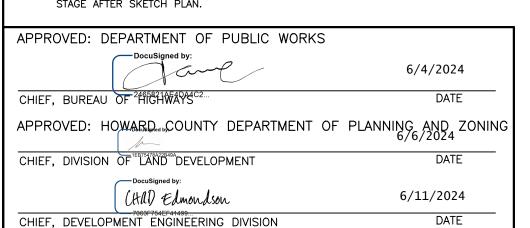
# GENERAL NOTES

- 1. SUBJECT PROPERTY IS ZONED R-12 PER THE COMPREHENSIVE ZONING PLAN DATED 10/6/13.
- 2. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT
- 3. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN
- 4. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NO. 38DB AND 38D6 WERE
- 5. WATER IS PUBLIC, EX. CONTRACT NO. 610 DEEP RUN DRAINAGE AREA, NEW CONTRACT NO. 14-5114-D
- 6. SEWER IS PUBLIC, CONTRACT NO. 256 DEEP RUM DRAINAGE AREA, NEW CONTRACT NO. 14-5114-D.
- 7. THE EXISTING TOPOGRAPHY AND UTILITIES SHOWN IS BASED ON FIELD SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC. IN JULY, 2019 AND HOWARD COUNTY GIS. THE HOUSE ON PROPOSED LOT 8 IS TO REMAIN. ALL OTHER EXISTING STRUCTURES ARE TO BE REMOVED.
- 8. THE SPECIMEN TREES WERE FIELD LOCATED BY BENCHMARK ENGINEERING, INC., IN MAY, 2018 AND SHOWN ON
- 9. THIS SITE IS WITHIN THE METROPOLITAN DISTRICT.
- 10. TO THE BEST OF OUR KNOWLEDGE, INFORMATION, AND BELIEF, THERE ARE NO CEMETERIES OR SCENIC ROADS LOCATED ON THIS SITE.
- 11. THERE ARE NO HISTORIC SITES/FEATURES OR HISTORIC STRUCTURES LOCATED ON THIS SITE, AND THE SITE IS NOT
- 12. THIS SUBDIVISION COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 FOR FOREST CONSERVATION. THE OBLIGATION IS MET THROUGH THE RETENTION OF 1.26 ACRES OF NET TRACT AREA FOREST AND THE PLANTING OF 0.08 ACRES OF FOREST, FINANCIAL SURETY IN THE AMOUNT OF \$12.719.52 SHALL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- 13 THE BIORETENTION FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOA. THE PROPOSED DRYWELLS WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER. DRYWELLS SHALL BE DESIGNED AND INSTALLED
- 14 COMMUNITY MEETING WAS HELD ON 11-28-2018, 6:00 PM AT THE ELKRIDGE LIBRARY, 6540 WASHINGTON AVE., ELKRIDGE, MD. PRIOR TO SUBMISSION OF S-19-004.
- 15 TRAFFIC STUDY WAS PERFORMED BY MARS GROUP 5-6-2018 AND APPROVED UNDER S-19-004 & S-23-001. AN UPDATED APFO TRAFFIC & MULTI-MODAL REPORT WAS PREPARED BY MARS GROUP AND APPROVED UNDER S-23-001 IN SEPTEMBER 2022
- 16. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IS APPLICABLE.
- 17. 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.
- 18. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY
- 19. THE LANDSCAPING FOR THIS PROJECT IS DESIGNED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. SURETY SHALL BE PROVIDED WITH THE DEVELOPER'S AGREEMENT, IN THE AMOUNT OF \$9,600.00 FOR 26 PERIMETER SHADE TREES AND 6 MITIGATED TREES PER WP-23-069.
- 20. PREVIOUS ALTERNATIVE COMPLIANCE UNDER F-20-070, WP-19-053 TO REQUEST RELIEF FROM SECTION 16.1205(A)(7) SPECIMEN TREES RETENTION; SECTION 16.116(B) STEEP SLOPE DISTURBANCE; SECTION 16.120(B)(4)(III)(A) STEEP SLOPES ON RESIDENTIAL LOTS; WAS APPROVED BY HOWARD COUNTY DIRECTOR OF PLANNING AND ZONING DATED APRIL 15, 2019.
- APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

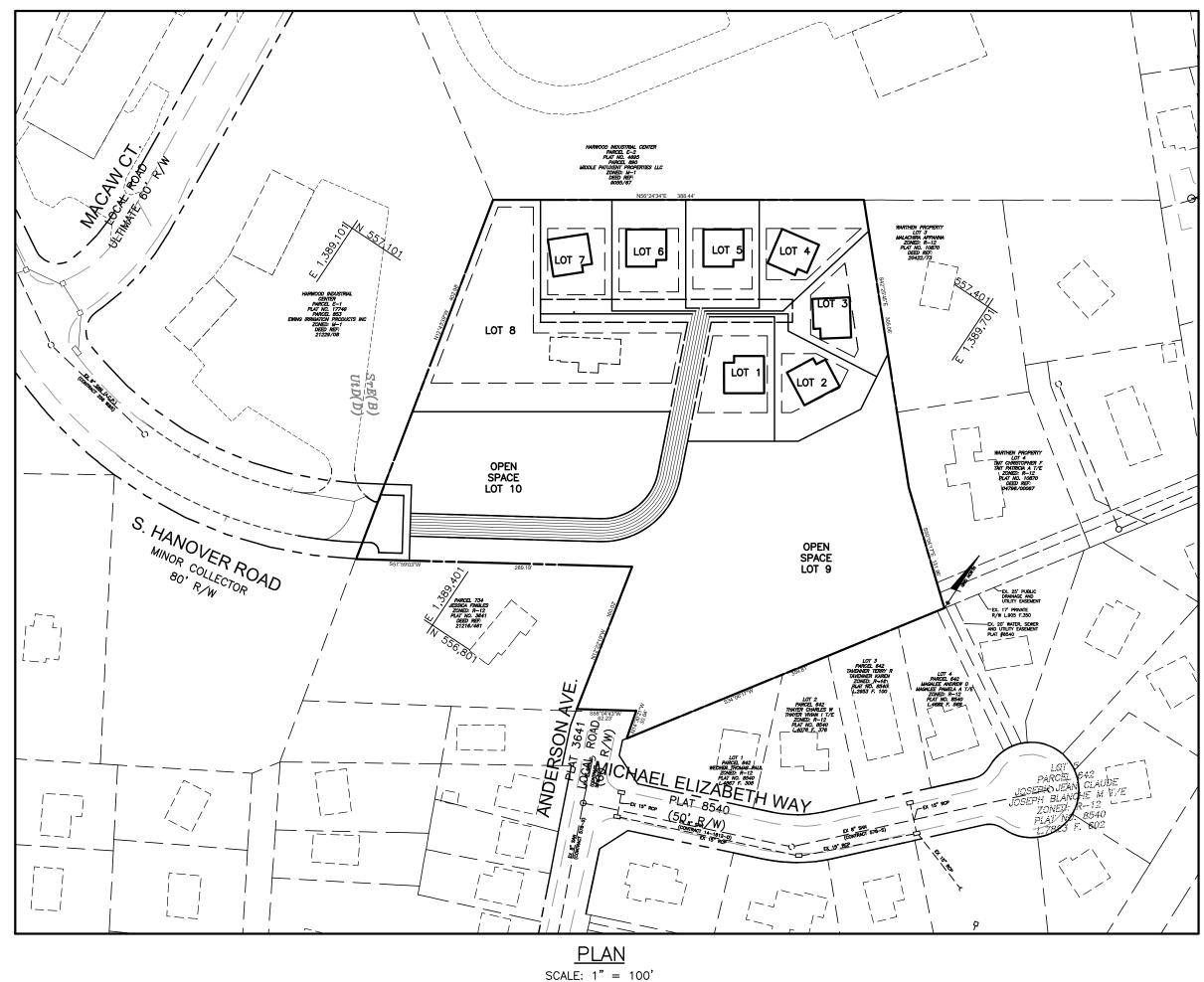
  1. STEEP SLOPE DISTURBANCE IS LIMITED TO THOSE AREAS SHOWN ON THE WP EXHIBIT FOR WP-19-053. ANY PROPOSAL TO IMPACT ADDITIONAL STEEP SLOPE AREA WILL REQUIRE A NEW ALTERNATIVE COMPLIANCE REQUEST OR AN AMENDMENT TO THIS ALTERNATIVE COMPLIANCE. 2. ALTERNATIVE COMPLIANCE APPROVAL IS LIMITED TO THE REMOVAL OF SPECIMEN TREES #1, 3 & 5 AS DEPICTED ON THE ALTERNATIVE COMPLIANCE EXHIBIT. ANY PROPOSAL TO REMOVE ADDITIONAL SPECIMEN TREES WILL REQUIRE A NEW ALTERNATIVE COMPLIANCE REQUEST OR AN AMENDMENT TO THIS
- ALTERNATIVE COMPLIANCE REQUEST. 3. ALL ATTEMPTS MUST BE MADE TO PRESERVE SPECIMEN TREE #3. INDIVIDUAL TREE PROTECTION DEVICES (TREE FENCING) SHALL BE PLACED COMPLETELY AROUND SPECIMEN TREE #3 PRIOR TO THE COMMENCEMENT OF ANY GRADING. ROOT PRUNING WILL OCCUR. THESE MEASURES SHALL BE OUTLINED IN THE PRE-CONSTRUCTION MANAGEMENT PLAN OF THE FINAL FOREST CONSERVATION PLAN (FCP) AND WITHIN THE SEQUENCE OF CONSTRUCTION PROVIDED ON THE FINAL PLAN FOR "THE AERIE IN
- 4. A MINIMUM OF 6 ADDITIONAL, NATIVE, 2-3" CALIPER TREES SHALL BE PROVIDED ON SIT AS PART OF THE MITIGATION FOR THE SPECIMEN TREE REMOVAL. THIS MITIGATION WILL BE ADDRESSED WITH THE PROJECT KNOWN AS "THE AERIE IN ELKRIDGE" AND WILL BE IN ADDITION TO ANY REQUIRED LANDSCAPE OR FOREST CONSERVATION PLANTINGS. 5. THE MITIGATION PLANTINGS SHOULD BE PLACED (IF POSSIBLE) WITHIN THE REAR YARDS OF LOTS 5,
- 6. THE EXISTING DRIVEWAY SHALL BE REMOVED AND THE AREA STABILIZED UNDER THE PRELIMINARY 21. PREVIOUS PLAN NUMBERS: ECP-19-028; S-19-004; P-20-003; F-20-070; WP-19-053; WP-22-013; WP-22-109; WP-23-049, WP-23-069; WP-23-098; F-20-070,
- 22. ALTERNATIVE COMPLIANCE WP-22-109, WAS APPROVED JULY 5, 2022 FOR RELIEF TO SECTION 16.144(P) AND SECTION 16.144(8) OF THE SUBDIVISION REGULATIONS. AN EXTENSION OF 4 MONTHS HAS BEEN GRANTED TO ALLOW THE OWNER TO DETERMINE THE DEVELOPMENT PATH FORWARD AND TO MAKE A FORMAL AMENDED SKETCH PLAN SUBMISSION FOR REVIEW BY DPZ OR MOVE FORWARD WITH THE SUBMISSION OF THE CURRENTLY APPROVED F-20-070 PLANS.
- 23. WP-22-013 WAS APPROVED OCTOBER 21, 2021. THIS ALTERNATIVE COMPLIANCE WAS A REQUEST FOR RELIEF TO SECTION 16.144(P,q) OF THE SUBDIVISION REGULATIONS. AN EXTENSION OF 9 MONTHS WAS FOR THE PROCESSING OF THE DEVELOPER'S AGREEMENT AND PLAT RECORDATION SO THAT THE CURRENT LAYOUT
- 24. A DESIGN MANUAL WAIVER TO THE HOWARD COUNTY COMPLETE STREETS, VOLUME III DESIGN MANUAL, SECTION 2.5.B., DRIVEWAY AND SECTION 2.3.4.3.e, GEOMETRIC DESIGN, TO ALLOW 8 LOTS ON A USE—IN—COMMON DRIVEWAY AND THAT THE DRIVEWAY IS LOCATED OFF THE END OF A PUBLIC
- TEE-TURNAROUND RATHER THEN THE "LEGS" OF EITHER END OF THE TURNAROUND WAS DEFERRED ON NOVEMBER 28, 2022 AND WAS APPROVED FEBRUARY 13, 2023 SUBJECT TO THE FOLLOWING: A. DUE TO THE SLOPE OF THE PROPOSED DRIVEWAY, A CONCRETE CURB AND GUTTER SHALL
- CONSTRUCTED ON BOTH SIDES OF THE USE-IN-COMMON DRIVEWAY ALONG WITH INLETS TO COLLECT AND DIRECT THE RUNOFF INTO THE STORMWATER MANAGEMENT FACILITIES.
- B. THE "TEE TURN AROUND" AT THE TOP OF THE HILL IS CONSTRUCTED IN ACCORDANCE WITH STANDARD DETAIL R-5.05 AND IS SURROUNDED WITH ENOUGH FASEMENT AS INDICATED IN THE DETAIL C. A NEW ALTERNATIVE COMPLIANCE REQUEST TO STEEP SLOPES AND FOREST CONSERVATION MAY E
- REQUIRED IF THE LIMIT OF DISTURBANCE CHANGES BASED ON FINAL GRADING AND DESIGN OF THE RETAINING WALL. WP-23-069 IS CURRENTLY IN PROCESS.
- D. ACCESS TO LOT 8 SHOULD BE CLEARLY SHOWN. THE DRIVEWAY SHOWN AS "EXISTING" ON THE PLAN WILL NEED TO BE PAVED PER DESIGN MANUAL REQUIREMENTS. 25. THE EXISTING HOUSE ON LOT 8 IS TO REMAIN AND WILL BE SERVED BY PUBLIC UTILITIES. THE EXISTING HOUSE NEEDS TO REMAIN IN SERVICE UNTIL THE PUBLIC SEWER IS BUILT AND CONNECTED TO THE HOUSE
- AT WHICH TIME THE SEPTIC SYSTEM FOR LOT 8 WILL BE PUMPED OUT AND PROPERLY ABANDONED WITH WRITTEN DOCUMENTATION SENT TO THE HEALTH DEPARTMENT. 26. ALTERNATIVE COMPLIANCE, WP-23-069 TO REQUEST RELIEF FROM SECTION 16.1205(a)(3) SPECIMEN TREES
- RETENTION; SECTION 16.116(b)(1) STEEP SLOPE DISTURBANCE WAS APPROVED BY HOWARD COUNTY DIRECTOR OF PLANNING AND ZONING DATED MARCH 2, 2023 SUBJECT TO THE FOLLOWING: 1. THE ALTERNATIVE COMPLIANCE APPROVAL IS LIMITED TO THE AREA OF STEEP SLOPES DISTURBANCE DEPICTED ON THE EXHIBIT. ANY PROPOSAL TO DISTURB OTHER LOCATION OF STEEP SLOPES WILL REQUIRE A NEW ALTERNATIVE COMPLIANCE REQUEST OR AN AMENDMENT TO THIS ALTERNATIVE COMPLIANCE REQUEST
- (WITHIN THE PERMITTED RECONSIDERATION PERIOD). 2. ÀFTER CONSTRUCTION IS COMPLETED, ALL DISTURBED AREAS SHALL BE STABILIZED AS SHOWN ON THE
- ALTERNATIVE COMPLIANCE PLAN EXHIBIT. 3. THE ALTERNATIVE COMPLIANCE APPROVAL IS LIMITED TO THE REMOVAL OF SPECIMEN TREES #1, #3, AND #5 ONLY AS DEPICTED ON THE EXHIBIT. ANY PROPOSAL TO REMOVE ANY OTHER SPECIMEN TREES WILL "REQUIRE A NEW ALTERNATIVE COMPLIANCE REQUEST OR AN AMENDMENT TO THIS ALTERNATIVE COMPLIANCE
- 4. A MINIMUM OF 6 (SIX) NATIVE, 3" DBH, SHADE TREES SHALL BE PROVIDED AS MITIGATION FOR THE REMOVAL OF THE 3 (THREE) SPECIMEN TREES FROM THE PROPERTY. SURETY IN THE AMOUNT OF \$300.00 PER TREE SHALL BE ADDED TO THE LANDSCAPING SURETY POSTED WITH THE DEVELOPER'S AGREEMENT OR
- 27. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MdUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- 28. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL., VOLUME III (2022) AND AS MODIFIED BY :GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (2022)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY
- 29. THERE IS NO FLOODPLAIN LOCATED ON THIS SITE.
- 30. THERE ARE NO WETLANDS LOCATED ON THIS SITE.
- 31. PER THE DESIGN MANUAL A NOISE STUDY IS NOT REQUIRED FOR DEVELOPMENTS THAT ARE MORE THEN 1,000' FROM ROUTE 1 AND 500' FROM A RAIL LINE. THIS DEVELOPMENT IS APPROXIMATELY 3,000' FROM ROUTE 1 AND 1.000' FROM A RAIL LINE.
- 32. A PRIVATE RANGE OF ADDRESS STREET NAME SIGN (SNS) SHALL BE INSTALLED BY THE COUNTY AS PART OF THIS DEVELOPMENT. THE DEVELOPER WILL BE RESPONSIBLE FOR PAYING FOR THIS SIGN TO BE INSTALLED. PLEASE CONTACT HOWARD COUNTY TRAFFIC (410-343-2430) TO MAKE ARRANGEMENTS FOR
- 33. ALTERNATIVE COMPLIANCE WP-23-049 WAS APPROVED DECEMBER 22, 2022 TO SECTION 16.144(p) AND SECTION 16.144(q) TO EXTEND THE DEADLINE DATES FOR THE FINAL PLAN MILESTONE REQUIREMENTS.
- 34. ALTERNATIVE COMPLIANCE WP-23-098 WAS APPROVED MAY 4, 2023 TO SECTION 16.146 TO PROVIDE RELIEF OF THE REQUIREMENT OF PROCESSING A PRELIMINARY PLAN AND TO PROCEED DIRECTLY TO THE FINAL PLAN STAGE AFTER SKETCH PLAN.



# THE AERIE IN ELKRIDGE

LOTS 1-8 AND OPEN SPACE LOTS 9 & 10 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

# FINAL CONSTRUCTION PLANS



1 inch = 100 ft.

ESD SUMMARY TABLE													
											inches	1	Pe=
		ESDv			Af			Qe	Impervious	Total DA	MDE Type	D.A.	
Pe	RV	75% ESDv	Provided	Required	Depth	2% DA	Provide d	Required	40	Area	TOM! BA	mbe type	<b>D</b>
0.86	0.17	PASS	836	730	1.0	PASS	2693	1373	0.17	9,167	68,665	(F-6)	BR 1
0.83	0.27	PASS	281	299	0.5	PASS	-	-	0.27	3,151	15,015	(M-8)	GS-1
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-1
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-2
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-4
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-5
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-6
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-7
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-8
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-9
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-10
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-11
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-12
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-13
1.16	0.95	PASS	72	62	5.0	PASS	72	62	0.95	782	782	(M-5)	DW-14
1.12			2,053	1,834			3,629	2,178		22,484	89,154	ve ra ge	Totals/
			1009 cf*	878 cf	REV								

STORMWATER MANAGMENT PRACTICES					
LOT NO.	ADDRESS	DRYWELLS (M-5)	MICRO- BIORENTION (F-6)		
1	6382 S. HANOVER RD.	2	0		
2	6386 S. HANOVER RD.	2	0		
3	6390 S. HANOVER RD.	2	0		
4	6391 S. HANOVER RD.	2	0		
5	6387 S. HANOVER RD.	2	0		
6	6383 S. HANOVER RD.	2	0		
7	6379 S. HANOVER RD.	2	0		
8	6375 S. HANOVER RD.	0	0		

\*THE BIORETENTION FACILITY SHALL TREAT THE USE-IN-COMMON DRIVE AND PORTIONS OF THE LOTS.

	SHEET INDEX
NO.	
1	COVER SHEET
2	PRIVATE ROAD PLAN AND PROFILE
3	GRADING AND SEDIMENT CONTROL PLAN
4	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
5	LANDSCAPE AND FOREST CONSERVATION PLAN
6	FOREST CONSERVATION PLAN
7	STORM DRAIN DRAINAGE AREA MAP
8	STORM DRAIN PROFILES
9	STORMWATER MANAGEMENT DRAINAGE AREA MAP
10	STORMWATER MANAGMENT PROFILES AND DETAILS
11-13	UGSWM (R-TANKS)

PROPERTY BOUNDARY

SOIL DELINEATION

EXISTING BUILDINGS

PROPOSED PAVING

EXISTING TREELINE

O PROPOSED STORMDRAIN

EX. OVERHEAD WIRES

NO WOODY BUFFER

EXISTING STRUCTURES (TO BE REMOVED)

PROPOSED DRYWELL

Minimum Lot Size Chart

11.650 | 1.058 |

8 36,710 1,050 35,660

MODERATE INCOME HOUSING UNIT (MIHU)

APPLICATION EXEMPTIONS TRACKING

10,124

10,684

10,553

10,169

10,580

Total Number of Lots/Units Proposed

Total Number of MIHU's Required

Number of MIHU's Provided Onsite

(Exempt from APFO allocations) Number of APFO Allocations Required

> (Remaining Lots/Units) MIHU Fee-in-Lieu

(Indicate Lot/Unit numbers)

10,472

Total Lot Flagstem Min Lot

Area (sf) | Area (sf) | Area (sf)

1,912

1,611

1,426

1,642

8,743

8,938

1 thru 8

PRIVATE USE-IN-COMMON ACCESS EASEMENT

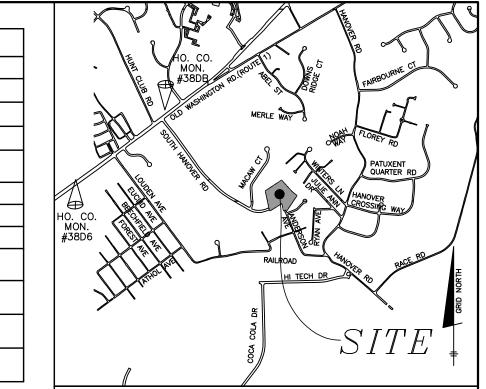
. PROPOSED TREELINE

PROPOSED SANITARY

ADJACENT PROPERTY BOUNDARY

— — 200 — GIS CONTOUR LINES

MaD



VICINITY MAP SCALE: 1" = 2000'

ADC MAP 35 GRID E4

6383 S. HANOVER ROAD

6379 S. HANOVER ROAD

6375 S. HANOVER ROAD

5.25 Ac.±

5.25 Ac.±

3.04 Ac.±

...4.51 Ac.±

2.61 Ac.±

 $0.13 \text{ Ac.} \pm$ 

2.48 Ac.±

.. 0.00 Ac.±

BENCH MARKS (NAD '83) HO. CO. #38DB ELEV. 192.132 STAMPED (BRASS OR ALUMINUM) DISC SET ON TOP OF A CONCRETE COLUMN 1" OR 2" BELOW GRADE N 558,427.282 E 1,386,582.476 ELEV. 175.228

N 557,155.459

ADDRESS CHART LOT NO. ADDRESS STAMPED (BRASS OR ALUMINUM) DISC SET ON TOP OF A CONCRETE COLUMN 1" OR 2" BELOW GRADE 6382 S. HANOVER ROAD E 1.384.992.262 LOT 2 6386 S. HANOVER ROAD 6390 S. HANOVER ROAD 6391 S. HANOVER ROAD 6387 S. HANOVER ROAD LOT 5

LOT 6

LOT 7

LOT 8

- 1) GENERAL SITE DATA
- a. PRESENT ZONING: R-12 b. LOCATION: TAX MAP 38 - GRID 14 - PARCEL 232 c. APPLICABLE DPZ FILE REFERENCES: ECP-19-028,

SITE DATA TABULATION

- S-19-004, WP-19-053, P-20-003,F-20-070 ,S-23-001, WP-22-013, WP-22-109, WP-23-049, WP-23-069, WP-23-098
- d. DEED REFERENCE: L. 18048 F. 6 e. PROPOSED USE OF SITE: 8 SFD DETACHED RESIDENCES.
- f. PROPOSED WATER AND SEWER: PUBLIC WATER AND PUBLIC SEWER
- 2) AREA TABULATIO TOTAL AREA OF SITE
- AREA OF 100 YEAR FLOODPLAIN (APPROX.) AREA OF STEEP SLOPES ON-SITE (25% OR GREATER).. 1.07 Ac.± NET AREA OF SITE
- e. AREA OF THIS PLAN SUBMISSION f. LIMIT OF DISTURBANCE (APPROX.)
- ARFA OF PROPOSED BUILDABLE LOTS .2.55 Ac.± AREA OF PROPOSED PUBLIC ROAD(R/W @ TEE). .0.09 Ac.±
- AREA OF PROPOSED PUBLIC WIDENING DEDICATION . . 0.00 Ac.± AREA OF SLOPES 15-24.9%... .0.42 Ac.± AREA OF WETLANDS.... .0.00 Ac.±
- AREA OF STREAM BANK BUFFER. .0.00 Ac.± m. AREA OF IMPERVIOUS SURFACES. ..0.74 Ac.±
- n. AREA OF GREEN OPEN AREAS...
- 3) UNIT/LOT TABULATION a. TOTAL NUMBER OF BUILDABLE LOTS
- (8.400 SF MIN. LOT SIZE)... b. TOTAL NUMBER OF OPEN SPACE LOTS
- 4) OPEN SPACE a. REQUIRED OPEN SPACE (FULL OBLIGATION 40%)...
- b. OPEN SPACE PROVIDED..
- c. NON-CREDIT OPEN SPACE .. d. CREDITED OPEN SPACE...
- e. PERCENT OF OPEN SPACE PROVIDED.
- NA(LESS THAN f. RECREATIONAL OPEN SPACE (200 SF/UNIT)..

REVISION NO. | DATE 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

Professional Certification. I hereby certify that these documen were prepared or approved by me, and that I am a duly license professional engineer upon the law of the State of Maryland, License No. 23399 Experience party 16-30-2025.

OWNER/DEVELOPER: TROTTER 5857, LLC. 1819 PANARAMA CT. MCLEAN, VA 22101 (P) 443-250-1555

DESIGN: JCO DRAFT: JCO

THE AERIE IN ELKRIDGE LOTS 1-8 AND OS LOT 9 & 10 6399 ANDERSON AVE, HANOVER, MD 21076

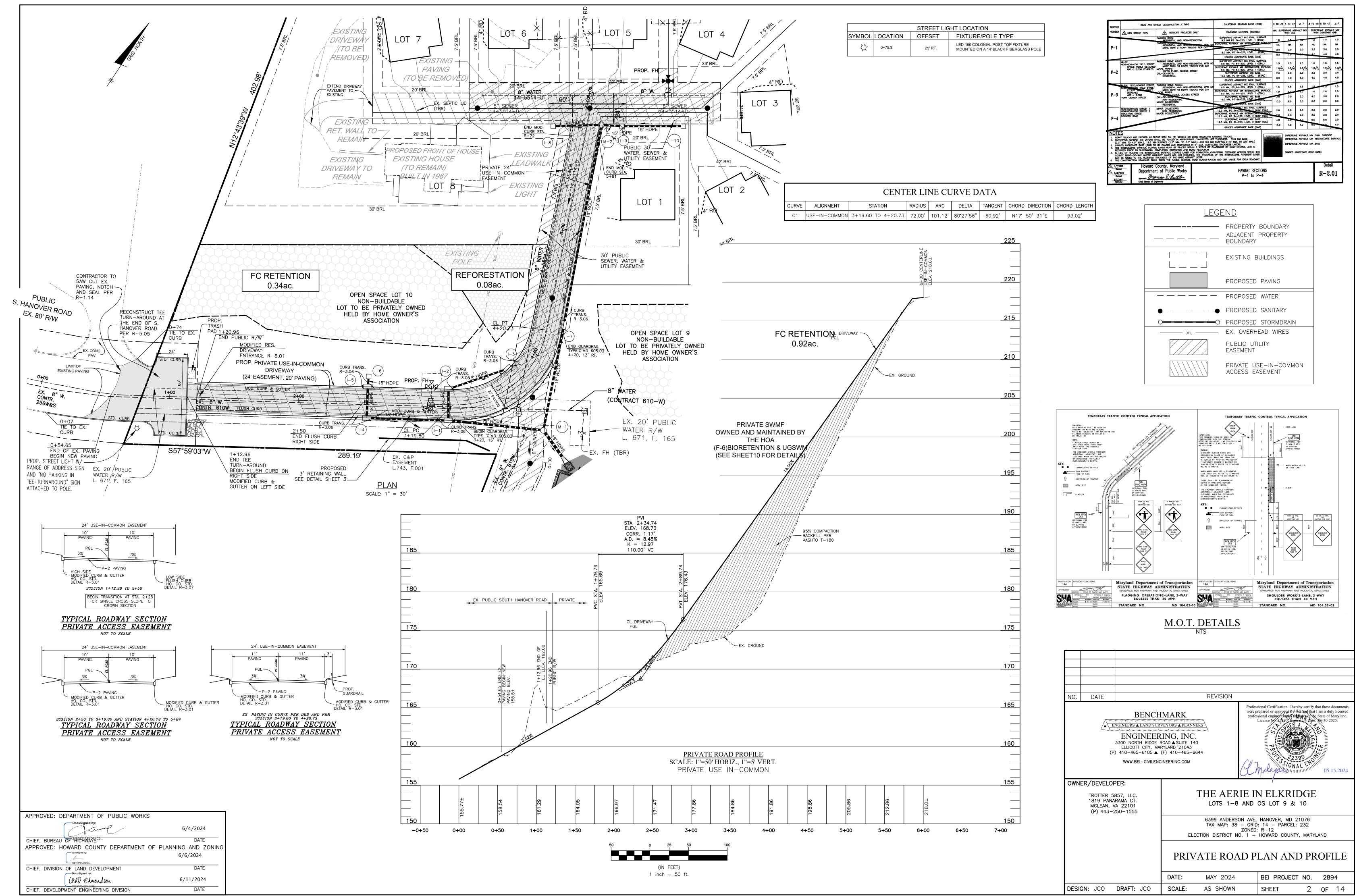
TAX MAP: 38 - GRID: 14 - PARCEL: 232 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

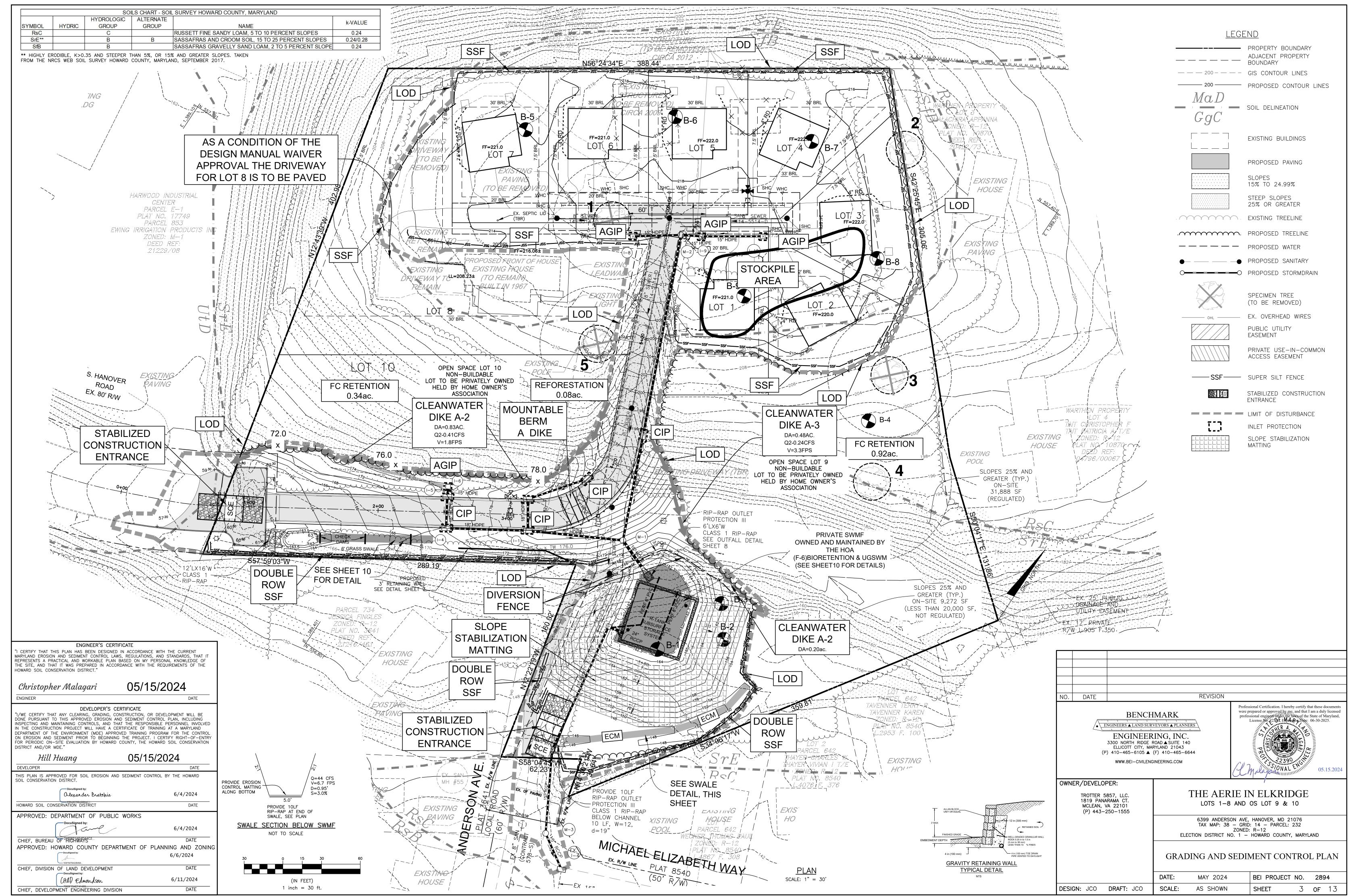
COVER SHEET

MAY 2024 BEI PROJECT NO. 2894

SCALE: AS SHOWN SHEET 1 **o**f 13 F-24-017

J:\2894 Anderson Ave\dwg\7000v5.dwg, 5/6/2024 2:49:43 PM





#### B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS The process of preparing the soils to sustain adequate vegetative stabilization **B-4 STANDARDS AND SPECIFICATION** VEGETATIVE STABILIZATION To provide a suitable soil medium for vegetative growth. Using vegetation as cover to protect exposed soil from erosion

To promote the establishment of vegetation on exposed soil. Conditions Where Practice Applies Temporary Stabilization On all disturbed areas not stabilized by other methods. This specification is divided into sections on stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary

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, 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 runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation increase organic matter content and improve the water holding capacity of the soil and subsequent plan Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to

within the root zone Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment. Adequate Vegetative Establishmen Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, as

receiving waters. Plants will also help protect groundwater supplies by assimilating those substances

reseedings within the 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 INCREMENTAL STABILIZATION

Establishment of vegetative cover on cut and fill slopes. 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

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.

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

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 th 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 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. B-4-5 STANDARDS AND SPECIFICATIONS

To stabilize disturbed soils with permanent vegetation

<u>Purpose</u>

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.

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 b Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for

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 d For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet

special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office

(150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent seeding Summar 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 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 1/2 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

c. Ideal Times of Seeding for Turf Grass Mixture 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)

of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of

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 moving 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 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). General Specifications

consumer protection and assures a pure genetic line.

a. Class of turfgrass must be Maryland State Certified. Sod labels must be made available to the job foreman and 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

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 it

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.

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 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.

HIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Olexander Bratchie

APPROVED: DEPARTMENT OF PUBLIC WORKS

(Hd) Edmondson

HOWARD SOIL CONSERVATION DISTRICT

CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF. BUREAU O

b. After the first week, sod watering is required as necessary to maintain adequate moisture conte 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.

6/4/2024

6/4/2024

6/6/2024

6/11/2024

DATE

DATE

# Conditions Where Practice Applies: Where vegetative stabilization is to be established.

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading. 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. Apply fertilizer and lime as prescribed on the plans.

Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means. Permanent Stabilization a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil i. Soil pH between 6.0 and 7.0.

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. v. Soil contains 1.5 percent minimum organic matter by weight v. Soil contains sufficient pore space to permit adequate root penetration

Application of amendments or topsoil is required if on-site soils do not meet the above 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. pply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

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 aving 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 nnecessary on newly disturbed areas.

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 noisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable so

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 JSDA-NRCS. Topsoiling is limited to areas having 2:1 or flatter slopes where:

The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth. 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. The soil is so acidic that treatment with limestone is not feasible.

reas having slopes steeper than 2:1 require special consideration and design Topsoil Specifications: Soil to be used as topsoil must meet the following criteria: 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. 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. 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 6. Topsoil Application

Erosion and sediment control practices must be maintained when applying topso 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 rected in order to prevent the formation of depressions or water pockets. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition. to proper grading and seedbed preparation. Soil Amendments (Fertilizer and Lime Specifications)

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.

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 propriate 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. Lime materials must be ground limestone (hydrated or burnt lime may be substituted excep 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 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. 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 o

FOR TEMPORARY STABLIZATION

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. 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 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 Controlling the suspension of dust particles from construction activities To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including

<u>Conditions Where Practice Applies</u>

Areas subject to dust blowing and movement where on and off-site damage is likely without treatment <u>Specifications</u>

<u>Mulches:</u> See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3

leeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to Vegetative Cover: See Section B-4-4 Temporary Stabilization. llage: 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.

Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must ot be irrigated to the point that runoff occurs. 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.

Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan **B-4-8 STANDARDS AND SPECIFICATIONS** 

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

6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sedimen ontrol 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.

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

Hill Huang

DEVELOPER

# ENGINEER'S CERTIFICATE

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

Christopher Malagari

**ENGINEER** DEVELOPER'S CERTIFICATE I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE ONE PURSUANT TO THIS APPROVED FROSION AND SEDIMENT CONTROL PLAN INCLUDING

INSPECTING AND MAINTAINING CONTROLS. AND THAT THE RESPONSIBLE PERSONNEL INVOLVED N THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL N EROSION AND SEDIMENT PRIOR TO BÉGINNING THE PROJECT. I CERTIFY RIGHT—OF—ENTRY OR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

05/15/2024

- EARTH FILL MIN. 6 IN OF 2 TO 3 IN
AGGREGATE OVER LENGTH
AND WIDTH OF ENTRANCE -- PIPE (SEE NOTE 6) <u>PROFILE</u> PLAN VIEW

CONSTRUCTION SPECIFICATIONS

. 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 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 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 ydroseeding at any one time. Do not use burnt or hydrated lime when iv. When hydroseeding do not incorporate seed into the soil.

B-4-3 STANDARDS AND SPECIFICATIO

Conditions Where Practice Applies

The application of seed and mulch to establish vegetative cover.

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

permit dissipation of phyto-toxic materials.

FOR SEEDING AND MULCHING

a. All seed must meet the requirements of the Maryland State Seed I aw. All seed must be

subject to re-testing by a recognized seed laboratory. All seed used must have been

any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be

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

above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inocul

chemicals used for weed control until sufficient time has elapsed (14 days min.) to

d. Sod or seed must not be placed on soil which has been treated with soil sterilants or

b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil

a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

available upon request to the inspector to verify type of seed and seeding rate.

tested within the 6 months immediately preceding the date of sowing such material on

culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must

Note: It is very important to keep inoculant as cool as possible until used. Temperature

i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table

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

B.1. Permanent Seeding Table B.3, or site-specific seeding summaries.

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

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 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 plication water holding capacity of 90 percent minimum.

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. 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 wate

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 a specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in vallevs 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.

MOUNTABLE

ISOMETRIC VIEW

25 FT (A DIKE) / 35 FT (B DIKE)

6 IN MIN.

SECTION A-A

PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.

PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.

MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITION DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.

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

tested. Adjustments are usually not needed for the cool-season grasses.

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

Hardiness Zone (from Figure B.3):

ate (lb/ac.)

60

40

Seed Misture (from Table B.3):

Species

Fescue, Tall

Bluegrass, Kentucky

Seeding Rate 1/

96 2.2 1.0

112 2.8 1.0

USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE

Cool-Season Grasse

Multiflorum

Annual Ryegrass (Lolium pe

Barley (Hordeum vulgare)

Wheat (Triticum aestivum

Cereal Rye (Secale cereale

oxtail Millet (Serataria italica

Warm-Season Grasses

BERM

MB

Table B.1: Temporary Seeding for Site Stabilization

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,

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 seeding:

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.

**Permanent Seeding Summary** 

1/4 - 1/2 in

1/4 - 1/2 in

1/4 - 1/2 in

all Fescue/Kentucky Bluegra

Seeding

Aug 1 to Oct 15

Aug 1 to Oct 15

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

Depth 2/

lb/ac lb/1000 ft2 (inches) 5b and 6a

2 TO 3 IN STONE

DETAIL C-8

ONSTRUCTION SPECIFICATIONS

SCE STABILIZED CONSTRUCTION ENTRANCE DETAIL B-4-6-A TEMPORARY SOIL STABILIZATION MOUNTABLE BERM (6 IN MIN.) - EXISTING PAVEMENT IN MIN. OVERLAP\_\_\_ ROLL END NSTRUCTION SPECIFICATIONS ISOMETRIC VIEW

STANDARD SYMBOL

DESIGN SHEER STRESS

T=2.25/sf

(SEE NOTE 9

- 6 IN MIN. OVERLAP

. 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 TIEXISTING ROAD TO PROVIDE A TURNING RADIUS. . 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 A SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINA TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.

PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS 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

ISOMETRIC VIEW

USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.

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 VECETATION AND SECO GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2½2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALC LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.

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 WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ 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.

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.

UNROLL MATTING DOWN SLOPE, LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.

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 DOWNSLOPE MATTER MATTER AND ADMINISTRATION OF THE DOWNSLOPE AND ADMINISTRATION OF THE DOWN

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.

ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

2011 MARYLAND DEPARTMENT OF ENVIRONMEN
WATER MANAGEMENT ADMINISTRATION

├── DF ──

TUV RESISTANT IMPERMEABLE SHEETING ON BOTH SIDES OF FENCE

DIVERSION FENCE

**SECTION** 

USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2% INCH MAXIMUM OPENING

FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.

USE 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE

SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.

EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM O 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.

WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.

7a and 7b

Fertilizer Rate

90 lb/ac

(2 lb/

1000 sf)

P2O5 K2O

90 lb/ac

1000 sf)

1000 sf)

(10-20-20)

per acre

(1.0 lb/

100 sf)

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

**ELEVATION** 

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION

CONSTRUCTION SPECIFICATIONS

GROUND SURFACE—

NSTRUCTION SPECIFICATIONS

Recommended Seeding Dates by Plant Hardiness Zone 3/

6b

Mar 1 to May 15; Aug 1 to Oct 3:

Mar 1 to May 15: Aug 1 to Oct 3:

Mar 1 to May 15; Aug 1 to Oct 3

Mar 1 to May 15; Aug 1 to Nov 1

May 16 to Jul 31

USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM)
NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND
DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. 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
LONGTUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT
MATERIAL. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. 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 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INC SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SWAM HARDWOOD 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM. NSTRUCTION SPECIFICATIONS

SWALE TO INLET I-6

STANDARD SYMBO

SECTION A-A

<del>- w</del> -

SECTION B-B

MAXIMUM DRAINAGE AREA = 1/4 ACRE

SECTION A-A

OF 2 IN x 4 IN

-2 IN x 4 IN SPACE

DETAIL E-3

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

**ROCK OUTLET** 

PROTECTION III

L12 IN MIN.

USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL H BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLITHE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING PIECES OF GEOTEXTILE TOGETHER.

PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (% TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.

EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.

WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.

CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONI SO THAT IT BLENDS IN WITH EXISTING GROUND.

MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIPRAP DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL FROSION AND SEDIMENT CONTROL

2011

6 FT MAX. SPACING OF 2 IN x 4 IN SPACERS 34 TO 1½ STONE -

2 IN x 4 IN ANCHORS, 2 FT MIN. LENGTH

DETAIL E-9-3 CURB INLET PROTECTION

∠2 IN x 4 IN WEIF

USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.

NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).

ATTACH A CONTINUOUS PIECE OF 1/4 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  $2\times4$  WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.

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

FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CUF TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.

AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLE

STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, I CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE CEDITATIE AND STORM

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

2.5" diameter galvanized or aluminum post at 10 ft. spacing.

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.

INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING

∠EDGE OF GUTTER PAN

ISOMETRIC

USE NOMINAL 2 INCH x 4 INCH LUMBER

ONSTRUCTION SPECIFICATIONS

**Detail – SMARTfence® 42** 

Minimum 1.33 lb. per ft., minimum 72-inch length

a of 14 square inches. Place t-posts every 10 f

Figure 1 - Elevation

metal t-posts shall be used. Metal posts shall b

equipped with an anchor plate having a minimu

(5 ft from 2.5" dia. galv. or aluminum posts)

Anchor Plates

THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND LIGHT THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT TO THE FILER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.

2 IN x 4 IN WEIR-

RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.

PLAN VIEW

NSTRUCTION SPECIFICATIONS

**PROFILE** 

OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE A 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE END OF THE SUPER SILT FENCE. 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 CONTRO EARTH DIKE PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIK 2:1 SLOPE OR FLATTER 2:1 SLOPE OR FLATTER-CROSS SECTION

SUPER SILT FENCE

GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE

ELEVATION

CROSS SECTION

INSTALL 2% 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.

FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.

WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.

CHAIN LINK FENCING -

WOVEN SLIT FILM GEOTEXTILE-

EMBED GEOTEXTILE AND CHAIN LINK FENCE 8 IN MIN. INTO GROUND

FLOW \_

⊢—SSF——I

DIKE TYPE CONTINUOUS GRADE 0.5% MIN. TO 10% MAX. SLOPE a - DIKE HEIGHT 18 IN MIN. 30 IN MIN. b - DIKE WIDTH 24 IN MIN. 36 IN MIN. c - FLOW WIDTH 4 FT MIN. 6 FT MIN. d - FLOW DEPTH 12 IN MIN. 24 IN MIN. PLAN VIEW

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

REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.

CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.

MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, A CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL FROSION AND SEDIMENT CONTROL

AT-GRADE INLET AGIP PROTECTION MAXIMUM DRAINAGE AREA = 1 ACRE - ¾ TO 1½ IN STONE NONWOVEN GEOTEXTILE PLAN / CUT AWAY VIEW L6 IN /-- 1/4 IN HARDWARE CLOTH — ¾ TO 1½ IN STONE ─INLET GRATE

CROSS SECTION NSTRUCTION SPECIFICATIONS USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.

PLACE CLEAN 3/4 TO 11/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE 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.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

AMARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

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NATURAL RESOURCES CONSERVATION SERVICE

MARYLAND DEPARTMENT OF AGRICULTURE
WATER MANAGEMENT ADMINISTRATION 2011 MARYLAND DEPARTMENT OF ENVI WATER MANAGEMENT ADMINISTI

CONSTRUCTION SPECIFICATIONS

mum 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

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

**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

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

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 fasteningthe 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 faut, then rotating the post 360 degrees, maintaining tension on the fence system. Secure the fence to the post at all four (4) orange 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 manua step 3. Take the obtains of market market between the distriction and the state of the state of

**SMARTfence42 MAY BE USED IN LIEU** OF SUPER SILT FENCE AT THE DESCRETION OF THE CONTRACTOR

# 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: PRIOR TO THE START OF EARTH DISTURBANCE UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT EFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING . PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING 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 HIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO

DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 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 ANI 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 ALONI 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

. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATIOI

IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS,

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:

AREA DISTURBED: ARE FOR SEDIMENT AREA TO BE ROOFED OR PAVED: ACRES CONTROL PURPOSES AREA TO BE VEGETATIVELY STABILIZED: ONLY. CONTRACTOR TOTAL CUT TOTAL FILL SITE WITH ACTIVE GP OFFSITE WASTE/BORROW AREA LOCATION: ' ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

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)  $^\circ$  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

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

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). 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. IO. 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.

I. 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 JNIT) 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 AN 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, AND BE IMBRICATED AT 25' MINIMUM INTERVALS. WITH LOWER FNDS CURLED UPHILL BY 2' IN FLEVATION.

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 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. REV. 8/2015

### SEQUENCE OF CONSTRUCTION NOTIFY SEDIMENT CONTROL DIVISION 48 HOUR

PRIOR TO START OF CONSTRUCTION DURATION 1.) OBTAIN GRADING PERMIT. DAY 1 2.) INSTALL PERIMETER SEDIMENT CONTROLS (SUPER SILT FENCE, CLEANWATER EARTH DIKES DAY 2 - 5 AND STABILIZED CONSTRUCTION ENTRANCE. 3.) WITH PERIMETER CONTROLS IN PLACE BEGIN REMOVAL OF EXISTING ONSITE PAVING DAY 6 - 13 AND STRUCTURES. 4.) CLEAR AND GRUB SITE. DAY 6 - 13 DAY 14 - 21 5.) ROUGH GRADE FOR ROAD, TEE AND COMMON DRIVEWAY & MASS GRADE SITE AS

6.) INSTALL SEWER & WATER MAINS AND INSTALL STORM DRAIN SYSTEMS. 7.) WITH SITE MASS GRADED, INSTALL DIVERSION FENCING ABOVE BIORETENTION FACILITY AND CONSTRUCT FACILITY. COVER BIO MEDIA WITH SILT CLOTH TO AVOID SOIL CONTAMINATION UNTIL GRADING IS COMPLETED AND STABILIZED. 8.) INSTALL CURB & GUTTER AS APPLICABLE.

DAY 52 - 59 9.) PAVE USE-IN-COMMON DRIVE AND ROAD AND STABILIZE REMAINING AREAS. DAY 60 - 67 10.) WITH AREAS STABILIZE COMPLETE SWM FACILITY. WHEN STABILIZATION IS DAY 68 - 71 COMPLETE, CONSTRUCT SWALE AT THE TOE OF THE EMBANKMENT BELOW FACILITY AND INSTALL PERMANENT EROSION CONTROL MATTING. DAY 72 - 78

11.) INSTALL PERIMETER LANDSCAPING PER LANDSCAPE PLAN. 12.) WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE ANY REMAINING DISTURBED AREAS. DAY 79 - 82

TEMPORARY EROSION CONTROL MATTING SHALL BE PLACED IN SWALES WHERE DEEMED NECESSARY UNTIL VEGETATION IS ESTABLISHED OR SOLID SOD SHOULD BE USED.

REVISION NO. I DATE 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

DESIGN: JCO DRAFT: JCO



BEI PROJECT NO. 2894

4 of 13

SHEET

DAY 22 - 36

DAY 37 - 51

OWNER/DEVELOPER:	
TROTTER 5857, LLC. 1819 PANARAMA CT. MCLEAN, VA 22101 (P) 443-250-1555	THE AERIE IN ELKRIDGE LOTS 1-8 AND OS LOT 9 & 10
	6399 ANDERSON AVE, HANOVER, MD 21076 TAX MAP: 38 — GRID: 14 — PARCEL: 232 ZONED: R-12 ELECTION DISTRICT NO. 1 — HOWARD COUNTY, MARYLAND
	SEDIMENT AND EROSION CONTROL NO AND DETAILS

SCALE:

MAY 2024

AS SHOWN

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#### REFORESTATION PLAN

#### A. Planting Plan and Methods

Plant species selection was based on our knowledge regarding plant communities in Maryland's Piedmont Plateau and information provided in the soil survey on typical vegetation for the soil type on the planting site. Species selection was also based on our knowledge of plant availability in the nursery industry.

Reforestation will be accomplished through a mixed planting of whips and branched transplants. Container grown stock is recommended but bareroot stock may be used to help control afforestation costs. If bareroot stock is used the root systems of all plants will be dipped in an anti-desiccant gel prior to planting to improve moisture retention in the root systems.

Prior to planting the proposed Forest Conservation Easements all multiflora rose in the planting area shall be removed. Removal of the rose may be performed with mowing and herbicide treatments. Physical removal of all top growth following by a periodic herbicide treatment of stump sprouts is recommended. Native tree and shrub species occurring within the rose thickets should be retained wherever possible. Herbicides treatments shall occur on 2 month intervals during the first growing season and once each in the spring and fall for subsequent years. Herbicide used shall be made specifically to address woody plant material and shall be applied as per manufacturers specifications. Care should be taken not to spray planted trees or naturally occurring native tree/shrub seedlings. It is recommended that initiation of rose removal begin at least six months prior to planting.

### B. Planting and Soil Specifications

Plant material will be installed in accordance with the Planting Detail and Planting Specifications shown on the Forest Conservation Plan.

Amendments to existing soil will be in accordance with the Planting Specifications shown on the Forest Conservation Plan. Soil disturbance will be limited to individual planting locations.

### C. Maintenance of Plantings

For information regarding maintenance of the reforestation plantings, see Post Construction Management Plans.

### D. Guarantee Requirements

A 90 percent survival rate of the reforestation plantings will be required after one growing season. All plant material below the 90 percent survival threshold will be replaced at the beginning of the second growing season. At the end of the second growing season, a 75 percent survival rate will be required. All plant material below the 75 percent survival threshold will be replaced by the beginning of the next growing season.

### E. Security for Reforestation

Section 16-1209 of the Howard County Forest Conservation Act requires that a developer shall post a security (bond, letter of credit, etc.) with the County to insure that all work is done in accordance with the FCP.

# PLANTING SCHEDULE

## FCE # 1 - 0.1 acres Planting Units Required: 70

Qty	Species	Size	Spacing	Total FCA Units
4	Liriodendron tulipifera - Tulip poplar **	5-6' cont.	15' o.c.	
4	Nyssa sylvatica - Black gum	5-6' cont.	15' o.c.	
4	Prunus serotina - Black cherry	5-6' cont.	15' o.c.	
4	Quercus alba - White oak	5-6' cont.	15' o.c.	
4	Viburnum prunifolium - Blackhaw	5-6' cont.	15' o.c.	
20	Total whip pla	ntings x 2 units /tre	e = FCA unit credit	70
		T ota	I Unit Credit	70

# Specimen Tree Mitigation

Qty	Species	Size	Spacing
4	Quercus alba - White oak	2-3" cal.	as shown
2	Quercus prinus - Chestnut oak	2-3" cal.	as shown

# Planting Notes:

- Planting density based on 700 planting units per acre. 2" caliper trees = 7 planting units, 1" caliper trees = 3.5 planting units, whips with shelter = 2 planting units.
- Planting shall be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance
- Multiflora rose/heavy brush removal/control may be required prior to installation of
- All trees are required to be installed with tree shelters per Howard County FCA

### CONSTRUCTION PERIOD PROTECTION PROGRAM

The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of a its roots may be found. The majority of roots responsible for water and nutrient uptake are located just below the soil surface. Temporary fencing shall be placed around the critical root zone of the

### 2. Fencing and Signage

Existing forest limits occurring within 25 feet of the limits of disturbance shall be protected using temporary protective fencing. Permanent signage shall be

### B. Pre-Construction Meeting

Upon staking of limits of disturbance a pre-construction meeting will be held between the developer, contractor and appropriate County inspector. The purpose of the meeting will be to verify that all sediment control is in order, and to notify the contractor of possible penalties for non-compliance with the FCP.

### C. Storage Facilities/Equipment Cleaning

All equipment storage, parking, sanitary facilities, material stockpiling, etc. associated with construction of the project will be restricted to those areas outside of the proposed Forest Conservation Easement. Cleaning of equipment will be limited to area within the LOD of the proposed homesites. Wastewater resulting from equipment cleaning will be controlled to prevent runoff into environmentally sensitive areas.

### D. Sequence of Construction

The following timetable represents the proposed timetable for development. The items outlined in the Forest Conservation Plan will be enacted within three

- 3. Build access roads, install well and septic systems, and construct houses. Stabilize all disturbed areas accordingly.

4.Begin multiflora rose removal. Install permanent protective signage for Easements and initiate plantings in accordance with Conservation Plan. Plantings will be completed within three (3) years of subdivision approval.

### 5. Remove sediment control.

### 7. Monitor and maintain plantings for 3 years.

are in compliance with the Forest Conservation Plan.

# F. Post-Construction Meeting

Upon completion of construction, Eco-Science Professionals, or another qualified professional designated by the developer, will notify the County that construction has been completed and arrange for a post-construction meeting to review the project site. The meeting will allow the County inspector to verify that afforestation plantings have been installed.

MINIMUM 2" STEEL U CHANNEL OR 2"X2" TIMBER, 6' IN LENGTH

## A. Forest Protection Techniques

### 1. Soil Protection Area (Critical Root Zone)

forest in areas where the forest limits occur within 25 feet of the limit of disturbance.

placed around the afforestation area prior to plant installation, as shown on the plan.

(3) years of subdivision approval.

### Below find a proposed sequence of construction.

### 1. Install all signage and sediment control devices.

- 2. Hold pre-construction meeting between developer, contractor and County inspector.

6. Hold post-construction meeting with County inspectors to assure compliance with FCP. Submit Certification of Installation.

## E. Construction Monitoring

Eco-Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities

CRITICAL ROOT ZONE

Source: Adapted from Steve Clark & Associates/ACRT, Inc. and Forest Conservation Manual, 1991

Root Pruning

**Undisturbed Soil** 

**Disturbed Soil** 

Planting on Slope

Container Grown and B&B Planting Techniques

# FOREST CONSERVATION WORKSHEET FOR 6399 ANDERSON ROAD

POST-CONSTRUCTION MANAGEMENT PLAN

The following items will be incorporated into the plan:

B. General Site Inspections/Maintenance of Plantings

management plan.

A. Fencing and Signage

4. Pruning of dead branches.

C. Education

D. Final Inspection

obligations and release the developer's bond.

Howard County requires a two year post-construction management plan be prepared as part of the forest conservation plan. The plan goes into effect upon acceptance of the construction certification of completion by the County. Eco-Science Professionals, or

Site inspections will be performed a minimum of three times during the growing season. The purpose of the inspections will be to

1. Watering - All plant material shall be watered twice a month during the 1st growing season, more or less frequently depending

5. After 12 and 24 months, replacement of plants, if required, in accordance with the Guarantee Requirements shown on the FCP.

The developer will provide appropriate materials to property owners informing them of the location and purpose of the afforestation

At the end of the two year post-construction management period, Eco-Science Professionals, or another qualified professional, will

submit to the administrator of the Howard County Forest Conservation Program certification that all retention/afforestation

requirements have been met. Upon acceptance of this certification, the County will release the developer from all future

on weather conditions. During the second growing season, once a month during May-September, if needed.

area. Materials may include site plans and information explaining the intent of the forest conservation law.

1.9

2. Removal of invasive exotics and noxious weeds. Old field successional species will be retained.

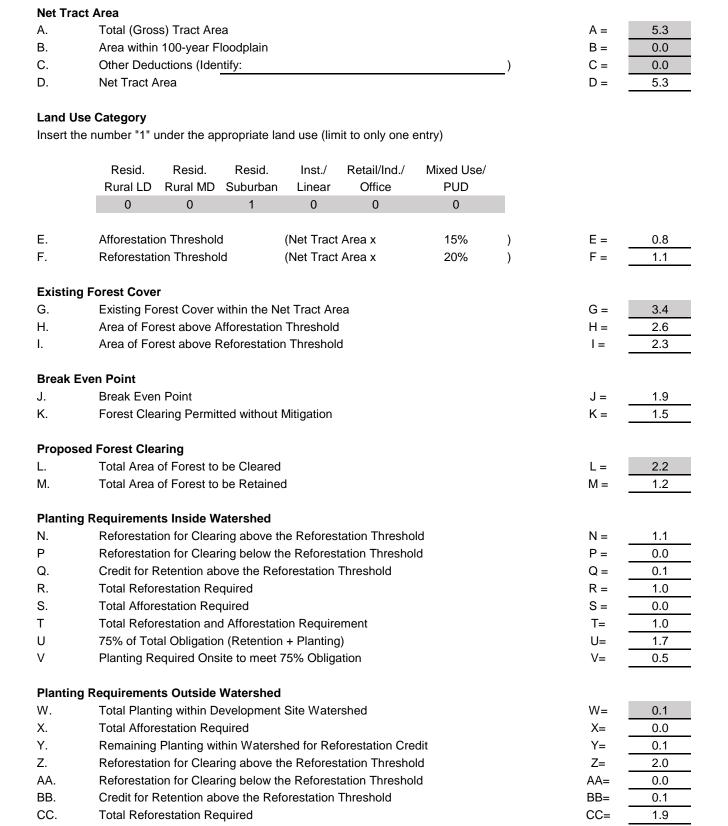
assess the health of the afforestation plantings. Appropriate measures will be taken to rectify any problems which may arise.

another qualified professional designated by the developer, will be responsible for implementation of the post-construction

Permanent signage indicating the limits of the retention/reforestation area shall be maintained.

In addition, maintenance of the afforestation plantings will involve the following steps:

3.Identification of serious plant pests and diseases, treatment with appropriate agent.



Credit for Retention above the Reforestation Threshold Total Reforestation Required

Total Afforestation and Reforestation Requirement

# Date: 8/28/23

# Violators are subject to fines as imposed by the Howard County Forest Conservation Act For more information or to report violations, please call Howard County Department of Recreation and Parks 410-313-4725 TTY 410-313-4665 1. Signs to be a minimum of 11" wide by 15" high. 2. Place signs on metal or wood posts 5' above finished grade. 3. Place forest conservation area signs at 50' to 100' on center and at change of direction around the perimeter of the forest conservation easement. 4. Do not attach signs to trees. Source: Howard County Department of Planning and Zoning

Figure E-2:
Forest Conservation Easement Signs (continued)

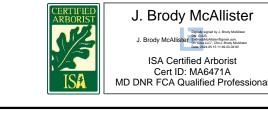
**FOREST** 

CONSERVATION

Dumping, Machinery, or Storage of Materials, Cutting or Disturbance of Vegetation or Soil in this Area

IS STRICTLY PROHIBITED

**Eco-Science** Professionals, Inc. CONSULTING ECOLOGIST Telephone (410) 683-7840



REVISION NO. DATE 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

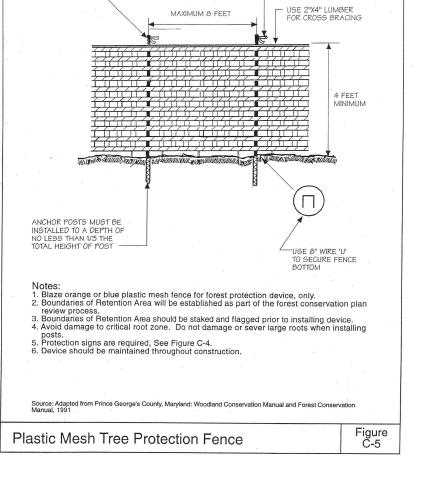
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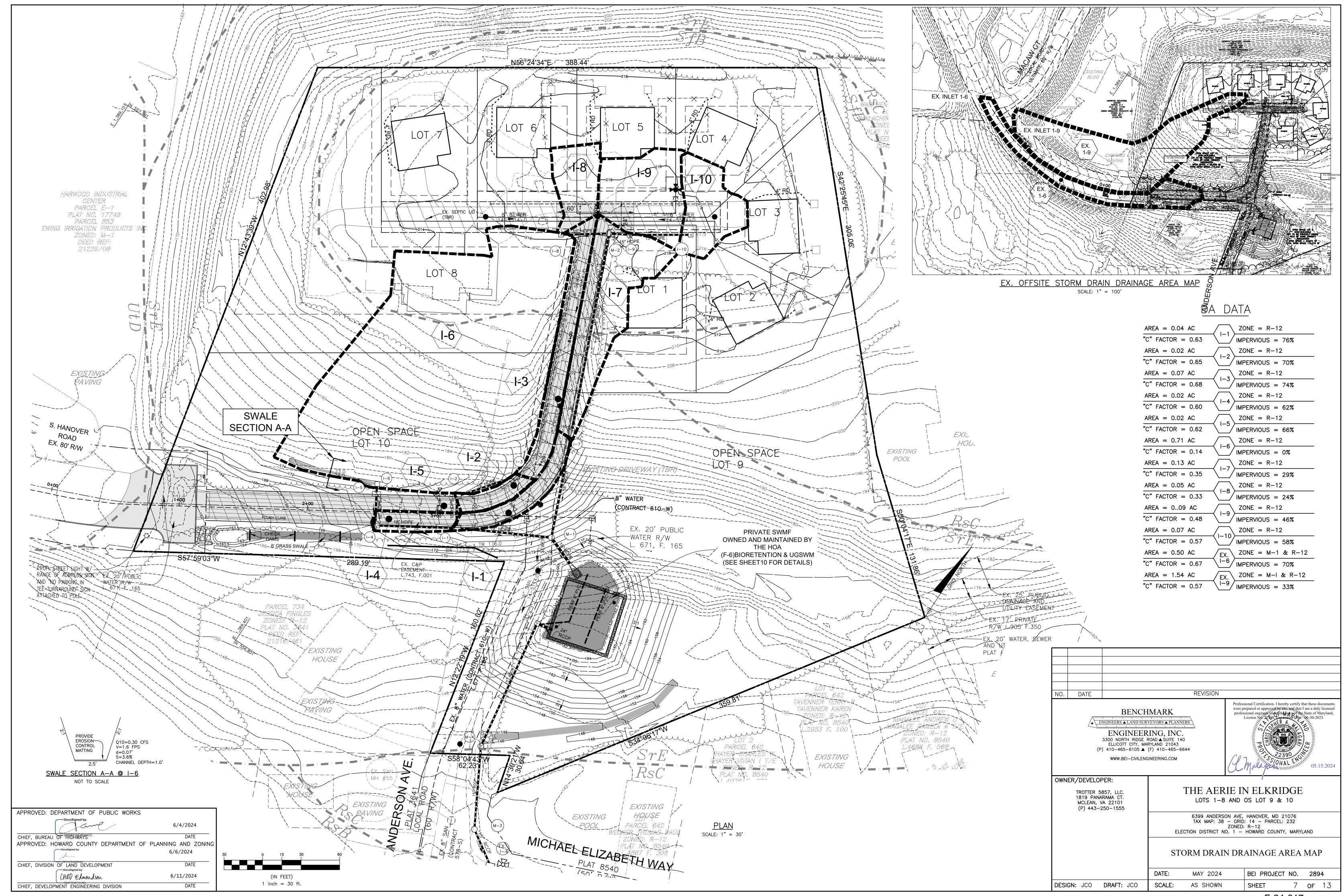
OWNER/DEVELOPER: THE AERIE IN ELKRIDGE AMENDED TROTTER 5857, LLC. 1819 PANARAMA CT LOTS 1-8 AND OS LOT 9 & 10 MCLEAN, VA 22101 (P) 443-250-1555 6399 ANDERSON AVE, HANOVER, MD 21076 TAX MAP: 38 - GRID: 14 - PARCEL: 232 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND FINAL ROAD CONSTRUCTION PLAN

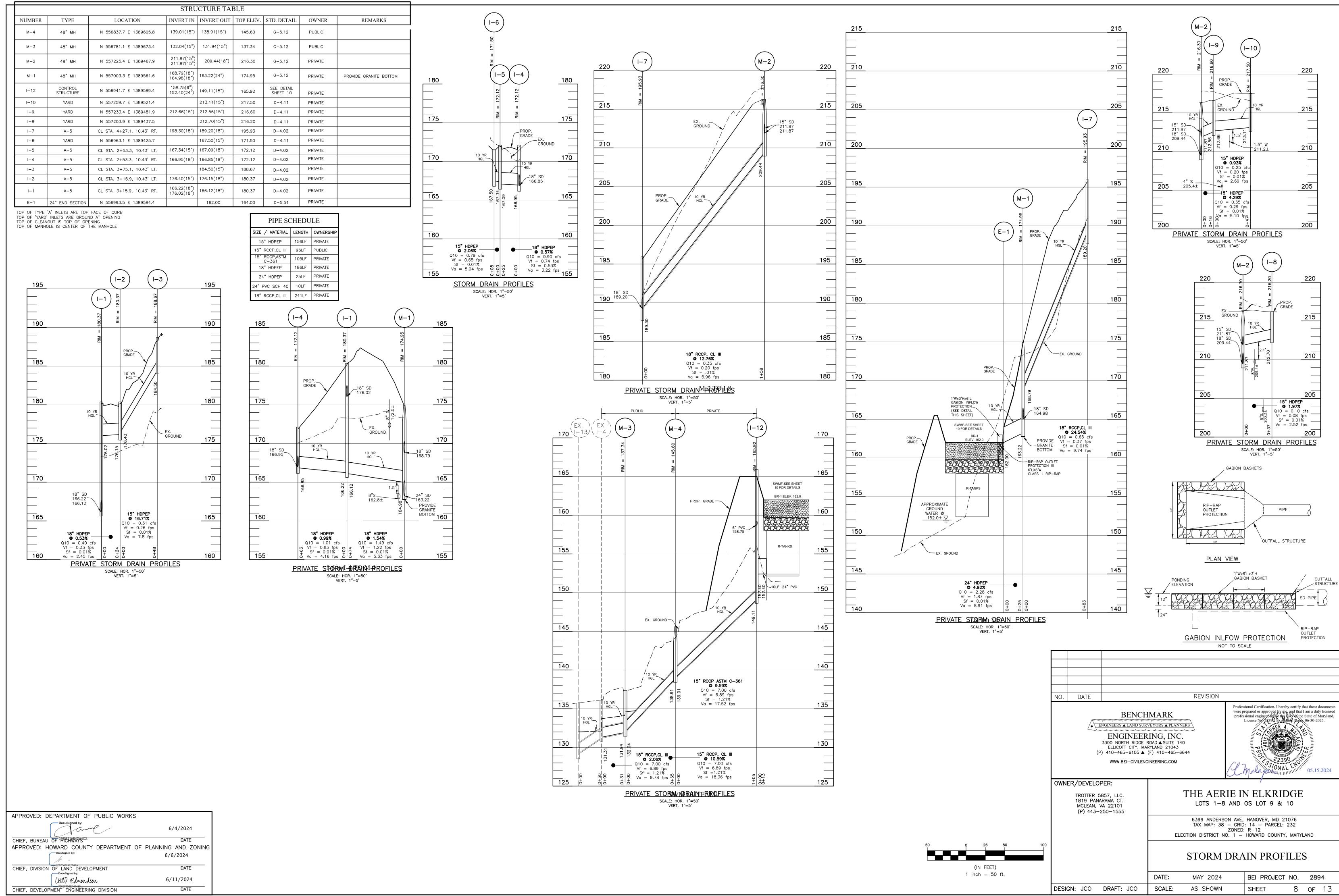
FOREST CONSERVATION PLAN DATE: SEPTEMBER 2023 BEI PROJECT NO. 2894 SCALE: AS SHOWN SHEET 6 **o**F 13

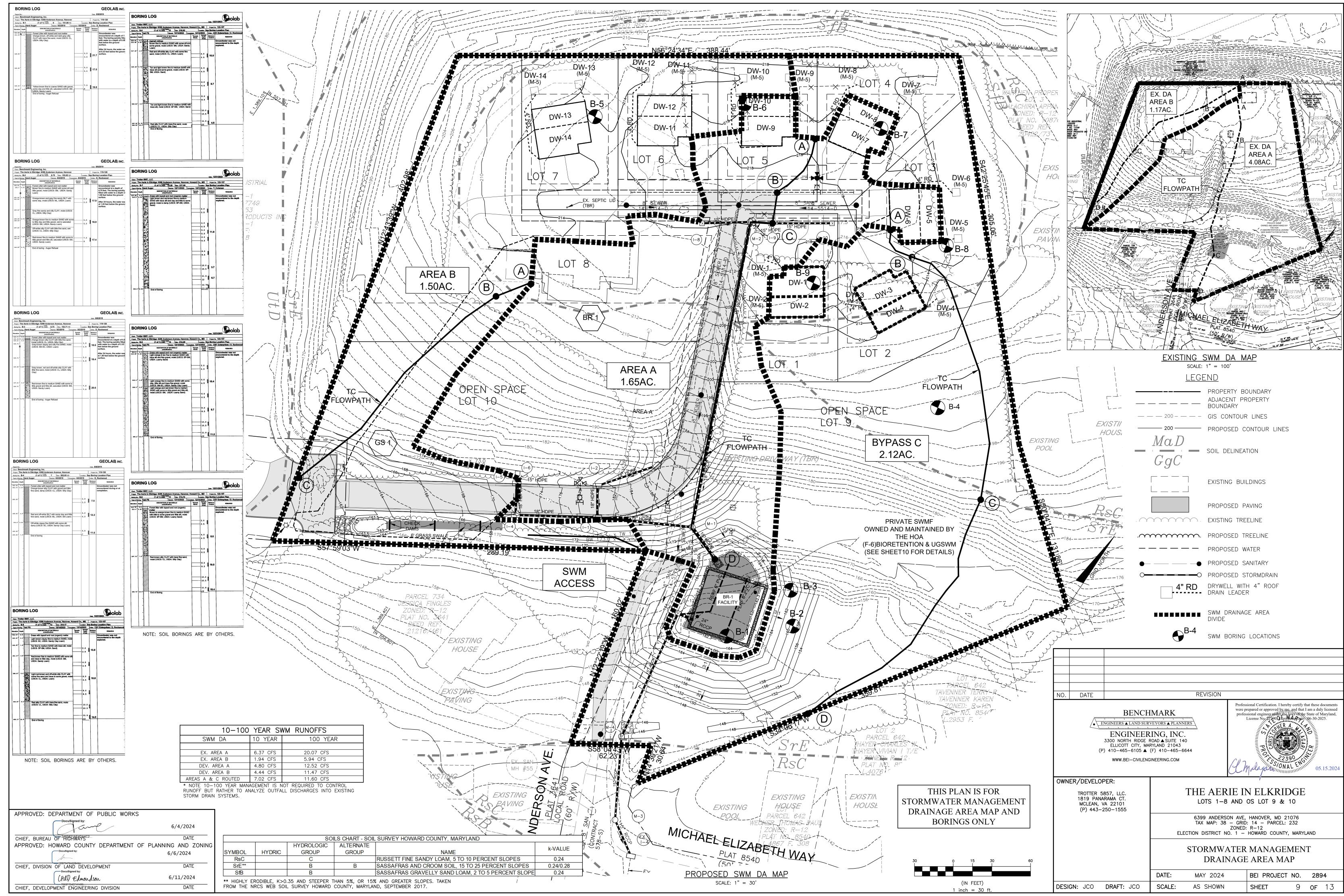
APPROVED: DEPARTMENT OF PUBLIC WORKS 6/4/2024 CHIEF, BUREAU OF APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 6/6/2024 CHIEF, DIVISION OF LAND DEVELOPMENT (Hal) Edmondson 6/11/2024 DATE CHIEF, DEVELOPMENT ENGINEERING DIVISION

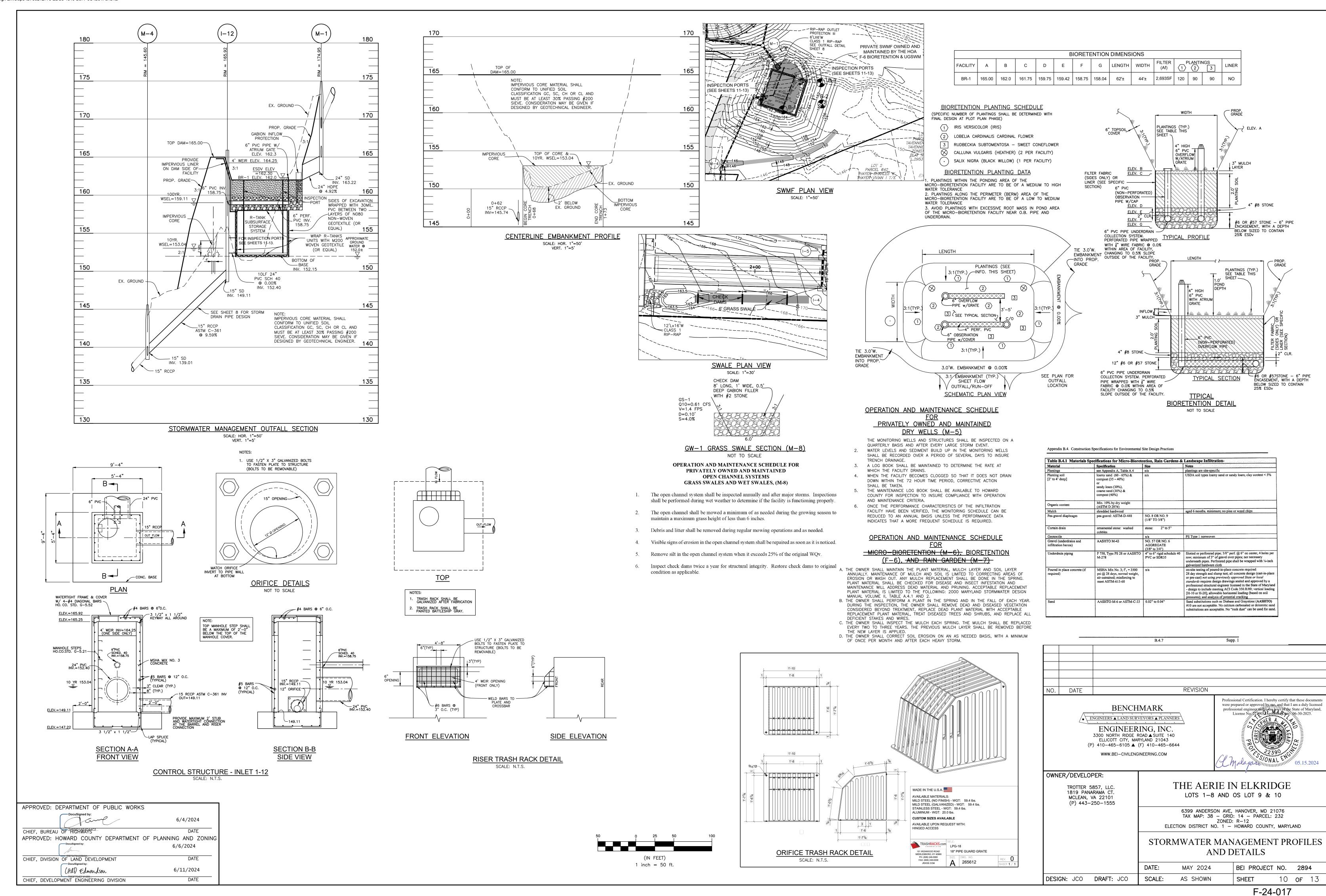


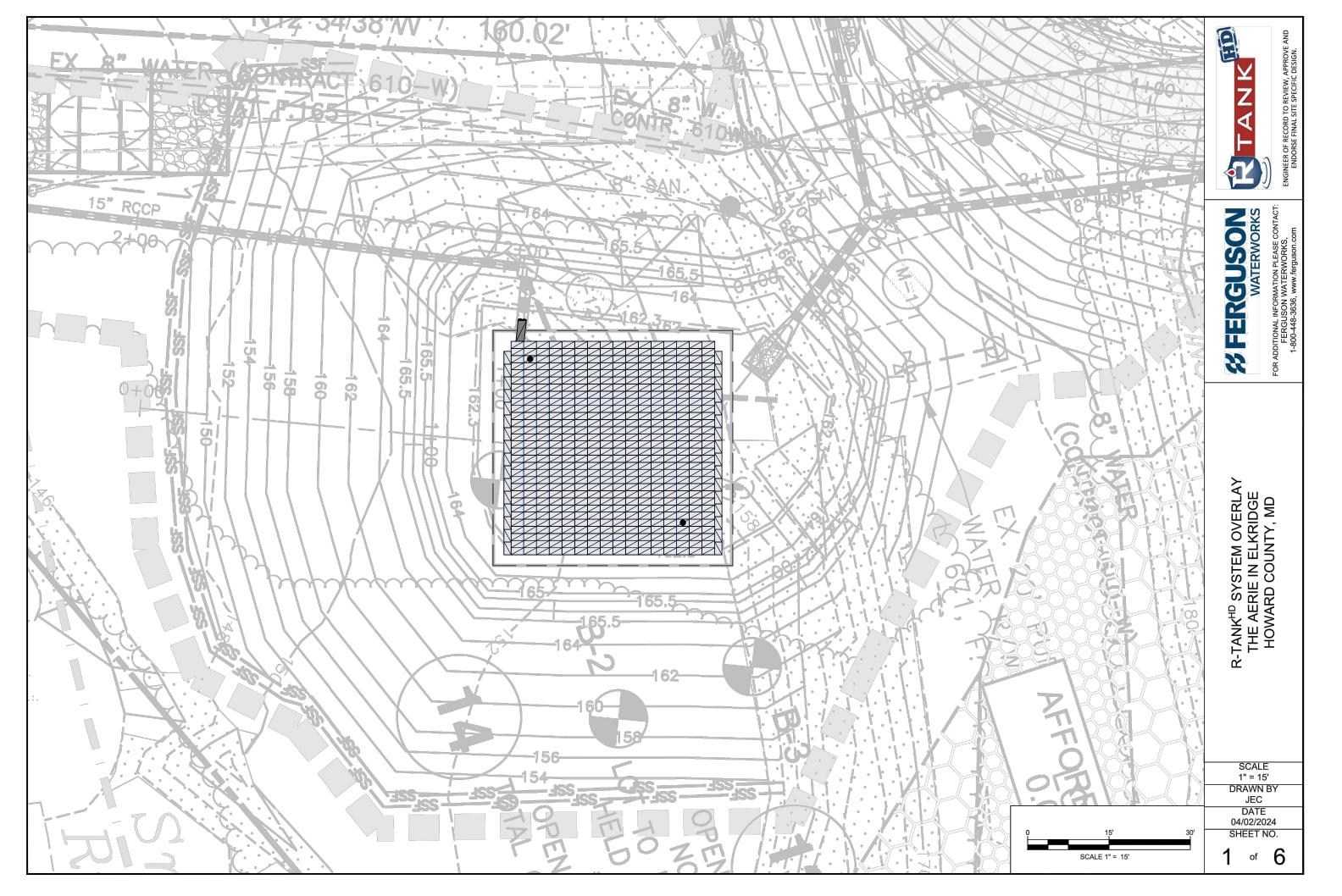


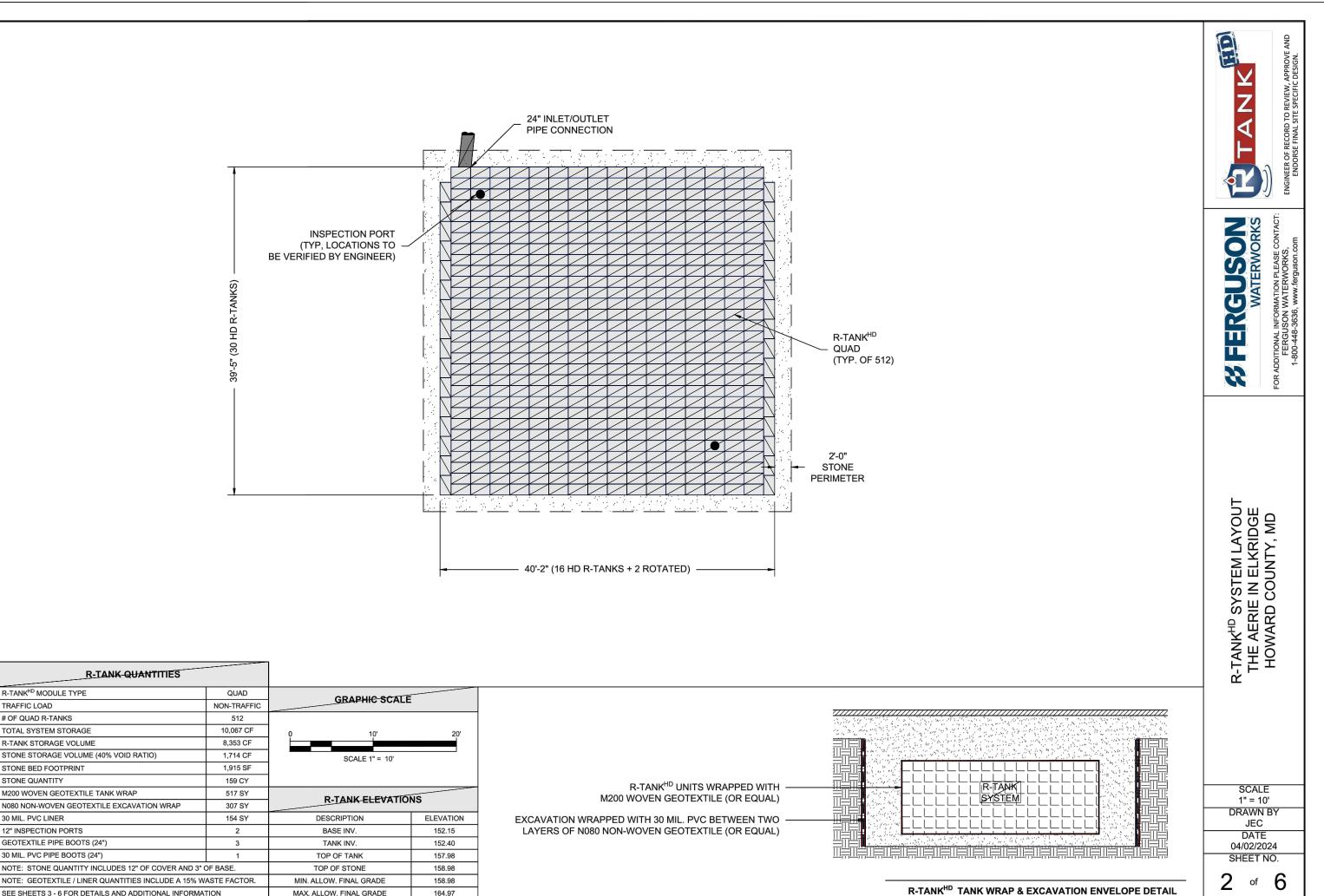












J. Chris Ogle Project Manager Benchmark Engineering, Inc. 3300 N. Ridge Road, Suite 140 Ellicott City, MD 21043

Ferguson Waterworks 2831 Cardwell Rd Richmond, VA 23234

SUBJECT: The Aerie in Elkridge Amended – Howard County, MD R-Tank - Plan Review and Construction Oversight Commitment

Thank you for forwarding the permit plans for The Aerie in Elkridge Amended – Howard County, Maryland to Ferguson Waterworks (formerly ACF Environmental) for review of the proposed R-Tank Subsurface storage system.

Our team has reviewed the Final Grading Plans and Stormwater Management Profiles and Details with the a plan date of May 2024, which identifies one R-Tank system. The system ("R-tank Subsurface Storage System") consists of 512 "Quad" R-TankHD modules.

These plans include all the details and specification information necessary for both the permitting and construction of the subsurface storage system.

The cover over the system fits within the allowable cover limits.

The tanks are to be fully wrapped with an M200 Woven Geotextile and the sides of the excavation is to be wrapped with 30 mil. PVC between two layers of N080 Non-Woven

An appropriate number of inspection ports have been provided.

Overall, Ferguson takes no exceptions to the location and application of the R-Tank system

With regard to the installation, Ferguson will host a preconstruction meeting with the site contractor and will visit the site several times during the installation to ensure the installation is being conducted in accordance with our standard installation procedures and specifications.

**1 |** Page

**FERGUSON**Please review and contact me with any questions from your office.

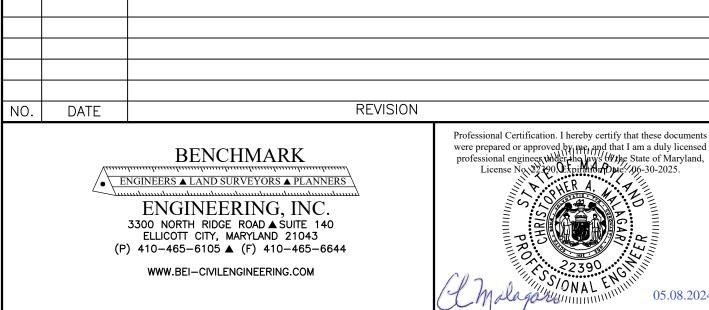
We look forward to working with you on this project.

Stephen Shiffer, PE Green Stormwater Infrastructure (GSI) Specialist Ferguson Waterworks

Cc: Jameson Copeland, Ferguson Waterworks Jason Bailey, PE, Ferguson Waterworks

\*BEI SIGNATURE/SEAL IS FOR CONFORMATION THAT THE R-TANK DESIGN IS BEING UTILIZED FOR SUBSURFACE STORMWATER STORAGE. CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING WITH FERGUSON WATERWORKS AND OBTAIN ALL NECESSARY INFORMATION FROM THEM TO ENSURE THE INSTALLATION IS BEING CONDUCTED IN ACCORDANCE WITH THEIR STANDARD INSTALLATION PROCEDURES AND SPECIFICATIONS.

**2 |** Page



OWNER/DEVELOPER: THE AERIE IN ELKRIDGE TROTTER 5857, LLC. 1819 PANARAMA CT. LOTS 1-8 AND OS LOT 9 & 10 MCLEAN, VA 22101 (P) 443-250-1555 6399 ANDERSON AVE, HANOVER, MD 21076 TAX MAP: 38 — GRID: 14 — PARCEL: 232 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND UGSWM (R-TANKS)

SCALE:

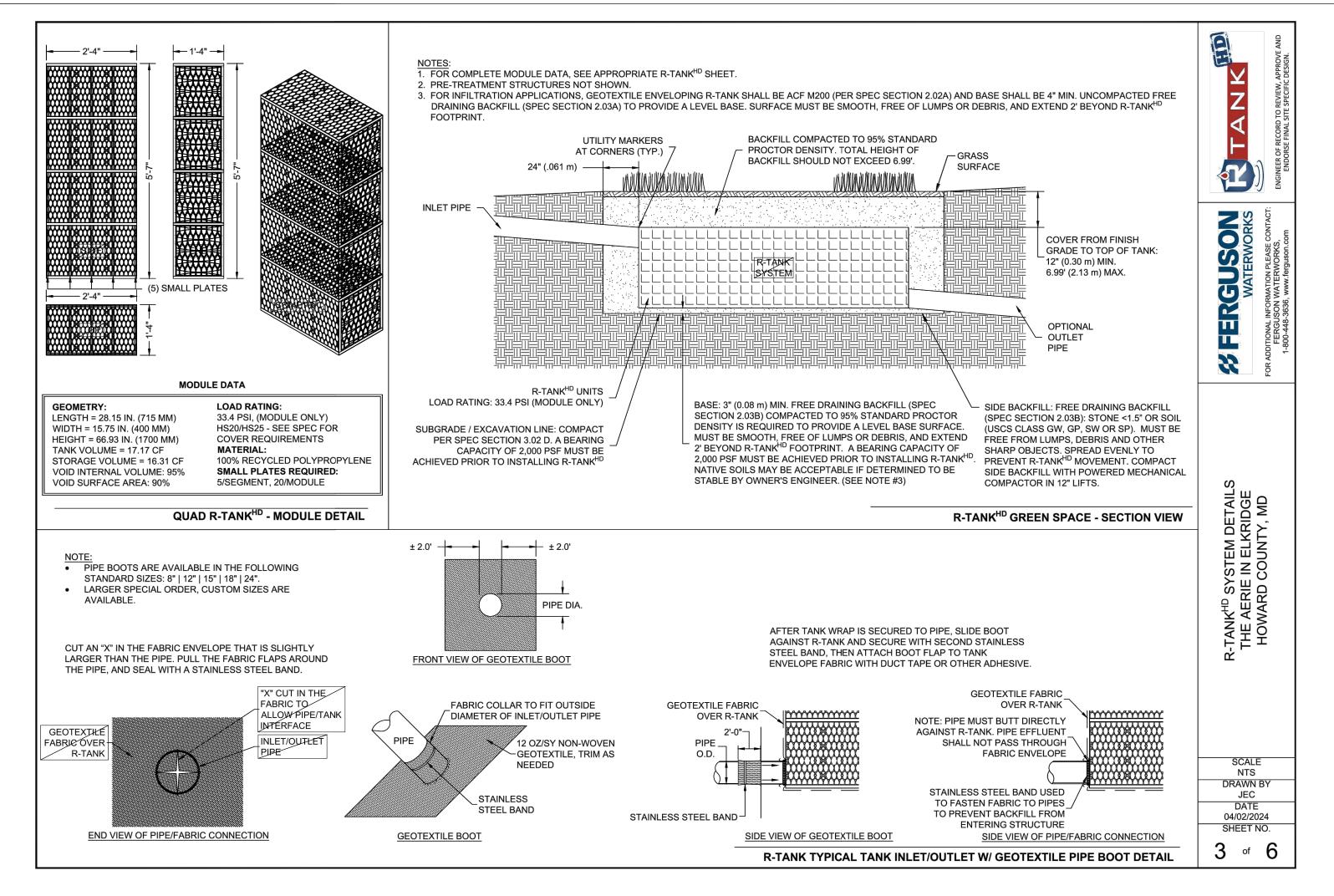
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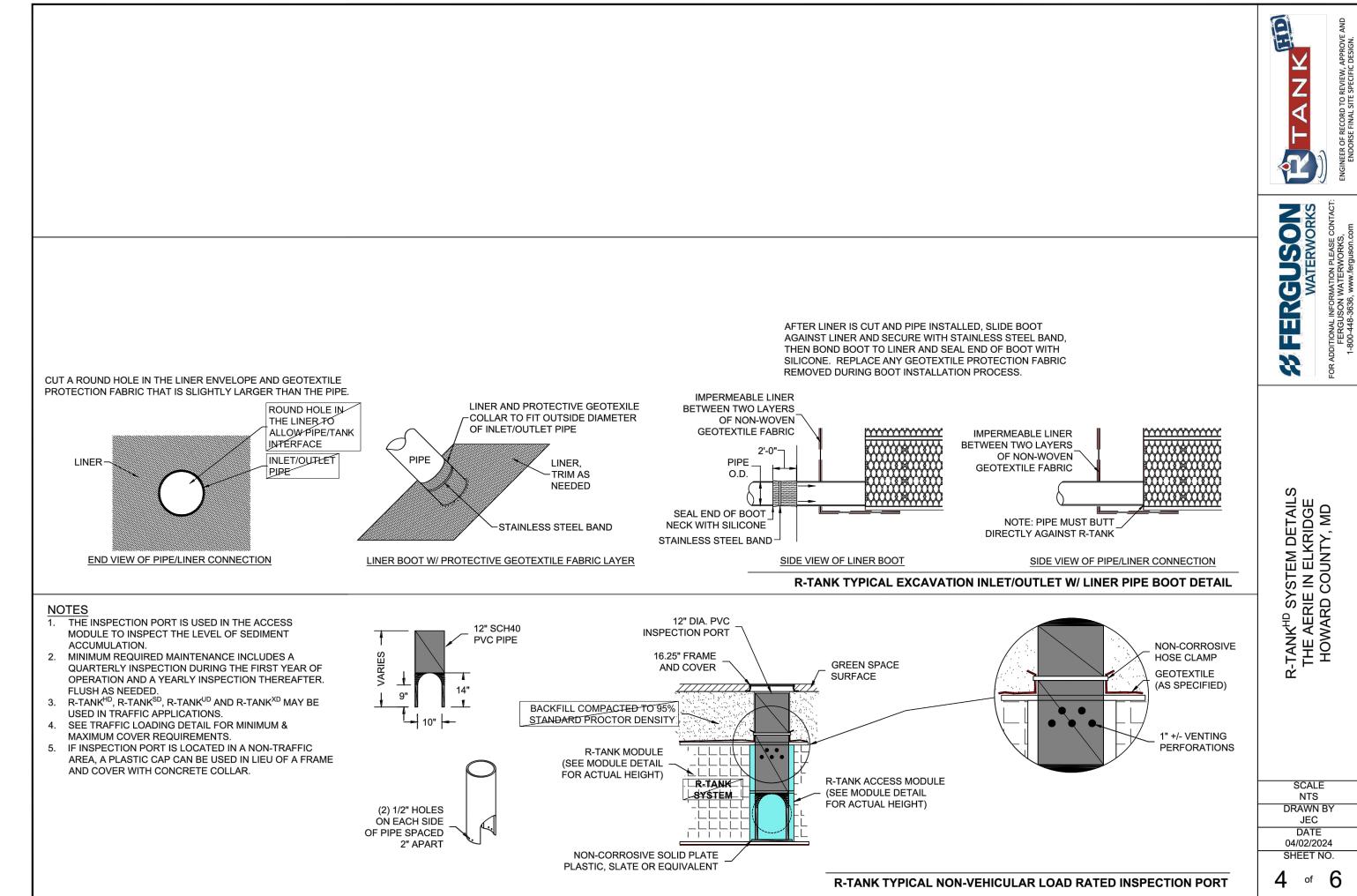
BY OTHERS BEI PROJECT NO. 2894 MAY 2024 AS SHOWN SHEET 11 of 13

6/4/2024 CHIEF, BUREAU OF THIGHWAYS APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 6/6/2024 CHIEF, DIVISION OF LAND DEVELOPMENT CHAD Edmondson 6/11/2024 DATE CHIEF, DEVELOPMENT ENGINEERING DIVISION

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APPROVED: DEPARTMENT OF PUBLIC WORKS





Richmond, VA 23234 J. Chris Ogle Project Manager Benchmark Engineering, Inc. 3300 N. Ridge Road, Suite 140

May 7, 2024

Ellicott City, MD 21043

Ferguson Waterworks

2831 Cardwell Rd

SUBJECT: The Aerie in Elkridge Amended – Howard County, MD R-Tank - Plan Review and Construction Oversight Commitment

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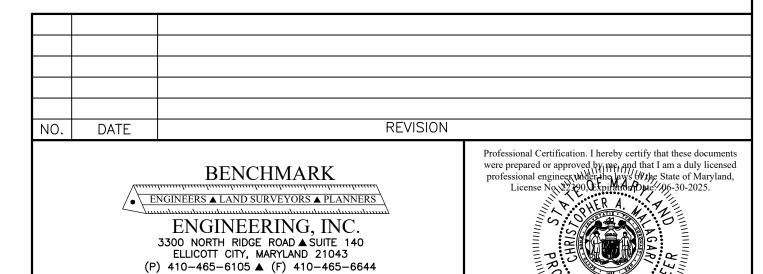
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**2 |** Page



OWNER/DEVELOPER: TROTTER 5857, LLC. 1819 PANARAMA CT. MCLEAN, VA 22101 (P) 443-250-1555

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THE AERIE IN ELKRIDGE LOTS 1-8 AND OS LOT 9 & 10

6399 ANDERSON AVE, HANOVER, MD 21076 TAX MAP: 38 - GRID: 14 - PARCEL: 232 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

> UGSWM (R-TANKS) BY OTHERS

> > F-24-017

BEI PROJECT NO. 2894 MAY 2024 DESIGN: JCO DRAFT: JCO SCALE: AS SHOWN 12 of 13 SHEET

APPROVED: DEPARTMENT OF PUBLIC WORKS 6/4/2024 CHIEF, BUREAU OF THIGHWAYS APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 6/6/2024 CHIEF, DIVISION OF LAND DEVELOPMENT 6/11/2024 (HD) Edmondson DATE CHIEF, DEVELOPMENT ENGINEERING DIVISION

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APPROVED: DEPARTMENT OF PUBLIC WORKS

(HD) Edmondson

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

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CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION

6/4/2024

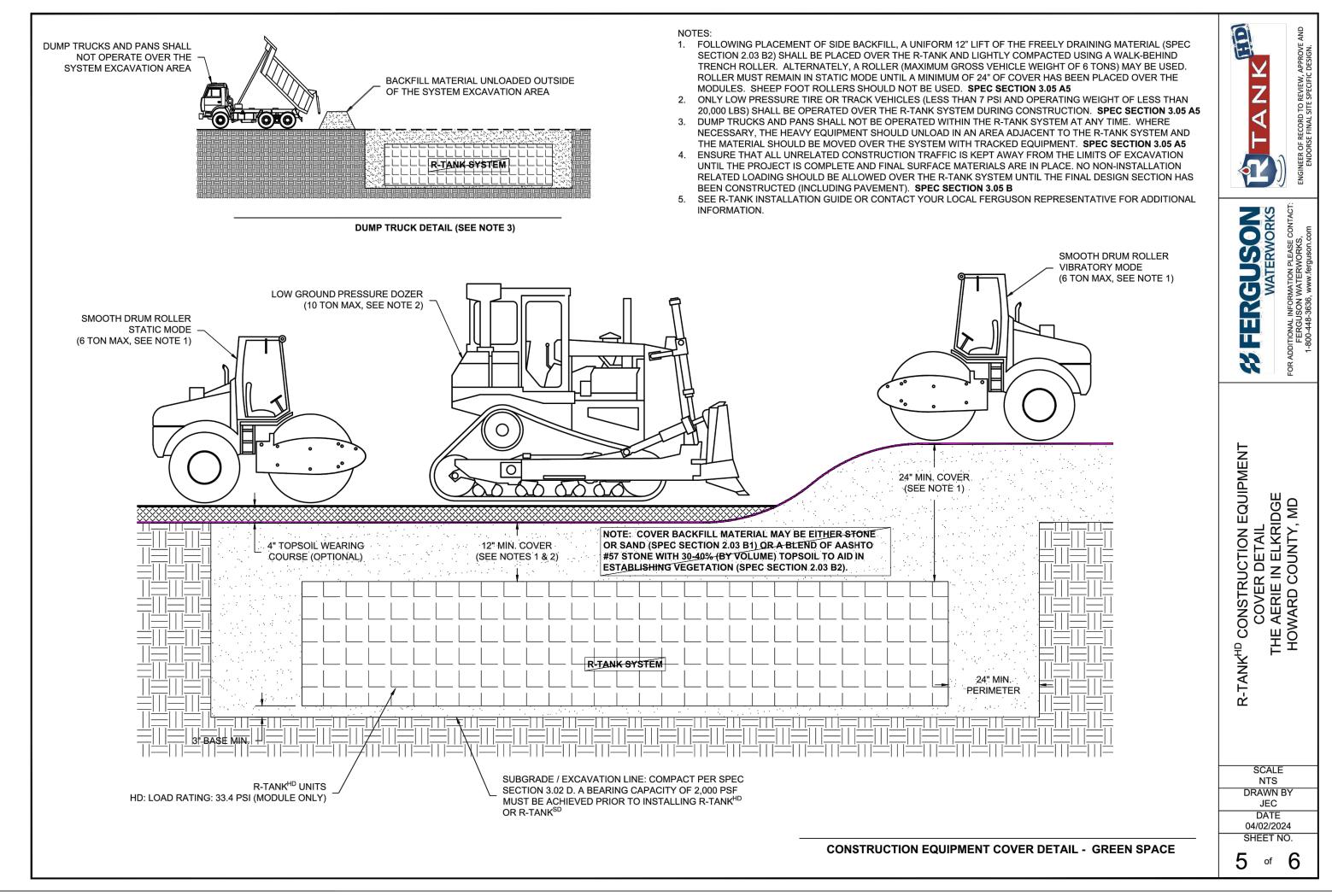
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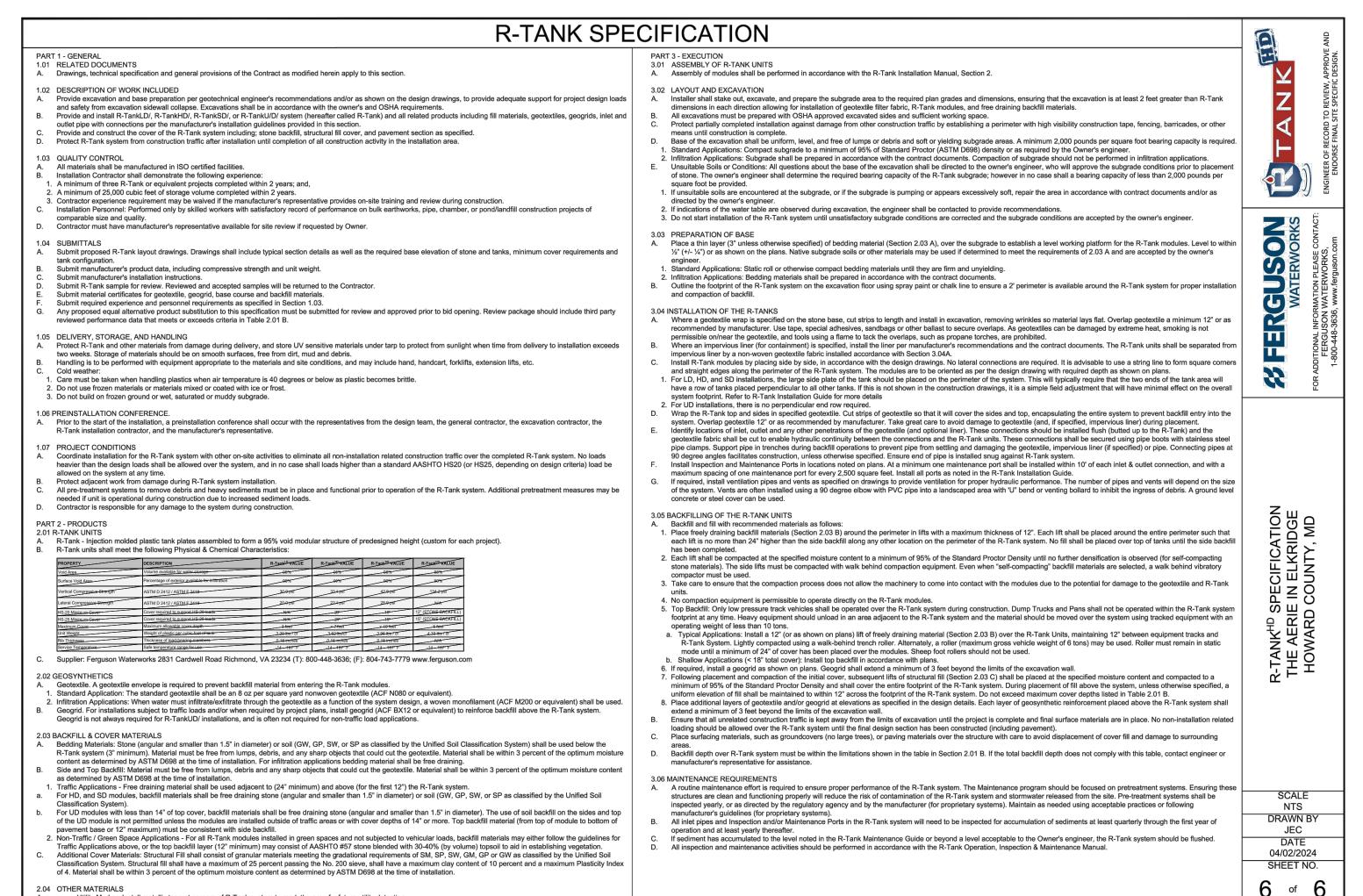
6/11/2024

DATE

2.04 OTHER MATERIALS

Utility Marker: Install metallic tape at corners of R-Tank system to mark the area for future utility detection.





Richmond, VA 23234 J. Chris Ogle Project Manager Benchmark Engineering, Inc.

3300 N. Ridge Road, Suite 140 Ellicott City, MD 21043

Ferguson Waterworks

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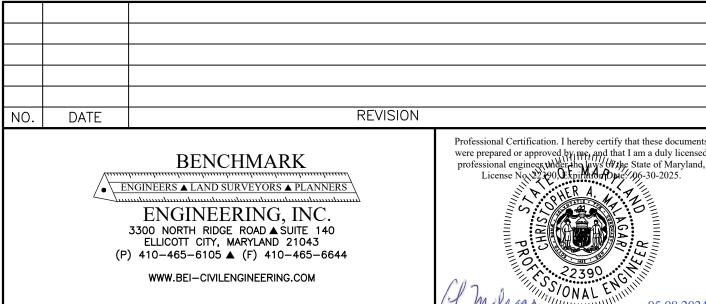
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