MEREDITH AVENUE - ROAD EXTENSION

NORTH LAUREL PARK
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FINAL ROAD CONSTRUCTION PLANS

GENERAL NOTES

1. THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVER OR ALTERNATIVE COMPLIANCE HAVE BEEN APPROVED.
2. THE SUBJECT PROPERTY IS ZONED R–SC 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 PER COUNCIL BILL 45–2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75–2003.
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. 50B5 AND 50BD WERE USED FOR THIS PROJECT.
5. TRACT BOUNDARY IS BASED ON A FIELD SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC. IN MARCH, 2021.
6. THE EXISTING TOPOGRAPHY SHOWN IS BASED ON FIELD SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC. IN APRIL, 2021.
7. THE EXISTING UTILITIES SHOWN ARE BASED ON FIELD LOCATIONS, SIGNED CONTRACT DRAWINGS AND HOWARD COUNTY GIS.
8. THIS PROPERTY IS NOT LOCATED ALONG A SCENIC ROAD.
9. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERIES, BURIAL GROUNDS OR HISTORIC STRUCTURES LOCATED ON THE SUBJECT PROPERTY.
10. STORMWATER MANAGEMENT HAS BEEN PROVIDED IN ACCORDANCE WITH THE "MARYLAND DEPARTMENT OF ENVIRONMENT STORMWATER MANAGEMENT ACT OF 2007" AND THE "HOWARD COUNTY DESIGN MANUAL VOLUME I, CHAPTER 5." ENVIRONMENTAL SITE DESIGN (ESD) HAS BEEN PROVIDED VIA TWO (M–6) MICRO BIO–RETENTION FACILITIES, WHICH WILL BE PUBLICLY OWNED BY HOWARD COUNTY AND JOINTLY MAINTAINED. STRUCTURAL MAINTENANCE OF THE MICRO–BIOS, INCLUDING INLETS, PIPING AND PLANTING MEDIA SHALL BE THE COUNTY'S RESPONSIBILITY. MAINTENANCE OF THE MULCH, PLANTINGS, TRASH REMOVAL AND MOWING SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNERS.
11. THE GEOTECHNICAL REPORTS WERE PREPARED BY GEOLAB DATED APRIL, 2022 AND MAY, 2023.
12. THIS PROJECT IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
13. WATER AND SEWER IS PUBLIC. THE CONTRACT NUMBERS ARE 24–1700–D AND 24–4162–D.
14. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT AS THIS PROJECT DOES NOT FALL WITHIN THE LOCATION GUIDELINES LISTED IN THE DESIGN MANUAL VOLUME III–ROADS AND BRIDGES.
15. A TRAFFIC STUDY IS NOT REQUIRED AS THIS PLAN IS FOR A ROAD EXTENSION ONLY. THE LOTS ADJACENT TO THE ROAD ARE EXISTING UNDER PLAT 61, FOLIO 470.
16. THERE ARE NO SPECIMEN TREES WITHIN THE LIMIT OF DISTURBANCE FOR THE ROAD EXTENSION.
17. A PRE–SUBMISSION COMMUNITY MEETING IS NOT REQUIRED FOR THIS PUBLIC ROAD EXTENSION. THE LOTS ADJACENT TO THE PUBLIC ROAD ARE EXISTING PLATTED LOTS.
18. ECP–22–034 WAS APPROVED BY DEVELOPMENT ENGINEERING DIVISION AND MYLARS WERE SIGNED ON 2/9/22.
19. THERE ARE NO STEEP SLOPES (25% OR GREATER) WITHIN THE LIMITS OF THIS SUBMISSION.
20. THE PROPOSED ROAD EXTENSION PROJECT IS EXEMPT FROM THE REQUIREMENT FOR FOREST CONSERVATION PLANS PER SECTION 16.1202(a), BECAUSE THE DEVELOPMENT AREA IS SMALLER THAN 40,000 SF.
21. TRAFFIC CONTROL DEVICES:
    - a.) THE R1–1("STOP") SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE PLACEMENT OF ANY ASPHALT.
    - b.) THE TRAFFIC CONTROL DEVICES LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION 410–313–2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
    - c.) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES." (MdMUTCD).
    - d.) ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT–OF–WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2–1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE(12 GAUGE)–3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
22. THE FINANCIAL SURETY ($3,000.00) FOR THE REQUIRED 10 STREET TREES WILL BE INCLUDED IN THE DED COST ESTIMATE AND WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT.
23. HOWARD COUNTY STANDARD DETAIL R–6.04 SHALL BE UTILIZED FOR THE DRIVEWAY APRONS LOTS 18–22 AND R–6.05 EXISTING LOTS 31 & 32.
24. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1–800–257–7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
25. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410–313–1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
26. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
27. STREET LIGHT PLACEMENT AND TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III, SECTION 2.13. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
28. THE PURPOSE OF THIS FINAL CONSTRUCTION PLAN IS TO EXTEND EXISTING MEREDITH AVENUE FOR FUTURE DEVELOPMENT OF THE LOTS 12–22. THE EXTENSION OF THIS ROAD IS CONFINED TO THE EXISTING PAPER RIGHT–OF–WAY ESTABLISHED UNDER PLAT 61, FOLIO 470.
29. ACCESS FOR LOTS 12–16 WILL BE ADDRESSED IN THE FUTURE, BUT AN EASEMENT IS PROVIDED ON LOT 17 TO ALLOW FOR THE FUTURE ACCESS.
30. A FINDINGS LETTER DATED NOVEMBER 11, 2021 WAS PREPARED BY ECO–SCIENCE PROFESSIONALS, AND FOUND THAT THERE WERE NO WETLANDS, STREAMS AND/OR BUFFERS, STEEP SLOPES, OR FLOODPLAINS WITHIN THE PROPOSED ROAD EXTENSION.
31. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
    - A. WIDTH – 12' (16' SERVING MORE THAN ONE RESIDENCE)
    - B. SURFACE – 6" OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1–1 ½" MIN)
    - C. GEOMETRY – MAX. 15% GRADE, MAX 10% GRADE CHANGE AND MIN. 45' TURNING RADIUS
    - D. STRUCTURE (CULVERTS/BRIDGES) – CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING)
    - E. DRAINAGE ELEMENTS – SAFELY PASSING 100–YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
    - F. MAINTENANCE – SUFFICIENT TO INSURE ALL WEATHER USE
32. A DESIGN MANUAL WAIVER WAS SUBMITTED TO REQUEST RELIEF FROM REQUIREMENTS REGARDING TEE TURNAROUND GEOMETRY AND DRIVEWAYS OFF A TEE TURNAROUND (DETAIL R–5.06) AND SIDEWALK DESIGN (DETAIL R–1.08).
    - A. THE REQUEST TO PLACE SIDEWALK ONLY ON THE EASTERN SIDE OF THE STREET WAS APPROVED NOVEMBER 15, 2023, WITH COMMENTS INCLUDING:
        - A.A. PROVIDE A 3 FOOT GRASS BUFFER BETWEEN THE CURB AND THE 5' SIDEWALK
        - A.B. WHERE THE SIDEWALK MUST BE ADJACENT TO THE CURB, PROVIDE A 6' SIDEWALK, AND
        - A.C. PROVIDE A HANDICAP RAMP TO ALLOW FOR PEDESTRIAN MOVEMENT TO CROSS SIXTH STREET.
    - B. THE REQUEST TO MODIFY THE TEE TURNAROUND GEOMETRY WAS APPROVED FEBRUARY 29, 2024 SUBJECT TO THE FOLLOWING COMMENTS:
        - B.A. INCREASE THE TURNING RADII LEADING INTO THE MODIFIED TEE TURNAROUND.
        - B.B. ADD A SECTION OF FLUSH CURB AROUND THE SOUTH AND EAST SECTIONS OF THE TEE.
        - B.C. RELOCATE THE PROPOSED STREET LIGHT FURTHER FROM THE TEE.
        - B.D. CONFIRMATION OF FEE SIMPLE OWNERSHIP MUST BE PROVIDED BEFORE FINAL ROAD PLAN SIGNATURE.
        - B.E. A GENERAL NOTE WITH APPROVAL AND CONDITIONS MUST BE ADDED TO THE PLAN.

APPROVED: DEPARTMENT OF PUBLIC WORKS

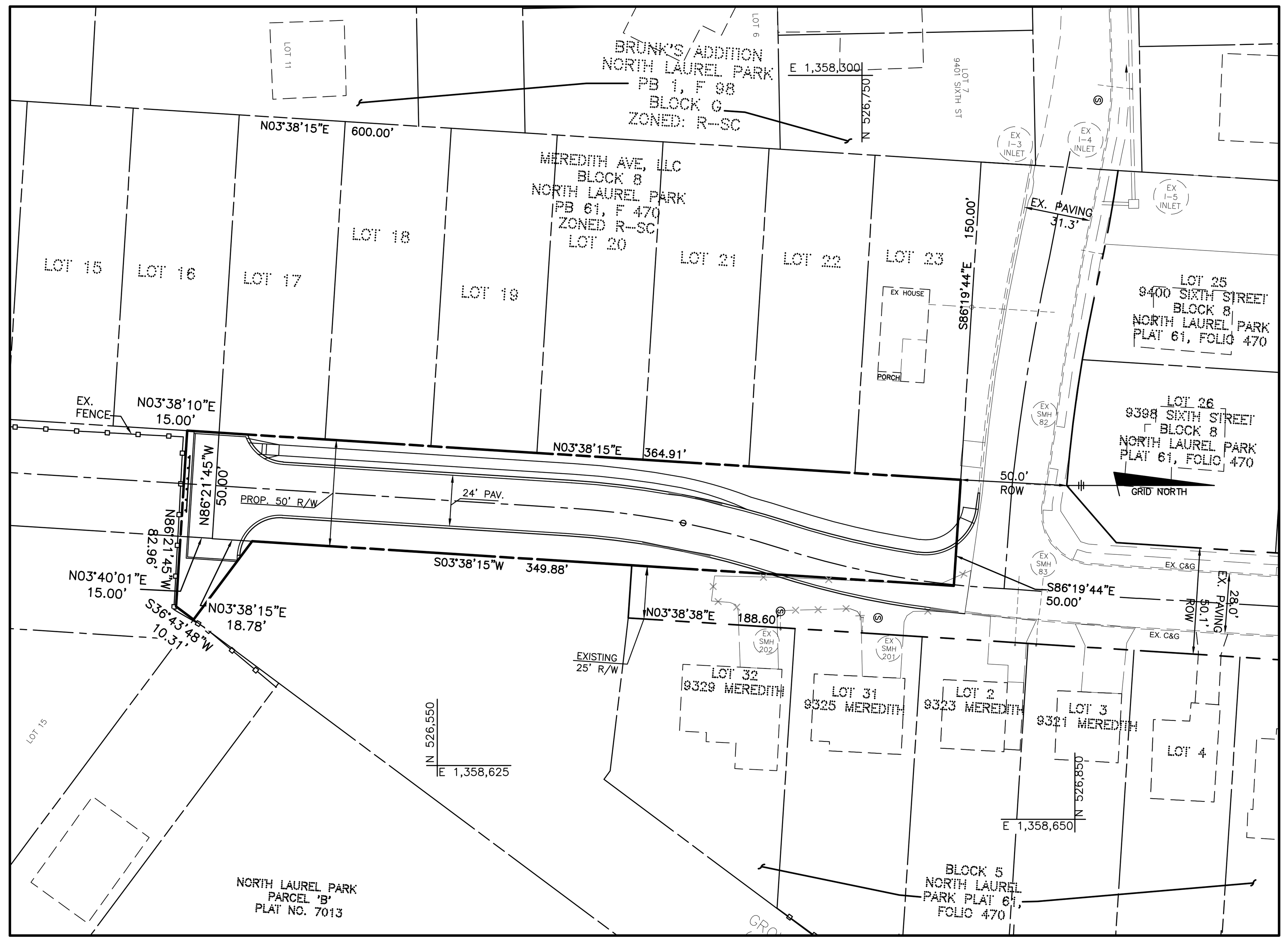
DocuSigned by: [signature] 2465821AE4DA4C2...   4/24/2024
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: [signature] 1EB75478A22B49A...   4/15/2024
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

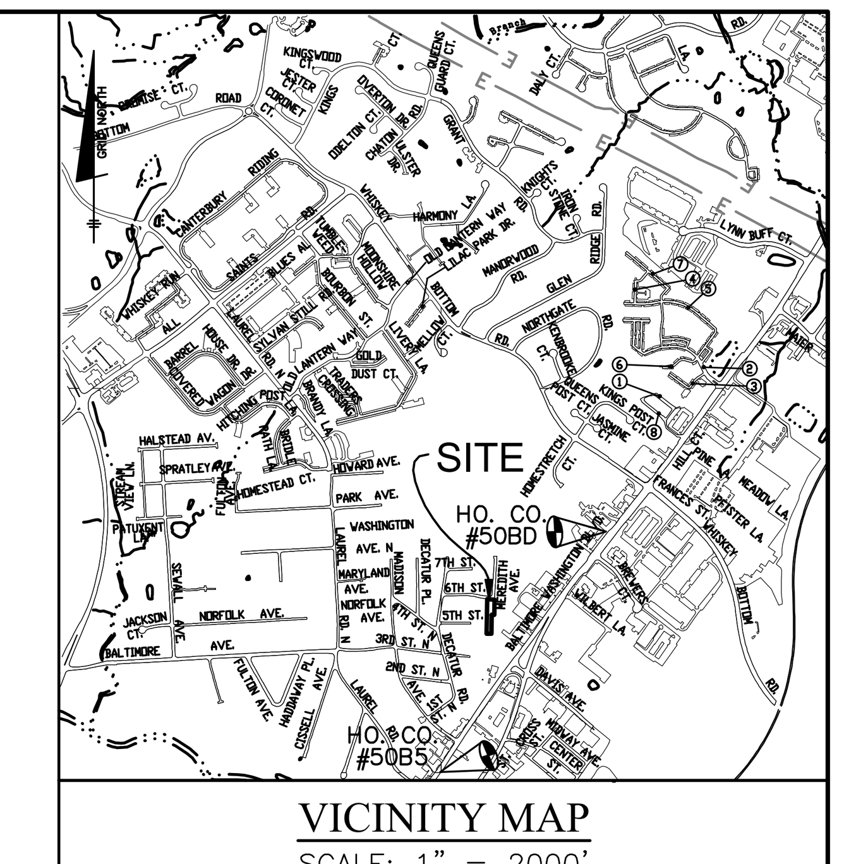
DocuSigned by: CHAD Edmondson 7063F754EF41499...   4/22/2024
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

THIS DOCUMENT INCLUDES CONFIDENTIAL INFORMATION AND DEPICTIONS OF BALTIMORE GAS AND ELECTRIC COMPANY'S ("BGE") ELECTRIC AND/OR GAS UTILITIES LOCATED WITHIN THE PROJECT AREA (THE "BGE UTILITY INFORMATION"). LOCATIONS, DIMENSIONS, DEPTHS, AND OTHER DETAILS OF ANY SUCH UTILITIES MAY NOT BE AS–BUILT, AND THE INFORMATION SHALL NOT BE RELIED UPON WITHOUT FIELD VERIFICATION. EXCAVATORS MUST EMPLOY SAFE DIGGING BEST PRACTICES WHEN APPROACHING BGE ELECTRIC AND GAS UTILITIES AND COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, INCLUDING, BUT NOT LIMITED TO, THE "MISS UTILITY DIG LAW". NO REPRESENTATIONS, GUARANTEES, OR WARRANTIES, EXPRESS OR IMPLIED, ARE MADE BY BGE AS TO THE QUALITY, COMPLETENESS, OR ACCURACY OF THE BGE UTILITY INFORMATION, AND IN ACCEPTING THIS DOCUMENT, THE RECIPIENT EXPRESSLY ACKNOWLEDGES AND AGREES THAT IT IS NOT RELYING ON THE ACCURACY OF THE SAME AND WILL MAINTAIN THE CONFIDENTIALITY OF THIS DOCUMENT.



LOCATION PLAN
SCALE: 1" = 50'

(IN FEET)
1 inch = 50 ft.



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 40, GRID B8

BENCH MARKS (NAD83)

HO. CO. No. 50B5 — ELEV. 177.427'
NEAR RT–1 BY DAVIS AVE
50.2 FEET FROM FIRE HYDRANT
12.2 FEET FROM CORNER OF PARKING LOT
N 524999.311 — E 1357925.729

HO. CO. No. 50BD — ELEV. 245.803'
BY RT–1 S OF WHISKEY BOTTOM RD
6.9 FEET FROM FIRE HYDRANT
17.2 FEET FROM SSMH
N 527593.830 — E 1359803.018

LEGEND

- PROPERTY BOUNDARY
- ADJACENT PROPERTY LINES
- 258 — PROPOSED CONTOUR LINES
- 258 — EX CONTOUR LINES
- FaaA / RsB — SOIL DELINEATION
- EXISTING STRUCTURES

SITE DATA TABULATION

1) GENERAL SITE DATA
- a. PRESENT ZONING: R–SC
- b. LOCATION: TAX MAP 50 – GRID 4 – PARCEL 426
- c. APPLICABLE DPZ FILE REFERENCES: ECP–22–034
- d. DEED REFERENCE: PB 61, F 470
- e. PROPOSED USE OF SITE: PUBLIC ROAD EXTENSION
- f. EXISTING WATER AND SEWER: PUBLIC WATER AND SEWER

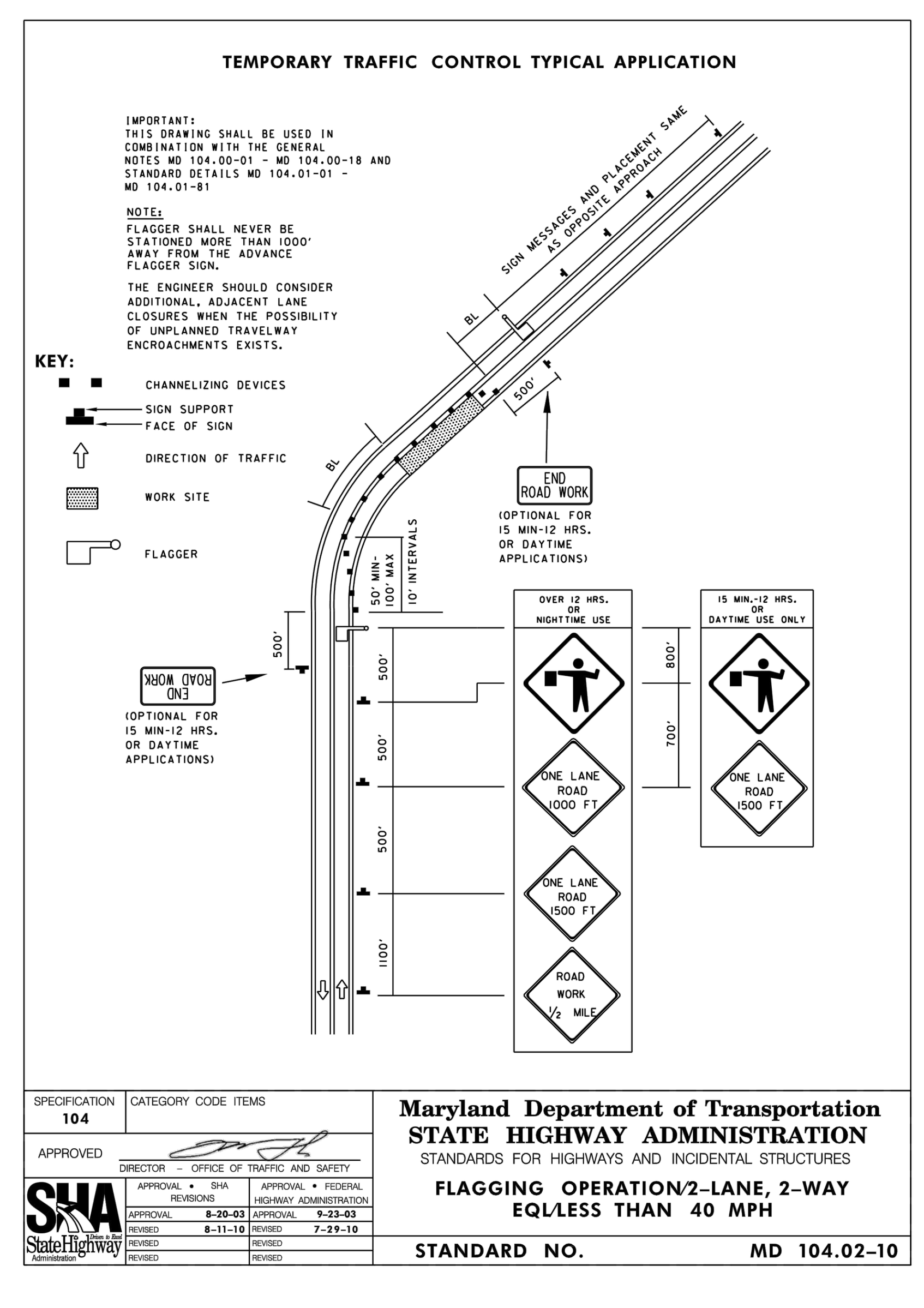
2) AREA TABULATION
- a. TOTAL AREA OF SITE .... 0.50 Ac.±
  PROP ROW: 0.40 AC EX ROW: 0.10 AC
- b. AREA OF 100 YEAR FLOODPLAIN (APPROX.) .... 0.00 Ac.±
- c. AREA OF STEEP SLOPES ON–SITE (25% OR GREATER).. 0.00 Ac.±
- d. AREA OF THIS PLAN SUBMISSION .... 0.50 Ac.±
- e. LIMIT OF DISTURBANCE (APPROX.) .... 0.60 Ac.±
- f. AREA OF PROPOSED BUILDABLE LOTS.......... 0.00 Ac.±
- g. AREA OF PROPOSED PUBLIC ROAD .... 0.21 Ac.±
- h. AREA OF EXISTING PUBLIC R/W DEDICATION .... 0.41 Ac.±

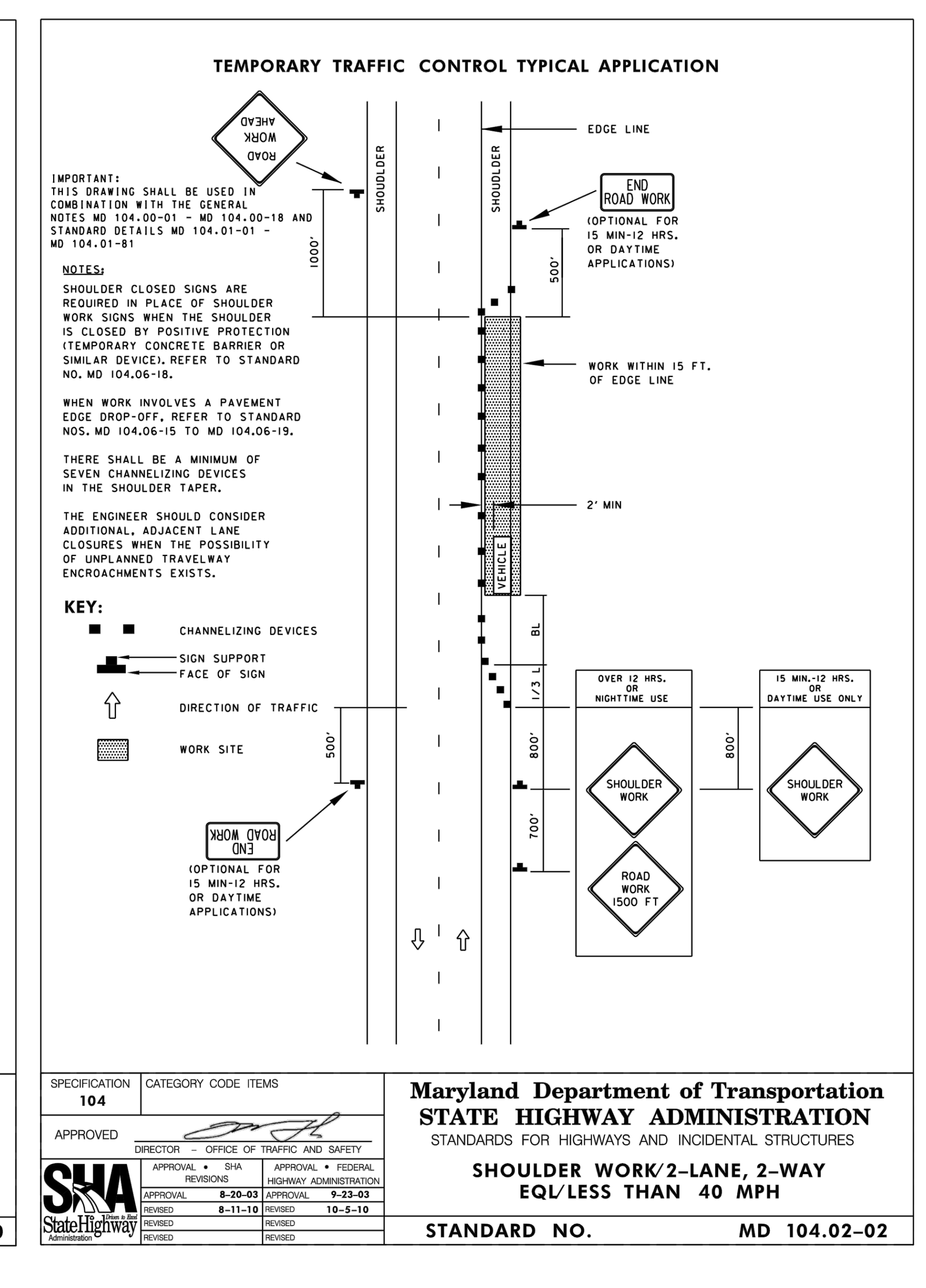
3) UNIT/LOT TABULATION
- a. TOTAL NUMBER OF BUILDABLE LOTS..........0
- b. TOTAL NUMBER OF OPEN SPACE LOTS 0

Stormwater Management Practices Chart

Lot/Parcel Number	Facility Name & Number	MDE Practice	Public	Private	HOA Maintains	Misc.
ROW	MB1	M-6	X		NO	MAINTAINED BY HO.CO. & PROPERTY OWNERS
ROW	MB2	M-6	X		NO	MAINTAINED BY HO.CO. & PROPERTY OWNERS

SHEET INDEX





NO.	DATE	REVISION

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

STATE OF MARYLAND — ALICE A. MILLER — 28376 — PROFESSIONAL ENGINEER
[signature] 3/26/2024

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. 28376, Expiration Date: 01-01-2025

OWNER/DEVELOPER:
MEREDITH AVE., LLC
9693 GERWIG LANE - SUITE L
COLUMBIA, MD 21046
443-676-2417

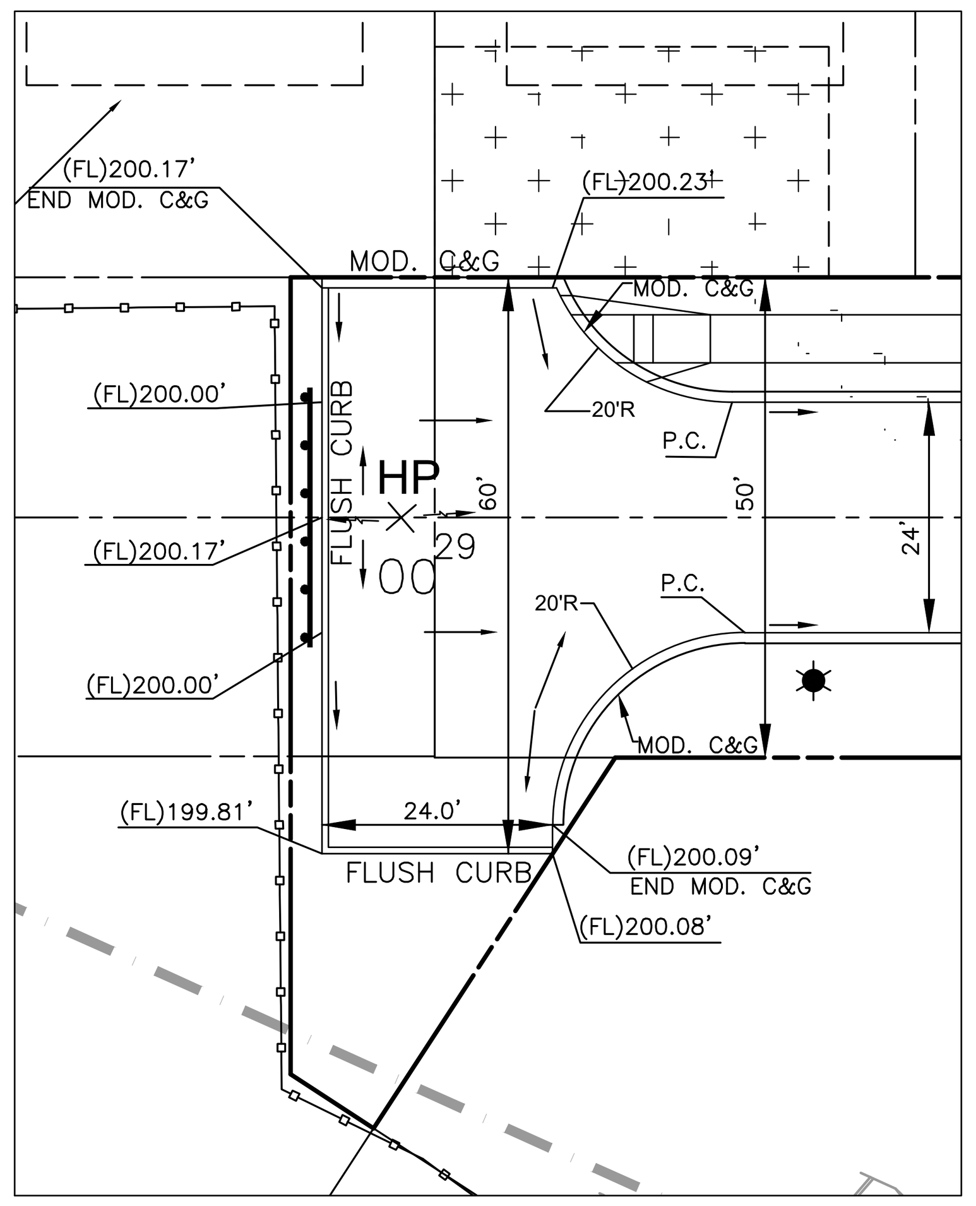
MEREDITH AVENUE - ROAD EXTENSION
NORTH LAUREL PARK

TAX MAP: 50 GRID: 4 PARCEL: 426
ZONED: R–SC
ELECTION DISTRICT NO. 6th HOWARD COUNTY, MARYLAND

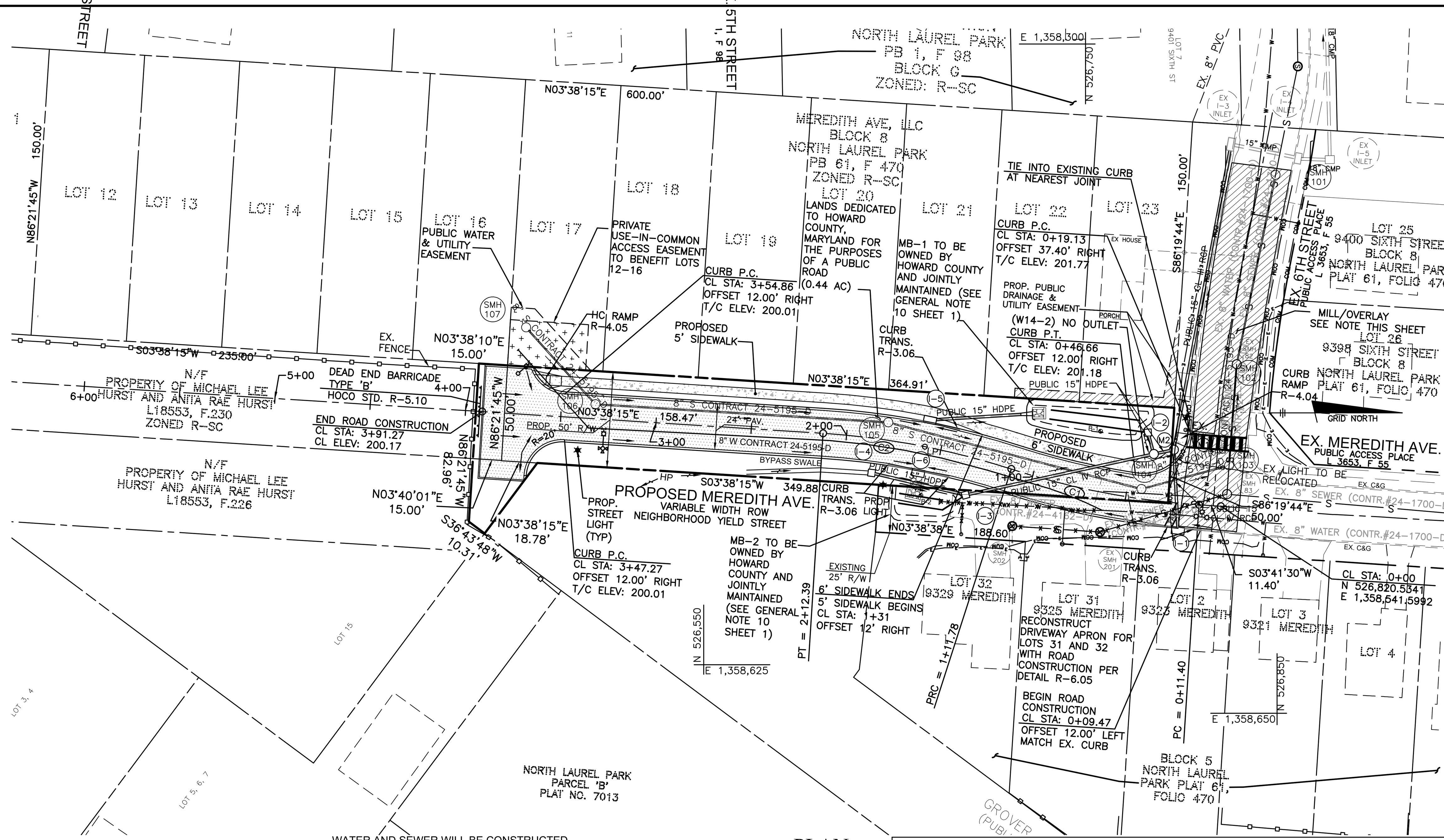
COVER SHEET

DESIGN: AAM	DRAFT: AAM	DATE: MARCH 2024	BEI PROJECT NO. 3058
		SCALE: AS SHOWN	SHEET 1 OF 7

F-23-052

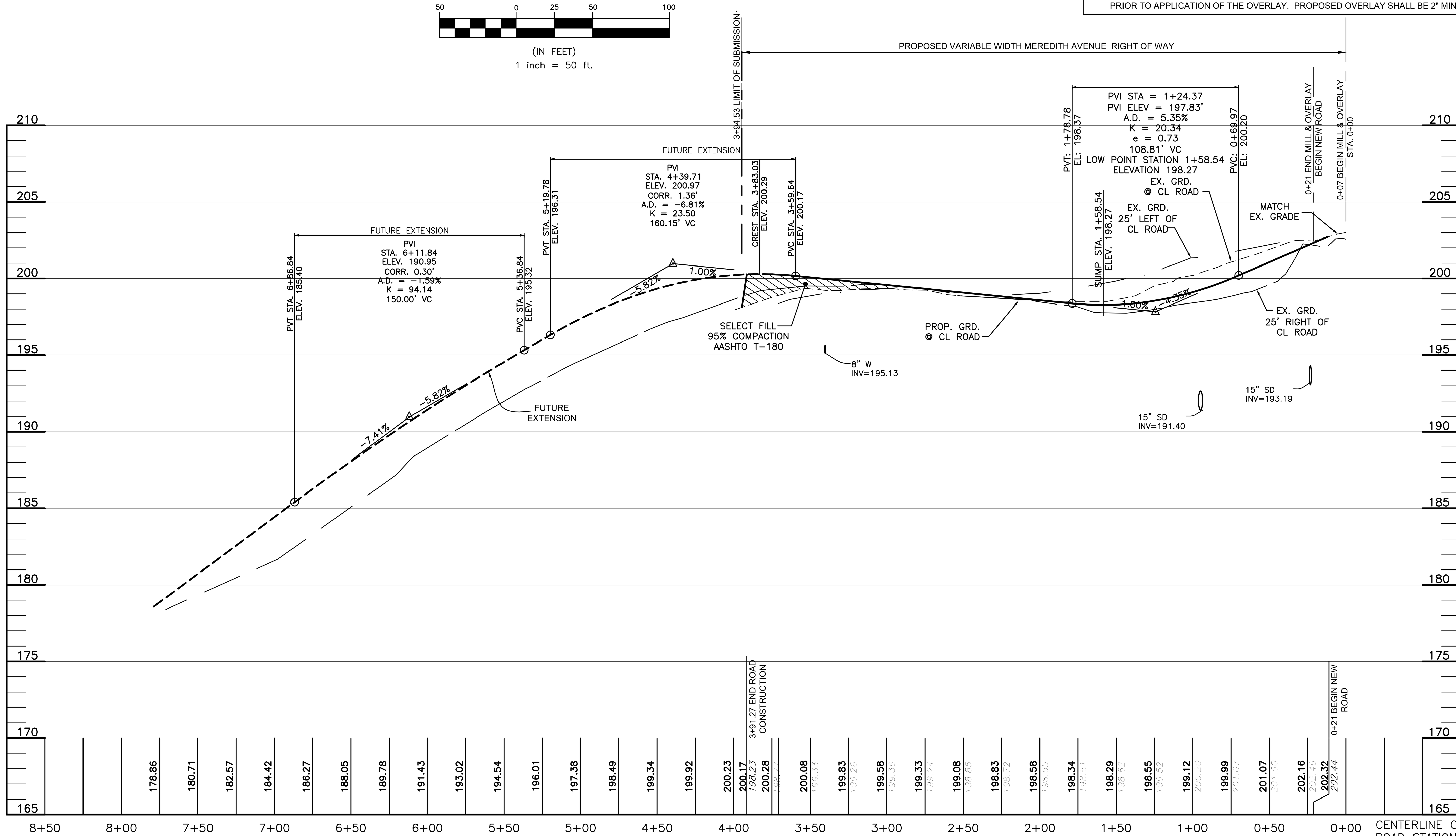


MODIFIED TEE–TURNAROUND
SCALE: 1"=20'



PLAN
SCALE: 1" = 50'

NOTES:
1. DUE TO THE PROXIMITY AND DEPTH OF THE PARALLEL STORM DRAIN, FULL DEPTH RECONSTRUCTION OF PAVEMENT AND CURB REPLACEMENT ON 6TH STREET WILL BE REQUIRED. THE EXTENT SHALL BE COORDINATED WITH THE HOWARD COUNTY INSPECTOR.
2. THE EXISTING SUB BASE MUST BE INSPECTED AND APPROVED BY THE HOWARD COUNTY INSPECTOR PRIOR TO APPLICATION OF THE OVERLAY. PROPOSED OVERLAY SHALL BE 2" MINIMUM.



MEREDITH AVE.
SCALE: 1"=50' HORIZ., 1"=5' VERT.
NEIGHBORHOOD YIELD STREET
(PUBLIC ACCESS PLACE)
DESIGN SPEED 25 MPH

APPROVED: DEPARTMENT OF PUBLIC WORKS	
DocuSigned by: [signature] 2465821AE4DA4C2...	4/24/2024
CHIEF, BUREAU OF HIGHWAYS	DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
DocuSigned by: [signature] 1EB75478A22B49A...	4/15/2024
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DocuSigned by: CHAD Edmondson 7063F754EF41499...	4/22/2024
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

ROAD CHART

ROAD	CLASSIFICATION	DESIGN SPEED	EXISTING RIGHT-OF-WAY	PVMT TYPE
MEREDITH AVENUE	NEIGHBORHOOD YIELD STREET (PUBLIC ACCESS PLACE)	25MPH	50' TO 75'	P-2

CENTER LINE CURVE DATA

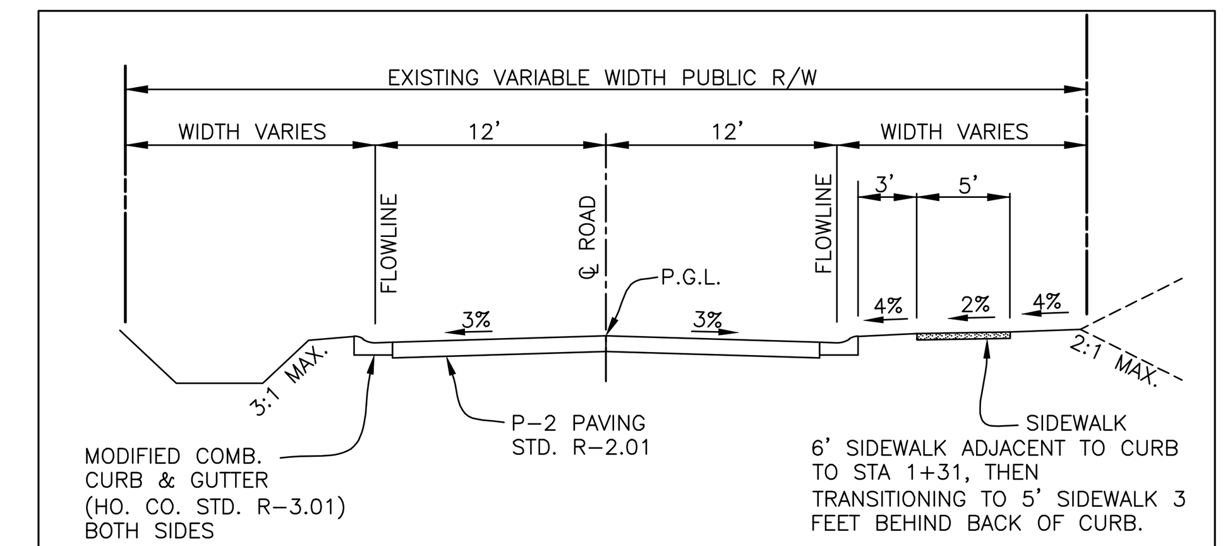
CURVE	ALIGNMENT	STATION	RADIUS	ARC	DELTA	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	MEREDITH AVE.	0+11.40 TO 1+11.78	405.00'	100.38'	14°12'03"	50.45'	S10° 46' 13"W	100.12'
C2	MEREDITH AVE.	1+11.78 TO 2+12.39	405.00'	100.61'	14°14'00"	50.57'	S10° 45' 15"W	100.35'

LEGEND

- FULL DEPTH PAVING
- MILL AND OVERLAY

PUBLIC STREET LIGHT SCHEDULE

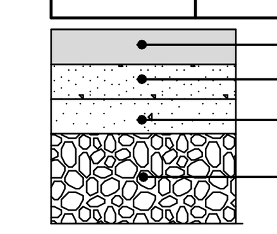
SYMBOL	LOCATION	DESCRIPTION
✷	MEREDITH AVE: RD STA. 0+22 45' RIGHT*	LED-100 COLONIAL POST-TOP FIXTURE 14' POLE HEIGHT *RELOCATED EXISTING LIGHT POLE
	MEREDITH AVE: RD STA. 1+77 24' LEFT	
	MEREDITH AVE: RD STA. 3+40 17' LEFT	



MEREDITH AVENUE
TYPICAL ROADWAY SECTION
NEIGHBORHOOD YIELD STREET*
0+00 TO STA. 3+91.27
DESIGN SPEED: 25 MPH
SCALE: 1" = 10'

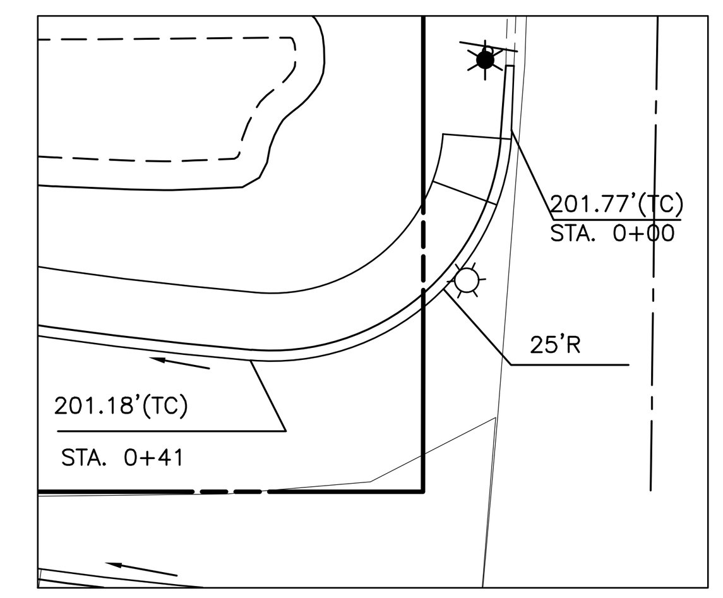
* SECTION MODIFIED DUE TO CONSTRAINTS WITHIN RIGHT-OF-WAY

SECTION NUMBER	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
	PAVEMENT MATERIAL (INCHES)	MIN. SUPERPAVE ASPHALT MIX WITH GAB			SUPERPAVE ASPHALT MIX WITH CONSTANT GAB		
P-2	SUPERPAVE ASPHALT MIX FINAL SURFACE 9.5 MM PG 64-22S, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
	SUPERPAVE ASPHALT MIX INTERMEDIATE SURFACE 9.5 MM PG 64-22S, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
	SUPERPAVE ASPHALT MIX BASE 19.0 MM PG 64-22S, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
	GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0

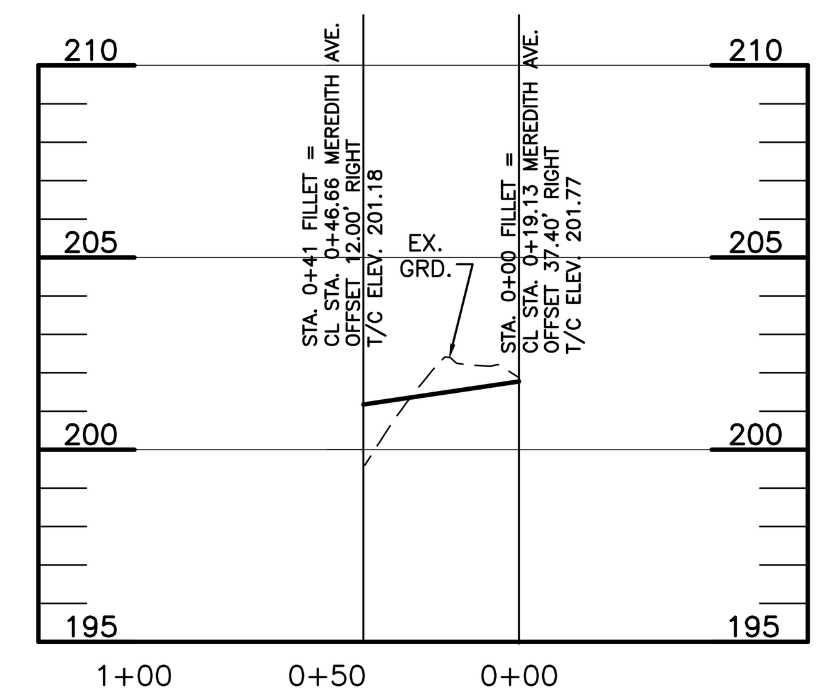


*PAVING SECTION SHALL BE CONFIRMED BY THE GEOTECHNICAL ENGINEER IN THE FIELD BASED ON THE CBR TESTS.

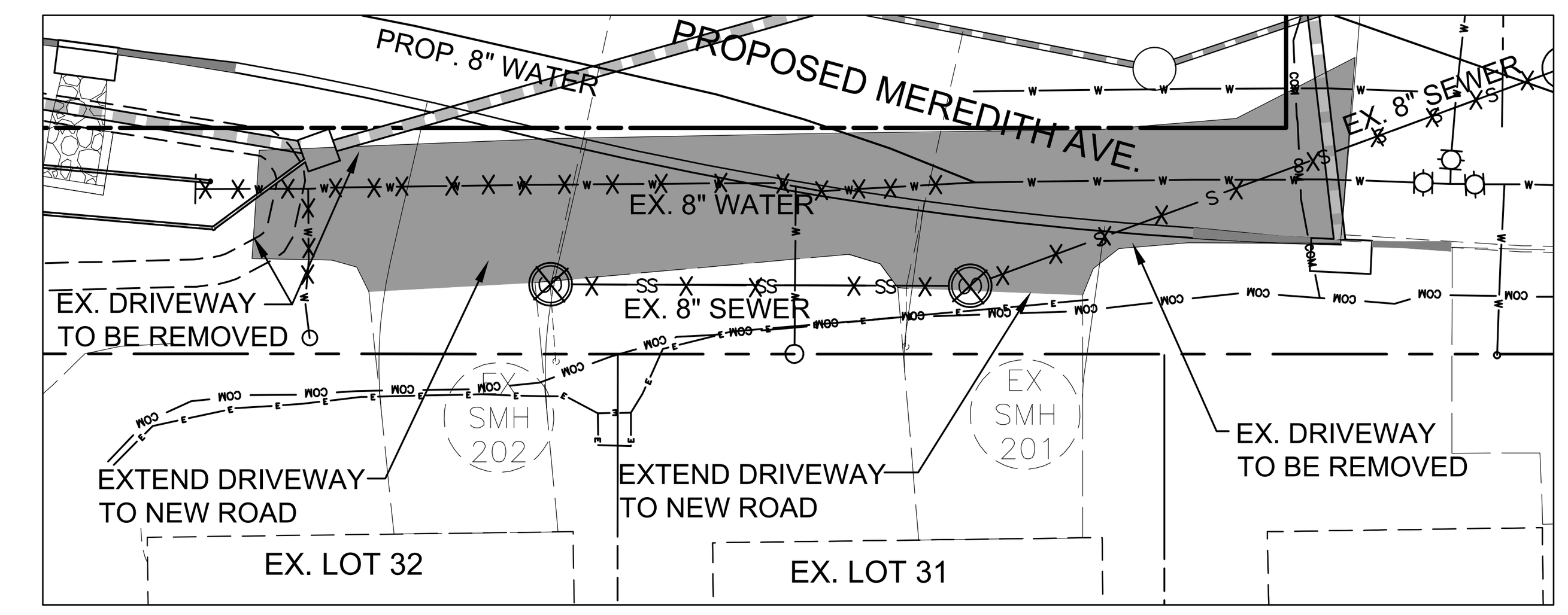
HOWARD COUNTY DETAIL R-2.01
TYPICAL PAVING SECTION DETAIL
NOT TO SCALE



CURB FILLET RETURN – PLAN
SCALE: 1"=20'

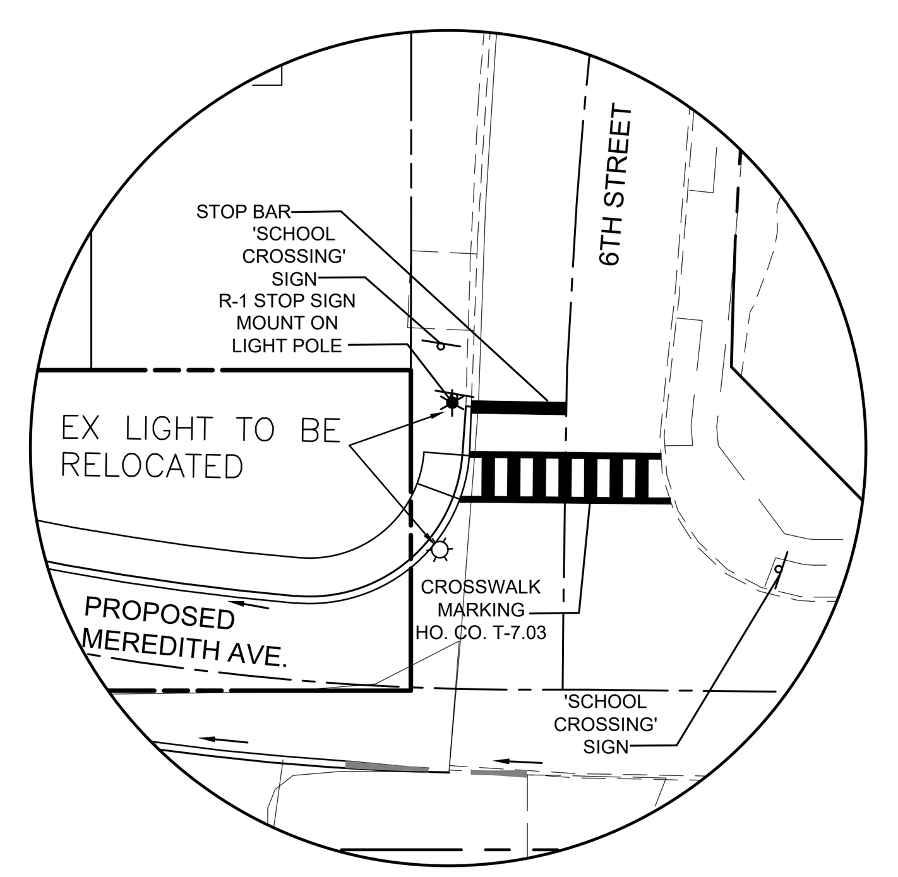


CURB FILLET RETURN
SCALE: 1"=50' HORIZ., 1"=5' VERT.



EXISTING DRIVEWAY REMOVAL BLOW UP
SCALE: 1"=20'

NOTES:
1. EXISTING UIC DRIVEWAY TO BE REMOVED AND EXISTING DRIVEWAYS FOR EXISTING LOT 31 AND 32 SHALL BE EXTENDED TO NEW PROPOSED MEREDITH AVE. ACCESS SHALL REMAIN OPEN FOR LOTS 31 AND 32 DURING CONSTRICTION. CONTRACTOR SHALL COORDINATE WITH THE HOMEOWNERS OF LOTS 31 AND 32 TO MAINTAIN ACCESS.
2. A PORTION OF THE EXISTING WATER MAIN SHALL BE REMOVED AND CONNECTED TO PROPOSED WATER. SEE W/S CONTRACT 24-5195-D.
3. SEWER FROM EX SHM 202 TO EX SMH 83 WILL BE ABANDONED IN PLACE IN ACCORDANCE WITH SEWER AND WATER CONTRACT 24-5195-D.



STRIPING AND SIGNAGE INSET
SCALE: 1"=30'

PROVIDE 'SCHOOL CROSSING AHEAD' SIGNAGE AS DIRECTED BY TRAFFIC ENGINEERING DIVISION. CONTACT YAN ZHANG 410-313-5742

NO.	DATE	REVISION

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

STATE OF MARYLAND – ALICE A. MILLER – 28376 – PROFESSIONAL ENGINEER
3/26/2024

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. 28376, Expiration Date: 01-01-2025

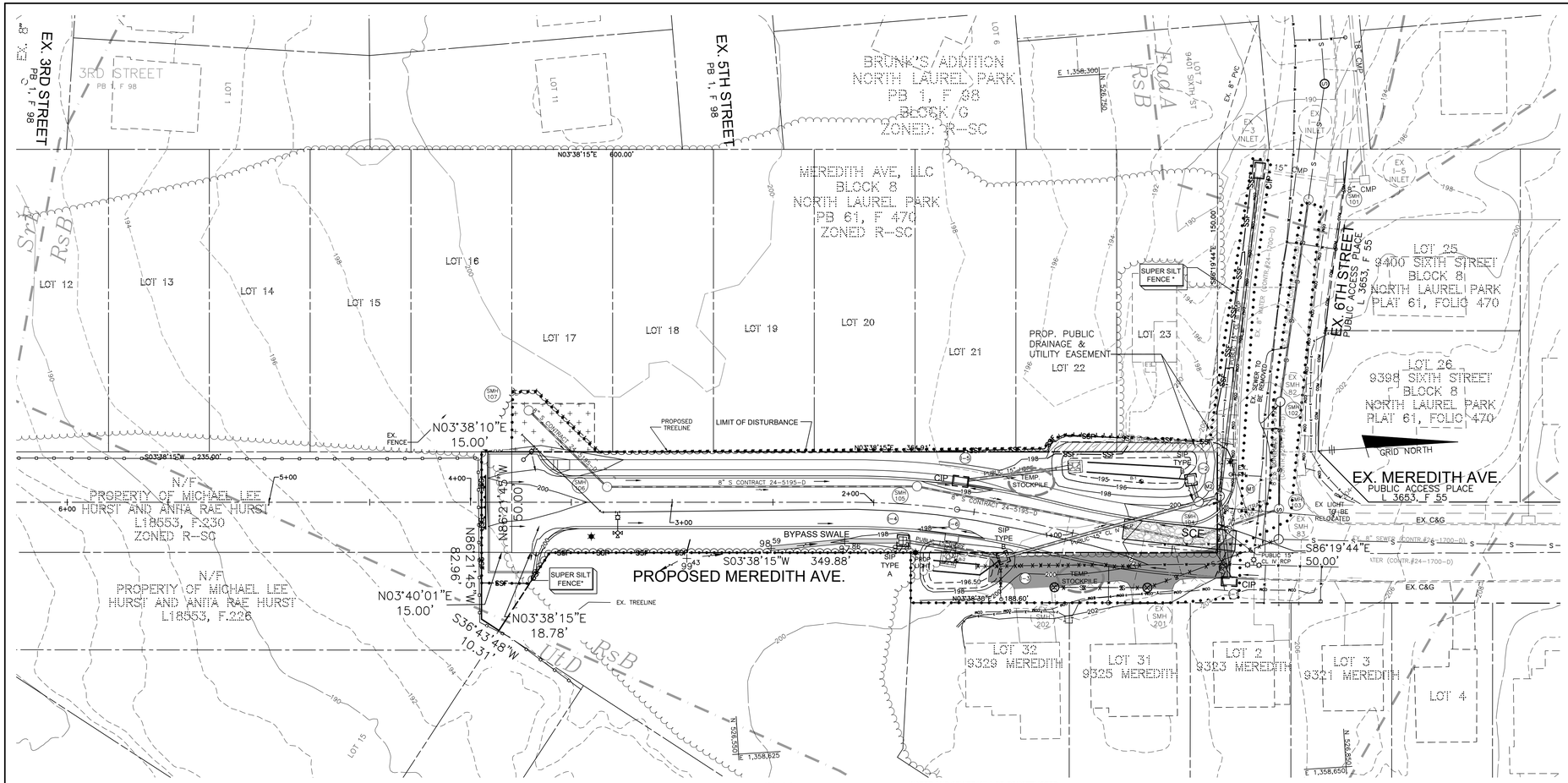
OWNER/DEVELOPER:
MEREDITH AVE., LLC
9693 GERWIG LANE - SUITE L
COLUMBIA, MD 21046
443-676-2417

MEREDITH AVENUE
NORTH LAUREL PARK

TAX MAP: 50 GRID: 4 PARCEL: 426
ZONED: R-SC
ELECTION DISTRICT NO. 6th HOWARD COUNTY, MARYLAND

ROAD CONSTRUCTION PLAN AND PROFILES

DATE:	MARCH 2024	BEI PROJECT NO.	3058
DESIGN: AAM	DRAFT: AAM	SCALE: AS SHOWN	SHEET 2 OF 7



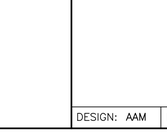
PLAN
SCALE: 1" = 30'

30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

WATER AND SEWER WILL BE CONSTRUCTED UNDER CONTRACT NO. 24-5195-D

LEGEND

- PROPERTY BOUNDARY
- ADJACENT PROPERTY LINES
- 258 — PROPOSED CONTOUR LINES
- 258 — EX CONTOUR LINES
- FaaA — SOIL DELINEATION
- RsB
- EXISTING STRUCTURES
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- SSF SSF SSF SSF — SUPER SILT FENCE*
- STABILIZATION MATTING
- CIP — CURB INLET PROTECTION
- SIP — STANDARD INLET PROTECTION



BYPASS SWALE
NOT TO SCALE

STORM	Q (RUNOFF)	VELOCITY	DEPTH
2 YR	0.11 CFS	1.27 FPS	0.17'
10 YR	0.15 CFS	1.39 FPS	0.19'
100 YR	0.29 CFS	1.68 FPS	0.24'

* SMARTfence 42 MAY BE USED IN PLACE OF SUPER SILT FENCE AT THE DISCRETION OF THE CONTRACTOR.

NOTE: CONTRACTOR SHALL IMMEDIATELY STABILIZE PROPOSED BYPASS SWALE UPON GRADING.

NOTE: OWNER OF LOTS 17-23 IS THE SAME OWNER OF MEREDITH AVENUE RIGHT-OF-WAY. THEREFORE OFFSITE GRADING/DISTURBANCE IS ALLOWED.

SOILS LEGEND			
SYMBOL	TYPE	K* FACTOR	NAME
**RsB	C	.43	RUSSETT FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES
**SrE	B	.32	SASSAFRAS AND CROOM SOILS, 15 TO 25 PERCENT SLOPES

SOIL MAPPING AND SOIL DATA TAKEN FROM NRCS WEB SOIL SURVEY, OCTOBER 2022.
*WHOLE SOIL K FACTOR
**HIGHLY ERODIBLE SOILS K>0.35 AND SLOPES>5%, OR GREATER THAN 15% SLOPES

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

DocuSigned by: Alexander Brakshire 4/16/2024
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

DocuSigned by: 4/24/2024
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: 4/15/2024
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: Chad Edmondson 4/22/2024
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

ENGINEER'S CERTIFICATE

"I HEREBY 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."

3/26/2024
ALICE A MILLER, P.E. MD PE 28376 — DATE

DEVELOPER'S CERTIFICATION

"I/WE HEREBY 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 ON 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."

Brian Boy 3/26/2024
BRIAN BOY – MEREDITH AVE., LLC — DATE

NO.	DATE	REVISION

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

STATE OF MARYLAND — ALICE A. MILLER — 28376 — PROFESSIONAL ENGINEER
3/26/2024

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. 28376, Expiration Date: 01-01-2025

OWNER/DEVELOPER:
MEREDITH AVE., LLC
9693 GERWIG LANE - SUITE L
COLUMBIA, MD 21046
443-676-2417

MEREDITH AVENUE
NORTH LAUREL PARK

TAX MAP: 50 GRID: 4 PARCEL: 426
ZONED: R-SC
ELECTION DISTRICT NO. 6th HOWARD COUNTY, MARYLAND

FINAL GRADING, SEDIMENT AND EROSION CONTROL PLAN

DESIGN: AAM	DRAFT: AAM	DATE: FEBRUARY 2024	BEI PROJECT NO. 3058
		SCALE: AS SHOWN	SHEET 3 OF 7

F-23-052

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.

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.

A.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-4-2 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-4-4 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.

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.

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.

STANDARD SEDIMENT CONTROL NOTES

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR 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.
   OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
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 FT. 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:	0.50	ACRES
AREA DISTURBED:	0.66	ACRES
AREA TO BE ROOFED OR PAVED:	0.54	ACRES
AREA TO BE VEGETATIVELY STABILIZED:	0.12	ACRES
TOTAL CUT:	533	CU. YDS. *
TOTAL FILL:	243	CU. YDS. *

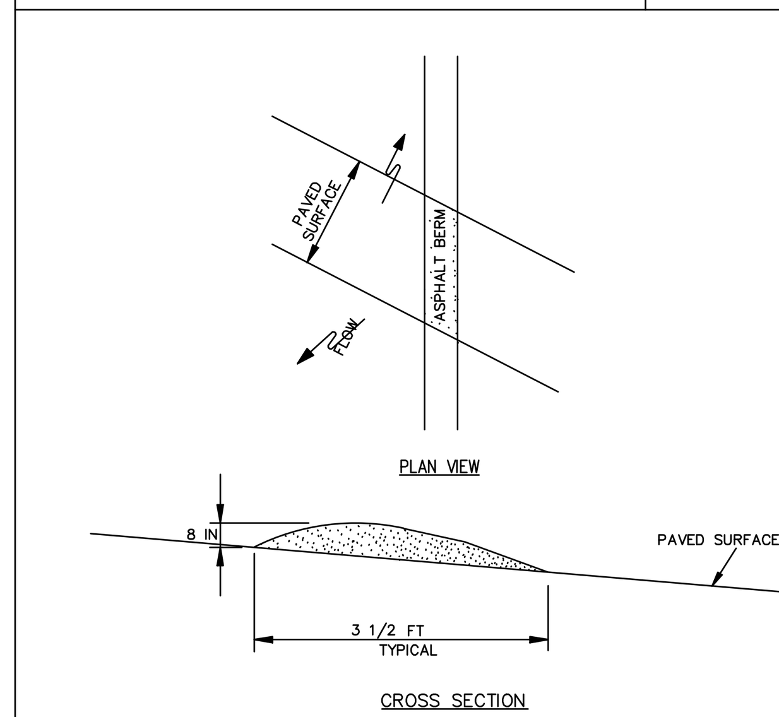
OFFSITE WASTE/BORROW AREA LOCATION: SITE WITH ACTIVE GRADING PERMIT

*CUT FILL NUMBERS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY FOR THEIR ESTIMATE PURPOSES.

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 AMOUNT 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 WORKDAY, 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 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 30 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, OR BE IMBRICATED AT 25' MAXIMUM 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.

DETAIL C-5 TEMPORARY ASPHALT BERM

STANDARD SYMBOL: TAB



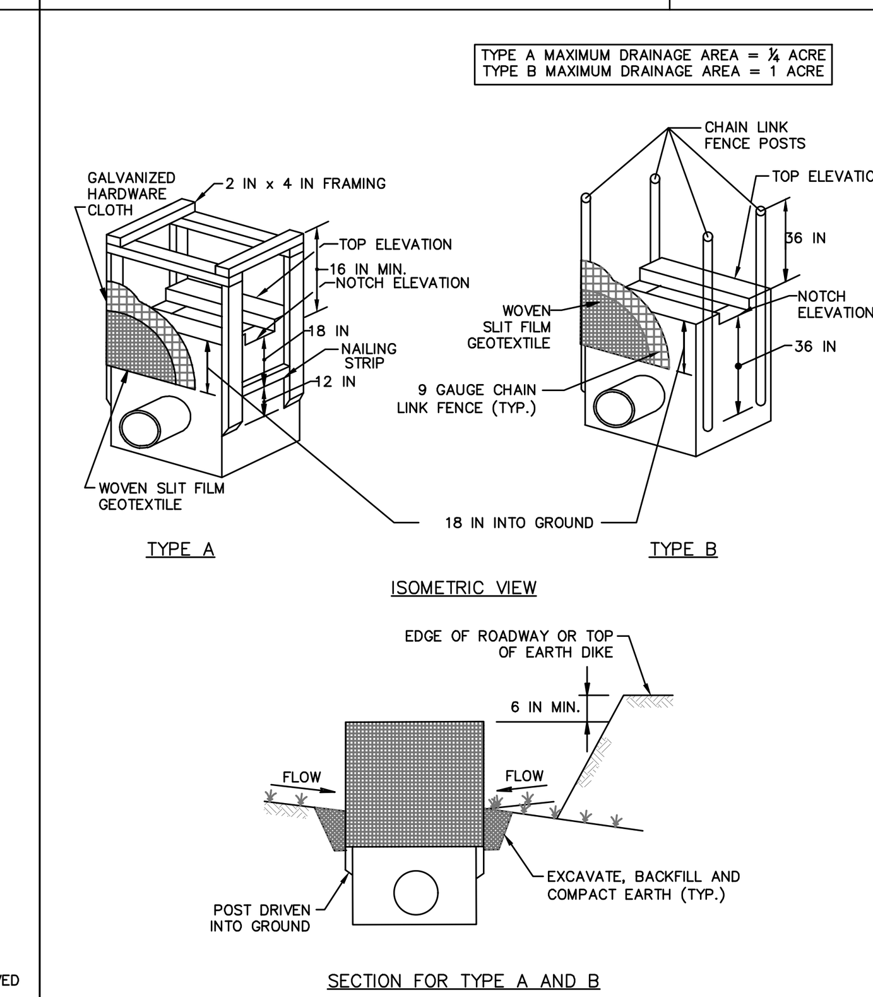
CONSTRUCTION SPECIFICATIONS
1. CONSTRUCT BERM ON AN UNINTERRUPTED, CONTINUOUS GRADE.
2. INSTALL BERM TO CONFORM TO CROSS SECTION DIMENSIONS OF A UNIFORM HEIGHT OF 8 INCHES MINIMUM AND APPROXIMATE WIDTH OF 3½ FEET.
3. PROVIDE OUTLET PROTECTION AS REQUIRED ON PLAN.
4. COMPACT ASPHALT BERM.
5. REPAIR DAMAGED ASPHALT. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.
6. UPON REMOVAL OF ASPHALT BERM, RETURN TO ORIGINAL CONDITIONS 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-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

TYPE A MAXIMUM DRAINAGE AREA = ¼ ACRE
TYPE B MAXIMUM DRAINAGE AREA = 1 ACRE



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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-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

CONSTRUCTION SPECIFICATIONS
1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH ½ INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.
   FOR TYPE B, USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
4. BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
5. 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.

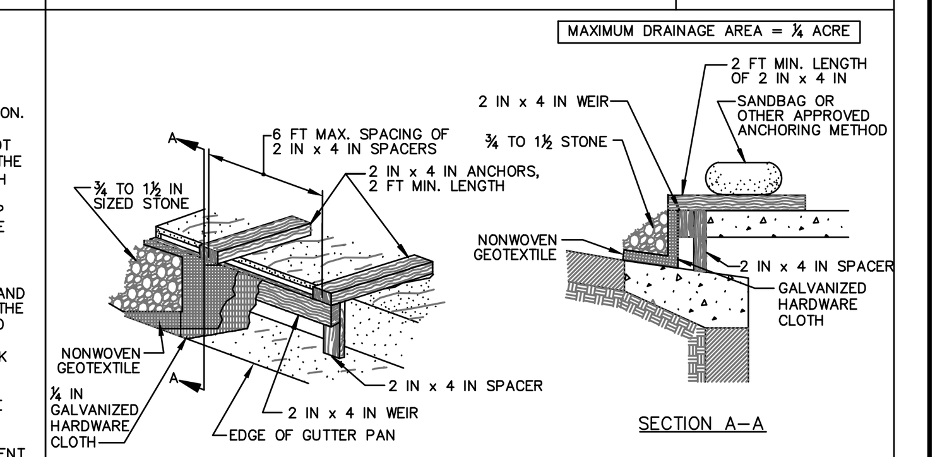
2 OF 2

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-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP

MAXIMUM DRAINAGE AREA = ¼ ACRE



CONSTRUCTION SPECIFICATIONS
1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. 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

Detail – SMARTfence® 42

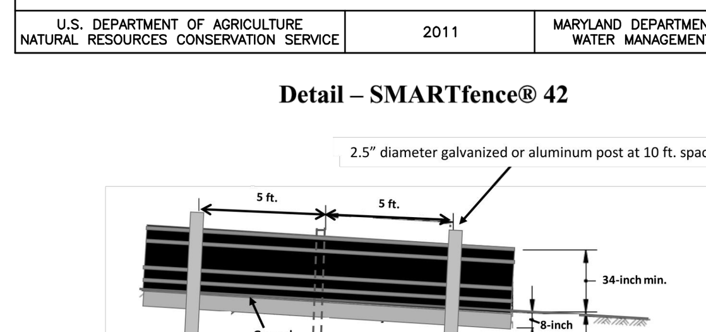


Figure 1 - Elevation

CONSTRUCTION SPECIFICATIONS

Step 1: Excavate trench a maximum of 6 inches wide and 8 inches deep. The trench shall be hand-cleaned following excavation to remove bulky debris such as rocks, sticks, and soil clods from the trench. Drive studded metal T-posts with anchor plates having a minimum weight of 1.33 lb. per ft. and a minimum 72-inch length. Drive post into ground a minimum of **3 ft. depth**. T-Post spacing will be 10 ft. maximum. In addition, drive 2.5" diameter galvanized or aluminum poles set at 10' maximum spacing. Poles should be installed a minimum 36" below the ground surface and extend a minimum of 33" aboveground. Alternate t-posts and poles every 5 ft. of fence length.

Step 2: Layout SMARTfence® 42 along proposed fence line next to anchor trench. Locate one end of the SMARTfence® 42 and position near the initial post. Position SMARTfence® 42 vertically along the initial post.

Step 3: For the initial 2.5"-diameter pole, place the end of SMARTfence® 42 along the pole height and rotate the post 360 degrees, maintaining tension on the fence system. Secure the fence to the post **at all four (4) orange-colored band locations** with minimum 10-inch long nylon ties.

Step 4: For fastening SMARTfence® 42 to metal T-posts and 2.5" poles, use the following method:

Minimum 10-inch nylon heavy-duty, UV-stabilized cable ties (zip-ties) with minimum 120-pound tensile strength. Puncture two 0.25-inch openings, spaced at a width apart that is roughly equivalent to the post width/pole diameter, and secure the fence to the post/pole. Tighten ties against the post/pole.

Step 5: Drive the initial post/pole with the attached fence into the ground to **3-ft. depth**.

Step 6: Drive the all remaining interior posts and poles of the fence system into the ground at least 3 ft., with the exception of the last pole along the fence length.

Step 7: Move to the next post/pole location while pulling SMARTfence® 42 **tightly**. Position the SMARTfence® 42 in front of the adjacent post/pole in preparation for fastening the fence to the post/pole. Fasten fence to post/pole **at all four (4) orange-colored band locations** as instructed in Step 4.

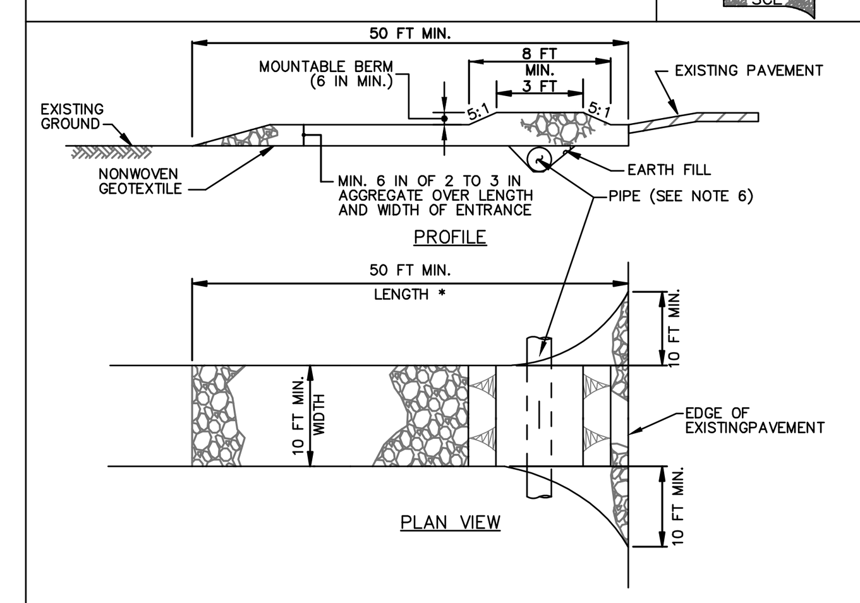
Step 8: After the interior posts have been fastened to the SMARTfence® 42, secure the fence to the final 2.5"-diameter pole by **pulling the final section of fencing taut**, then rotating the post 360 degrees, maintaining tension on the fence system. Secure the fence to the post **at all four (4) orange-colored band locations** with the nylon ties per Step 4. Drive the final post into the ground to 3-ft. depth.

Step 9: Place the bottom 8 inches of fabric into the trench. Backfill trench (overfill) with soil placed around fabric. Compact soil backfill with either manual tamping (or other manual means) or via mechanical equipment such as the front wheel of a tractor, skid steer, roller, or other device (per Note 5 of ASTM D 6462 *Standard Practice for Silt Fence Installation)*. Do not damage the fabric during compaction (damaged fabric shall be replaced).

* SMARTfence 42 MAY BE USED IN PLACE OF SUPER SILT FENCE AT THE DISCRETION OF THE CONTRACTOR.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE

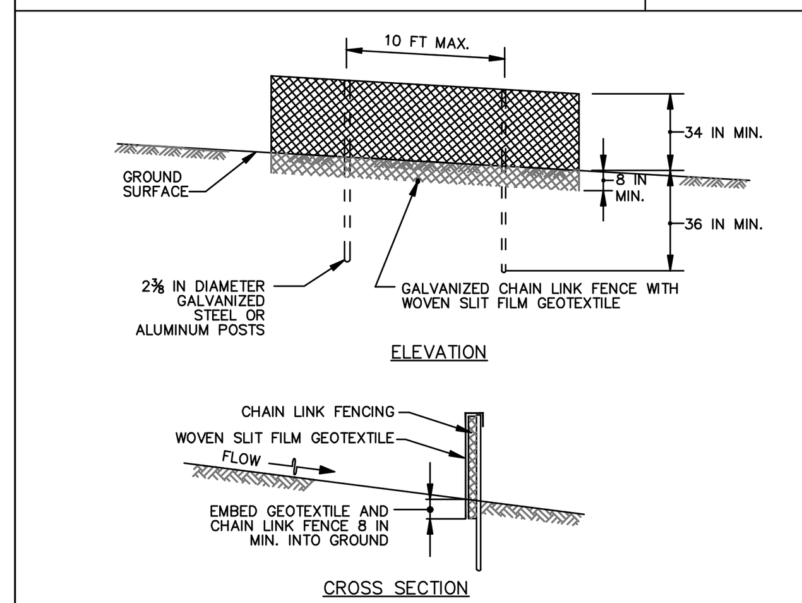


CONSTRUCTION SPECIFICATIONS
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING 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 E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF

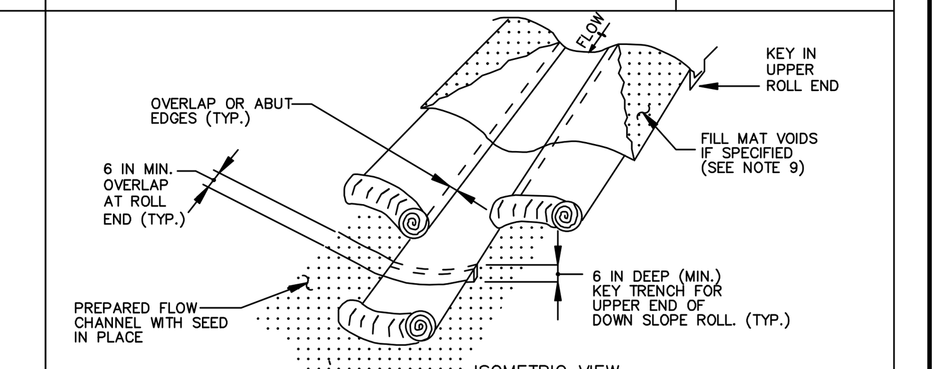


CONSTRUCTION SPECIFICATIONS
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 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

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: PSSMC – 1.0 lb/ft²



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. APPLY FOR GRADING PERMIT. (DAY 1)
2. HOLD ON-SITE PRE-CONSTRUCTION MEETING AND OBTAIN GRADING PERMIT. (DAY 2)
3. CLEAR AND GRUB AS NECESSARY TO INSTALL STABILIZED CONSTRUCTION ENTRANCE AND PERIMETER CONTROLS (I.E. SUPER SILT FENCE) (DAYS 7-10)
4. INSTALL INLETS I-1 THRU I-6 AND STORMDRAIN SYSTEM. GRADE BYPASS SWALE TO I-4 AND IMMEDIATELY PERMANENTLY STABILIZE BYPASS SWALE, AND INSTALL INLET PROTECTION. ROUGH GRADE SWM FACILITIES AS NECESSARY FOR INLET INSTALLATION, BUT DO NOT INSTALL SWM FACILITY MATERIALS. (DAYS 11-15)
5. CONSTRUCT ROADWAY AND LOTS 31 AND 32 DRIVEWAYS. (DAYS 16-27)
6. FINAL GRADE AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDED NOTES. WHEN ALL UPSTREAM DRAINAGE AREAS ARE COMPLETE AND WITH THE PERMISSION OF INSPECTOR, INSTALL MICRO-BIORETENTION FACILITIES AND STABILIZE DISTURBED AREAS. (DAYS 28-45)
7. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR CONSTRUCT MICRO-BIORETENTION AND STABILIZE ANY REMAINING AREAS. WITH PERMISSION OF THE INSPECTOR, REMOVE ANY REMAINING SEDIMENT CONTROL DEVICES. (DAYS 46-79)

EXISTING UIC DRIVEWAY TO BE REMOVED AND EXISTING DRIVEWAYS FOR EXISTING LOT 31 AND 32 SHALL BE EXTENDED TO NEW PROPOSED MEREDITH AVE. ACCESS SHALL REMAIN OPEN FOR LOTS 31 AND 32 DURING CONSTRICTION. CONTRACTOR SHALL COORDINATE WITH THE HOMEOWNERS OF LOTS 31 AND 32 TO MAINTAIN ACCESS.

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1/ lb/ac	Seeding Rate 1/ lb/1000 ft2	Seeding Depth 2/ (inches)	Recommended Seeding Dates by Plant Hardiness Zone 3/: 5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (Lolium perenne ssp. Multiflorum	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	**Mar 1 to May 15; Aug 1 to Oct 31**	Feb 15 to Apr 30; Aug 15 to Nov 30
Barley (Hordeum vulgare)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	**Mar 1 to May 15; Aug 1 to Oct 31**	Feb 15 to Apr 30; Aug 15 to Nov 30
Oats (Avena sativa)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	**Mar 1 to May 15; Aug 1 to Oct 31**	Feb 15 to Apr 30; Aug 15 to Nov 30
Wheat (Triticum aestivum)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	**Mar 1 to May 15; Aug 1 to Oct 31**	Feb 15 to Apr 30; Aug 15 to Nov 30
Cereal Rye (Secale cereale)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	**Mar 1 to May 15; Aug 1 to Nov 15**	Feb 15 to Apr 30; Aug 15 to Dec 15
Warm-Season Grasses						
Foxtail Millet (Serataria italica)	30	0.7	0.5	Jun 1 to Jul 31	**May 16 to Jul 31**	May 1 to Aug 14
Pearl Millet (Pennisetum glaucum	20	0.5	0.5	Jun 1 to Jul 31	**May 16 to Jul 31**	May 1 to Aug 14

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				

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
DocuSigned by: Alexander Bratchie
65648D5BA9B64C1...
HOWARD SOIL CONSERVATION DISTRICT — DATE 4/16/2024

DocuSigned by:
2465821AE4DA4C2...
CHIEF, BUREAU OF HIGHWAYS — DATE 4/24/2024

DocuSigned by:
1EB75478A22B49A...
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/15/2024

DocuSigned by: CHAD Edmondson
7063F754EF41499...
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/22/2024

DESIGN CERTIFICATION
I HEREBY 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."
ALICE A MILLER, P.E. MD PE 28376 — DATE 3/26/2024

DEVELOPER'S CERTIFICATION
"I/WE HEREBY 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 ON 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."
Brian Boy
BRIAN BOY – MEREDITH AVE., LLC — DATE 3/26/2024

NO.	DATE	REVISION

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

STATE OF MARYLAND — ALICE A. MILLER — 28376 — PROFESSIONAL ENGINEER
3/26/2024
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. 28376, Expiration Date: 01-01-2025

OWNER/DEVELOPER:
MEREDITH AVE., LLC
9693 GERWIG LANE - SUITE L
COLUMBIA, MD 21046
443-676-2417

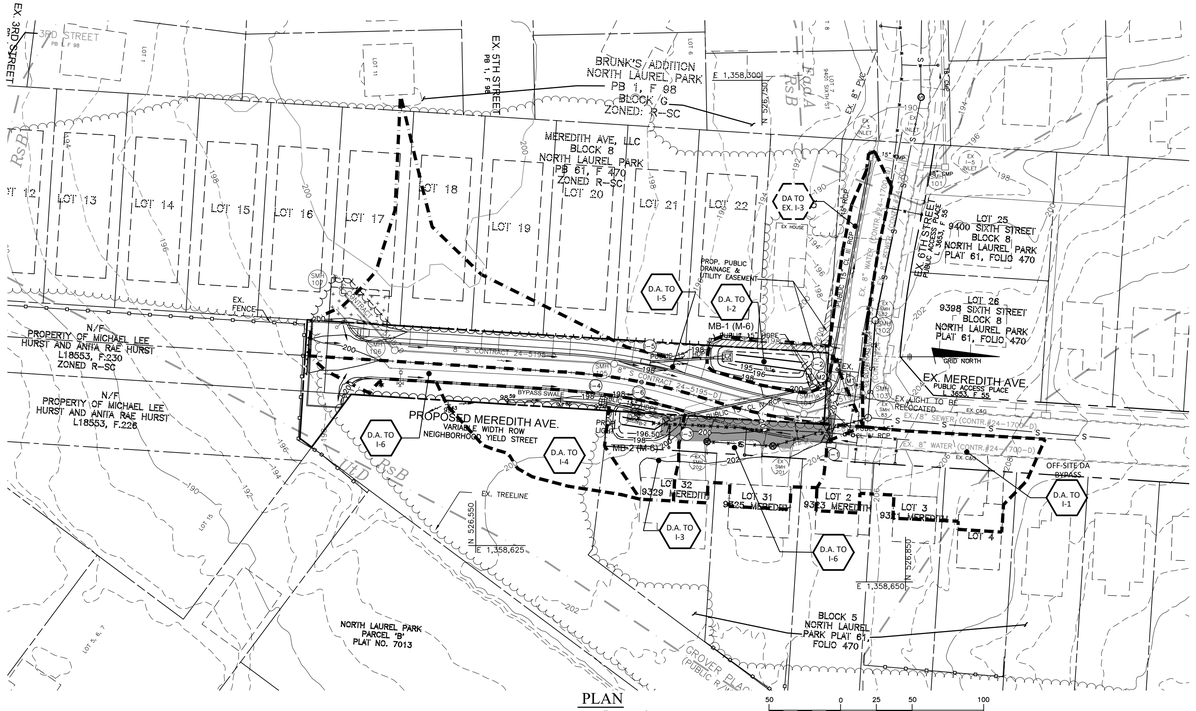
MEREDITH AVENUE
NORTH LAUREL PARK

TAX MAP: 50 GRID: 4 PARCEL: 426
ZONED: R-SC
ELECTION DISTRICT NO. 6th HOWARD COUNTY, MARYLAND

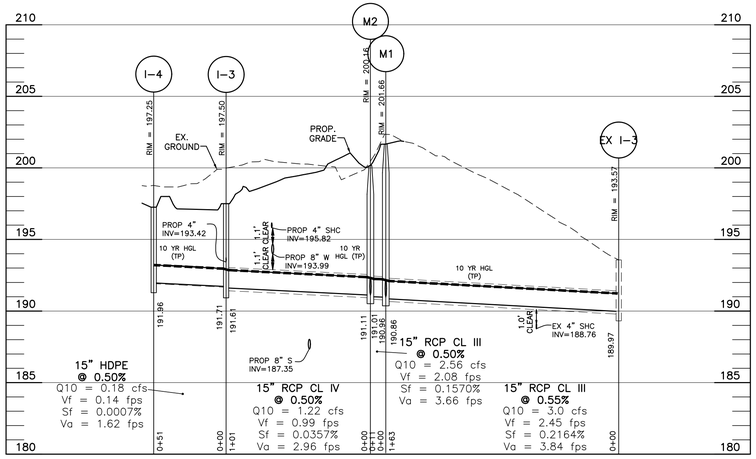
SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

DESIGN: AAM	DRAFT: AAM	DATE: MARCH 2024	BEI PROJECT NO. 3058
		SCALE: AS SHOWN	SHEET 4 OF 7

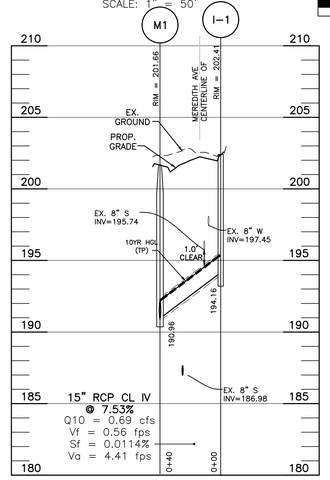
F-23-052



PLAN
SCALE: 1" = 50'



EX I-3 to I-4
SCALE: 1"=50' HORZ., 1"=5' VERT.



MH1 to I-1
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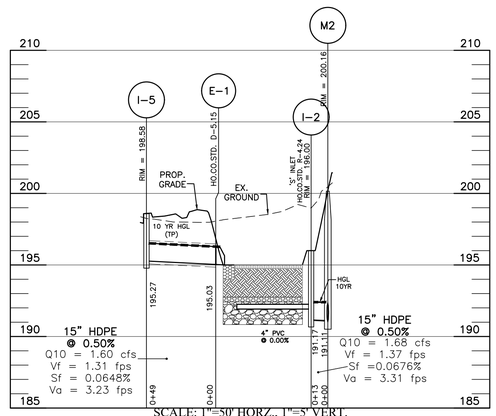

SCALE: 1"=50' HORZ., 1"=5' VERT.
MB-1 TO M2
SECTION A-A
SCALE: 1"=50' HORZ., 1"=5' VERT.

NOTE: SEE STORMWATER MANAGEMENT PLAN FOR ADDITIONAL FACILITY DESIGN INFORMATION

AREA AND "C" FACTOR TABULATION

	INLET #	ZONING (Z)	AREA (Ac) (A)	"C" FACTOR (C)<25	"C" FACTOR (C)>25	% IMPERVIOUS (P)<25
	I-1	R-SC	0.19	0.55	0.65	71.1
	I-2	R-SC	0.06	0.19	0.23	0.0
	I-3	R-SC	0.07	0.63	0.72	78.2
	I-4	R-SC	0.14	0.16	0.20	0.0
	I-5	R-SC	0.39	0.56	0.62	68.4
	I-6	R-SC	0.22	0.62	0.70	73.5
	EX.I-3	R-SC	0.09	0.86	0.96	100.0

PIPE TABLE

SIZE / MATERIAL	LENGTH	OWNER
15" RCP CL III	176 LF	PUBLIC
15" RCP CL IV	139 LF	PUBLIC
15" HDPE	113 LF	PUBLIC
4" PVC (PERF)	138 LF	PUBLIC
4" PVC	34 LF	PUBLIC

STRUCTURE TABLE

NUMBER	TYPE	LOCATION	INVERT IN	INVERT OUT	TOP ELEV.	STD. DETAIL	OWNER
EX. I-3	A-5	EXISTING ON SIXTH STREET	189.97(15")		193.57		PUBLIC
I-1	A-5	CL STA. 0+21.22, OFFSET 14.36 LEFT		194.16(15")	202.41	D-4.02	PUBLIC
I-2	'S'	CL STA. 0+43.28, OFFSET 34.90 RIGHT	191.92(4")	191.17(15")	196.00	D-4.24	PUBLIC
I-3	'S'	CL STA. 1+31.37, OFFSET 19.80 LEFT	191.71(15") 193.42(4")	191.61(15")	197.50	D-4.24	PUBLIC
I-4	'S'	CL STA. 1+84.41, OFFSET 18.14 LEFT		191.96(15")	197.25	D-4.24	PUBLIC
I-5	A-5	CL STA. 1+58.62, OFFSET 14.25 RIGHT		195.27(15")	198.58	D-4.02	PUBLIC
I-6	FLOW THRU	CL STA. 1+58.62, OFFSET 14.25 LEFT			198.58	D-4.35	PUBLIC
MH1	48" MH	CL STA. 0+28.13, OFFSET 25.42 LEFT	190.96(15") 190.89(15")	190.86(15")	201.61	G-5.12	PUBLIC
MH2	48" MH	CL STA. 0+38.40, OFFSET 24.19 RIGHT	191.11(15") 191.11(15")	191.01(15")	200.16	G-5.12	PUBLIC
E-1	15" ES	CL STA. 1+09.85, OFFSET 31.06 RIGHT	195.03(15")			D-5.15	PUBLIC

SOILS LEGEND

SYMBOL	TYPE	K* FACTOR	NAME
**RsB	C	.43	RUSSETT FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES
**SrE	B	.32	SASSAFRAS AND CROOM SOILS, 15 TO 25 PERCENT SLOPES

SOIL MAPPING AND SOIL DATA TAKEN FROM NRCS WEB SOIL SURVEY, OCTOBER 2022.
*WHOLE SOIL K FACTOR
**HIGHLY ERODIBLE SOILS K>0.35 AND SLOPES>5%, OR GREATER THAN 15% SLOPES

APPROVED: DEPARTMENT OF PUBLIC WORKS
DocuSigned by:
4/24/2024
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
DocuSigned by:
4/15/2024
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
DocuSigned by:
4/22/2024
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	DATE	REVISION

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

STATE OF MARYLAND · ALICE A. MILLER · 28376 · PROFESSIONAL ENGINEER
3/26/2024

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. 28376, Expiration Date: 01-01-2025

OWNER/DEVELOPER:
MEREDITH AVE., LLC
9693 GERWIG LANE - SUITE L
COLUMBIA, MD 21046
443-676-2417

MEREDITH AVENUE
NORTH LAUREL PARK

TAX MAP: 50 GRID: 4 PARCEL: 426
ZONED: R-SC
ELECTION DISTRICT NO. 6th HOWARD COUNTY, MARYLAND

STORMDRAIN PLAN, PROFILES AND DRAINAGE AREA MAP

DESIGN: AAM | DRAFT: AAM | SCALE: AS SHOWN | DATE: MARCH 2024 | BEI PROJECT NO. 3058 | SHEET 5 OF 7

F-23-052

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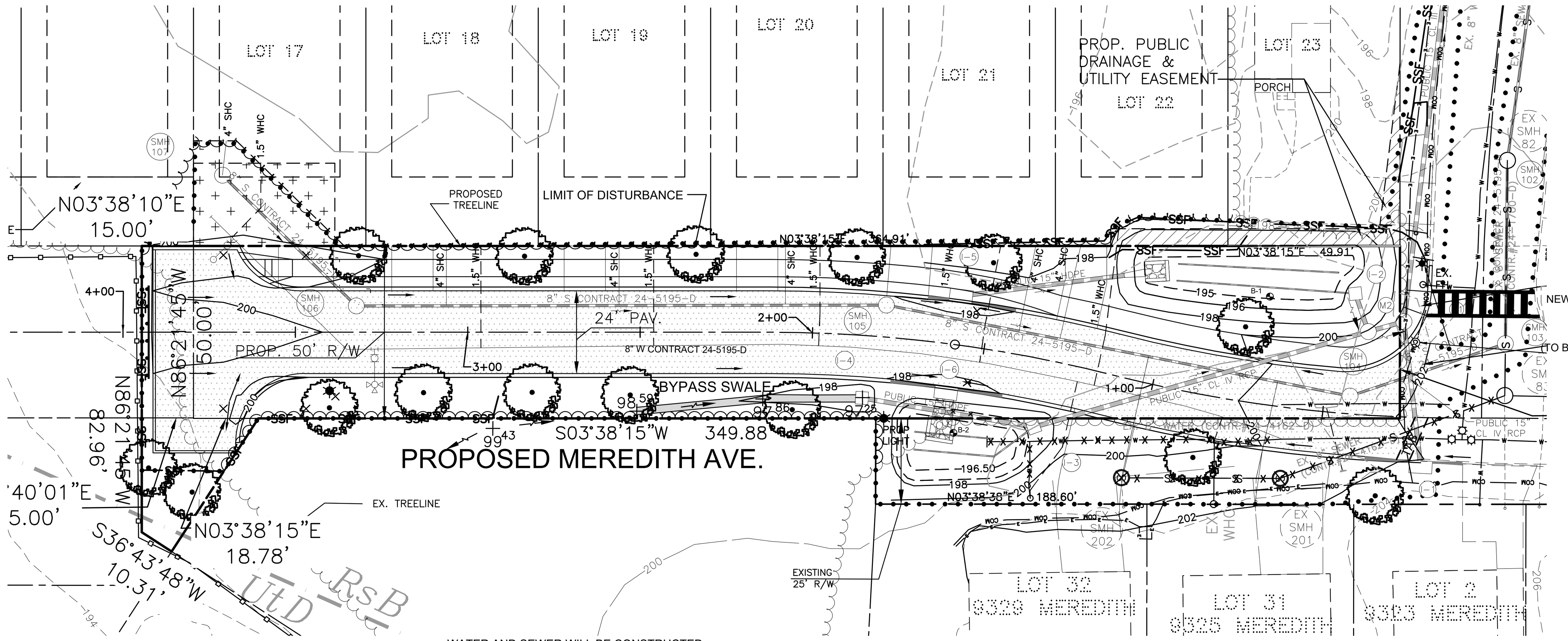
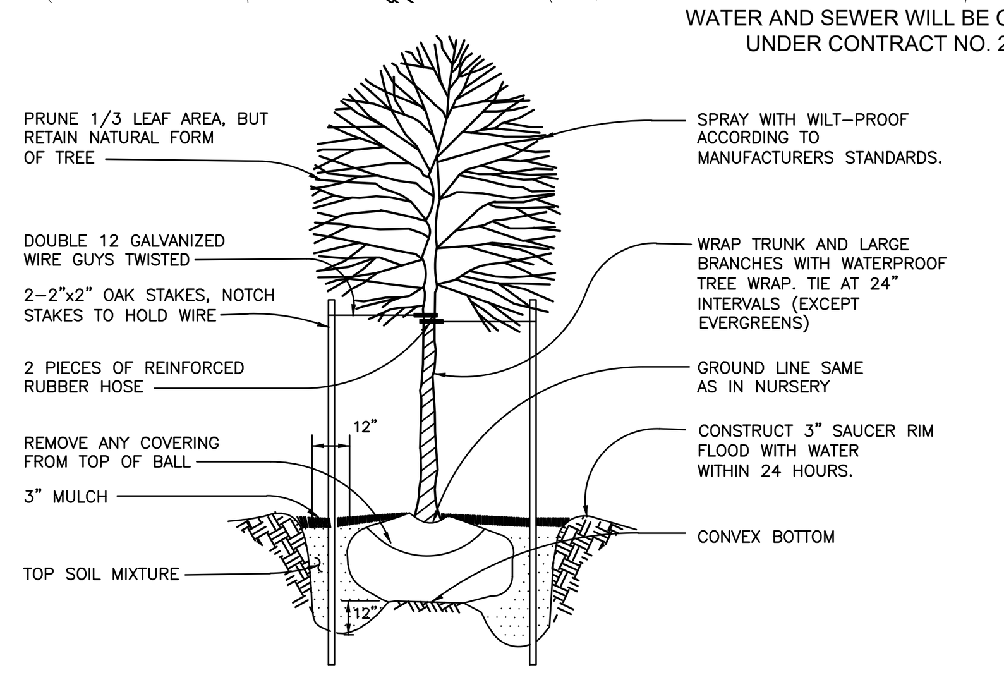


PLAN

SCALE: 1" = 30'

(IN FEET)
1 inch = 30 ft.



TREE PLANTING DETAIL

NOT TO SCALE

STREET TREE NOTES

1) STREET TREES SHALL BE PROVIDED BY THE DEVELOPER AS SHOWN ON THESE PLANS.
2) TREES MUST BE A MINIMUM OF FOUR (4) FEET FROM PAVEMENT AND MUST BE A MINIMUM OF FIVE (5) FEET FROM ANY STORM DRAIN, IF APPLICABLE.
3) TREE MUST BE PLANTED A MINIMUM OF TEN (10) FEET FROM A DRIVEWAY APRON.
4) THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SEC.–16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
5) THIS LANDSCAPE PLAN IS IN ACCORDANCE WITH SECTION 16.124 OF HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. STREET TREES ARE BONDED WITH THE DEVELOPER'S AGREEMENT.
6) ALL TREE SPECIES SHOWN ON THESE PLANS ARE RECOMMENDATIONS AND MAY BE SUBSTITUTED WITH APPROVED EQUIVALENTS FROM THE HOWARD COUNTY LANDSCAPE MANUAL.
7) AT THE TIME OF INSTALLMENT, ALL TREES HERE WITHIN LISTED AND APPROVED FOR THIS ROAD PLAN, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL.

STREET TREE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
	15	TILIA CORDATA 'GREENSPIRE' (Greenspire Littleleaf Linden)	2 1/2" MIN. CAL. B&B FULL HEAD

STREET TREE SCHEDULE

ROADWAY	FRONTAGE FT	RETENTION CREDIT	OBLIGATION (1 TREE PER 40')	PROVIDED
MEREDITH AVE.	*586'	--	15	15

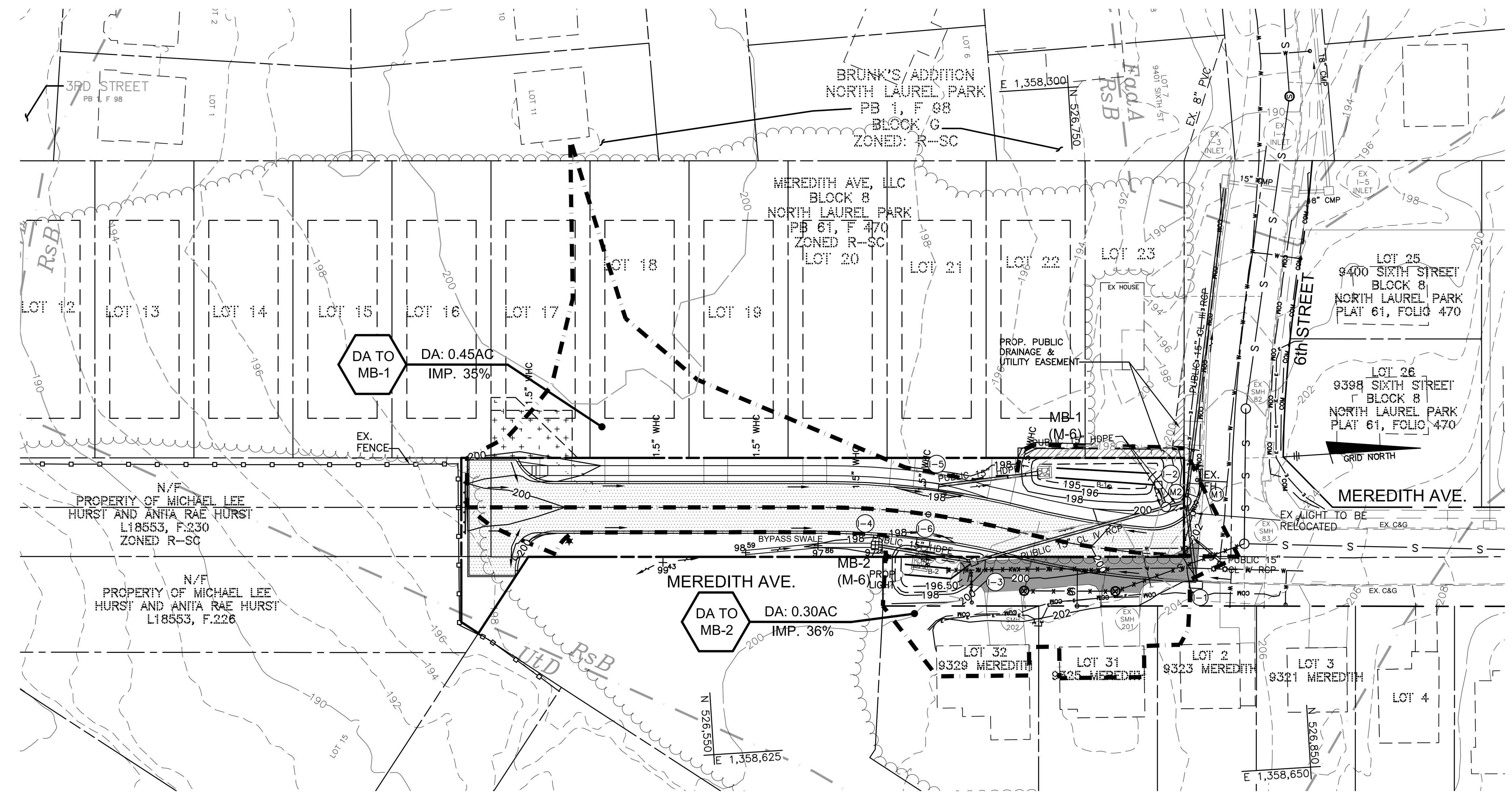
* FRONTAGE IS THE ROAD STATION LENGTH, REDUCED BY THE ENTRANCE FILLET AND THE TEE TURN–AROUND, MULTIPLIED BY 2.

DEVELOPER'S/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 SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION 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.

Brian Boy 3/26/2024

DEVELOPER DATE



STORMWATER MANAGEMENT DRAINAGE AREA MAP

SCALE: 1" = 50'

(IN FEET)
1 inch = 50 ft.

LEGEND

Symbol	Description
——————	PROPERTY BOUNDARY
——————	ADJACENT PROPERTY LINES
——258——	PROPOSED CONTOUR LINES
- - -258- - -	EX CONTOUR LINES
FaaA / RsB	SOIL DELINEATION
[dashed outline]	EXISTING STRUCTURES
— — — —	DRAINAGE AREA

BORING LOG

geolab

Date: 4/4/2022

Client: Cornerstone Homes
Project: Meredith Avenue, Laurel, Howard County, MD — Project No. 122-067
Boring No.: B-1 (1 of 1) — Total Depth (feet) 13 — Elev: 198.84 — Location: See Boring Location Plan
Type of Boring: Hand Auger — Started: 3/30/2022 — Completed: 3/31/2022 — Driller: D. Adams

Elevation	Depth	DESCRIPTION OF MATERIALS (classification)	*Sample Blows	Sample Depth (Feet)	Moisture Content	REMARKS
198.84	0.0	Forrest litter with topsoil and root (organic) matter				Groundwater was not encountered during drilling or at completion Infiltration testing performed at 9.3 feet
198.34	0.5	Orange-brown silty CLAY with some fine sand, wet to moist (USCS: CL, USDA: Clay Loam)		2.0 – 2.5	18.7	
195.84	3.0	Red-brown silty CLAY with trace fine sand, moist (USCS: CL, USDA: Silty Clay)		4.0 – 4.5		
				6.0 – 6.5	18.0	
				8.0 – 8.5		
				10.0 – 10.5	17.2	
187.84	11.0	Gray silty CLAY with some gravel and trace fine sand, moist (USCS: CL, USDA: Silty Clay)		12.0 – 12.5		
185.84	13.0	End of Boring				

BORING LOG

geolab

Date: 5/1/2023

Client: Cornerstone Homes
Project: Meredith Avenue, Laurel, Howard County, MD — Project No. 122-067
Boring No.: B-2 (1 of 1) — Total Depth (feet) 10 — Elev: 199.0 +/- — Location: See Boring Location Plan
Type of Boring: Hand Auger — Started: 4/27/2023 — Completed: 4/27/2023 — Driller: D. Rockwood

Elevation	Depth	DESCRIPTION OF MATERIALS (classification)	*Sample Blows	Sample Depth (Feet)	Moisture Content	REMARKS
199	0.0	Grass with topsoil and root (organic) matter				Groundwater was not encountered during drilling. At the end of the day, water was at 9.0 feet.
198.5	0.5	Light brown to red-brown fine sandy and silty CLAY, moist (USCS: CL, USDA: Clay Loam)		2.0 – 2.5	18.5	
				4.0 – 4.5		
				6.0 – 6.5	14.7	
192	7.0	Red-brown silty CLAY with trace fine sand, moist (USCS: CL, USDA: Silty Clay)		8.0 – 8.5		
				9.5 – 10	20.4	
189	10.0	End of Boring				

SOILS LEGEND

SYMBOL	TYPE	K* FACTOR	NAME
**RsB	C	.43	RUSSETT FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES
**SrE	B	.32	SASSAFRAS AND CROOM SOILS, 15 TO 25 PERCENT SLOPES

SOIL MAPPING AND SOIL DATA TAKEN FROM NRCS WEB SOIL SURVEY, OCTOBER 2022.
*WHOLE SOIL K FACTOR
**HIGHLY ERODIBLE SOILS K>0.35 AND SLOPES>5%, OR GREATER THAN 15% SLOPES

APPROVED: DEPARTMENT OF PUBLIC WORKS
DocuSigned by: 4/24/2024
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
DocuSigned by: 4/15/2024
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
DocuSigned by: *Chad Edmondson* 4/22/2024
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

NO.	DATE	REVISION

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

STATE OF MARYLAND — ALICE A. MILLER — 28376 — PROFESSIONAL ENGINEER
3/26/2024

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. 28376, Expiration Date: 01-01-2025

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MEREDITH AVENUE

NORTH LAUREL PARK

TAX MAP: 50 GRID: 4 PARCEL: 426
ZONED: R–SC
ELECTION DISTRICT NO. 6th HOWARD COUNTY, MARYLAND

LANDSCAPE PLAN AND STORMWATER MANAGEMENT DRAINAGE AREA MAP

DATE: MARCH 2024 — BEI PROJECT NO. 3058
DESIGN: AAM — DRAFT: AAM — SCALE: AS SHOWN — SHEET 6 OF 7

F-23-052

CONSTRUCTION SPECIFICATIONS

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 micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05. 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 and(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 1,0000 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

MATERIALS & SPECIFICATIONS FOR MICRO–BIORETENTION

MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS	SEE APPENDIX A; TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2.0' TO 4.0' 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	N/A	AGED 6 MONTHS, MINIMUM, NO PINE OR WOOD CHIPS
GEOTEXTILE (CLASS "C")		N/A	PE TYPE 1 NONWOVEN
(1/4" WIRE MESH)		1/4" OPENINGS	1/4" WIRE MESH GALVANIZED HARDWARE CLOTH
UNDERDRAIN GRAVEL	AASHTO M–43	NO. 57 OR NO. 6 0.375" TO 0.750"	
UNDERDRAIN PIPING	F758, TYPE PS28 OR AASHTO M–278	4" TO 6" RIGID SCH.40 PVC, SDR35 OR HDPE	3/8" PERF. @ 6" O/C, 4 HOLES PER ROW; MINIMUM OF 2" OF GRAVEL OVER PIPES, NOT NECESSARY UNDER PIPES. PERFORATED PIPES SHALL BE WRAPPED WITH 1/4" GALVANIZED HARDWARE CLOTH
IMPERVIOUS LINER	ASTM–D–4833 (THICKNESS) ASTM–D–412 (TENSILE STRENGTH 1,100 LB., ELONGATION 200%) ASTM–D–624 (TEAR RESISTANCE – 150 LB./IN) ASTM–D–471 (WATER ADSORPTION: +8 TO –2% MASS)	30 MIL. THICK	LINER TO BE ULTRAVIOLET RESISTANT. A GEOTEXTILE FABRIC SHOULD BE USED TO PROTECT THE LINER FROM PUNCTURE.
GEOTEXTILE (BELOW IMPERV. LINER)	ASTM–D–4833 (PUNCTURE STRENGTH 125LB) ASTM–D–4632 (TENSILE STRENGTH 300 LB.)		
PEA GRAVEL	ASTM–D–448	#8 OR #9 STONE	

APPROVED: DEPARTMENT OF PUBLIC WORKS

DocuSigned by: [signature] 2465821AE4DA4C2... 4/24/2024

CHIEF, BUREAU OF HIGHWAYS — DATE

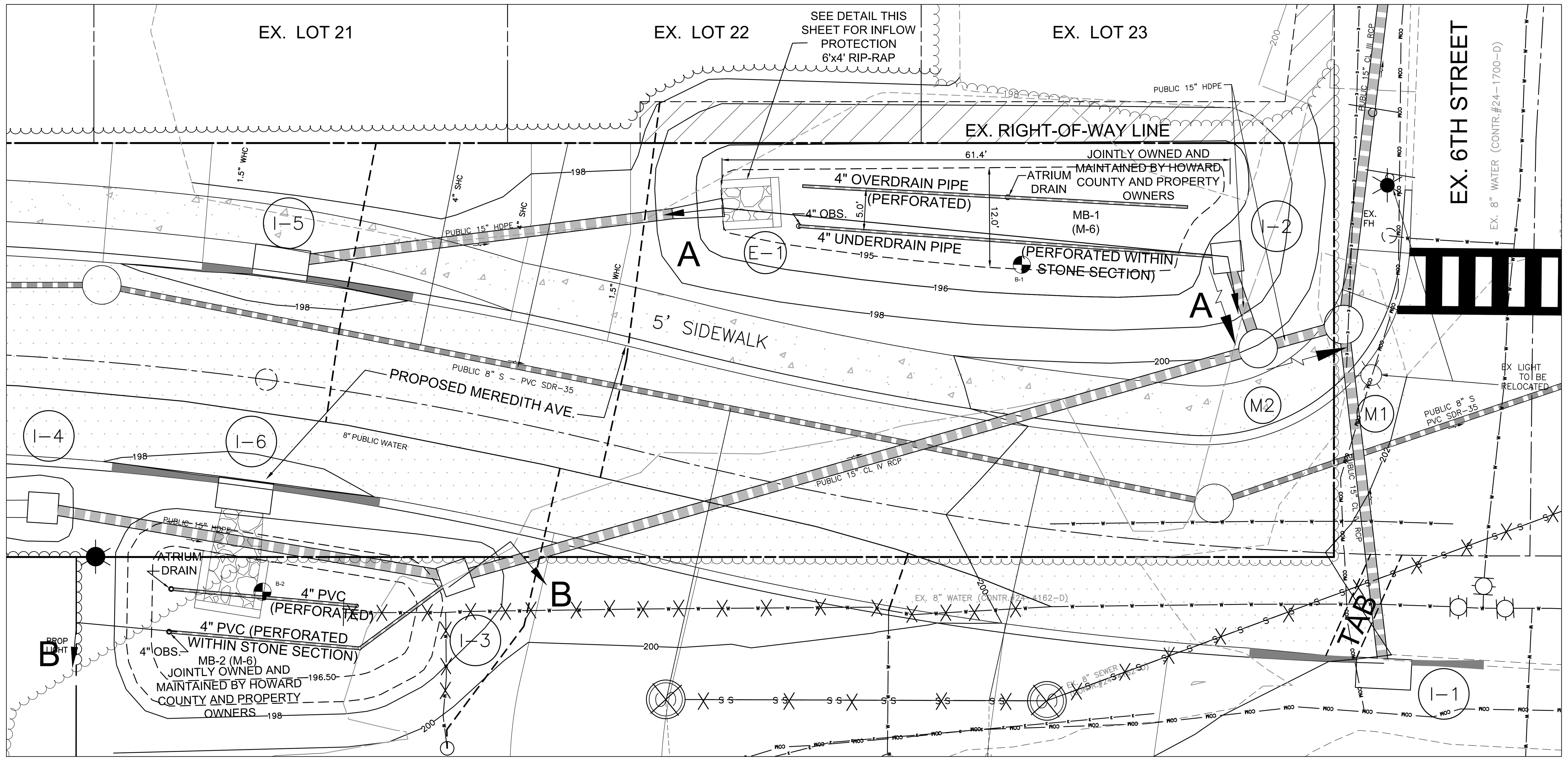
APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: [signature] 1EB75478A22B49A... 4/15/2024

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: CHAD Edmondson 7063F754EF41499... 4/22/2024

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

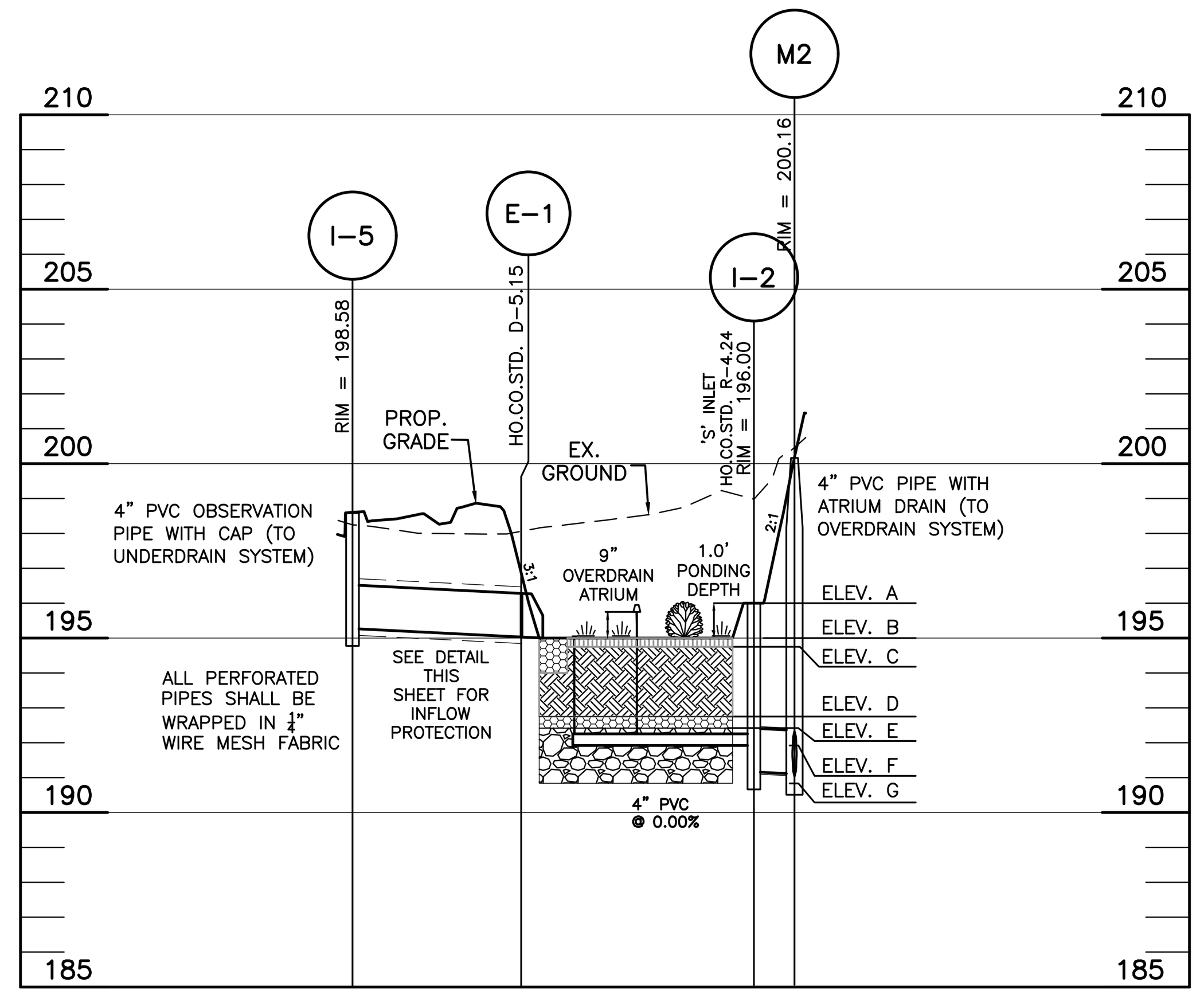


WATER AND SEWER WILL BE CONSTRUCTED UNDER CONTRACT NO. 24-5195-D

MICRO BIO-RETENTION
SCALE: 1" = 10'

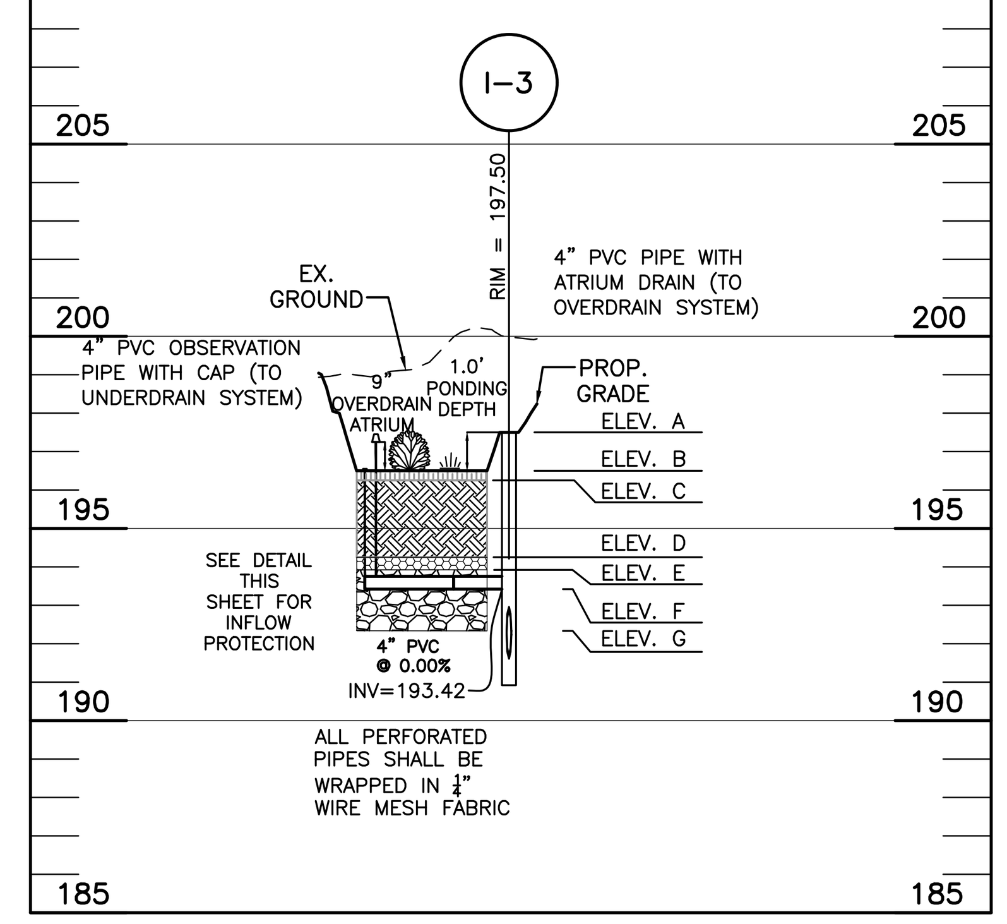
(IN FEET)
1 inch = 10 ft.

MICRO BIO-RETENTION FACILITIES WILL BE PUBLICLY OWNED BY HOWARD COUNTY AND JOINTLY MAINTAINED. STRUCTURAL MAINTENANCE OF THE MICRO-BIOS SHALL BE THE COUNTY'S RESPONSIBILITY. MAINTENANCE OF THE MULCH, PLANTINGS, TRASH REMOVAL AND MOWING SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNERS.



MB-1 SECTION A-A
SCALE: 1"=50' HORZ., 1"=5' VERT.

NOTE: REFER TO BIORETENTION DIMENSIONS TABLE THIS SHEET FOR ELEVATIONS



MB-2 SECTION B-B
SCALE: 1"=50' HORZ., 1"=5' VERT.

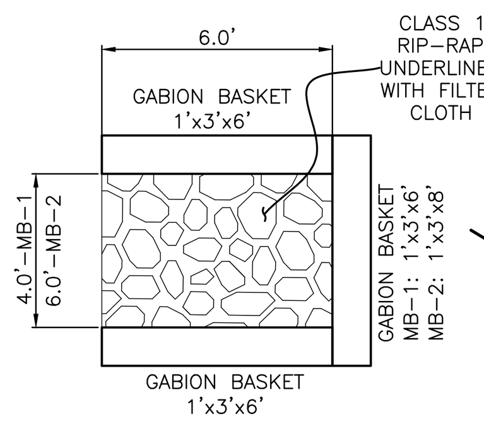
OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

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.

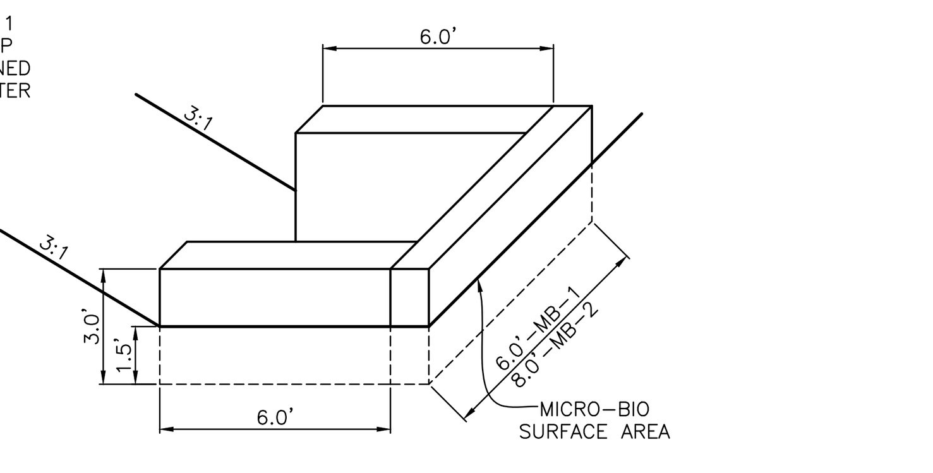
B. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND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



PLAN VIEW



ELEVATION VIEW

GABION BASKETS TO BE BURIED 18 INCHES. THEY SHOULD EXTEND 18 INCHES ABOVE THE MICRO–BIO SURFACE.

INFLOW PROTECTION
RIP–RAP WRAPPED IN GABION BASKETS
SCALE: 1" = 5'

STORMWATER MANAGEMENT SUMMARY TABLE

Pe: 1.8 inches

BIORETENTION FACILITIES (M-6)

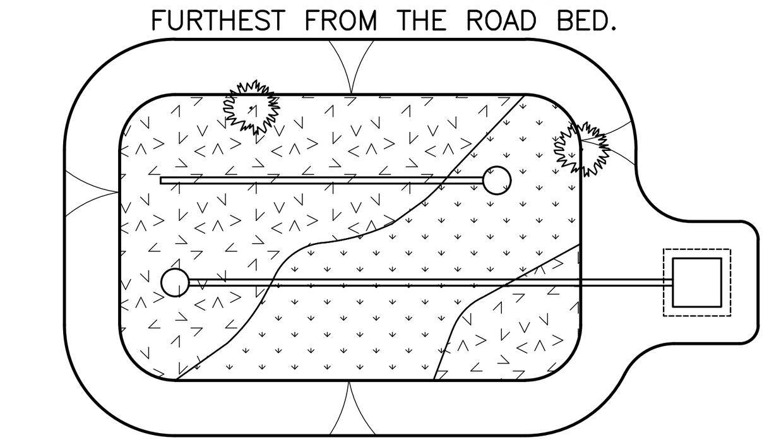
FACILITY	Drainage Area	Impervious	I (%)	Rv	ESDv (cf)	75% ESDv Ponding (cf)	Volume Stored	Volume treated (V/0.75)	Pe Treated
MB-1	19757	6997	35%	0.369	1093	820	873 cf	1163 cf	1.92
MB-2	12909	4616	36%	0.372	720	540	564 cf	752 cf	1.88
						TOTAL:	564 cf	752 cf	

BIORETENTION DIMENSIONS												
FACILITY	LENGTH (FT)	WIDTH (FT)	A	B	C	D	E	F	G	FILTER (Af)	PLANTINGS ⟨1⟩	PLANTINGS ⟨2⟩	PLANTINGS ⟨3⟩
MB-1	61	12	196.00	195.00	194.75	192.75	192.42	191.92	190.84	651	2	24	48
MB-2	65	11	197.50	196.50	196.25	194.25	193.92	193.42	192.34	623	2	23	46

MICRO BIO-RETENTION DIMENSION LEGEND

FACILITY	NAME
A	TOP OF PONDING AREA
B	TOP OF MULCH
C	TOP OF SOIL
D	TOP OF STONE FILTER
E	TOP OF STONE ENCASEMENT/STORAGE
F	UNDERDRAIN INVERT
G	BOTTOM OF STONE

* PLACE TREES ON SIDE SLOPE FURTHEST FROM THE ROAD BED.



MICRO–BIORETENTION PLANTING SCHEDULE

	SYMBOL	NAME
⟨1⟩	[symbol]	BETULA NIGRA (RIVER BIRCH)* 6' HEIGHT (OR GREATER)
⟨2⟩	[symbol]	TALL CONEFLOWER (RUDBECKIA LACINIATA) 3" POTS (OR GREATER)
⟨3⟩	[symbol]	PANICUM VIRGATUM (SWITCHGRASS) 3" POTS (OR GREATER)

NOTE:
THIS DETAIL IS A SCHEMATIC DETAIL. ACTUAL LOCATION OF ALL PLANTINGS TO BE DETERMINED BY THE CONTRACTOR DURING INSTALLTION.

SCHEMATIC PLANTING DETAIL FOR (M–6) MICRO BIO–RETENTION PRACTICES
NOT TO SCALE

NO.	DATE	REVISION

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

STATE OF MARYLAND — ALICE A. MILLER — 28376 — PROFESSIONAL ENGINEER
[signature] 3/26/2024

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. 28376, Expiration Date: 01-01-2025

OWNER/DEVELOPER:
MEREDITH AVE., LLC
9693 GERWIG LANE - SUITE L
COLUMBIA, MD 21046
443-676-2417

MEREDITH AVENUE

NORTH LAUREL PARK

TAX MAP: 50 GRID: 4 PARCEL: 426
ZONED: R–SC
ELECTION DISTRICT NO. 6th HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT PLAN, SECTIONS, NOTES AND DETAILS

DATE:	MARCH 2024	BEI PROJECT NO.	3058
SCALE:	AS SHOWN	SHEET	7 OF 7

DESIGN: AAM DRAFT: AAM

F-23-052