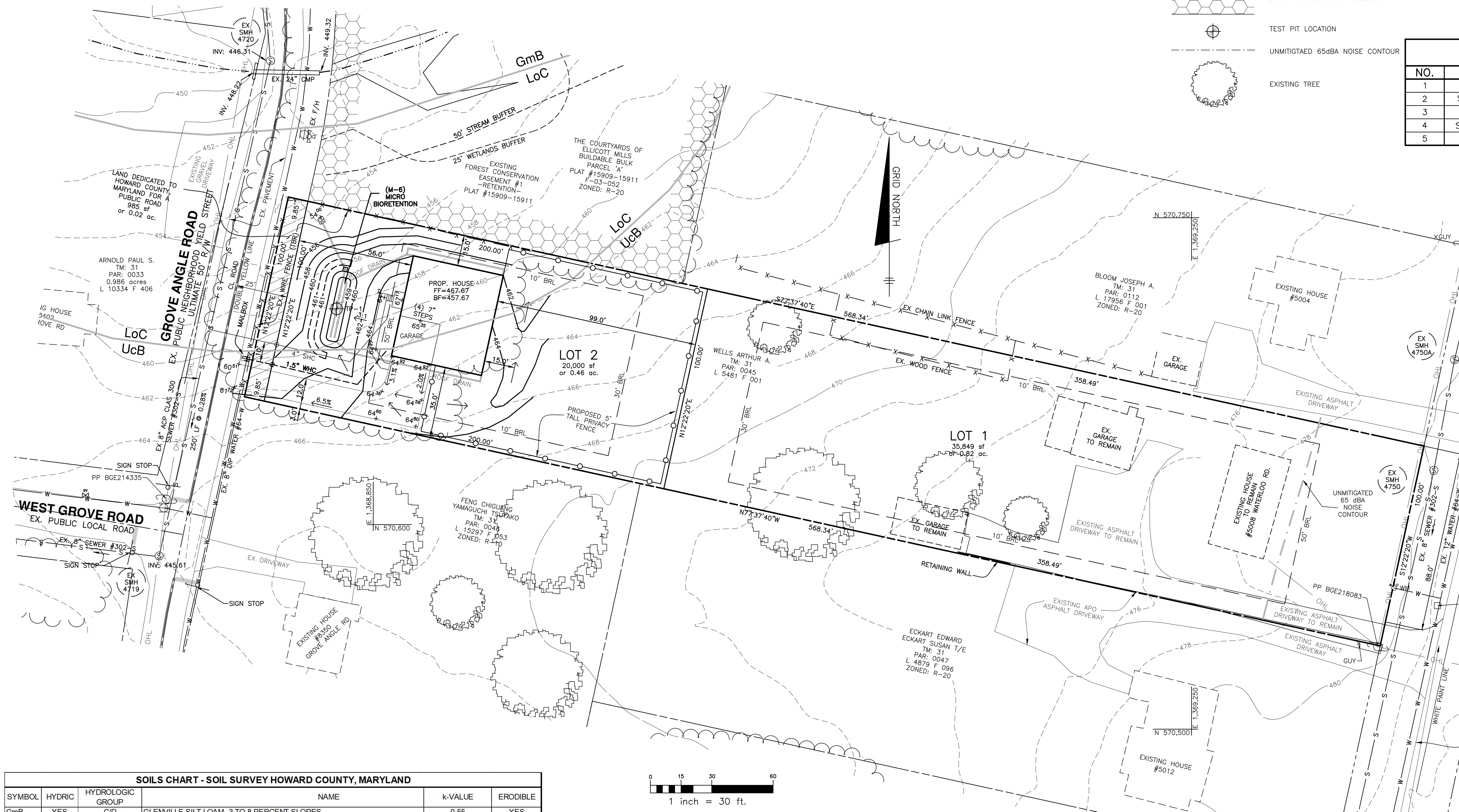
SUPPLEMENTAL F-PLANS
WELLS PROPERTY
LOTS 1 and 2

GENERAL NOTES

1. THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS AN ALTERNATIVE COMPLIANCE HAS BEEN APPROVED.
2. SUBJECT PROPERTY IS ZONED R–20 PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
3. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
4. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NO. 31DB AND 31D4 WERE USED FOR THIS PROJECT.
5. ALL AREAS ARE "MORE OR LESS".
6. TRACT BOUNDARY IS BASED ON A FIELD SURVEY PERFORMED BY BENCHMARK ENGINEERING, IN OCTOBER, 2022.
7. THERE ARE NO WETLANDS, STREAMS, THEIR BUFFERS, 100–YEAR FLOODPLAIN, OR 25% OR GREATER STEEP SLOPES WITH MORE THAN 20,000 SF OF CONTIGUOUS AREA LOCATED ON THIS PROPERTY. FIELD REVIEW WAS PERFORMED BY ECO–SCIENCE PROFESSIONALS, INC. RESULTS IN THIER LETTER DATED OCTOBER 17, 2022.
8. THIS SITE IS WITHIN THE METROPOLITAN DISTRICT PER THE HOWARD COUNTY PLAN FOR WATER AND SEWER, DATED NOVEMBER, 2015.
9. TO THE BEST OF OUR KNOWLEDGE, INFORMATION, AND BELIEF, THERE ARE NO CEMETERIES OR HISTORIC STRUCTURES LOCATED ON THIS SITE.
10. THERE ARE EXISTING STRUCTURES LOCATED WITHIN THE LIMITS OF LOT 1, NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLINGS ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATION REQUIREMENTS.
11. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:

    A) WIDTH – 12' (16' SERVING MORE THAN ONE RESIDENCE).
    B) SURFACE – 6" OF CRUSHER RUN BASE WITH TAR AND CHIP COATING (1.5" MIN)
    C) GEOMETRY – MAX 15% GRADE, MAX 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
    D) STRUCTURES (CULVERTS/BRIDGES) – CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOAD)
    E) DRAINAGE ELEMENTS – CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
    F) STRUCTURE CLEARANCES – MINIMUM 12 FEET
    G) MAINTENANCE – SUFFICIENT TO ENSURE ALL WEATHER USE
12. THE REQUIRED PRE–SUBMISSION COMMUNITY MEETING WAS HELD ON NOVEMBER 29, 2022.
13. THIS DEVELOPMENT IS NOT SUBJECT TO THE REQUIREMENTS OF SECTION 16.1200 FOR FOREST CONSERVATION SINCE IT IS A MINOR SUBDIVISION THAT CREATES ONE ADDITIONAL LOT AND HAS NO FURTHER SUBDIVISION POTENTIAL PER SECTION 16.1202(b)(vii).
14. PERIMETER LANDSCAPING FOR THIS DEVELOPMENT SHALL BE IN ACCORDANCE WITH SECTION 16.124 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF $4,070.00 FOR 2 SHADE TREES ($300 EACH), 2 EVERGREEN TREES ($150 EACH) AND 317 FEET OF FENCE ($10 PER LF) SHALL BE PAID AS PART OF THE GRADING PERMIT UNDER THE SITE DEVELOPMENT PLAN.
15. THE NOISE STUDY WAS PREPARED BY MARS GROUP IN OCTOBER, 2022. THE 65dBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS, AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPT OF HOUSING AND URBAN DEVELOPMENT.
16. A TRAFFIC STUDY IS NOT REQUIRED SINCE THIS IS A MINOR SUBDIVISION, PER DESIGN MANUAL VOLUME III, SECTION 4.7.B.5
17. THE 85TH PERCENTILE SPEED STUDY WAS PREPARED BY MARS GROUP IN OCTOBER, 2022.
18. THE MULTIMODAL STUDY WAS PREPARED BY MARS GROUP IN OCTOBER, 2022.
19. THE STORMWATER MANAGEMENT REPORT WAS PREPARED BY BENCHMARK ENGINEERING, INC. IN NOVEMBER, 2022. STORMWATER MANAGEMENT FOR THIS DEVELOPMENT HAS BEEN PROVIDED VIA ENVIRONMENTAL SITE DESIGN TO THE MAXIMUM EXTENT PRACTICAL (ESD TO THE MEP) AND COMPLIES WITH THE "MARYLAND DEPARTMENT OF THE ENVIRONMENT STORMWATER MANAGEMENT ACT OF 2007" AND THE "HOWARD COUNTY DESIGN MANUAL VOLUME I, CHAPTER 5".

    STORMWATER MANAGEMENT IS PROVIDED VIA ONE M–6 MICRO BIO–RETENTION PRACTICE. IT SHALL BE OWNED AND MAINTAINED BY THE OWNER OF LOT 2.
20. A TEST PIT FOR STORMWATER MANAGEMENT WAS DUG BY HILLIS–CARNES ON OCTOBER 18, 2022. THE TEST PIT LOG GAS BEEN INCORPORATED INTO THE STORMWATER MANAGEMENT REPORT
21. THIS DEVELOPMENT IS IN ACCORDANCE WITH SECTION 16.127 "RESIDENTIAL INFILL DEVELOPMENT" OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
22. OPEN SPACE REQUIREMENTS ARE BEING PROVIDED BY A FEE–IN–LIEU PAYMENT IN THE AMOUNT OF $1,500.00 SINCE THIS SUBDIVISION DOES NOT UTILIZ THE OPTIONAL LOT SIZE METHOD, THE SIZE OF THE AREA REQUIRED FOR DEDICATED OPEN SPACE IS LESS THAN ½ ACRE, AND THE OPEN SPACE WOULD HAVE NO ENVIRONMENTAL OR RECREATIONAL PURPOSE PER SECTION 16.121(b)(2).
23. THIS PROPERTY IS SUBJECT TO SECTION 16.1107(b)(1)(vi) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS TO ALLOW FOR A SINGLE LOT FAMILY MEMBER EXEMPTION.
24. A FEE–IN–LIEU REQUEST FOR SIDEWALK IMPROVEMENTS ALONG GROVE ANGLE ROAD AND MD RTE 104 (WATERLOO ROAD) IN THE AMOUNT OF $9,184.60 WAS APPROVED ON JANUARY 9, 2023 AND SHALL BE APPLIED TO CAPITAL PROJECT NUMBER J–4711.
25. ANY DAMAGE TO THE COUNTY'S RIGHT–OF–WAY SHALL BE CORRECTED AT THE DEVELOPERS EXPENSE.
26. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1–800–257–7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
27. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT 410–313–1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
28. REFUSE COLLECTION AND MAIL DELIVERY FOR LOT 2 IS PROVIDED AT THE JUNCTION OF THE PRIVATE DRIVEWAY AND THE ROAD RIGHT–OF–WAY.
29. APPROVAL OF A SITE DEVELOPMENT PLAN IS REQUIRED FOR THE DEVELOPMENT OF LOT 2 PRIOR TO ISSUANCE OF ANY GRADING OR BUILDING PERMITS FOR NEW HOUSE CONSTRUCTION IN ACCORDANCE WITH SECTION 16.155 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
30. WATER AND SEWER SERVICE TO LOT 2 WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWER ALLOCATIONS SHALL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
31. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
32. WATER AND SEWER IS PUBLIC. THE CONTRACT NUMBERS ARE 64–W AND 302–S. A NEW WATER AND SEWER SERVICE (N.W.S.S.) AGREEMENT SHALL BE EXECUTED FOR WATER AND SEWER HOUSE CONNECTION HOOKUP TO THE PUBLIC MAINS.
33. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
34. THIS PROJECT IS LOCATED IN THE RED HILL BRANCH OF THE LITTLE PATUXENT WATERSHED #02131105.
35. THIS SUBDIVISION IS SUBJECT TO SECTION 13.402(c)(e) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS FOR MODERATE INCOME HOUSING UNITS. THIS SHALL BE ACCOMPLISHED VIA FEE–IN–LIEU PAYMENT THAT IS TO BE CALCULATED AND PAID AT THE TIME OF BUILDING PERMIT ISSUANCE FOR LOT 2 AND FOR LOT 1 IF THE EXISTING HOUSE IS EVER DEMOLISHED.
36. FOR DRIVEWAY APRON REFER TO HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R–6.06. A DRIVEWAY CULVERT IS NOT REQUIRED SINCE THE CALCULATED FLOW OVER THE DRIVEWAY IS LESS THAN THE AMOUNT REQUIRED FOR A CULVERT (5cfs)
37. WP–23–072, AN ALTERNATIVE COMPLIANCE TO SECTION 16.119(f)(1) TO ALLOW THE EXISTING DRIVEWAY SERVING LOT 1 TO CONTINUE TO ACCESS FROM MD ROUTE 104 WAS APPROVED ON FEBRUARY 27, 2023 WITH THE FOLLOWING CONDITIONS:
    1. ACCESS TO THE SITE IS RESTRICTED TO THE ACCESS POINTS APPROVED UNDER F–23–025
    2. ADD THE AC REQUEST NUMBER, PURPOSE, SECTION, DATE, AND CONDITIONS ON ALL SUBSEQUENT PLAN SUBMISSIONS.



SYMBOL	HYDRIC	HYDROLOGIC GROUP	NAME	k-VALUE	ERODIBLE
GmB	YES	C/D	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	0.55	YES
LoC	NO	C	LEGORE-MONTALDO-URBAN LAND COMPLEX, 8 TO 15 PERENT SLOPES	0.64	YES
UcB	NO	C	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	0.64	NO

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

HSCD Newsletter dated April, 2013 defines erodible soils as those soils with a slope greater than 15 percent or those with a soil erodibility factor K greater than 0.35 and with a slope greater than 5%.

STANDARD STORMWATER MANAGEMENT PRACTICE CHART

LOT NUMBER	ADDRESS	MICRO-BIORETENTION M-6 (NUMBER)
2	8360 GROVE ANGLE ROAD	1

STORMWATER MANAGEMENT SUMMARY CHART - INDIVIDUAL PRACTICES

Practice		DA (sf)	Imp Area (sf)	% Imp	Rv	Pe Required	Total ESDv Required	75% ESDV ponding Required	75% ESDV ponding Provided	25% ESDv (cf) below Required	25% ESDv (cf) below Provided	Total ESDv Provided	Pe Provided	REv (cf) Required		REv (cf) Provided	Ownership
(M-6) Micro Bio-Retention	#1	5,339	3,314	62%	0.61	1.0	271	203	309	68	68	376	1.4	49		68	Private
Totals →							271 cf					376 cf		49 cf		68 cf	

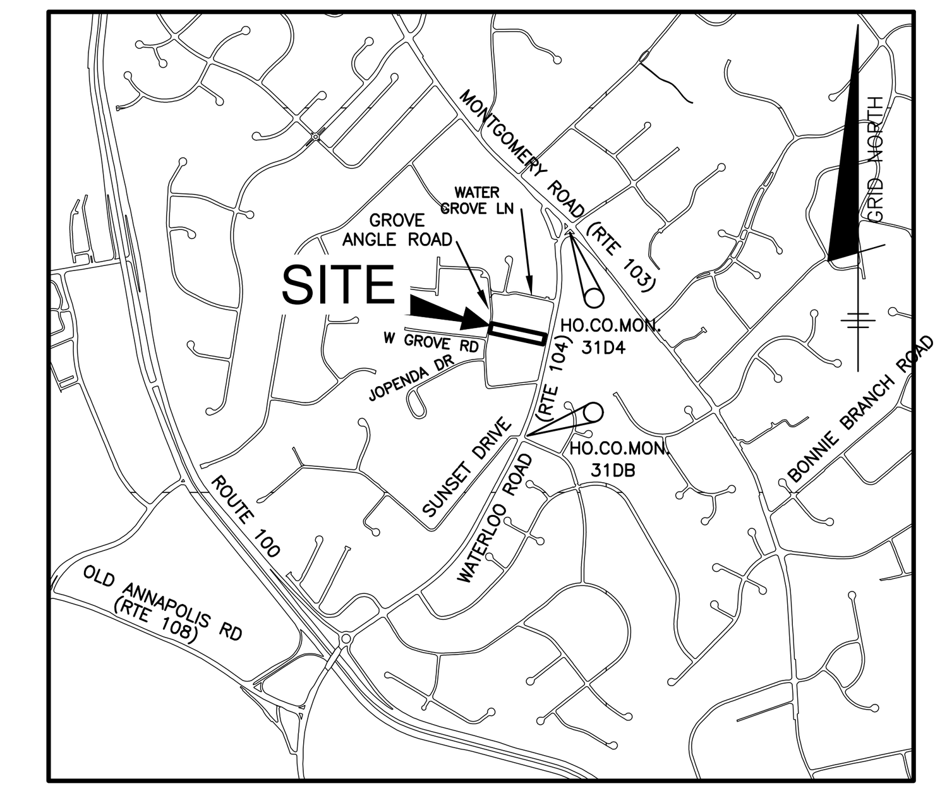
APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: [illegible] 1EB75478A22B49A... 3/29/2023
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: Chad Edmondson 7063F754EF41499... 3/29/2023
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

LEGEND OF SYMBOLS

- EXISTING CONTOURS
- EXISTING TREELINE
- NRCS SOILS DELINEATION LINE
- UcB — NRCS SOILS TYPE
- LIMIT OF SUBMISSION
- EXISTING FENCE LINE
- EXISTING SEWER
- EXISTING WHC
- OHL — EXISTING OVERHEAD LINES
- EXISTING POWER POLE
- PROPOSED ROOF DRAIN
- RIGHT–OF–WAY DEDICATION
- 10' BRL — BUILDING RESTRICTION LINE
- EXISTING FOREST CON EASEMENT
- TEST PIT LOCATION
- UNMITIGTAED 65dBA NOISE CONTOUR
- EXISTING TREE



VICINITY MAP
SCALE: 1" = 2000'

ADC MAP: 4936
GRID: C3

BENCHMARKS
HORIZONTAL: MARYLAND NAD83
VERTICAL: NAVD88L

HO. CO. #31D4 (AKA: 2843004)
STAMPED BRASS DISK SET ON TOP OF A 3ft DEEP COLUMN OF CONCRETE.
N 571700.664' E 1369606.417'
ELEVATION: 494.445'

HO. CO. #31DB
STAMPED BRASS DISK SET ON TOP OF A 3ft DEEP COLUMN OF CONCRETE.
N 569583.589' E 1369155.211'
ELEVATION: 492.348'

SHEET INDEX

NO.	TITLE
1	SITE LAYOUT AND GRADING PLAN, NOTES, AND DETAILS
2	STORMWATER MANAGEMENT PLAN, DRAINAGE AREA MAP, AND DETAILS
3	LANDSCAPE PLAN
4	SEDIMENT AND EROSION CONTROL PLAN AND TRAFFIC CONTROL PLAN
5	SEDIMENT AND EROSION CONTROL NOTES

ADDRESS CHART

LOT	STREET ADDRESS
1	5008 WATERLOO ROAD
2	8360 GROVE ANGLE ROAD

MODERATE INCOME HOUSING UNIT (MIHU) APPLICATION EXEMPTIONS TRACKING

Total Number of Lots/Units Proposed	2
Total Number of MIHU's Required	1
Number of MIHU's Provided Onsite (Exempt from APFO allocations)	0
Number of APFO Allocations Required (Remaining Lots/Units)	1
MIHU Fee-in-Lieu (Indicate Lot/Unit numbers)	Lots 1 & 2

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
3300 N. RIDGE ROAD ▲ SUITE 140 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410–465–6105 (F) 410–465–6644
WWW.BEI–CIVILENGINEERING.COM

Professional Certification. 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. 22390, Expiration Date: 6-30-2023.

STATE OF MARYLAND — CHRISTOPHER A. MALAGARI — 22390 — PROFESSIONAL ENGINEER

C Malagari 03.17.2023

OWNER:
ARTHUR A. WELLS
5008 WATERLOO ROAD
ELLICOTT CITY, MARYLAND 21043
410–207–2188

DEVELOPER:
JACLYN WELLS
5008 WATERLOO ROAD
ELLICOTT CITY, MARYLAND 21043
410–207–2188

DESIGN: DBT | DRAFT: DBT

WELLS PROPERTY
LOTS 1 AND 2

TAX MAP: 31 – GRID: 13 – PARCEL: 45
ZONED: R–20
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

SITE LAYOUT AND GRADING PLAN, NOTES, AND DETAILS

DATE: MARCH 9, 2023 | BEI PROJECT NO. 3133
SCALE: AS SHOWN | SHEET 1 OF 5

F-23-025

TEST PIT LOG
Test Pit No.: B-1

PROJECT: 5008 Waterloo Road	PROJECT NO.: 22630A
CLIENT: Jackie Wells	DATE: 10/18/22
LOCATION: Ellicott City	ELEV.
EXCAVATION METHOD	LOGGER
Groundwater depth - At completion: Dry	Cave-in depth:

ELEVATION/ DEPTH	USCS	DESCRIPTION	DENSITY pcf	MOISTURE %
0		Topsoil - 5"		
	SM	Dark brown, moist, silty SAND. (SM)		
	SC	Brown, moist, clayey SAND. (SC)		
5	SM	Brown, moist, silty SAND, some gravel. (SM) Hard excavation at 10'		
10		Bottom of test pit at 10'		

Notes:

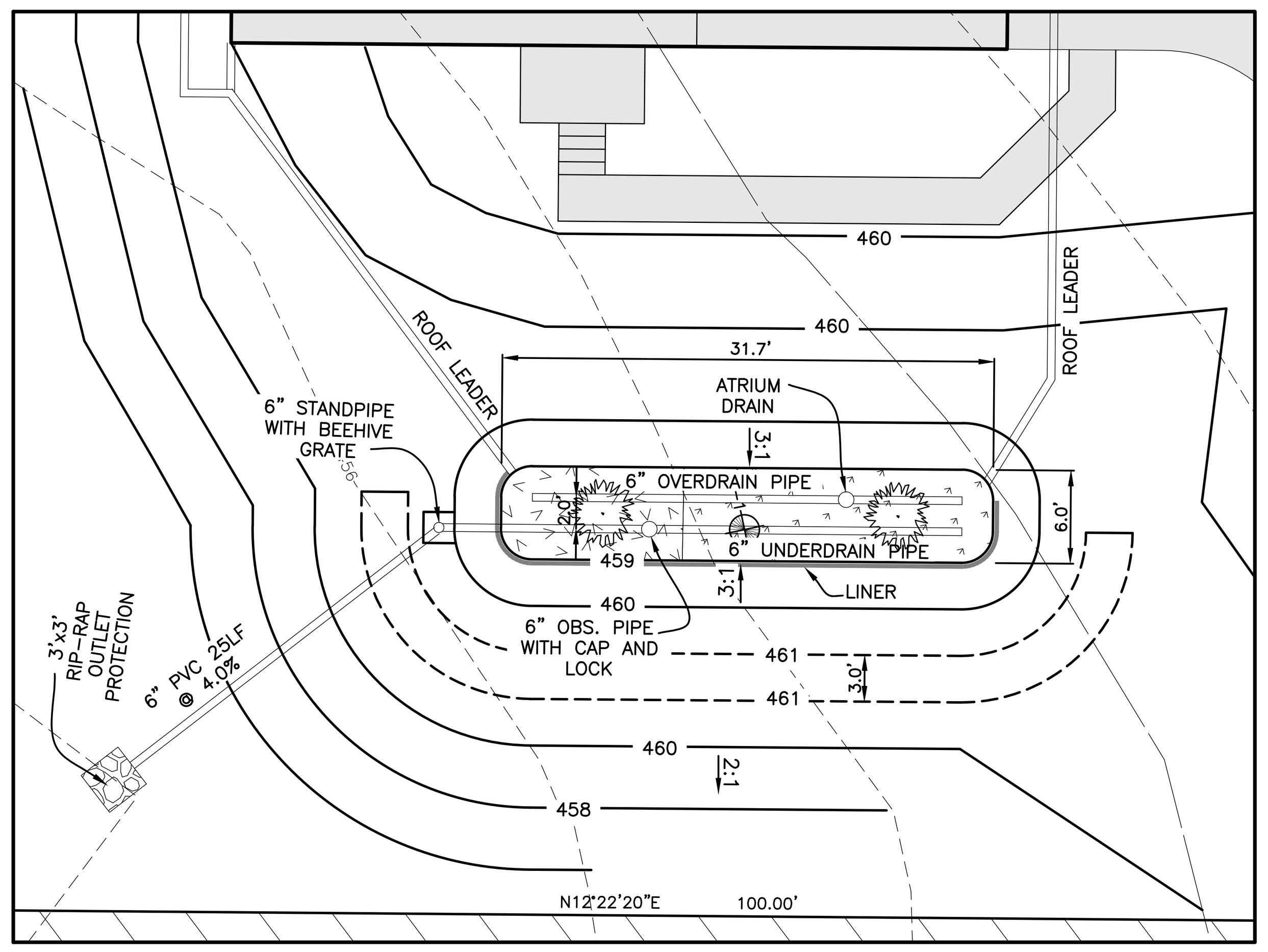
HILLIS-CARNES ENGINEERING ASSOCIATES, INC.

(M-6) Micro Bio-Retention Landscaping Chart

PLANT NAME	COMMON NAME	TYPE	SIZE	MB #1 QUANTITY
		Surface Area	→	187
Comus Amomum	Silky Dogwood	deciduous shrub	18-24" ht. #3 CAN	2
Echinacea Purpurea	Purple Coneflower	perennial	2 gal. container	12
Juncus Effusus	Common Rush	perennial	1 qt.	35

PLANTING LEGEND

SYMBOL	NAME
(symbol)	SILKY DOGWOOD
(symbol)	PURPLE CONEFLOWER
(symbol)	COMMON RUSH



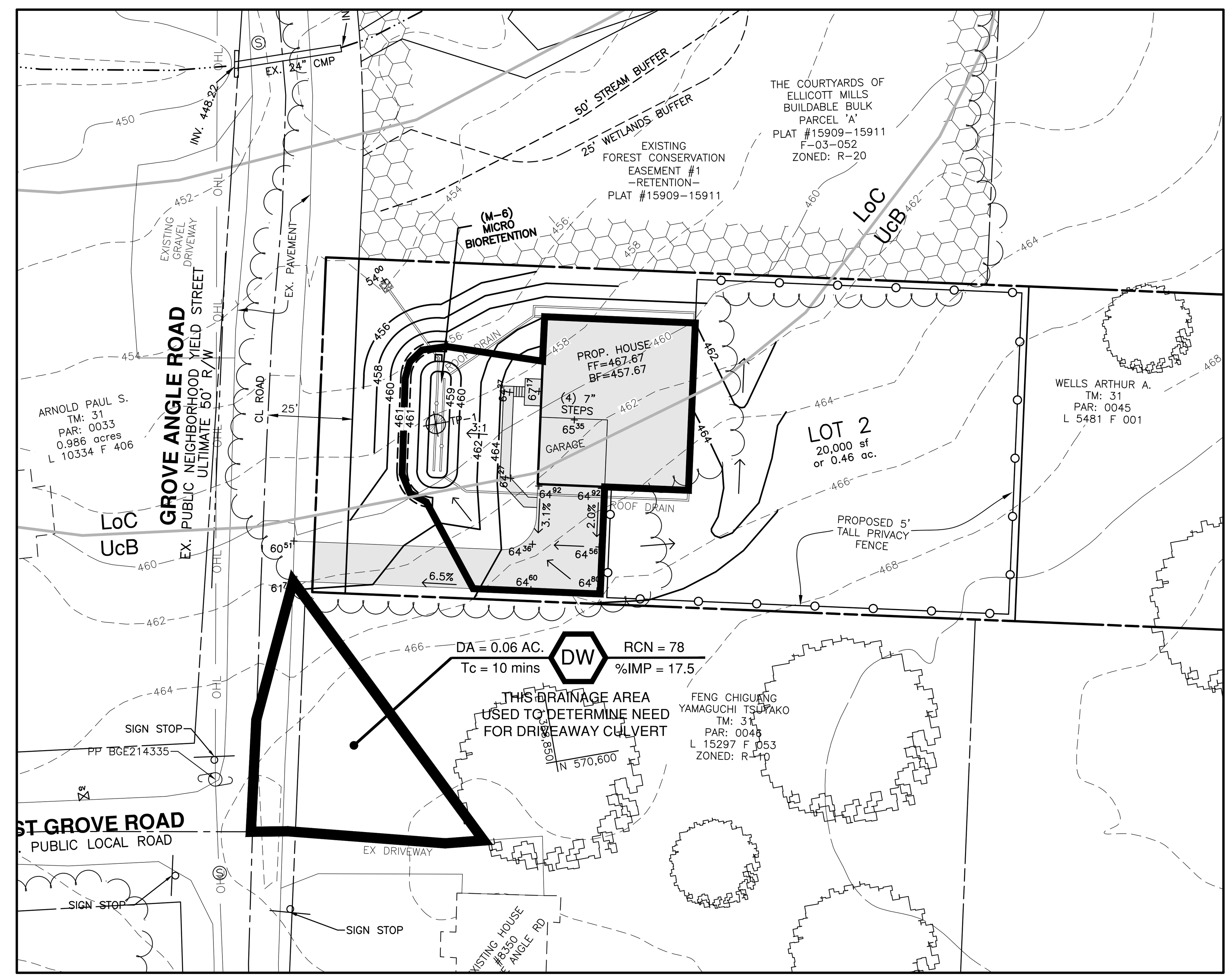
0 5 10 20
1 inch = 10 ft.

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

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

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 – 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 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 ¼-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	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (**AASHTO**) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

B.4.7 Supp. 1

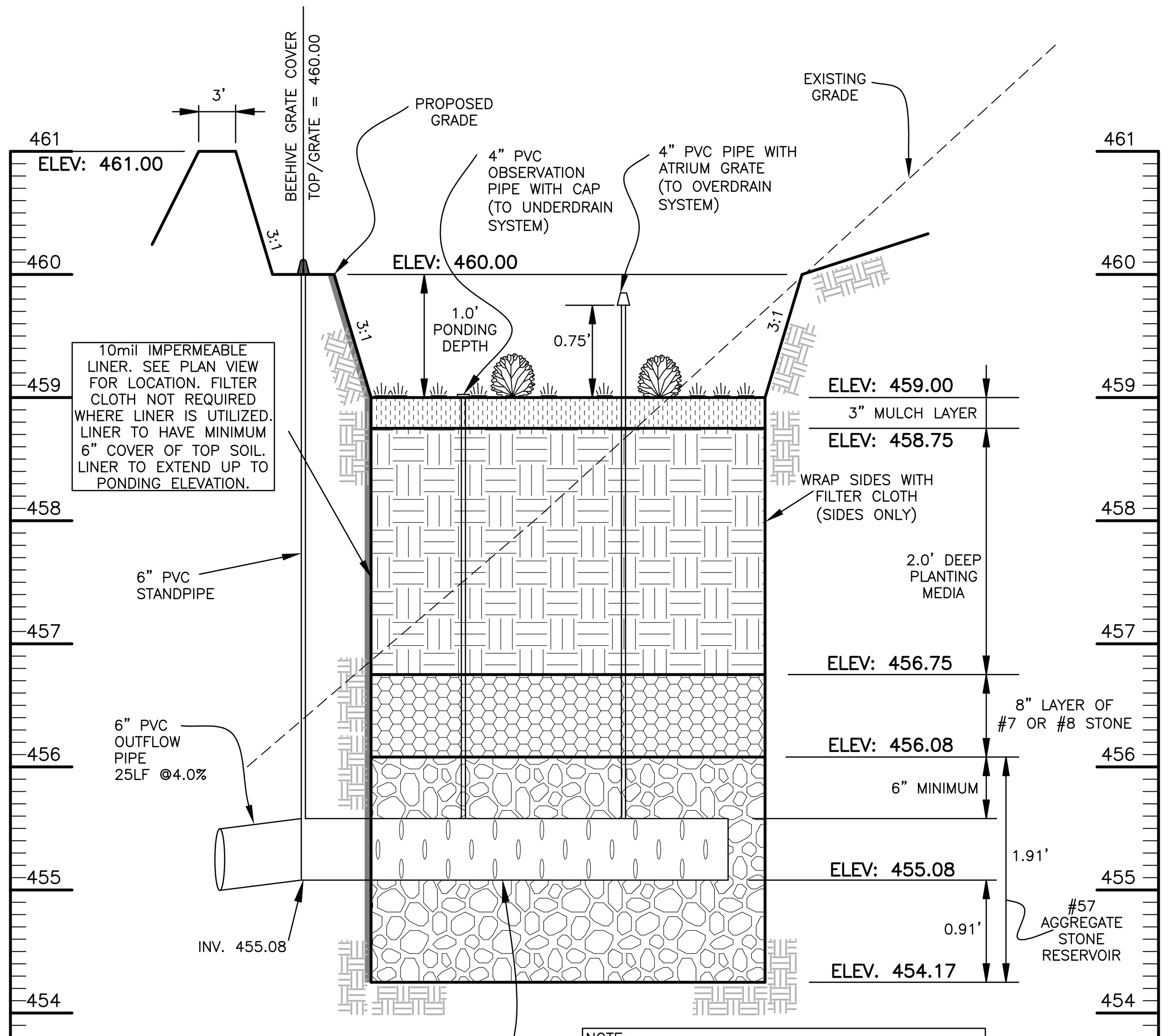


DRAINAGE AREA MAP

0 15 30 60
1 inch = 30 ft.

STORMWATER MANAGEMENT LEGEND

(heavy line)	DRAINAGE AREA
(shaded)	PROPOSED IMPERVIOUS AREA



6" PVC PIPE OVERDRAIN AND UNDERDRAIN COLLECTION SYSTEM TO BE SLOTTED OR PERFORATED WITHIN AREA OF BMP. FOR PERFORATED PIPE, WRAP WITH 1/4" GALVANIZED HARDWARE CLOTH. DO NOT USE FILTER FABRIC.

NOTE:
THE OVERDRAIN AND UNDERDRAIN PIPES SHALL HAVE THE SAME INVERT ELEVATION.
THE OVERDRAIN PIPE SYSTEM SHALL NOT CONNECT TO THE UNDERDRAIN PIPE SYSTEM. SEE PLAN VIEW FOR LAYOUT.

(M-6) MICRO BIO-RETENTION #1
CROSS SECTION A-A

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

a. The Owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2.

b. The Owner shall perform a plant inspection in the spring and in the fall of each year. During the inspection, the Owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material, treat diseased trees and shrubs, and replace all deficient stakes and wires.

c. The Owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed the new layer is applied.

d. The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: [signature]	3/29/2023
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DocuSigned by: Chad Edmondson	3/29/2023
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
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(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. 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. 22390, Expiration Date: 6-30-2023.

STATE OF MARYLAND — CHRISTOPHER A. MALAGARI — 22390 — PROFESSIONAL ENGINEER
03.17.2023

OWNER:
ARTHUR A. WELLS
5008 WATERLOO ROAD
ELLICOTT CITY, MARYLAND 21043
410-207-2188

DEVELOPER:
JACLYN WELLS
5008 WATERLOO ROAD
ELLICOTT CITY, MARYLAND 21043
410-207-2188

DESIGN: DBT | DRAFT: DBT

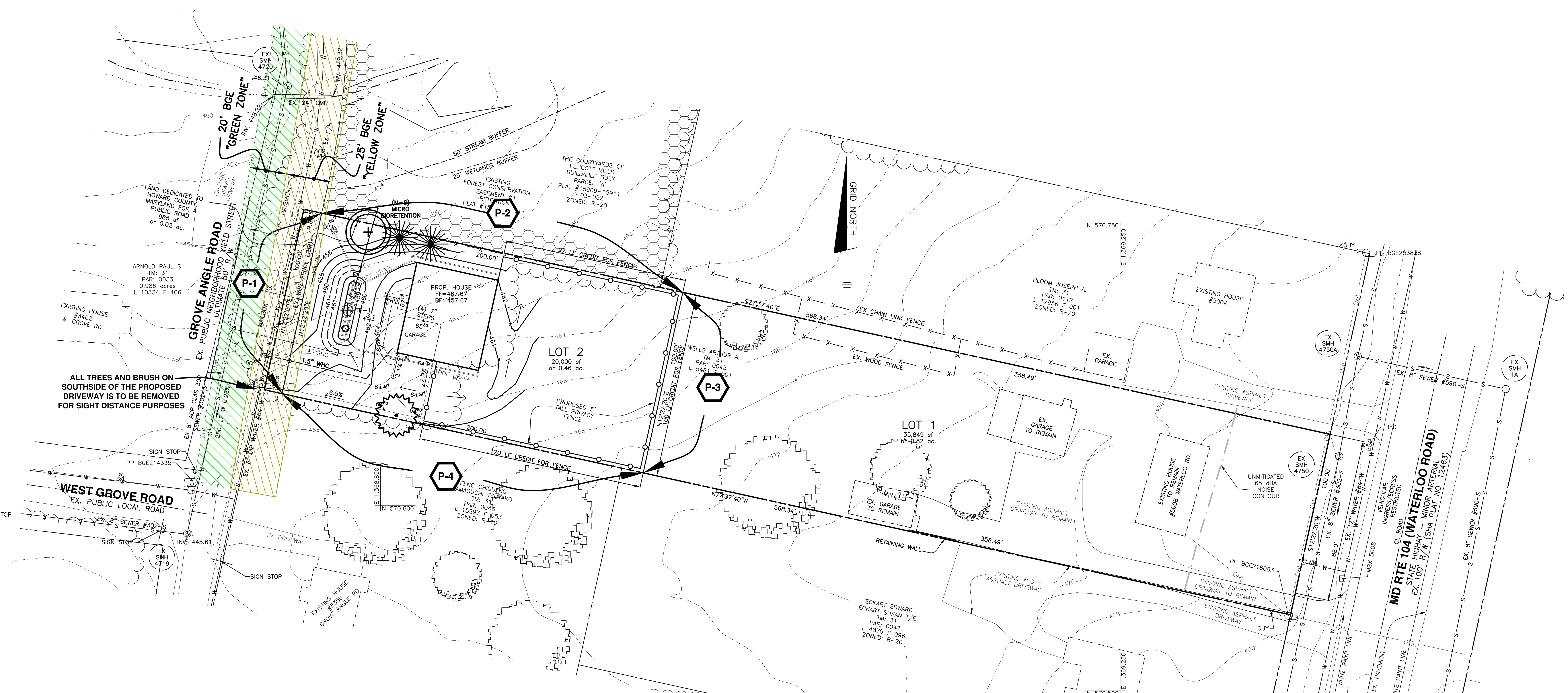
WELLS PROPERTY
LOTS 1 AND 2

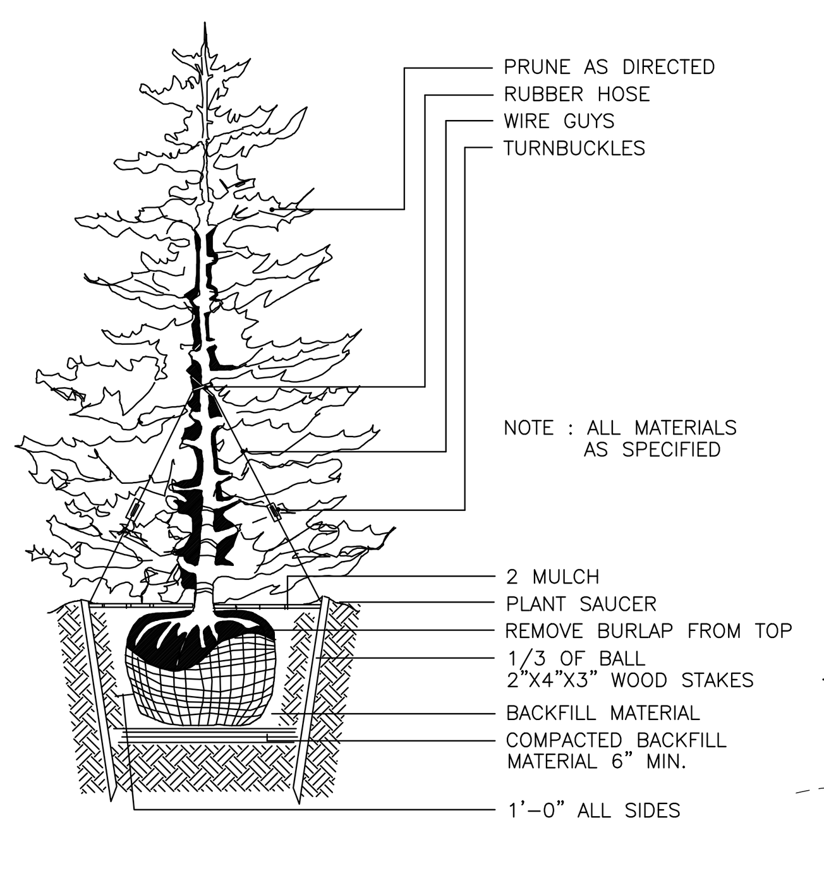
TAX MAP: 31 – GRID: 13 – PARCEL: 45
ZONED: R-20
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT PLAN, DRAINAGE AREA MAP, AND DETAILS

DATE: MARCH 9, 2023	BEI PROJECT NO. 3133
SCALE: AS SHOWN	SHEET 2 OF 5

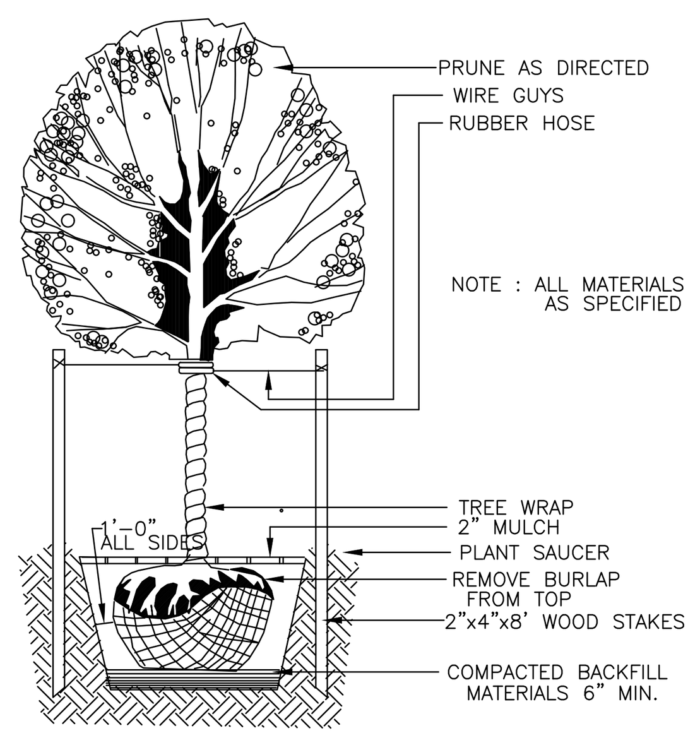
F-23-025





TYPICAL EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



TYPICAL DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

0 15 30 60

1 inch = 30 ft.

LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
⊕	1	ACER RUBRUM (Red Sunset Red Maple)	2.5" – 3"cal.	PERIMETER EDGE SHADE TREE. PROVIDED BY DEVELOPER
✹	1	QUERCUS RUBRA (Northern Red Oak)	2.5" – 3"cal.	PERIMETER EDGE SHADE TREE. PROVIDED BY DEVELOPER
✳	2	THUJA PLICATA (Green Giant)	5'–6' hgt	PERIMETER EDGE EVERGREEN TREE. PROVIDED BY DEVELOPER

Schedule A
Perimeter Landscape Edge

Category	*P-1*	*P-2*	*P-3*	*P-4*	*Totals*
Landscape Type	N/A	A	A	A	
Linear Feet of Road Frontage or Perimeter	100	200	100	200	
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	0	0	0	0	
Credit for Wall, Fence, or Berm (Yes, No, Linear Feet) (Describe below if needed)	0	97 yes fence	100 yes fence	120 yes fence	
Linear Feet of Planting	100	103	0	80	
Number of Plants Required					
Shade Trees	0	2	0	1	3
Evergreen Trees	0	0	0	0	0
Other Trees (2:1 substitute)					
Shrubs	0	0	0	0	0
Number of Plant Provided					
Shade Trees	0	1	0	1	2
Evergreen Trees	0	2	0	0	2
Other Trees (2:1 substitute)	0	0	0	0	0
Shrubs	0	0	0	0	0

2 evergreen trees will be substituted for 1 shade tree along P-2

LANDSCAPE NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.

2. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.

3. THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

4. BGE ZONES: TREE HEIGHTS AT MATURITY SHALL BE LIMITED TO 25 FEET MAXIMUM WITHIN THE "GREEN ZONE". TREE HEIGHTS AT MATURITY SHALL BE LIMITED TO 40 FEET MAXIMUM WITHIN THE "YELLOW ZONE". IF TREES ARE TO BE PLANTED ON BERMS THE TREE HEIGHTS SHALL BE REDUCED BY THE HEIGHT OF THE BERM AS MEASURED ABOVE THE MEAN GROUND ELEVATION OF THE UTILITY POLE LINE

5. FINANCIAL SURETY IN THE AMOUNT OF $4,070.00 FOR 2 SHADE TREES ($300 EACH), 2 EVERGREEN TREES ($150 EACH) AND 317 FEET OF FENCE ($10 PER LF) SHALL BE PAID AS PART OF THE GRADING PERMIT UNDER THE SITE DEVELOPMENT PLAN.

BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Jaclyn Wells 2023-03-16

JACLYN WELLS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: [illegible] 1EB75478A22B49A... 3/29/2023

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DocuSigned by: CHAD Edmondson 7063F754EF41499... 3/29/2023

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
3300 N. RIDGE ROAD ▲ SUITE 140 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. 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. 22390, Expiration Date: 6-30-2023.

STATE OF MARYLAND CHRISTOPHER A. MALAGARI 22390 PROFESSIONAL ENGINEER

CL Malagari 03.17.2023

OWNER:
ARTHUR A. WELLS
5008 WATERLOO ROAD
ELLICOTT CITY, MARYLAND 21043
410-207-2188

DEVELOPER:
JACLYN WELLS
5008 WATERLOO ROAD
ELLICOTT CITY, MARYLAND 21043
410-207-2188

DESIGN: DBT DRAFT: DBT

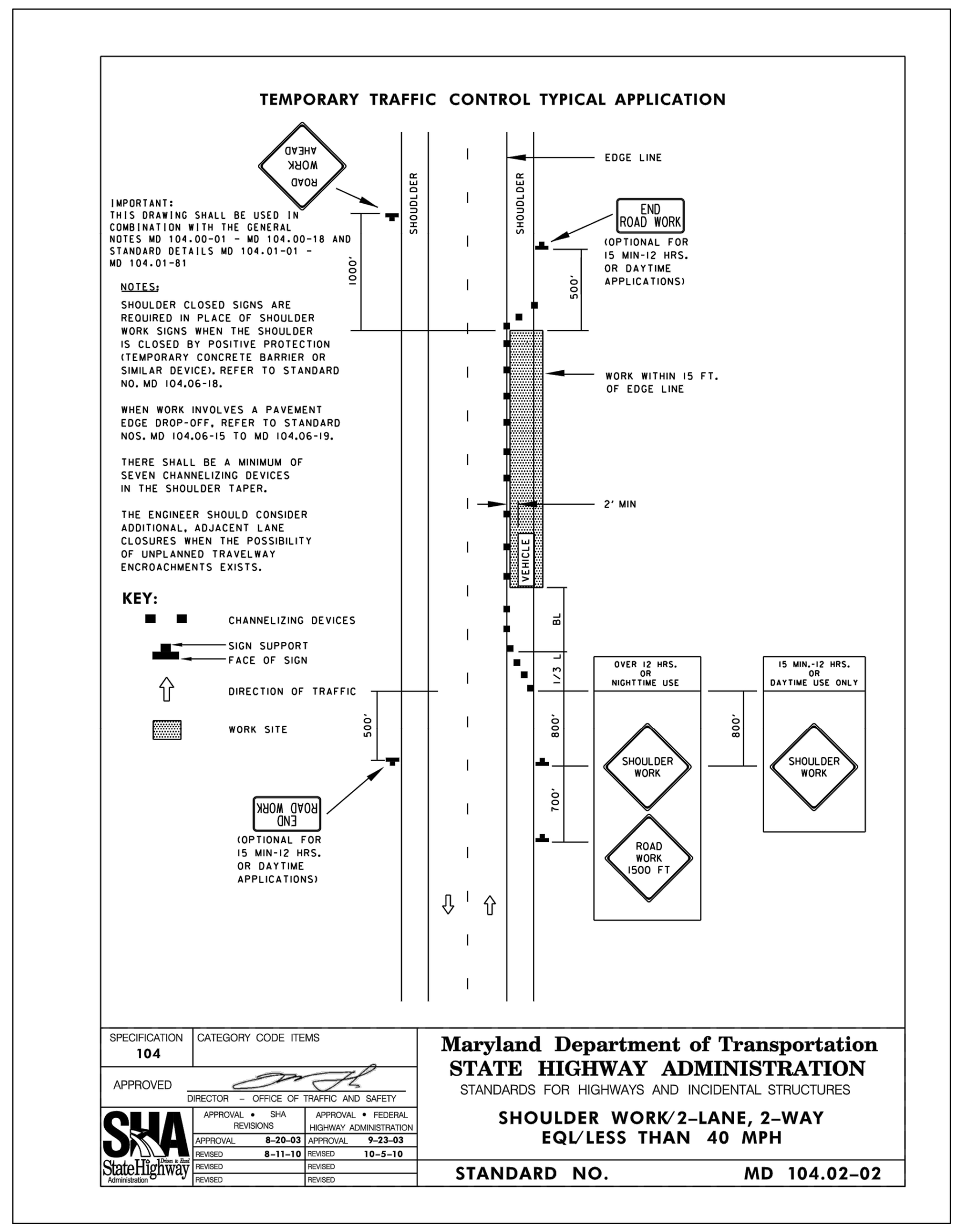
WELLS PROPERTY
LOTS 1 AND 2

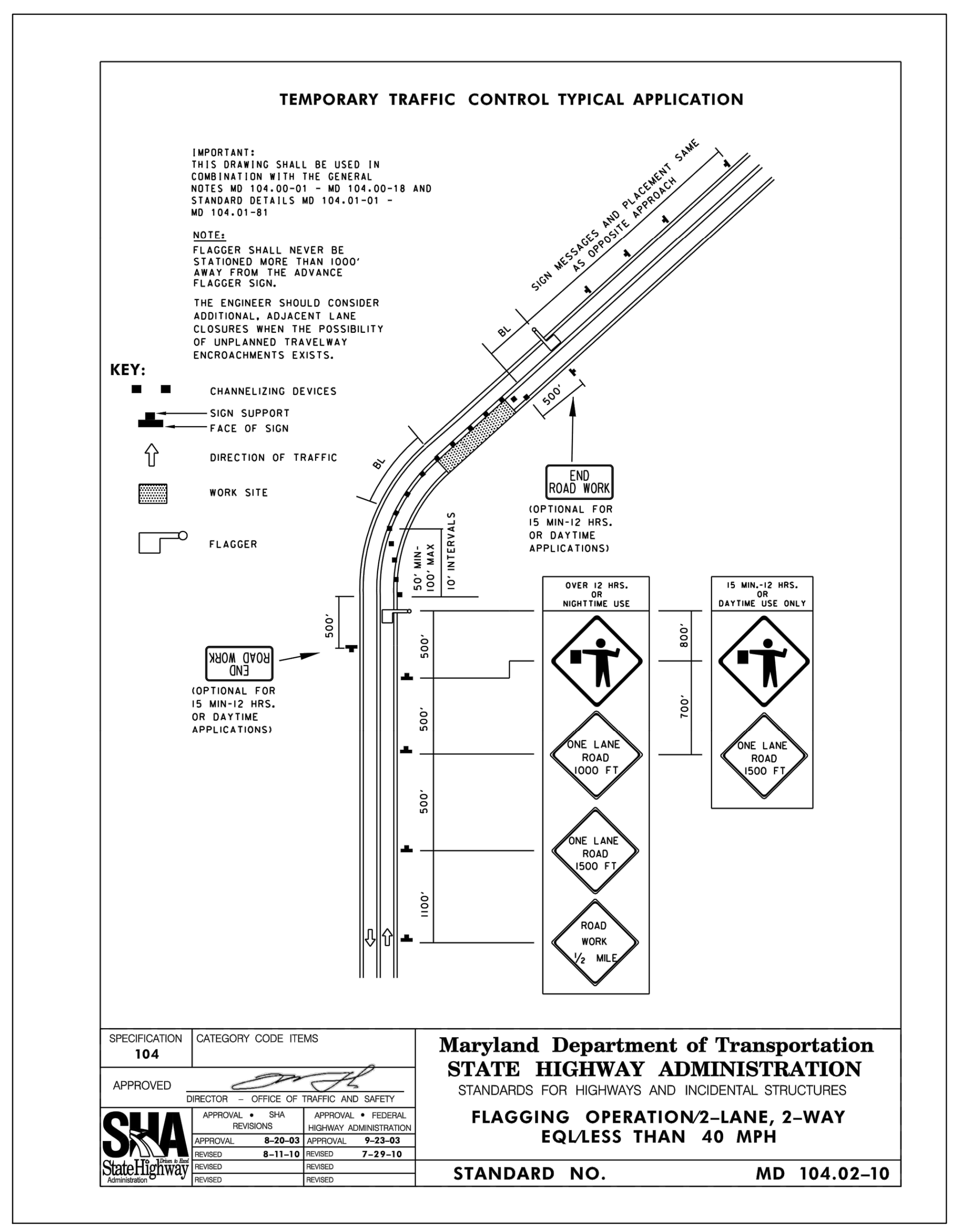
TAX MAP: 31 – GRID: 13 – PARCEL: 45
ZONED: R-20
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

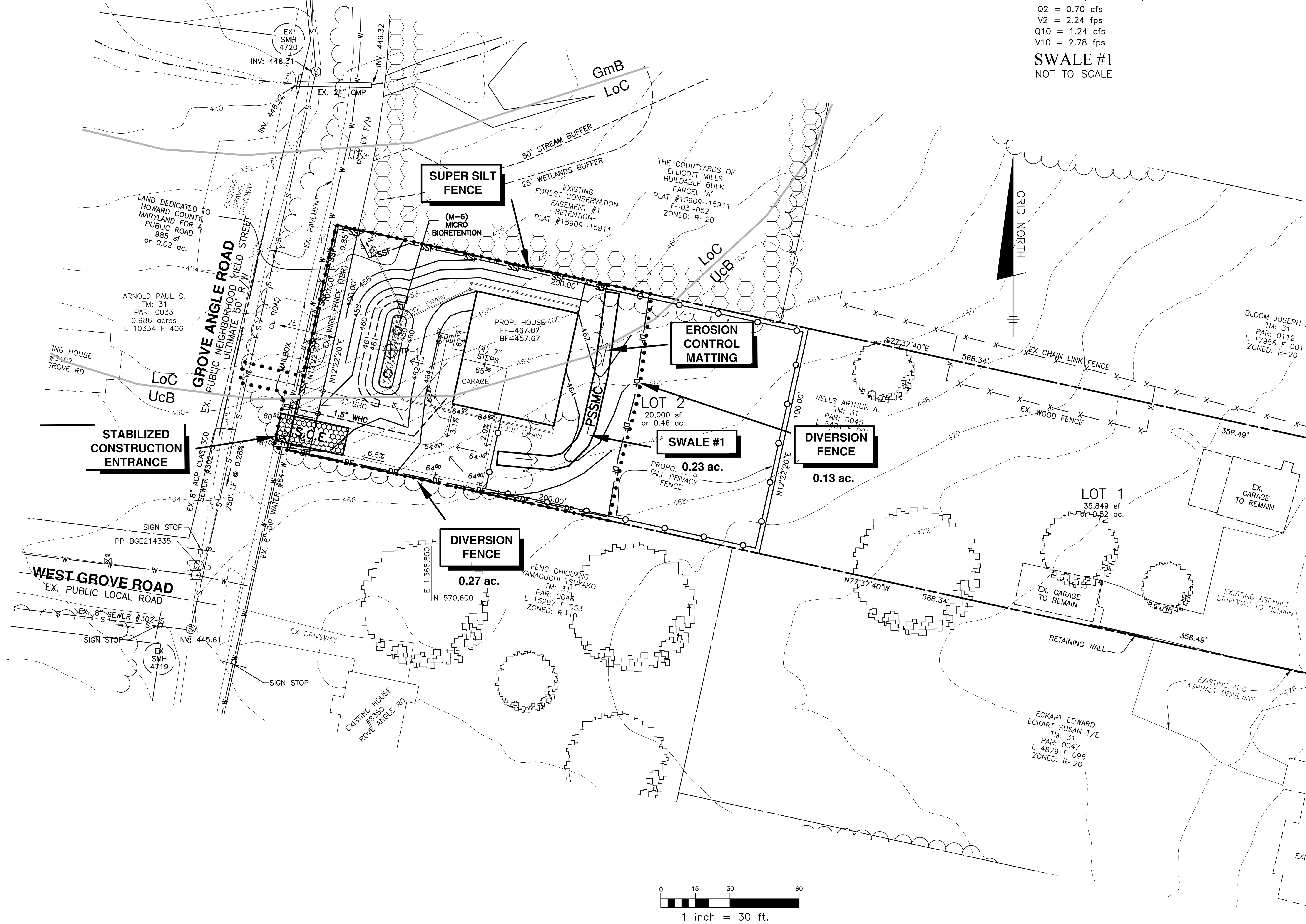
LANDSCAPE PLAN

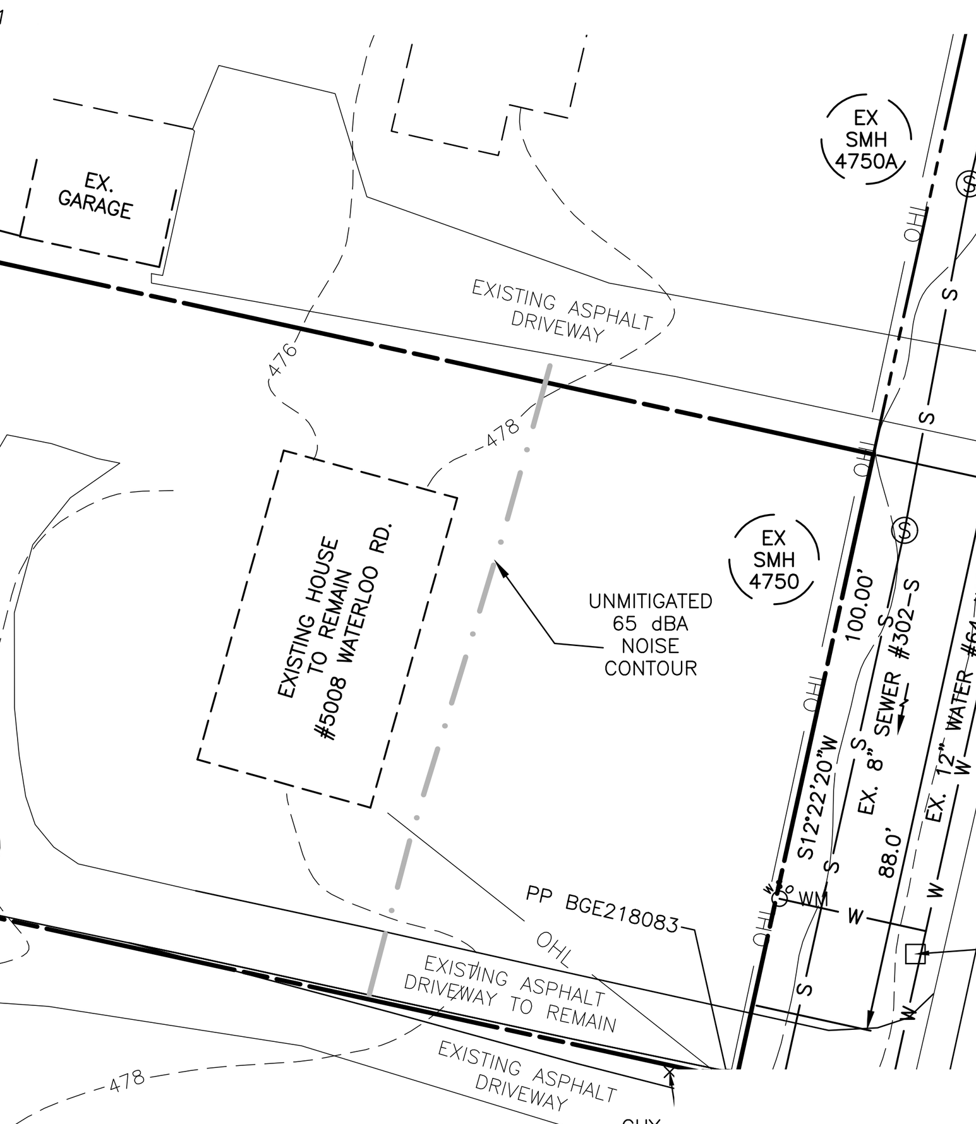
DATE: MARCH 9, 2023 | BEI PROJECT NO. 3133
SCALE: AS SHOWN | SHEET 3 OF 5

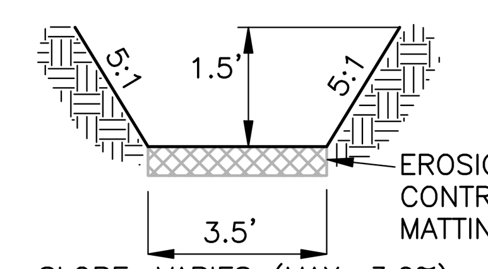
F-23-025


TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81
NOTES:
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.
WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.
THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.
THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.
KEY:
CHANNELIZING DEVICES
SIGN SUPPORT
FACE OF SIGN
DIRECTION OF TRAFFIC
WORK SITE
EDGE LINE
SHOULDER
END ROAD WORK
(OPTIONAL FOR 15 MIN-12 HRS. OR DAYTIME APPLICATIONS)
WORK WITHIN 15 FT. OF EDGE LINE
2' MIN
VEHICLE
OVER 12 HRS. OR NIGHTTIME USE
15 MIN.-12 HRS. OR DAYTIME USE ONLY
SHOULDER WORK
ROAD WORK 1500 FT
SPECIFICATION 104
CATEGORY CODE ITEMS
APPROVED
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
SHOULDER WORK/2-LANE, 2-WAY
EQL/LESS THAN 40 MPH
STANDARD NO. MD 104.02-02


TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81
NOTE:
FLAGGER SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.
THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.
KEY:
CHANNELIZING DEVICES
SIGN SUPPORT
FACE OF SIGN
DIRECTION OF TRAFFIC
WORK SITE
FLAGGER
SIGN MESSAGES AND PLACEMENT SAME AS OPPOSITE APPROACH
END ROAD WORK
(OPTIONAL FOR 15 MIN-12 HRS. OR DAYTIME APPLICATIONS)
OVER 12 HRS. OR NIGHTTIME USE
15 MIN.-12 HRS. OR DAYTIME USE ONLY
ONE LANE ROAD 1000 FT
ONE LANE ROAD 1500 FT
ROAD WORK ½ MILE
SPECIFICATION 104
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
FLAGGING OPERATION/2-LANE, 2-WAY
EQL/LESS THAN 40 MPH
STANDARD NO. MD 104.02-10


GROVE ANGLE ROAD
PUBLIC NEIGHBORHOOD YIELD STREET
ULTIMATE 50' R/W
WEST GROVE ROAD
EX. PUBLIC LOCAL ROAD
MD RTE 104 (WATERLOO ROAD)
STATE HIGHAY - MINOR ARTERIAL
EX. 100' R/W (SHA PLAT NO. 12463)
LAND DEDICATED TO HOWARD COUNTY, MARYLAND FOR A PUBLIC ROAD 985 sf or 0.02 ac.
ARNOLD PAUL S. TM: 31 PAR: 0033 0.986 acres L 10334 F 406
SUPER SILT FENCE
(M-6) MICRO BIORETENTION
STABILIZED CONSTRUCTION ENTRANCE
EROSION CONTROL MATTING
SWALE #1
0.23 ac.
DIVERSION FENCE
0.13 ac.
DIVERSION FENCE
0.27 ac.
LOT 2
20,000 sf or 0.46 ac.
LOT 1
35,849 sf or 0.82 ac.
PROP. HOUSE FF=467.67 BF=457.67
GARAGE
PSSMC
50' STREAM BUFFER
25' WETLANDS BUFFER
EXISTING FOREST CONSERVATION EASEMENT #1 -RETENTION- PLAT #15909-15911
THE COURTYARDS OF ELLICOTT MILLS BUILDABLE BULK PARCEL 'A' PLAT #15909-15911 F-03-052 ZONED: R-20
GRID NORTH
WELLS ARTHUR A. TM: 31 PAR: 0045
BLOOM JOSEPH A. TM: 31 PAR: 0112 L 17956 F 001 ZONED: R-20
FENG CHIGUANG YAMAGUCHI TSUYAKO TM: 31 PAR: 0046 L 15297 F 053 ZONED: R-10
ECKART EDWARD ECKART SUSAN T/E TM: 31 PAR: 0047 L 4879 F 096 ZONED: R-20
EXISTING HOUSE TO REMAIN #5008 WATERLOO RD.
EXISTING HOUSE #5012
EXISTING HOUSE #8350 GROVE ANGLE RD
EX. GARAGE TO REMAIN
UNMITIGATED 65 dBA NOISE CONTOUR
VEHICULAR INGRESS/EGRESS RESTRICTED
S77°37'40"E 568.34'
N77°37'40"W 568.34'
N12°22'20"E 100.00'
S12°22'20"W 100.00'
358.49'
200.00'
RETAINING WALL
EX CHAIN LINK FENCE
EX. WOOD FENCE
PROPO. TALL PRIVACY FENCE
EX SMH 4720
INV: 446.31
EX. 24" CMP
EX SMH 4719
INV. 445.61
EX SMH 4750
EX SMH 4750A
EX SMH 1A
EX. 8" SEWER #302-S
EX. 8" SEWER #590-S
EX. 12" WATER #64-W
PP BGE214335
PP BGE218083
SIGN STOP
E 1,368,850
N 570,600
E 1,369,250
N 570,500
0 15 30 60
1 inch = 30 ft.



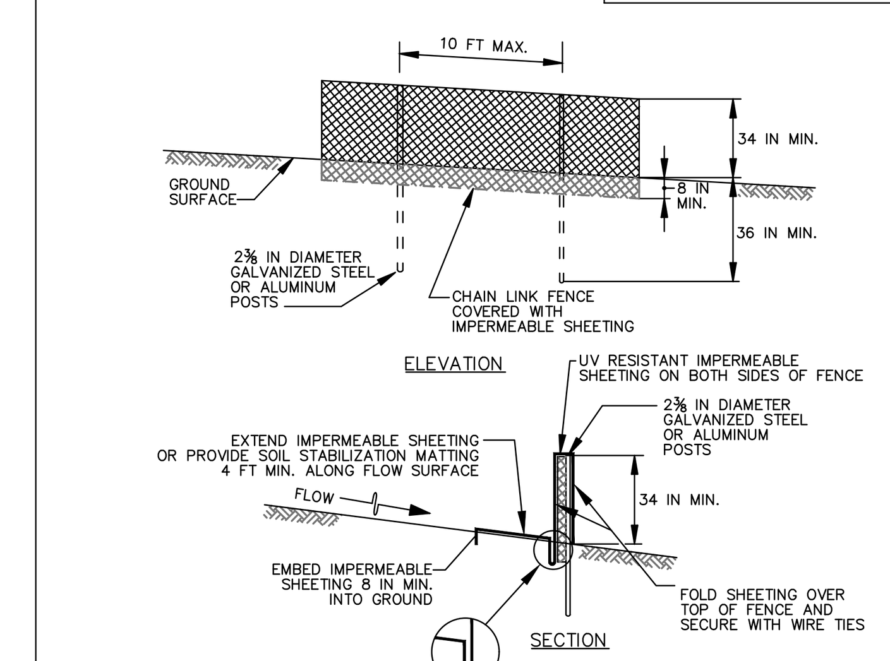


SLOPE: VARIES (MAX. 3.0%)
Q2 = 0.70 cfs
V2 = 2.24 fps
Q10 = 1.24 cfs
V10 = 2.78 fps

SWALE #1
NOT TO SCALE

DETAIL C-9 DIVERSION FENCE — STANDARD SYMBOL: DF

MAXIMUM DRAINAGE AREA = 2 ACRES


10 FT MAX.
34 IN MIN.
8 IN MIN.
36 IN MIN.
GROUND SURFACE
2⅜ IN DIAMETER GALVANIZED STEEL OR ALUMINUM POSTS
CHAIN LINK FENCE COVERED WITH IMPERMEABLE SHEETING
ELEVATION
UV RESISTANT IMPERMEABLE SHEETING ON BOTH SIDES OF FENCE
EXTEND IMPERMEABLE SHEETING OR PROVIDE SOIL STABILIZATION MATTING 4 FT MIN. ALONG FLOW SURFACE
FLOW
EMBED IMPERMEABLE SHEETING 8 IN MIN. INTO GROUND
FOLD SHEETING OVER TOP OF FENCE AND SECURE WITH WIRE TIES
SECTION

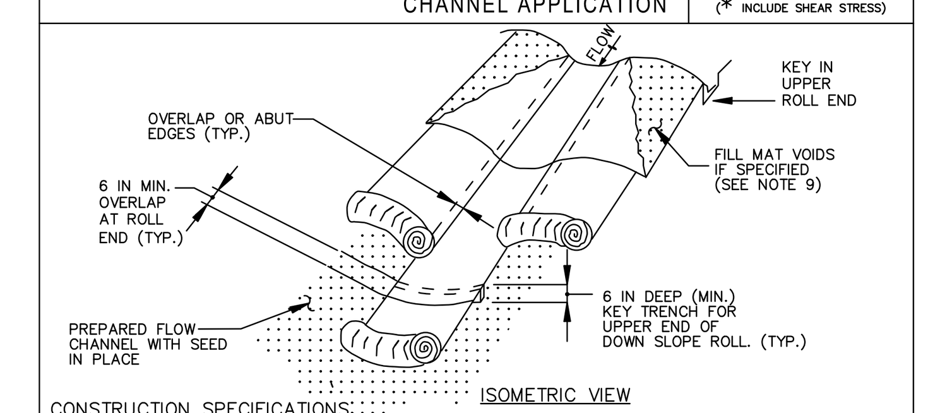
CONSTRUCTION SPECIFICATIONS

1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

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 B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION — STANDARD SYMBOL: PSSMC - * 0.21 lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

1. Obtain grading/building permit. Notify D.I.L.P. at 410-313-1880 at least 24 hours before starting any work. (1 day)

2. Hold on-site pre-construction meeting. (day 2)

3. Clear and grub as necessary to Install perimeter controls (i.e. SSF, DF, and SCE). (day 3)

4. Excavate for house foundation, rough grade, backfill, and stabilize in accordance with the temporary seedbed notes. (day 4-10)

5. Construct house and driveway, install water and sewer house connections. Finalize lot grading and construct the micro-bioretention facility. If needed, cover MB with filter fabric. Connect roof leaders to facility (day 11-120)

6. Once building construction is complete, and newly graded areas have been stabilized, remove filter fabric cover from micro bio-retention and install mulch and plantings. Final pave driveway. Install perimeter landscaping. (day 121-138)

8. Upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices and stabilize any remaining disturbed areas in accordance with the permanent seedbed notes. (day 129-130)

Note: Following initial soil disturbance or any re-disturbances, permanent or temporary stabilization shall be completed within:
A. 3 calendar days for all perimeter sediment control structures, dikes, swales and all slopes greater than 3:1.
B. 7 calendar days for all other disturbed areas.
During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the sediment control measures of this plan.

DESIGN CERTIFICATION

"I CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Christopher Malagari 2023-03-17

ENGINEER
CHRISTOPHER A. MALAGARI
DATE
MD REGISTRATION NO. 22390
[✓ P.E.] R.L.S., OR R.L.A. (circle one)

DEVELOPERS CERTIFICATION

"I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

Jaclyn Wells 2023-03-16

SIGNATURE
JACLYN WELLS
DATE

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
DocuSigned by:
Alexander Bratchie 3/29/2023
65648D5BA9B64C1...

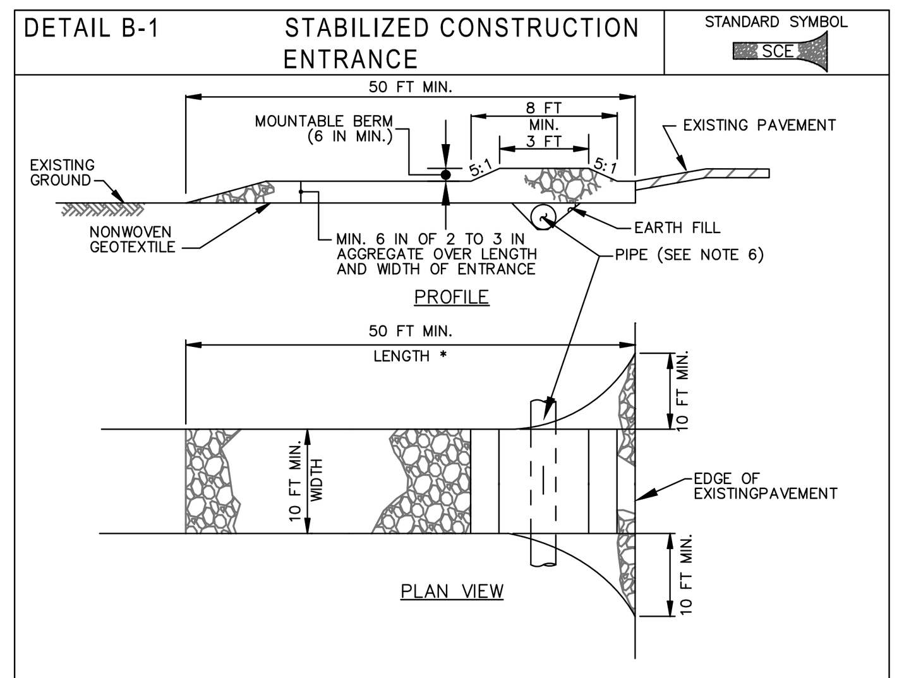
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by:
[illegible] 3/29/2023
1EB75478A22B49A...
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DocuSigned by:
CHAD Edmondson 3/29/2023
7063F754EF41499...
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE — STANDARD SYMBOL: SCE


50 FT MIN.
MOUNTABLE BERM (6 IN MIN.)
8 FT MIN.
3 FT
5:1
5:1
EXISTING PAVEMENT
EXISTING GROUND
NONWOVEN GEOTEXTILE
MIN. 6 IN OF 2 TO 3 IN AGGREGATE OVER LENGTH AND WIDTH OF ENTRANCE
EARTH FILL
PIPE (SEE NOTE 6)
PROFILE
50 FT MIN.
LENGTH *
10 FT MIN. WIDTH
10 FT MIN.
10 FT MIN.
EDGE OF EXISTINGPAVEMENT
PLAN VIEW

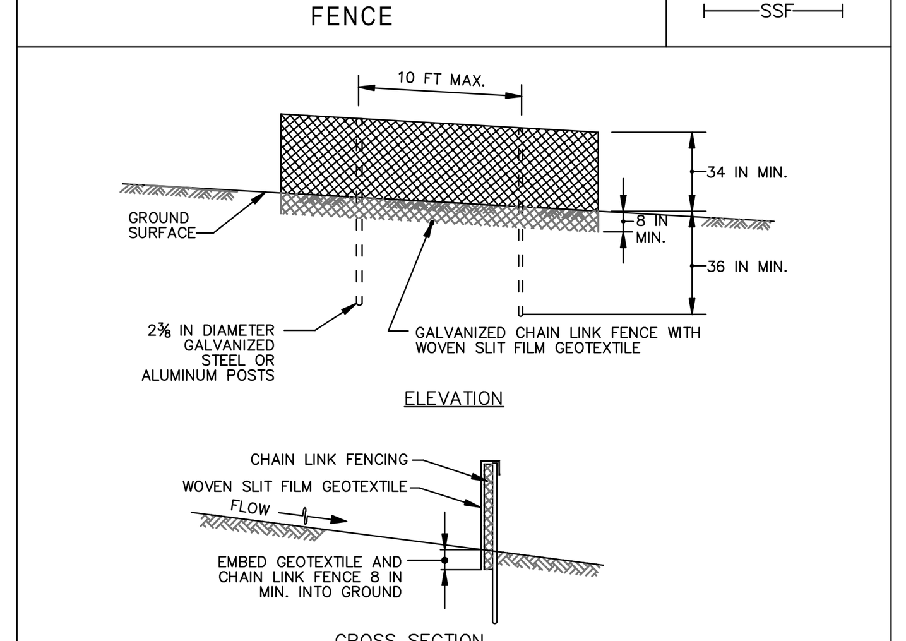
CONSTRUCTION SPECIFICATIONS

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 E-3 SUPER SILT FENCE — STANDARD SYMBOL: SSF


10 FT MAX.
34 IN MIN.
8 IN MIN.
36 IN MIN.
GROUND SURFACE
2⅜ IN DIAMETER GALVANIZED STEEL OR ALUMINUM POSTS
GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE
ELEVATION
CHAIN LINK FENCING
WOVEN SLIT FILM GEOTEXTILE
FLOW
EMBED GEOTEXTILE AND CHAIN LINK FENCE 8 IN MIN. INTO GROUND
CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER 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 SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

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

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL ONLY.

SEDIMENT CONTROL LEGEND

—DF——DF——DF—	DIVERSION FENCE
—SSF——SSF——SSF—	SUPER SILT FENCE
● ● ● ● ● ● ● ●	LIMIT OF DISTURBANCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
PSSMC	PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
3300 N. RIDGE ROAD ▲ SUITE 140 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. 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. 22390, Expiration Date: 6-30-2023.

STATE OF MARYLAND
CHRISTOPHER A. MALAGARI
22390
PROFESSIONAL ENGINEER

CMalagari 03.17.2023

OWNER:
ARTHUR A. WELLS
5008 WATERLOO ROAD
ELLICOTT CITY, MARYLAND 21043
410-207-2188

DEVELOPER:
JACLYN WELLS
5008 WATERLOO ROAD
ELLICOTT CITY, MARYLAND 21043
410-207-2188

DESIGN: DBT | DRAFT: DBT

WELLS PROPERTY
LOTS 1 AND 2

TAX MAP: 31 - GRID: 13 - PARCEL: 45
ZONED: R-20
ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL PLAN AND TRAFFIC CONTROL PLAN

DATE:	MARCH 9, 2023	BEI PROJECT NO.	3133
SCALE:	AS SHOWN	SHEET	4 OF 5

F-23-025

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Definition

Using vegetation as cover to protect exposed soil from erosion.

Purpose

To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

Definition

Establishment of vegetative cover on cut and fill slopes.

Purpose

To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies

Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria

A. Incremental Stabilization - Cut Slopes
1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
2. Construction sequence example (Refer to Figure B.1):
   a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
   b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
   c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
   d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

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

B. Incremental Stabilization - Fill Slopes
1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
4. Construction sequence example (Refer to Figure B.2):
   a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
   b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
   c. Place Phase 1 fill, prepare seedbed, and stabilize.
   d. Place Phase 2 fill, prepare seedbed, and stabilize.
   e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill 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.

Figure B.

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DESIGN CERTIFICATION

"I CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Christopher Malagari — 2023-03-17

ENGINEER
CHRISTOPHER A. MALAGARI

DATE
MD REGISTRATION NO. 22390
(P.E.) R.L.S., OR R.L.A. (circle one)

DEVELOPERS CERTIFICATION

"I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

Jaclyn Wells — 2023-03-16

SIGNATURE
JACLYN WELLS

DATE

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

DocuSigned by: Alexander Bratchie — 3/29/2023
65648D5BA9B64C1...

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: — 3/29/2023
1EB75478A22B49A...

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: Chad Edmondson — 3/29/2023
7063F754EF41499...

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition

The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation
1. Temporary Stabilization
   a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches 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 must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked 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 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
   a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
      i. Soil pH between 6.0 and 7.0.
      ii. Soluble salts less than 500 parts per million (ppm).
      iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
      iv. Soil contains 1.5 percent minimum organic matter by weight.
      v. Soil contains sufficient pore space to permit adequate root penetration.
   b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
   c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
   d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
   e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling
1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.
4. Areas having slopes steeper than 2:1 require special consideration and design.
5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
   a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
   b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
   c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
6. Topsoil Application
   a. Erosion and sediment control practices must be maintained when applying topsoil.
   b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
   c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

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

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding
1. Specifications
   a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
   b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
   c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
   d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
2. Application
   a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
   b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      i. 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.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
   c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
      i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
      ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      iii. Mix seed and fertilizer on site and seed immediately and without interruption.
      iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching
1. Mulch Materials (in order of preference)
   a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
   b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
      i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
      iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
      iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
      v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
2. Application
   a. Apply mulch to all seeded areas immediately after seeding.
   b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
   c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
   a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the 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 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 follow the contour.
      ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
      iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
      iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures
1. General Use
   a Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
   b Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guild, Section 342 - Critical Area Planting.
   c For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
   d For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
2. Turfgrass Mixtures
   a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
   b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
      i. Kentucky Bluegrass: Full sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
      iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 ½ to 3 pounds per 1000 square feet.
      Notes:Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland" Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.
   c. Ideal Times of Seeding for Turf Grass Mixtures
      Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)
      Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)
      Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
   d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 ½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
   e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is not especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

B. Sod: to provide quick cover on disturbed areas (2:1 grade or flatter).
1. General Specifications
   a. Class of turfgrass must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
   b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
   c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
   d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
   e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
2. Sod Installation
   a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
   b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that 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.
   c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
   d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.
3. Sod Maintenance
   a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
   b. After the first week, sod watering is required as necessary to maintain adequate moisture content.
   c. Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABLIZATION

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

H-5 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

Definition

Controlling the suspension of dust particles from construction activities.

Purpose

To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards.

Conditions Where Practice Applies

Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

1. Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.
2. Vegetative Cover: See Section B-4-4 Temporary Stabilization.
3. Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.
4. Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the point that runoff occurs.
5. Barriers: Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.
6. Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1/		Seeding Depth 2/ (inches)	Recommended Seeding Dates by Plant Hardiness Zone 3/		
	lb/ac	lb/1000 ft2		5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (Lolium perenne ssp. Multiflorum	40	1.0	0.5		**Mar 1 to May 15; Aug 1 to Oct 31**	
Barley (Hordeum vulgare)	96	2.2	1.0		**Mar 1 to May 15; Aug 1 to Oct 31**	
Oats (Avena sativa)	72	1.7	1.0		**Mar 1 to May 15; Aug 1 to Oct 31**	
Wheat (Triticum aestivum)	120	2.8	1.0		**Mar 1 to May 15; Aug 1 to Oct 31**	
Cereal Rye (Secale cereale)	112	2.8	1.0		**Mar 1 to May 15; Aug 1 to Nov 15**	
Warm-Season Grasses						
Foxtail Millet (Serataria italica)	30	0.7	0.5		**May 16 to Jul 31**	
Pearl Millet (Pennisetum glaucum	20	0.5	0.5		**May 16 to Jul 31**	

Notes:

1/ Seeding rates for the warm season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

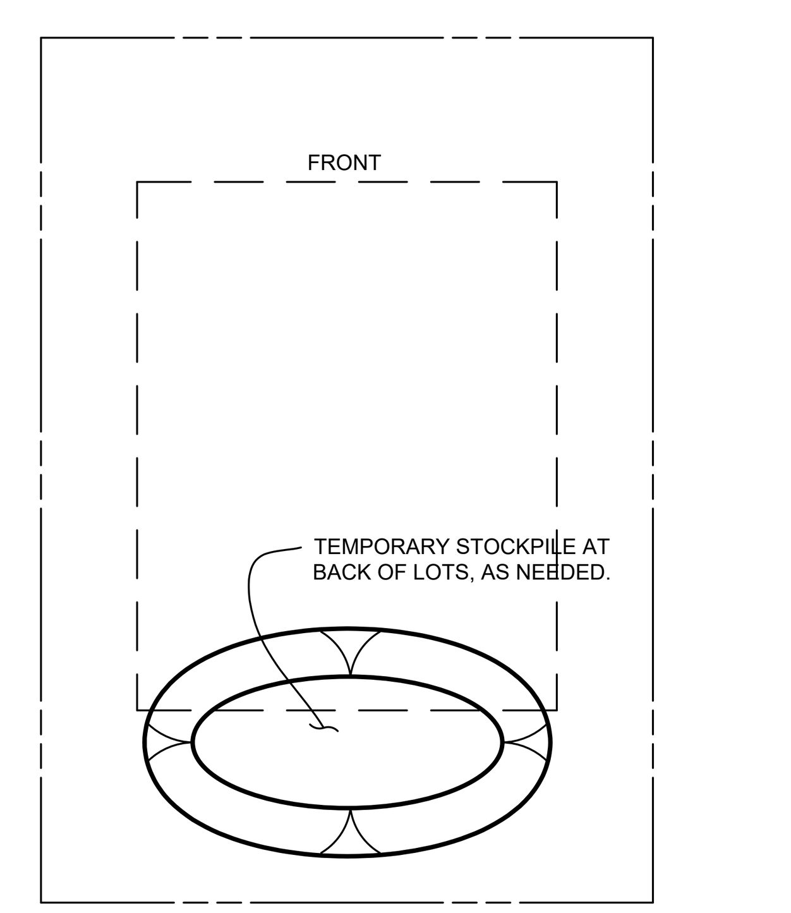
2/ For sandy soils, plant seeds at twice the depth listed above.

3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): 6b
Seed Misture (from Table B.3): Tall Fescue/Kentucky Bluegrass

No.	Species	Application Rate (lb/ac.)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20) N	P2O5	K2O	Lime Rate
9	Fescue, Tall	60	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in	45 pounds per acre (1.0 lb/ 100 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac 2 lb/ 1000 sf)	2 tons/ac (90lb/ 1000 sf)
	Bluegrass, Kentucky	40	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in				
				1/4 - 1/2 in				



B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL ONLY.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-3133-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hours notice to CID must be given at the following stages:

   a. Prior to the start of earth disturbance,
   b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
   c. Prior to the start of another phase of construction or opening of another grading unit,
   d. Prior to the removal or modification of sediment control practices.

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.

3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.

4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 feet must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).

5. All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.

6. Site Analysis:

Total Area of Site:	0.46 Acres	(LOT 2 ONLY)
Area Disturbed:	0.34 Acres	
Area to be roofed or paved:	0.10 Acres	*CUT/FILL NUMBERS ARE ROUGH ESTIMATE FOR SEDIMENT CONTROL PURPOSES ONLY. CONTRACTOR TO VERIFY.
Area to be vegetatively stabilized:	0.24 Acres	
Total cut:	333 * Cu Yds	
Total fill:	333 * Cu Yds	
Off-site waste/borrow area location:	SITE WITH AN ACTIVE GRADING PERMIT	

7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:

- Inspection date
- Inspection type (routine, pre-storm event, during rain event)
- Name and title of inspector
- Weather information (current conditions as well as time and an=mount of last recorded precipitation
- Brief description of project's status (e.g. percent complete) and/or current activities
- Evidence of sediment discharges
- Identification of plan deficiencies
- Identification of sediment controls that require maintenance
- Identification of missing or improperly installed sediment controls
- Compliance status regarding the sequence of construction and stabilization requirements
- Photographs
- Monitoring/sampling
- Maintenance and/or corrective action performed
- Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back filled and stabilized by the end of each work day, whichever is shorter.

10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.

11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the HSCD, no more than 20 acres cumulatively may be disturbed at a given time.

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.

13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.

14. All silt fence and super silt fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.

15. Stream channels must not be disturbed during the following restricted time periods (inclusive):

- Use I and IP March 1 – June 15
- Use III and IIIP October 1 – April 30
- Use IV March 1 – May 31

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
3300 N. RIDGE ROAD ▲ SUITE 140 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. 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. 22390, Expiration Date: 6-30-2023.

STATE OF MARYLAND — CHRISTOPHER A. MALAGARI — 22390 — PROFESSIONAL ENGINEER

C. Malagari 03.17.2023

OWNER:
ARTHUR A. WELLS
5008 WATERLOO ROAD
ELLICOTT CITY, MARYLAND 21043
410-207-2188

DEVELOPER:
JACLYN WELLS
5008 WATERLOO ROAD
ELLICOTT CITY, MARYLAND 21043
410-207-2188

DESIGN: DBT | DRAFT: DBT

WELLS PROPERTY

LOTS 1 AND 2

TAX MAP: 31 – GRID: 13 – PARCEL: 45
ZONED: R-20
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL NOTES

DATE: MARCH 9, 2023 | BEI PROJECT NO. 3133
SCALE: AS SHOWN | SHEET 5 OF 5

F-23-025