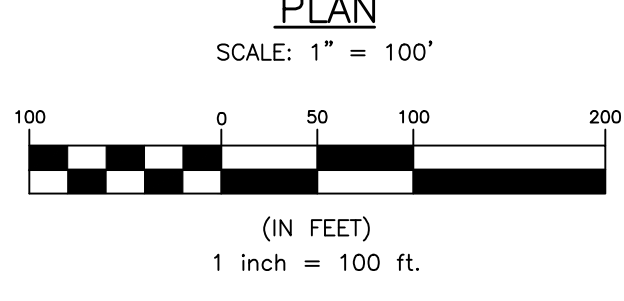
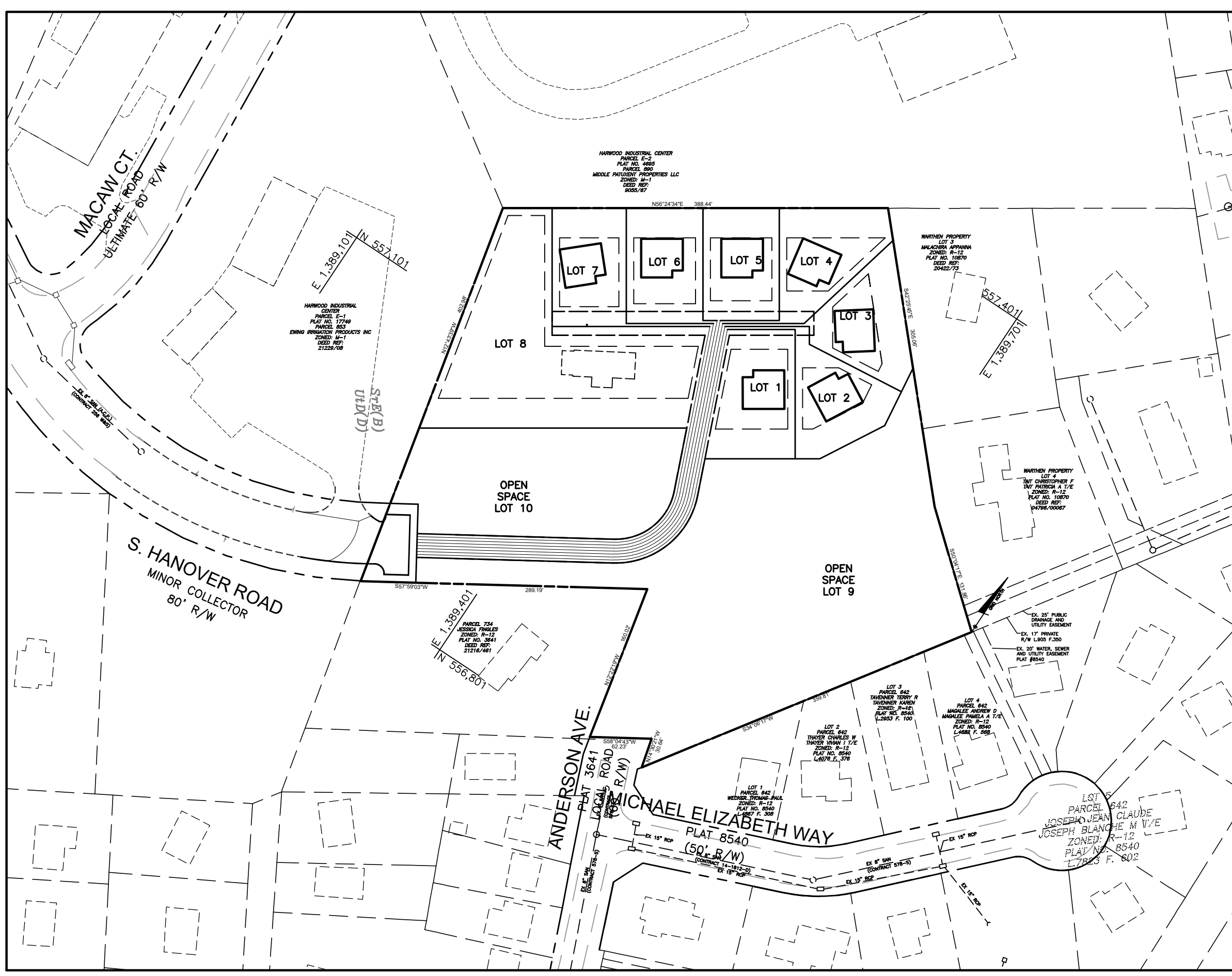
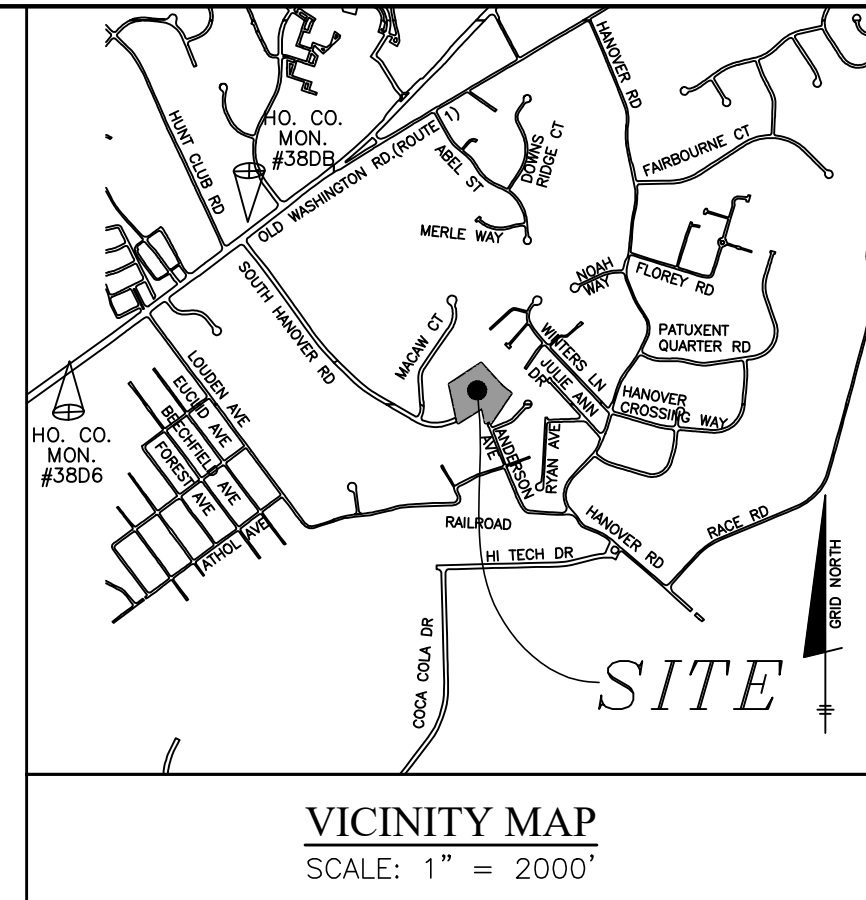


GENERAL NOTES

- 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 REGULATIONS.
3. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
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. 380B AND 380C WERE USED FOR THIS PROJECT.
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 RUN 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 APPROVED S-23-001.
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 IN A HISTORIC DISTRICT.
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 UNDER THE SDP.
14. COMMUNITY MEETING WAS HELD ON 11-28-2018, 6:00 PM AT THE ELKBRIDGE LIBRARY, 6540 WASHINGTON AVE., ELKBRIDGE, MD. PRIOR TO SUBMISSION OF S-19-004.
15. TRAFFIC STUDY WAS PERFORMED BY MARS GROUP S-6-6-2018 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 EXCAVATION WORK BEING DONE.
19. THE LANDSCAPING FOR THIS PROJECT IS DESIGNED IN ACCORDANCE WITH SECTION 16.1214 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 16.1200(A)(7) SPECIMEN TREES RETENTION; SECTION 16.116(B) STEEP SLOPE DISTURBANCE; SECTION 16.1200(A)(10)(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 ELKBRIDGE".
4. A MINIMUM OF 6 ADDITIONAL, NATIVE, 2-3" CALIPER TREES SHALL BE PROVIDED ON SITE AS PART OF THE MITIGATION FOR THE SPECIMEN TREE REMOVAL. THIS MITIGATION WILL BE ADDRESSED WITH THE PROJECT KNOWN AS "THE AERIE IN ELKBRIDGE" 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, 10 AND 12.
6. THE EXISTING DRIVEWAY SHALL BE REMOVED AND THE AREA STABILIZED UNDER THE PRELIMINARY PLAN.
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(B) 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.a) OF THE SUBDIVISION REGULATIONS. AN EXTENSION OF 9 MONTHS WAS FOR THE PROCESSING OF THE DEVELOPER'S AGREEMENT AND PLAT RECORDDATION SO THAT THE CURRENT LAYOUT COULD BE REWORKED.
24. A DESIGN MANUAL WAMER TO THE HOWARD COUNTY COMPLETE STREETS, VOLUME III DESIGN MANUAL, SECTION 2.5.B, DRIVEWAY AND SECTION 2.3.4.3.a, GEOMETRIC DESIGN, TO ALLOW 8 LOTS ON A USE-IN-COMMON DRIVEWAY AND THAT THE DRIVEWAY WILL BE LOCATED OFF THE END OF A PUBLIC TEE-TURNAROUND RATHER THAN 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 BE 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 EASEMENT AS INDICATED IN THE DETAIL.
C. A NEW ALTERNATIVE COMPLIANCE REQUEST TO STEEP SLOPES AND FOREST CONSERVATION MAY BE 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(G)(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. AFTER 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 REQUEST.
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 THE APPLICANT'S GRADING PERMIT.
27. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). 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 STREETLIGHT AND ANY TREE.
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 PAYMENT.
33. ALTERNATIVE COMPLIANCE WP-23-049 WAS APPROVED DECEMBER 22, 2022 TO SECTION 16.144(G) AND SECTION 16.144(G) 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 ELKBRIDGE
LOTS 1-8 AND OPEN SPACE LOTS 9 & 10
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
FINAL CONSTRUCTION PLANS

SHEET INDEX table with columns NO. and description of sheets including COVER SHEET, PRIVATE ROAD PLAN AND PROFILE, GRADING AND SEDIMENT CONTROL PLAN, etc.



LEGEND section detailing symbols for property boundaries, contours, soil delineation, existing buildings, slopes, tree symbols, and other site features.

BENCH MARKS (NAD '83) table listing station numbers, elevations, and coordinates for various benchmark points on the site.

ADDRESS CHART table mapping lot numbers to their corresponding addresses on Hanover Road.

SITE DATA TABULATION

- 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, 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 TABULATION
a. TOTAL AREA OF SITE 5.25 Ac.±
b. AREA OF 100 YEAR FLOODPLAIN (APPROX.) 0.00 Ac.±
c. AREA OF STEEP SLOPES ON-SITE (25% OR GREATER) 1.07 Ac.±
d. NET AREA OF SITE 4.18 Ac.±
e. AREA OF THIS PLAN SUBMISSION 5.25 Ac.±
f. LIMIT OF DISTURBANCE (APPROX.) 3.04 Ac.±
g. AREA OF PROPOSED BUILDABLE LOTS 2.55 Ac.±
h. AREA OF PROPOSED PUBLIC ROAD(R/W @ TEE) 0.09 Ac.±
i. AREA OF PROPOSED PUBLIC WIDENING DEDICATION 0.00 Ac.±
j. AREA OF SLOPES 15-24.9% 0.42 Ac.±
k. AREA OF WETLANDS 0.00 Ac.±
l. AREA OF STREAM BANK BUFFER 0.00 Ac.±
m. AREA OF IMPERVIOUS SURFACES 0.74 Ac.±
n. AREA OF GREEN OPEN AREAS 4.51 Ac.±
3) UNIT/LOT TABULATION
a. TOTAL NUMBER OF BUILDABLE LOTS (8,400 SF MIN. LOT SIZE) 8
b. TOTAL NUMBER OF OPEN SPACE LOTS 2
4) OPEN SPACE
a. REQUIRED OPEN SPACE (FULL OBLIGATION 40%) 2.10 Ac.±
b. OPEN SPACE PROVIDED 0.13 Ac.±
c. NON-CREDIT OPEN SPACE 4.7%
d. CREDITED OPEN SPACE 2.48 Ac.±
e. PERCENT OF OPEN SPACE PROVIDED NA(LESS THAN 47%)
f. RECREATIONAL OPEN SPACE (200 SF/UNIT) 10 LOTS

ESD SUMMARY TABLE with columns for Per, inches, MDE Type, Total DA, Impervious Area, Qr, Required, Provided, 2% DA, Depth, Required, Provided, ESDv, RV, Pe.

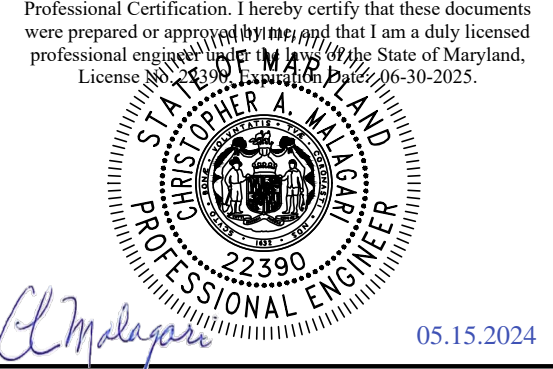
Minimum Lot Size Chart table showing Total Lot Area, Flagstem Area, and Min Lot Area for lots 1 through 8.

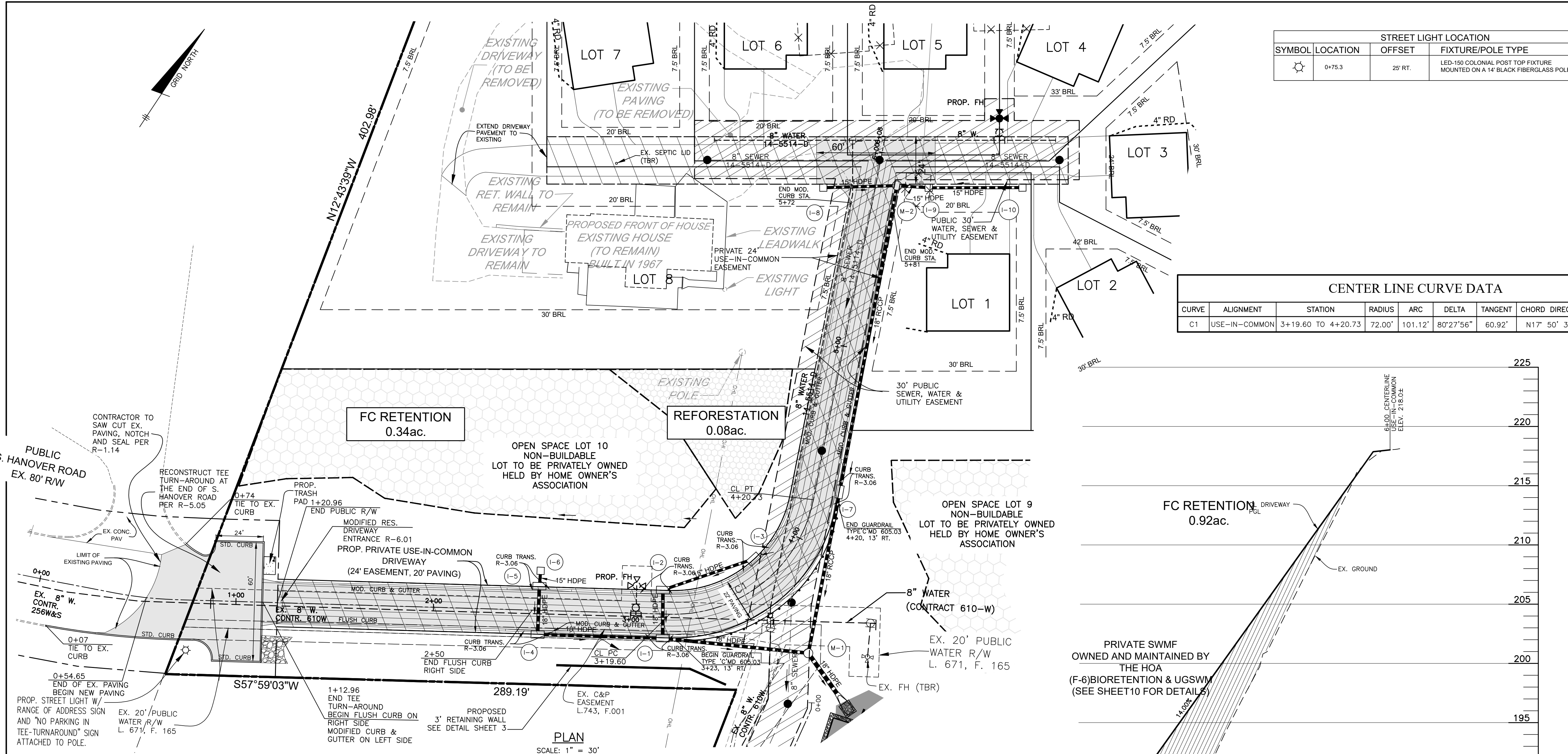
STORMWATER MANAGEMENT PRACTICES table with columns for LOT NO., ADDRESS, DRYWELLS (M-5), and MICRO-BIORETENTION (F-6).

MODERATE INCOME HOUSING UNIT (MIHU) APPLICATION EXEMPTIONS TRACKING table showing Total Number of Lots/Units Proposed, Total Number of MIHUs Required, etc.

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development

Project title block containing owner/developer information (Trotter 5857, LLC), project name (The Aerie in Elkridge), address (6399 Anderson Ave), and sheet information (DATE: MAY 2024, SHEET 1 OF 13).

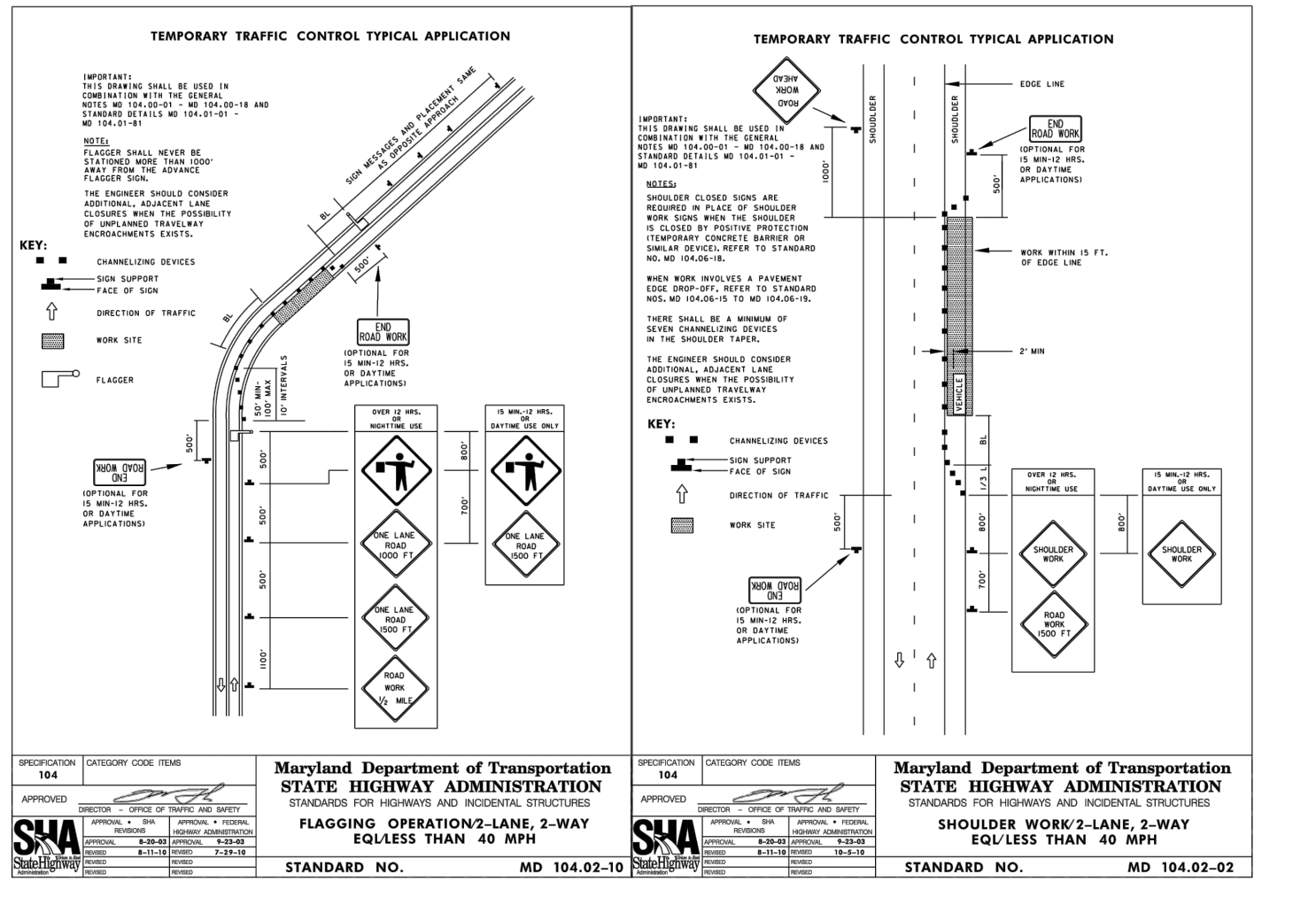
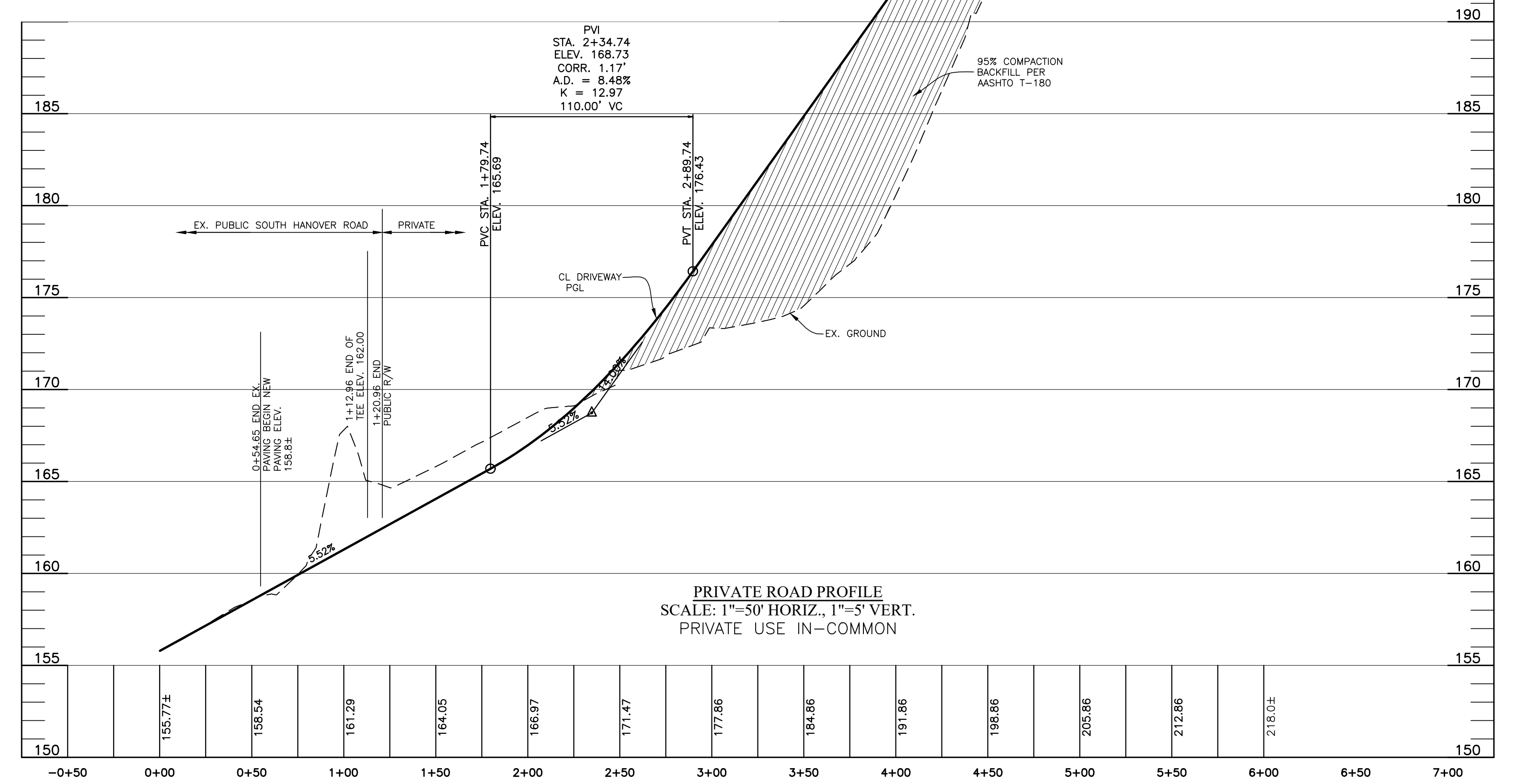
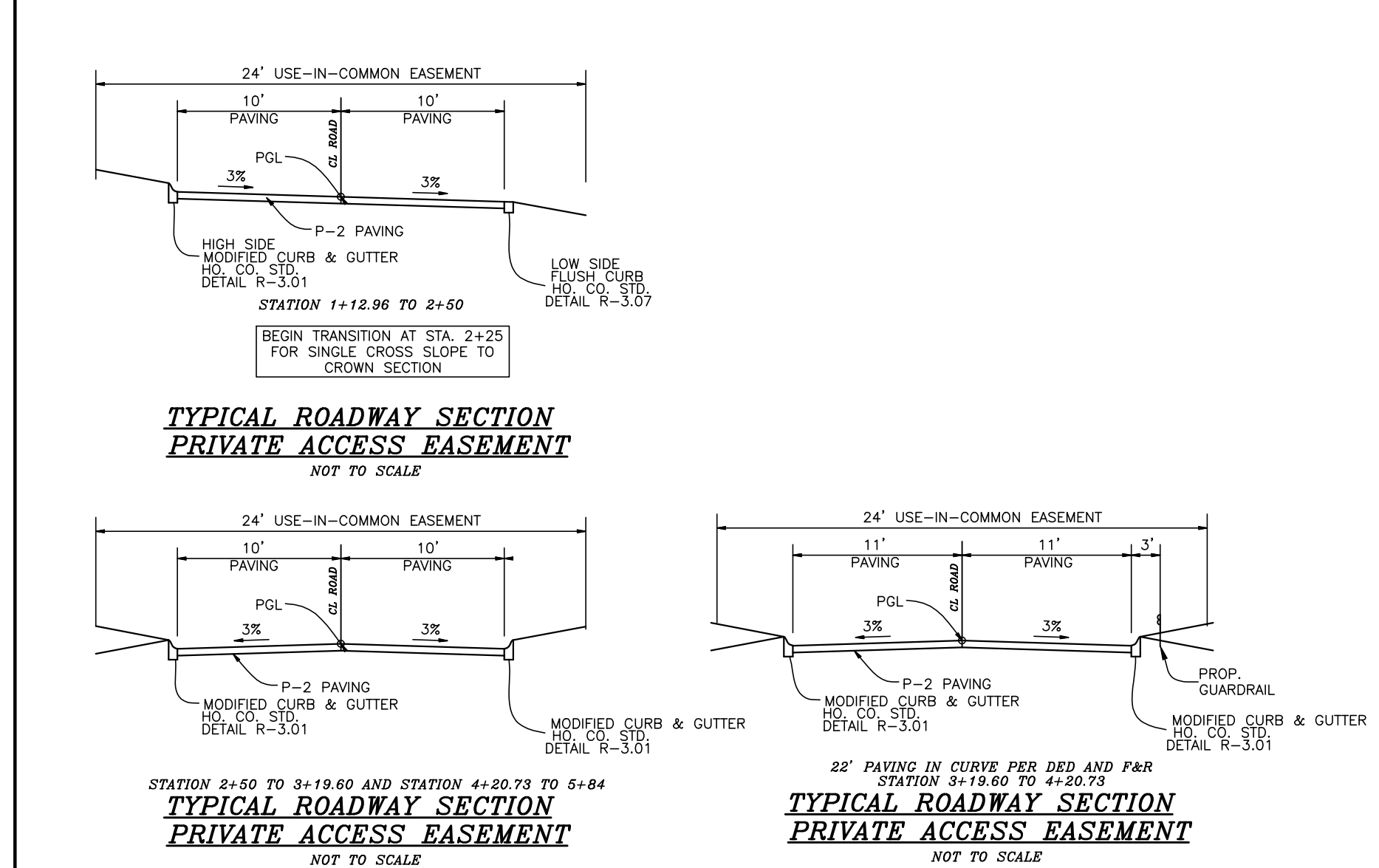
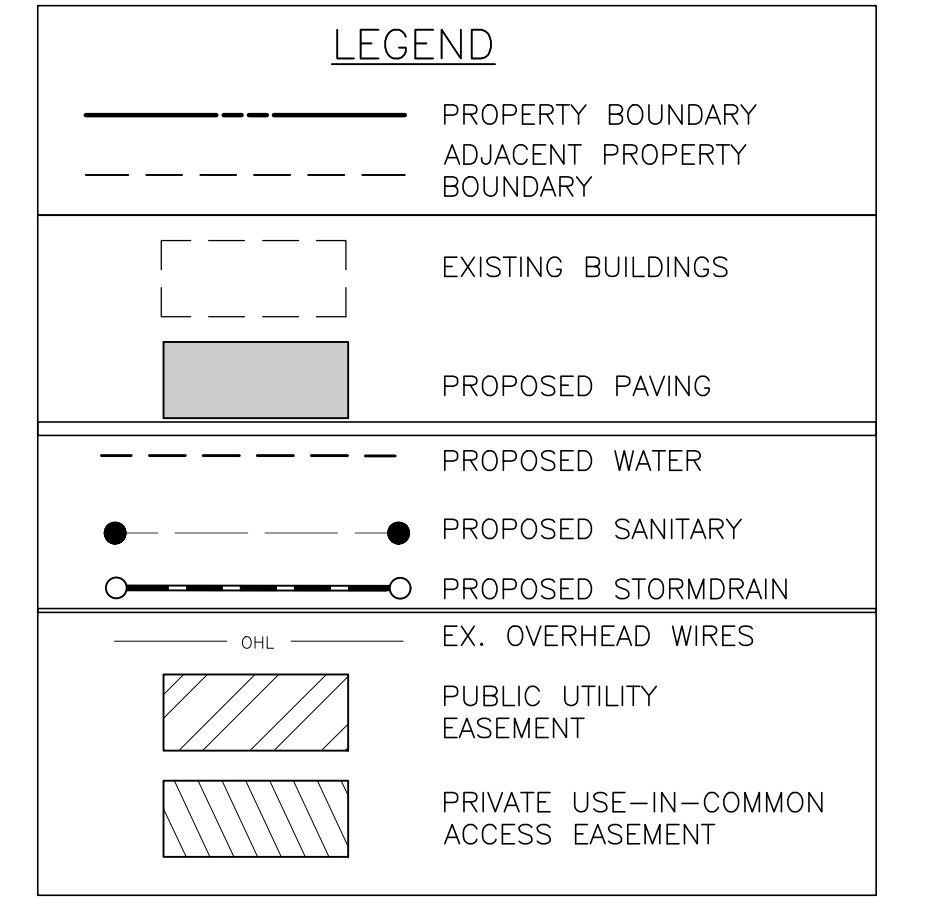




STREET LIGHT LOCATION		
SYMBOL	LOCATION	OFFSET
	0+75.3	25' RT.
		LED-150 COLONIAL POST TOP FIXTURE MOUNTED ON A 14" BLACK FIBERGLASS POLE

CENTER LINE CURVE DATA								
CURVE	ALIGNMENT	STATION	RADIUS	ARC	DELTA	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	USE-IN-COMMON	3+19.60 TO 4+20.73	72.00'	101.12'	80°27'56"	60.92'	N17° 50' 31"E	93.02'

SECTION	ROAD AND STREET CLASSIFICATION / TYPE	CALIFORNIA BURNING RATE (CBBR)	MIN. SUPERIMPOSED WIND SPEED (MPH)						
			3 TO 4	5 TO 6	7 TO 8	9 TO 10	11 TO 12	13 TO 14	15 TO 16
P-1	RESIDENT PROJECTS ONLY	PAYMENT MATERIAL (CHDED)	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-2	RESIDENT PROJECTS ONLY	RESIDENTIAL SURFACE	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-3	RESIDENT PROJECTS ONLY	RESIDENTIAL SURFACE	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-4	RESIDENT PROJECTS ONLY	RESIDENTIAL SURFACE	1.5	1.5	1.5	1.5	1.5	1.5	1.5



M.O.T. DETAILS
NTS

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

NO.	DATE	REVISION
<p>BENCHMARK ENGINEERING, INC. 3300 NORTH RIDGE ROAD SUITE 140 ELLCOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-CIVILENGINEERING.COM</p>		
<p>THE AERIE IN ELKRIDGE LOTS 1-8 AND OS LOT 9 & 10</p>		
<p>6399 ANDERSON AVE, HANOVER, MD 21076 TAX MAP: 38 - GRID: 14 - PARCEL: 232 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND</p>		
<p>PRIVATE ROAD PLAN AND PROFILE</p>		
DESIGN: JCO	DRAFT: JCO	DATE: MAY 2024
SCALE: AS SHOWN	SHEET 2 OF 14	BEI PROJECT NO. 2894

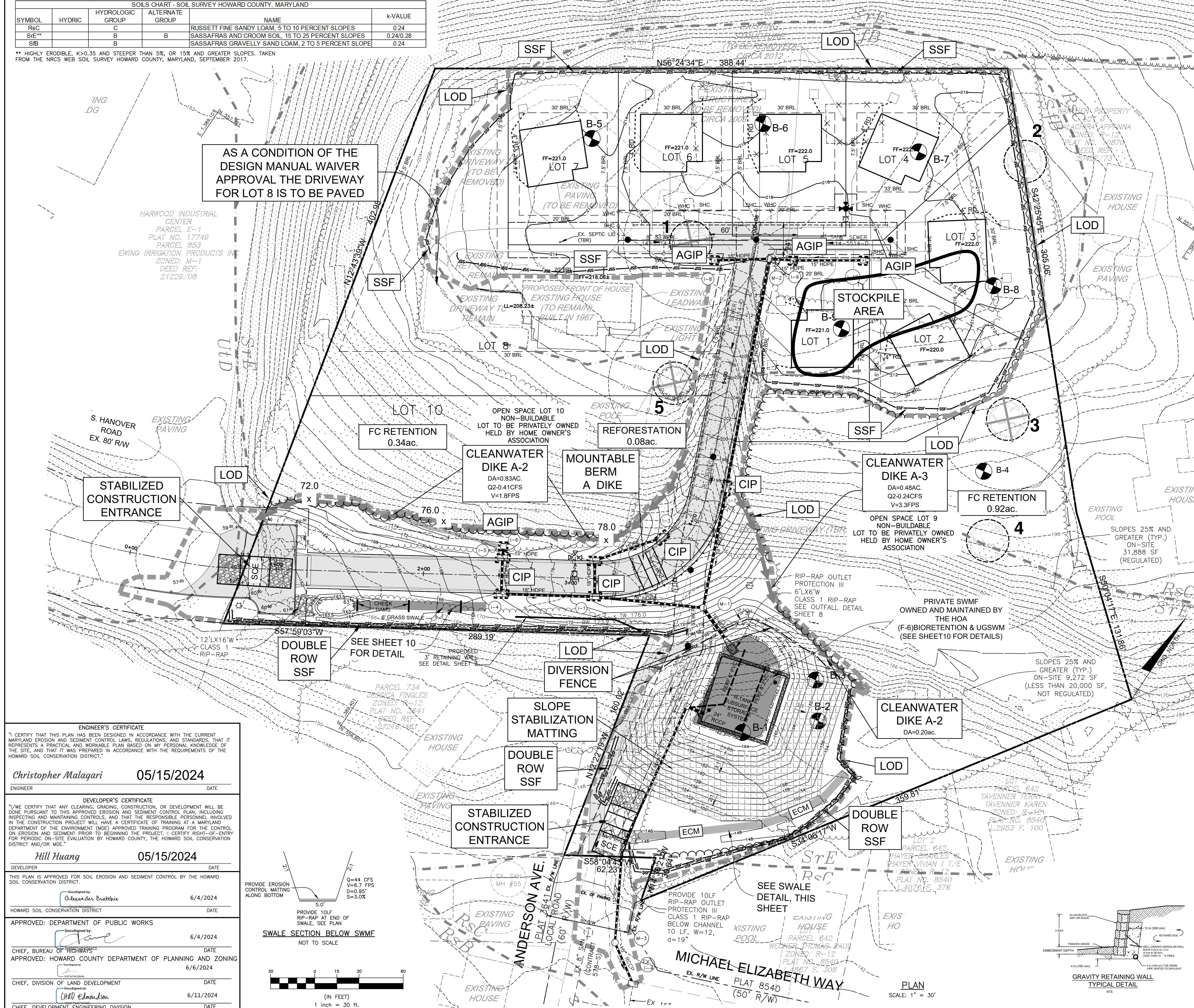
SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND					
SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
R5C		C		RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES	0.24
SiE**		B	B	SASSAFRAS AND CROOM SOIL, 15 TO 25 PERCENT SLOPES	0.24/0.28
SiB		B		SASSAFRAS GRAVELLY SAND LOAM, 2 TO 5 PERCENT SLOPE	0.24

** HIGHLY ERODIBLE, K>0.35 AND STEEPER THAN 5%, OR 15% AND GREATER SLOPES. TAKEN FROM THE NRCS WEB SOIL SURVEY HOWARD COUNTY, MARYLAND, SEPTEMBER 2017.

LEGEND

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- GIS CONTOUR LINES
- PROPOSED CONTOUR LINES
- SOIL DELINEATION
- EXISTING BUILDINGS
- PROPOSED PAVING
- SLOPES 15% TO 24.99%
- STEEP SLOPES 25% OR GREATER
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPOSED WATER
- PROPOSED SANITARY
- PROPOSED STORMDRAIN
- SPECIMEN TREE (TO BE REMOVED)
- EX. OVERHEAD WIRES
- PUBLIC UTILITY EASEMENT
- PRIVATE USE-IN-COMMON ACCESS EASEMENT
- SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- INLET PROTECTION
- SLOPE STABILIZATION MATTING

AS A CONDITION OF THE DESIGN MANUAL WAIVER APPROVAL THE DRIVEWAY FOR LOT 8 IS TO BE PAVED



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

Christopher Malagari 05/15/2024
 ENGINEER DATE

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

Hill Huang 05/15/2024
 DEVELOPER DATE

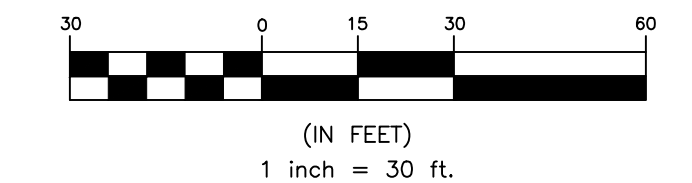
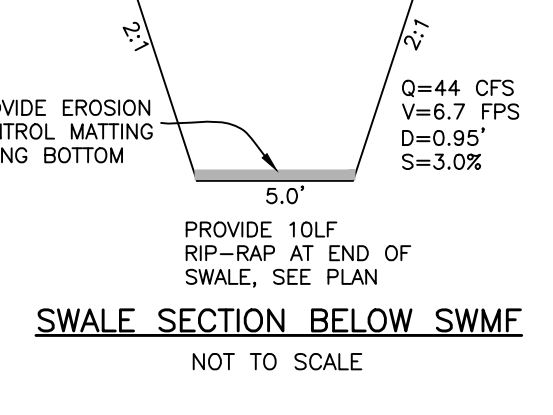
Alexander Bratbie 6/4/2024
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 6/4/2024 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 6/6/2024 DATE

APPROVED: DIVISION OF LAND DEVELOPMENT
 6/11/2024 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE



NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
 3300 NORTH RIDGE ROAD SUITE 140
 ELICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer in the State of Maryland. License No. 1211700116 06-30-2025.

Christopher Malagari 05.15.2024

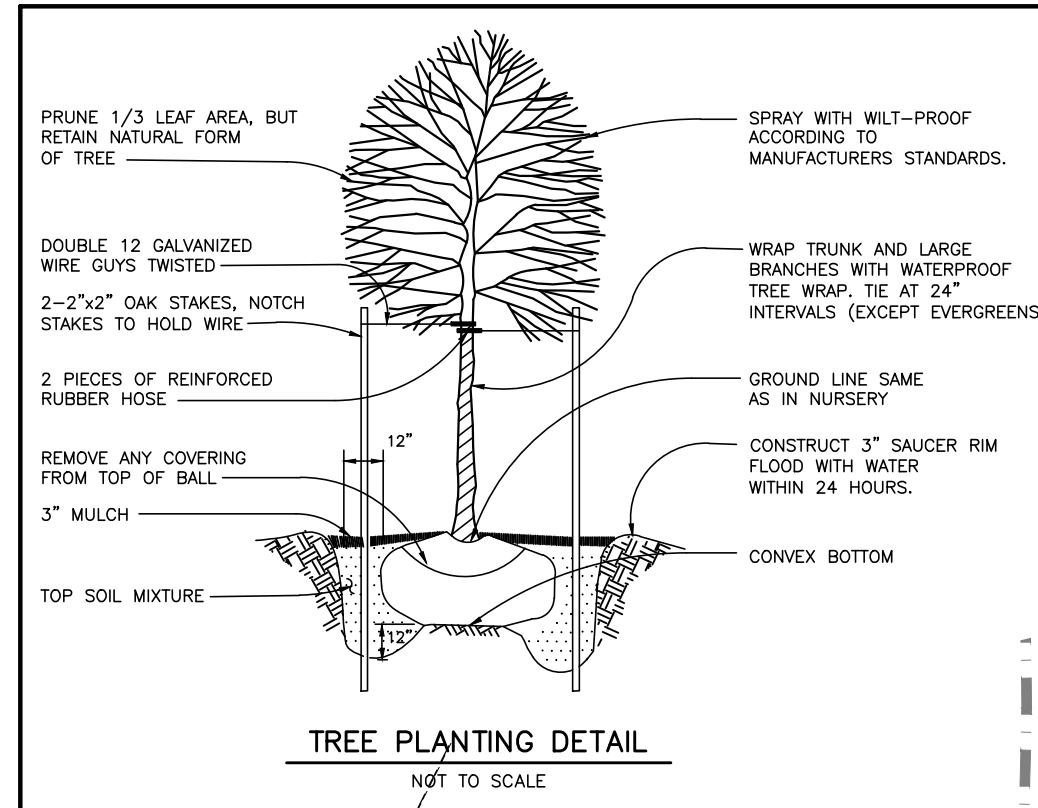
OWNER/DEVELOPER:
 TROTTER 5857, LLC.
 1819 PANARAMA CT.
 MCLEAN, VA 22101
 (P) 443-250-1555

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

6399 ANDERSON AVE, HANOVER, MD 21076
 TAX MAP: 3B - GRID: 14 - PARCEL: 232
 ZONED: R-12
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

GRADING AND SEDIMENT CONTROL PLAN

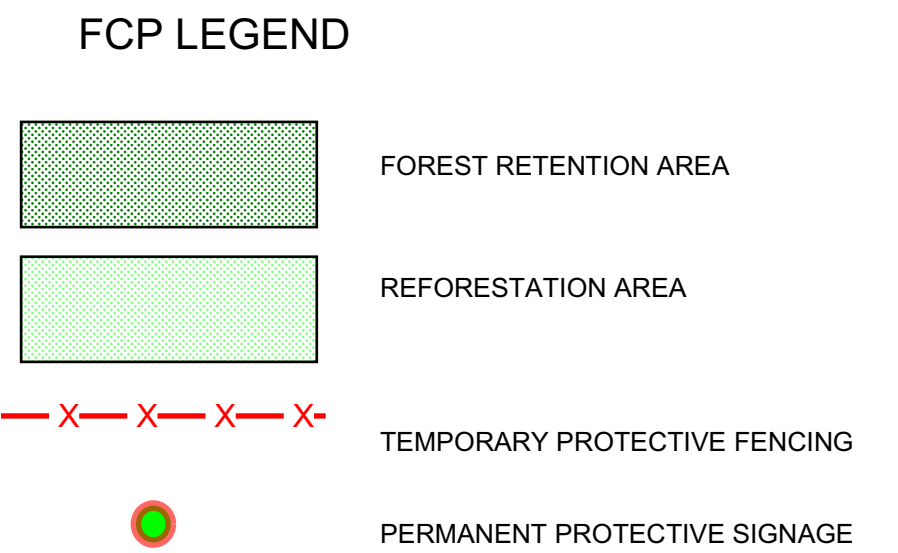
DATE:	MAY 2024	BEI PROJECT NO.	2894
DESIGN:	JCO	DRAFT:	JCO
SCALE:	AS SHOWN	SHEET	3 OF 13



HARWOOD INDUSTRIAL CENTER
PARCEL E-1
PLAT NO. 17749
PARCEL 853
EWING IRRIGATION PRODUCTS INC.
ZONED: M-1
DEED REF: 21229/08

BENCH MARKS (NAD '83)

HO. CO. #3808	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
HO. CO. #3906	ELEV. 175.228
STAMPED (BRASS OR ALUMINUM) DISC SET ON TOP OF A CONCRETE COLUMN 1" OR 2" BELOW GRADE.	
N 557,155.459	E 1,384,992.262



SEE SHEET 6 FOR FCP DETAILS AND SPECIFICATIONS

Specimen Tree Chart

Key (X#)	Species	Size (in dbh)	CRZ (feet radius)	Comments
1	Black oak	30.5	45.75	to be removed
2	Chestnut oak	31	46.5	to be retained
3	Chestnut oak	32	48	permitted for removal but proposed for retention
4	Black oak	41	61.5	to be retained
5	Chestnut oak	29.8	44.7	to be removed

SYMBOL: 24"-29.9" 12

SITE TREE INVENTORY CHART

Key (X#)	Species	Size (in dbh)	CRZ (feet radius)	State Champion (DBH)	Good (unless otherwise noted)
1	Black Oak	30.5	45.75	11.5 (0)	Fair, some dieback noted
2	Chestnut Oak	31	46.5	68.79	CRZ impacted by offsite activity
3	Chestnut Oak	32	48.0	69.79	Fair, some dieback noted
4	Black Oak	41	61.5	81.85	
5	Black Oak	29.8	44.7	69.79	Fair, trunk suckering, basal wound healing over
6	Chestnut Oak	25.5	38.25	65.92	Trunk suckering present
7	Chestnut Oak	24.5	36.75	69.79	Fair, some dieback, grinding rod present
8	Chestnut Oak	28	39.0	69.79	Fair, suckering in crown, basal wound healing over
9	Chestnut Oak	24.5	36.75	101.27	Storm damage present
10	Black Oak	24	36.0	69.79	Average deadwood
11	Chestnut Oak	25	37.5	65.92	Large deadwood
12	Black Oak	27.5	41.25	52.54	
13	Black Oak	25	37.5	101.27	

SCHEDULE A PERIMETER LANDSCAPE EDGE

LANDSCAPE TYPE	A	A	A	A	A	TOTAL
PERIMETER	①	②	③	④	⑤	
LINEAR FEET OF PERIMETER	319 LF	388 LF	436 LF	359 LF	449 LF	449 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 63 LF	NO	YES 255 LF	YES 208 LF	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED						
SHADE TREES (1-60)	5	7	3	3	8	26
EVERGREEN TREES	-	-	-	-	-	-
OTHER TREES (2-1 SUBSTITUTE)	-	-	-	-	-	-
SHRUBS	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED						
SHADE TREES	5	7	3	3	8*	26
EVERGREEN TREES	-	-	-	-	-	-
OTHER TREES (2-1 SUBSTITUTE)	-	-	-	-	-	-
SHRUBS (10-1 SUBSTITUTE)	-	-	-	-	-	-

CREDIT IS FOR EXISTING FOREST IN EASEMENT.
*PERIMETER 5 RELOCATED 2 TREES TO PERIMETER 4 DUE TO PUBLIC EASEMENT

PERIMETER LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
○	26	AGER SACCHARIN GREEN MOUNTAIN SUGAR MAPLE	2 1/2"-3" CAL

PLANTING LIST MITIGATED TREES PER WP-23-069

SYMBOL	QUANTITY	NAME	REMARKS
⊗	4	QUERCUS ALBA WHITE OAK	2"-3" CAL
⊙	2	QUERCUS PRINUS CHESTNUT OAK	2"-3" CAL

APPROVED: DEPARTMENT OF PUBLIC WORKS
DATE: 6/4/2024

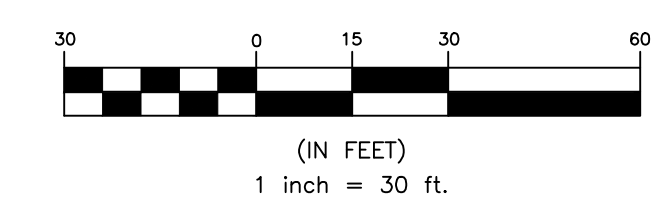
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE: 6/6/2024

CHIEF, DIVISION OF LAND DEVELOPMENT

DATE: 6/11/2024

CHIEF, DEVELOPMENT ENGINEERING DIVISION



DEVELOPER'S CERTIFICATION:
I HEREBY CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Hill Huang 05/15/2024
DEVELOPER DATE

- LANDSCAPING NOTES**
- PERIMETER LANDSCAPING SHALL BE PROVIDED BY THE PLANTINGS AS SHOWN ON THESE PLANS.
 - TREES MUST BE A MINIMUM OF FOUR(4) FEET FROM PAVEMENT AND MUST BE A MINIMUM OF FIVE(5) FEET FROM ANY STORM DRAIN, IF APPLICABLE.
 - TREE MUST BE PLANTED A MINIMUM OF TEN (10) FEET FROM A DRIVEWAY APRON.
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SEC.16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
 - 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 \$96,000.00 FOR 26 PERIMETER SHADE TREES AND MITIGATED TREES PER WP-23-069.
 - TWO SPECIMEN TREES HAVE BEEN IDENTIFIED TO REMAIN ON THIS PLAN. THESE TREES ARE TO BE PRESERVED AND IF ANY CONSTRUCTION IS EXPECTED TO IMPACT THE CRITICAL ROOT ZONE OF ANY SPECIMEN TREES, ROOT PRUNING ALONG THE PROPOSED LIMITS OF DISTURBANCE SHALL BE PROVIDED TO REDUCE IMPACTS.
 - THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, BERMS, FENCES, AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
 - AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS HEREWITH IN LISTED AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OR REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
 - ALL LANDSCAPING PLANT TYPES SHOWN ON THESE PLANS ARE RECOMMENDED AND MAY BE SUBSTITUTED WITH APPROVED EQUIVALENTS FROM THE HOWARD COUNTY LANDSCAPE MANUAL.

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS
3300 NORTH RIDGE ROAD SUITE 140
ELICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

J. Brody McAllister
ISA Certified Arborist
Cert ID: MA6471A
MD DNR FCA Qualified Professional

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
3300 NORTH RIDGE ROAD SUITE 140
ELICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 22390, Expiration Date: 06-30-2025.

FOR LANDSCAPING ONLY

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

FINAL ROAD CONSTRUCTION PLAN
LANDSCAPE AND FOREST CONSERVATION PLAN

DATE: FEBRUARY 2024 BEI PROJECT NO. 2894
SCALE: AS SHOWN SHEET 5 OF 13

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.

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.

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.

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.

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.

CONSTRUCTION PERIOD PROTECTION PROGRAM

A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)

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

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

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.

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) 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.
3. Build access roads, install well and septic systems, and construct houses.
4. Begin multiflora rose removal.
5. Remove sediment control.
6. Hold post-construction meeting with County inspectors to assure compliance with FCP.
7. Monitor and maintain plantings for 3 years.

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 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.

POST-CONSTRUCTION MANAGEMENT PLAN

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.

The following items will be incorporated into the plan:

A. Fencing and Signage

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

B. General Site Inspections/Maintenance of Plantings

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

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

- 1. Watering - All plant material shall be watered twice a month during the 1st growing season, more or less frequently depending on weather conditions.
2. Removal of invasive exotics and noxious weeds.
3. Identification of serious plant pests and diseases, treatment with appropriate agent.
4. Pruning of dead branches.
5. After 12 and 24 months, replacement of plants, if required, in accordance with the Guarantee Requirements shown on the FCP.

C. Education

The developer will provide appropriate materials to property owners informing them of the location and purpose of the afforestation area. Materials may include site plans and information explaining the intent of the forest conservation law.

D. Final Inspection

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.

PLANTING SCHEDULE

FCE # 1 - 0.1 acres

Planting Units Required: 70
Planting Units Provided:

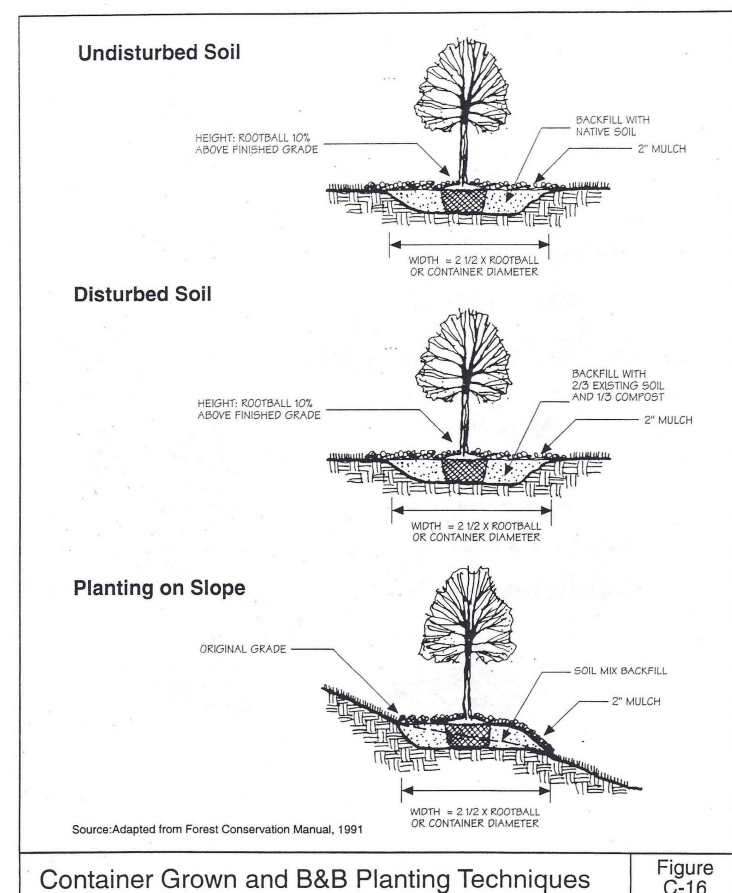
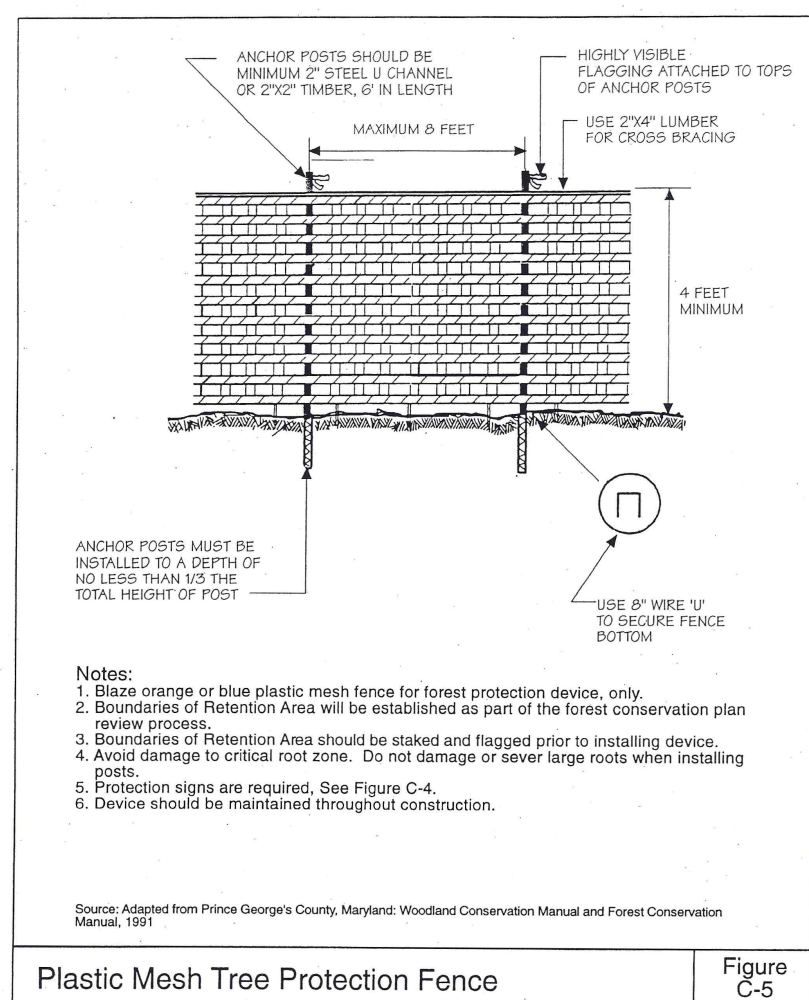
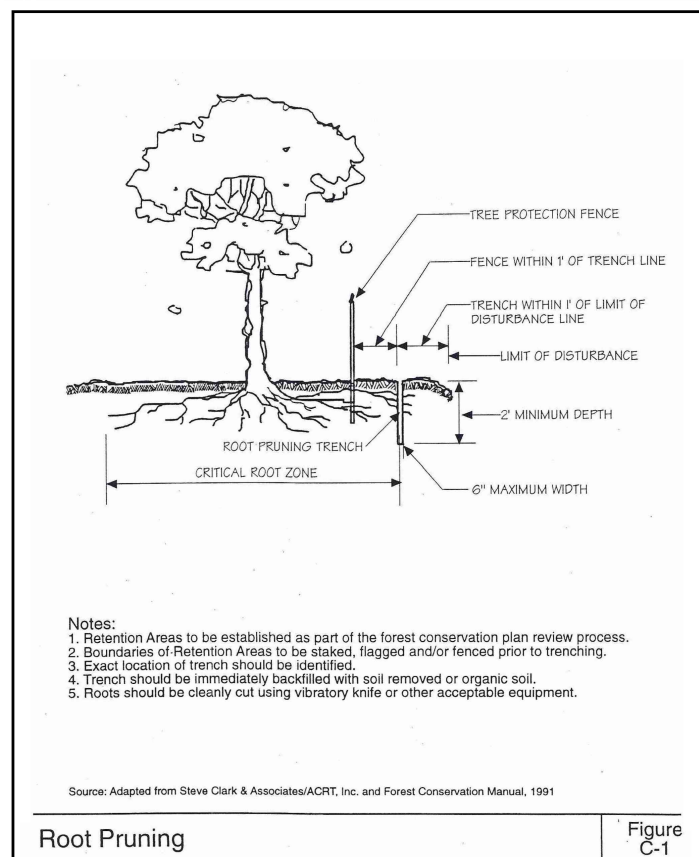
Table with 5 columns: Qty, Species, Size, Spacing, Total FCA Units. Lists species like Liriodendron tulipifera, Nyssa sylvatica, Prunus serotina, Quercus alba, and Viburnum prunifolium.

Specimen Tree Mitigation

Table with 4 columns: Qty, Species, Size, Spacing. Lists Quercus alba - White oak and Quercus prinus - Chestnut oak.

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.
Multiflora rose/heavy brush removal/control may be required prior to installation of planting.
All trees are required to be installed with tree shelters per Howard County FCA requirements.



FOREST CONSERVATION WORKSHEET FOR 6399 ANDERSON ROAD

Table for Net Tract Area calculations: A. Total (Gross) Tract Area, B. Area within 100-year Floodplain, C. Other Deductions, D. Net Tract Area.

Land Use Category

Table for Land Use Category: Resid. Rural LD, Resid. Rural MD, Resid. Suburban, Inst./Linear, Retail/Office, Mixed Use/PUD.

Table for Existing Forest Cover: E. Afforestation Threshold, F. Reforestation Threshold.

Table for Existing Forest Cover: G. Existing Forest Cover within the Net Tract Area, H. Area of Forest above Afforestation Threshold, I. Area of Forest above Reforestation Threshold.

Table for Break Even Point: J. Break Even Point, K. Forest Clearing Permitted without Mitigation.

Table for Proposed Forest Clearing: L. Total Area of Forest to be Cleared, M. Total Area of Forest to be Retained.

Table for Planting Requirements Inside Watershed: N. Reforestation for Clearing above the Reforestation Threshold, P. Reforestation for Clearing below the Reforestation Threshold, Q. Credit for Retention above the Reforestation Threshold, R. Total Reforestation Required, S. Total Afforestation Required, T. Total Reforestation and Afforestation Requirement, U. 75% of Total Obligation (Retention + Planting), V. Planting Required Onsite to meet 75% Obligation.

Table for Planting Requirements Outside Watershed: W. Total Planting within Development Site Watershed, X. Total Afforestation Required, Y. Remaining Planting within Watershed for Reforestation Credit, Z. Reforestation for Clearing above the Reforestation Threshold, AA. Reforestation for Clearing below the Reforestation Threshold, BB. Credit for Retention above the Reforestation Threshold, CC. Total Reforestation Required, DD. Total Afforestation and Reforestation Requirement.

Date: 8/28/23

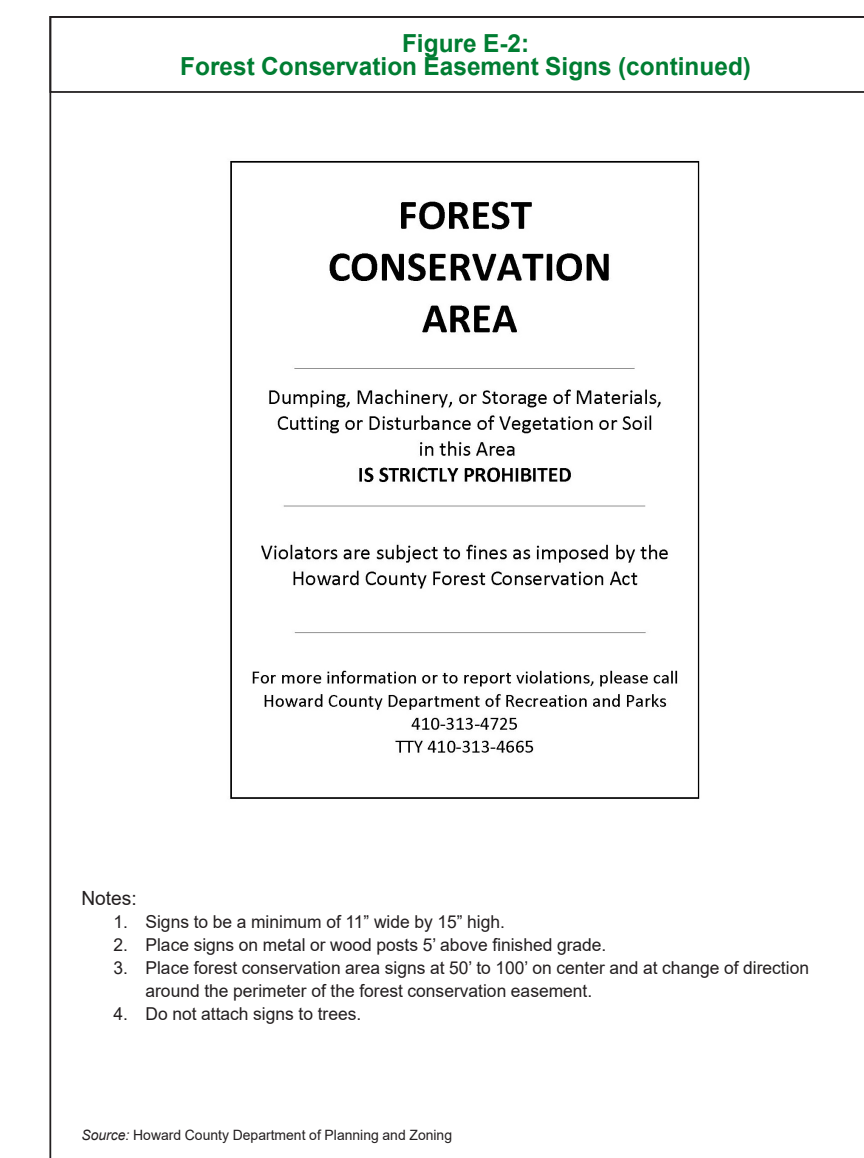
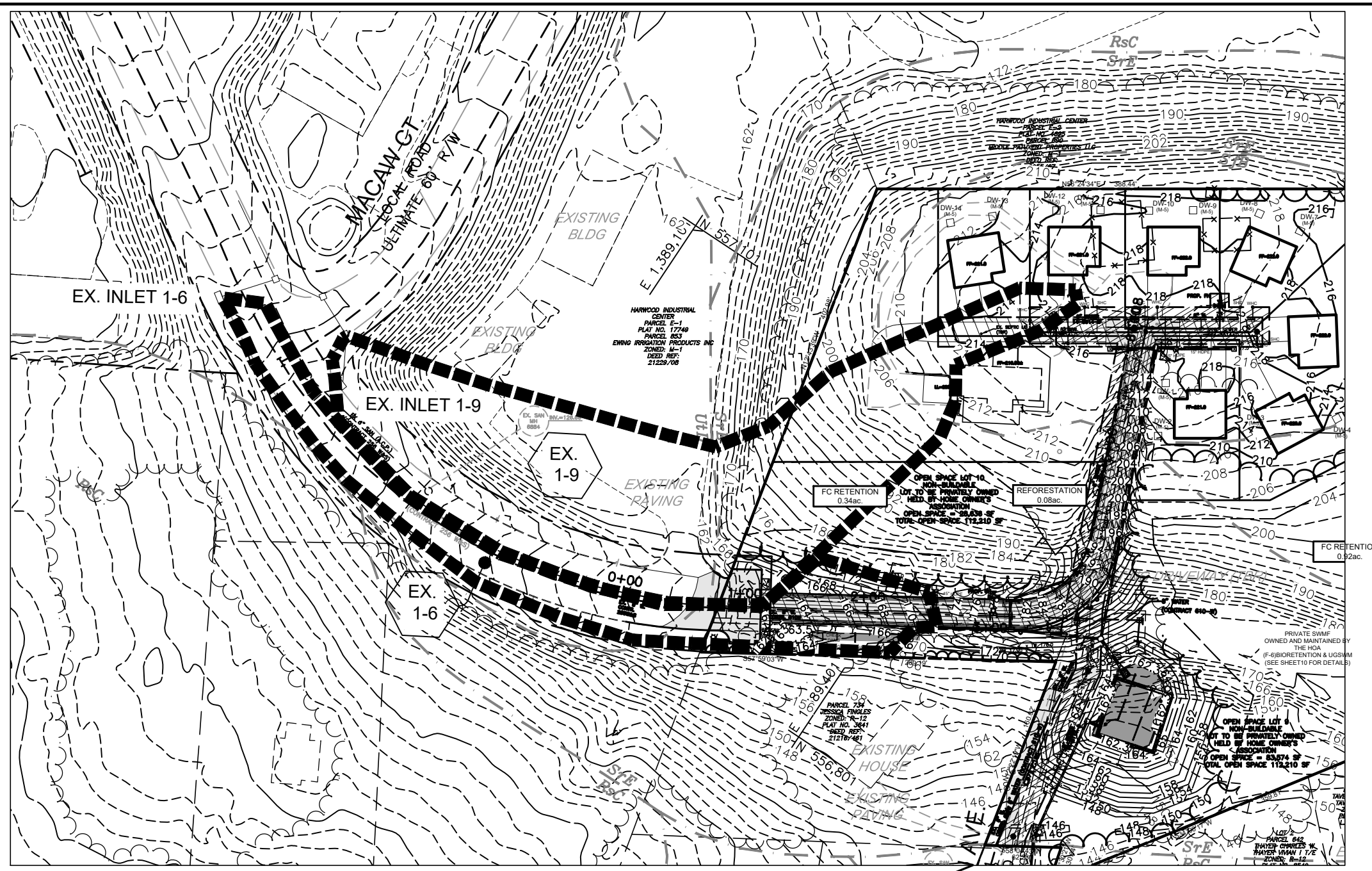
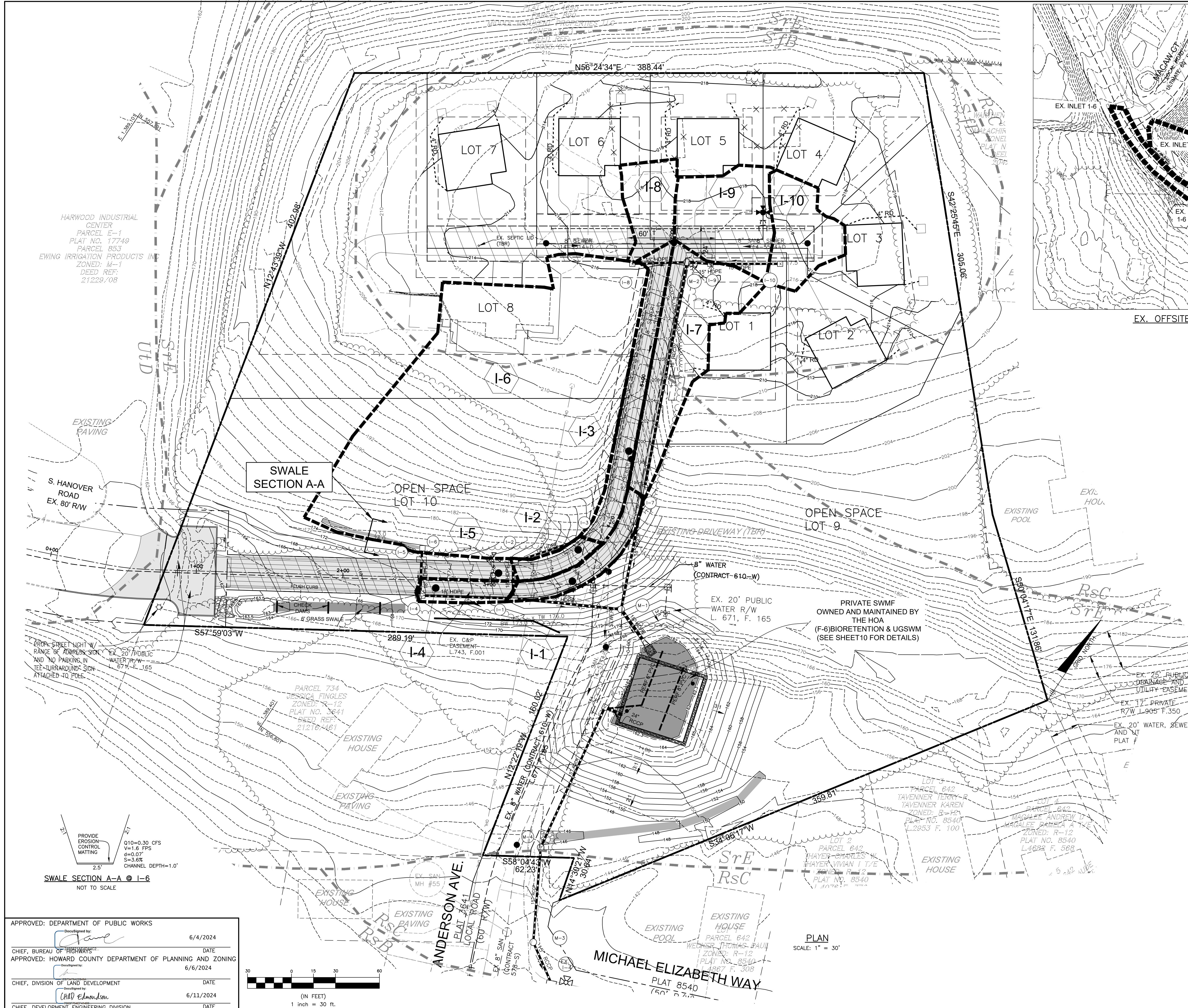


Table with columns: NO., DATE, REVISION.

BENCHMARK ENGINEERING, INC. 3300 NORTH RIDGE ROAD SUITE 140 ELLICOTT CITY, MARYLAND 21043

OWNER/DEVELOPER: TROTTER 5857, LLC. THE AERIE IN ELKRIDGE AMENDED LOTS 1-8 AND OS LOT 9 & 10. FINAL ROAD CONSTRUCTION PLAN FOREST CONSERVATION PLAN. DATE: SEPTEMBER 2023. BEI PROJECT NO. 2894. DESIGN: JCO DRAFT: JCO. SCALE: AS SHOWN. SHEET 6 OF 13.

APPROVED: DEPARTMENT OF PUBLIC WORKS. Chief, Bureau of Highways. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. Chief, Division of Land Development. Chief, Development Engineering Division.



EX. OFFSITE STORM DRAIN DRAINAGE AREA MAP
SCALE: 1" = 100'

DATA

AREA = 0.04 AC	I-1	ZONE = R-12
"C" FACTOR = 0.63	I-2	IMPERVIOUS = 76%
AREA = 0.02 AC	I-3	ZONE = R-12
"C" FACTOR = 0.65	I-4	IMPERVIOUS = 70%
AREA = 0.07 AC	I-5	ZONE = R-12
"C" FACTOR = 0.68	I-6	IMPERVIOUS = 74%
AREA = 0.02 AC	I-7	ZONE = R-12
"C" FACTOR = 0.60	I-8	IMPERVIOUS = 62%
AREA = 0.02 AC	I-9	ZONE = R-12
"C" FACTOR = 0.62	I-10	IMPERVIOUS = 66%
AREA = 0.71 AC	EX. I-6	ZONE = R-12
"C" FACTOR = 0.14	EX. I-6	IMPERVIOUS = 0%
AREA = 0.13 AC	EX. I-6	ZONE = R-12
"C" FACTOR = 0.35	EX. I-6	IMPERVIOUS = 29%
AREA = 0.05 AC	EX. I-6	ZONE = R-12
"C" FACTOR = 0.33	EX. I-6	IMPERVIOUS = 24%
AREA = 0.09 AC	EX. I-6	ZONE = R-12
"C" FACTOR = 0.48	EX. I-6	IMPERVIOUS = 46%
AREA = 0.07 AC	EX. I-6	ZONE = R-12
"C" FACTOR = 0.57	EX. I-6	IMPERVIOUS = 58%
AREA = 0.50 AC	EX. I-6	ZONE = M-1 & R-12
"C" FACTOR = 0.67	EX. I-6	IMPERVIOUS = 70%
AREA = 1.54 AC	EX. I-9	ZONE = M-1 & R-12
"C" FACTOR = 0.57	EX. I-9	IMPERVIOUS = 33%

HARWOOD INDUSTRIAL CENTER
PARCEL E-1
PLAT NO. 17749
PARCEL 853
EWING IRRIGATION PRODUCTS INC.
ZONED: M-1
DEED REF: 21229/08

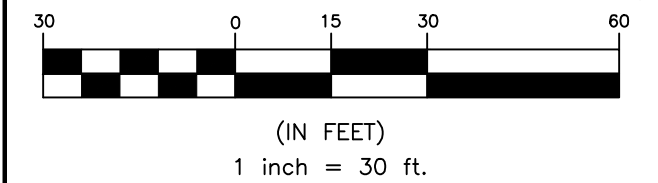
SWALE SECTION A-A

PRIVATE SWMF OWNED AND MAINTAINED BY THE HOA (F-6)BIORETENTION & UGSWM (SEE SHEET 10 FOR DETAILS)

GROUP STREET LIGHT W/ RANGE OF ADDRESS SIGN AND NO PARKING IN TEE-TURNAROUNDS SIGN ATTACHED TO POLE.

PROVIDE EROSION CONTROL MATTING
Q10=0.30 CFS
V=1.6 FPS
d=0.07'
S=3.0%
CHANNEL DEPTH=1.0'

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



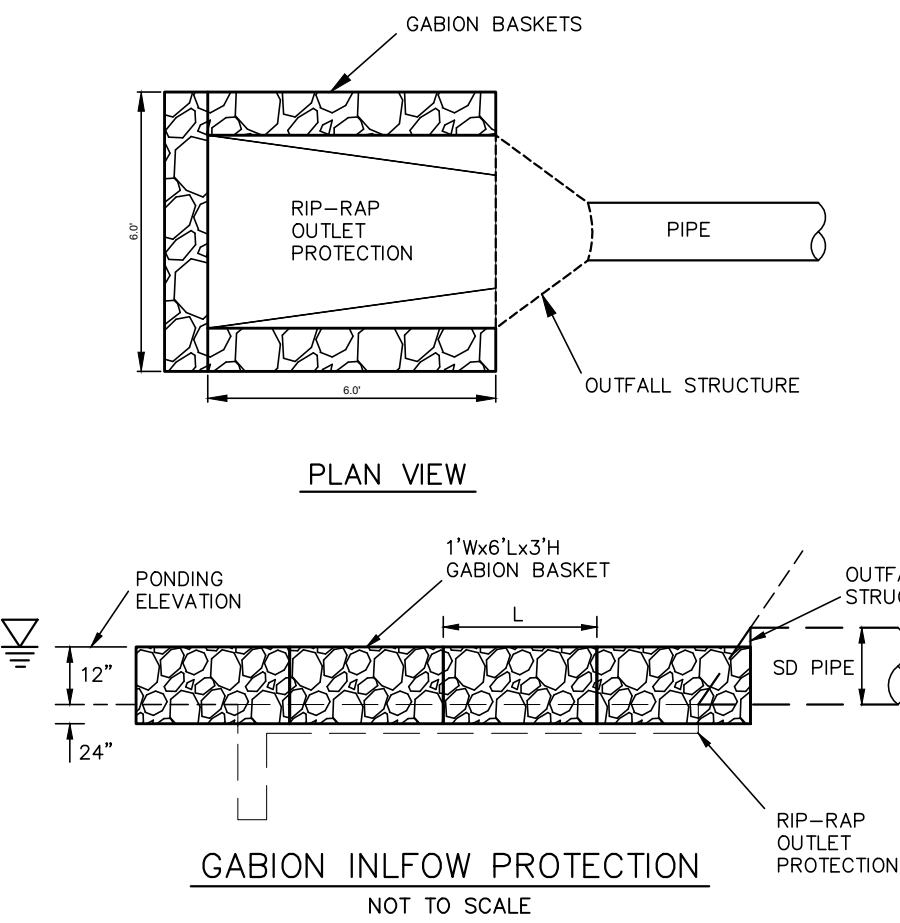
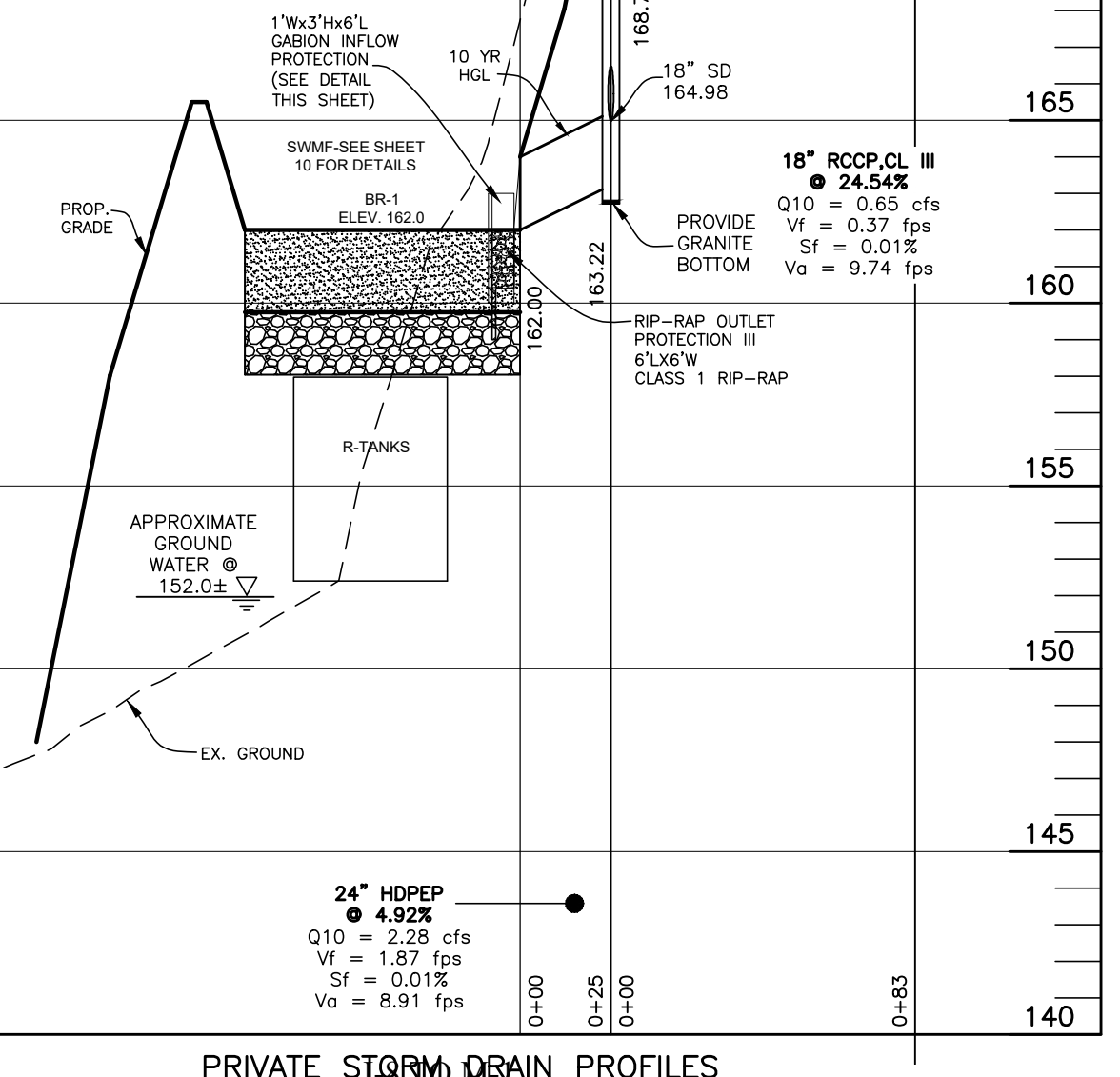
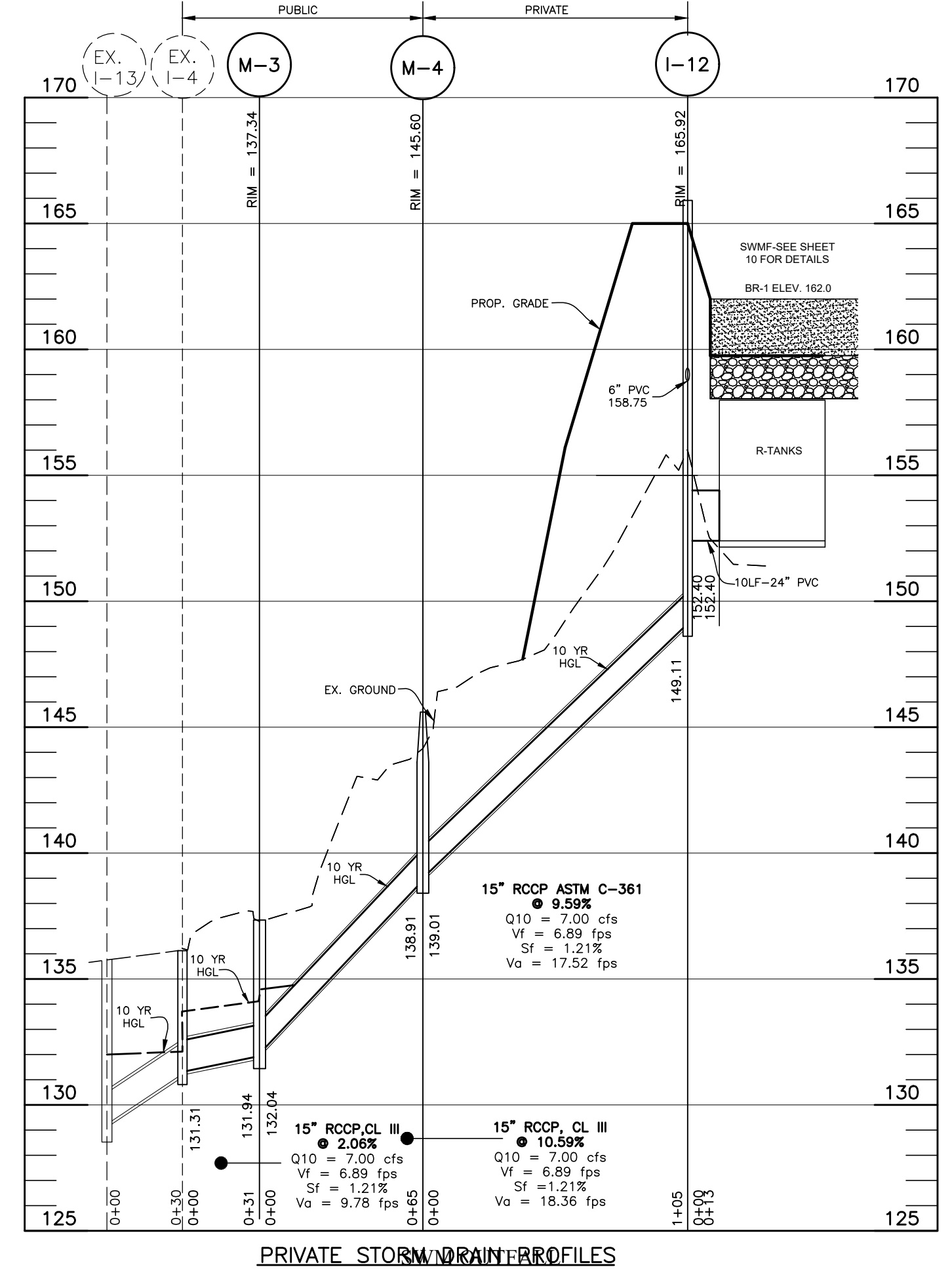
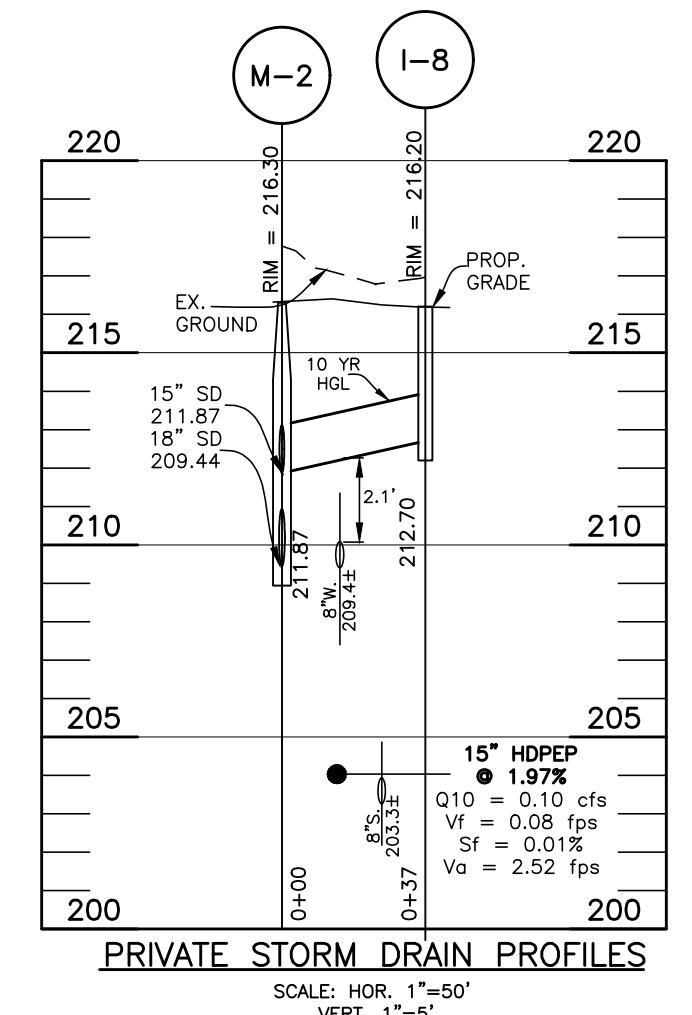
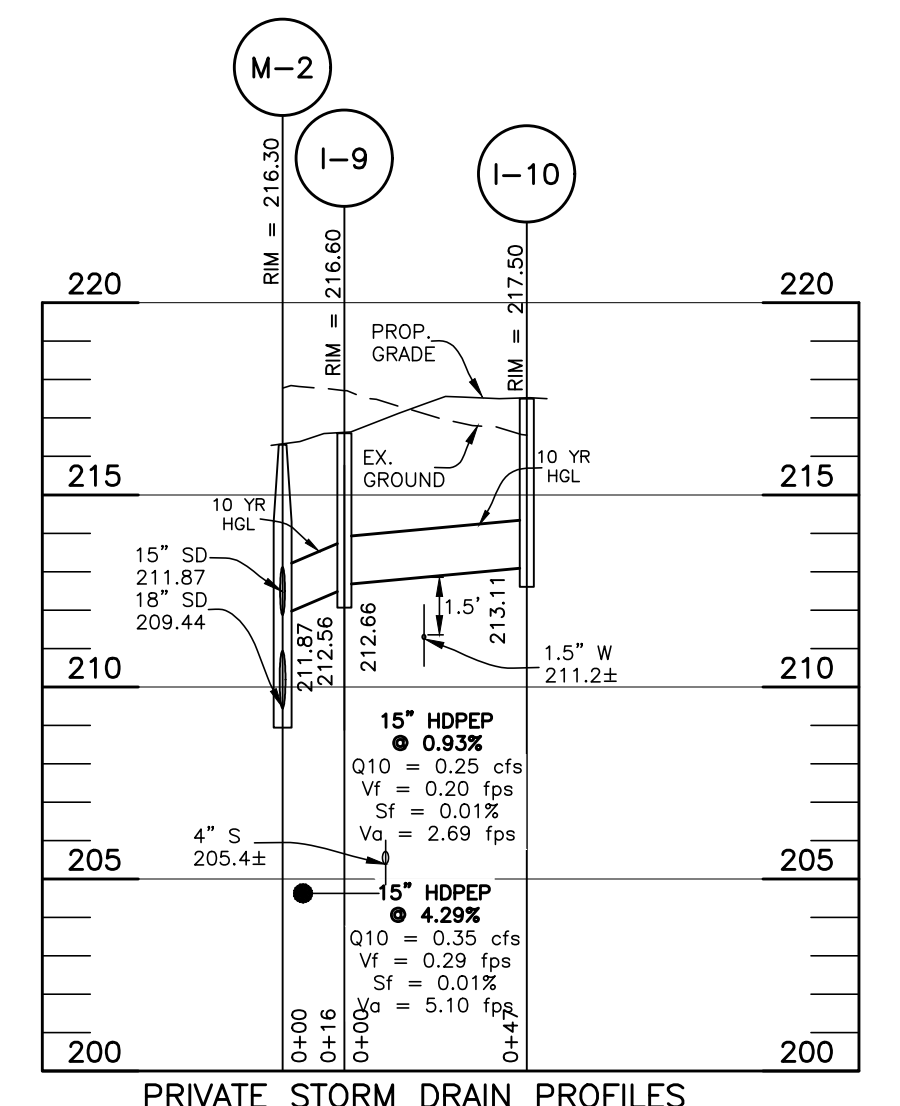
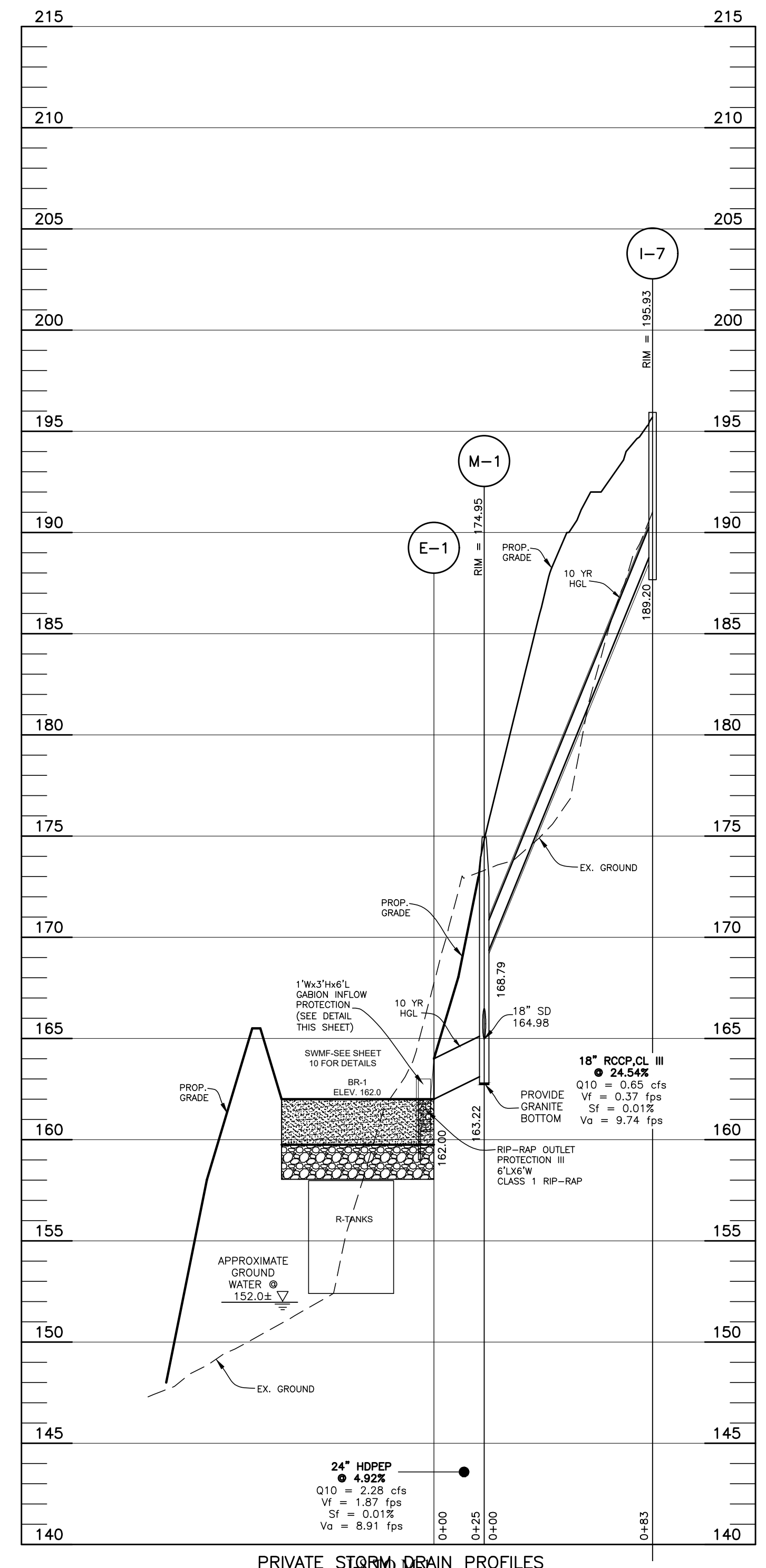
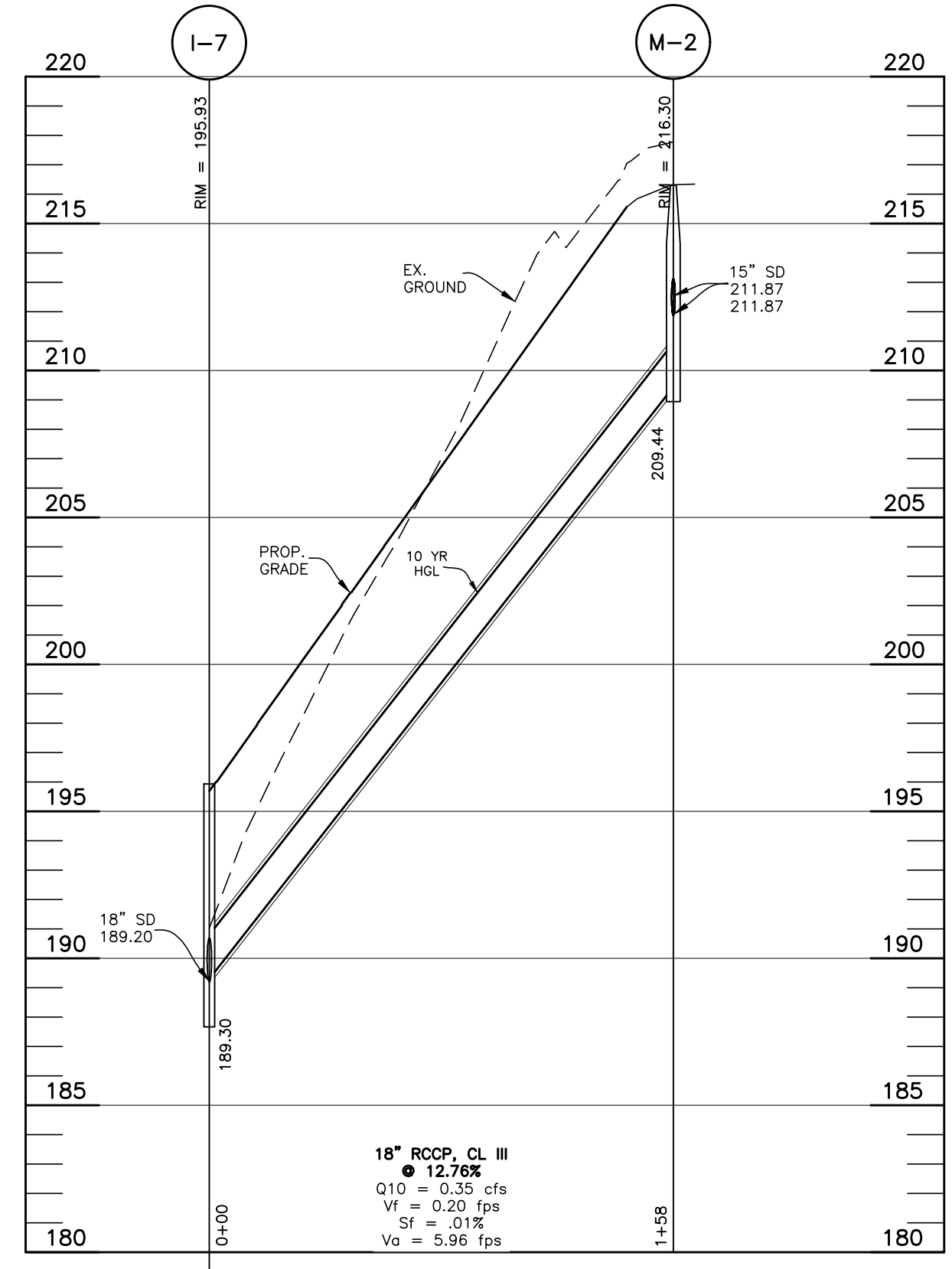
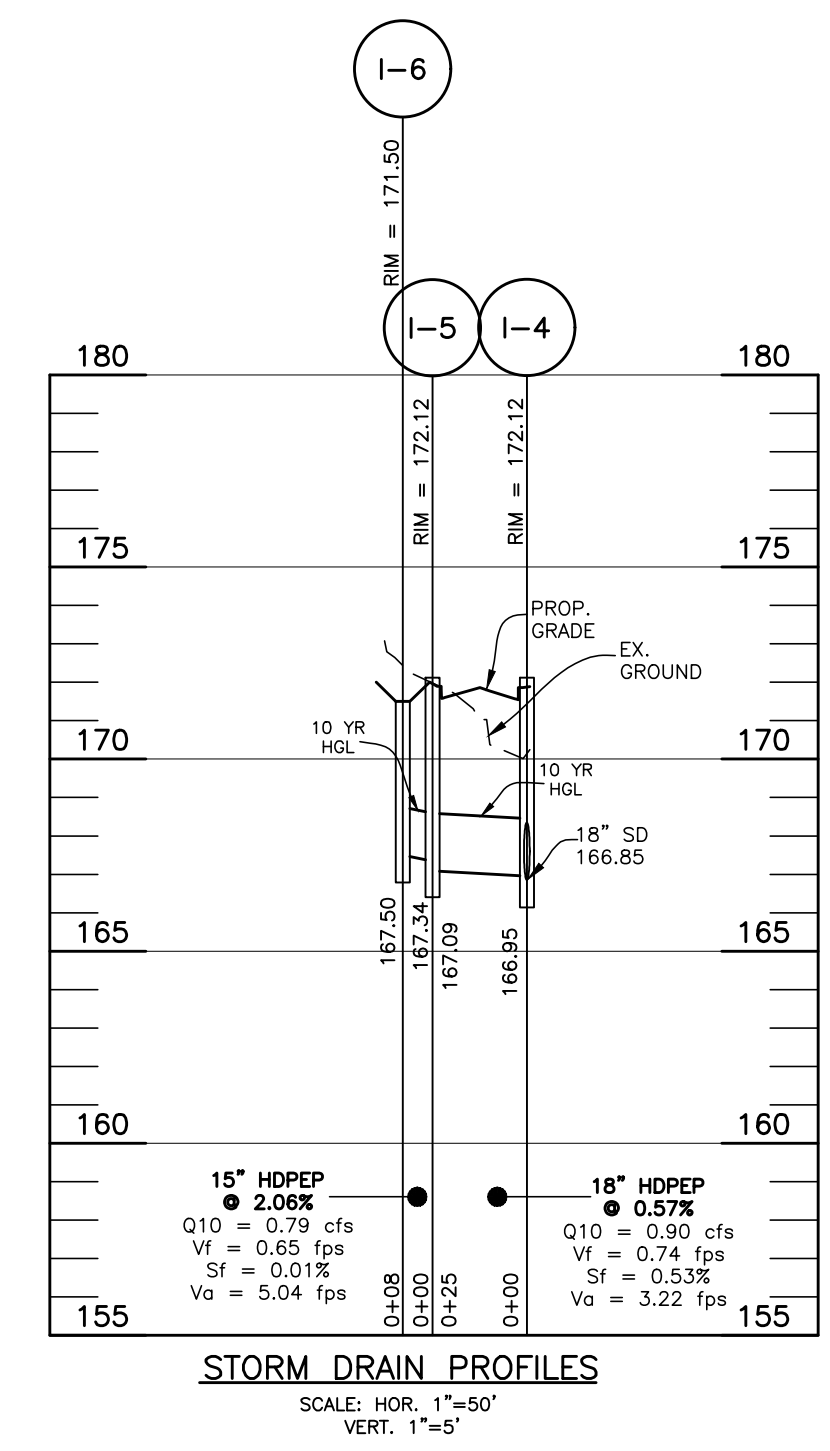
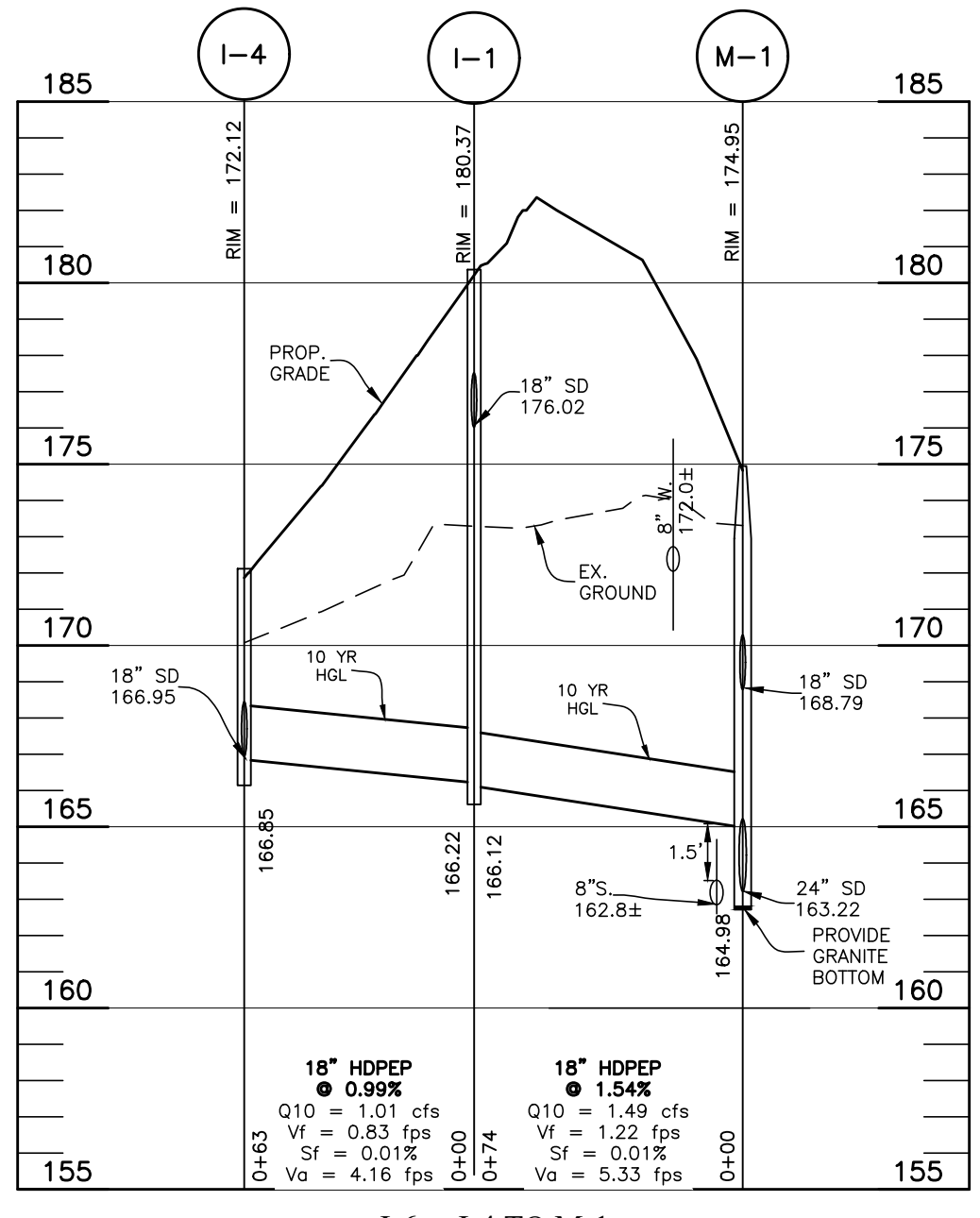
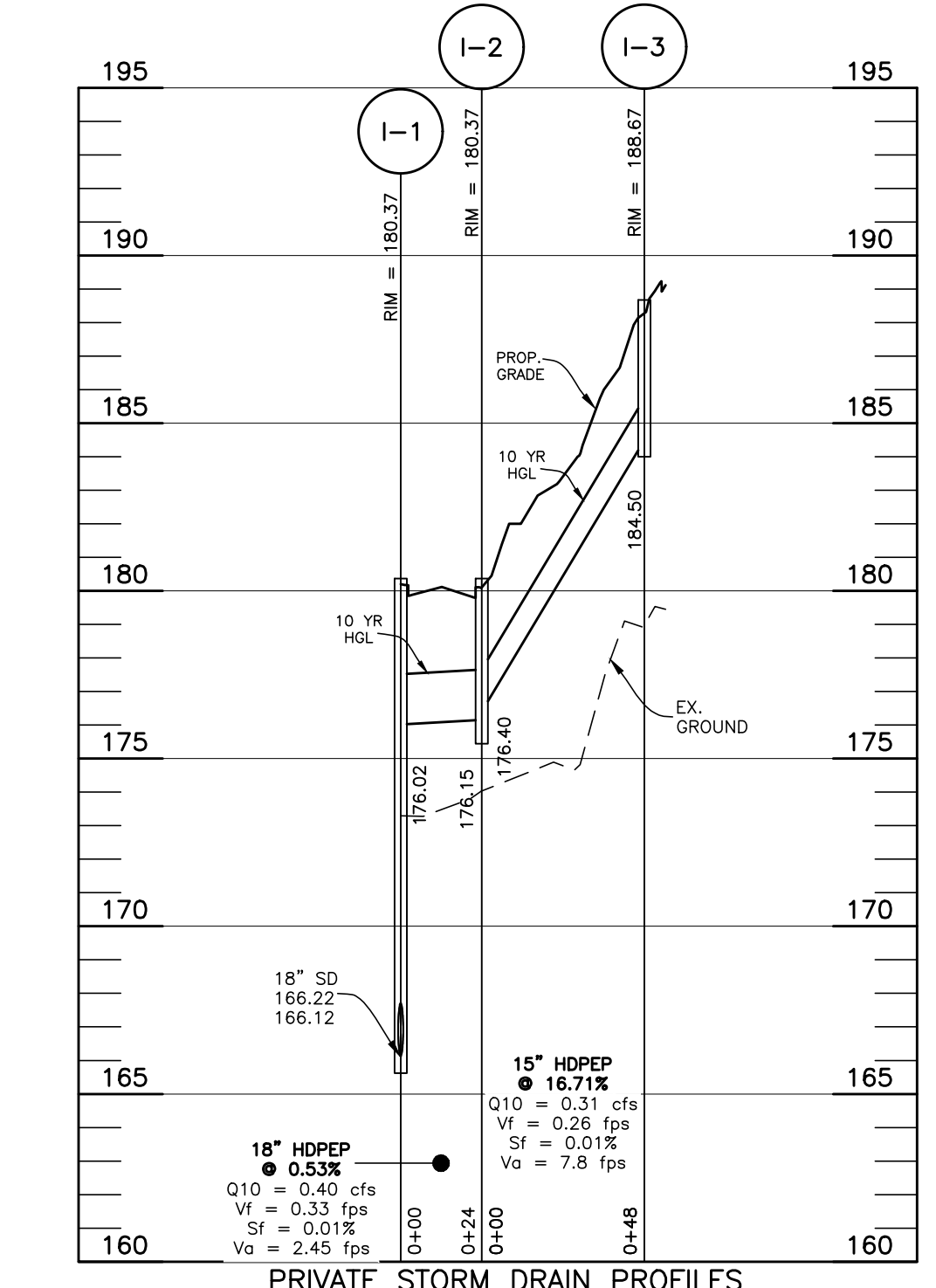
PLAN SCALE: 1" = 30'

NO.	DATE	REVISION
<p>BENCHMARK ENGINEERING, INC. 3300 NORTH RIDGE ROAD SUITE 140 ELICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-CIVILENGINEERING.COM</p>		
<p>Professional Certification. I hereby certify that these documents were prepared or approved by me or under my direct supervision and I am a duly licensed professional engineer in the State of Maryland. License No. 22350</p>		
<p>OWNER/DEVELOPER: TROTTER 5857, LLC. 1819 PANARAMA CT. MCLEAN, VA 22101 (P) 443-250-1555</p>		
<p>THE AERIE IN ELKRIDGE LOTS 1-8 AND OS LOT 9 & 10</p>		
<p>6399 ANDERSON AVE, HANOVER, MD 21076 TAX MAP: 3B - GRID: 14 - PARCEL: 232 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND</p>		
<p>STORM DRAIN DRAINAGE AREA MAP</p>		
DATE:	MAY 2024	BEI PROJECT NO. 2894
DESIGN:	JCO	DRAFT: JCO
SCALE:	AS SHOWN	SHEET 7 OF 13

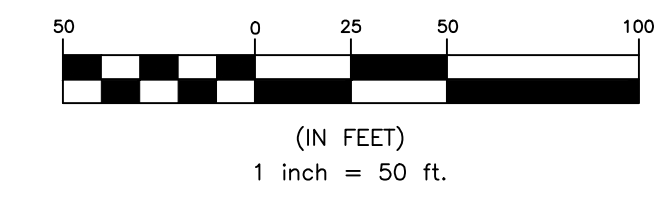
STRUCTURE TABLE								
NUMBER	TYPE	LOCATION	INVERT IN	INVERT OUT	TOP ELEV.	STD. DETAIL	OWNER	REMARKS
M-4	48" MH	N 556837.7 E 1389605.8	139.01(15')	138.91(15')	145.60	G-5.12	PUBLIC	
M-3	48" MH	N 556781.1 E 1389673.4	132.04(15')	131.94(15')	137.34	G-5.12	PUBLIC	
M-2	48" MH	N 557225.4 E 1389467.9	211.87(15')	209.44(18')	216.30	G-5.12	PRIVATE	
M-1	48" MH	N 557003.3 E 1389561.6	168.79(18')	164.98(18')	174.95	G-5.12	PRIVATE	PROVIDE GRANITE BOTTOM
I-12	CONTROL STRUCTURE	N 556941.7 E 1389589.4	158.75(6')	152.40(24')	149.11(15')		PRIVATE	SEE DETAIL SHEET 10
I-10	YARD	N 557259.7 E 1389521.4	211.87(15')	213.11(15')	217.50	D-4.11	PRIVATE	
I-9	YARD	N 557233.4 E 1389481.9	212.66(15')	212.56(15')	216.60	D-4.11	PRIVATE	
I-8	YARD	N 557203.9 E 1389437.5	212.70(15')	212.70(15')	216.20	D-4.11	PRIVATE	
I-7	A-5	CL STA. 4+27.1, 10.43' RT.	198.30(18')	189.20(18')	195.93	D-4.02	PRIVATE	
I-6	YARD	N 556963.1 E 1389425.7	167.50(15')	167.50(15')	171.50	D-4.11	PRIVATE	
I-5	A-5	CL STA. 2+53.3, 10.43' LT.	167.34(15')	167.09(18')	172.12	D-4.02	PRIVATE	
I-4	A-5	CL STA. 2+53.3, 10.43' RT.	166.95(18')	166.85(18')	172.12	D-4.02	PRIVATE	
I-3	A-5	CL STA. 3+75.1, 10.43' LT.	184.50(15')	184.50(15')	188.67	D-4.02	PRIVATE	
I-2	A-5	CL STA. 3+15.9, 10.43' LT.	176.40(15')	176.15(18')	180.37	D-4.02	PRIVATE	
I-1	A-5	CL STA. 3+15.9, 10.43' RT.	166.22(18')	166.12(18')	180.37	D-4.02	PRIVATE	
E-1	24" END SECTION	N 556993.5 E 1389584.4	162.00	164.00	164.00	D-5.51	PRIVATE	

TOP OF TYPE 'A' INLETS ARE TOP FACE OF CURB
 TOP OF 'YARD' INLETS ARE GROUND AT OPENING
 TOP OF CLEANOUT IS TOP OF OPENING
 TOP OF MANHOLE IS CENTER OF THE MANHOLE

PIPE SCHEDULE			
SIZE / MATERIAL	LENGTH	OWNERSHIP	
15" HDPEP	156LF	PRIVATE	
15" RCCP, CL III	96LF	PUBLIC	
15" RCCP, ASTM C-361	105LF	PRIVATE	
18" HDPEP	186LF	PRIVATE	
24" HDPEP	25LF	PRIVATE	
24" PVC SCH 40	10LF	PRIVATE	
18" RCCP, CL III	241LF	PRIVATE	



APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways: [Signature] 6/4/2024
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: [Signature] 6/6/2024
 Chief, Development Engineering Division: [Signature] 6/11/2024



NO.	DATE	REVISION

BENCHMARK 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 documents were prepared or approved by me (or by a duly licensed professional engineer or professional engineer-in-training) in the State of Maryland, License No. 22390, dated 05-15-2024.

THE AERIE IN ELKRIDGE
 LOTS 1-8 AND OS LOT 9 & 10
 6399 ANDERSON AVE, HANOVER, MD 21076
 TAX MAP: 3B - GRID: 14 - PARCEL: 232
 ZONED: R-12
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

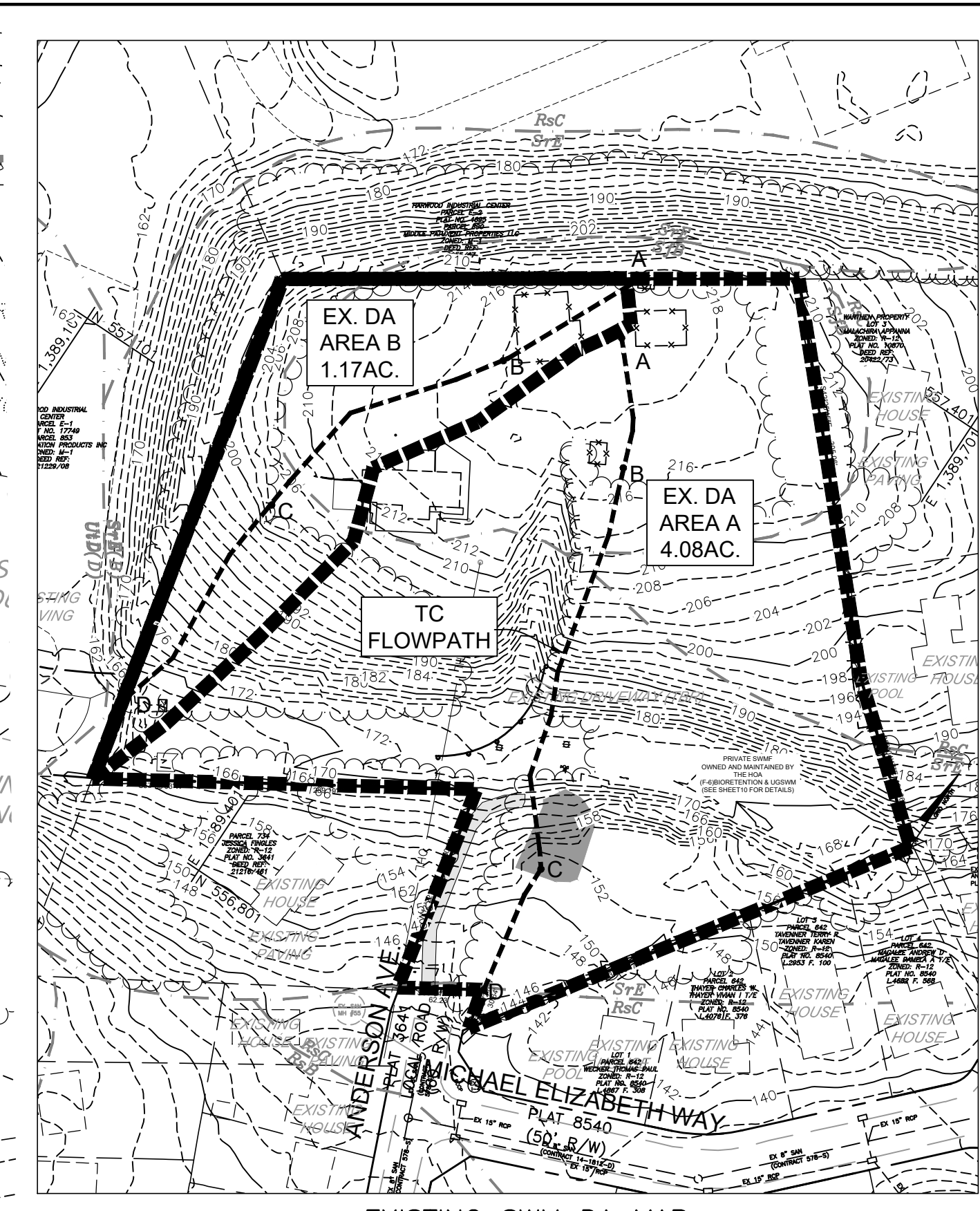
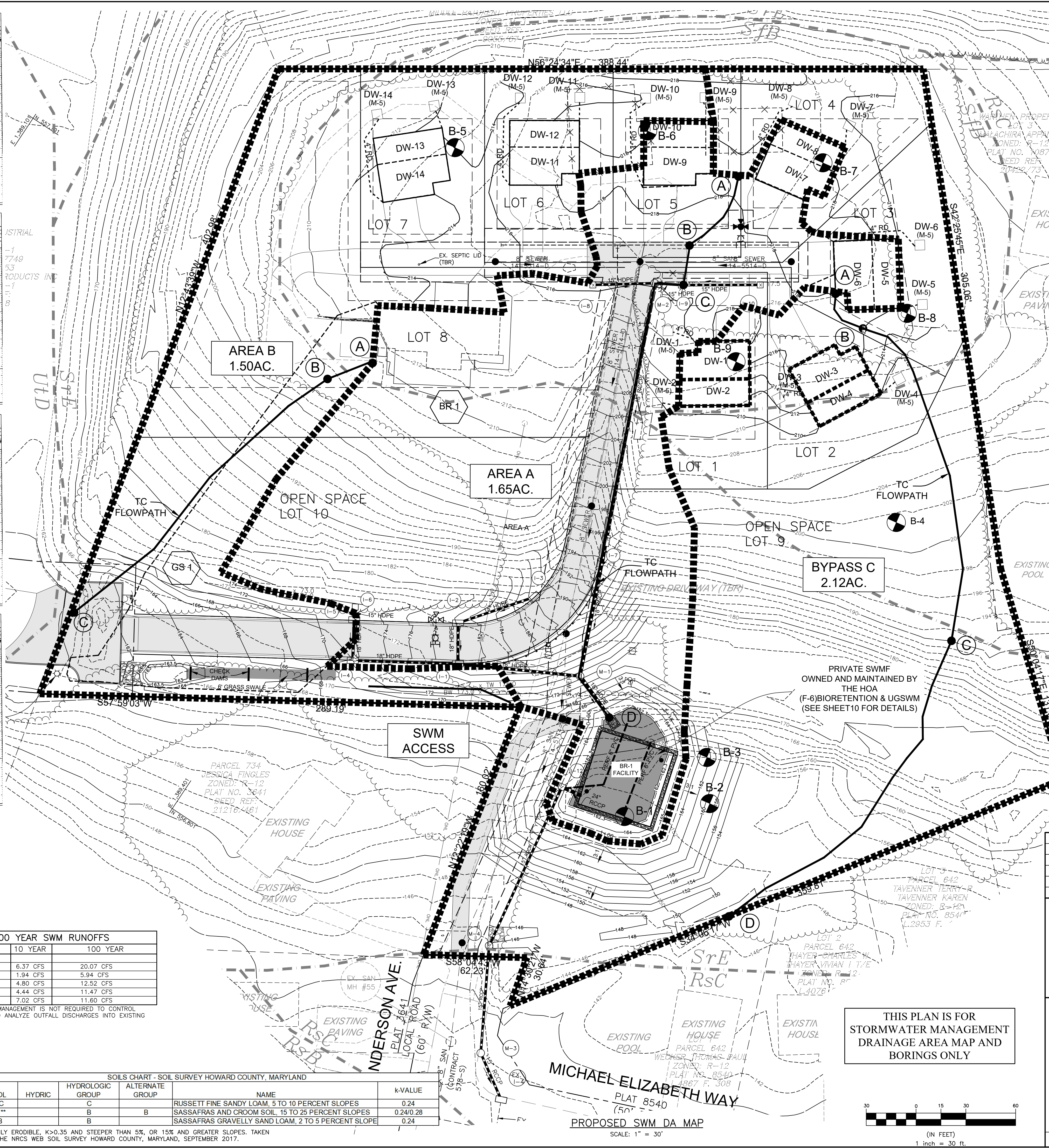
STORM DRAIN PROFILES

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

DATE: MAY 2024 BEI PROJECT NO. 2894
 DESIGN: JCO DRAFT: JCO SCALE: AS SHOWN SHEET 8 OF 13

BORING LOG		GEOLAB INC.	
1.0	1.0	1.0	1.0
2.0	2.0	2.0	2.0
3.0	3.0	3.0	3.0
4.0	4.0	4.0	4.0
5.0	5.0	5.0	5.0
6.0	6.0	6.0	6.0
7.0	7.0	7.0	7.0
8.0	8.0	8.0	8.0
9.0	9.0	9.0	9.0
10.0	10.0	10.0	10.0
11.0	11.0	11.0	11.0
12.0	12.0	12.0	12.0
13.0	13.0	13.0	13.0
14.0	14.0	14.0	14.0
15.0	15.0	15.0	15.0
16.0	16.0	16.0	16.0
17.0	17.0	17.0	17.0
18.0	18.0	18.0	18.0
19.0	19.0	19.0	19.0
20.0	20.0	20.0	20.0

NOTE: SOIL BORINGS ARE BY OTHERS.



EXISTING SWM DA MAP
SCALE: 1" = 100'

LEGEND

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- GIS CONTOUR LINES
- PROPOSED CONTOUR LINES
- SOIL DELINEATION
- EXISTING BUILDINGS
- PROPOSED PAVING
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPOSED WATER
- PROPOSED SANITARY
- PROPOSED STORMDRAIN
- DRYWELL WITH 4" ROOF DRAIN LEADER
- SWM DRAINAGE AREA DIVIDE
- SWM BORING LOCATIONS

10-100 YEAR SWM RUNOFFS

SWM DA	10 YEAR	100 YEAR
EX. AREA A	6.37 CFS	20.07 CFS
EX. AREA B	1.94 CFS	5.94 CFS
DEV. AREA A	4.80 CFS	12.52 CFS
DEV. AREA B	4.44 CFS	11.47 CFS
AREAS A & C ROUTED	7.02 CFS	11.60 CFS

* NOTE 10-100 YEAR MANAGEMENT IS NOT REQUIRED TO CONTROL RUNOFF BUT RATHER TO ANALYZE OUTFALL DISCHARGES INTO EXISTING STORM DRAIN SYSTEMS.

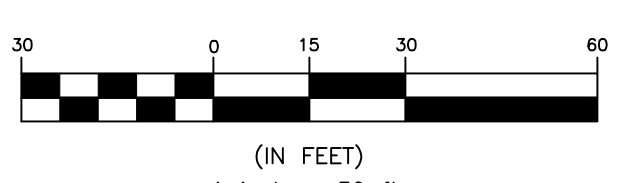
SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
Rsc		C		RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES	0.24
SiE**		B	B	SASSAFRAS AND CROOM SOIL, 15 TO 25 PERCENT SLOPES	0.24/0.28
SIB		B		SASSAFRAS GRAVELLY SAND LOAM, 2 TO 5 PERCENT SLOPE	0.24

** HIGHLY ERODIBLE, K>0.35 AND STEEPER THAN 5%, OR 15% AND GREATER SLOPES. TAKEN FROM THE NRCS WEB SOIL SURVEY HOWARD COUNTY, MARYLAND, SEPTEMBER 2017.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Disapproved by: [Signature] DATE: 6/4/2024
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Disapproved by: [Signature] DATE: 6/6/2024
 CHIEF, DIVISION OF LAND DEVELOPMENT
 Disapproved by: [Signature] DATE: 6/11/2024
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

THIS PLAN IS FOR STORMWATER MANAGEMENT DRAINAGE AREA MAP AND BORINGS ONLY



NO.	DATE	REVISION

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

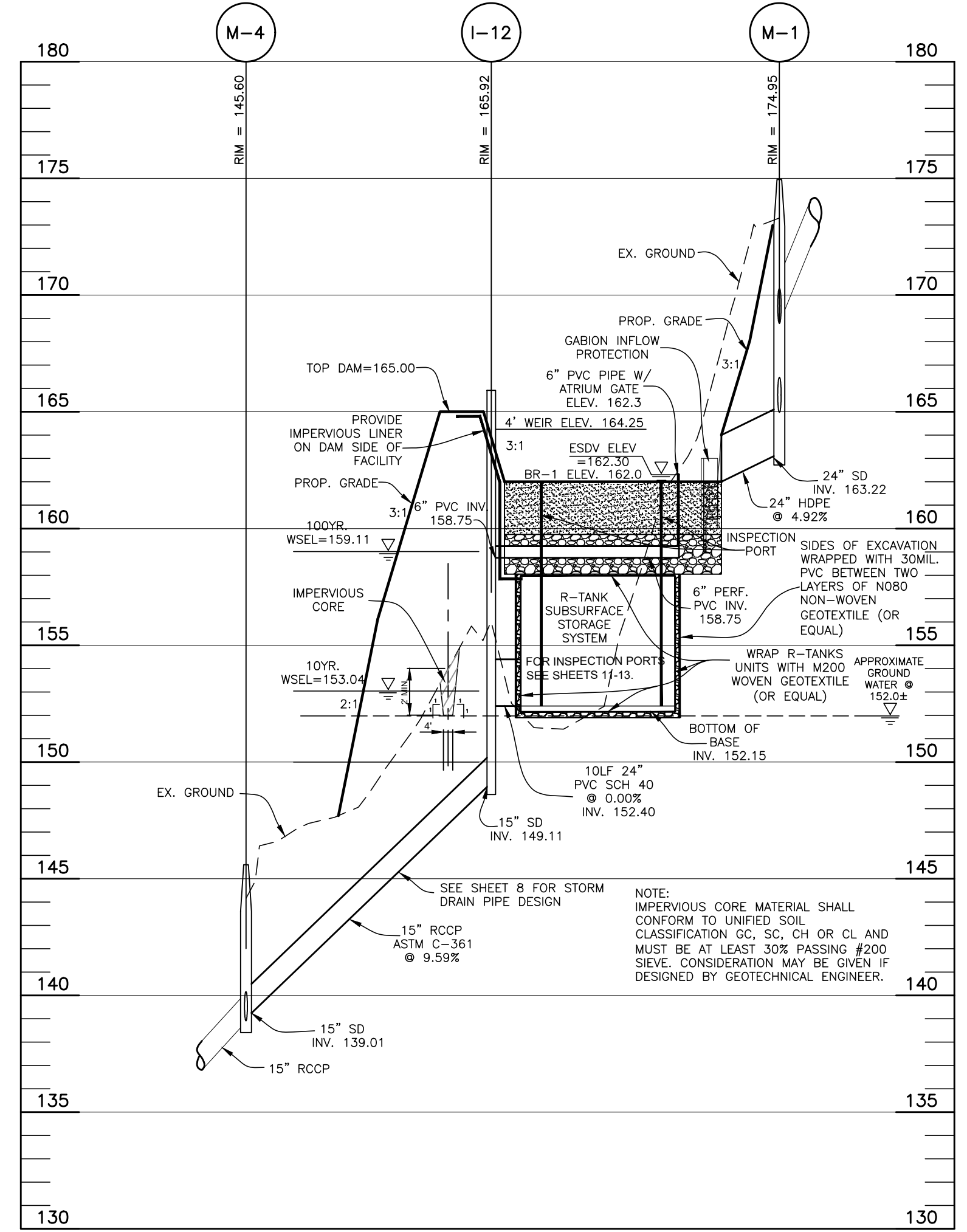
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer in the State of Maryland. License No. 22390
 05.15.2024

OWNER/DEVELOPER:
 TROTTER 5857, LLC.
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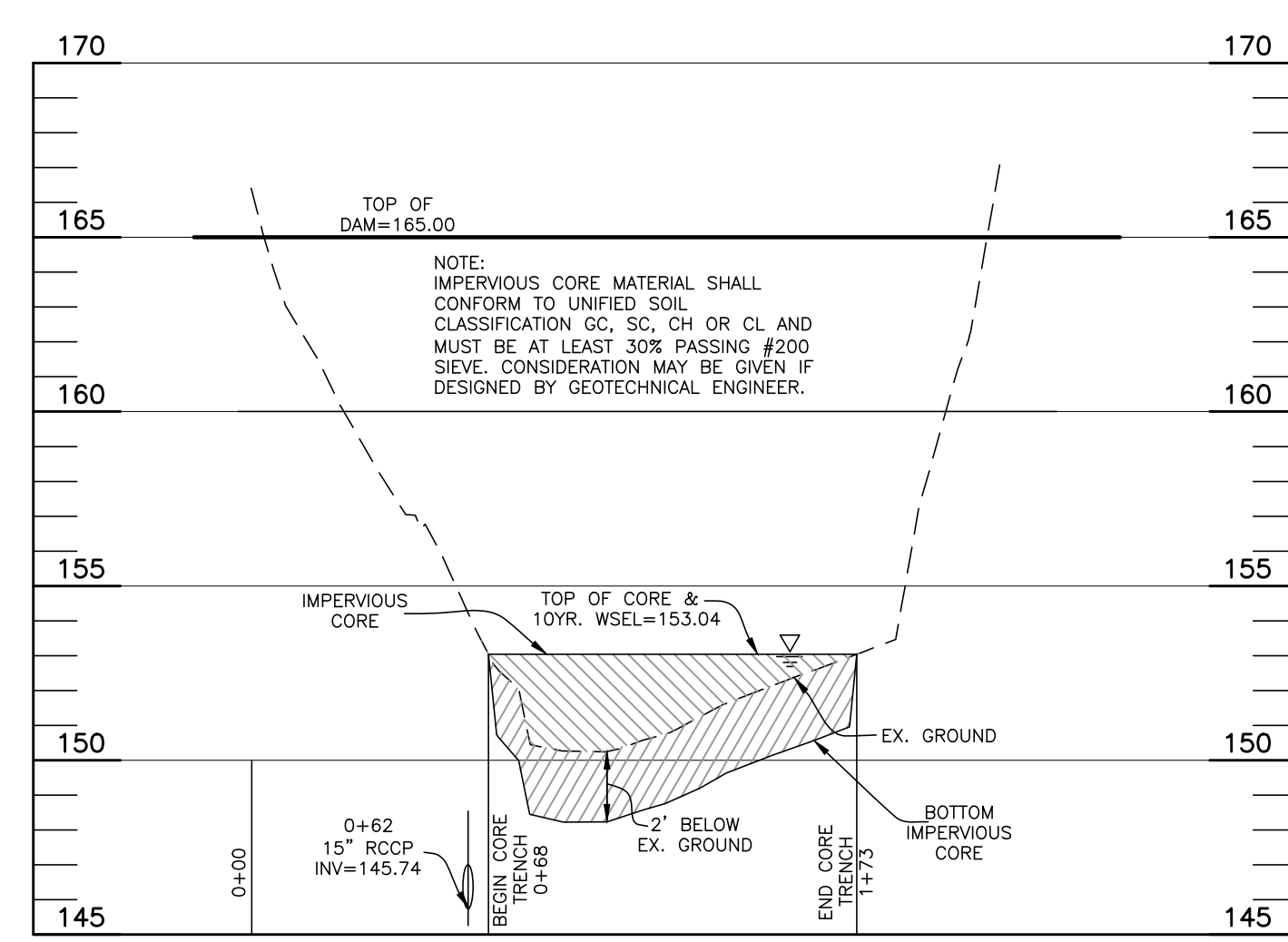
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 TAX MAP: 38 - GRID: 14 - PARCEL: 232
 ZONED: R-12
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT DRAINAGE AREA MAP

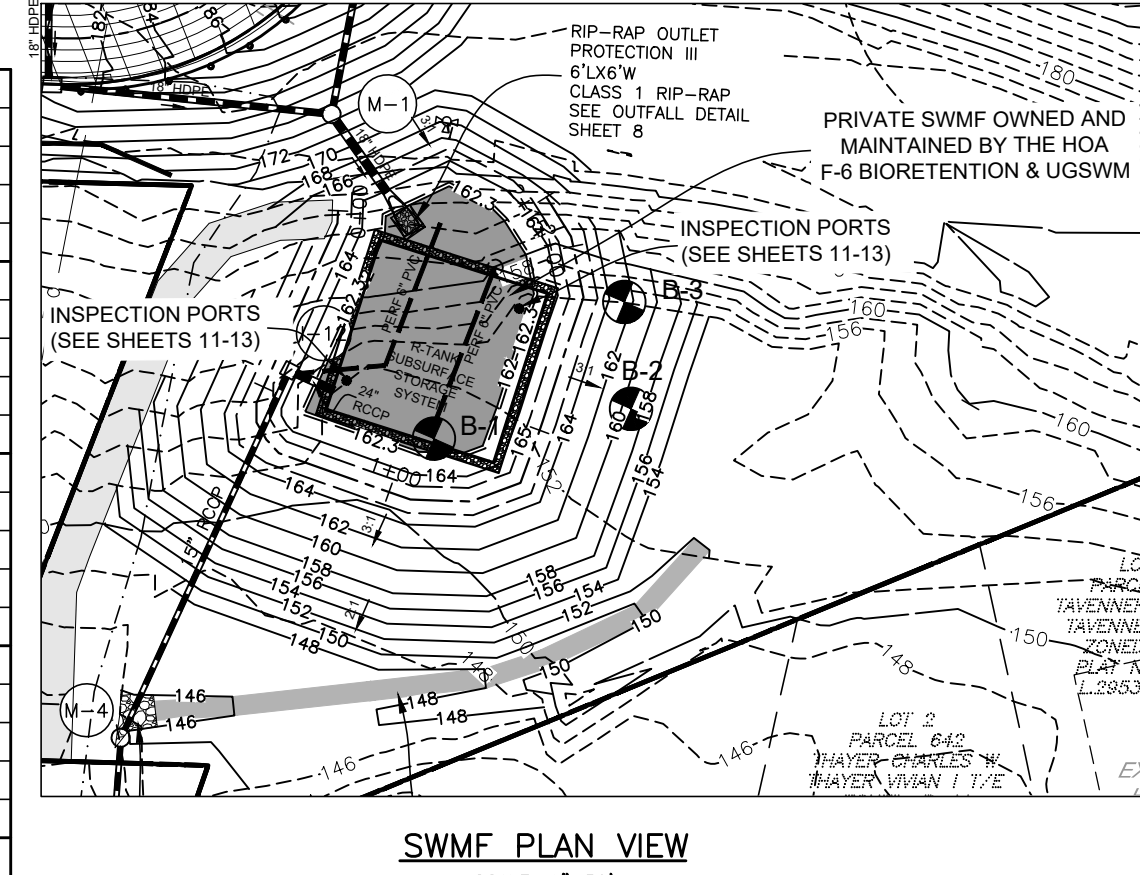
DATE: MAY 2024 BEI PROJECT NO. 2894
 DESIGN: JCO DRAFT: JCO SCALE: AS SHOWN SHEET 9 OF 13



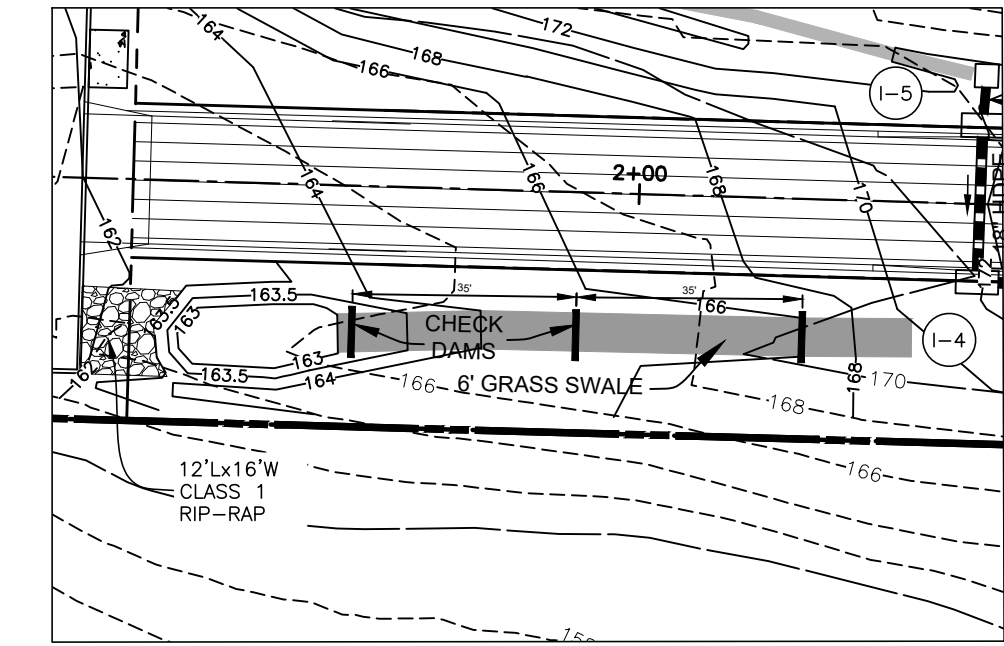
STORMWATER MANAGEMENT OUTFALL SECTION
SCALE: HOR. 1"=50'
VERT. 1"=5'



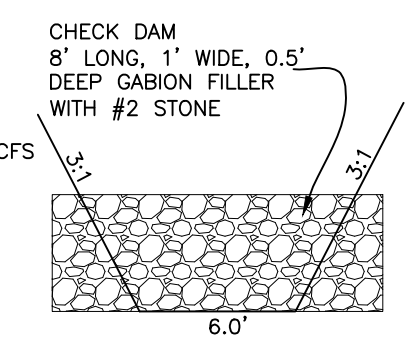
CENTERLINE EMBANKMENT PROFILE
SCALE: HOR. 1"=50'
VERT. 1"=5'



SWMF PLAN VIEW
SCALE: 1"=50'



SWALE PLAN VIEW
SCALE: 1"=30'



GW-1 GRASS SWALE SECTION (M-8)
NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED OPEN CHANNEL SYSTEMS GRASS SWALES AND WET SWALES (M-8)

- The open channel system shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
- The open channel shall be mowed a minimum of as needed during the growing season to maintain a maximum grass height of less than 6 inches.
- Debris and litter shall be removed during regular mowing operations and as needed.
- Visible signs of erosion in the open channel system shall be repaired as soon as it is noticed.
- Remove silt in the open channel system when it exceeds 25% of the original WQv.
- Inspect check dams twice a year for structural integrity. Restore check dams to original condition as applicable.

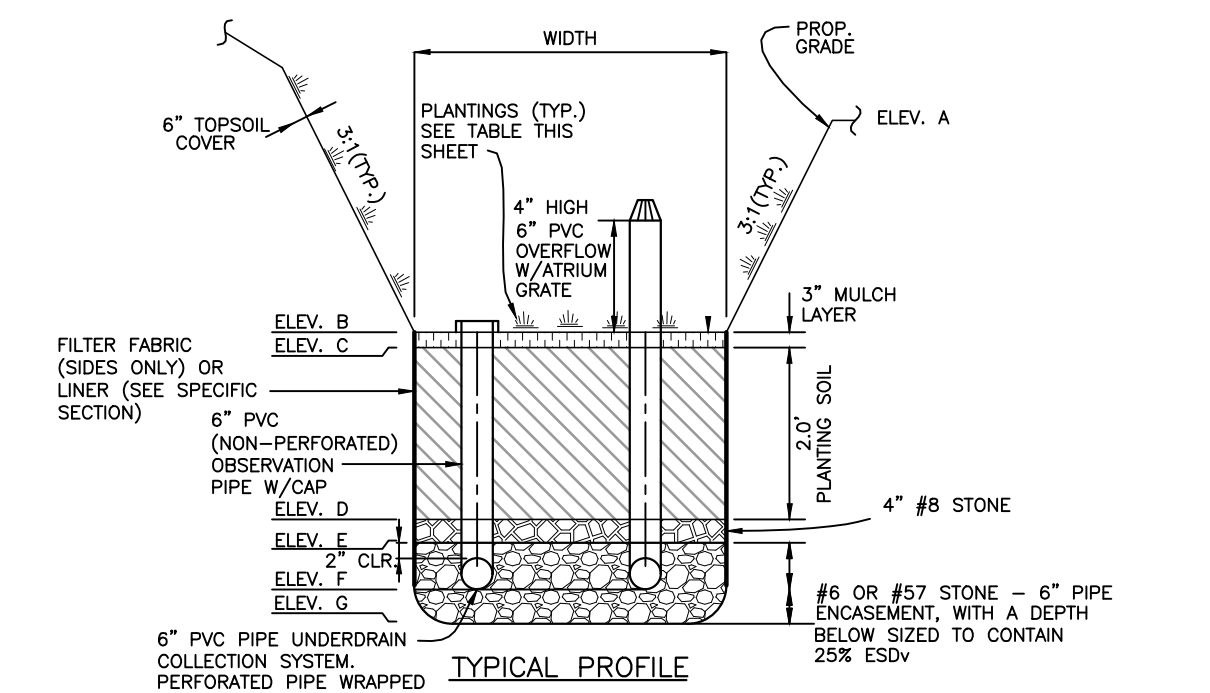
FACILITY	A	B	C	D	E	F	G	LENGTH	WIDTH	FILTER (A/F)	PLANTINGS (1) (2) (3)	LINER
BR-1	165.00	162.0	161.75	159.75	159.42	158.75	158.04	62'	44'	2.6935F	120 90 90	NO

BIORETENTION PLANTING SCHEDULE
(SPECIFIC NUMBER OF PLANTINGS SHALL BE DETERMINED WITH FINAL DESIGN AT PLOT PLAN PHASE)

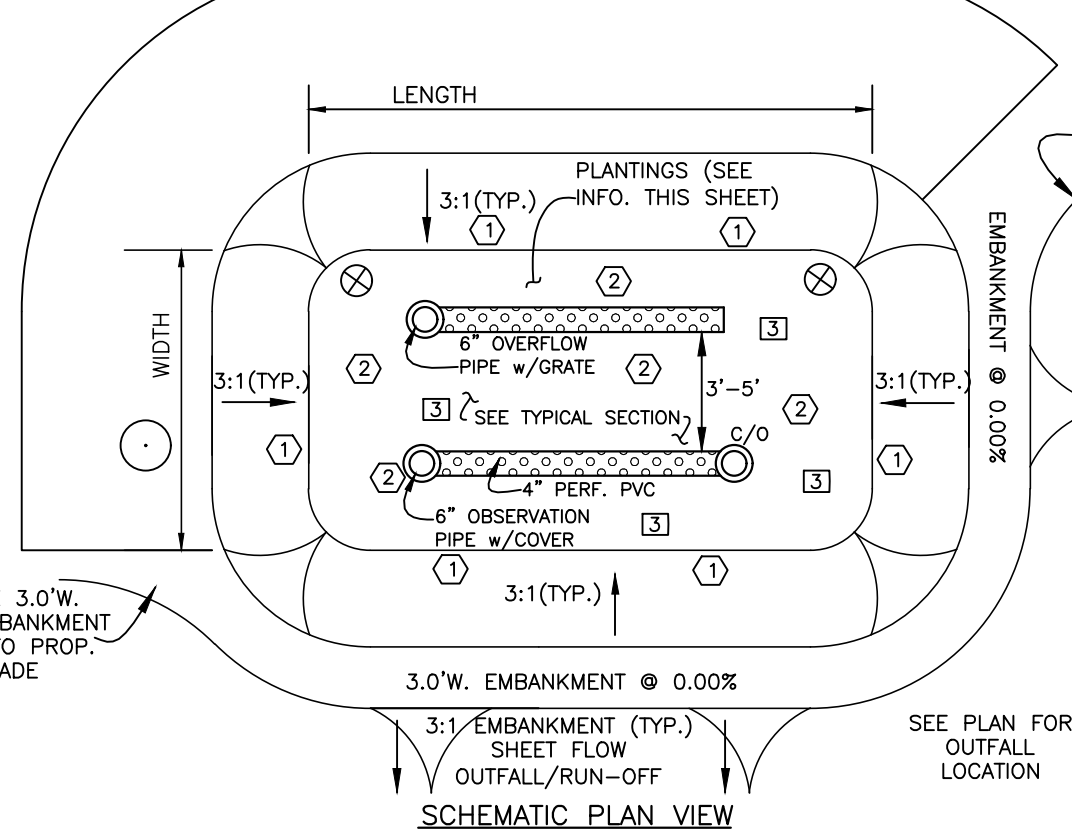
- IRIS VERSICOLOR (IRIS)
- LOBELIA CARDINALIS CARDINAL FLOWER
- RUBRICKIA SUBTOMENTOSA - SWEET CONEFLOWER
- CALLUNA VULGARIS (HEATHER) (2 PER FACILITY)
- SALIX NIGRA (BLACK WILLOW) (1 PER FACILITY)

BIORETENTION PLANTING DATA

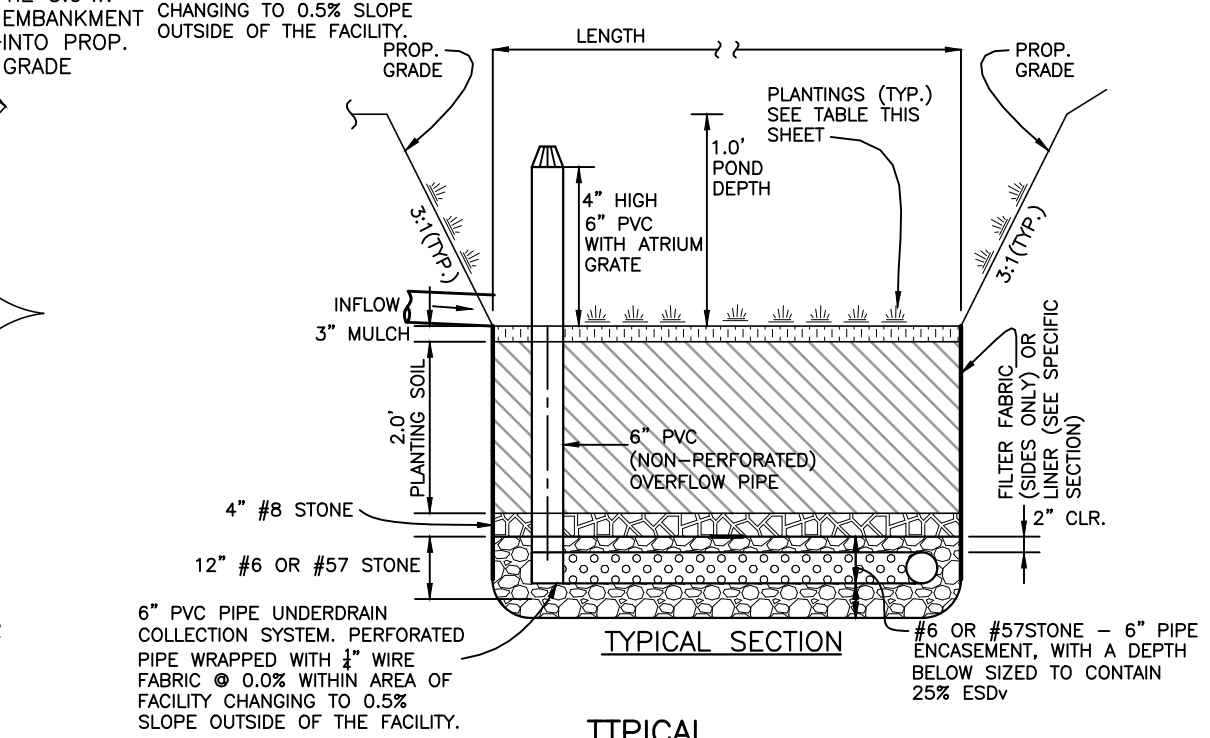
- PLANTINGS WITHIN THE PONDING AREA OF THE MICRO-BIORETENTION FACILITY ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE.
- PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE MICRO-BIORETENTION FACILITY ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE.
- AVOID PLANTINGS WITH EXCESSIVE ROOT MASS IN POND AREA OF THE MICRO-BIORETENTION FACILITY NEAR O.B. PIPE AND UNDERDRAIN.



TYPICAL PROFILE



SCHEMATIC PLAN VIEW



TYPICAL SECTION

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)

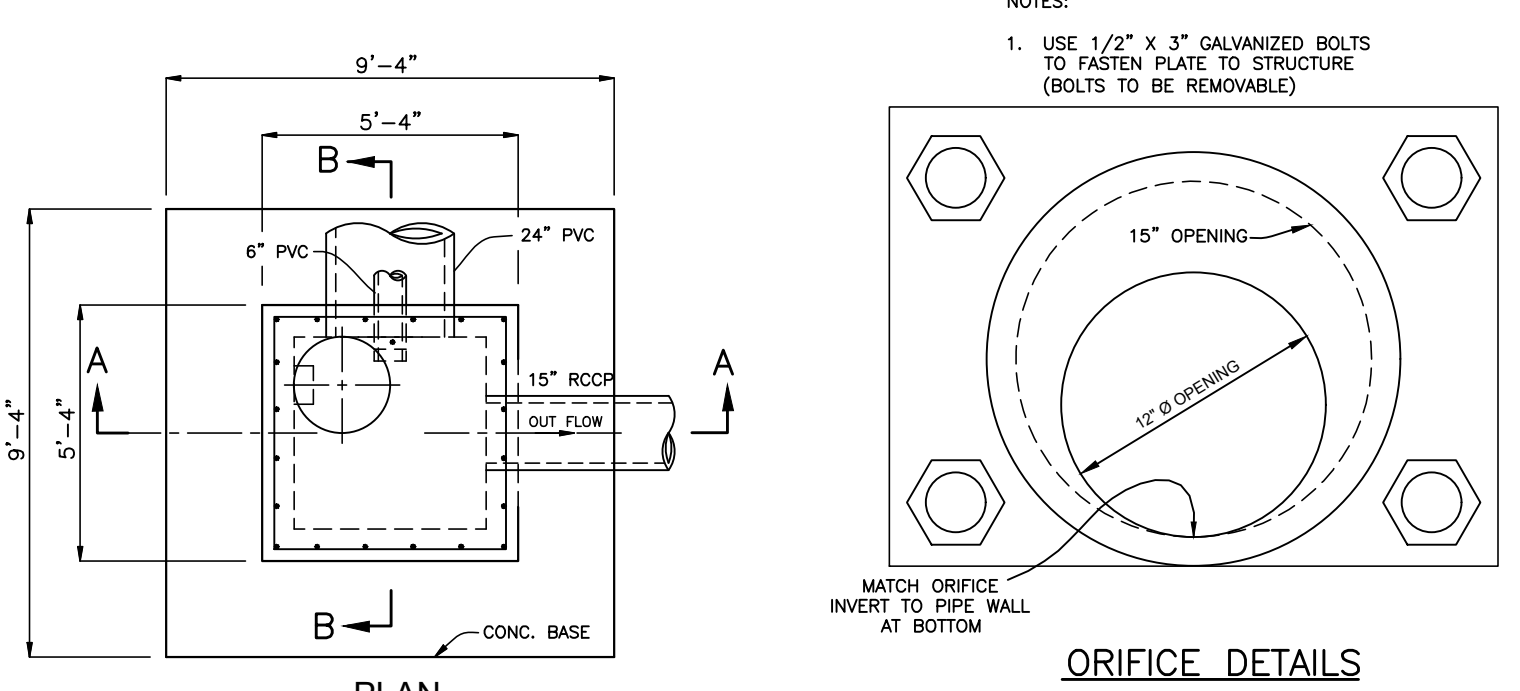
- THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
- WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
- A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN THE 72 HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6), BIORETENTION (M-7), AND RAIN GARDEN (M-7)

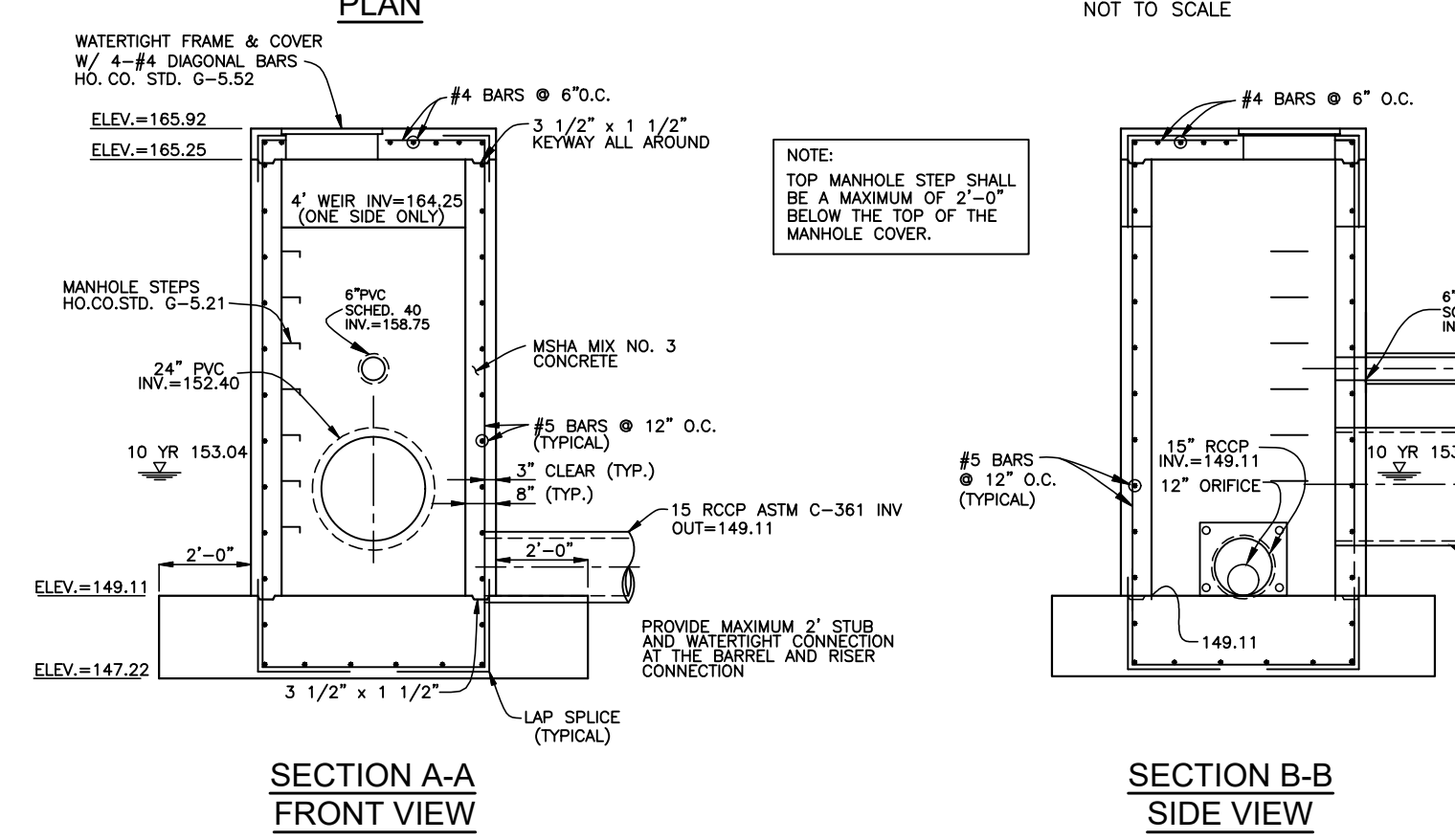
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME 1, TABLE 4.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. REMOVE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

Table B.4.1 Construction Specifications for Environmental Site Design Practices

Material	Specification	Notes
Plantings	see Appendix A, Table A.4	plantings are site-specific.
Flushing soil	heavy sand (65-85% silica) & compost (35-40%)	USDA soil types heavy sand or sandy loam; clay content <5%
Organic content	Min. 10% by dry weight (ASTM D 2974)	
Mulch	biodegradable	aged 6 months, minimum no pine or wood chips
Pre gravel diaphragm	pea gravel ASTM-D-449	NO. 8 OR NO. 9 (1/8" TO 3/8")
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"
Geotextile	n/a	PE Type I nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 (3/8" TO 3/4")
Underdrain piping	F-754, Type PS 28 or AASHTO M-278	4" or 6" rigid schedule 40 PVC or SDR35
Formed in place concrete (if required)	MSHA Mix No. 3, F _c = 3500 psi @ 28 days, normal weight air-entrained, reinforcing to meet ASTM-G-109	cast-in-place concrete required 28 day strength and slump test, all concrete design (cast-in-place or pre-cast) not using previously approved design or local standards requires design review and approval by a professional structural engineer located in the State of Maryland - design to include meeting ACT Code 100.000 - vertical loading (16-18 or 18-20); allowable horizontal loading (based on soil permeability and analysis of potential cracking)
Sand	AASHTO M-6 or ASTM-C-33	0.075 to 0.04"



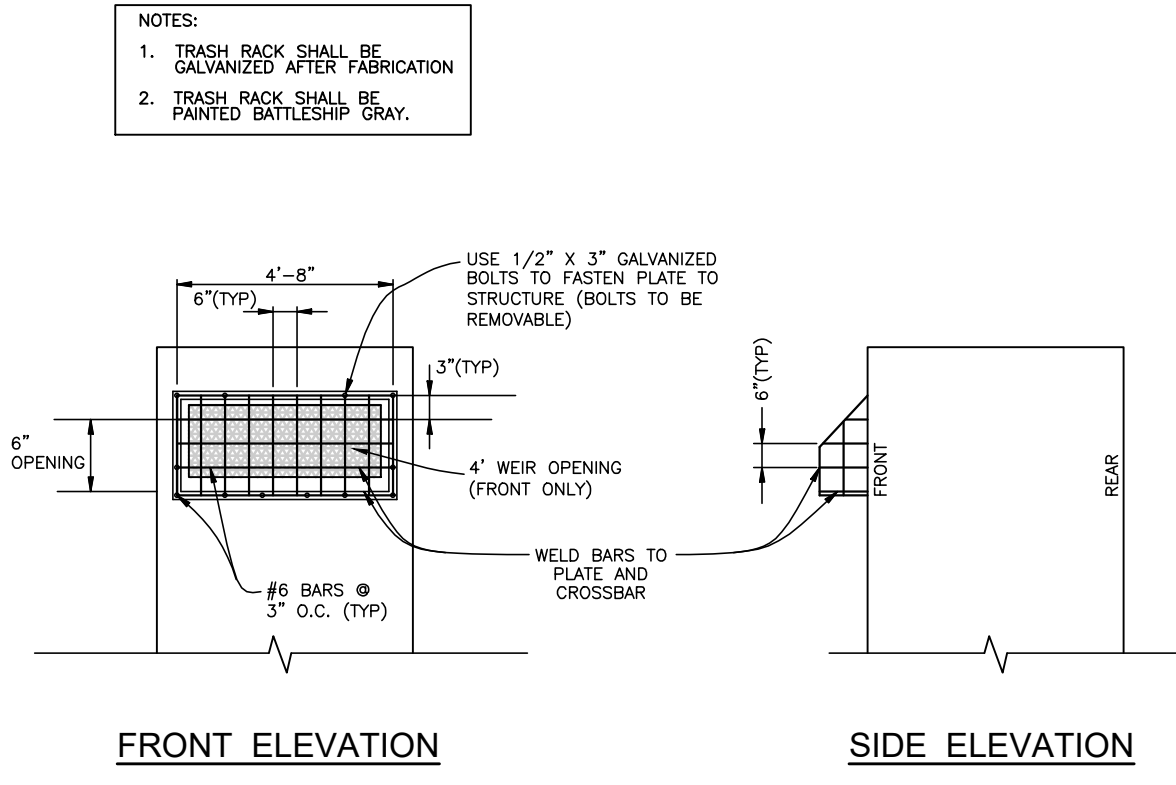
ORIFICE DETAILS
NOT TO SCALE



SECTION A-A FRONT VIEW

SECTION B-B SIDE VIEW

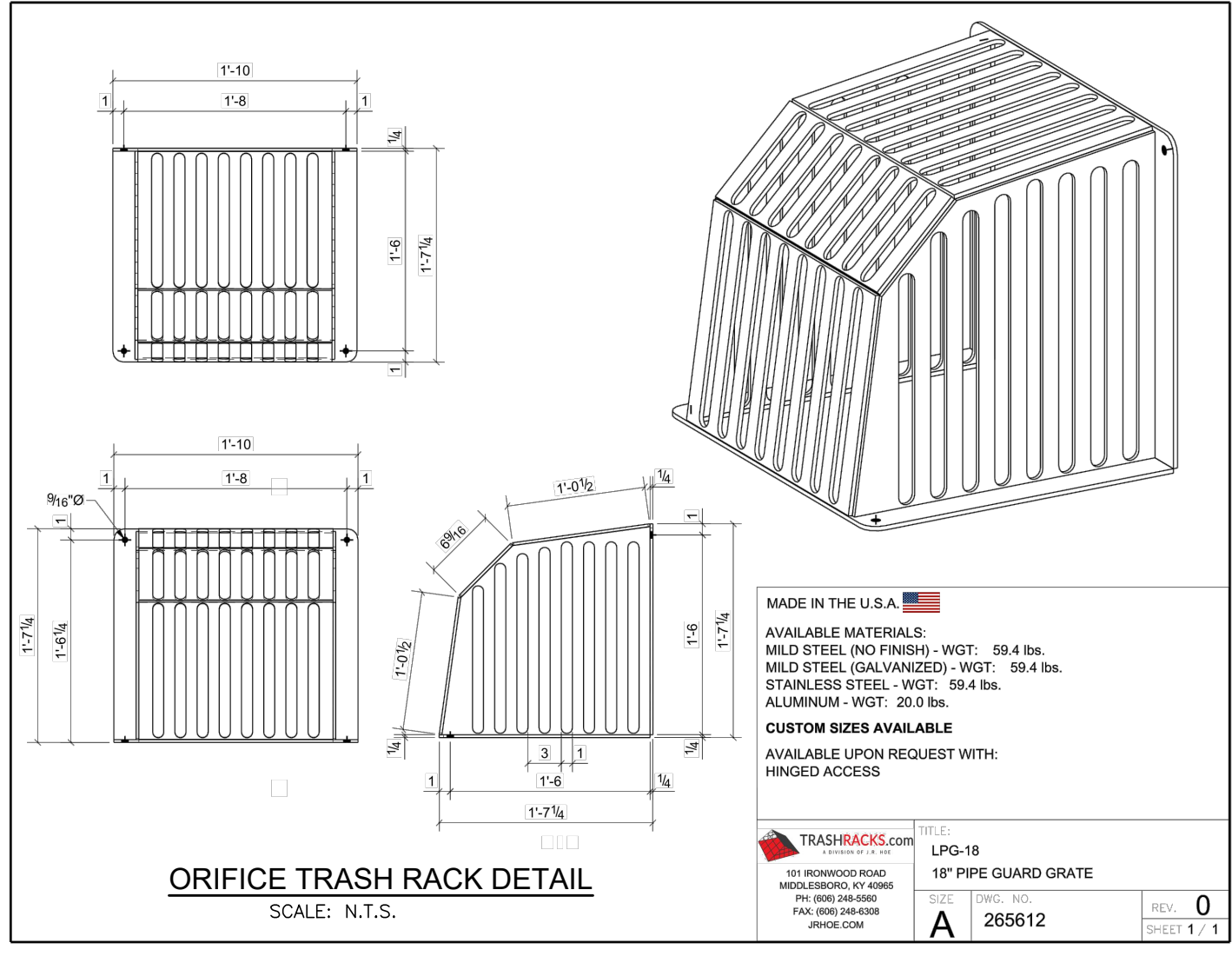
CONTROL STRUCTURE - INLET 1-12
SCALE: N.T.S.



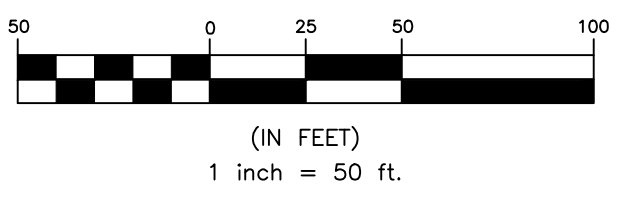
FRONT ELEVATION

SIDE ELEVATION

RISER TRASH RACK DETAIL
SCALE: N.T.S.



ORIFICE TRASH RACK DETAIL
SCALE: N.T.S.



APPROVED: DEPARTMENT OF PUBLIC WORKS
 Disapproved by: [Signature] 6/4/2024
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Disapproved by: [Signature] 6/6/2024
 CHIEF, DIVISION OF LAND DEVELOPMENT
 Disapproved by: [Signature] 6/11/2024
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

B.4.7 Supp. 1

NO.	DATE	REVISION

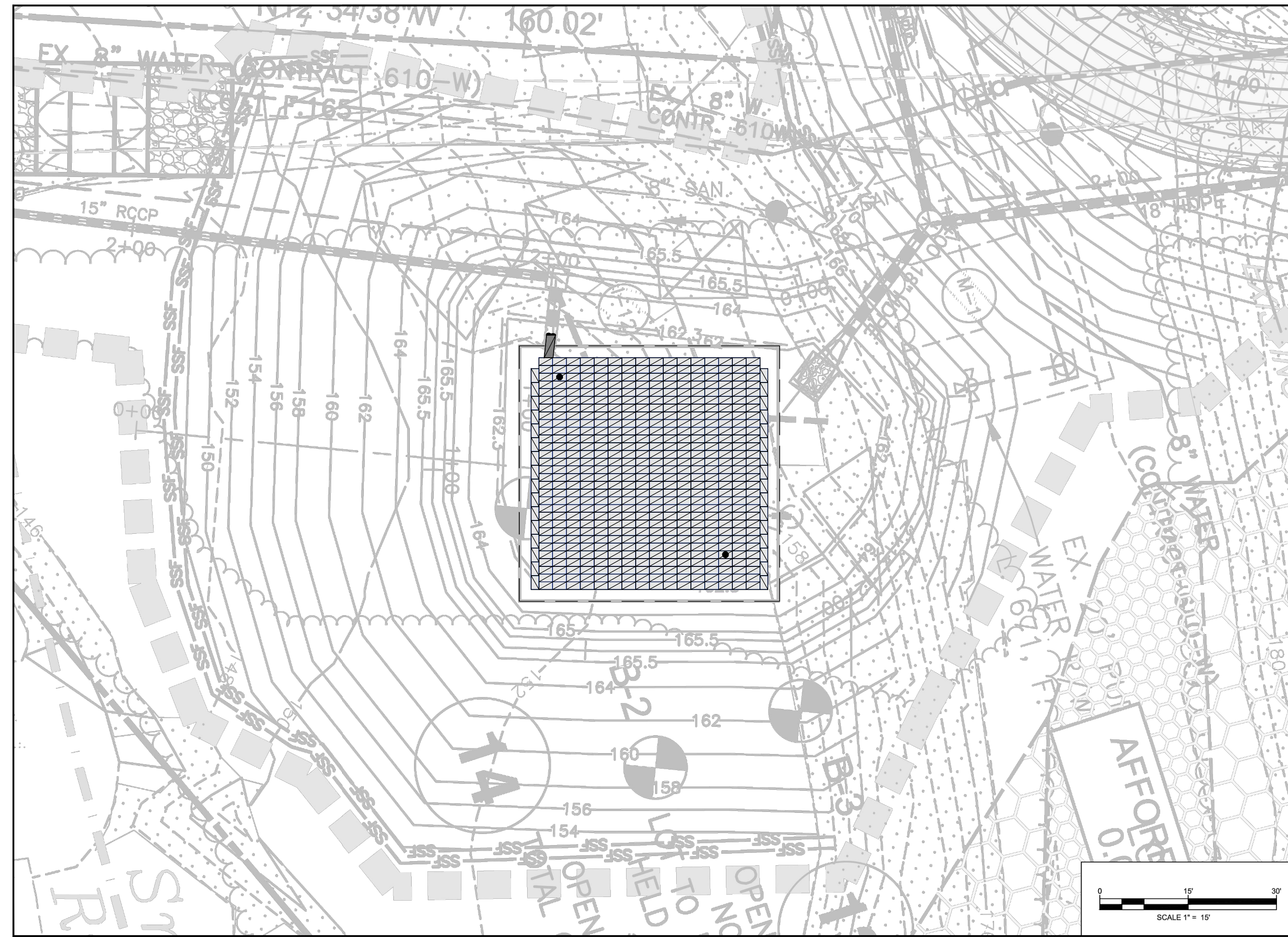
BENCHMARK ENGINEERING, INC.
 3300 NORTH RIDGE ROAD SUITE 140
 ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
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Professional Certification. I hereby certify that these documents were prepared or approved by [Signature] that I am a duly licensed professional engineer in the State of Maryland. License No. 22390

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 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT PROFILES AND DETAILS

DATE: MAY 2024 BEI PROJECT NO. 2894
 DESIGN: JCO DRAFT: JCO SCALE: AS SHOWN SHEET 10 OF 13



R-TANK^{HD} SYSTEM OVERLAY
THE AERIE IN ELKRIDGE
HOWARD COUNTY, MD

FERGUSON WATERWORKS
FOR ADDITIONAL INFORMATION PLEASE CONTACT:
 1-800-448-3806, www.ferguson.com

R-TANK^{HD}
ENGINEER OF RECORD TO REVIEW, APPROVE, AND ENDORSE FINAL SITE SPECIFIC DESIGN.

SCALE 1" = 15'
 DRAWN BY JEC
 DATE 04/02/2024
 SHEET NO. 1 of 6

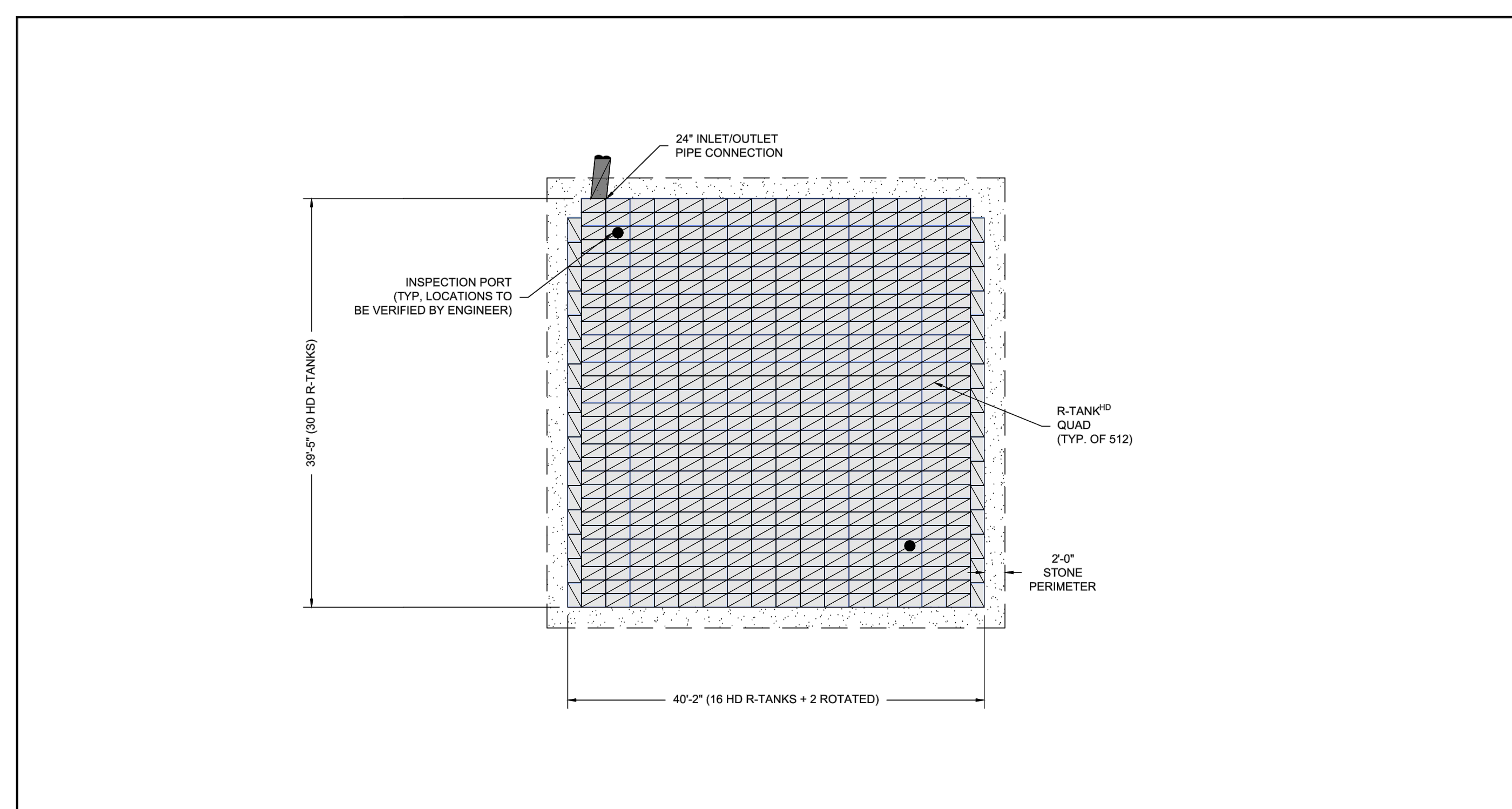
APPROVED: DEPARTMENT OF PUBLIC WORKS

 Chief, Bureau of Highways
 DATE 6/4/2024

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 Chief, Division of Land Development
 DATE 6/6/2024

 Chief, Development Engineering Division
 DATE 6/11/2024



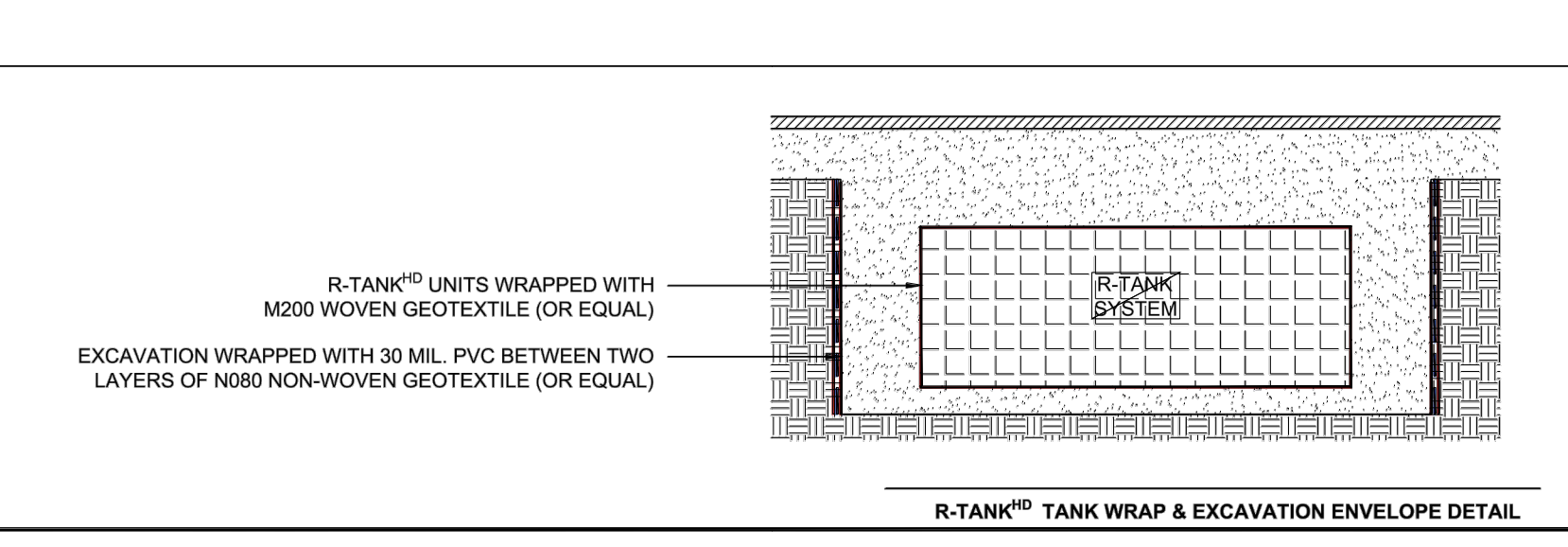
R-TANK^{HD} SYSTEM LAYOUT
THE AERIE IN ELKRIDGE
HOWARD COUNTY, MD

FERGUSON WATERWORKS
FOR ADDITIONAL INFORMATION PLEASE CONTACT:
 1-800-448-3806, www.ferguson.com

R-TANK^{HD}
ENGINEER OF RECORD TO REVIEW, APPROVE, AND ENDORSE FINAL SITE SPECIFIC DESIGN.

SCALE 1" = 10'
 DRAWN BY JEC
 DATE 04/02/2024
 SHEET NO. 2 of 6

R-TANK QUANTITIES		GRAPHIC SCALE	
R-TANK ^{HD} MODULE TYPE	QUAD	SCALE 1" = 10'	
TRAFFIC LOAD	NON-TRAFFIC		
# OF QUAD R-TANKS	512		
TOTAL SYSTEM STORAGE	10,087 CF		
R-TANK STORAGE VOLUME	8,353 CF		
STONE STORAGE VOLUME (40% VOID RATIO)	1,714 CF		
STONE BED FOOTPRINT	1,915 SF		
STONE QUANTITY	189 CY		
M200 WOVEN GEOTEXTILE TANK WRAP	517 SY		
N800 NON-WOVEN GEOTEXTILE EXCAVATION WRAP	307 SY		
30 MIL PVC LINER	154 SY		
12" INSPECTION PORTS	2		
GEOTEXTILE PIPE BOOTHS (24")	3		
30 MIL PVC PIPE BOOTHS (24")	1		
NOTE: STONE QUANTITY INCLUDES 12" OF COVER AND 3" OF BASE			
NOTE: GEOTEXTILE / LINER QUANTITIES INCLUDE A 15% WASTE FACTOR			
SEE SHEETS 3 - 6 FOR DETAILS AND ADDITIONAL INFORMATION			



FERGUSON WATERWORKS
 2831 Cardwell Rd
 Richmond, VA 23234

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

May 7, 2024

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

Dear Chris,
 Thank you for forwarding the permit plans for The Aerie in Elkrige 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-Tank^{HD} 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 N800 Non-Woven Geotextile.

An appropriate number of inspection ports have been provided.

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

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.

Sincerely,

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

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

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NO.	DATE	REVISION

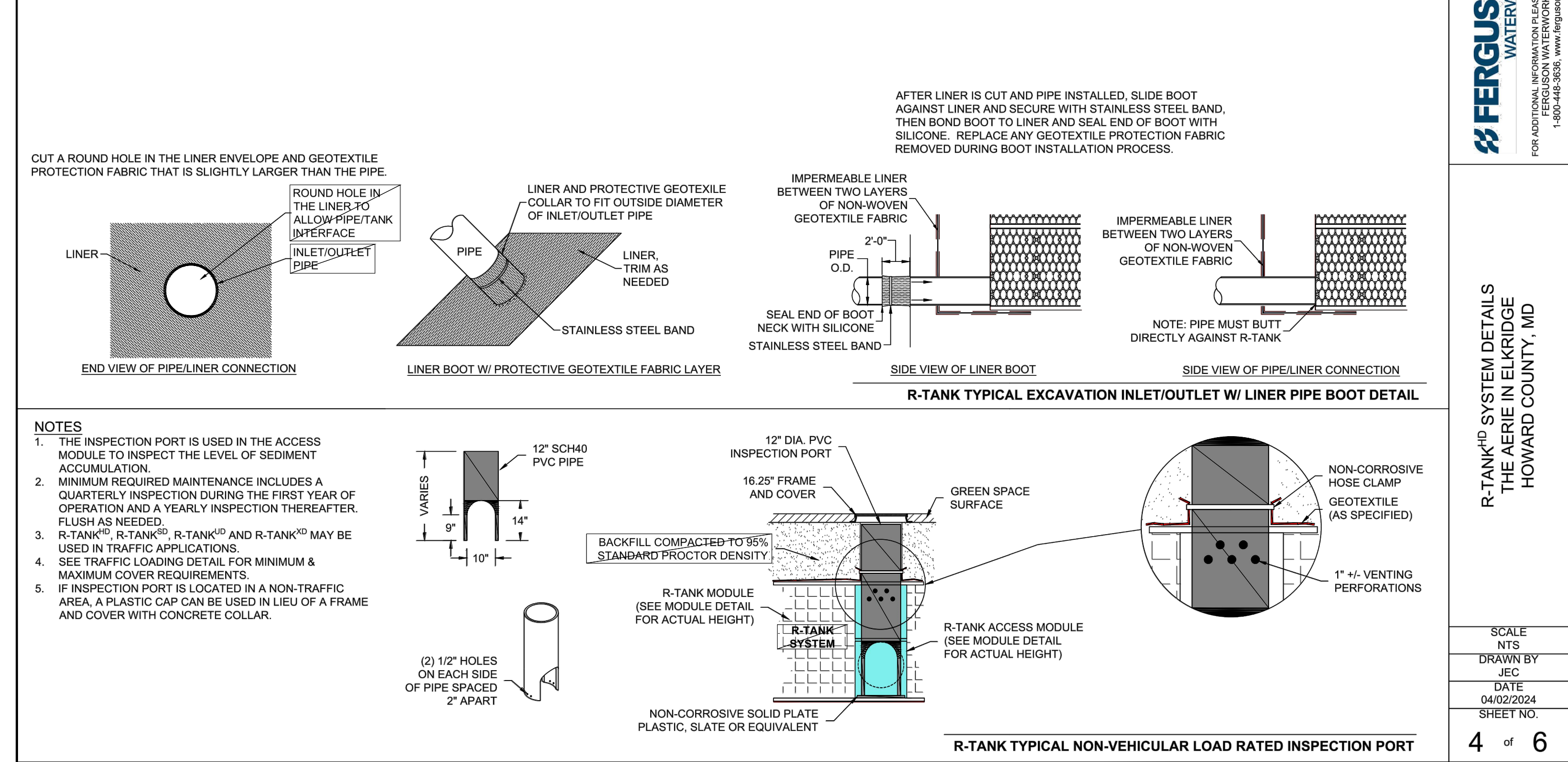
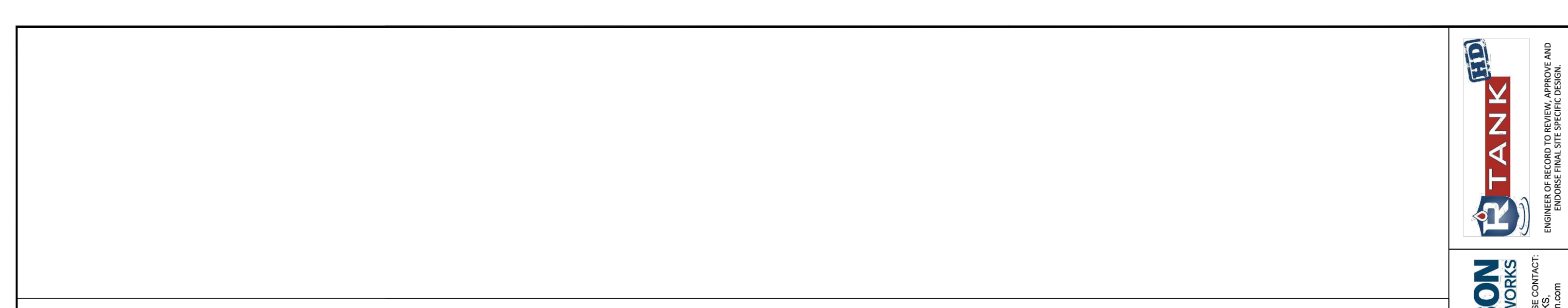
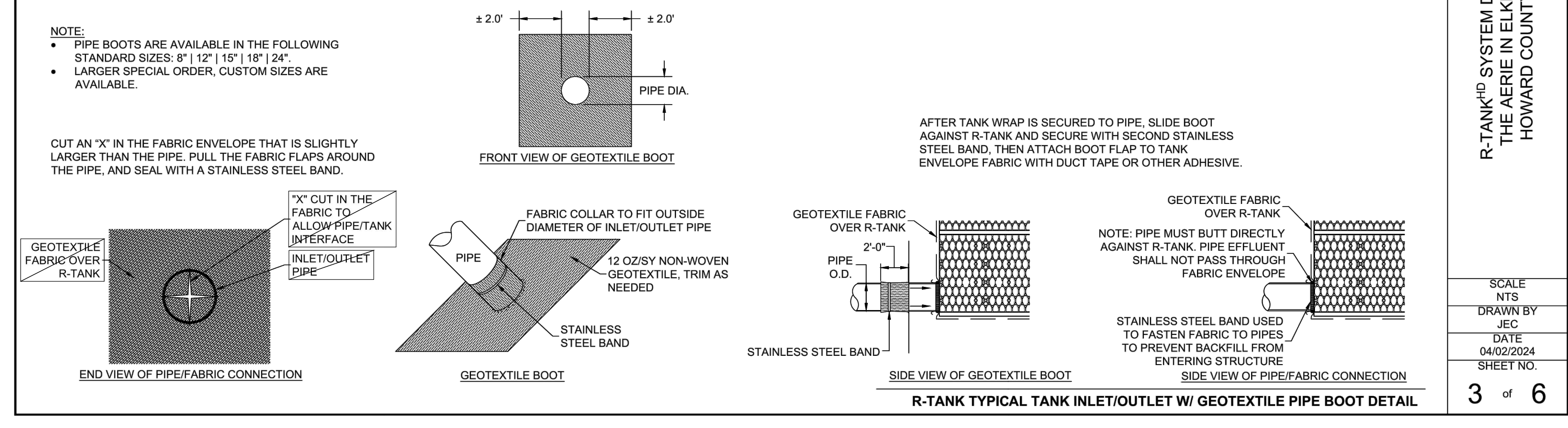
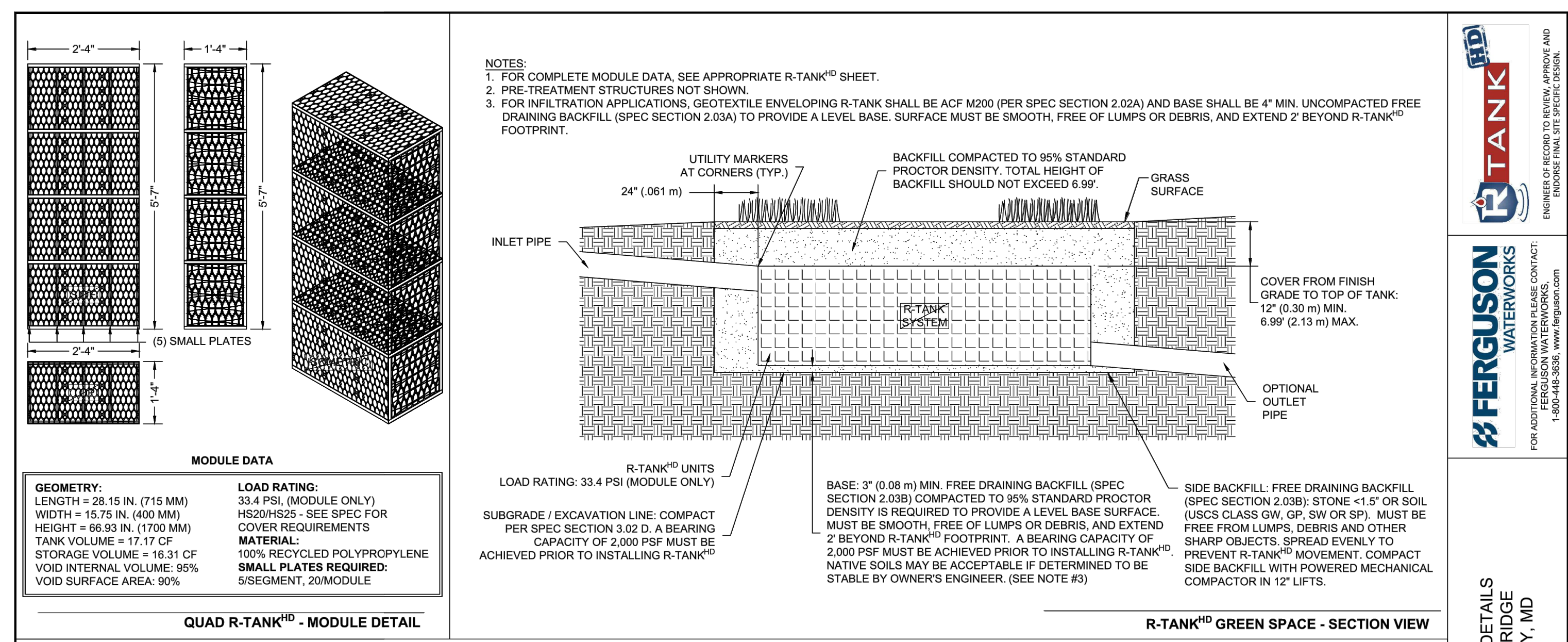
BENCHMARK ENGINEERING, INC.

3300 NORTH RIDGE ROAD SUITE 140
 ELICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 ▲ (F) 410-465-6644
 WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me (or by a duly licensed professional engineer) in the State of Maryland. License # 22390

05.08.2024

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: 3B - GRID: 14 - PARCEL: 232 ZONED: R-12 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND
UGSWM (R-TANKS) BY OTHERS	
DATE: MAY 2024 SCALE: AS SHOWN	BEI PROJECT NO. 2894 SHEET 11 OF 13



APPROVED: DEPARTMENT OF PUBLIC WORKS

DocuSigned by: *[Signature]* 6/4/2024
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: *[Signature]* 6/6/2024
 CHIEF, DIVISION OF LAND DEVELOPMENT

DocuSigned by: *[Signature]* 6/11/2024
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

R-TANK
 ENGINEER OF RECORD TO REVIEW, APPROVE AND SEAL THESE PLANS.
 WWW.FERGUSONWATERWORKS.COM

FERGUSON WATERWORKS
 FOR ADDITIONAL INFORMATION PLEASE CONTACT:
 1-800-555-5555
 WWW.FERGUSONWATERWORKS.COM

R-TANK[®] SYSTEM DETAILS
 THE AERIE IN ELKRIDGE
 HOWARD COUNTY, MD

SCALE: NTS
 DRAWN BY: JEC
 DATE: 04/02/2024
 SHEET NO.: 3 of 6

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R-TANK[®] SYSTEM DETAILS
 THE AERIE IN ELKRIDGE
 HOWARD COUNTY, MD

SCALE: NTS
 DRAWN BY: JEC
 DATE: 04/02/2024
 SHEET NO.: 4 of 6

Ferguson Waterworks
 2631 Cardwell Rd
 Richmond, VA 23234

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

May 7, 2024

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

Dear Chris,

Thank you for forwarding the permit plans for The Aerie in Elkrige 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-Tank[®] 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 N800 Non-Woven Geotextile.

An appropriate number of inspection ports have been provided.

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

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.

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FERGUSON WATERWORKS

Please review and contact me with any questions from your office.
 We look forward to working with you on this project.

Sincerely,

[Signature]

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

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

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<p>DATE: MAY 2024</p>	<p>BEI PROJECT NO. 2894</p>
<p>DESIGN: JCO DRAFT: JCO</p>	<p>SCALE: AS SHOWN SHEET 12 OF 13</p>

