management
P.O. Box 462
Solomons, Maryland 20688
443.404.5498 • 240.577.2527 • jayn@jhcllc.com

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. 41325, EXPIRATION DATE: 02/09/26.

DATE: MARCH 14, 2025

EXISTING CONDITIONS

CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS DEVELOPMENT, LLC
THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

Tax Map / Grid / Parcel: TM 133, GD 11, PCL 440
Zoning: R
Sewer Category: LEONARDTOWN
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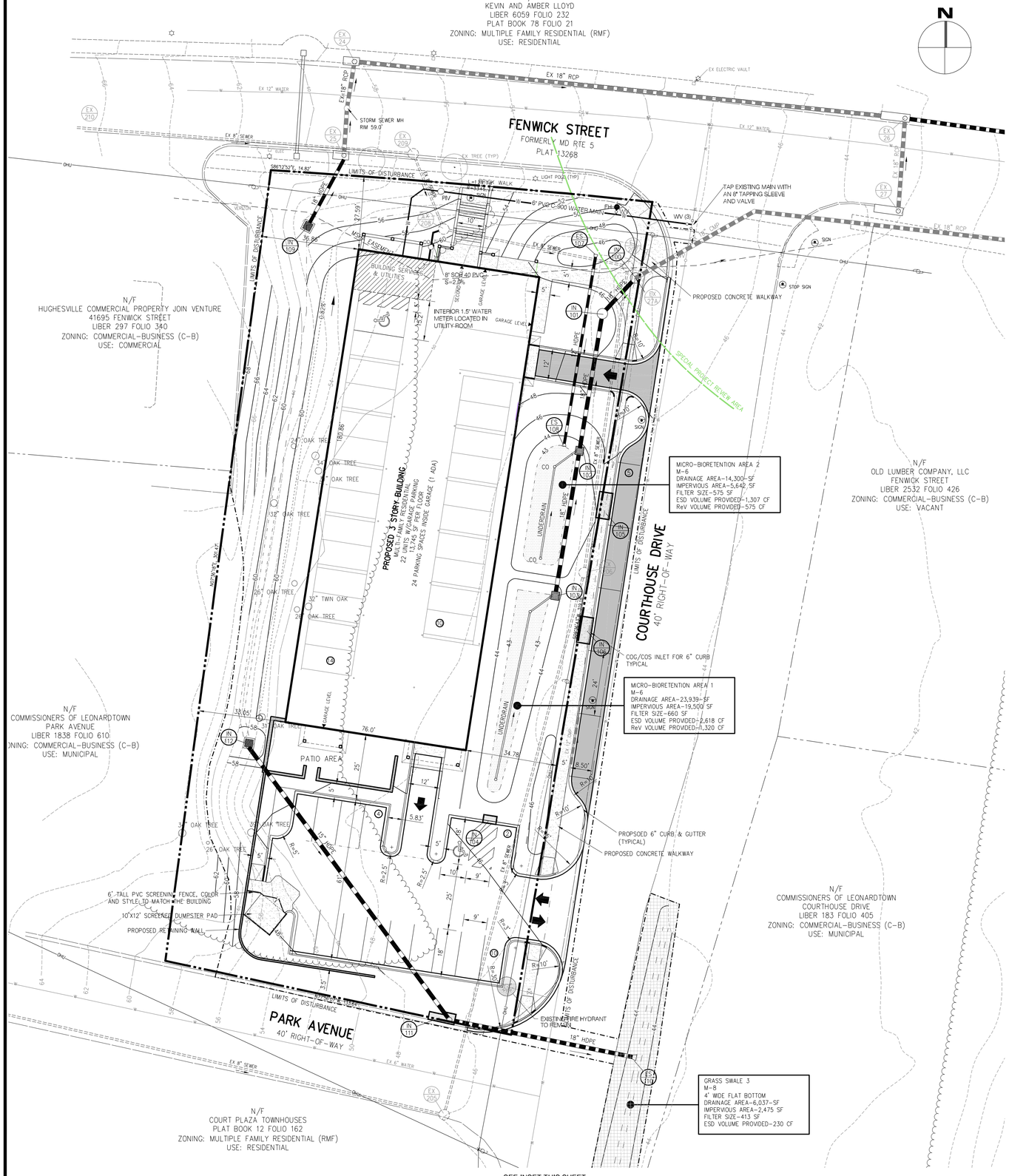
Liber / Folio: 3433/579
Drawn By: cjh
Date: NOVEMBER 2024

1" = 20'

SHEET 2
OF 11



REVISIONS

DATE	

MISS UTILITY NOTE:
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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. 34125, EXPIRATION DATE 01/09/26.

DATE: MARCH 14, 2025

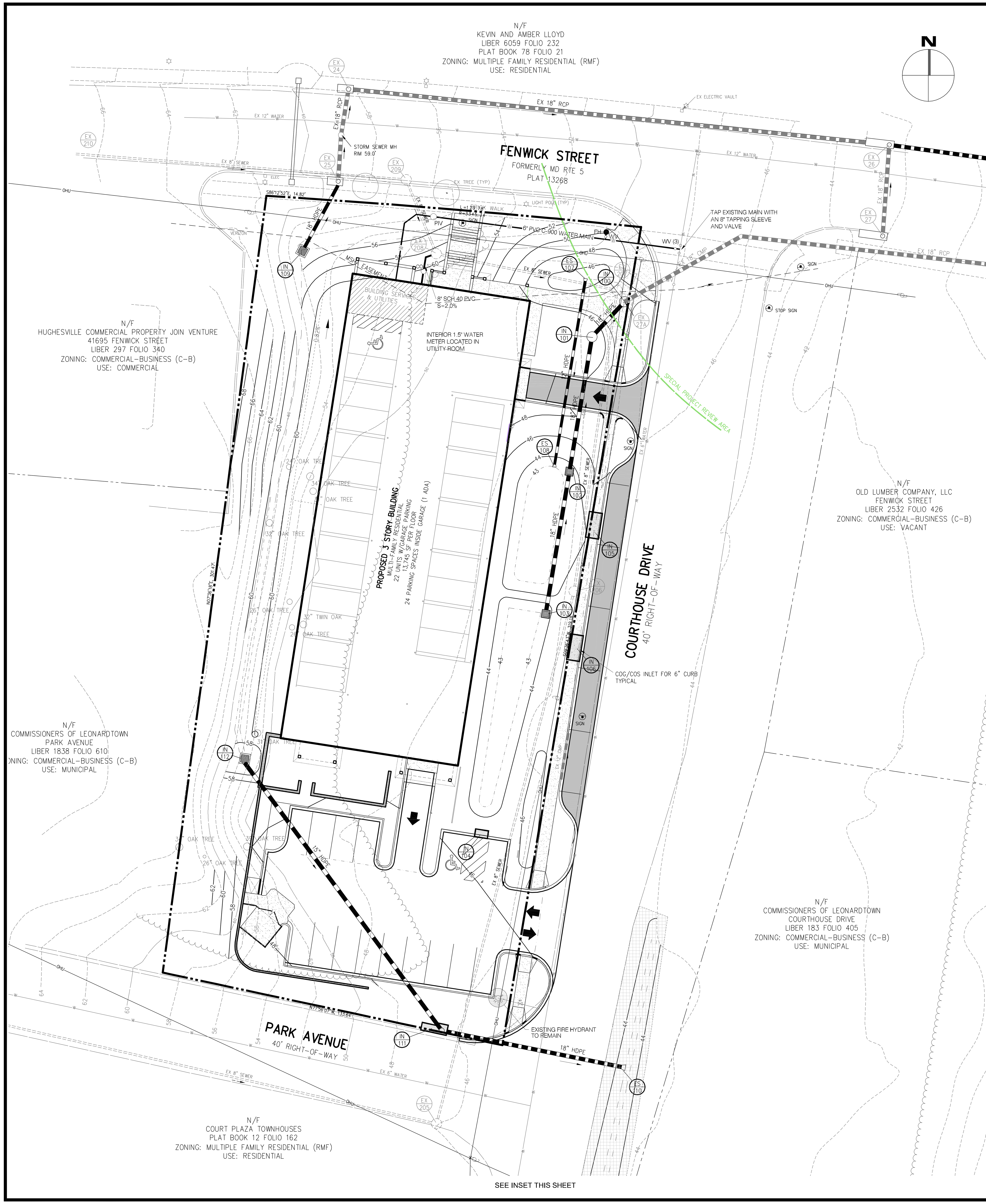
SITE DEVELOPMENT PLAN

CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS DEVELOPMENT, LLC
THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

Tax Map / Grid / Parcel:	TM 133, GD 11, PCL 440
Zoning :	C-B
Sewer Category:	LEONARDTOWN
Water Category:	LEONARDTOWN
Liber / Folio:	3433/579
Drawn By:	cjh
Date:	NOVEMBER 2024

ONE INCH
1" = 20'

SHEET 3
OF 11


N/F
KEVIN AND AMBER LLOYD
LIBER 6059 FOLIO 232
PLAT BOOK 78 FOLIO 21
ZONING: MULTIPLE FAMILY RESIDENTIAL (RMF)
USE: RESIDENTIAL
FENWICK STREET
FORMERLY MD RTE 5
PLAT 13268
EX 18" RCP
STORM SEWER MH
RIM 59.0'
TAP EXISTING MAIN WITH
AN 8" TAPPING SLEEVE
AND VALVE
N/F
HUGHESVILLE COMMERCIAL PROPERTY JOIN VENTURE
41695 FENWICK STREET
LIBER 297 FOLIO 340
ZONING: COMMERCIAL–BUSINESS (C–B)
USE: COMMERCIAL
INTERIOR 1.5" WATER
METER LOCATED IN
UTILITY ROOM
8" SCH 40 PVC
S=2.0%
SPECIAL PROJECT REVIEW AREA
PROPOSED 3 STORY BUILDING
N/F
OLD LUMBER COMPANY, LLC
FENWICK STREET
LIBER 2532 FOLIO 426
ZONING: COMMERCIAL–BUSINESS (C–B)
USE: VACANT
COURTHOUSE DRIVE
40' RIGHT–OF–WAY
COG/COS INLET FOR 6" CURB
TYPICAL
N/F
COMMISSIONERS OF LEONARDTOWN
PARK AVENUE
LIBER 1838 FOLIO 610
ZONING: COMMERCIAL–BUSINESS (C–B)
USE: MUNICIPAL
N/F
COMMISSIONERS OF LEONARDTOWN
COURTHOUSE DRIVE
LIBER 183 FOLIO 405
ZONING: COMMERCIAL–BUSINESS (C–B)
USE: MUNICIPAL
PARK AVENUE
40' RIGHT–OF–WAY
EXISTING FIRE HYDRANT
TO REMAIN
18" HDPE
N/F
COURT PLAZA TOWNHOUSES
PLAT BOOK 12 FOLIO 162
ZONING: MULTIPLE FAMILY RESIDENTIAL (RMF)
USE: RESIDENTIAL

SEE INSET THIS SHEET

ST. MARY'S COUNTY METROPOLITAN COMMISSION
GENERAL NOTES FOR WATERLINE AND SEWER LINECONSTRUCTION

1. ALL WATERLINE AND SEWER LINE CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE ST. MARY'S COUNTY METROPOLITAN COMMISSION STANDARDS AND SPECIFICATIONS FOR WATER AND SEWERAGE CONSTRUCTION. THE CONTRACTOR IS TO NOTIFY THE ST. MARY'S COUNTY METROPOLITAN COMMISSION - ENGINEERING DEPARTMENT 48 HOURS PRIOR TO THE START OF CONSTRUCTION - TELEPHONE NUMBER 301.737.7400. ALSO, THE CONTRACTOR SHALL CONTACT THE ENGINEERING DEPARTMENT BEFORE RESTARTING AFTER WORK HAS STOPPED FOR MORE THAN 5 DAYS.

2. ALL FIRE HYDRANTS THAT ARE SET IN THE GROUND, THAT ARE NOT YET OPERATIONAL SHALL HAVE AN "OUT OF SERVICE" DISK PLACED ON THE 4-1/2" DISCHARGE OUTLET. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH & INSTALL THE "OUT OF SERVICE" DISK.

3. THE CONTRACTOR SHALL NOT TAP OR OTHERWISE PENETRATE THE EXISTING WATER OR SEWER MAIN LINES WITHOUT PRIOR APPROVAL FROM METCOM. THE CONTRACTOR IS RESPONSIBLE TO AVOID SPILLAGE OF RAW SEWAGE. THE CONTRACTOR SHALL PROVIDE ALL SEWER PLUGGING AND PUMPING EQUIPMENT NECESSARY TO AVOID SPILLAGE. VIOLATIONS ARE SUBJECT TO FINES AND PENALTIES AND WILL BE ENFORCED TO THE FULL EXTENT OF THE LAW.

4. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS IN ACCORDANCE WITH ST. MARY'S COUNTY AND MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS LATEST EDITION.

5. WATER AND SEWER MAIN CONSTRUCTION SHALL NOT COMMENCE UNTIL INVOLVED ROADWAYS, STORMDRAINS, AND UTILITY EASEMENTS HAVE BEEN GRADED AND CONTOURED TO APPROXIMATELY FINAL GRADE. PROPERTY CORNERS FOR ALL LOTS ARE REQUIRED TO BE STAKED BY A LICENSED SURVEYOR PRIOR TO INSTALLING WATER AND SEWER SERVICE CONNECTIONS.

6. ONLY THE AMOUNT OF TRENCH THAT CAN BE OPENED, WORKED IN AND THEN STABILIZED IN A WORK DAY SHALL BE DONE SO. IF STABILIZATION DOES NOT OCCUR AT THE END OF THE WORK DAY, THEN APPROPRIATE SEDIMENT AND EROSION CONTROL DEVICES AND SAFETY CONTROLS SHALL BE INSTALLED.

7. A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO THE START OF CONSTRUCTION. MATERIALS DELIVERED TO THE SITE FOR WATER AND SEWER CONSTRUCTION MUST BE INSPECTED PRIOR TO THE START OF THE WORK.

8. ALL PIPES SHALL BE CLEANED BEFORE INSTALLATION AND SHALL BE KEPT CLEAN UNTIL THE ACCEPTANCE OF THE COMPLETED WORK BY METCOM. OPEN ENDS OF PIPES SHALL BE FITTED WITH WATER TIGHT STOPPERS TO PREVENT ENTRANCE OF FOREIGN MATTER WHEN PIPE LAYING OPERATIONS ARE INTERRUPTED.

9. ATTENTION IS CALLED TO PUBLIC SERVICE COMMISSION ORDER NO. 60838, CHAPTER 863, EFFECTIVE AUGUST 1, 1974, SECTION 28A, ARTICLE 78 OF THE ANNOTATED CODE OF MARYLAND (1974) REGARDING THE PROTECTION OF UNDERGROUND UTILITIES AND THE RESPONSIBILITY OF THE CONTRACTORS CONTAINED THEREIN. THE CONTRACTORS SHALL CONTACT "MISS UTILITY" AT 1-800-257-7777, 48-HOURS IN ADVANCE OF ANY CONSTRUCTION, FOR LOCATION OF UNDERGROUND UTILITIES. FOR LOCATION OF UTILITIES NOT COVERED BY "MISS UTILITY," THE CONTRACTOR SHALL CONTACT THOSE UTILITIES DIRECTLY.

10. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT AND SCHEDULE WORK WITHIN STATE AND COUNTY RIGHTS-OF-WAY WITH THE MARYLAND STATE HIGHWAY ADMINISTRATION AND THE ST. MARY'S COUNTY DEPARTMENT OF PUBLIC WORKS - PERMITS AND INSPECTIONS DIVISION 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

11. THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ARE FROM BEST RECORD DRAWINGS AND ABOVE GROUND EVIDENCE AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION PRIOR TO BEGINNING CONSTRUCTION. NEITHER THE ENGINEER, THE SURVEYOR,THE OWNER, GUARANTY OR WARRANTY THE INFORMATION SHOWN ON THE PLANS. IN CASE OF CONFLICT BETWEEN ANY PARTS OF THE PLANS AND SPECIFICATIONS OR IF ANY ERRORS OR OMISSIONS ARE DISCOVERED IN THE LINES, GRADES, DIMENSIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND SHALL REQUEST A WRITTEN DETERMINATION PRIOR TO PROCEEDING WITH THE WORK INVOLVED. IF WORK PROCEEDS WITH THE KNOWLEDGE OF THE ERROR OR OMISSION AND WITHOUT A WRITTEN DETERMINATION, SUCH WORK SHALL BE CONSIDERED NOT IN COMPLIANCE WITH THESE PLANS AND SPECIFICATIONS.

12. PRIOR TO THE INSTALLATION OF WORK CALLED FOR UNDER THIS CONTRACT, THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASUREMENTS TO ASSURE PROPER FABRICATION AND INSTALLATION OF THE WORK. HE SHALL BE RESPONSIBLE FOR CHECKING ALL FIELD DIMENSIONS, WHETHER OR NOT SHOWN ON THE DRAWING, UPON WHICH THE ACCURATE FABRICATION AND INSTALLATION OF THE WORK MAY DEPEND, OR WHICH MAY AFFECT THE PROPER INSTALLATION OF RELATED WORK.

13. ANY DAMAGE TO EXISTING SERVICE ROADS, PAVEMENT AREAS, UTILITIES OR OTHER FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

14. THE CONTRACTOR MAY UTILIZE OPEN TRENCHING INSTALLATION PROCEDURES, BORE AND JACK OR DIRECTIONAL BORE METHODS AT HIS OPTION, HOWEVER CONTRACTOR MUST GET APPROVAL FOR INSTALLATION PROCEDURE FROM METCOM PRIOR TO CONSTRUCTION. INSTALLATION OF WATERLINE BY ANY OF THESE METHODS IS ACCEPTABLE IN ALL LOCATIONS EXCEPT AT ROADWAY CROSSINGS WHERE BORE METHODS OR BORE AND JACK OR DIRECTIONAL BORE METHODS ONLY WILL BE PERMITTED.

15. METALIZED UNDERGROUND WARNING TAPE SHALL BE PLACED 12 INCHES BELOW FINISHED GRADE ABOVE ALL PLASTIC WATER MAINS. ALSO,A 12 GAUGE COPPER WIRE SHALL BE TAPED TO THE TOP OF THE PIPE AND RUN UP INSIDE THE VALVE BOXES. SEE DETAIL W-2.

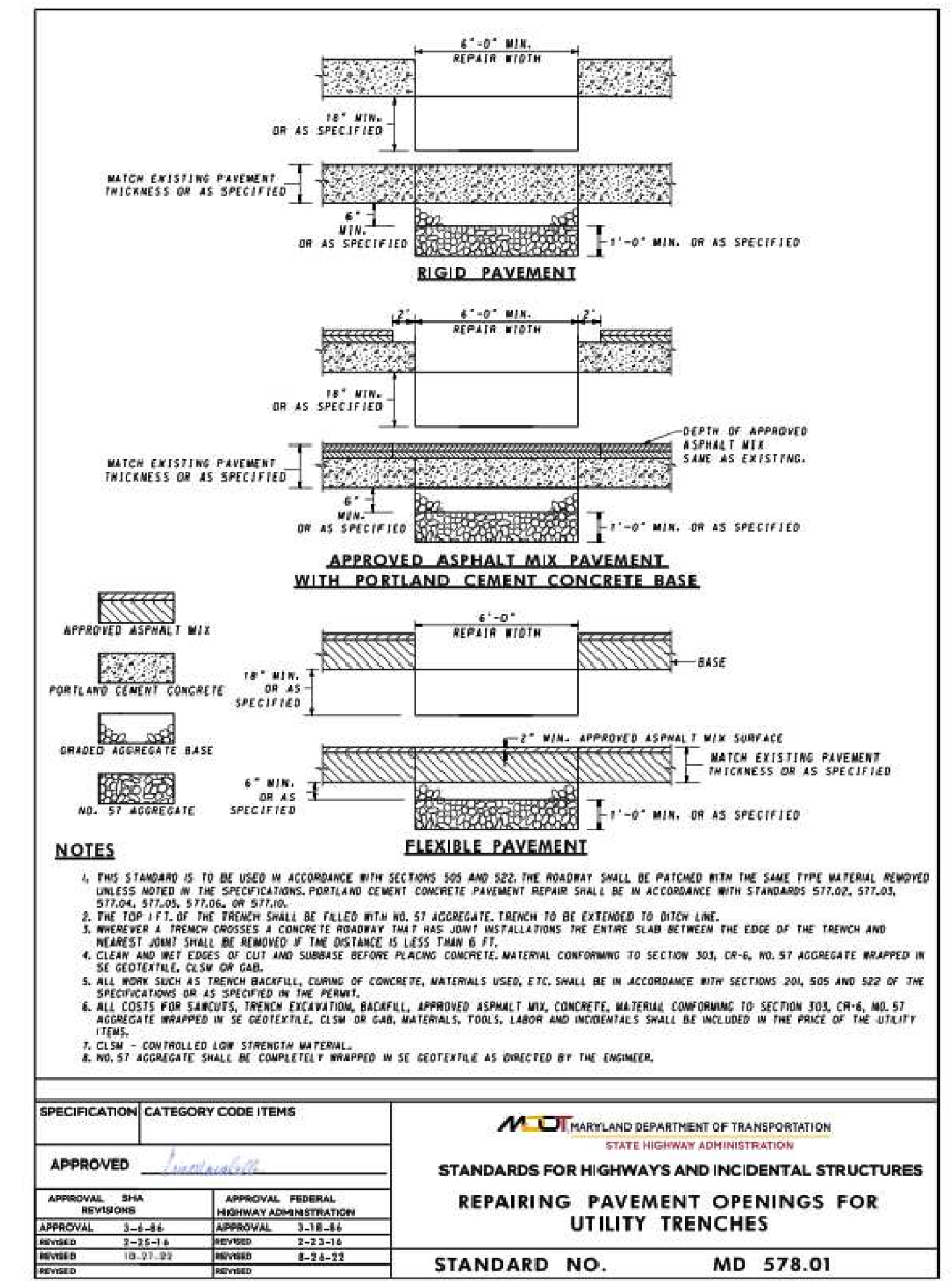
16. ALL TEES, CROSSES, BENDS, FITTINGS, AND VALVES USED IN WATERLINE CONSTRUCTION SHALL BE DUCTILE IRON WITH MECHANICAL JOINT CONNECTIONS PER ST. MARY'S COUNTY METROPOLITAN COMMISSION STANDARDS AND SPECIFICATIONS FOR WATER AND SEWERAGE CONSTRUCTION - SECTION 30.5.2.

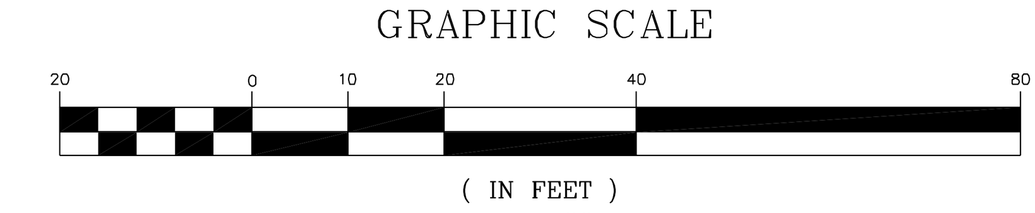
17. ALL BACKFLOW DEVICES SHALL COMPLY WITH THE NATIONAL STANDARD PLUMBING CODE AND THE ST. MARY'S COUNTY METROPOLITAN COMMISSION CROSS CONNECTION CONTROL PROGRAM. THE BACKFLOW DEVICES SHALL COMPLY WITH THE PROPOSED USE'S HEALTH HAZARD LEVEL AS SPECIFIED IN THE NATIONAL STANDARD PLUMBING CODE."

18. WHERE A WHC CROSSES A SEWER MAIN, IT MUST CROSS OVER TOP OF THE SEWER MAIN. IF A SHC CROSSES A WATER MAIN, IT MUST CROSS UNDER THE WATER MAIN. IF THIS CANNOT BE AVOIDED, THE TOP OF THE PIPE WILL NEED TO BE ENCASED IN CONCRETE 10 FEET ON EITHER SIDE OF THE CROSSING.

THE FOLLOWING ST. MARY'S METROPILTAN COMMISSION STANDARD DETAILS APPLY TO THIS PROJECT.

STD NUMBER	DESCRIPTION
G-1	BUTTRESS FOR TEES
G-2	BUTTRESS FOR CAPS AND HORIZONTAL BENDS
G-3	BUTTRESS FPR VERTICAL BENDS
G-4	ANCHORAGES FOR VERTICAL BENDS
G6	TYPICAL BEDDING AND BACKFILL FOR PIPES AND APPURTENANCES
G-11	TYPICAL METOD OF STRAPPING VALVE OR APPURTENANCE TO MAIN
W-1	FIRE HYDRANT SETTING
W-2	IN-LINE WATER VALVE SETTING
W-8	STANDARD FRAMES AND COVERS FOR WATER METERS AND VALVE VAULTS
W-15	POST INDICATOR VALVE
S-17	CLEANOUT CAP


RIGID PAVEMENT
APPROVED ASPHALT MIX PAVEMENT WITH PORTLAND CEMENT CONCRETE BASE
FLEXIBLE PAVEMENT
NOTES
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
REPAIRING PAVEMENT OPENINGS FOR UTILITY TRENCHES
STANDARD NO. MD 578.01



REVISIONS | DATE

MISS UTILITY NOTE:
INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

JHOPSON CONSULTING LLC
Civil Engineering • Construction Management
P.O. Box 462
Solomons, Maryland 20688
443.404.5498 • 240.577.2527 • jayh@jhc-llc.com

STATE OF MARYLAND C. JAY HOPSON No. 41325 REGISTERED PROFESSIONAL ENGINEER
DATE: MARCH 14, 2025

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. 41325, EXPIRATION DATE 01/05/26.

UTILITY PLAN

CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS DEVELOPMENT, LLC
THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

Tax Map / Grid / Parcel:	TM 133, GD 11, PCL 440
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Water Category:	LEONARDTOWN
Liber / Folio:	3433/579
Drawn By:	cjh
Date:	NOVEMBER 2024

ONE INCH
1" = 20'

CRITICAL AREA MITIGATION LANDSCAPE SCHEDULE

SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	CAL.	CONT.
CANOPY TREES					
	10	QUERCUS BICOLOR	SWAMP WHITE OAK	1 1/2"-2" @ 10'	B&B
		ACER RUBRUM	RED MAPLE	1 1/2"-2" @ 10'	B&B
		BETULA NIGRA	RIVER BIRCH	1 1/2"-2" @ 10'	B&B
		LIQUIDAMBAR STYRACIFLUA	SEEDLESS SWEETGUM	1 1/2"-2" @ 10'	B&B
		QUERCUS PHELLOS	WILLOW OAK	1 1/2"-2" @ 10'	B&B
		QUERCUS RUBRA	NORTHERN RED OAK	1 1/2"-2" @ 10'	B&B
UNDERSTORY TREES					
	11	CERCIS CANADENSIS	EASTERN REDBUD	1 1/2"-2" @ 6'	B&B
		CRATAEGUS CRUS-GALLI	COCKSPUR HAWTHORN	1 1/2"-2" @ 6'	B&B
		CORNUS FLORIDA	FLOWERING DOGWOOD	1 1/2"-2" @ 6'	B&B
		ACER NEGUNDO	BOX ELDER	1 1/2"-2" @ 6'	B&B
SHRUBS					
	74	VIBURNAM DENTATUM	SOUTHERN ARROWOOD		1 GALLON
		SPIRAEA ALBA	NARROW-LEAVED MEADOW SWEET		1 GALLON
		RHODODENDRON CANESCENS	SWEET AZALEA		1 GALLON
		MORELLA CAROLINIENSIS	SOUTHERN BAYBERRY		1 GALLON
		HYPERICUM DENSIFLORUM	ST. JOHN'S WORT		1 GALLON
		GAYLUSSACIA FRONDOSA	DANGLEBERRY		1 GALLON
		COMPTONIA PEREGRINA	SWEET FERN		1 GALLON
		GAULTHERIA PROCUMBENS	WINTERGREEN CHECKERBERRY		1 GALLON
GRASS					
	748	ANDROPOGON GERARDI	BIG BLUESTEM	PLUGS	TRAY
		AGROSTIS GIGANTEA	REDTOP	PLUGS	TRAY
		BROMUS INERMIS LEYSS	SMOOTH BROME	PLUGS	TRAY
		PANICUM VIRGATUM	SWITCH GRASS	PLUGS	TRAY

CRITICAL AREA PLANTING MITIGATION TABLE

Vegetation Type	Minimum Size Elgible for Credit	Credit Allowed (SF)	Maximum Percent of Credit	Credit	Plants Required
Canopy Tree	2-inch Caliper	400	No Maximum	1200	3
Understory Tree	1-inch Caliper	200	No Maximum	825 sf	11
Shrub	18 inches High	25	20%	1850 sf	74
Herbacious Perennial	1-quart or Based Upon the Area Covered by Plugs or Seed Mix	2	10%	1496 sf	748
Planting Cluster 1	1 Canopy Tree; 6 small Shrubs	300	Not Applicable	2100 sf	7
				Total=	**7471 sf**

Total Critical Area Disturbance = 42480 sf
Planting Mitigation= 15640 sf
Amount for Fee-in-Lieu= 8169 sf
$1.50 per sf = $ 12,253.50

TOTAL LANDSCAPING REQUIRED 20 %
PARCEL AREA = 0.99 ACRES
0.99 x 0.20 = 0.20 ACRES OF LANDSCAPED AREA
TOTAL LANDSCAPE AREA PROVIDED = XXX ACRES (TOTAL PERVIOUS AREA)
TOTAL USEABLE OPEN SPACE REQUIRED (200 SF PER UNIT) = XXX ACRES
PROVIDED (649 SF PER UNIT) = XXX ACRES

10% MINIMUM INTERIOR PARKING AREA REQUIRED
TOTAL PARKING AREA= 5,868 SF FACILITY X 0.1=587 SF

INTERIOR LANDSCAPING PROVIDED = 679 SF
679/5,868-SF = 0.116 OR 11.57 % PROVIDED

CRITICAL AREA NOTES
1. THE CRITICAL AREA BUFFER MUST REMAIN IN NATURAL, VEGETATION AND MAY NOT BE DISTURBED EXCEPT AS PROVIDED UNDER COMAR 27.01.09.
2. NO DEVELOPMENT IS PERMITTED IN WETLANDS WITHOUT APPROVAL FROM THE APPROPRIATE LOCAL, STATE, AND FEDERAL AGENCIES.
3. THIS SITE HAS BEEN EVALUATED FOR TIDAL AND NON-TIDAL WETLANDS BY J HOPSON CONSULTING, LLC, ON AUGUST 15, 2024.
4. LOCATION OF NATURAL HERITAGE AREAS, HABITATS OF THREATENED OR ENDANGERED SPECIES, AND HABITATS OF SIGNIFCANT PLANTS OR WILDLIFE ARE INDETIFIED ON THIS PLAN IN ACCORDANCE WITH SECTION 60 OF THE LEONARDTOWN MUNICIPAL CODE.
5. EXISTING LOT COVERAGE WITHIN THE 100' CRITICAL AREA BUFFER IS 0 SQ-FT.
6. AREA OF 15% SLOPES OR GREATER IS 10,952 SF.
7. EXISTING TREES OR FORESTED AREA IS 20,205 SQ-FT (CANOPY).
8. EXISTING LOT COVERGE IS 0 SQ-FT.
9. PROPOSED AREA OF VEGETATION CLEARING IS 38,407 SQ-FT.
10. PROPOSED AREA OF SOIL DISTURBANCE 42,480 SQ-FT
11. PROPOSED AREA OF LOT COVERAGE IS 27,504 SQ-FT.
12. AREA OF REOFRESTATION OR AFFORESTATION IS 15,640 SQ-FT (1 TO 1 REPLACEMENT).

THE DEVELOPER, HIS SUCCESSOR, OR THE OWNER SHALL BE RESPONSIBLE FOR PROPER MAINTENANCE OF THE LANDSCAPE. AS USED IN THIS SECTION, "MAINTENANCE" INCLUDES WATERING; FERTILIZING; LITTER REMOVAL; WEEDING; PRUNING; TRIMMING; INSECT, DISEASE, RODENT, AND WEED CONTROL; AND REPLACEMENT OFPLANT MATERIALS AS NEEDED TO PRESERVE THE HEALTH AND APPEARANCE OF THE PLANTINGS. PLANT MATERIALS SHOWING SIGNS OF INSECT OR DISEASE INFESTATION OR OTHER DAMAGE SHALL BE APPROPRIATELY TREATED, AND DEAD PLANT MATERIAL REMOVED AND REPLACED.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

REVISIONS
DATE

MISS UTILITY NOTE:
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I HEREBY CERTIFY THAT THE WORK PREPARED OR APPROVED BY ME WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, IN THE DULY AUTHORIZED CAPACITY OF A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 41325, EXPIRATION DATE: 01/06/26.

DATE: MARCH 14, 2025

LANDSCAPE PLAN

CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS DEVELOPMENT, LLC
THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

Tax Map / Grid / Parcel: TM 133, GD 11, PCL 440
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1" = 20'

SHEET 5
OF 11

B.4.C Specifications for Micro-Bioretention. Rain Gardens, 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 dumped within the microbioretention 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 15.08.01.05.

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 (35 % 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 into 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 a 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 a chisel plow, ripper, or subsoiler. These tilling operations are 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 ponded 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 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 (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 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

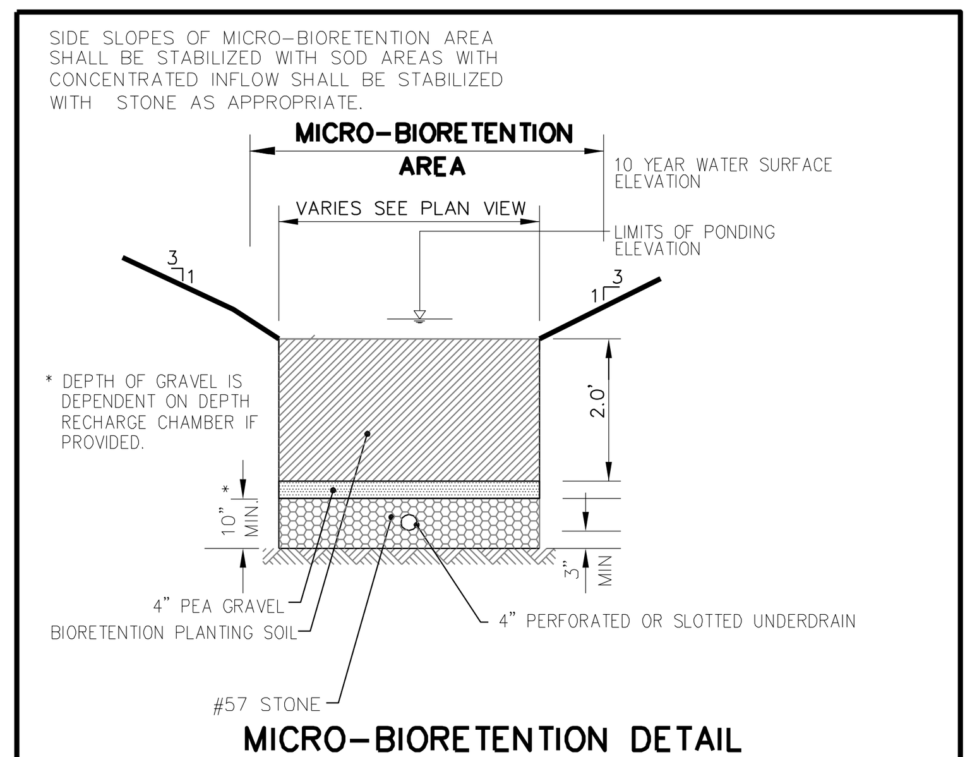
Underdrains should meet the following criteria:

- Pipe- Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations - If perforated pipe is used, perforations should be ⅜" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a ¼" (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 (⅛" to ⅜" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

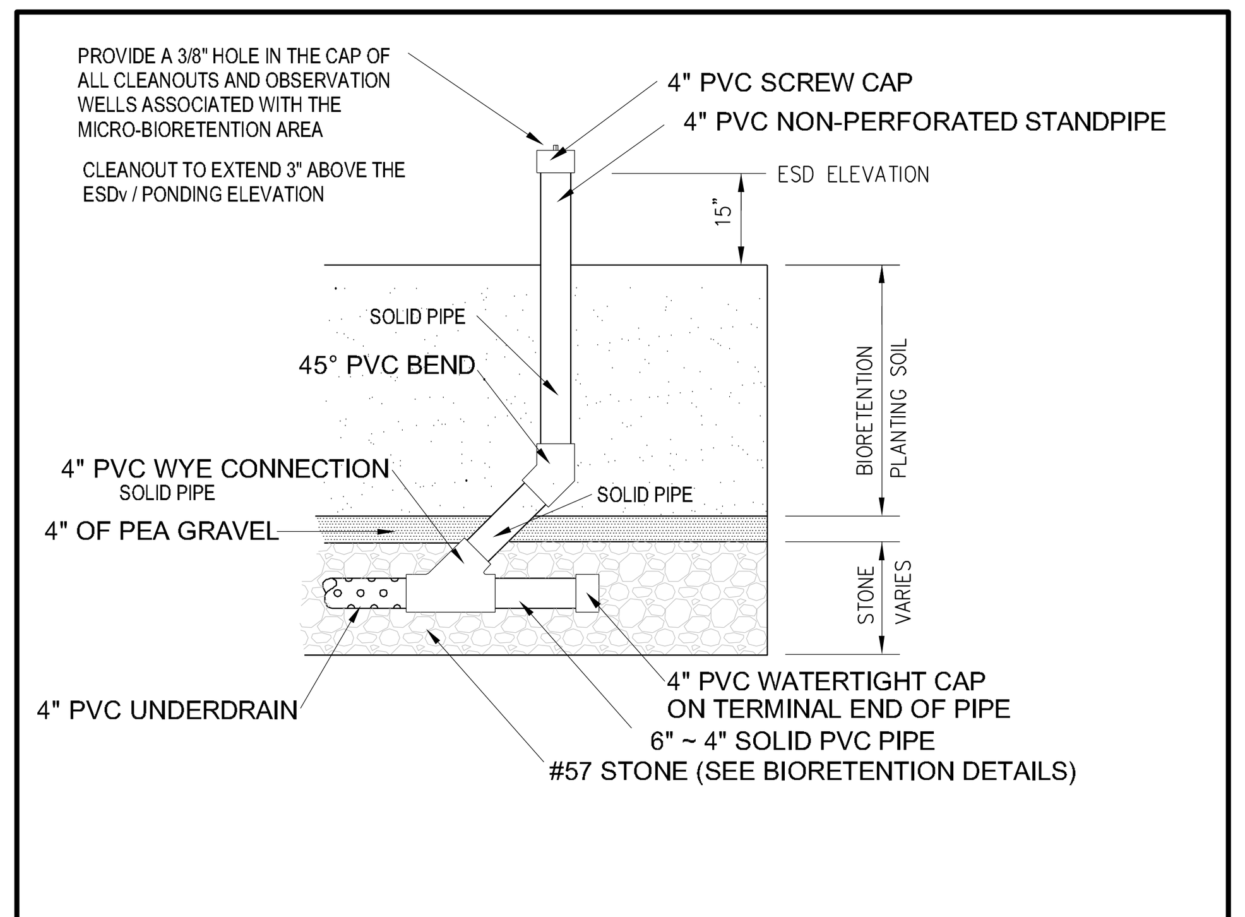
The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5 %. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

7. Miscellaneous

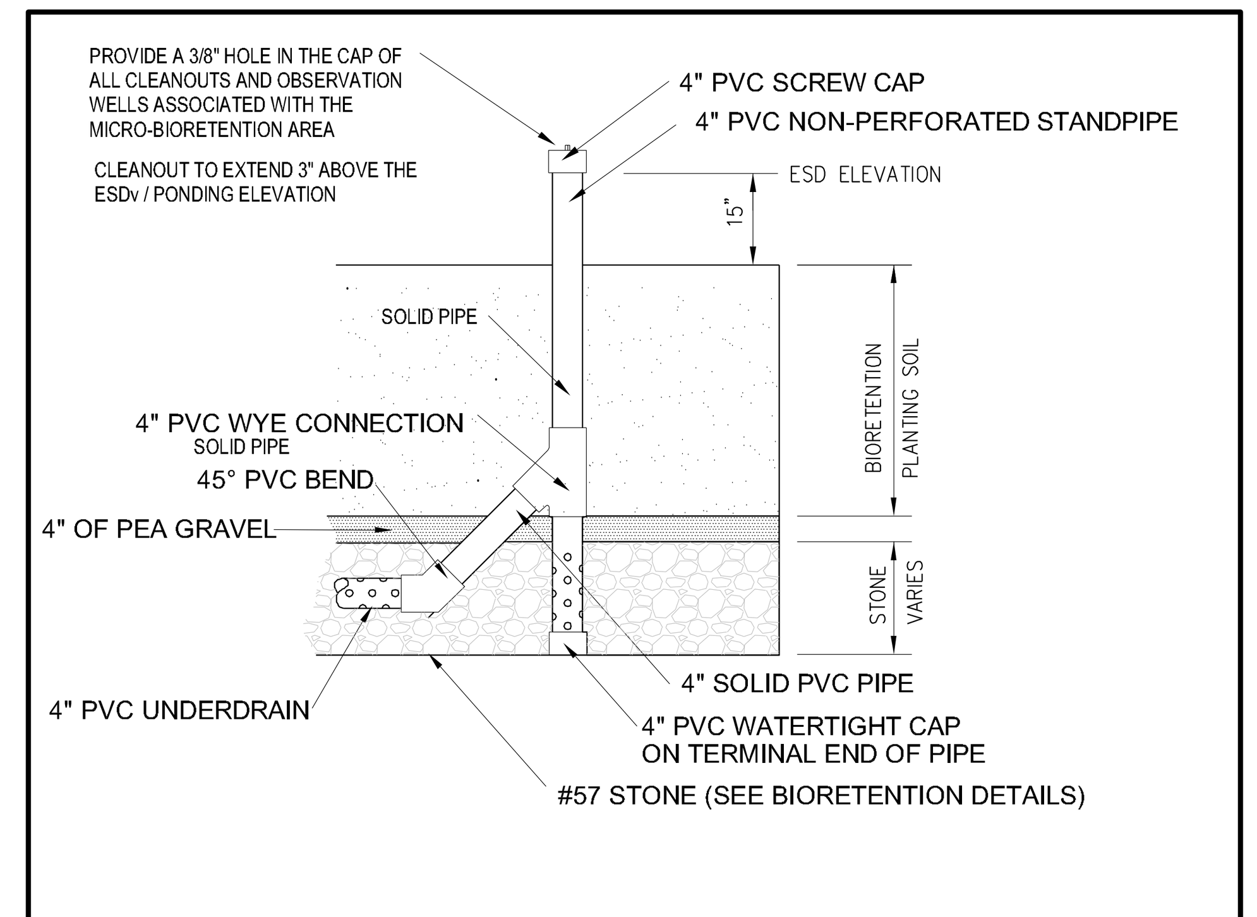
These practices may not be constructed until all contributing drainage area has been stabilized



MICRO-BIORETENTION DETAIL
NOT TO SCALE
NOTE: BOTTOM OF THE MICRO-BIORETENTION FACILITY SHALL BE A MINIMUM OF 4' ABOVE GROUND WATER.



CLEANOUT DETAIL
NOT TO SCALE



OBSERVATION WELL DETAIL
NOT TO SCALE

TABLE B.4.1 MATERIAL SPECIFICATIONS FOR MICRO-BIORETENTION, BIO-SWALE, RAIN GARDEN & LANDSCAPE INFILTRATION

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL	LOAMY SAND 60-65% & COMPOST 35 - 40% OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%)	N/A	USDA SOIL TYPES LOAMY SAND, SANDY LOAM; CLAY CONTENT <5%
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM D 2974)		
MULCH	SHREDDED HARDWOOD	N/A	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 BERMS)	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 PIPES; 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; 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 350.R/89; VERTICAL LOADING [H-10 OR H-20]; ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND [1' DEEP]	AASHTO-M-6 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.

MICRO-BIORETENTION DESIGN AND INSTALLATION

1. Materials and construction shall be in accordance with the 2000 Maryland Stormwater Design Manual including, but not limited to, Appendix "B.4" Section B.4.C for construction specifications.
2. Structure to be located at least 10' away from foundation walls, 25' from septic easements and 50' from confined water supplies.
3. Micro-bioretention shall not be constructed until the contributing drainage area is stabilized.
4. During site construction, structures shall be delineated with highly visible stakes. Runoff shall be be diverted away from and use of heavy equipment avoided on top of proposed structures.
5. Planting soil may be mixed on-site prior to installation. Soils should not be placed under saturated conditions. Filter media should be placed in horizontal layers (12" max) and allowed to compact.
6. Gravel for the underdrain system shall be clean, washed, and free of fines. The upstream end of the pipe should be capped.
7. Optimum planting time for landscaping is during the fall. Spring planting is acceptable, with watering.
8. Micro-bioretention shall be inspected at a minimum:
   a) During excavation to subgrade and placing of soil.
   b) during placement of soil media.
   c) during construction of appurtenant conveyance
   d) Upon completion of final grading and establishment of permanent stabilization.

INSPECTION & MAINTENANCE FOR ALL ESD FACILITIES

Visual inspection of the stormwater management faciliteis after major rain events. Any sign of erosion should be repaired immediatly.

Trash and debris shall be removed as necessary. Silt/sediment shall be removed from the filter bed when the accumulation exceeds one inch.

When the filtering capacity of the filter diminishes substantially (i.e., when water ponds on the surface of the filter bed for more than 48 hours), the top few inches of discolored material shall be removed and shall be replaced with fresh material. The removed sediments should be disposed in an acceptable manner (i.e., landfill).

If ponding continues to be an issue then removal and replacement of the pea gravel bridging layer or the filter material itself may be necessary (Does not apply to Submerged Gravel Wetlands)

Grass cover should be mowed a minimum of 3 times per growing season to maintain maximum grass heights less than 12 inches. Areas devoid of mulch should be re-mulched on an annual basis.

Dead or diseased plant material shall be replaced.

SUITABILITY OF ESD DEVICES

MICRO-BIORETENTION HAVE BEEN PROPOSED ON THIS SITE. SOIL IN THIS AREA IS GENERALLY C. UNDERDRAINS WILL BE PROVIDED IN ALL MICRO-BIORETENTION AREAS.

DRAINAGE AREAS MUST BE KEPT BELOW THE 30,000 SF THRESHOLD FOR MICRO-BIORETENTION AREAS.

RAIN GARDENS HAVE NOT BEEN PROPOSED BECAUSE OF THE RELATIVELY LARGE DRAINAGE AREAS WITH LITTLE OPPORTUNITY TO MINIMIZE THE SIZE.

GRASS SWALES HAVE BEEN UTILIZED TO MEET ESD REQUIREMENTS ON COURTHOUSE DRIVE.

A SUBMERGED GRAVEL WETLAND WOULD NOT BE APPROPRIATE DO TO THE PROXIMITY TO UTILITIES AND THE LIMITED SPACE.

HOPSON CONSULTING LLC

Maryland Environmental Site Design Calculations
New Development Calculations
CHESELDINE DEVELOPMENT

Project No:
Date: 12/21/2024
Designer: cjh
TOTAL SITE

Page 1 of 2

Site / Drainage Area Data

On-Site Area:	1.154 Acres	50250 sq ft
Contributing Offsite Area:	0.000 Acres	
Total Study Area (Area):	1.154 Acres	50250 sq ft
Existing Impervious Area:	0.000 Acres	
Proposed Impervious Area:	0.577 Acres	25142 sq ft
% Impervious (I)	50.03%	

1. Determine ESD Implementation Goals

A. Determine Pre-Developed Conditions

HSG	RCN†	Area	RCNxArea
A‡			
B			
C	70	1.15	80.75
D			0.00
Total		1.15	80.75

† RCN for "woods in good condition" (Table 2-2, TR-55)
‡ Actual RCN is less than 30, use RCN = 38

(Total RCNxArea)/Total Area = Weighted RCN woods
Target RCN = 70

B. Determine P_E from Table 5.3

HSG	% Imperv.	Area	P_E†	Area * P_E
A				
B				
C	50.0%	1.15	1.8	2.1
D				0.000
Total		1.15	1.8	2.1

† From Table 5.3

P_E = 1.8 inches

C. Compute Q_E :

Q_E = Runoff depth used to size ESD practices
$Q_E = P_E \times R_v$, where
P_E = 1.8 inches
$R_v = 0.05 + (0.009)(I)$; where
I = 50.03
R_v = 0.500
Q_E = 0.90 inches

D. Compute Recharge Volume (Re_v) Required

HSG	S	Area	Area *S
A	0.38	0.00	0.000
B	0.26	0.00	0.000
C	0.13	1.15	0.150
D	0.07	0.00	0.000
Total		1.15	0.150

Weighted S = 0.13 Total Areax(S)/Area
$Re_v = [(S)(R_v)(A)]/12$
Re_v= 0.006 Inches   Total Volume = 272 cu ft

2.Determine ESDv Requirements

Page 2 of 2

E. Compute Required Project ESD_V:

ESD_v = Required ESD Volume Based on DA and A_F of This Practice

$$ESD_v = \frac{(Q_E)(A)}{12\ in/ft}$$ where A is the drainage area (in acres)

Minimum Volume Required For Total Site → **ESD_v =** 0.087 ac/ft   Total Volume = 3771 cu ft

F. Project SWM Summary

ESD Summary

DRAINAGE AREA	BMP #	Area	Total Impervious	Recharge Volume Provided	ESD Volume Provided	Max Permissible ESD Volume
		(SF)	(SF)	(CF)	(CF)	(CF)
DA-1	BIO1	23939	19712	1056	2354	3632
DA-2	BIO2	14300	5430	575	1380	1307
DA-3	SWALE	6037	2475	0	590	590
Existing Impervious Treated		4647				
TOTAL		38239	25142	1631	4251	4939

TOTAL PROVIDED 4251

I HEREBY CERTIFY ... WERE PREPARED ... THAT I AM A DUL... ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 41325, EXPIRATION DATE 01/05/26.

Stormwater Management Overall Summary

Site Area	Proposed Impervious Area	Percent Impervious	Rv	Target Pe	S	Required Rev	Required ESDv
50,250	25,142	50.03%	0.500	1.8	0.13	272	3771

ESD Practices

Practice Number	Type	Drainage Area	Impervious Area	I	Rv	Target Pe	Target ESDv	ESDv provided	Max ESDv allowable	Rev Provided	Pe Provided	As-built ESDv	As-built P_E
BIO-1	MICRO-BIORETENTION	23939	19712	0.82	0.79	1.8	2,841	2,354	4,419	1056	1.49		
BIO-2	MICRO-BIORETENTION	14300	5430	0.38	0.39	1.8	840	1,307	1,307	575	2.80		
SWALE	GRASS SWALE	6037	2475	0.41	0.42	1.8	379	590	590		2.80		
Totals		44276	27617				4060	4251	6316	1631			

REVISIONS

DATE

MISS UTILITY NOTE:
INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT MISS UTILITY AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

HOPSON CONSULTING LLC
Civil Engineering • Construction Management
P.O. Box 462
Solomons, Maryland 20688
443.404.5498 • 240.577.2527 • jayh@jhc-llc.com

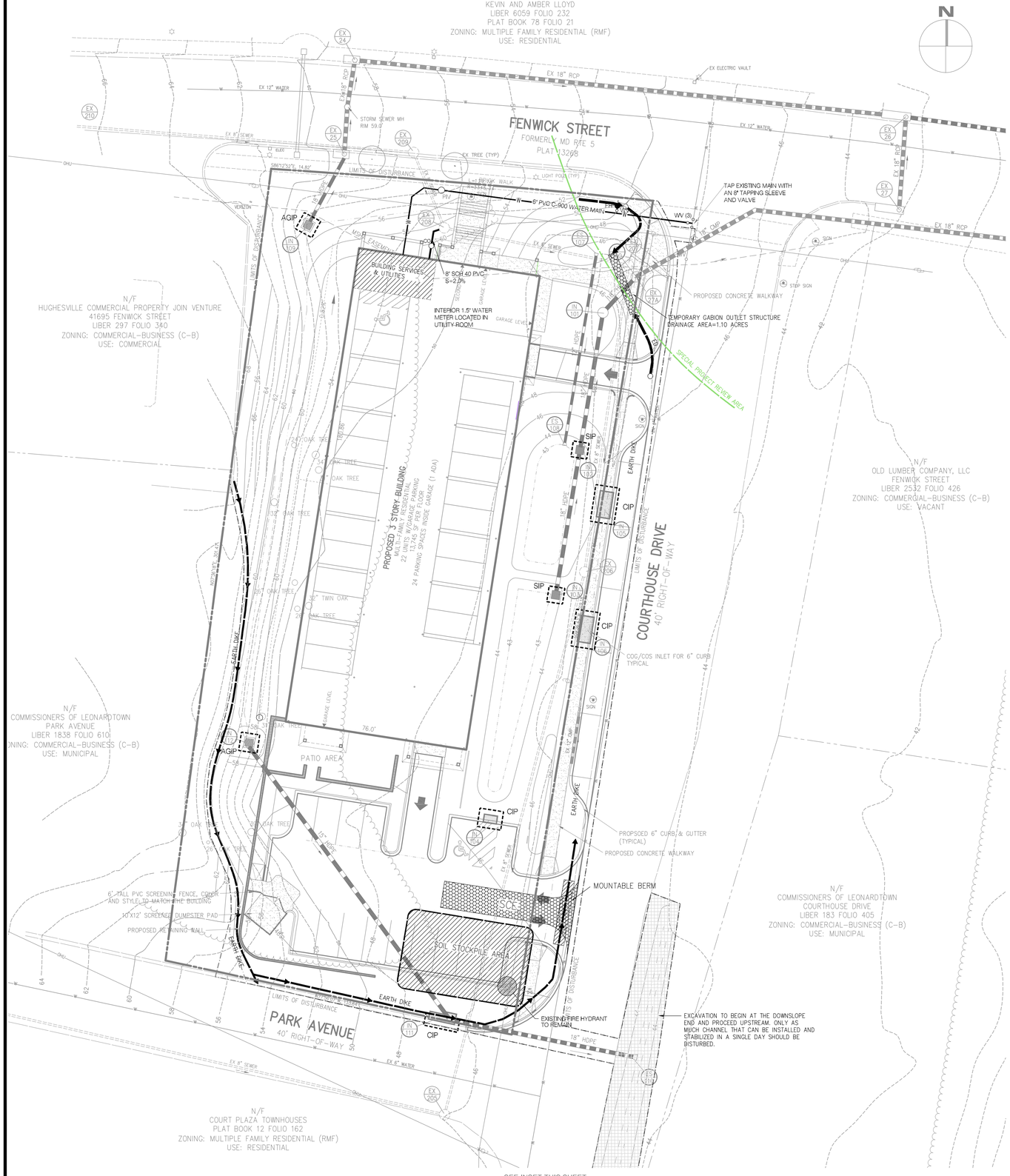
STATE OF MARYLAND PROFESSIONAL ENGINEER
DATE: MARCH 14, 2025

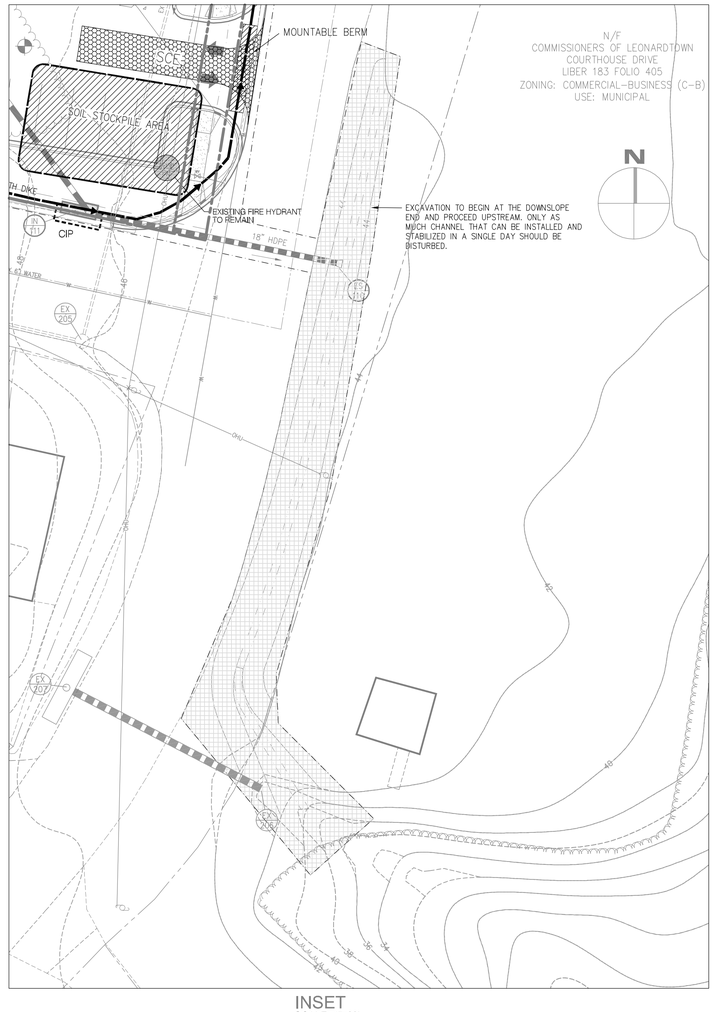
SWM DETAIL SHEET
CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS DEVELOPMENT, LLC
THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

Tax Map / Grid / Parcel:	TM 133, GD 11, PCL 440
Zoning :	C-B
Sewer Category:	LEONARDTOWN
Water Category:	LEONARDTOWN
Liber / Folio:	3433/579
Drawn By:	cjh
Date:	NOVEMBER 2024

ONE INCH
1" = 20'

SHEET 6 OF 11





INSET
SCALE: 1"=20'

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

REVISIONS

DATE	

MISS UTILITY NOTE:
INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL CONFLICTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY AT 1-800-257-7777 FOR LOCATIONS OF UTILITIES BEFORE EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. IF CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

HOPSON CONSULTING LLC
Civil Engineering-Construction Management
P.O. Box 462
Solomons, Maryland 20688
443.404.5498 • 240.577.2527 • jayh@hcllc.com

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. 34125, EXPIRATION DATE 01/09/26.

DATE: MARCH 14, 2025

SEDIMENT AND EROSION CONTROL PLAN

CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS DEVELOPMENT, LLC

THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

Tax Map / Grid / Parcel:	TM 133, GD 11, PCL 440
Zoning :	C-B
Sewer Category:	LEONARDTOWN
Water Category:	LEONARDTOWN
Liber / Folio:	3433/579
Drawn By:	cjh
Date:	NOVEMBER 2024

ONE INCH
1" = 20'

SHEET 7
OF 11

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE ST. MARY'S SOIL CONSERVATION DISTRICT (SCD) AT (301) 475-8402 SEVEN (7) DAYS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY. THE APPLICANT SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES AND A REPRESENTATIVE OF ST. MARY'S SOIL CONSERVATION DISTRICT.

2. THE CONTRACTOR MUST NOTIFY WMA IN WRITING AND BY TELEPHONE AT THE FOLLOWING POINTS:

   A. THE REQUIRED PRE-CONSTRUCTION MEETING.

   B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES.

   C. DURING THE INSTALLATION OF SEDIMENT BASINS (TO BE CONVERTED INTO PERMANENT STORMWATER MANAGEMENT STRUCTURES) AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION OF EACH STEP IS MANDATORY.

   D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).

   E. PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES.

   F. PRIOR TO FINAL ACCEPTANCE.

3. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE AND, SHALL HAVE THEM INSPECTED AND APPROVED BY THE AGENCY INSPECTOR OF WMA PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES. MINOR SEDIMENT CONTROL DEVICE LOCATION ADJUSTMENTS MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE INSPECTOR. THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE WMA INSPECTOR AND AGENCY INSPECTOR. THE CONTRACTOR MUST OBTAIN PRIOR AGENCY AND WMA APPROVAL FOR CHANGES TO THE SEDIMENT CONTROL PLAN AND/OR SEQUENCE OF CONSTRUCTION.

4. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.

5. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM WMA INSPECTOR AND AGENCY INSPECTOR.

6. ALL SEDIMENT BASINS, TRAP EMBANKMENTS AND SLOPES, PERIMETER DIKES, SWALES AND ALL DISTURBED SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES, AS SOON AS POSSIBLE BUT NO LATER THAN THREE (3) CALENDAR DAYS AFTER ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT FOR STABILIZATION MAY BE REDUCED TO THREE (3) DAYS FOR SENSITIVE AREAS.)

7. THE CONTRACTOR SHALL APPLY SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS AND STOCKPILES WITHIN SEVEN (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED IN THE AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT MAY BE REDUCED TO THREE (3) DAYS FOR SENSITIVE AREAS.)

8. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE CONTRACTOR SHALL STABILIZE AND HAVE ESTABLISHED PERMANENT STABILIZATION FOR ALL CONTRIBUTORY DISTURBED AREAS USING SOD OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHERE THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE, BUT NOT LATER THAN SEVEN (7) CALENDAR DAYS AFTER ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, TEMPORARY SEED AND ANCHORED STRAW MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE APPLIED BY MARCH 13 OR EARLIER IF GROUND AND WEATHER CONDITIONS ALLOW.

9. THE SITE'S APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, DAILY LOG BOOKS AND TEST REPORTS SHALL BE, AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF WMA AND AGENCY RESPONSIBLE FOR THE PROJECT.

10. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING PROTECTIVE DEVICES TO LOWER THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. PROTECTIVE METHODS MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.

11. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING, RIPRAP, OR BY OTHER APPROVED STABILIZATION MEASURES.

12. TEMPORARY SEDIMENT CONTROL DEVICES MAY BE REMOVED WITH PERMISSION OF WMA INSPECTOR AND AGENCY INSPECTORS, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO MEET PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.

13. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.

14. FOR FINISHED GRADING, THE CONTRACTOR SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO PREVENT WATER FROM STANDING ON THE SURFACE MORE THAN TWENTY FOUR (24) HOURS AFTER THE END OF A RAINFALL EXCEPT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS WHICH MAY DRAIN AS LONG AS FORTY-FIGHT (48) HOURS AFTER THE END OF A RAINFALL, AREAS DESIGNED TO HAVE STANDING WATER SHALL NOT BE REQUIRED TO MEET THIS REQUIREMENT.

15. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A FOUNDATION WHICH IS EXISTING OR UNDER CONSTRUCTION. NO STRUCTURE MAY BE CONSTRUCTED WITHIN 20 FEET OF AN ACTIVE SEDIMENT TRAP OR BASIN.

16. THE WMA INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SAFETY OR SEDIMENT CONTROL MEASURES, IF DEEMED NECESSARY.

17. ALL TRAP DEPTH DIMENSIONS ARE RELATIVE TO THE OUTLET ELEVATION. ALL TRAPS MUST HAVE A STABLE OUTFALL. ALL TRAPS AND BASINS SHALL BE STABLE INFLOW POINTS.

18. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. REFER TO APPROPRIATE SPECIFICATIONS FOR TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, SODDING AND GROUND COVERS.

19. TEMPORARY SEDIMENT TRAP(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A POINT ONE HALF (1/2) THE DEPTH BETWEEN THE OUTLET CREST AND THE BOTTOM OF THE TRAP. SEDIMENT BASINS SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE HALF (1/2) THE DEPTH BETWEEN THE DEWATERING ELEVATION AND THE BOTTOM OF THE BASIN.

20. SEDIMENT REMOVED FROM TRAPS (AND BASINS) SHALL BE PLACED ON STABILIZED APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR TREE-SAVE AREA. WHEN PUMPING SEDIMENT LADEN WATER, THE DISCHARGE MUST BE DIRECTED TO A SEDIMENT TRAPPING DEVICE PRIOR TO RELEASE FROM THE SITE. A SUMP PIT MAYBE USED IF SEDIMENT TRAPS THEMSELVES ARE BEING PUMPED OUT.

21. WHERE DEEMED APPROPRIATE BY THE ENGINEER OR INSPECTOR, SEDIMENT BASINS AND TRAPS MAY NEED TO BE SURROUNDED WITH AN APPROVED SAFETY FENCE. THE FENCE MUST CONFORM TO LOCAL ORDINANCES AND REGULATIONS. THE DEVELOPER OR OWNER SHALL CHECK WITH LOCAL BUILDING OFFICIALS ON APPLICABLE SAFETY REQUIREMENTS. WHERE SAFETY FENCE IS DEEMED APPROPRIATE AND LOCAL ORDINANCES DO NOT SPECIFY FENCING SIZES AND TYPES, THE FOLLOWING SHALL BE USED, AS A MINIMUM STANDARD THE SAFETY FENCE MUST BE MADE OF WELDED WIRE AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THAN 2 INCHES IN WIDTH AND 4 INCHES HEIGHT WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED AND IN GOOD CONDITION AT ALL TIMES.

22. SEDIMENT CONTROL FOR UTILITY CONSTRUCTION FOR AREAS OUTSIDE OF DESIGNED CONTROLS OR AS DIRECTED BY ENGINEER OR WMA INSPECTOR:

   (A) CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK.

   (B) EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.

   (C) TRENCHES FOR UTILITY INSTALLATION SHALL BE BACKFILLED. COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED THE SAME DAY, UNLESS;

   (D) TEMPORARY SILT FENCE SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.

23. OFF-SITE SPOIL OR BORROW AREAS ON STATE OR FEDERAL PROPERTY MUST HAVE PRIOR APPROVAL BY WMA AND OTHER APPLICABLE STATE, FEDERAL, AND LOCAL AGENCIES OTHERWISE, APPROVAL MUST BE GRANTED BY THE LOCAL AUTHORITIES. ALL WASTE AND BORROW AREAS OFF-SITE MUST BE PROTECTED BY SEDIMENT CONTROL MEASURES AND STABILIZED.

24. SITES WHERE INFILTRATION DEVICES ARE USED FOR THE CONTROL OF STORMWATER, EXTREME CARE MUST BE TAKEN TO PREVENT RUNOFF FROM UNSTABILIZED AREAS FROM ENTERING THE STRUCTURE DURING CONSTRUCTION. SEDIMENT CONTROL DEVICES PLACED IN CONSTRUCTION. SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST HAVE BOTTOM ELEVATIONS AT LEAST TWO (2) FEET HIGHER THAN THE FINISH GRADE BOTTOM ELEVATION OF THE INFILTRATION PRACTICE. WHEN CONVERTING A SEDIMENT TRAP TO AN INFILTRATION DEVICE, ALL ACCUMULATED SEDIMENT MUST BE REMOVED AND DISPOSED OF PRIOR TO FINAL GRADING OF INFILTRATION DEVICE.

25. WHEN A STORM DRAIN SYSTEM OUTFALL IS DIRECTED TO A SEDIMENT TRAP OR SEDIMENT BASIN AND THE SYSTEM IS TO BE USED FOR TEMPORARILY CONVEYING SEDIMENT LADEN WATER, ALL STORM DRAIN INLETS IN NON-SUMP AREAS SHALL HAVE TEMPORARY ASPHALT BERMS CONSTRUCTED AT THE TIME OF BASE PAVING TO DIRECT GUTTER FLOW INTO INLETS TO AVOID SURCHARGING AND OVERFLOW OF INLETS IN SUMP AREAS.

26. DRIVEWAY GRADES OF 12% OR GREATER MUST BE TREATED WITH BITUMINOUS CONCRETE PAVEMENT OR OTHER SIMILAR MATERIAL.

STANDARD STABILIZATION NOTE:

"FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE."

NOTE TO CONTRACTOR

SEDIMENT AND EROSION CONTROL WILL BE STRICTLY ENFORCED.

SECTION I - VEGETATIVE STABILIZATION AND MATERIALS

A. SITE PREPARATION

i. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OR PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS.

ii. PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING.

iii. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREAS OVER, 5 ACRES.

B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

i. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES. SOIL ANALYSIS MAYBE PERFORMED BY THE UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSIS.

ii. FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING, AND SUITABLE FOR APPLICATION BY APPROVED EQUIPMENT. MANURE MAYBE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADE NAME, OR TRADEMARK AND WARRANTEE OF THE PRODUCER.

iii. LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST 50% WILL PASS THROUGH A #100 MESH SIEVE AND 98 - 100% WILL PASS THROUGH A #20 MESH SIEVE.

iv. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3" - 5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

C. SEEDBED PREPARATION

i. TEMPORARY SEEDING

   a. SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3" TO 5" BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION, EQUIPMENT, SUCH-AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT SHOULD NOT BE ROLLED OR DRAGGED SMOOTH, BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER THAN 3:1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

   b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

   c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3" - 5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

ii. PERMANENT SEEDING

   a. MINIMUM SOIL CONDITION REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT.

      1. SOIL pH SHALL BE BETWEEN 6.0 AND 7.0.
      2. SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
      3. THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (> 30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF (LOVEGRASS OR SERICIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (< 30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      4. SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
      5. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
      6. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL REQUIRED IN ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATIONS FOR TOPSOIL.

   b. AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED IN A TRUE AND EVEN GRADE, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3" - 5" TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREA TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE.

   c. APPLY SOIL AMENDMENTS, AS PER SOIL TEST OR AS INCLUDED ON THE PLANS.

   d. MIX SOIL AMENDMENTS INTO THE TOP 3" - 5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVYCHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE. STEEP SLOPES (GREATER THAN 3:1) SHOULD BE TRACKED BY A DOOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OR THE SLOPE. THE TOP 1"- 3" OF SOIL SHOULD BE LOOSE AND FRIABLE. SEEDBED LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.

D. SEED SPECIFICATIONS

i. ALL SEED MUST MEET THE REQUIREMENT OF THE MARYLAND STATE SEEDLAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB. (NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED).

ii. INOCULANT - THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES SHALL BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75-80 F. CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

E. METHODS OF SEEDING

i. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER). BROADCAST OR DROP SEEDER, OR A CULTIPACKER SEEDER.

   a. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES AMOUNTS WILL NOT EXCEED THE FOLLOWING: NITROGEN, MAXIMUM OF 100 LBS. PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS): 200 LBS/AC; K20 (POTASSIUM): 200 LBS/AC.

   b. LIME - USE ONLY GROUND AGRICULTURAL LIMESTONE, (UP TO 5 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDOSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

   c. SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

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

   a. SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY OR PERMANENT SEEDING SUMMARIES. THE SEEDED AREA SHALL THEN BE ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

   b. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

iii. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

   a. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH Of SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

   b. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

F. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)

i. STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLY BRIGHT IN COLOR, AND SHALL NOT BE MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW.

ii. WOOD CELLULOSE FIBER MULCH (WCFM)

   a. WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

   b. WCFM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKACE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.

   c. WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

   d. WCFM MATERIALS SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

   e. WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

   f. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 MM., DIAMETER APPROXIMATELY 1 MM., pH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6% MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM.

   NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

G. MULCHING SEEDED AREAS - MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

i. IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE SEEDING SEASON RETURNS AND SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.

ii. WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE.

iii. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS. PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

H. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON SIZE OF AREA AND EROSION HAZARD:

i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF TWO (2) INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD BE USED ON THE CONTOUR IF POSSISLE.

ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LBS/ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

iii. APPLICATION OF LIQUID BINDERS SHOULD BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. THE REMAINDER OF AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS - SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX 11, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH.

iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

I. INCREMENTAL STABILIZATION - CUT SLOPES

i. ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 15 FEET.

ii. CONSTRUCTION SEQUENCE TO BE DESCRIBED IF UTILIZED.

NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

J. INCREMENTAL STABILIZATION OF EMBANKMENTS - FILL SLOPES

i. EMBANKMENTS SHALL BE CONSTRUCTED IN LIFTS AS PRESCRIBED ON THE PLANS.

ii. SLOPES SHALL BE STABILIZED IMMEDIATELY WHEN THE VERTICAL HEIGHT OF THE MULTIPLE LIFTS REACHES 15 FEET, OR, WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.

iii. AT THE END OF EACH DAY, TEMPORARY BERMS AND PIPE SLOPE DRAINS SHOULD BE CONSTRUCTED ALONG THE TOP EDGE OF THE EMBANKMENT TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER TO A SEDIMENT TRAPPING DEVICE.

iv. CONSTRUCTION SEQUENCE TO BE DESCRIBED IF UTILIZED.
NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION AND GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

SECTION II - TEMPORARY SEEDING

TEMPORARY SEEDING SUMMARY						
SEED MIXTURE HARDNESS ZONE 7a) FROM TABLE 26						
MIX NO.	SPECIES	APPLICATION RATE SEEDING (LB./AC.)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-10-10)	LIME RATE
1	RYE 39	2.5 BU. (140 LBS.)	2/1-4/30 8/15-11/30	1/4"-1/2"	600 LB./AC. (15 LB./1000 S.F.)	2 TONS./AC. (100LB./1000S.F.)
-	-	-	-	-		

SECTION III - PERMANENT SEEDING

PERMANENT SEEDING SUMMARY								
SEED MIXTURE HARDNESS ZONE 7a) FROM TABLE 25					FERTILIZER RATE (10-20-20)			LIME RATE
MIX NO.	SPECIES	APPLICATION RATE SEEDING (LB./AC.)	SEEDING DATES	SEEDING DEPTHS				
3	TALL FESCUE (85%), PERENNIAL RYEGRASS (10%), KENTUCKY BLUEGRASS (5%)	125 15 10	3/1-5/15 8/15-11/15	1/4"-1/2"	90 LB./AC. (2.0 LB./1000 S.F.)	175 LB./AC. (4.0 LB./1000 S.F.)	175 LB./AC. (4.0 LB./1000 S.F.)	2 TONS./AC. (100 LB./1000 S.F.)
-	-	-	-	-				
-	-	-	-	-				

SECTION IV - SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

A. GENERAL SPECIFICATIONS

i. CLASS OF TURFGRASS SOD SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED OR APPROVED. SOD LABELS SHALL BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.

ii. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4", PLUS OR MINUS 1/4" AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND MATCH. INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIERS WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

iii. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

iv. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

v. SOD SHALL BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE APPROVED BY A AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

B. SOD INSTALLATION

i. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, THE SUBSOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD.

ii. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

iii. WHEREVER POSSISLE, SOD SHALL BE LAID WITH THE LONG EDGES PARRALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. SOD SHALL BE ROLLED AND TAMPED, PEGGED OR OTHERWISE SECURED TO PREVENT SLIPPAGE ON SLOPES AND TO ENSURE SOLID CONTACT BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

iv. SOD SHALL BE WATERED IMMEDIATELY FOLLOWING ROLLING OR TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN EIGHT HOURS.

C. SOD MAINTENANCE

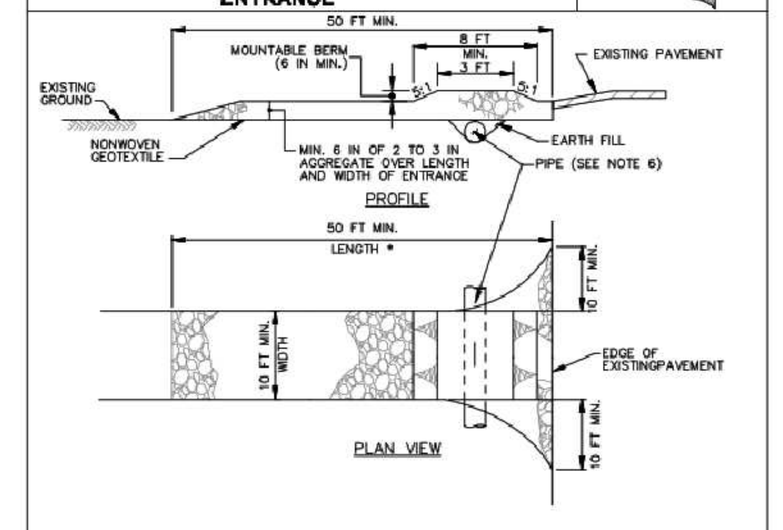
i. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4". WATERING SHOULD BE DONE DURING THE HEAT OF THE DAY TO PREVENT WILTING.

ii. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.

iii. THE FIRST MOWING OF SOD SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF SHALL BE REMOVED BY THE INITIAL CUITING OR SUBSEQUENT CUTTINGS. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2" AND 3" UNLESS OTHERWISE SPECIFIED.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



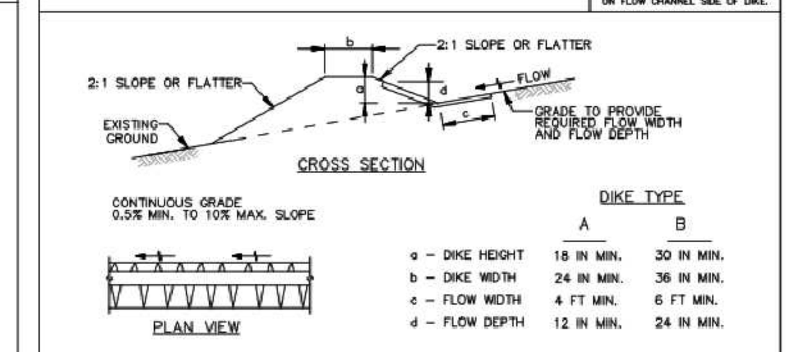
CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1 (PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIKE.)



FLOW CHANNEL STABILIZATION

A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

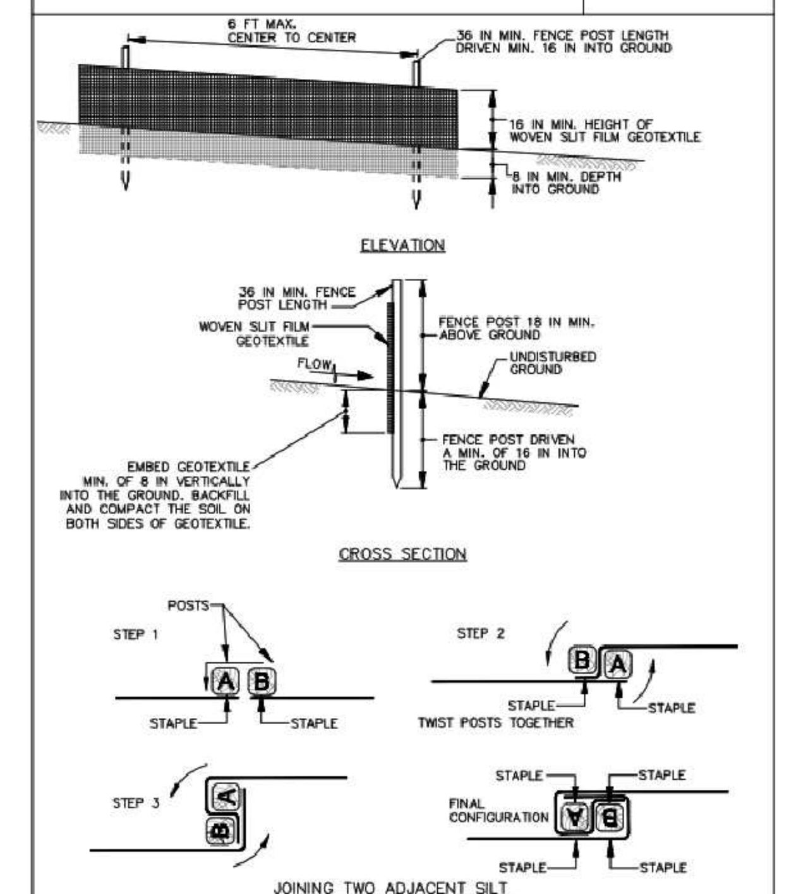
CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅛ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

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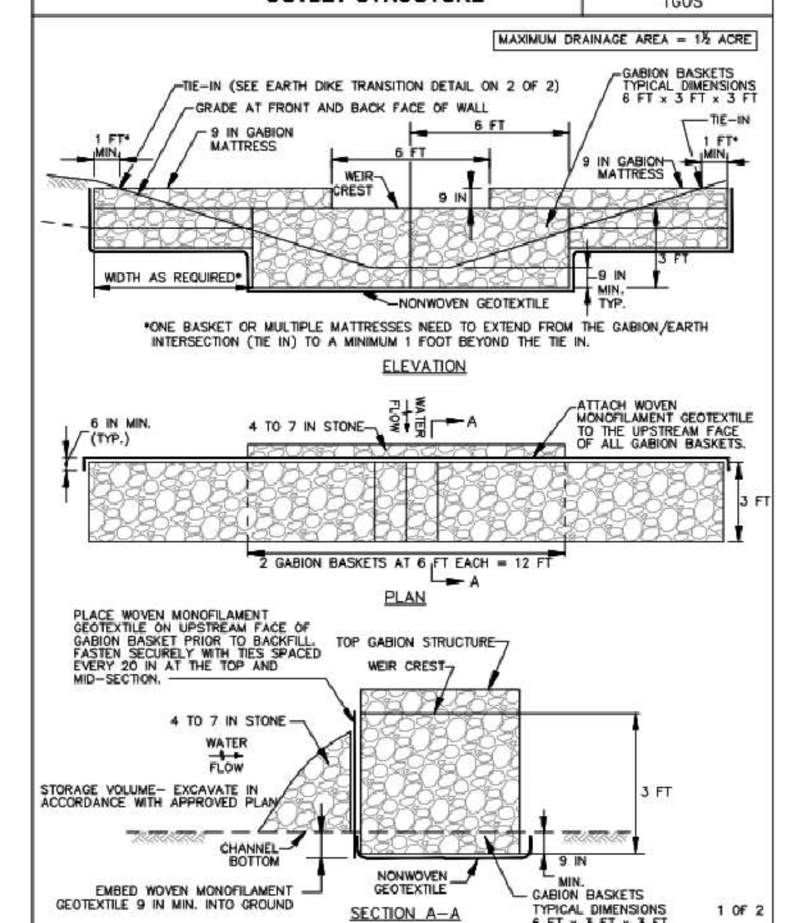
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS

MAXIMUM DRAINAGE AREA = 1½ ACRE

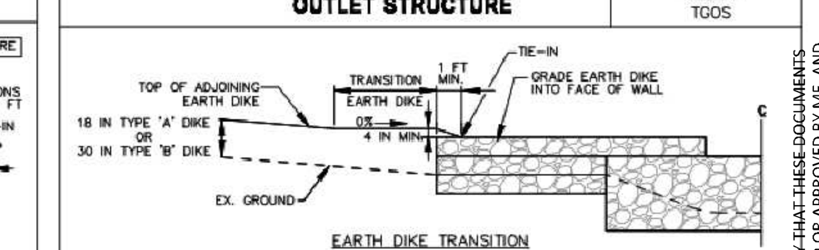


1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS



NOTES:
1. PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED 4 INCH MINIMUM FREEBOARD ABOVE TOP OF GABION AND EXTEND AT THIS ELEVATION UNTIL IT INTERCEPTS THE TOP OF ADJOINING EARTH DIKE.
2. PROVIDE POSITIVE DRAINAGE ALONG EARTH DIKE TO GABION OUTLET STRUCTURE.
3. COMPACT FILL.
4. SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED ON PLAN. BANK PROJECTIONS OR IRREGULARITIES ARE NOT ALLOWED.

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER.
3. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. EMBED THE GABION OUTLET STRUCTURE INTO THE SOIL A MINIMUM OF 9 INCHES. PROVIDE NONWOVEN GEOTEXTILE UNDER ALL GABIONS.
6. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
7. MAKE THE WEIR CREST OF THE GABION OUTLET STRUCTURE 9 INCHES LOWER THAN THE TOP OF THE ADJACENT GABIONS.
8. PROVIDE A MINIMUM WEIR CREST OF 6 FEET.
9. ATTACH WOVEN MONOFILAMENT GEOTEXTILE TO THE UPSTREAM FACE OF GABION BASKETS AND COVER WITH 4 TO 7 INCH STONE.
10. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 12 INCHES OF THE WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO FUNCTION. MAINTAIN LINE, GRADE, AND CROSS SECTION.
11. UPON REMOVAL OF GABION OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

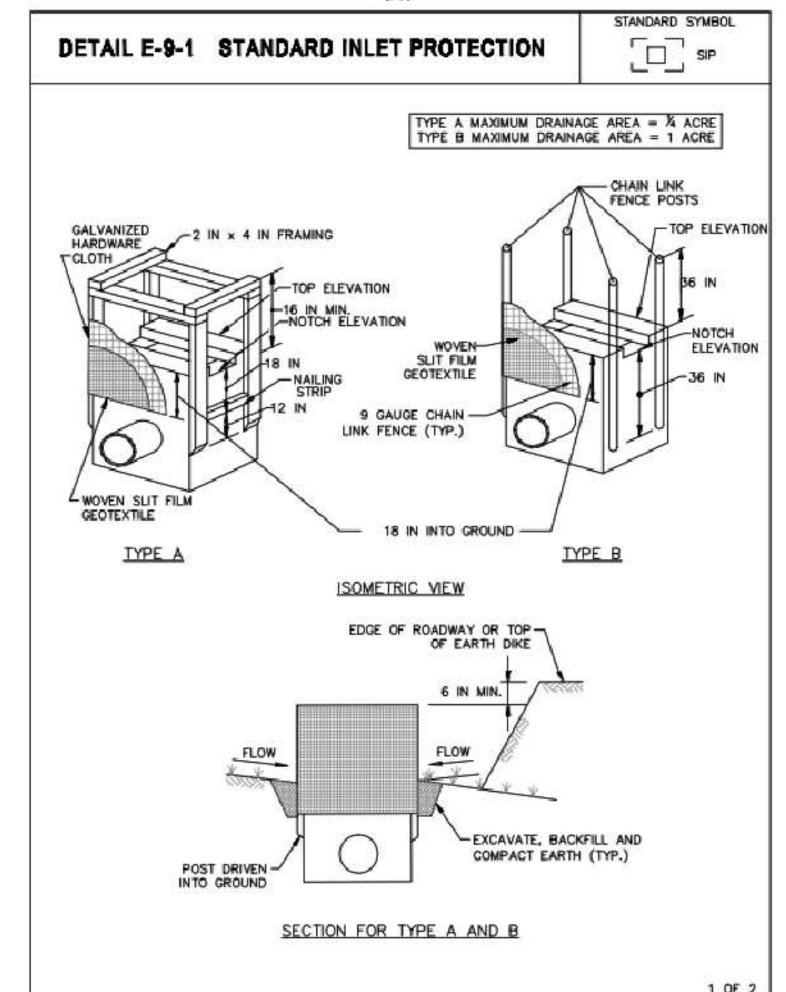
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

TYPE A MAXIMUM DRAINAGE AREA = ¾ ACRE
TYPE B MAXIMUM DRAINAGE AREA = 1 ACRE



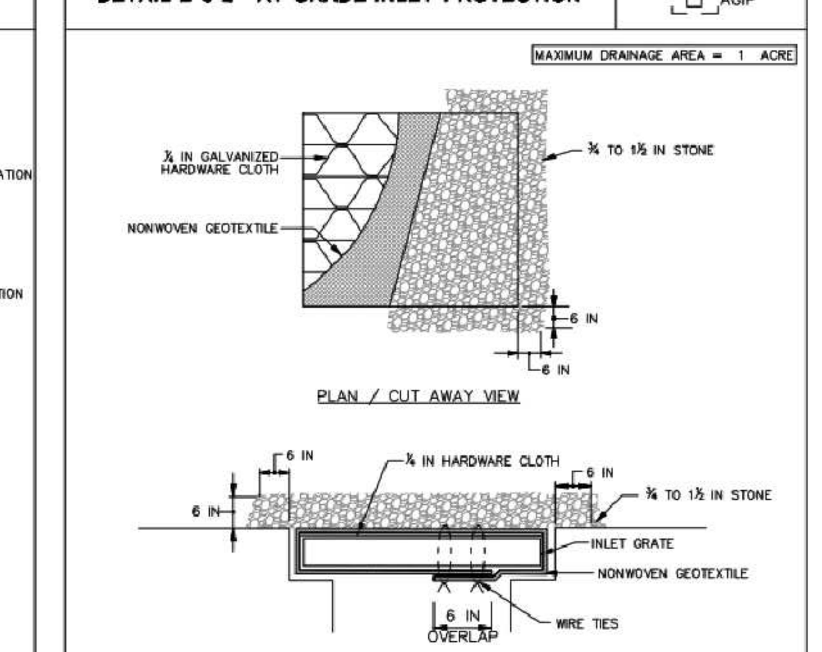
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

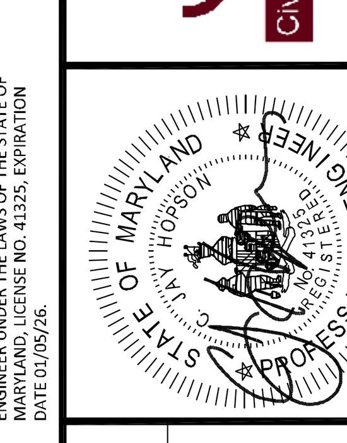
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

REVISIONS	DATE

MISS UTILITY NOTE:
INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

JHOPSON CONSULTING LLC
Civil Engineering • Construction Management
P.O. Box 462
Solomons, Maryland 20688
443.404.5498 • 240.577.2527 • jayh@jhc-llc.com

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. 41325, EXPIRATION DATE 01/05/26.



DATE: MARCH 14, 2025

SEDIMENT AND EROSION CONTROL NOTES

CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS DEVELOPMENT, LLC
THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

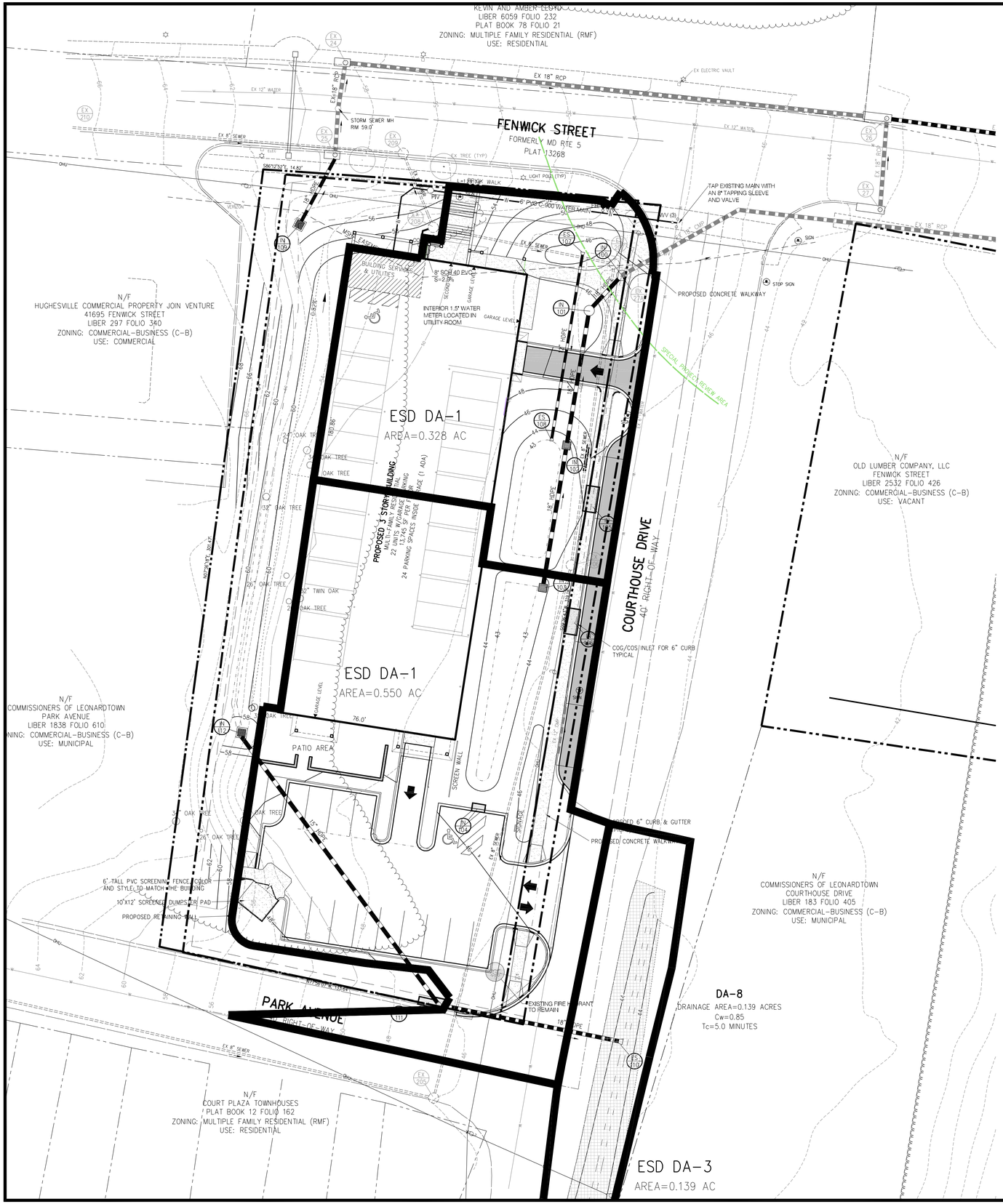
Tax Map / Grid / Parcel:	TM 133, GD 11, PCL 440
Zoning:	C-B
Sewer Category:	LEONARDTOWN
Water Category:	LEONARDTOWN
Liber / Folio:	3433/579
Drawn By:	cjh
Date:	NOVEMBER 2024

ONE INCH
1" = 20'

SHEET 8 OF 11

CONCEPT SWM E&S SHEET 8

PERMIT CASE 2-25



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Civil Engineering-Construction Management
P.O. Box 462
Solomons, Maryland 20688
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DATE: MARCH 14, 2025

ESD DRAINAGE AREA MAP

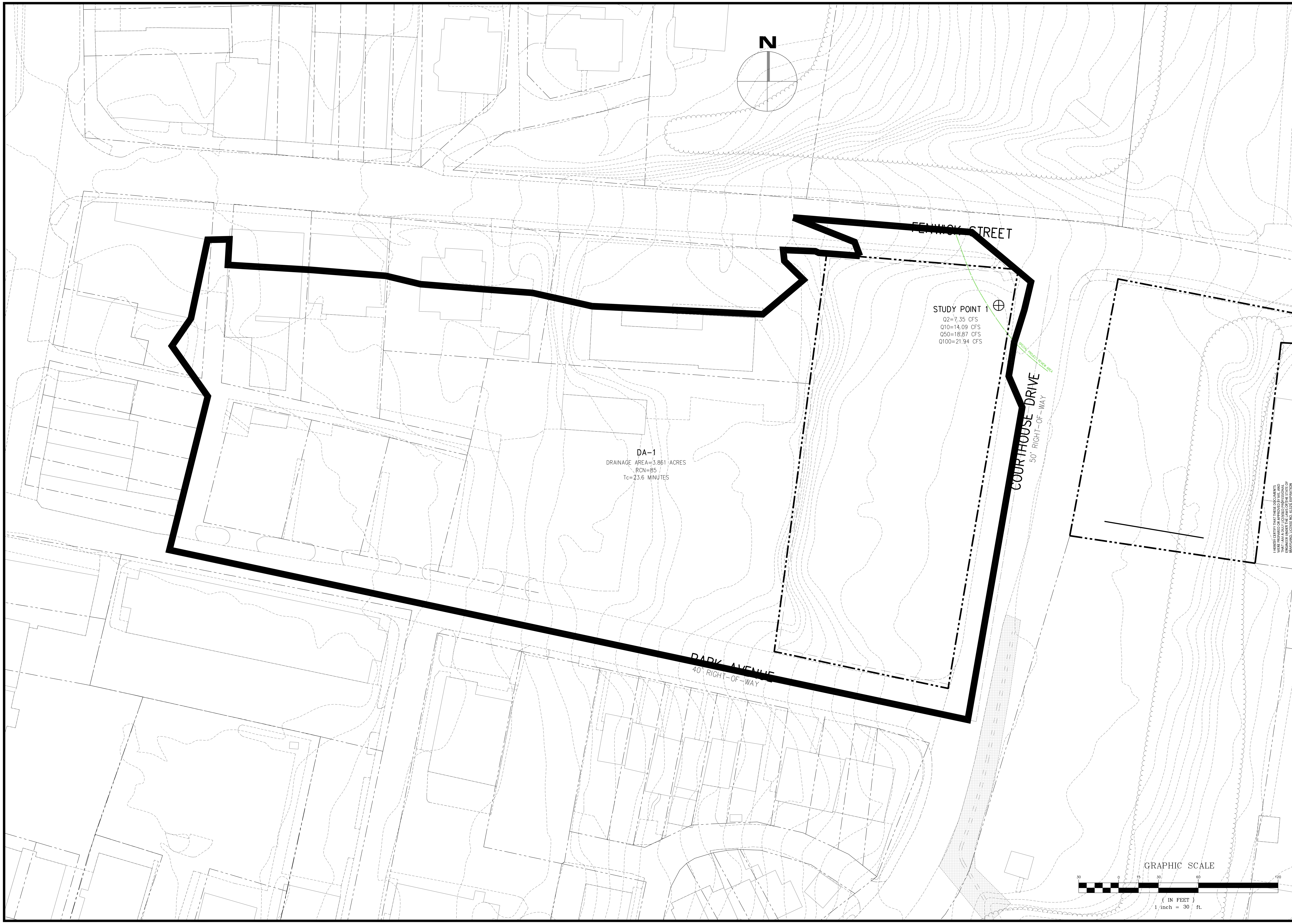
CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS DEVELOPMENT, LLC
THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

Tax Map / Grid / Parcel:	TM 133, GD 11, PCL 440
Zoning :	C-B
Sewer Category:	LEONARDTOWN
Water Category:	LEONARDTOWN
Liber / Folio:	3433/579
Drawn By:	cjh
Date:	NOVEMBER 2024

1" = 20'

SHEET 9

OF 11



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JHOPSON CONSULTING LLC
Civil Engineering • Construction Management
P.O. Box 462
Solomons, Maryland 20688
443.404.5498 • 240.577.2527 • jayh@jhc-llc.com

STATE OF MARYLAND — C. JAY HOPSON — No. 41325 — REGISTERED PROFESSIONAL ENGINEER
DATE: MARCH 14, 2025

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. 41325, EXPIRATION DATE 01/05/26.

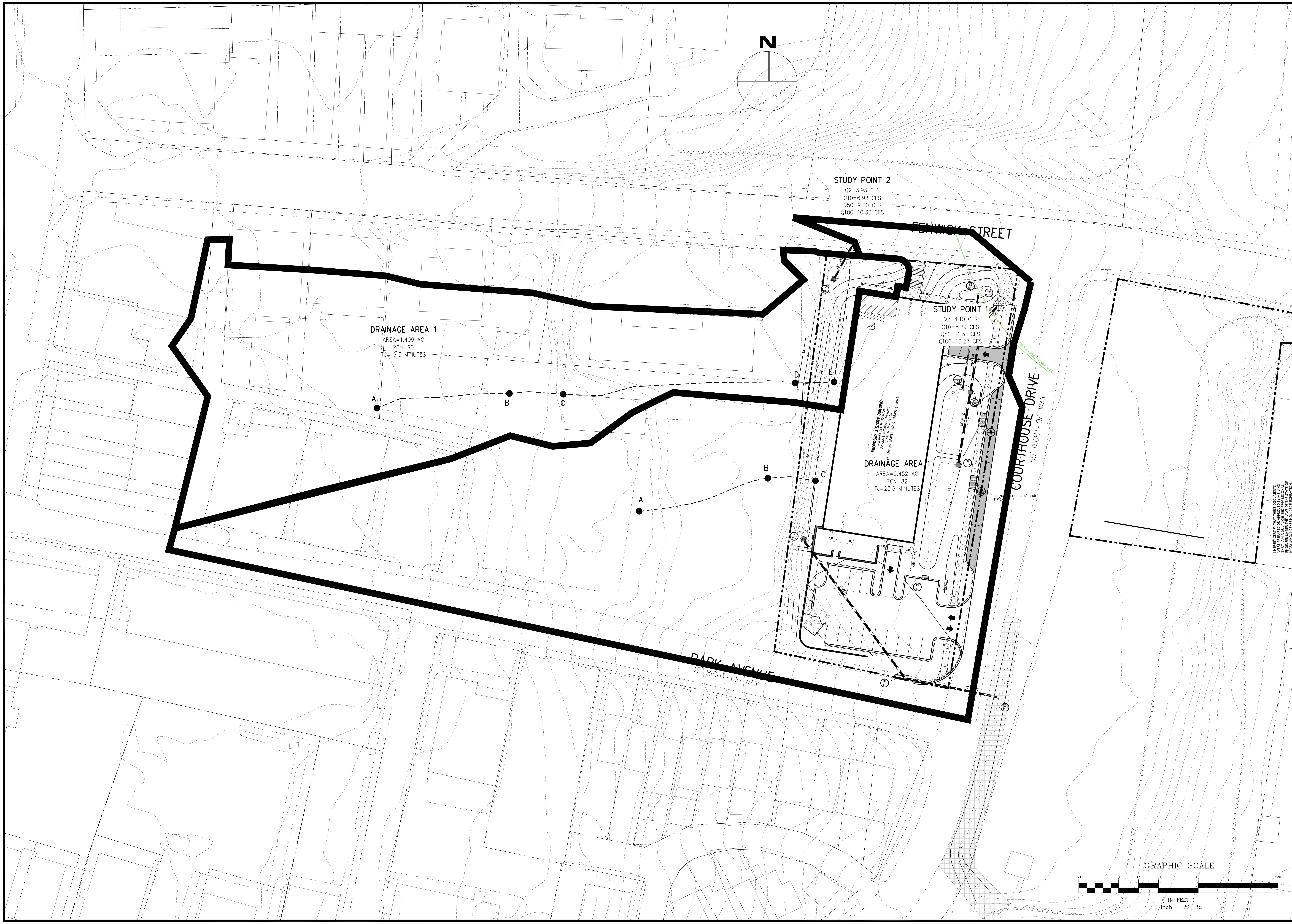
PRE-DEVELOPMENT DRAINAGE AREA MAP

CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS DEVELOPMENT, LLC
THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

Tax Map / Grid / Parcel:	TM 133, GD 11, PCL 440
Zoning :	R
Sewer Category:	LEONARDTOWN
Water Category:	LEONARDTOWN
Liber / Folio:	3433/579
Drawn By:	cjh
Date:	NOVEMBER 2024

ONE INCH
1" = 20'

SHEET 10 OF 11



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DATE

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STATE OF MARYLAND — C. JAY HOPSON — No. 41325 — REGISTERED PROFESSIONAL ENGINEER

DATE: MARCH 14, 2025

POST-DEVELOPMENT DRAINAGE AREA MAP

CONCEPT SITE PLAN
LEONARDTOWN CONDOMINIUMS
BUMPY OAKS DEVELOPMENT, LLC

THIRD ELECTION DISTRICT
TOWN OF LEONARDTOWN

Tax Map / Grid / Parcel:	TM 133, GD 11, PCL 440
Zoning :	R
Sewer Category:	LEONARDTOWN
Water Category:	LEONARDTOWN
Liber / Folio:	3433/579
Drawn By:	cjh
Date:	NOVEMBER 2024

ONE INCH
1" = 20'

SHEET 11
OF 11