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ROAD CLASSIFICATION CHART		
ROAD NAME	CLASSIFICATION	PAVING WIDTH
PRIVATE DRIVE	PRIVATE USE-IN-COMMON DRIVE	VARIABLE

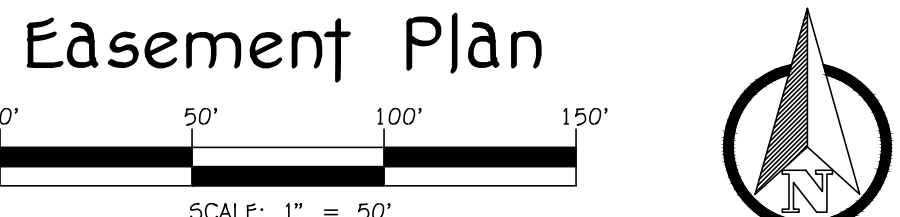
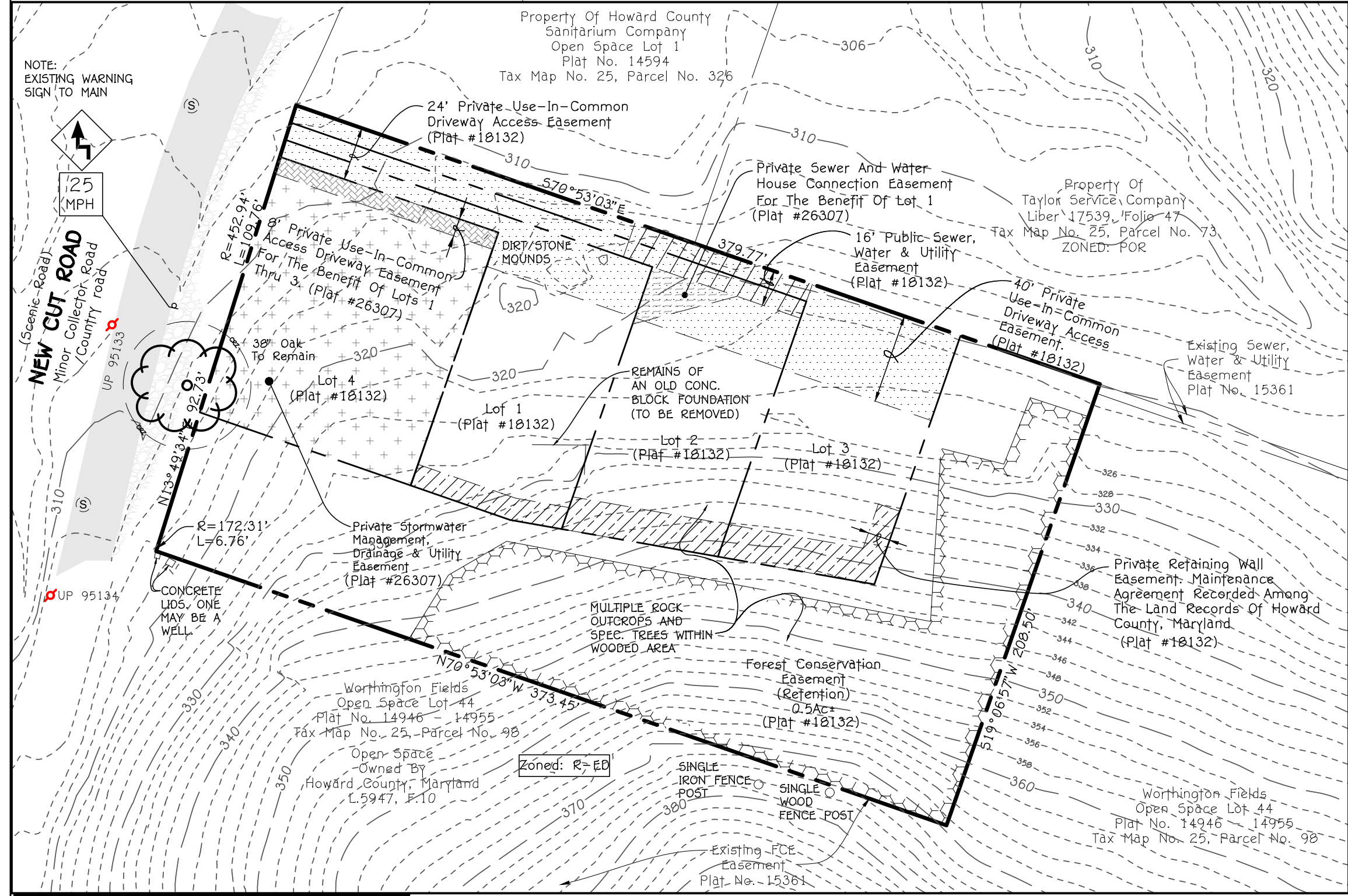
# SITE DEVELOPMENT PLAN

# JOURNEY'S END

LOTS 1 THRU 3 AND  
OPEN SPACE LOTS 4 & 5  
ZONED: R-ED

TAX MAP No. 25 GRID No. 20 PARCEL NO. 72

SECOND ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND



SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
x 448.5	SPOT ELEVATION
18" SD	EXISTING STORM DRAIN
18" SD	PROPOSED STORM DRAIN PIPE
18" SW	EXISTING WATER LINE
18" SW	PROPOSED WATER LINE
18" SW	PROPOSED SEWER LINE
18" SW	PROPOSED PAVING/PATH
18" SW	PROPOSED SIDEWALKS
18" SW	FOREST CONSERVATION EASEMENT (RETENTION)
18" SW	FOREST CONSERVATION EASEMENT FENCING
18" SW	LIMIT OF DISTURBANCE
18" SW	SUPER SILT FENCE
18" SW	SILT FENCE
18" SW	EXISTING TREE LINE
18" SW	PROPOSED TREE LINE
18" SW	DRYWELL (M-5)-TYPICAL
18" SW	SOIL LINES AND TYPES
18" SW	EXISTING WETLANDS & WETLAND BUFFER
18" SW	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
18" SW	PROPOSED ROOF LEADER
18" SW	DENOTES EXISTING TREES TO BE REMOVED
18" SW	DENOTES EXISTING TREES TO REMAIN
18" SW	CRITICAL ROOT ZONE
18" SW	STABILIZED CONSTRUCTION ENTRANCE
18" SW	SUPER SILT FENCE
18" SW	15%-24.99% STEEP SLOPES
18" SW	25% AND GREATER STEEP SLOPES
18" SW	SWM EASEMENT

STORMWATER MANAGEMENT PRACTICES							
AREA ID	PERMEABLE PAVING A-2 (Y/N)	DISCONNECTION OF ROOFTOP RUNOFF N-1 (Y/N)	DISCONNECTION OF NON-ROOFTOP RUNOFF N-2 (Y/N)	FILTERED INLETS (Y/N)	MICRO BIO-RETENTION M-6 (Y/N)	BIO-RETENTION F-6 (Y/N)	DRYWELL M-5 (Y/N)
LOT 1	NO	NO	NO	NO	NO	NO	YES - 2
LOT 2	NO	NO	NO	NO	NO	NO	YES - 2
LOT 3	NO	NO	NO	NO	NO	NO	YES - 2
O.S. LOT 4	NO	NO	NO	NO	NO	YES - 1	NO

APPROVED  
PLANNING BOARD OF  
HOWARD COUNTY  
12/7/2023

DATE: \_\_\_\_\_  
PB CASE No.: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Disapproved by: **Carl D. Edmondson**, 4/2/2024  
Chief, Development Engineering Division

Disapproved by: \_\_\_\_\_, 4/4/2024  
Chief, Division of Land Development

Disapproved by: **Lynda Eisenberg**, 4/4/2024  
Director



**Aldo M. Vitucci, P.E.**, 4/1/2024  
Date

"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. 20748, Expiration Date 2-22-25."

**OWNER**  
Historic Ellicott Properties, Inc.  
c/o Taylor Property Group  
9 Park Center Ct., Suite 200  
Owings Mills, Maryland 21117-5616  
Tel: 410-465-3500

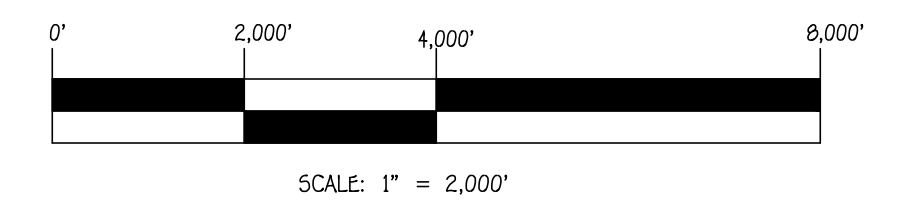
**DEVELOPER**  
Autumn Development Corporation  
c/o Taylor Property Group  
9 Park Center Ct., Suite 200  
Owings Mills, Maryland 21117-5616  
Tel: 410-465-3500

### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 10-06-13 ZONING REGULATIONS PER COUNTY BILL NO. 32-2013. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS OR PARCELS MUST COMPLY WITH SETBACKS AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF A BUILDING OR GRADING PERMIT APPLICATION.
- COORDINATES BASED ON NAD83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 250A AND NO. 250B  
Station No. 250A North 579,483.667 East 1,371,171.838 Elev. 381.902  
Station No. 250B North 577,875.934 East 1,368,199.62 Elev. 410.934
- SUBJECT PROPERTY ZONED R-ED.
- SITE ANALYSIS DATA CHART:  
a. SUBDIVISION NAME: JOURNEY'S END  
b. TAX MAP NO.: 25  
c. PARCELS NO.: 72  
d. ZONING: R-ED  
e. ELECTION DISTRICT: 2nd  
f. TOTAL AREA OF SITE: 1.824 ACRES  
g. NUMBER OF BUILDABLE LOTS: 3  
h. NUMBER OF OPEN SPACE LOTS: 2  
i. AREA OF BUILDABLE LOTS: 0.701 AC.  
j. AREA OF OPEN SPACE LOTS: 1.123 AC.  
k. AREA OF PUBLIC ROADWAY TO BE DEDICATED: 0.00 ACRES  
l. PREVIOUS FILE NUMBERS: F-05-134 (Plat No. 18132), EOP-20-053, PLAT OF REVISION (Plat No. 26307)  
m. AREA OF FLOODPLAIN: 0.00 AC.  
n. AREA OF 25% OR GREATER SLOPES: 0.38 AC. (ON-SITE)  
o. LIMIT OF DISTURBANCE: 1.00 AC.  
p. PROPOSED SITE USE: SINGLE FAMILY DWELLINGS  
q. THE MODERATE INCOME HOUSING UNIT (MIU) REQUIREMENT PER R-ED ZONING IS 10% OF THE TOTAL NUMBER OF LOTS. THE REQUIREMENT OF 0.10 x 3 LOTS = 0.3 UNITS WHICH WILL BE PAID BY A FEE-IN-LIEU AT THE TIME OF BUILDING PERMIT APPLICATION.  
r. RECORDING DATA = L. 09914 F. 00701; L. 5051 F. 634; L. 09955 F. 00011; PLAT 18132
- ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
- SINCE THIS IS A MINOR SUBDIVISION, A TRAFFIC STUDY IS NOT REQUIRED PER PLAT #18132.
- NO CEMETERIES EXIST ON THIS SITE BASED ON A VISUAL SITE VISIT AND AN EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP.
- EXISTING UTILITIES ARE BASED ON WATER IS PUBLIC (CONTRACT NO. 14-3853-D), SEWER IS PUBLIC (CONTRACT NO. 10-3854-D & 14-3855-D)
- FOREST STAND DELINEATION WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED MARCH 9, 2004. IN CONJUNCTION WITH PLAT 18132 (F-05-134).
- THERE IS NO FLOODPLAIN LIMITS ON THIS PROPERTY.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY (MAXIMUM OF TWO FOOT CONTOUR INTERVALS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED JULY 23, 2002).
- NO NON-TIDAL WETLANDS EXIST ON THIS SITE BASED ON AN EVALUATION BY ECO-SCIENCE PROFESSIONALS INC.
- ON-SITE STORMWATER MANAGEMENT FOR WATER QUALITY VOLUME AND GROUNDWATER RECHARGE VOLUME ARE BEING PROVIDED IN A BIO-RETENTION FACILITY PER CHAPTER 5 OF THE MDE STORMWATER MANAGEMENT DESIGN MANUAL. THIS SUBDIVISION IS REQUIRED TO PROVIDE MANAGEMENT FOR THE 100-YEAR AND 2016 ELLICOTT CITY FLOOD STORM (SEE GENERAL NOTE 17).
- STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH THE 2010 MDE, CHAPTER 5 REGULATIONS AND THE LATEST HOWARD COUNTY DESIGN MANUAL VOL. I, CHAPTER 5 ADOPTED ON OR AROUND MAY 4, 2010. GROUNDWATER RECHARGE VOLUME WILL BE PROVIDED THROUGH THE USE OF A STONE RESERVOIR LOCATED WITHIN THE MICRO BIO-RETENTION FACILITY. THE REQUIRED 250 VOLUMES WILL BE PROVIDED BY ON LOT DRYWELLS AND A MICRO BIO-RETENTION FACILITY LOCATED ON OPEN SPACE LOT 4. AN ADDITIONAL 10% OF QUANTITY MANAGEMENT IS REQUIRED IN THE REDUCTION OF THIS DEVELOPED PEAK FLOWS RATES. A DISTURBANCE TO CREATE THE POND AND ASSOCIATED PIPING IS CONSIDERED AN ESSENTIAL COMPONENT OF THE SUBDIVISION AS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOA.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- NO CEMETERIES OR HISTORIC STRUCTURES EXIST WITHIN THIS SUBDIVISION.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY STREET TREE.
- TRAFFIC CONTROL DEVICES:  
a) THE 8'1" (8" STORY) SIGNS AND THE STREET NAME SIGN (SNS) ASSEMBLIES FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.  
b) THE TRAFFIC CONTROL DEVICE LOCATIONS (SIGNS & PAVING MARKINGS) SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY THE HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO THE INSTALLATION OF ANY OF THESE TRAFFIC CONTROL DEVICES.  
c) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).  
d) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (1 1/2" GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (1 1/2" GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR FLOODPLAIN OR THEIR EXTENDED GREEN NEIGHBORHOOD BUFFERS UNLESS THE ACTIVITIES ARE CONSIDERED NECESSARY BY THE DEPARTMENT OF PLANNING AND ZONING OR AN ALTERNATIVE COMPLIANCE IS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING TREES (11 SHADE, 15 EVERGREENS, AND 5 SHRUBS) SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$5,700.00.
- A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER'S/OWNER'S EXPENSE FOR THE USE-IN-COMMON DRIVEWAY. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
- DRIVEWAY (S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:  
A) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE)  
B) SURFACE - SIX (6) INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1 1/2" MIN.)  
C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45 FOOT TURNING RADIUS  
D) STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING)  
E) DRAINAGE ELEMENTS CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE  
F) STRUCTURE CLEARANCES - MINIMUM 12 FEET  
G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE TO BE PROVIDED AT THE JUNCTION OF FLAG/PIPESTEM AND THE ROAD RIGHT OF WAY AND NOT ONTO THE FLAG/PIPESTEM DRIVEWAY.
- THIS PLAN COMPLIED WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION THROUGH ON-SITE FOREST RETENTION (0.5 AC. = 25%) F-05-134, PLAT 18132.
- THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, BEMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- PROPERTY IS SUBJECT TO TAYLOR PROPERTIES COMMUNITY ASSOCIATION REQUIREMENTS INCLUDING THE HOA COVENANTS (PLAT NO. 18132).
- LOTS SHOWN ARE SUBJECT TO THE ELLICOTT CITY WATER COMPANY ANNUAL ASSESSMENTS FOR 33-YEARS FOR WATER AND SEWER.
- PROPERTY IS SUBJECT TO AN OVERALL LOT EASEMENT FOR COMMUNICATIONS CABLE BY ELLICOTT CITY CABLE COMPANY (PLAT NO. 18132).
- THIS SITE DEVELOPMENT PLAN FOR LOTS 1, 2 & 3 MUST BE APPROVED BY THE PLANNING BOARD IN ACCORDANCE WITH SECTION 107.0.G.
- IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
- NEW CUT ROAD IS A SCENIC ROAD AND THE SCENIC ROAD REGULATIONS WERE ADDRESSED UNDER F-05-134.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- SHC ELEVATIONS ARE LOCATED AT THE PROPERTY LINE.
- FOR DRIVEWAY ENTRANCE DETAILS, REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.06.
- THE PREVIOUS INFRASTRUCTURE SHOWN ON THE SUPPORT PLAN FOR F-05-134 HAS NOT BEEN CONSTRUCTED. A REVISION PLAT AND REDLINE TO THE F-05-134 PLAT AND SUPPORT PLAN WILL NOTE THAT THIS SDP-22-036 IS TO REPLACE THE PREVIOUS INFRASTRUCTURE PLAN.
- THE DEVELOPER'S AGREEMENT FILED WITH F-05-134 HAS BEEN TRANSFERRED TO THIS SDP PLAN SUBMISSION (SDP-22-036).
- ON DECEMBER 7, 2023, THE PLANNING BOARD APPROVED THE PLANS AS SUBMITTED WITH THE MODIFICATION THAT THE EXISTING VEGETATION BE PRESERVED WHERE POSSIBLE. FURTHER, THE APPLICANT SHOULD WORK WITH THE DEPARTMENT OF PLANNING AND ZONING TO EXPLORE PROVIDING A HOPE ROBUST EVERGREEN PLANTING TO BUFFER THE VIEWS TO LOT 1 FROM NEW CUT ROAD WITH ADDITIONAL EVERGREENS BOTH ALONG THE PUBLIC ROAD FRONTAGE AND BETWEEN LOT 1 AND OPEN SPACE LOT 4. AN ADDITIONAL 12 EVERGREENS, 2 SHADE TREES AND SURETY HAVE BEEN PROVIDED TO MEET THIS PB CONDITION OF APPROVAL.
- A REQUEST FOR NECESSARY ENVIRONMENTAL DISTURBANCE WAS APPROVED ON MARCH 4, 2024. THE APPROVAL ALLOWS STREAMBANK BUFFER DISTURBANCES AS ESSENTIAL OR NECESSARY DISTURBANCES IN ACCORDANCE WITH SECTION 16.116(c) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS AND MITIGATION METHODS:  
1. THE STORMWATER MANAGEMENT IMPROVEMENT PROJECT SHALL ONLY DISTURB THOSE ENVIRONMENTAL AREAS AS STATED IN THE REQUEST AND AS DELINEATED ON THE PLAN EXHIBITS. ANY DISTURBANCES TO REGULATED ENVIRONMENTAL FEATURES BEYOND THIS REQUEST ARE NOT PERMITTED UNLESS THE APPLICANT SUBMITS A FORMAL REQUEST TO THE DEPARTMENT OF PLANNING AND ZONING IN ACCORDANCE WITH SECTION 16.116(c).  
2. THE APPLICANT WILL BE REQUIRED TO OBTAIN ALL NECESSARY APPROVALS AND AUTHORIZATIONS BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) AND THE U.S. ARMY CORPS OF ENGINEERS (USACE) FOR ACTIVITIES IN REGULATED AREAS PRIOR TO BEGINNING CONSTRUCTION.  
3. THE DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE EROSION & SEDIMENT CONTROL PLANS PROVIDED WITH SDP-22-036.

STORMWATER MANAGEMENT INFORMATION						
Lot/Parcel No.	Facility Name & Number	Practice Type (Quantity)	Public	Private	HOA Maintained	Misc.
Lot 1	DRY WELL #1 & #2	M-5 - (2)	--	X	X	Standard Dry Well
Lot 2	DRY WELL #3 & #4	M-5 - (2)	--	X	X	Standard Dry Well
Lot 3	DRY WELL #5 & #6	M-5 - (2)	--	X	X	Standard Dry Well

STORMWATER MANAGEMENT INFORMATION						
Lot/Parcel No.	Facility Name & Number	Practice Type (Quantity)	Public	Private	HOA Maintained	Misc.
O.S. LOT 4	ESD #1	M-6 - (1)	--	X	X	Micro Bio-Retention



STREET ADDRESS CHART	
LOT No.	STREET ADDRESS
1	4253 NEW CUT ROAD
2	4251 NEW CUT ROAD
3	4249 NEW CUT ROAD



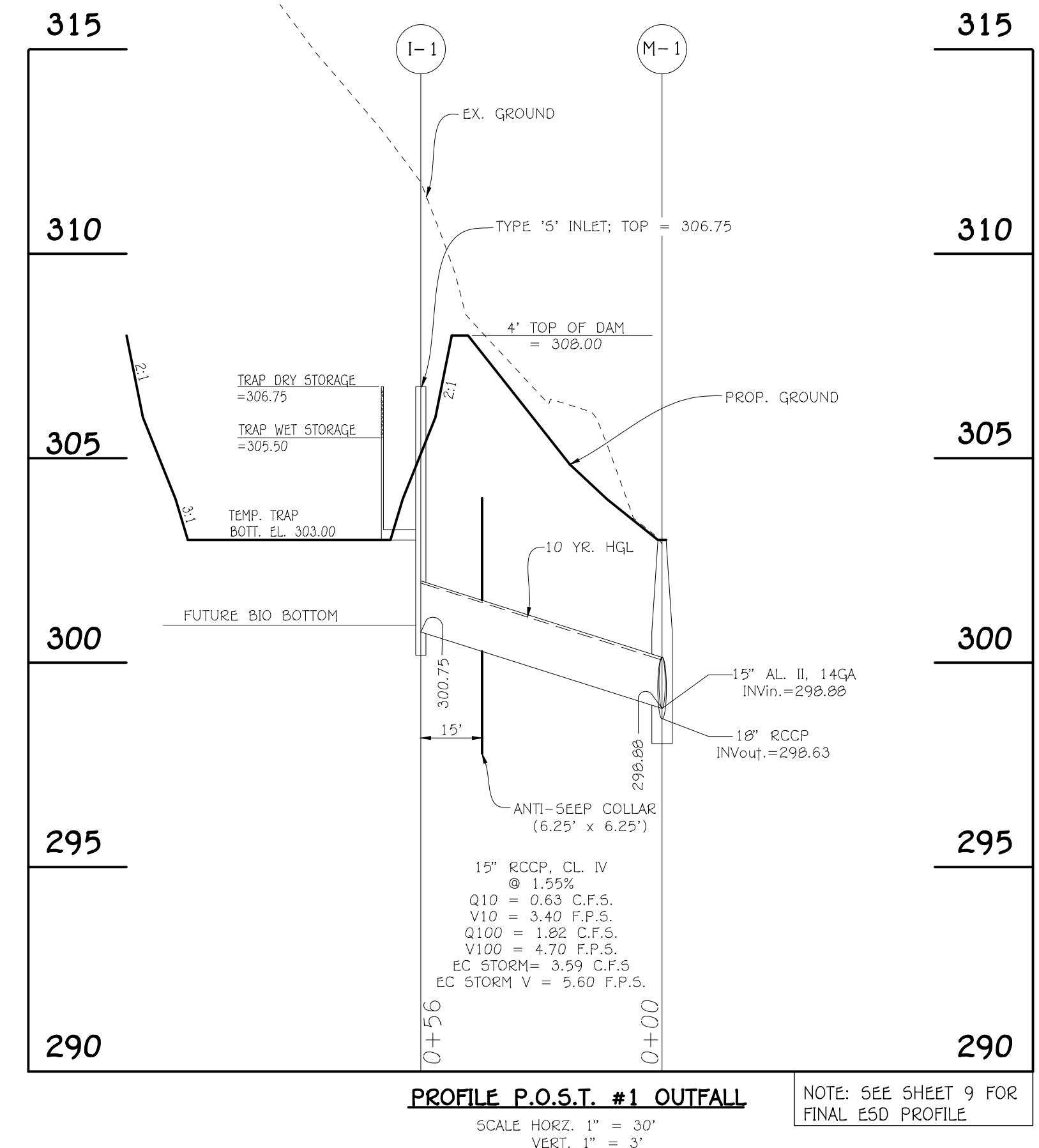
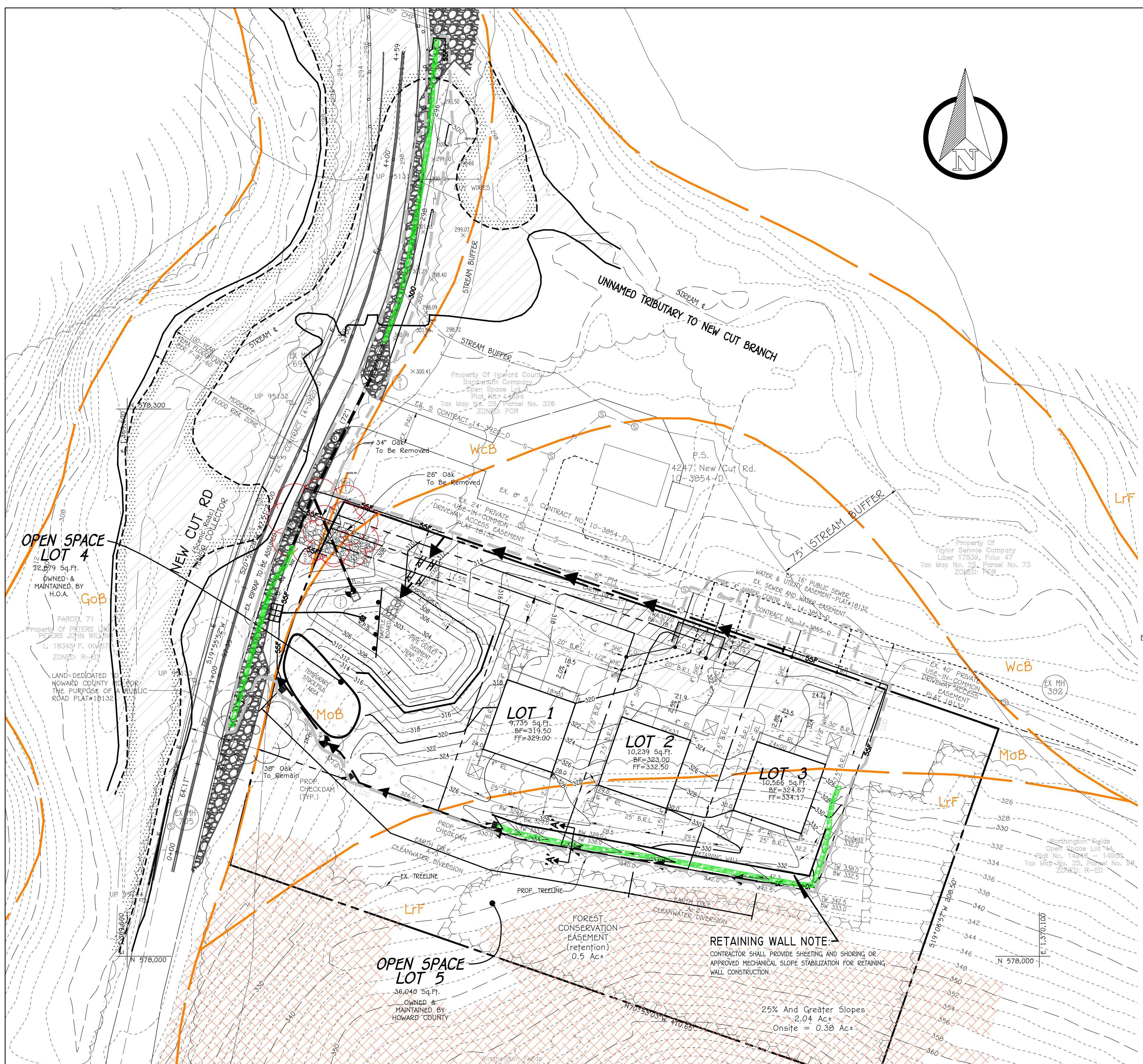
TITLE SHEET

**JOURNEY'S END**  
LOTS 1 THRU 3 AND  
OPEN SPACE LOTS 4 & 5

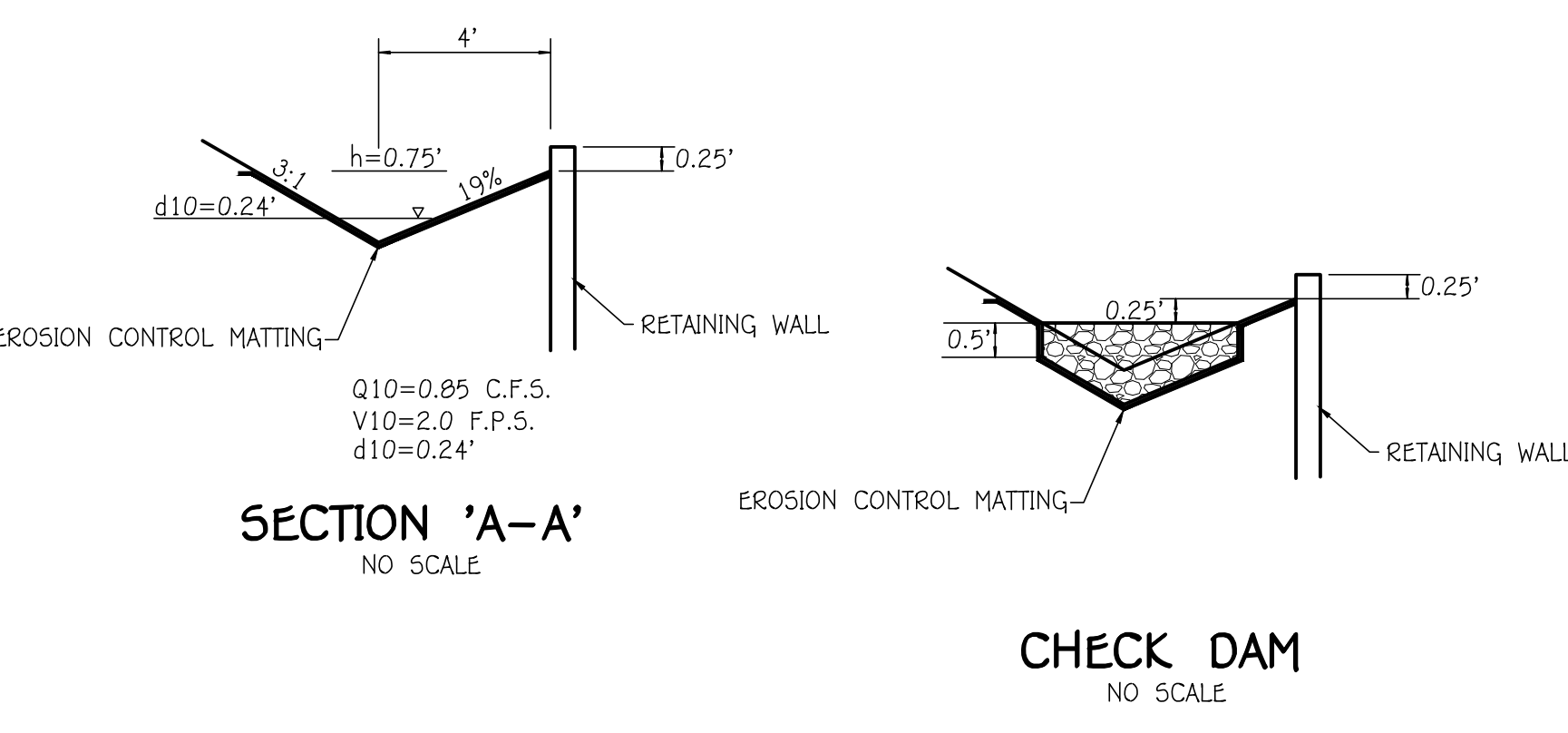
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TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO.: 72  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 6, 2023  
SHEET 1 OF 16





LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
X 448.5	SPOT ELEVATION
18" SD	EXISTING STORM DRAIN
12" SD	PROPOSED STORM DRAIN PIPE
EX. F.W.	EXISTING WATER LINE
8" S	EXISTING SEWER LINE
8" S	PROPOSED SEWER
8" W	PROPOSED WATER
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING OVERHEAD WIRE
---	PROPOSED PAVING/PATH
---	PROPOSED SIDEWALKS
---	FOREST CONSERVATION EASEMENT (RETENTION)
---	FOREST CONSERVATION EASEMENT FENCING
---	EXISTING TREE LINE
---	PROPOSED TREE LINE
---	DRYWELL (M-5)-TYPICAL
---	SOIL LINES AND TYPES
MoB	EXISTING WETLANDS & WETLAND BUFFER
LrF	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
---	PROPOSED ROOF LEADER
---	DENOTES EXISTING TREES TO BE REMOVED
---	DENOTES EXISTING TREES TO REMAIN
---	CRITICAL ROOT ZONE
---	25% AND GREATER STEEP SLOPES
---	SWM EASEMENT



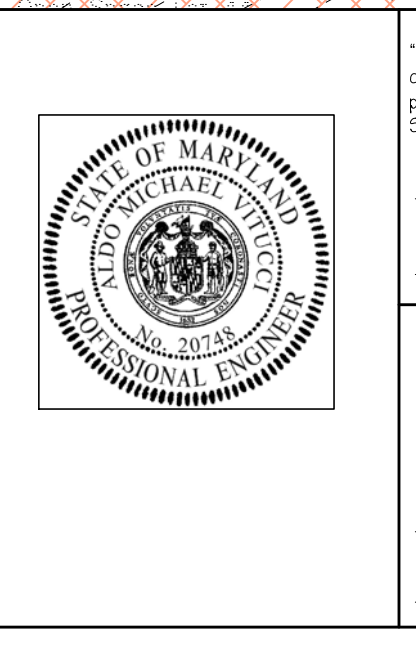
PIPE OUTLET SEDIMENT TRAP ST-1, TRAP NO. 1		
DRAINAGE AREA - INITIAL	1.32	ACRES
DRAINAGE AREA - INTERIM	0.75	ACRES
DRAINAGE AREA - FINAL	0.68	ACRES
TOTAL STORAGE REQUIRED	4752	CF
TOTAL STORAGE PROVIDED	7807	CF
WET STORAGE REQUIRED	2376	CF
WET STORAGE PROVIDED	2695	CF
DRY STORAGE REQUIRED	2376	CF
DRY STORAGE PROVIDED	5385	CF
TRAP BOTTOM ELEVATION	303.00	FT
TRAP BOTTOM DIMENSIONS	10 x 45	FT x FT
RISER CREST (DRY STORAGE) ELEVATION	306.75	FT
OUTLET (WET STORAGE) ELEVATION	305.50	FT
CLEANOUT ELEVATION	304.25	FT
TOP OF EMBANKMENT ELEVATION	308.0	FT
SIDE SLOPE	2:1	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
PRINCIPAL SPILLWAY MATERIAL (BARREL RISER, ANTI-SEEP COLLAR)	CONC.	
RISER DIAMETER	15"	IN
BARREL DIAMETER	15"	IN
TRASH RACK DIAMETER	-	IN
TRASH RACK HEIGHT	-	IN
ANTI-SEEP COLLAR DIMENSIONS	6.25' x 6.25'	FT
OUTLET PROTECTION - LENGTH	20	FT
OUTLET PROTECTION - WIDTH	2	FT
OUTLET PROTECTION - DEPTH	19	IN

SOILS LEGEND			
SOIL	NAME	CLASS	'K' VALUE
GoB	Glennville-Codorus silt loams, 0 to 8 percent slopes	C	0.49
LrF	Legore-Relay gravelly loams, 25 to 65 percent slopes, very stony	B/C	0.64
MoB	Mount Lucas silt loam, 3 to 8 percent slopes, stony	C	0.37
WcB	Watchung silt loam, 3 to 8 percent slopes, stony	D	0.43

SEDIMENT CONTROL LEGEND	
---SSF---SSF---SSF---	SUPER-SILT FENCE
---DF---DF---DF---	DIVERSION FENCE
---	STABILIZED CONSTRUCTION ENTRANCE
---	EARTH DIKE
---	LIMIT OF DISTURBANCE
---	REMOVEABLE PUMPING STATION
---	FILTER BAG
---	EROSION CONTROL MATTING (ADD SAME DAY MATTING FOR SWALES)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: <b>Chad Edmondson</b> 7003754EF4169	4/2/2024
DocuSigned by: <b>Lynda Eisenberg</b> 12B7547A22845A	4/4/2024
DocuSigned by: <b>Lynda Eisenberg</b> 12B08593942E	4/4/2024



**DESIGN CERTIFICATE**

I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

**OWNER'S/DEVELOPER CERTIFICATE**

I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE.

Designer's Signature: <b>Alma M. Vitucci, P.E.</b>	Date: 4/6/23
Owner's/Developer's Signature: <b>Bruce Taylor</b>	Date: 9/19/2023

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

OWNER	DEVELOPER
Historic Ellicott Properties, Inc. c/o Taylor Property Group 8 Park Center Ct. Suite 200 Owings Mills, Maryland 21117-5616 Tel: 410-465-3500	Autumn Development Corporation c/o Taylor Property Group 8 Park Center Ct. Suite 200 Owings Mills, Maryland 21117-5616 Tel: 410-465-3500

NO.	REVISION	DATE

SUBDIVISION	SECTION/AREA	LOT No.			
JOURNEY'S END	N/A	LOTS 1 THRU 3			
PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
26307	N/A	R-ED	25	2	602700

**SEDIMENT & EROSION CONTROL PLAN**

**JOURNEY'S END**  
LOTS 1 THRU 3 AND  
OPEN SPACE LOTS 4 & 5

ZONED: R-ED

TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO.: 72  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 6, 2023  
SHEET 3 OF 16

SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS (B-4-2)

- A. Soil Preparation
1. Temporary Stabilization
a. Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment...
b. Apply fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable method...

- B. Topsoiling
1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where...

- C. Soil Amendments (Fertilizer and Lime Application)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment...

PERMANENT SEEDING NOTES (B-4-5)

- A. Seed Mixtures
1. General Use
a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose...
b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency...

- Notes:
Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"
Choose certified material. Certified material is the best guarantee of cultivar purity, the certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.
Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5a, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
Till soils 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 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

Permanent Seeding Summary table with columns for Hardness Zone, Species, Application Rate, Seeding Dates, Seeding Depth, N, P2O5, K2O, and Lime Rate.

STANDARD STABILIZATION NOTE table with columns for Fertilizer Rate (10-20-20) and Lime Rate.

STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA (B-4-8)

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

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

Conditions Where Practice Applies: Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria: 1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan. 2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.

Table with columns for Species, Application Rate, Seeding Dates, Seeding Depth, and Lime Rate for various species like Barley, Oats, and Rye.

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

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

Purpose: The application of seed and mulch to establish vegetative cover.

Conditions Where Practice Applies: To protect disturbed soils from erosion during and at the end of construction.

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

Application: A. Seeding 1. Specifications a. All seed used must meet the requirement of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory.

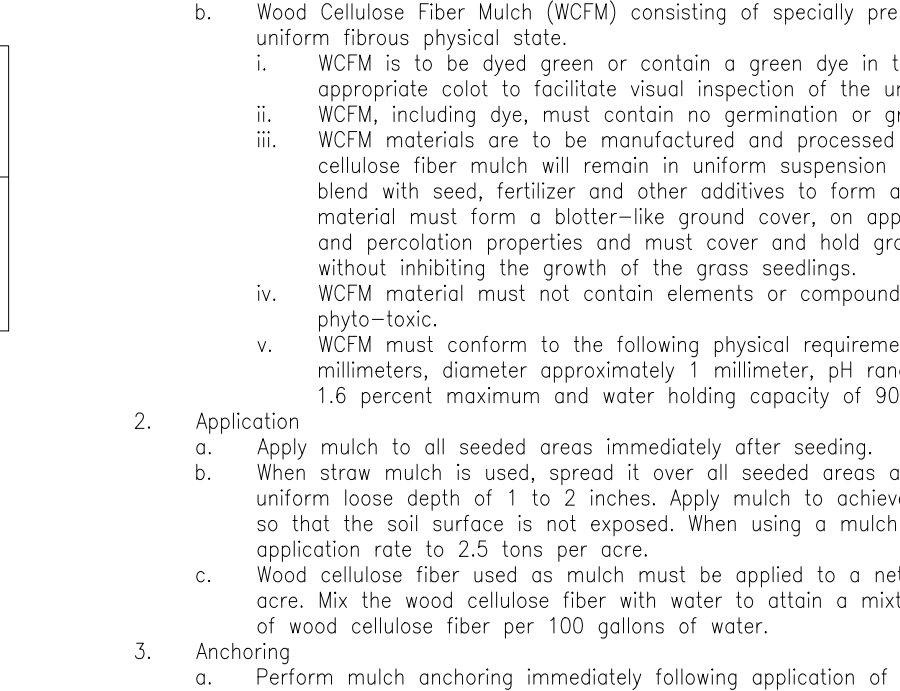
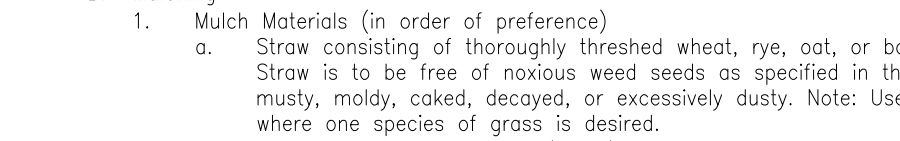
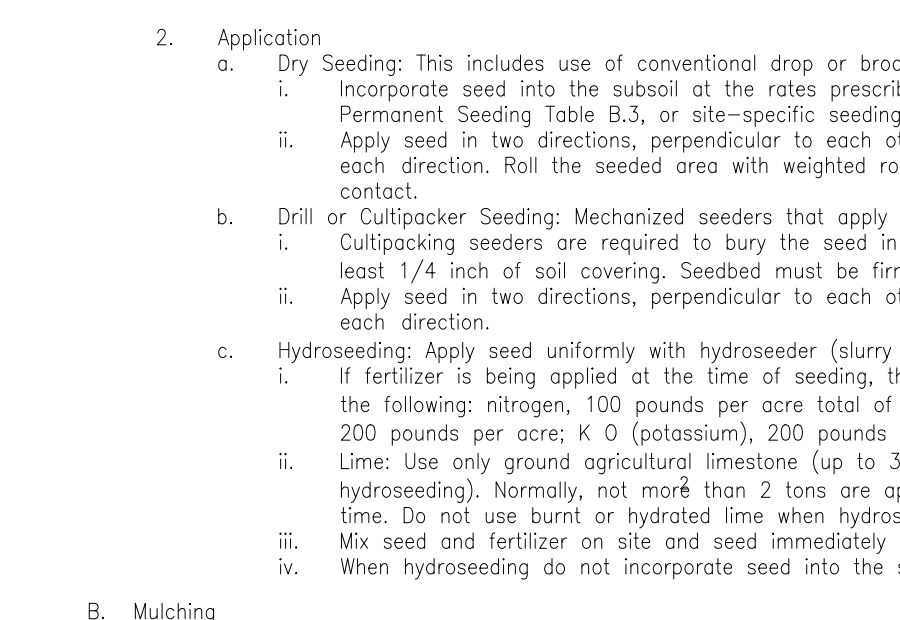
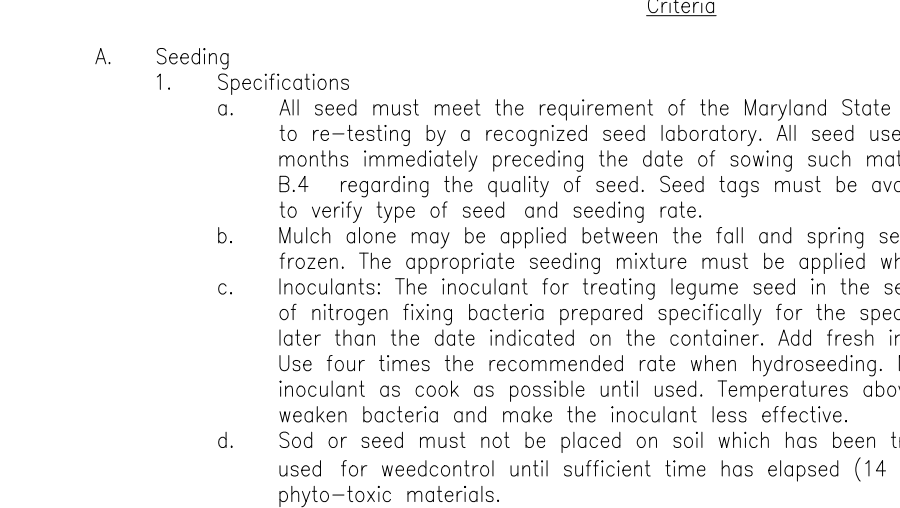


Table with columns for California Bearing Ratio (CBR), Pavement Material (Inches), and Minimum HMA with GAB for different traffic levels.

CONSTRUCTION SPECIFICATIONS: 1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2 1/2 INCH MAXIMUM OPENING). 2. USE 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OR 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART.

Table with columns for SECTION NUMBER, ROAD AND STREET CLASSIFICATION, CALIFORNIA BEARING RATIO (CBR), PAVEMENT MATERIAL (INCHES), MIN HMA WITH GAB, and HMA WITH CONSTANT GAB.

DESIGN CERTIFICATE: I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Design Certificate form including Designer's Signature (Aldo Michael Wilco), Owner's/Developer Certificate, and Owner/Developer information (Historic Elliott Properties, Inc. and Autumn Development Corporation).

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN GRADING PERMITS. (2 WEEKS)
2. NOTIFY "MIS UTILITY" AT LEAST 48 HOURS BEFORE ANY WORK AT 1-800-257-7777. NOTIFY HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION DIVISION AT 410-313-1870 AT LEAST 24-HOURS BEFORE STARTING ANY WORK.
3. INSTALL THE STABILIZED CONSTRUCTION ENTRANCES OR DRIVEWAY CURBVERT, PERIMETER SUPER SILT FENCE AND EXTERNAL EARTH DIKES AS SHOWN ON THE PLANS. (NOTE THE SLOPES UPSTREAM AND DOWNSTREAM OF THE CURBVERT SHALL BE CONSTRUCTED USING SAME-DAY STABILIZATION AT THE SAME TIME THE CURBVERT IS INSTALLED.) CLEAR AND GRUB SITE. (3 DAYS)
4. INSTALL INTERNAL EARTH DIKES AND P.O.S.'s #1 w/OUTFALL STORM DRAIN. (4 DAYS)
5. GRADE SITE TO MASS GRADING CONDITIONS FOR THE PRIVATE DRIVEWAY AND BUILDING PADS. OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING. (1 WEEK)
6. INSTALL PUBLIC WATER HOUSE CONNECTIONS AND PUBLIC SEWER HOUSE CONNECTIONS AS SHOWN ON THE PLANS. (1 WEEK)
7. OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED. INSTALL BASIC COURSE PAVING. (1 WEEK)
8. CONSTRUCT RETAINING WALLS, HOUSES AND DETNALLS. INSTALL FINAL PAVING COURSE. CONTRACTOR SHALL UTILIZE SHORING TO PROTECT THE FOREST CONSERVATION EASEMENT DURING WALL CONSTRUCTION. (9 MONTHS)
9. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, THE CONSTRUCTION OF THE 80-RETENTION FACILITY CAN BE INSTALLED ALONG WITH THE REMAINING STORM DRAIN. (2 WEEKS)
10. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE ALL REMAINING DISTURBED AREAS ON SITE WITH PERMANENT SEEDING OR OPTIONAL SOODING. (1 WEEK)

STANDARD NOTES: 1. THE CONTRACTOR SHALL COORDINATE WITH THE INSPECTOR IN REGARDS TO THE REQUIREMENT THAT NO AREAS OF "OPEN" GROUND SHALL BE DISTURBED AT ANY GIVEN TIME. IF REQUIRED, THIS SDP AND ASSOCIATED L.O.D. IS LESS THAN 20-AC.

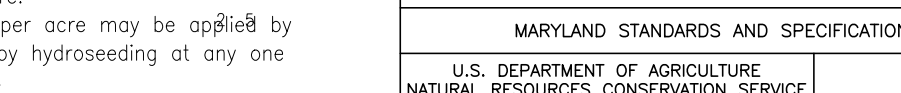
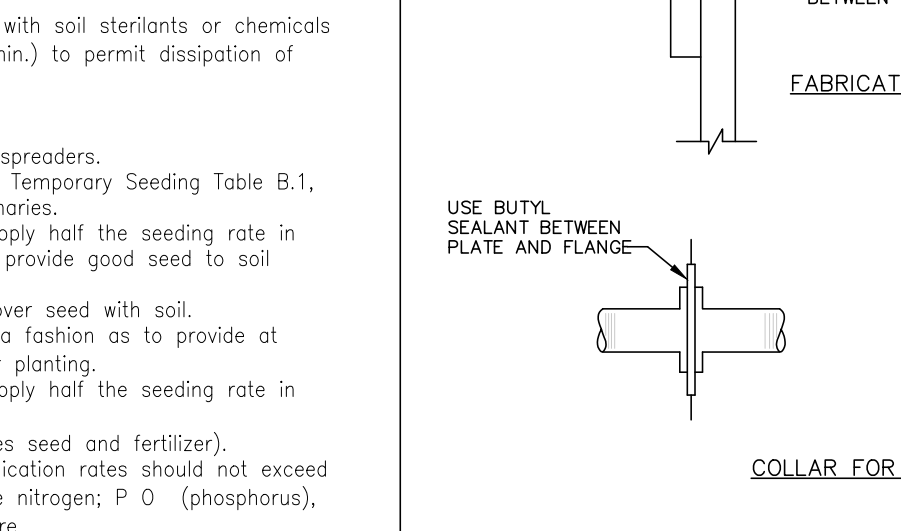


Table with columns for Maryland Standards and Specifications for Soil Erosion and Sediment Control, U.S. Department of Agriculture, Natural Resources Conservation Service, 2011, and Maryland Department of Environment, Water Management Administration.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- 1. A pre-construction meeting must be held with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LID and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages:
a. Prior to the start of earth disturbance.
b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading.
c. Prior to the start of another phase of construction or opening of another grading unit.
d. Prior to the removal or modification of sediment control practices.
Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced to ensure coordination and to avoid conflicts with this plan.
4. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1), across every 100 calendar days as to all other disturbed areas on the project site except for those areas under active grading.
4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the start and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of erosion. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of erosion. All sediment control structures are to remain in place, and are to be maintained in operative condition until their removal has been obtained from the CID.
6. Site Analysis:
Total Area of Site: 1.824 Acres
Area Disturbed: 1.0 Acres
Area to be roofed or paved: 0.327 Acres
Area to be vegetatively stabilized: 0.350 Acres
Total Cost: \$350,000.00 Ga. Yds.
Total Fill: 1242.00 Cu. Yds.
water/Borrow Area location: 780.

Table with columns for No., Species, Application Rate, Seeding Dates, Seeding Depth, N, P2O5, K2O, and Lime Rate.

TEMPORARY SEEDING NOTES (B-4-4)

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

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

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

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

Table with columns for Hardness Zone, Species, Application Rate, Seeding Dates, Seeding Depth, and Lime Rate.

Table with columns for SECTION NUMBER, ROAD AND STREET CLASSIFICATION, CALIFORNIA BEARING RATIO (CBR), PAVEMENT MATERIAL (INCHES), MIN HMA WITH GAB, and HMA WITH CONSTANT GAB.

DESIGN CERTIFICATE: I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Design Certificate form including Designer's Signature (Alexander Brathie), Owner's/Developer Certificate, and Owner/Developer information (Historic Elliott Properties, Inc. and Autumn Development Corporation).

STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

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

Conditions Where Practice Applies: Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

- 1. Incremental Stabilization - Cut Slopes
a. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seeded and fill areas and mulch cut slopes as the work progresses.
b. Construction sequence example (refer to Figure B.2):
i. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
ii. Perform Phase 1 excavation, prepare seeded, and stabilize.
iii. Perform Phase 2 excavation, prepare seeded, and stabilize.
iv. Perform final phase excavation, prepare seeded, and stabilize. Overseed previously seeded areas as necessary.
Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or comparing the operation out of the seeding season will necessitate the application of temporary stabilization.
8. Incremental Stabilization - Fill Slopes
a. Construct and stabilize all slopes in increments not to exceed 15 feet in height. Prepare seeded and apply seed and mulch on all slopes as the work progresses.
b. Stabilize slopes in increments of a minimum height of a 10 inch vertical (1:1), or when the grading operation ceases as prescribed in the plans.
c. At the end of each day, install temporary water conveyance practices, as necessary, to intercept runoff and prevent erosion down the slope in a non-erosive manner.
d. Construction sequence example (refer to Figure B.2):
i. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct all fence on low side of fill unless other methods shown on the plans address this area.
ii. At the end of each day, install temporary water conveyance practices, as necessary, to intercept runoff and prevent erosion down the slope in a non-erosive manner.
e. Phase Phase 1 fill, prepare seeded, and stabilize.
f. Phase Phase 2 excavation, prepare seeded, and stabilize.
g. Phase final phase fill, prepare seeded, and stabilize. Overseed previously seeded areas as necessary.
Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or comparing the operation out of the seeding season will necessitate the application of temporary stabilization.

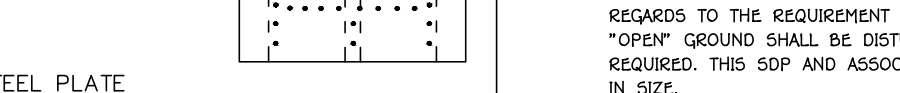
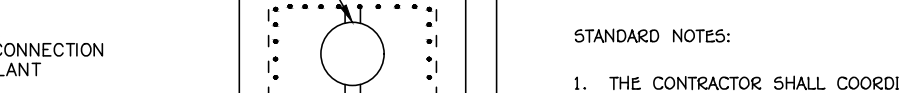


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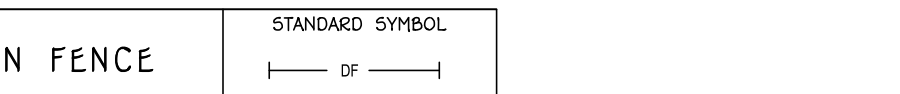
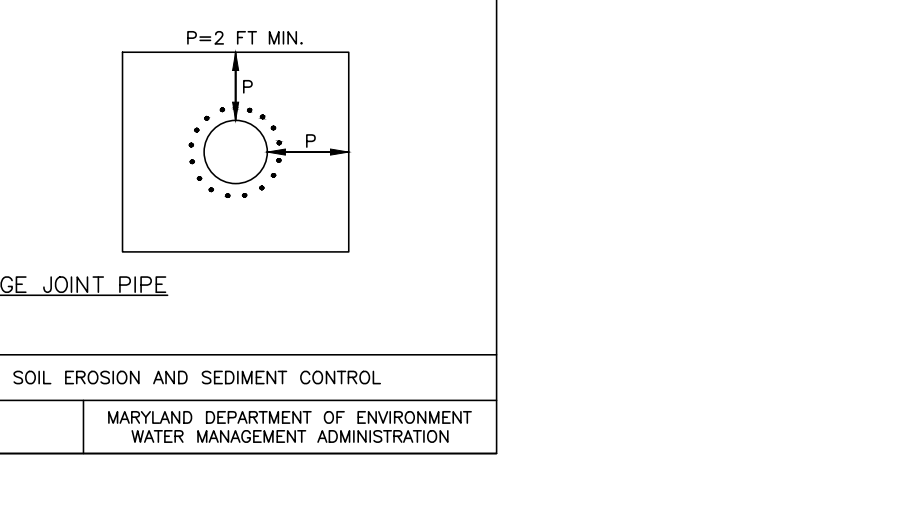


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SEDIMENT AND EROSION CONTROL NOTES & DETAILS

JOURNEY'S END LOTS 1 THRU 3 AND OPEN SPACE LOTS 4 & 5

ZONED: R-ED
TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO.: 72
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 6, 2023
SHEET 4 OF 16

- 1. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (minimum average of 20 sq. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a 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 imbedded at 25' minimum intervals, with lower ends canted until by 2' elevation.
15. Stream channels must not be disturbed during the following restricted time periods (inclusive):
• Use II and IP March 1 - June 15
• Use III and IP October 1 - April 30
• Use IV March 1 - May 31
16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

Table with columns for NO., REVISION, and DATE.

Table with columns for SUBDIVISION, SECTION/AREA, and LOT No.

Table with columns for PLAT NO., BLOCK NO., ZONE, TAX/ZONING, ELEC. DIST., and CENSUS TR.

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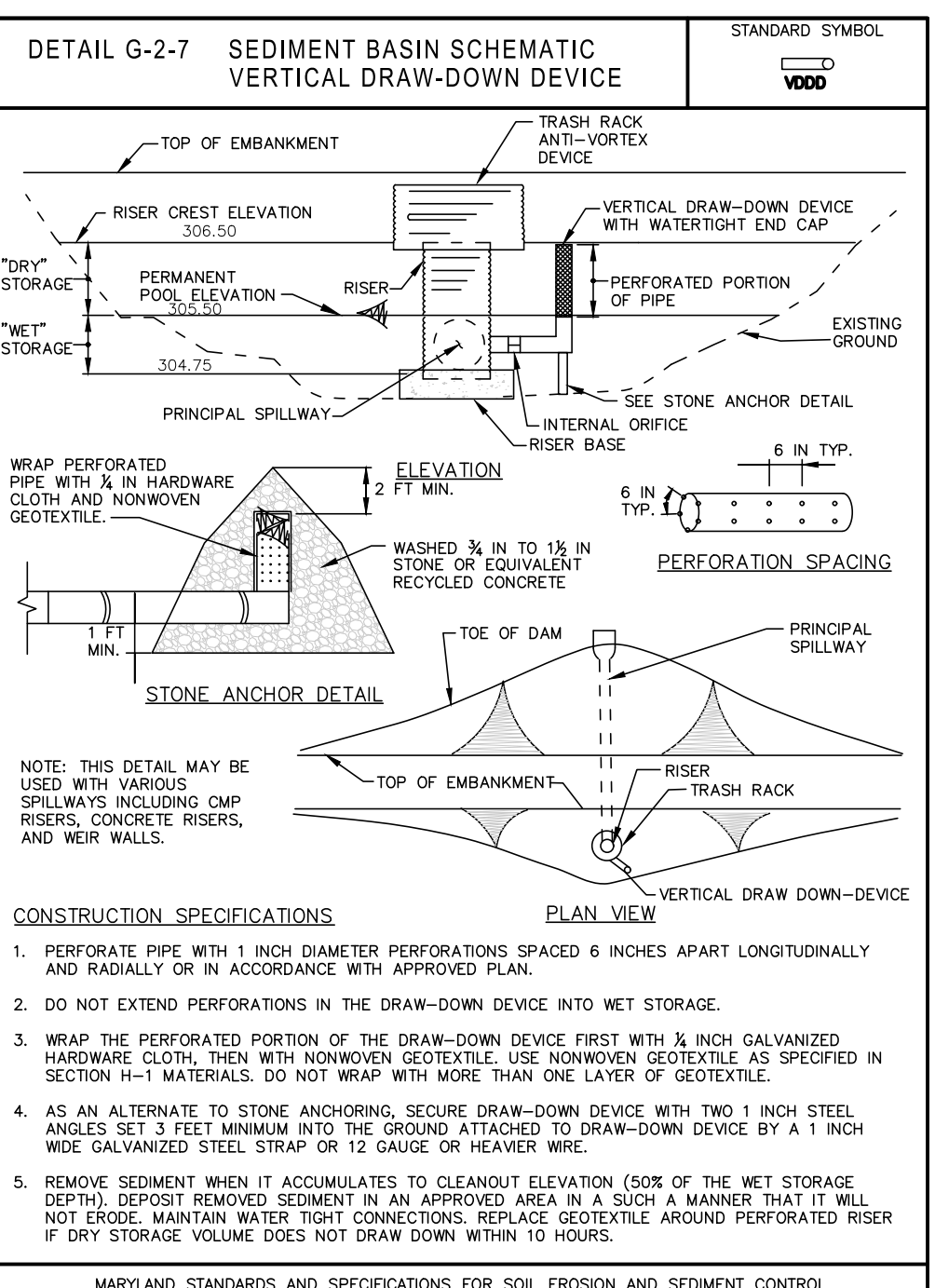
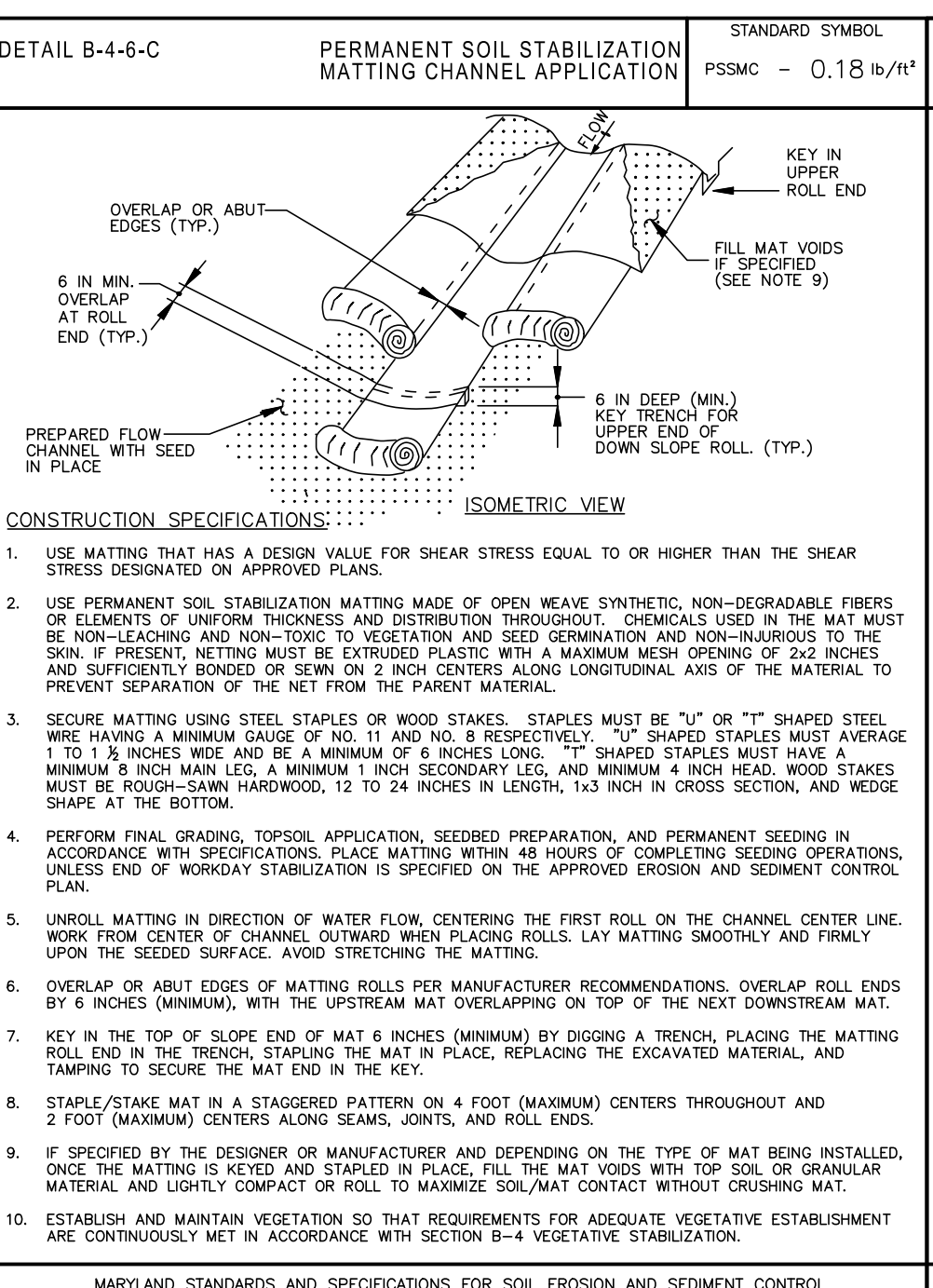
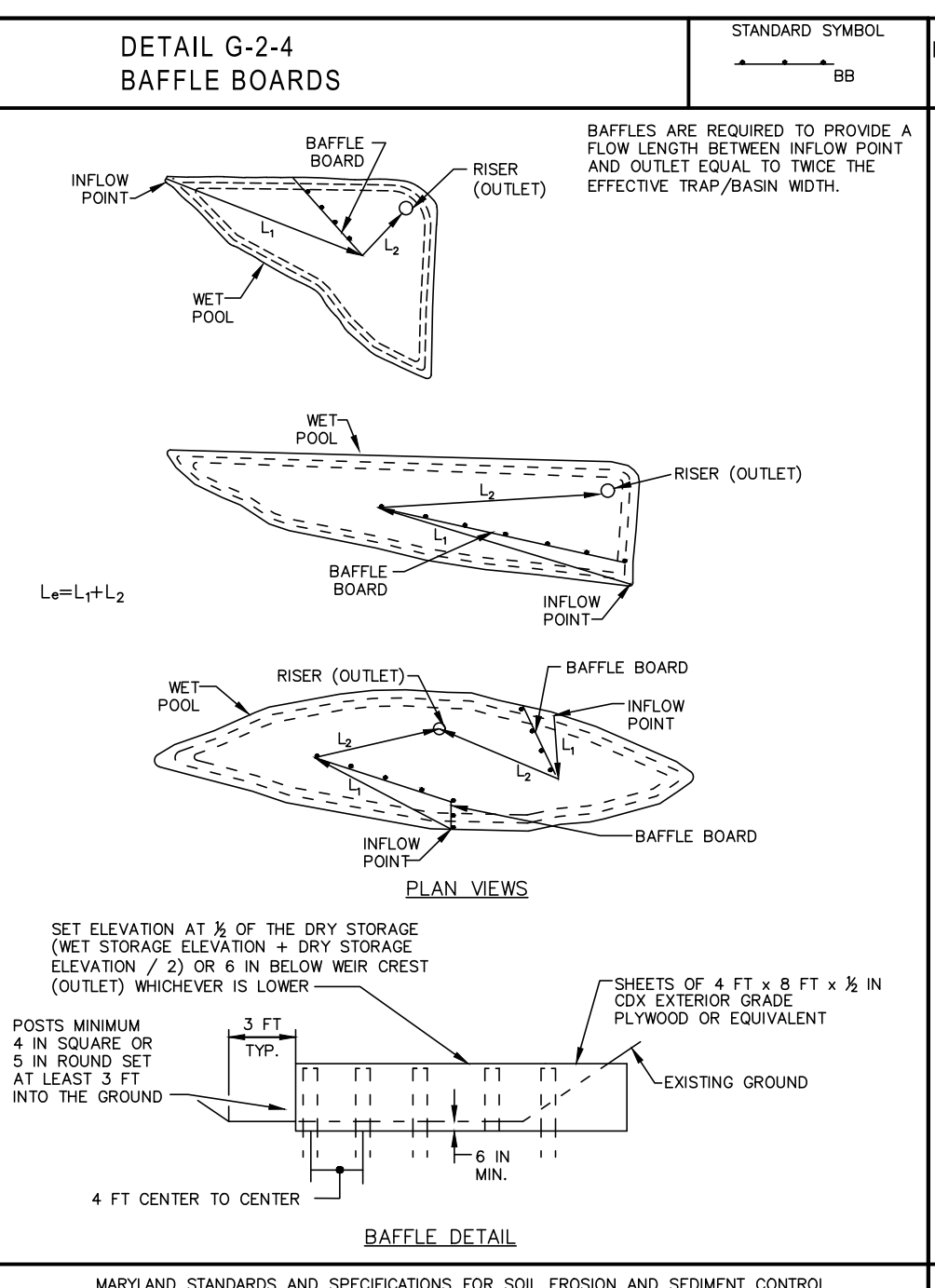
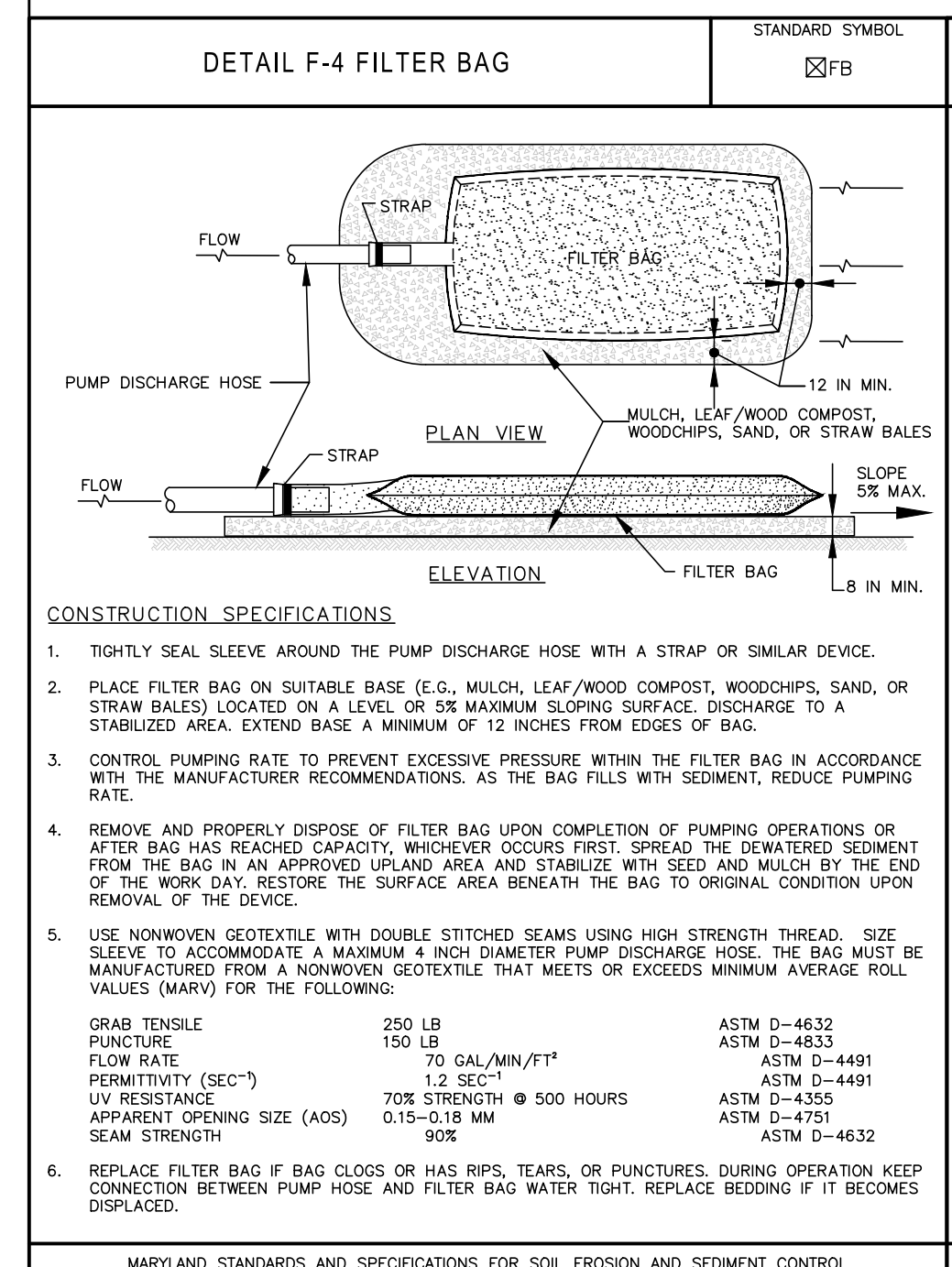
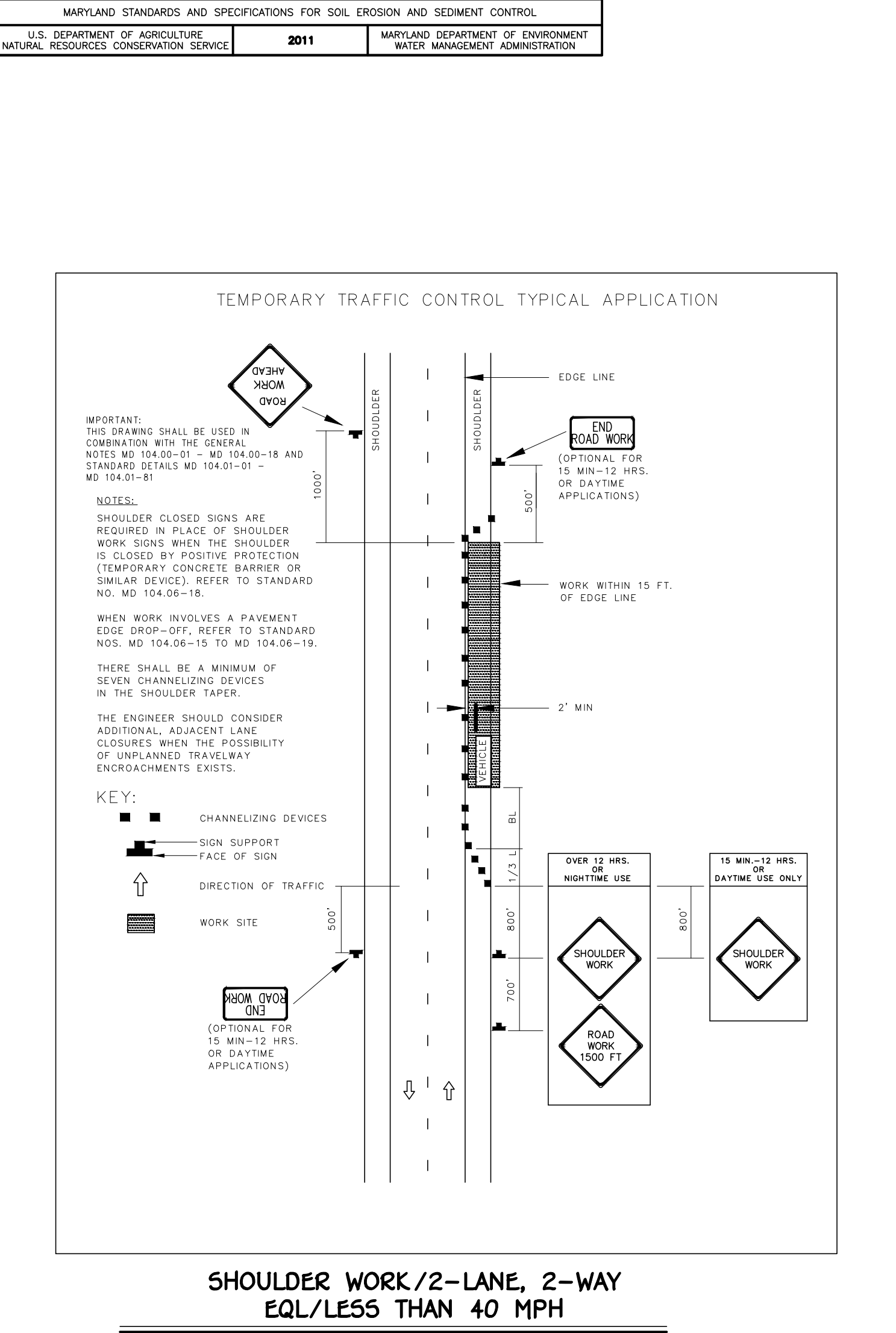
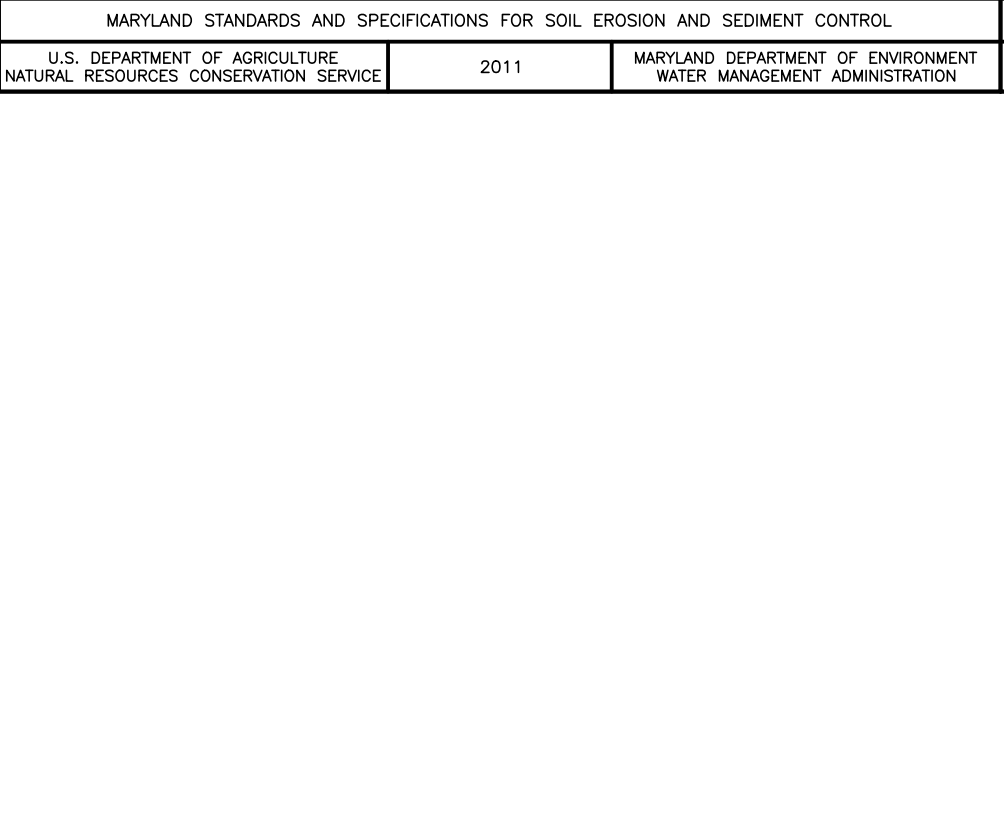
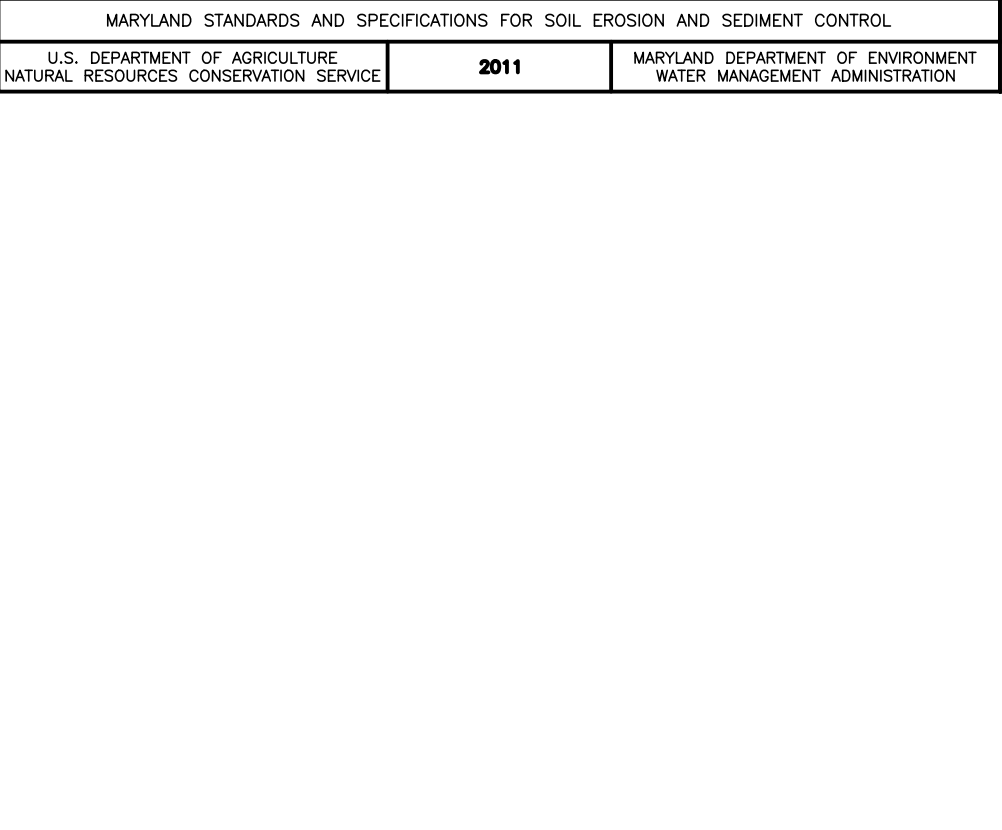
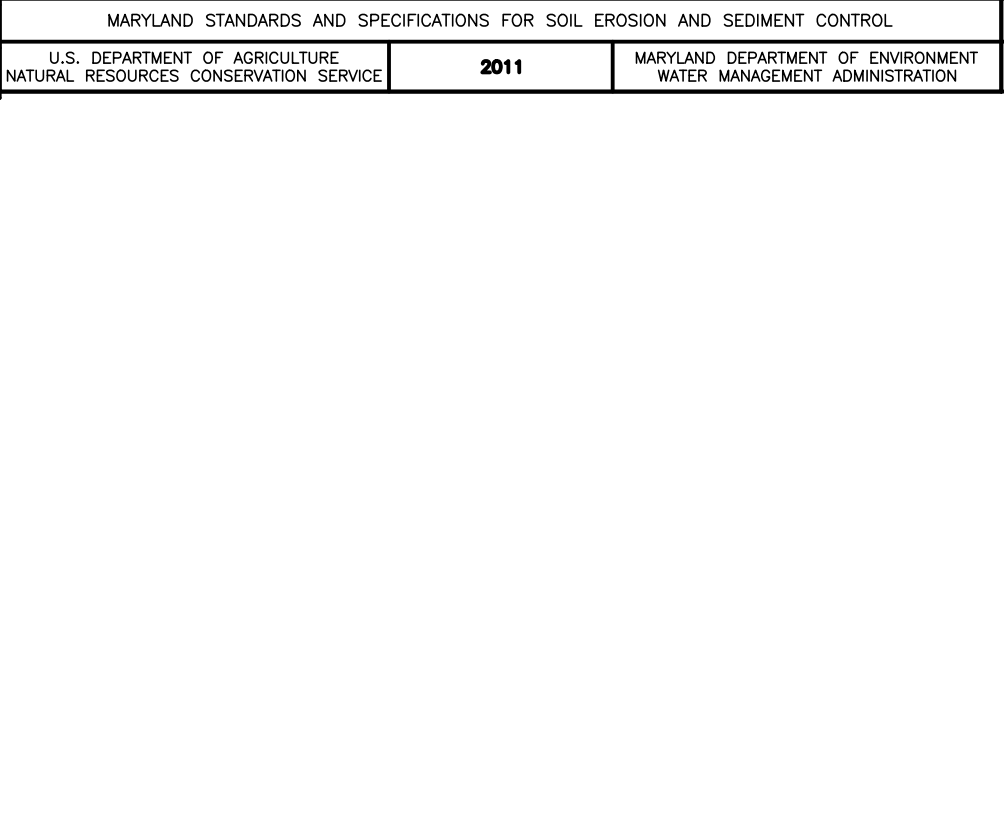
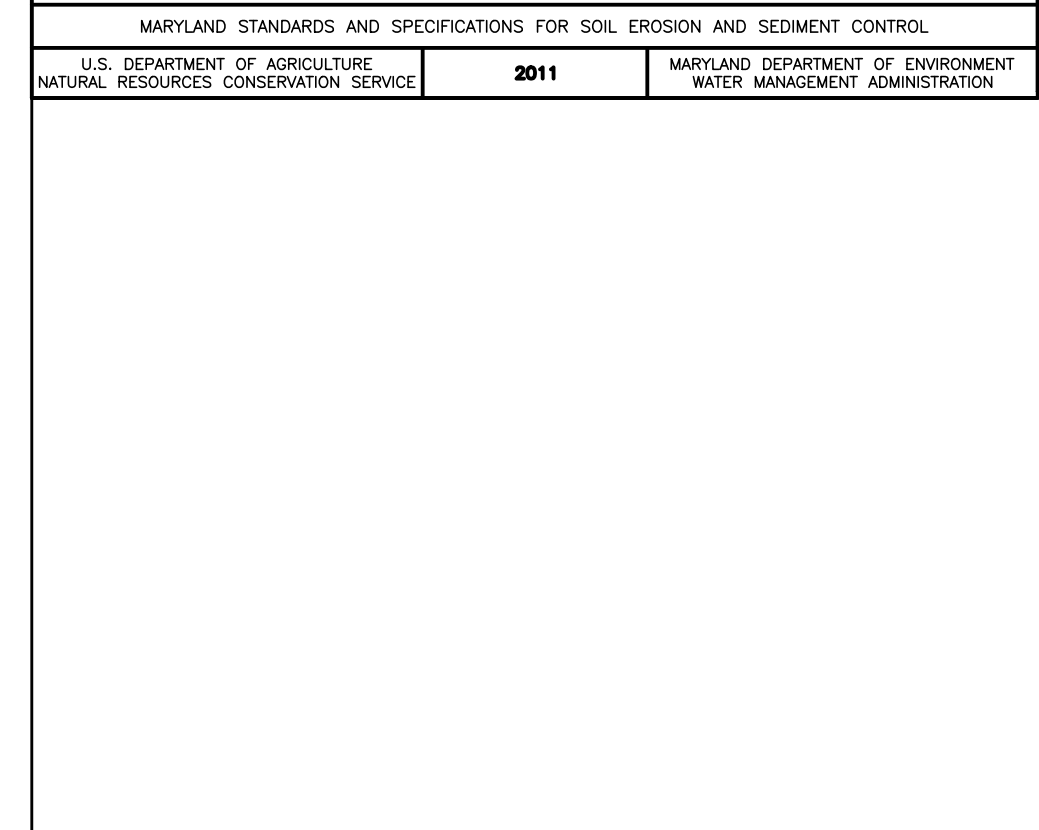
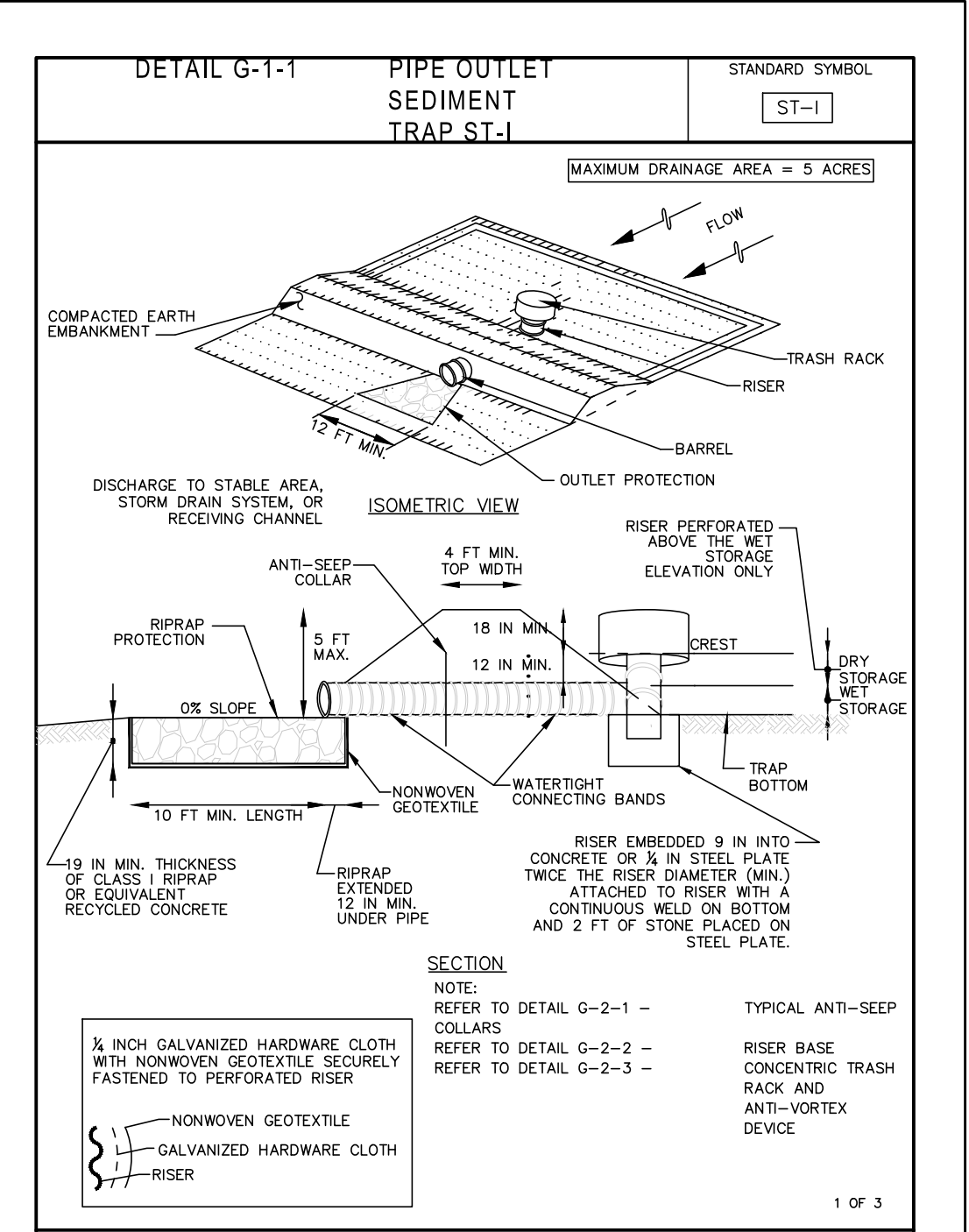
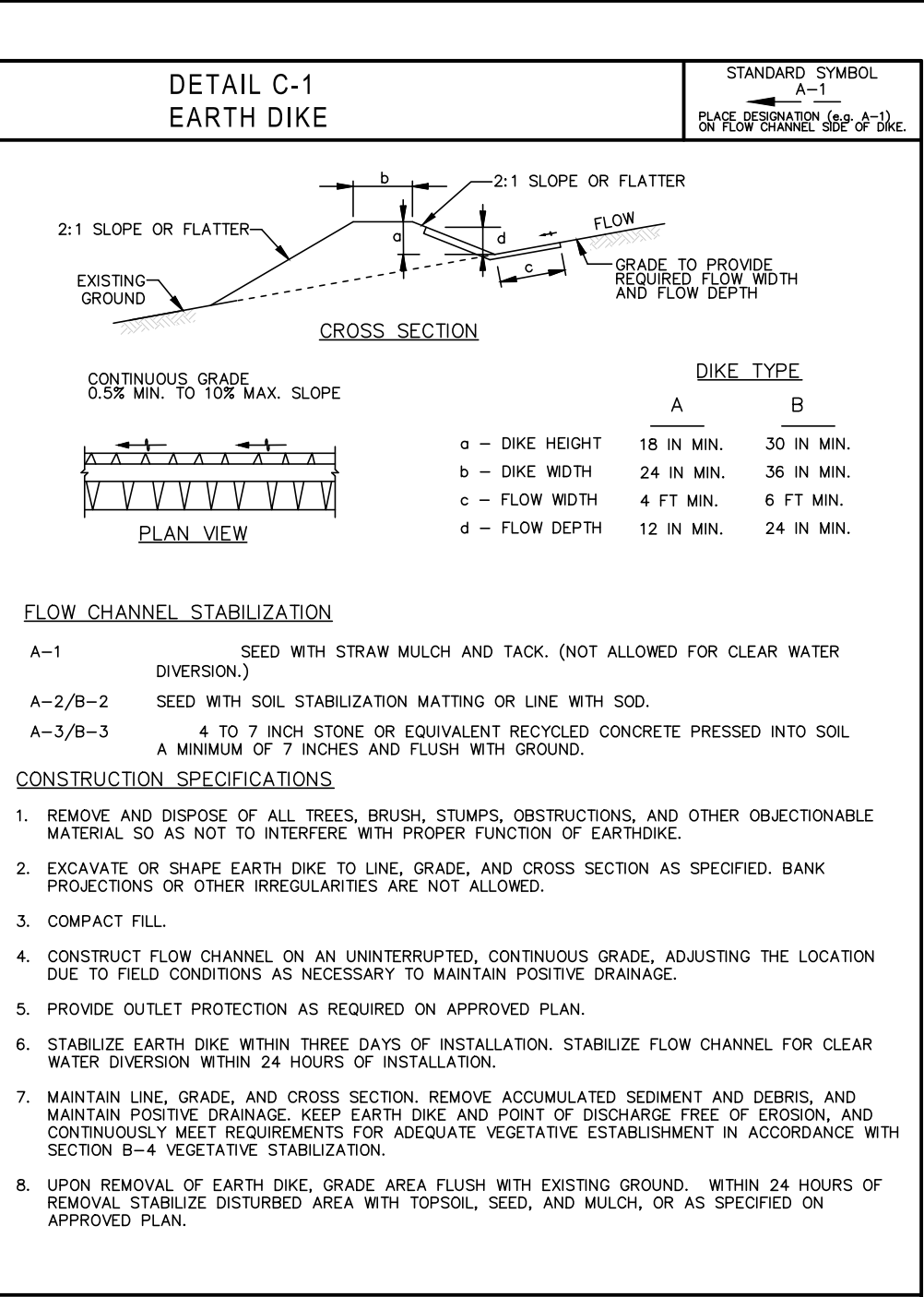
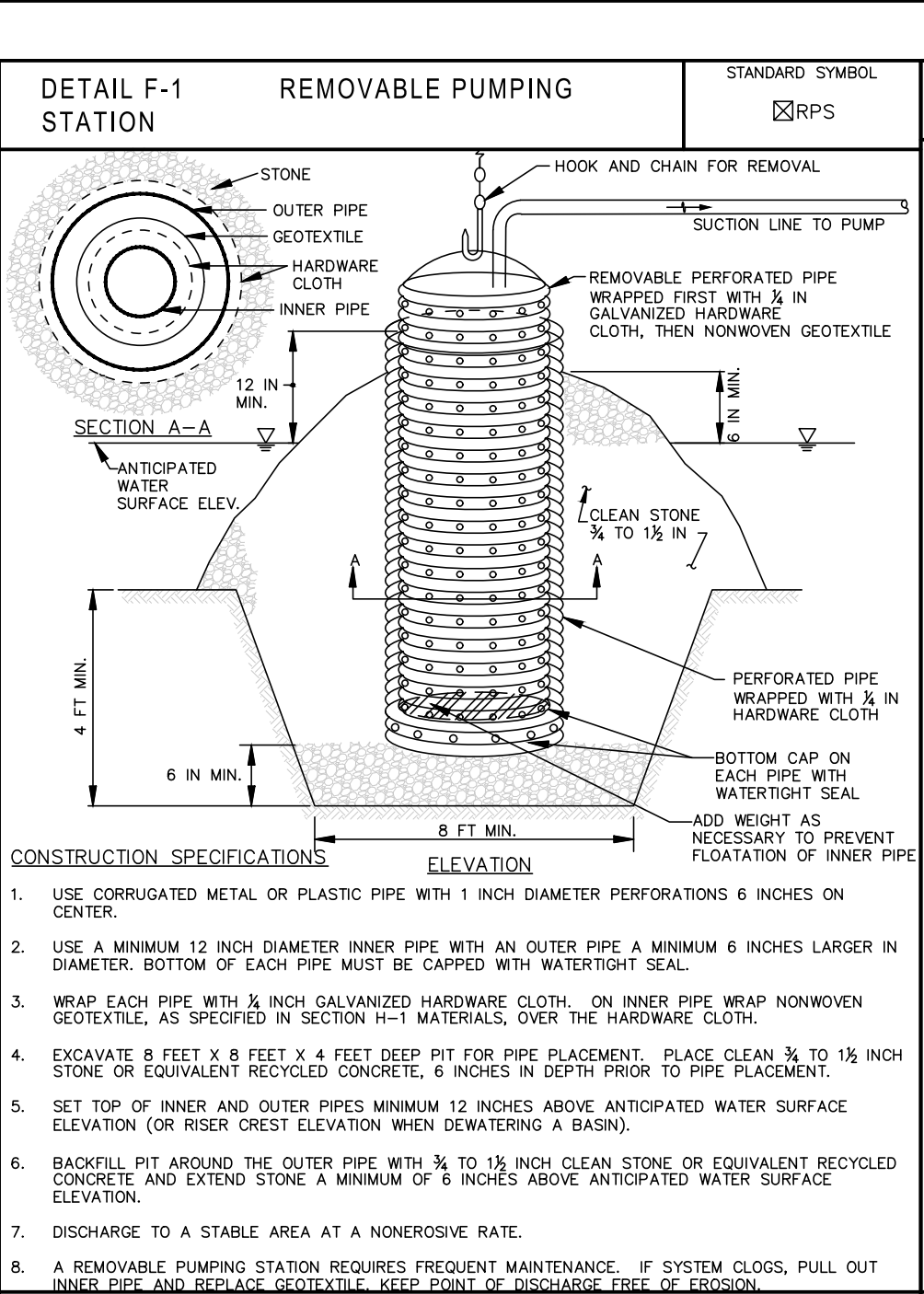
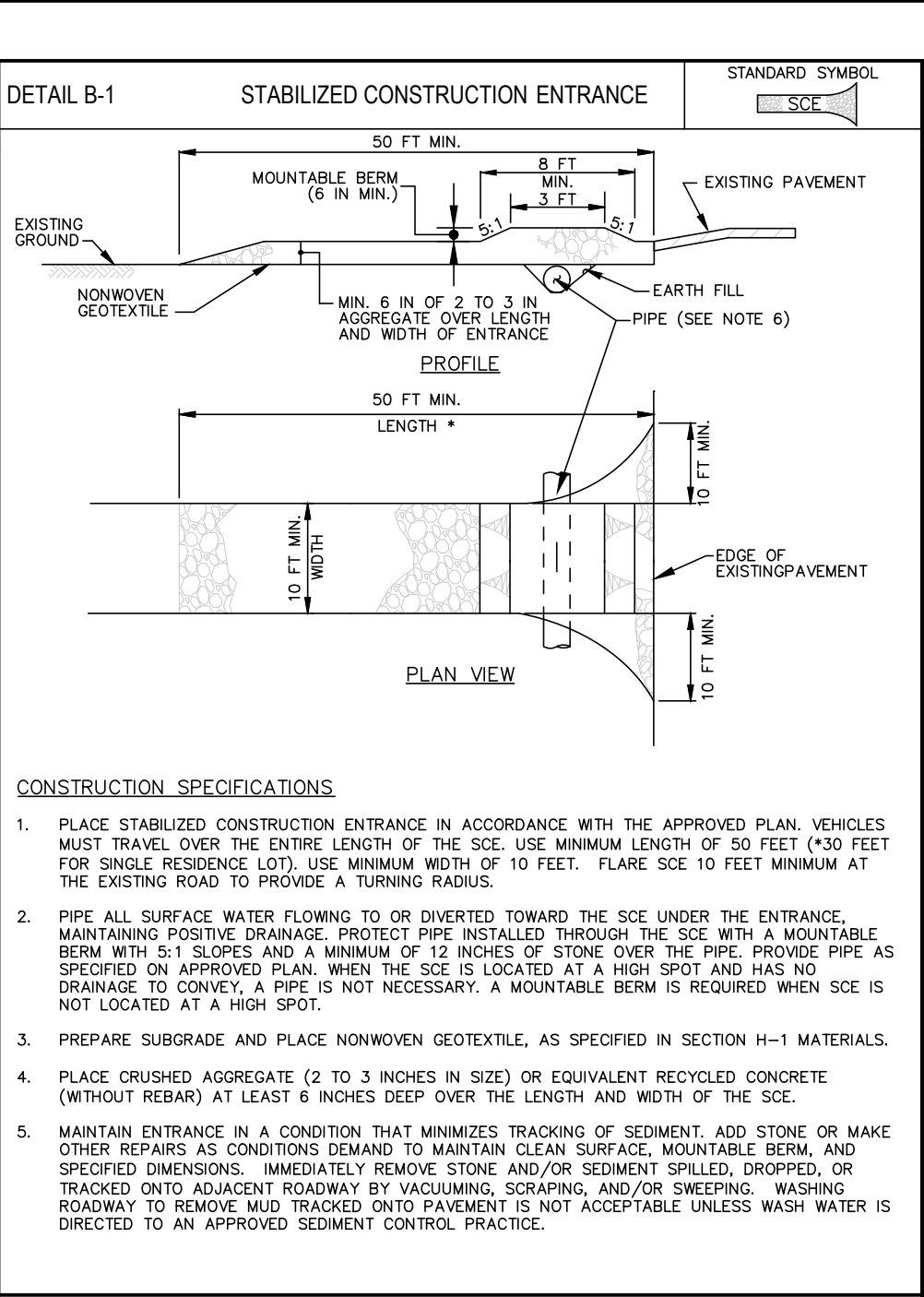
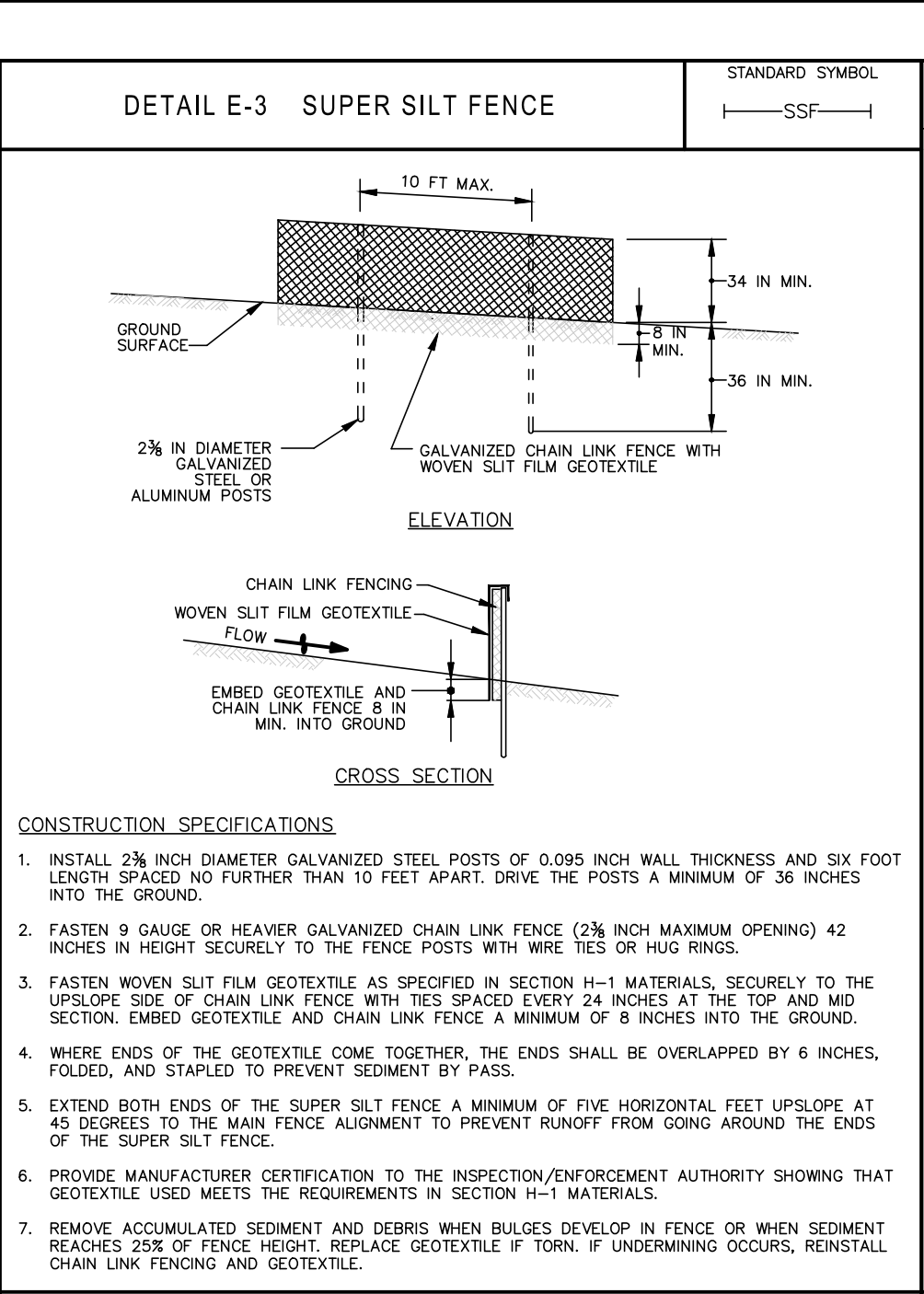
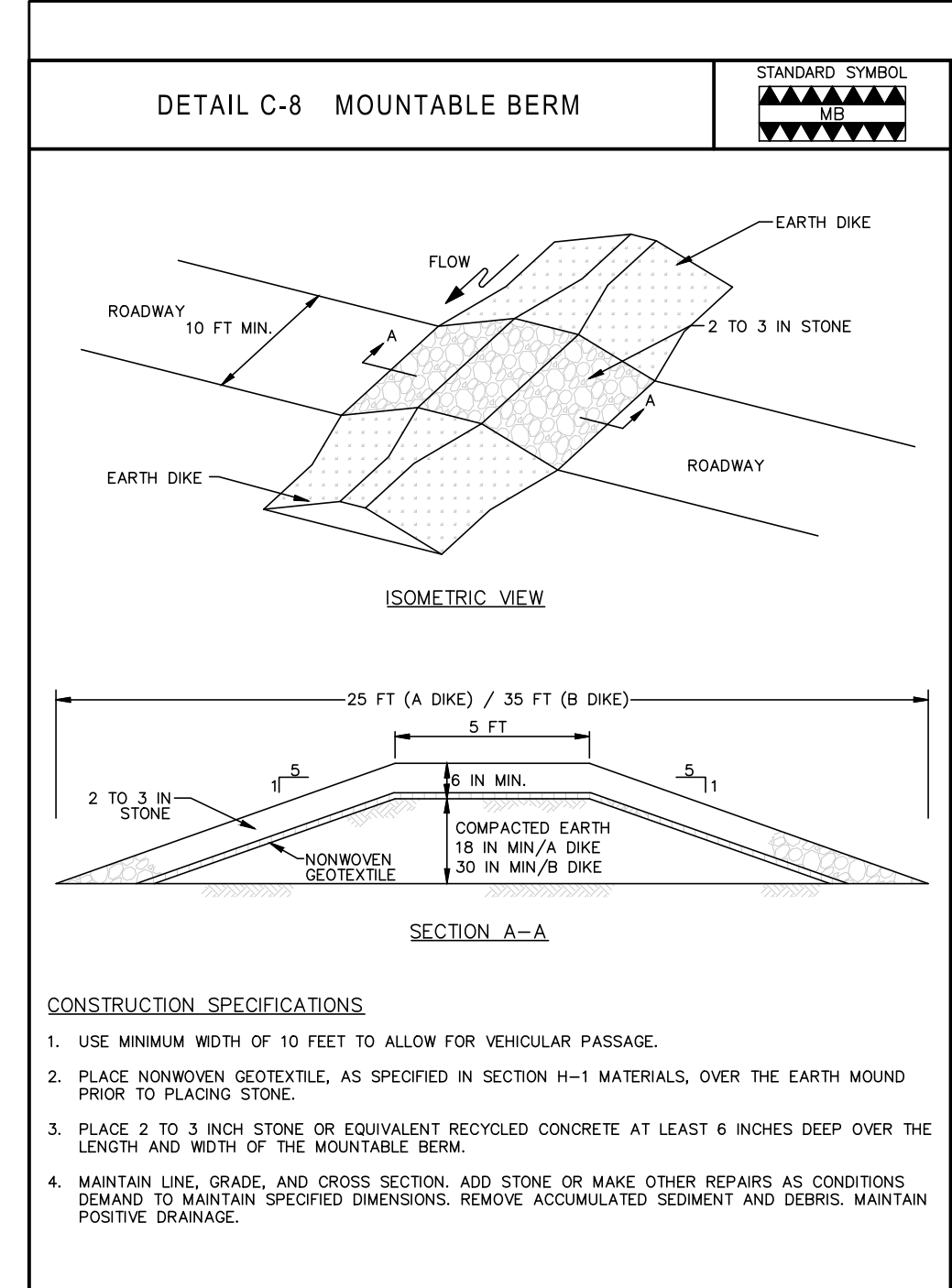
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Table with columns for PLAT NO., BLOCK NO., ZONE, TAX/ZONING, ELEC. DIST., and CENSUS TR.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by:  
**Carol Edmondson**  
7083748E41499  
Chief, Development Engineering Division

DocuSigned by:  
**Lynda Eisenberg**  
120895989042E  
Director

4/2/2024  
Date

4/4/2024  
Date

4/4/2024  
Date

**DESIGN CERTIFICATE**

I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

DocuSigned by:  
**Alexander Bratchie**  
85684028A986AC1  
Howard Soil Conservation District.

4/6/25  
Date

4/19/2023  
Date

**OWNER'S/DEVELOPER CERTIFICATE**

I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining control, 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.

DocuSigned by:  
**Bruce Taylor**  
120895989042E  
Owner's/Developer's Signature

4/19/2023  
Date

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

DocuSigned by:  
**Alexander Bratchie**  
85684028A986AC1  
Howard Soil Conservation District.

4/2/2024  
Date

**OWNER**

Historic Ellicott Properties, Inc.  
c/o Taylor Property Group  
8 Park Center Ct.  
Suite 200  
Owings Mills, Maryland 21117-5616  
Tel: 410-465-3500

**DEVELOPER**

Autumn Development Corporation  
c/o Taylor Property Group  
8 Park Center Ct.  
Suite 200  
Owings Mills, Maryland 21117-5616  
Tel: 410-465-3500

NO.	REVISION	DATE

SUBDIVISION	SECTION/AREA	LOT No.
JOURNEY'S END	N/A	LOTS 1 THRU 3

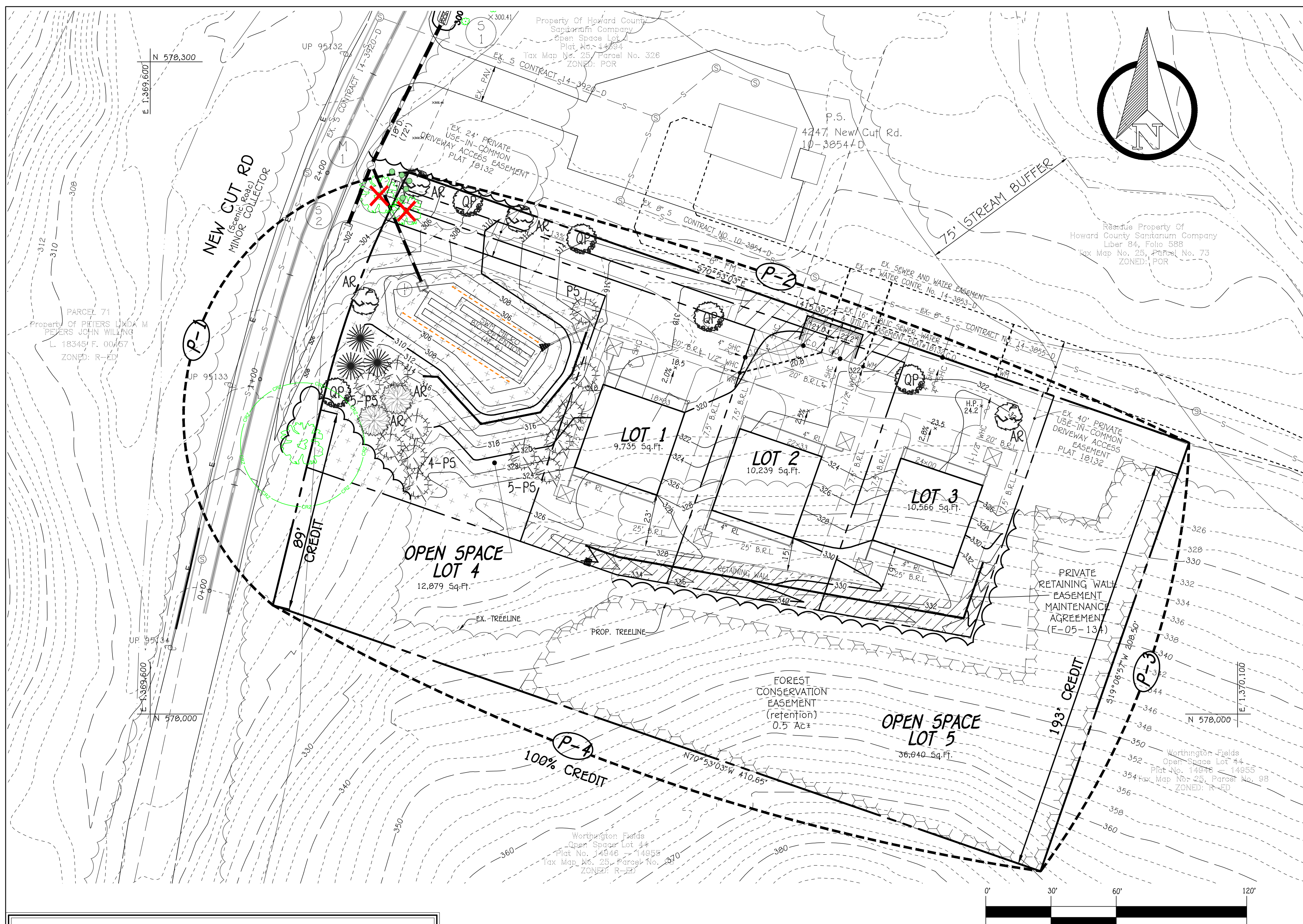
PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
26307	N/A	R-ED	25	2	602700

**SEDIMENT AND EROSION CONTROL NOTES & DETAILS**

**JOURNEY'S END**  
LOTS 1 THRU 3 AND OPEN SPACE LOTS 4 & 5

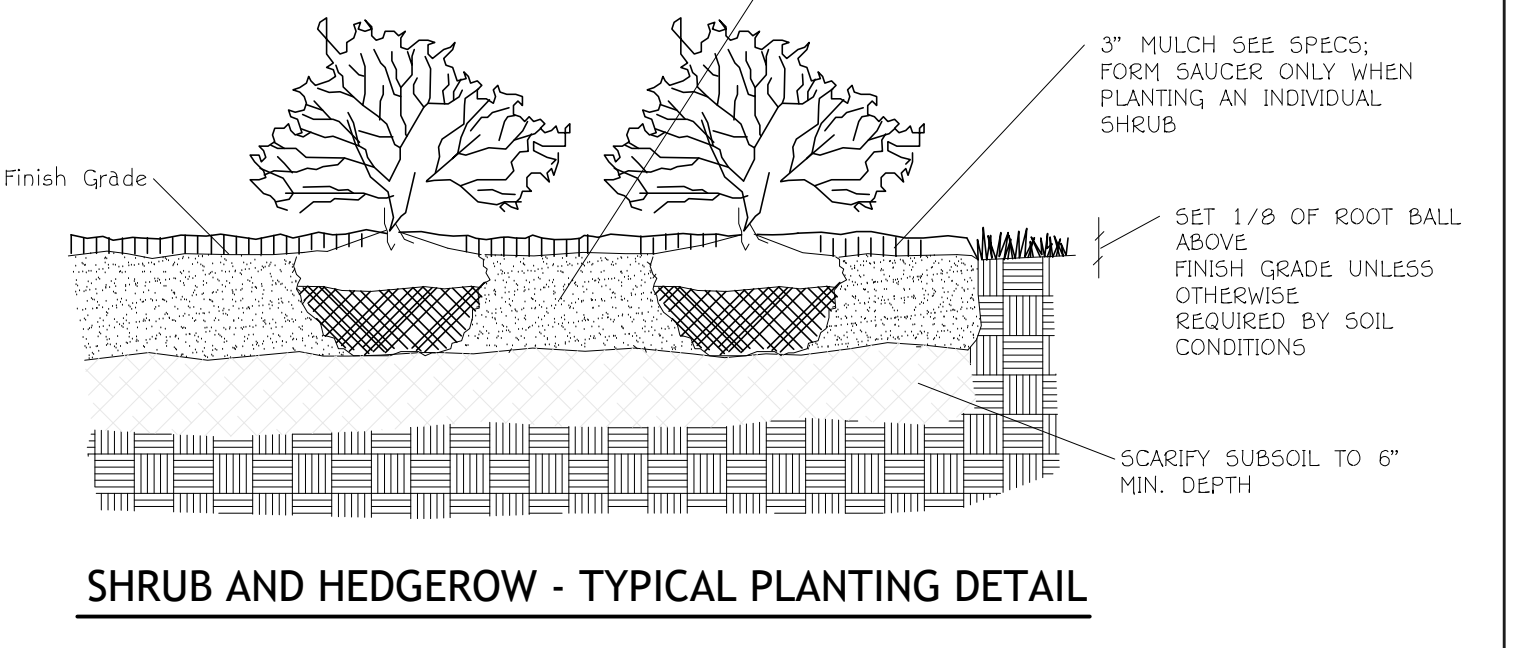
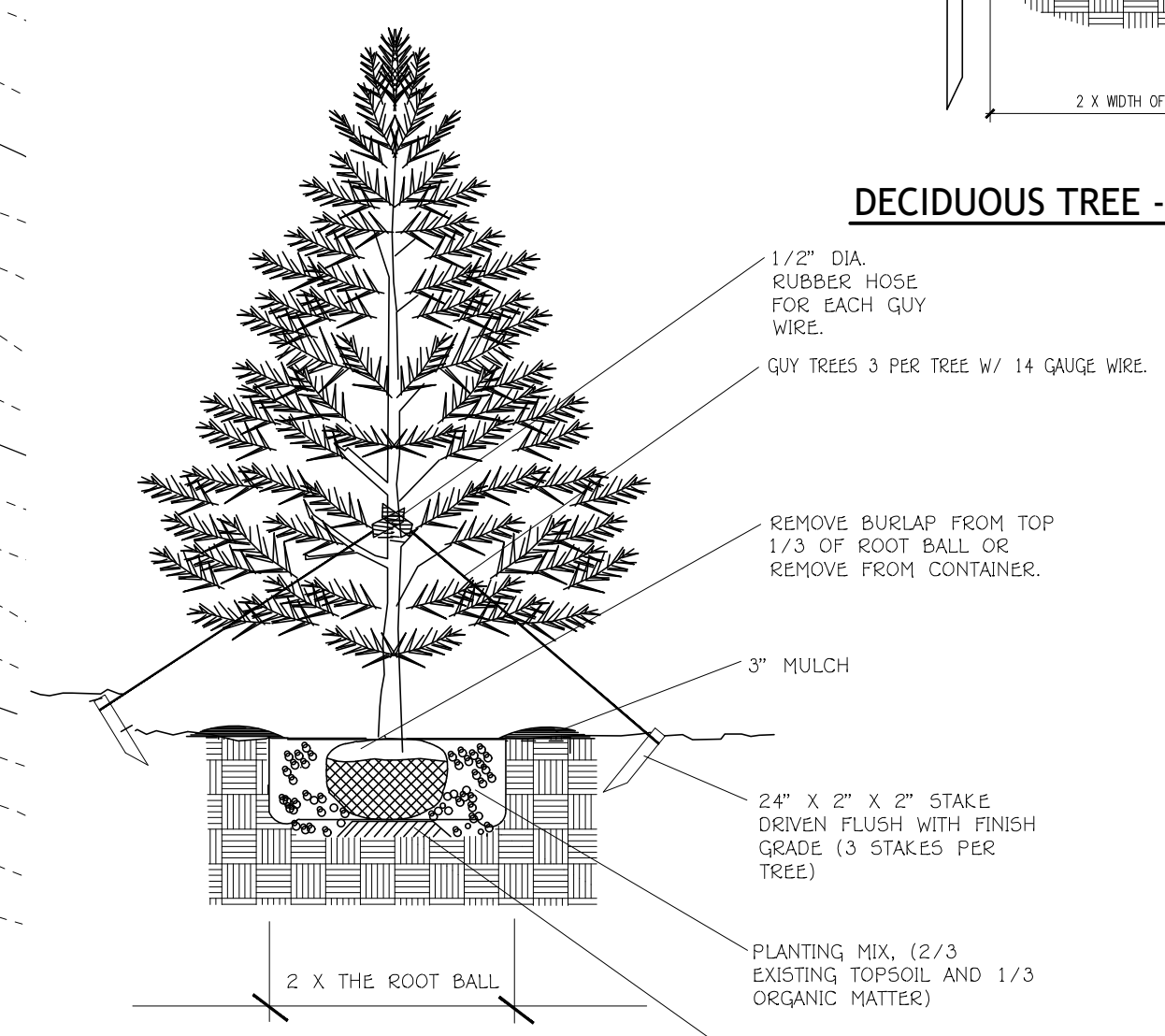
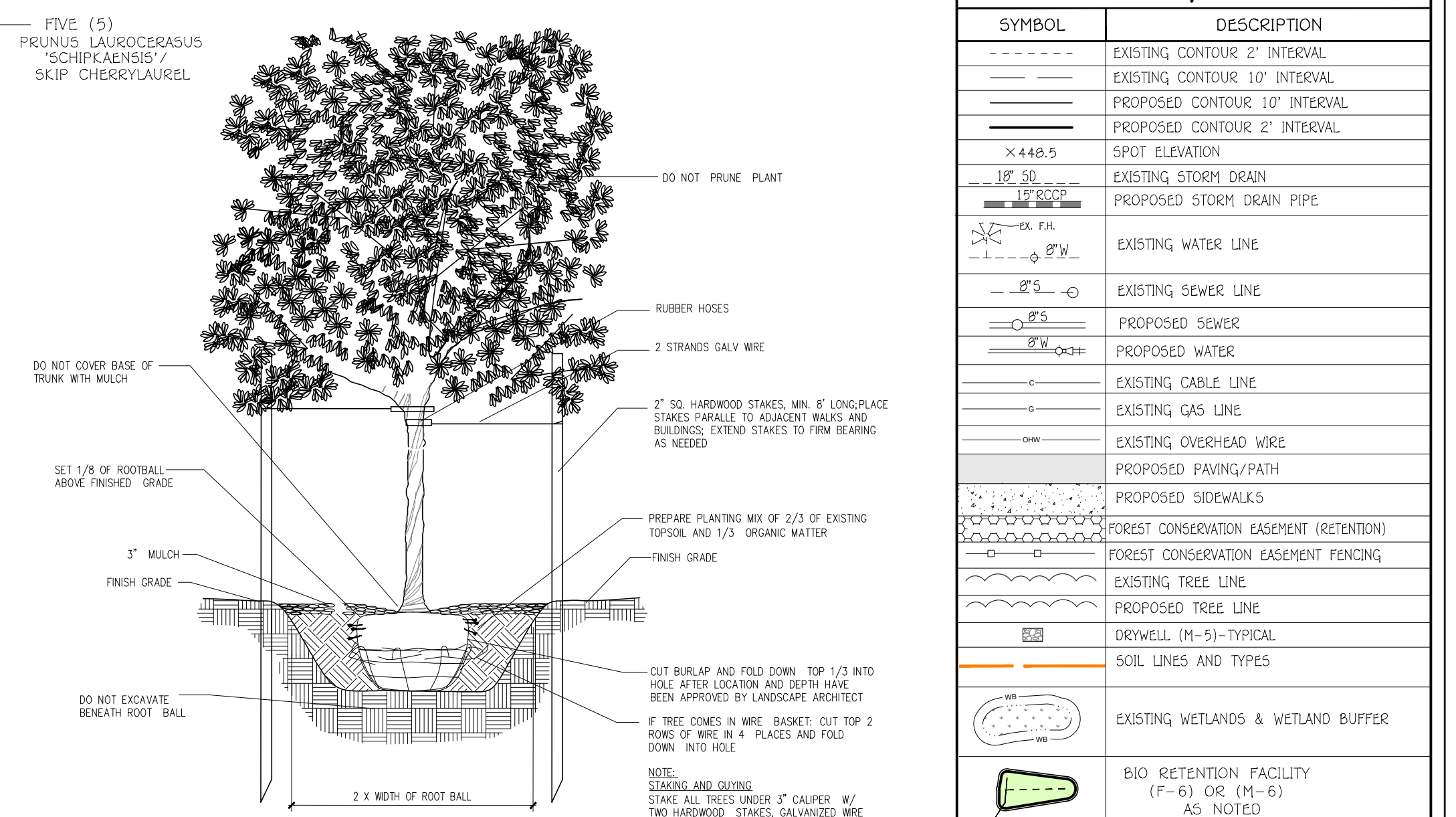
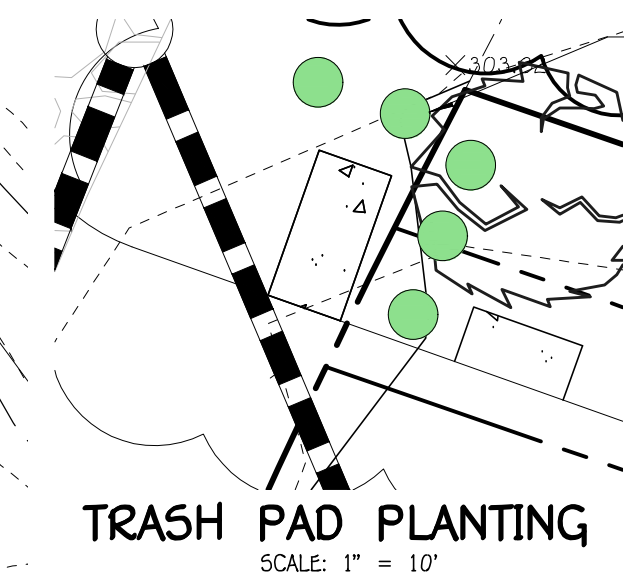
ZONE: R-ED

TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO.: 72  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 6, 2023  
SHEET 5 OF 16



**NOTES:**

- "Should any tree designated for preservation for which landscaping credit is given, die prior to release of bonds, the developer will be required to replace the tree with the equivalent species or with a tree which will obtain the same height, spread and growth characteristics. The replacement tree must be a minimum of 2.5 inches in caliper and installed as required in the Howard County Landscape Manual."
- "At the time of plant installation, all shrubs and trees listed and approved on the landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from the 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 the applicable plans."
- "The Owner, tenants and/or their agents shall be responsible for maintenance of the required perimeter landscaping including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All the other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced."
- This Plan Has Been Prepared In Accordance With The Provisions Of Section 16.124 Of The Howard County Code And The Landscape Manual". Financial Surety For The Required 11 Shade, 15 Evergreen Trees & 5 Shrubs Has Been Posted As Part Of The Developer's Agreement In The Amount Of \$5,700.00.



**SCHEDULE 'A' - PERIMETER LANDSCAPE EDGE**

PERIMETER	P-1	P-2	P-3	P-4
CATEGORY	Adjacent to Roadway	Adjacent to Preservation Parcel	Adjacent to Preservation Parcel	Adjacent to Preservation Parcel
LANDSCAPE TYPE	B	A	A	A
LINEAR FEET OR ROADWAY FRONTAGE/PERIMETER	209.3'	379.8'	208.5'	373.6'
CREDIT FOR EXISTING VEGETATION (YES, NO LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES - 89' (EX. FOREST)	NO	YES - 193' (F.C.E.)	YES - 100% (EX. FOREST/F.C.E.)
CREDIT FOR WALL, FENCE OR BERM (YES, NO LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	-	-	-	-
NUMBER OF PLANTS REQUIRED				
SHADE TREES	2	6	1	0
EVERGREEN TREES	3	-	-	-
SHRUBS	-	-	-	-
NUMBER OF PLANTS PROVIDED				
SHADE TREES	2	6	1	0
EVERGREEN TREES	3	-	-	-
SHRUBS	-	-	-	-

- PLANTING SPECIFICATIONS**
- CLEAR & GRUB ALL PLANTING AREAS AS INDICATED ON THE DRAWINGS.
  - PROVIDE PROTECTION FOR TREES, SHRUBS, AND PERENNIALS/GROUND COVERS THAT ARE TO BE PRESERVED.
  - CONTRACTOR SHALL VERIFY THE CORRECT LOCATION OF ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO INSTALLATION OF ANY PLANT MATERIALS.
  - ALL PLANTING SHALL BE DONE AS PER PLANTING DETAILS AND SPECIFICATIONS.
  - NO CHANGES SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE OWNER OR LANDSCAPE ARCHITECT.
  - PRIOR TO CONSTRUCTION OF PLANTING BEDS, THE CONTRACTOR SHALL STAKE OUT PLANTING BED LINES IN THE FIELD FOR REVIEW BY THE LANDSCAPE ARCHITECT. LANDSCAPE ARCHITECT SHALL MAKE ADJUSTMENTS IN THE FIELD AS NECESSARY. ALL FINAL PLANTING BED LOCATIONS ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT. FOR LAYOUT REVIEW, CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT A MINIMUM OF THREE DAYS IN ADVANCE.
  - INSTALL ALL REQUIRED PLANTING AND LAWN SOILS AS PER DETAILS AND SPECIFICATIONS, AND ALL SHRUBS, GROUND COVERS, AND PERENNIALS SHALL BE PLANTED IN PLANTING BEDS PREPARED AS REQUIRED BY THE DETAILS AND SPECIFICATIONS.
  - MAINTAIN POSITIVE DRAINAGE OUT OF PLANTING BEDS AT A MINIMUM 2% SLOPE AND MAINTAIN POSITIVE DRAINAGE OF ALL LAWN AREAS, UNLESS OTHERWISE NOTED ON DRAWINGS. ALL GRADES, DIMENSIONS, AND EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR ON SITE BEFORE CONSTRUCTION BEGINS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT OR OWNER.
  - ALL PLANT BEDS SHALL BE CONTAINED WITH A SPACED EDGE UNLESS OTHERWISE NOTED ON DRAWINGS.
  - IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE DRAWINGS AND QUANTITIES SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE DRAWINGS SHALL APPLY. REPORT DISCREPANCIES TO THE LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING.
  - ALL PLANTS SHALL CONFORM TO THE SIZES GIVEN IN THE PLANT LIST AND SHALL BE NURSERY GROWN IN ACCORDANCE WITH THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION.
  - PLANTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS. PRIOR TO PLANTING, THE CONTRACTOR SHALL STAKE OUT THE LOCATIONS OF ALL PLANTS IN THE FIELD FOR REVIEW BY THE LANDSCAPE ARCHITECT. LANDSCAPE ARCHITECT SHALL MAKE ADJUSTMENTS IN THE FIELD AS NECESSARY. ALL FINAL PLANT LOCATIONS ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT. FOR LAYOUT REVIEW, CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT A MINIMUM OF THREE DAYS IN ADVANCE.
  - ALL DISTURBED AREAS SHALL BE FINE GRADED AND SEEDED OR SODED; SEE PLAN FOR LOCATIONS.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING AND MAINTAINING ALL PLANTS DURING THE WARRANTY PERIOD; REFER TO SPECIFICATIONS.

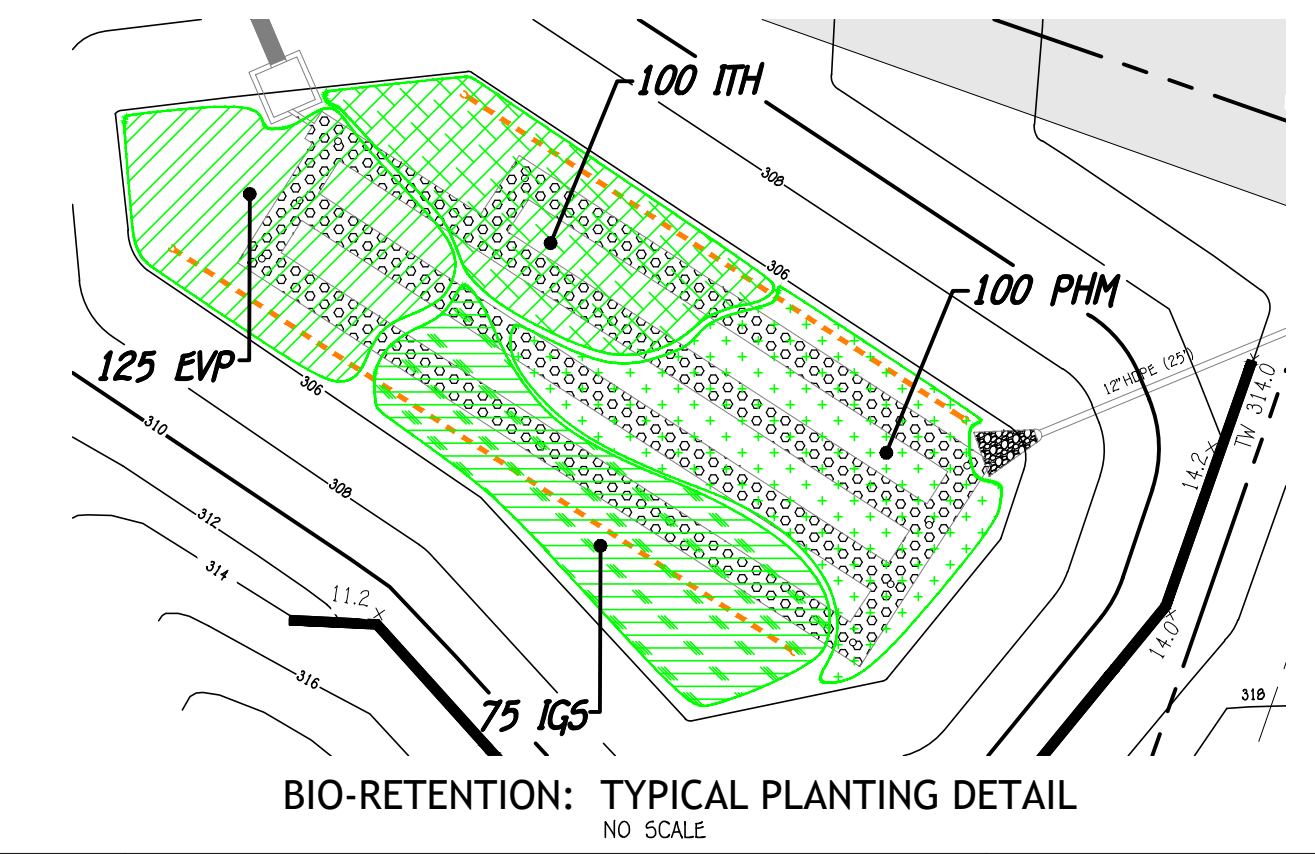
**TRASH/RECYCLE PAD LANDSCAPING**

LINEAR FEET OF PERIMETER	LOTS 1-3 PAD: 16 L.F.
NUMBER OF SHRUBS PROVIDED:	5

- NOTES: 1. THE TRASH/RECYCLE PAD LANDSCAPING WILL BE MAINTAINED BY THE USERS OF THE PRIVATE USE-IN-COMMON MAINTENANCE AGREEMENT.  
2. THE LANDSCAPING SHALL BE INSTALLED AROUND THE PERIMETER OF THE PAD EXCLUDING THE SIDE ADJACENT TO THE PUBLIC ROAD RIGHT-OF-WAY.

**ESD PLANTS**

Quantity	Code	Plant Name	Size	Availability	Notes
75	IGS	Ilex glabra 'Shamrock' Inkberry	24"-30" Ht.	Cont.	40" o.c./Male Cultivar
125	EVP	Eupatorium dubium 'Little Joe' Dwarf Joe-Pye Weed	# 1	Cont.	24" O.C.
100	ITH	Itea virginica 'Little Henry' Dwarf Virginia Sweetspire	24"-30" Ht.	Cont.	36" O.C.
100	PHM	Panicum virgatum 'Heavy Metal' Heavy Metal Switchgrass	#1	Cont.	36" O.C.



**PERIMETER PLANT LIST FOR SCHEDULE 'A' - PERIMETER LANDSCAPE EDGE TRASH/RECYCLE PAD LANDSCAPING**

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
AR	4	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2-3" CAL.
QP	5	QUERCUS PALUSTRIS PIN OAK	2 1/2-3" CAL.
P5	3	PINUS STROBUS EASTERN WHITE PINE	6'-8' HT.
P5	5	PRUNUS LAUROCERASUS 'SCHIPFLAENSIS' / SKIP CHERRY/LAUREL	18"-24" SPREAD
P5	+12	• PINUS STROBUS EASTERN WHITE PINE	6'-8' HT.
AR	+2	• ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2-3" CAL.

\*ADDITIONAL TREES PROPOSED AS PART OF PLANNING BOARD APPROVAL (APPROVED DECEMBER 7, 2023)

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
GALLOTT CITY, MARYLAND 21042  
(410) 461-2895

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Designed by: **Chad Edmondson** 4/2/2024  
Chief, Development Engineering Division

Designed by: **Lynda Eisenberg** 4/4/2024  
Chief, Division of Land Development

Director: **Lynda Eisenberg** 4/4/2024

**Aldo M. Vitucci, P.E.** 3/7/2024  
Date

"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. 20748, Expiration Date 2-22-25."

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

**Ernie Taylor** 3/7/2024  
NAME DATE

**OWNER**  
Historic Elliott Properties, Inc.  
c/o Taylor Property Group  
8 Park Center Ct.  
Suite 200  
Owings Mills, Maryland 21117-5616  
Tel: 410-465-3900

**DEVELOPER**  
Autumn Development Corporation  
c/o Taylor Property Group  
8 Park Center Ct.  
Suite 200  
Owings Mills, Maryland 21117-5616  
Tel: 410-465-3900

NO.	REVISION	DATE

**LANDSCAPE PLAN, NOTES & DETAILS**

**JOURNEY'S END**  
LOTS 1 THRU 3 AND  
OPEN SPACE LOTS 4 & 5  
ZONED: R-ED

TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO.: 72  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 6, 2023  
SHEET 6 OF 16

PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
26307	N/A	R-ED	25	2	602700

### Infiltration and Filter System Construction Specifications

Infiltration and filter systems either take advantage of existing permeable soils or create a permeable medium such as sand for WC, and Rv. In some instances where permeability is great, these facilities may be used for Op as well. The most common systems include infiltration trenches, infiltration basins, sand filters, and organic filters.

When properly planted, vegetation will thrive and enhance the functioning of these systems. For example, pre-treatment buffers will trap sediments that often are bound with phosphorous and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide arteries for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

#### Design Constraints:

- > Planting buffer strips of at least 20 feet will cause sediments to settle out before reaching the facility, thereby reducing the possibility of clogging.
  - > Determine areas that will be saturated with water and water table depth so that appropriate plants may be selected (hydrology will be similar to bioretention facilities, see figure A.5 and Table A.4 for planting material guidance).
  - > Plants known to send down deep taproots should be avoided in systems where filter fabric is used as part of facility design.
  - > Test soil conditions to determine if soil amendments are necessary.
  - > Plants shall be located so that access is possible for structure maintenance.
  - > Stabilize heavy flow areas with erosion control mats or sod.
  - > Temporally divert flows from seeded areas until vegetation is established.
- See Table A.5 for additional design considerations.

#### Bio-retention

##### Soil Bed Characteristics

The characteristics of the soil for the bioretention facility are perhaps as important as the facility location, size, and treatment volume. The soil must be permeable enough to allow runoff to filter through the media, while having characteristics suitable to promote and sustain a robust vegetative cover. In addition, much of the nutrient pollutant uptake (nitrogen and phosphorus) is accomplished through absorption and microbial activity within the soil profile. Therefore, soils must balance their chemical and physical properties to support biotic communities above and below ground.

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (should contain a minimum 35 to 60% sand, by volume). The clay content for these soils should be less than 25% by volume (Environmental Quality Resources (EQR), 1996; Engineering Technology Inc. and Biohabitats, Inc. (ETAB), 1993). Soils should fall within the SM, M, or SC classifications or the Unified Soil Classification System (USCS). A permeability of at least 1.0 feet per day (0.5"/hr) is required (a conservative value of 0.5 feet per day is used for design). The soil should be free of stones, stumps, roots, or other woody material over 1" in diameter. Brush or seeds from noxious weeds (e.g., Johnson Grass, Mugwort, Nutgrass, and Canada Thistle or other noxious weeds as specified under COMAR 15.08.01.05.) should not be present in the soils. Placement of the planting soil should be in 12 to 18 lifts that are loosely compacted (tamped lightly with a backhoe bucket or traversed by dozer tracks). The specific characteristics are presented in Table A.3.

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P2O5)	75 lbs. per acre, minimum
Potassium (potash - K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	0 to 5%
Silt	30 to 55%
Sand	35 to 60%

##### Mulch Layer

The mulch layer plays an important role in the performance of the bioretention system. The mulch layer helps maintain soil moisture and avoids surface sealing, which reduces permeability. Mulch helps prevent erosion, and provides a microenvironment suitable for soil biota at the mulch/soil interface. It also serves as a pretreatment layer, trapping the finer sediments, which remain suspended after the primary pretreatment.

The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as a mulch material.

##### Planting Guidance

Plant material selection should be based on the goal of simulating a terrestrial forested community of native species. Bioretention simulates an upland-species ecosystem. The community should be dominated by trees, but have a distinct community of understory trees, shrubs and herbaceous materials. By creating a diverse, dense plant cover, a bioretention facility will be able to treat stormwater runoff and withstand urban stresses from insects, disease, drought, temperature, wind, and exposure. The proper selection and installation of plant materials is key to a successful system. There are essentially three zones within a bioretention facility (Figure A.5). The lowest elevation supports plant species adapted to standing and fluctuating water levels. The middle elevation supports plants that like drier soil conditions, but can still tolerate occasional inundation by water. The outer edge is the highest elevation and generally supports plants adapted to dryer conditions. A sample of appropriate plant material for bioretention facilities are included in Table A.4. The layout of plant material should be flexible, but should follow the general principals described in Table A.5. The objective is to have a system, which resembles a random, and natural plant layout, while maintaining optimal conditions for plant establishment and growth. For a more extensive bioretention plan, consult ETAB, 1993 or Clayton and Schueler, 1997.

### B.4.C Specifications for Bioretention, Landscape Infiltration & Infiltration Berms

#### 1. Material Specifications

The allowable materials to be used in these practices are detailed in Table B.4.1.

#### 2. Filtering Media or Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)

Organic Content - Minimum 1.0% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).

Clay Content - Media shall have a clay content of less than 5%.

pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A hindrance analysis is required (hindrance analysis: If the soil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

#### 3. Compaction

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoists to remove original soil. Practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary filling operation such as a chain ripper, vibrator, or subsoiler. These filling operations are to restructure the soil profile through the 12 inch compaction zone. Substrate methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base. When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Gentle bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

#### 4. Plant Material

Recommended plant material for bioretention practices can be found in Appendix A, Section A.2.3.

#### 5. Plant Installation

Compost is a better organic material source, is less likely to float, and should be placed in the lower and lower areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8 th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specification.

#### 6. Underdrains

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1,000 square feet.

#### 7. Miscellaneous

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

Underdrains should meet the following criteria:  
Pipe - should be 4 to 6 inch diameter, slotted or perforated rigid plastic pipe (ASTM F756, Type PS 2B or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).

Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) galvanized hardware cloth.

Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.

The main collector pipe shall be at a minimum 0.5% slope.  
A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.

A 4" layer of pea gravel (1/4" to 3/8" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1,000 square feet of surface area).

#### 8. Miscellaneous

A RIGID, NON PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

A 4" LAYER OF PEA GRAVEL (1/4" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4 X 4) GALVANIZED HARDWARE CLOTH.

GRAVEL LAYER SHALL BE (NO. 57 STONE PREFERRED) AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.

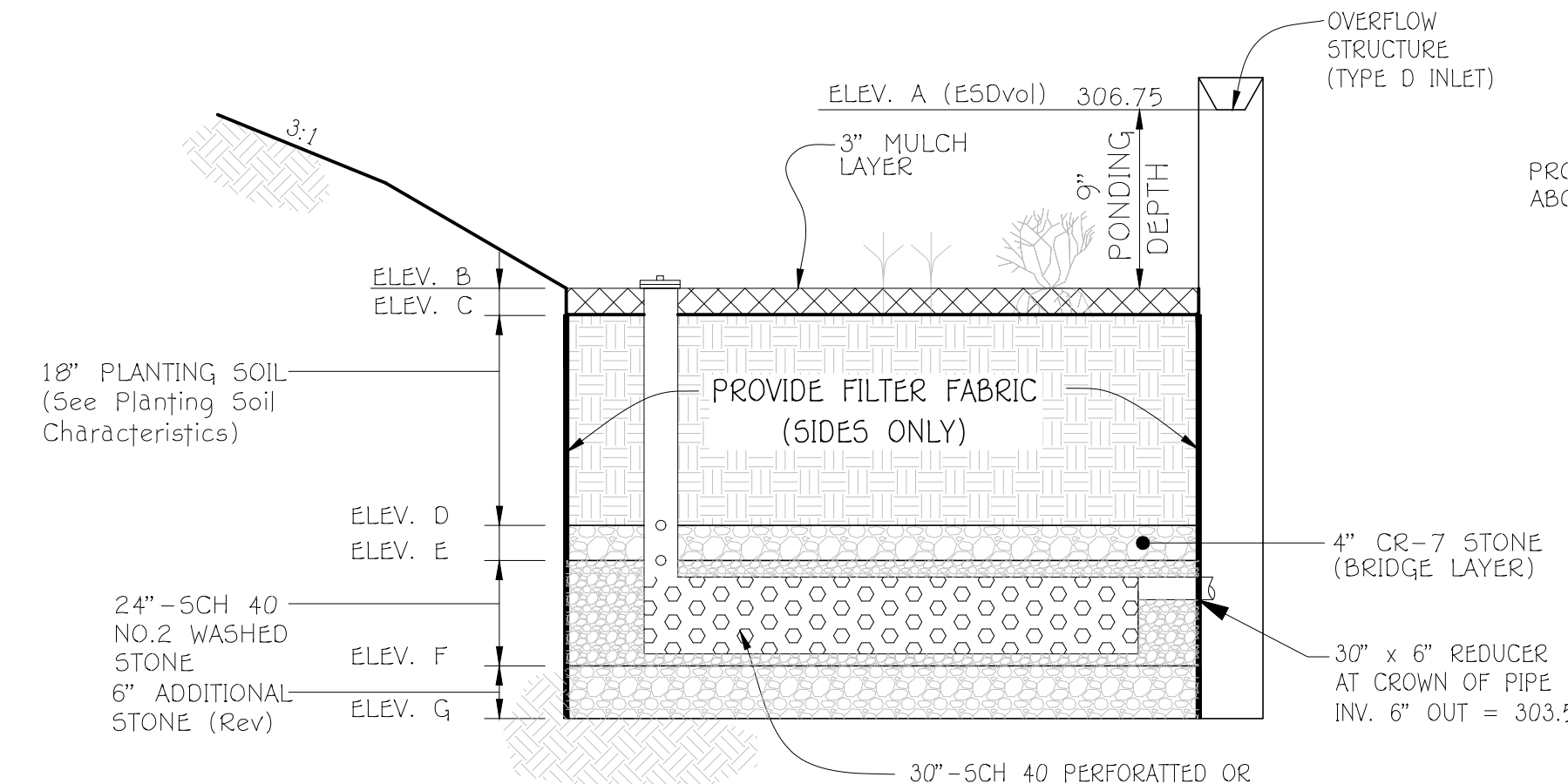
THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.

A RIGID, NON PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

A 4" LAYER OF PEA GRAVEL (1/4" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

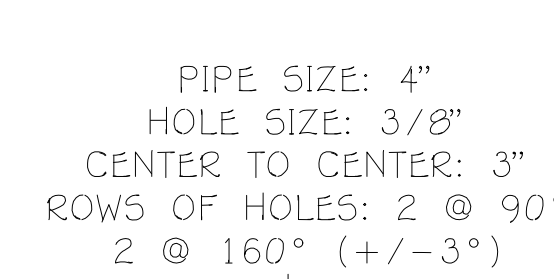
#### MICRO-BIORETENTION NOTES

- ONLY THE SIDES OF THE MICRO-BIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICRO-BIORETENTION WILL CAUSE THE MBR TO FAIL, AND THEREFORE SHALL NOT BE INSTALLED.
- WRAP THE PERFORATED MBR UNDER DRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.
- PROVIDE 5' MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLAN)



MICRO-BIORETENTION (UNDERDRAIN)(M-6)

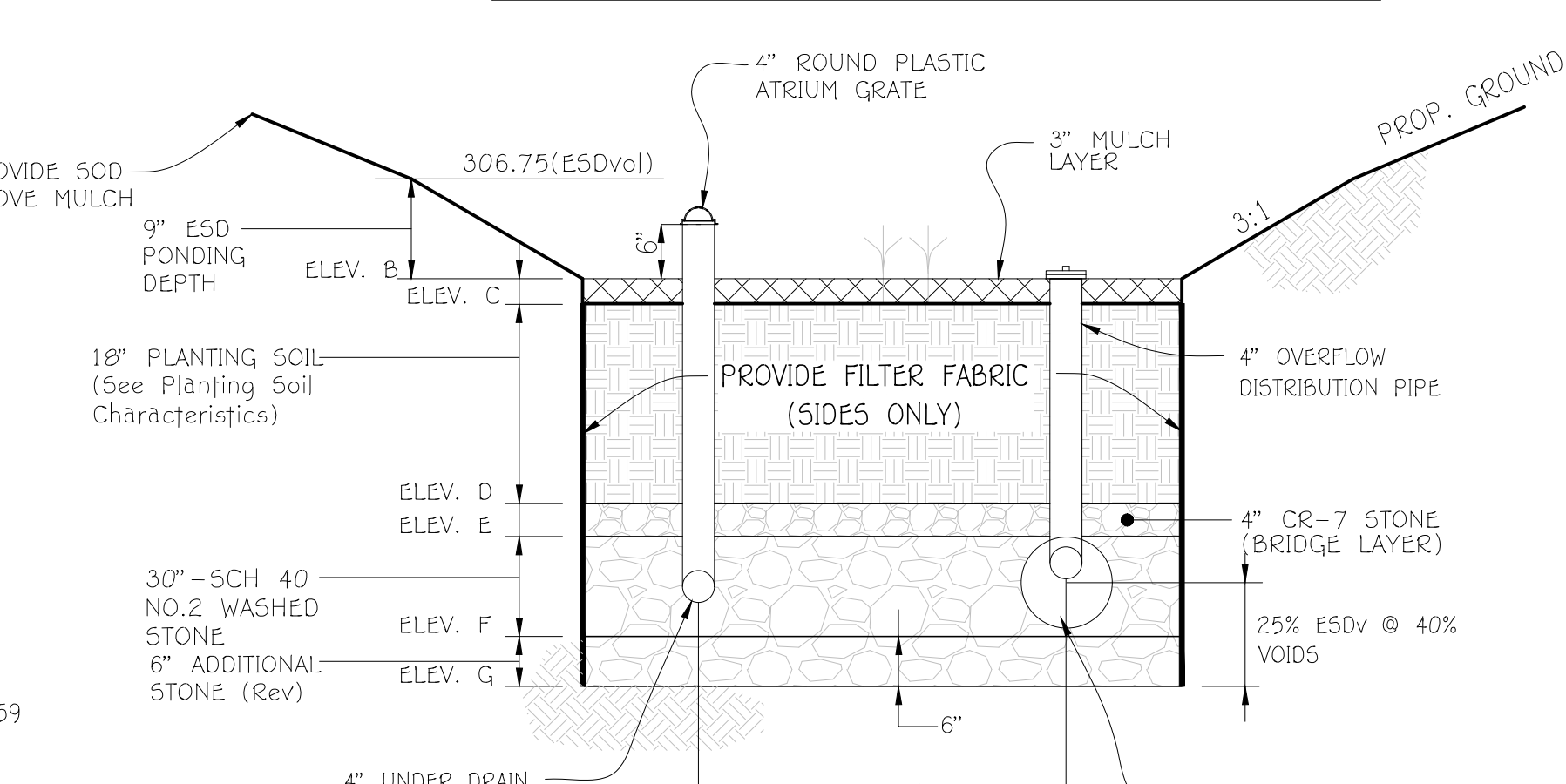
NO SCALE



NOTE: WRAP PERFORATED PVC W/ 4x4 GALVANIZED HARDWARE CLOTH  
SCH 40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE

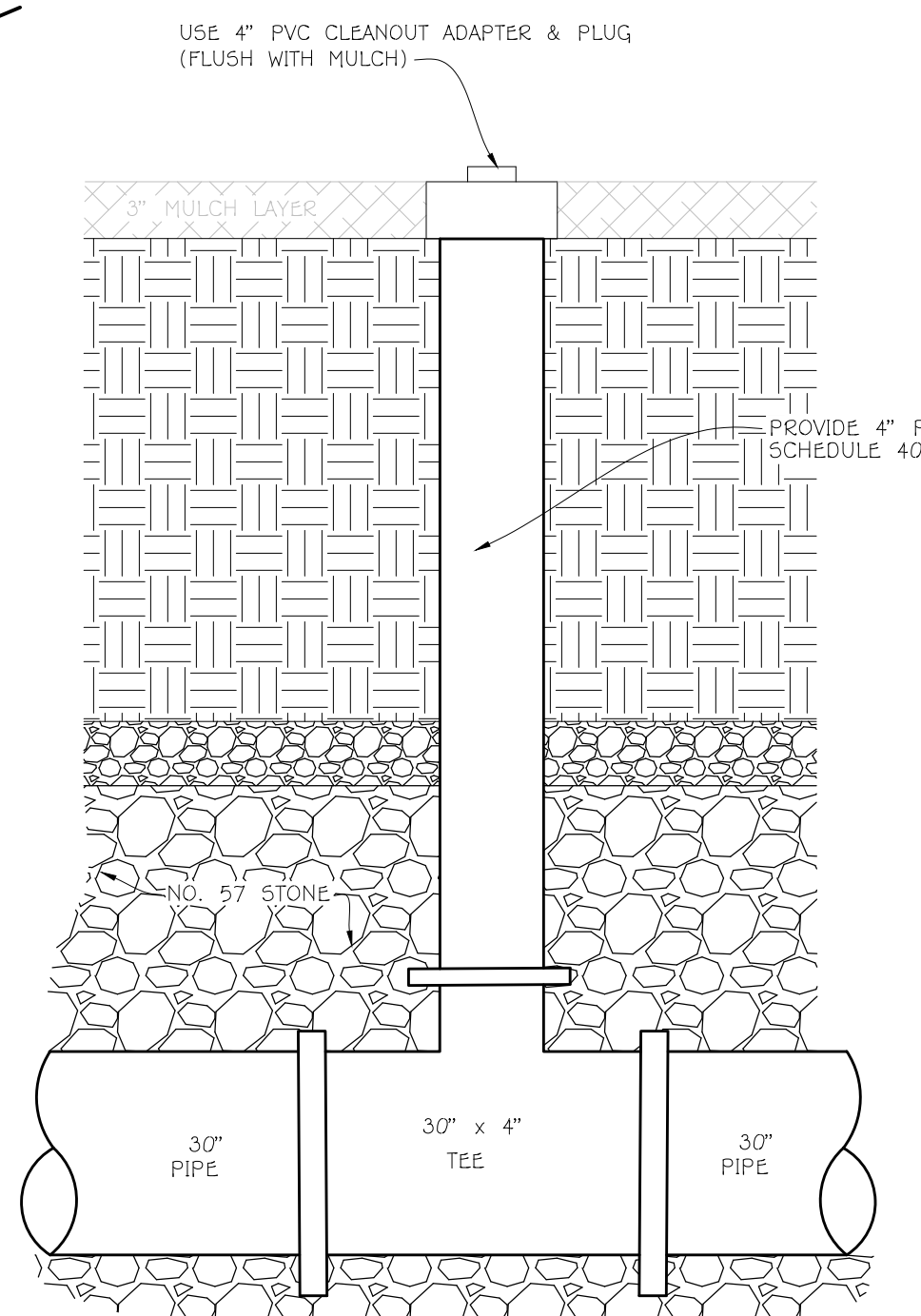
NO SCALE

MICRO-BIO-RETENTIONS							
MICRO-BIORETENTION FILTER	A	B	C	D	E	F	G
#1	306.75	306.00	305.75	304.25	303.92	301.42	300.42



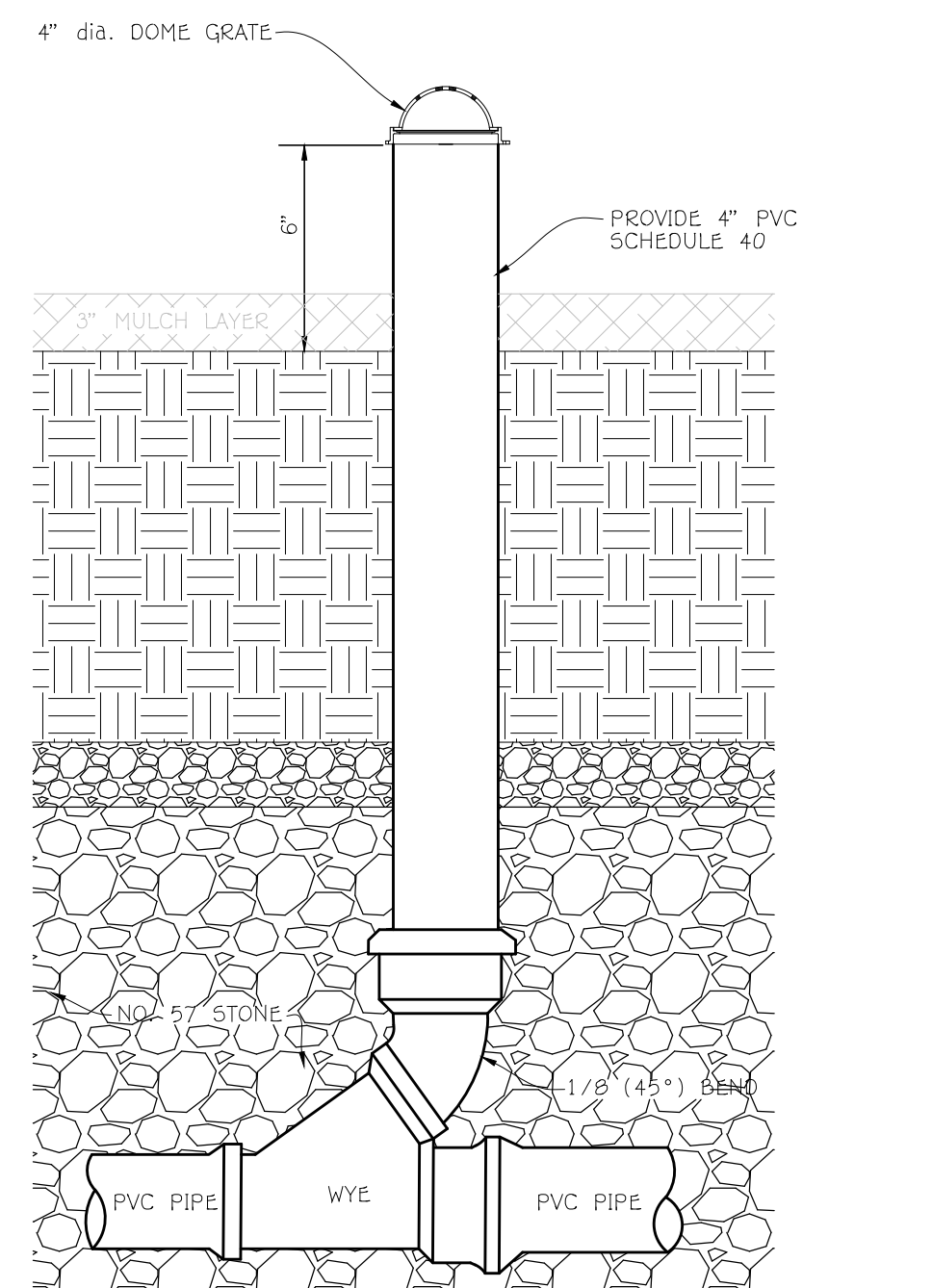
MICRO-BIORETENTION (OVERFLOW)(M-6)

NO SCALE



Typical Clean-Out Detail (4" Underdrain to Outfall Or Inlet)

NO SCALE



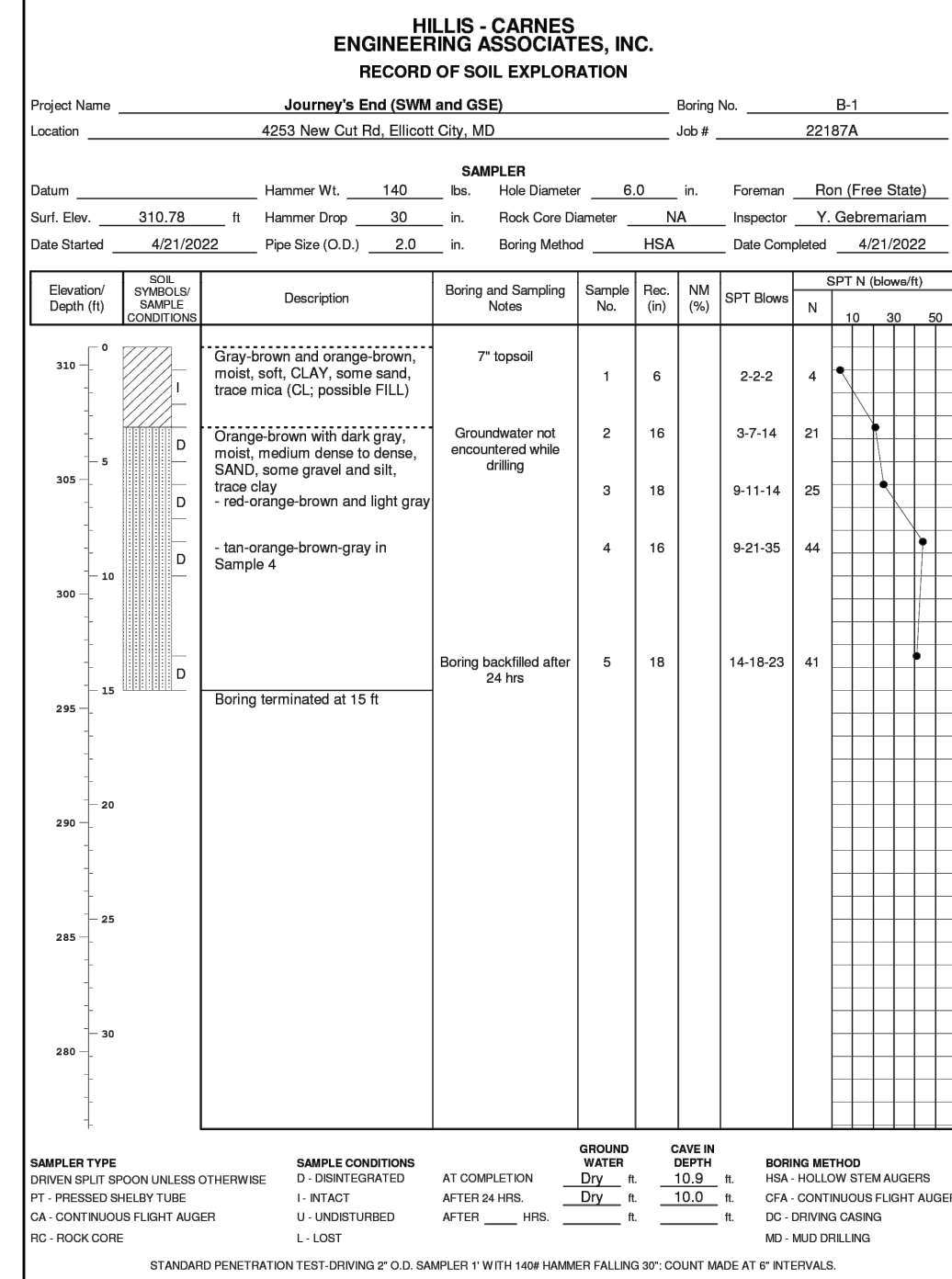
Typical Clean-Out Detail (4" Distribution Pipe)

NO SCALE

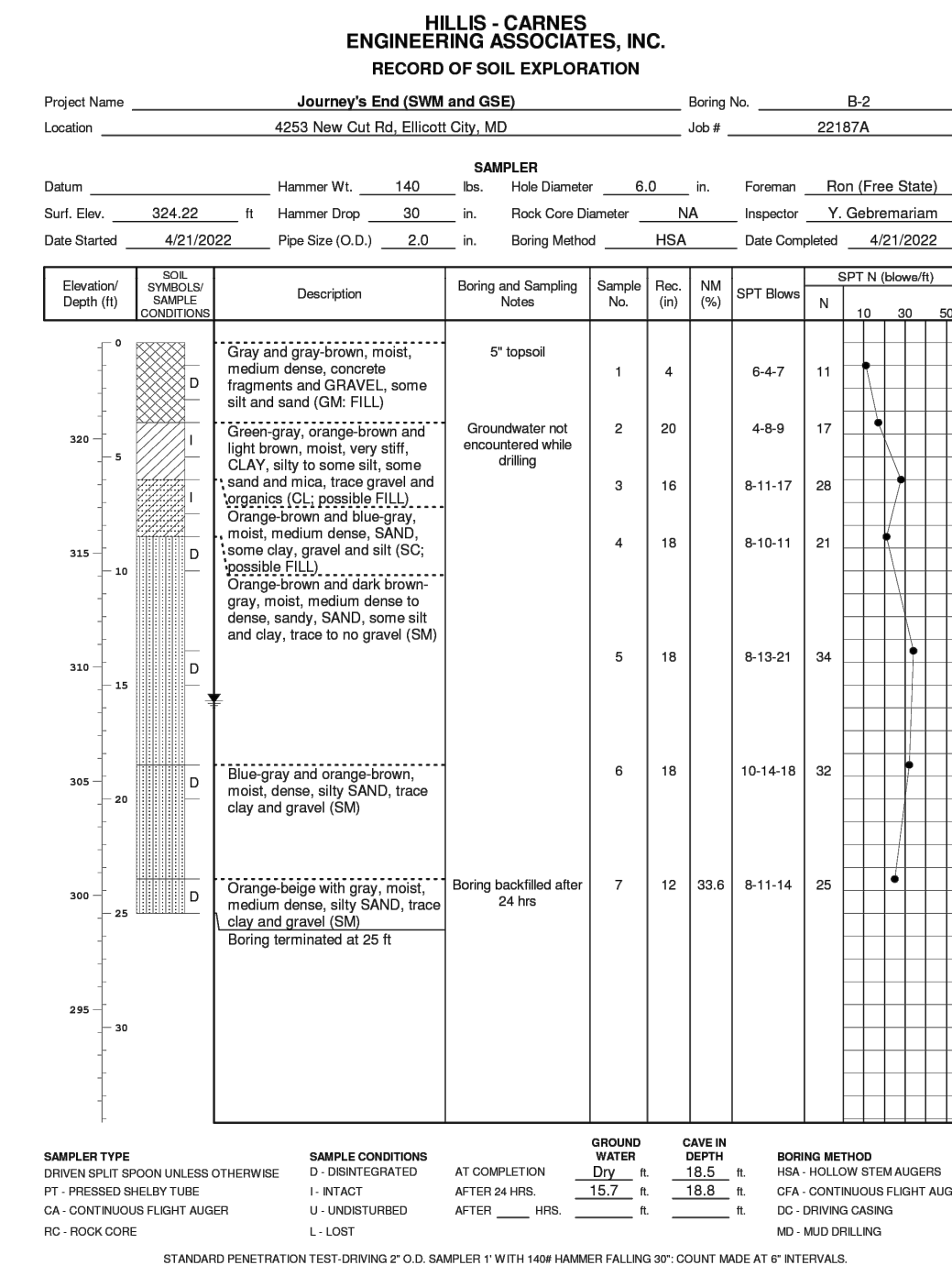
## Operation And Maintenance Schedule For Homeowners Association Owned & Maintained Bio-Retention Areas (M-6)

- The owner shall maintain the plant material, mulch layer and soil layer annually, maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland stormwater design manual volume II, table A.4.1 and 2.
- The owner shall perform a plant in the spring and in the fall each year. during the inspection, the owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material. Treat diseased trees and shrubs and replace all deficient stakes and wires.
- 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 year and after each heavy storm.
- The owner shall maintain all observation wells, clean-outs and perforated underdrains.
- Filter material must be replaced when water remains on the surface of the filter bed for more than 24 hours following a 1 or 2 year storm event or more than 48 hours following a 10 year storm event.

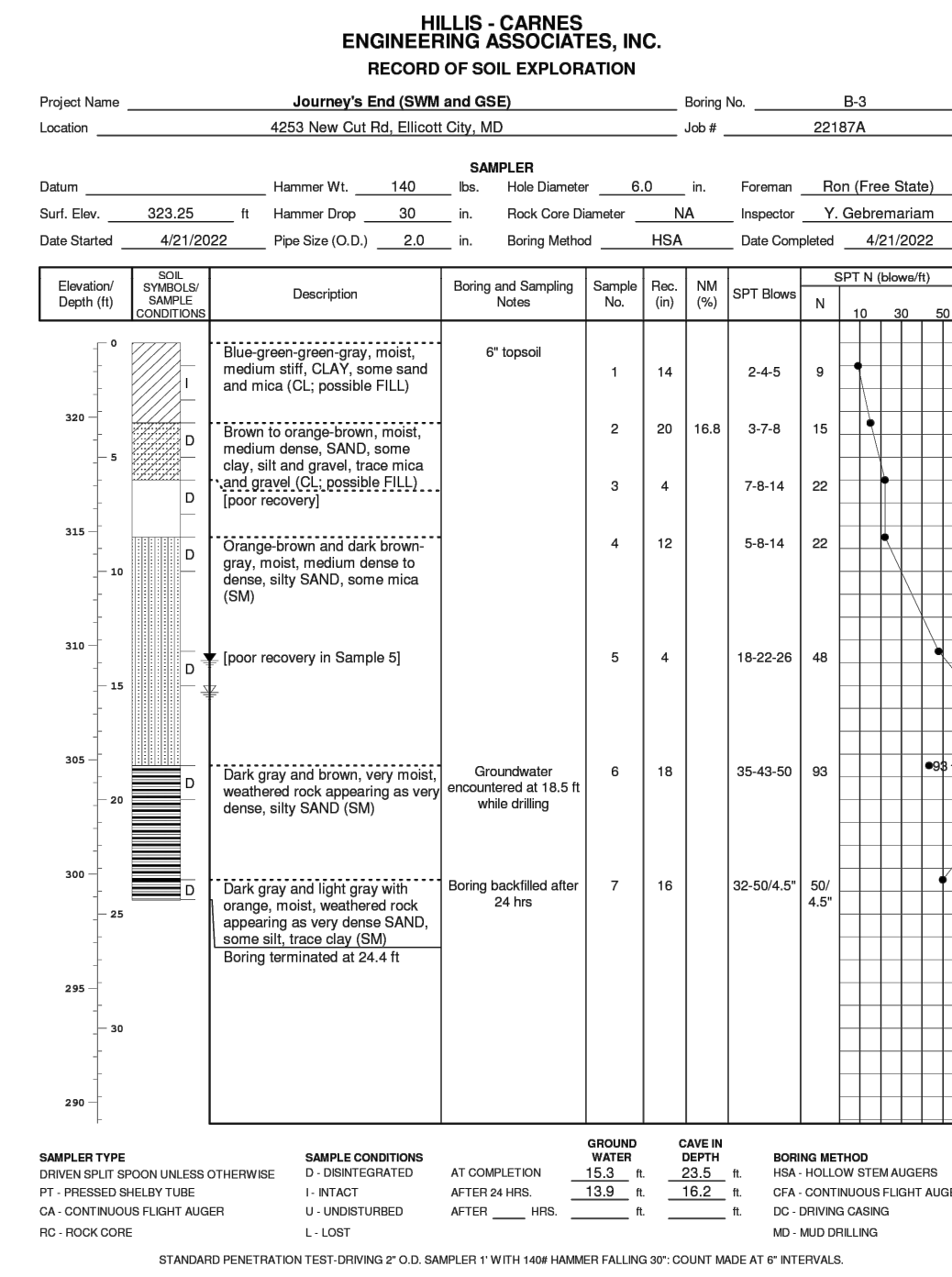
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING		Aldo M. Vitucci, P.E.		9/19/2023						STORMWATER MANAGEMENT PLAN, DETAILS & PROFILES	
DeSigned by: <b>Carl D. Edmondson</b> Chief, Development Engineering Division Date: 4/2/2024		DeSigned by: <b>Aldo M. Vitucci, P.E.</b> Professional Engineer Date: 9/19/2023		DeSigned by: <b>Lynda Eisenberg</b> Director Date: 4/4/2024							
<b>FISHER, COLLINS &amp; CARTER, INC.</b> CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PARK ELICOTT CITY, MARYLAND 21042 (410) 461-2895		<b>OWNER</b> Historic Elicott Properties, Inc. c/o Taylor Property Group 8 Park Center Ct. Suite 200 Owings Mills, Maryland 21117-5616 Tel: 410-465-3500		<b>DEVELOPER</b> Autumn Development Corporation c/o Taylor Property Group 8 Park Center Ct. Suite 200 Owings Mills, Maryland 21117-5616 Tel: 410-465-3500						ZONED: R-ED TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO: 72 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: APRIL 6, 2023 SHEET 7 OF 16	
NO.		REVISION		DATE							
SUBDIVISION		SECTION/AREA		LOT No.							
JOURNEY'S END		N/A		LOTS 1 THRU 3							
PLAT NO.		BLOCK NO.		ZONE		TAX/ZONE		ELEC. DIST.		CENSUS TR.	
26307		N/A		R-ED		25		2		602700	



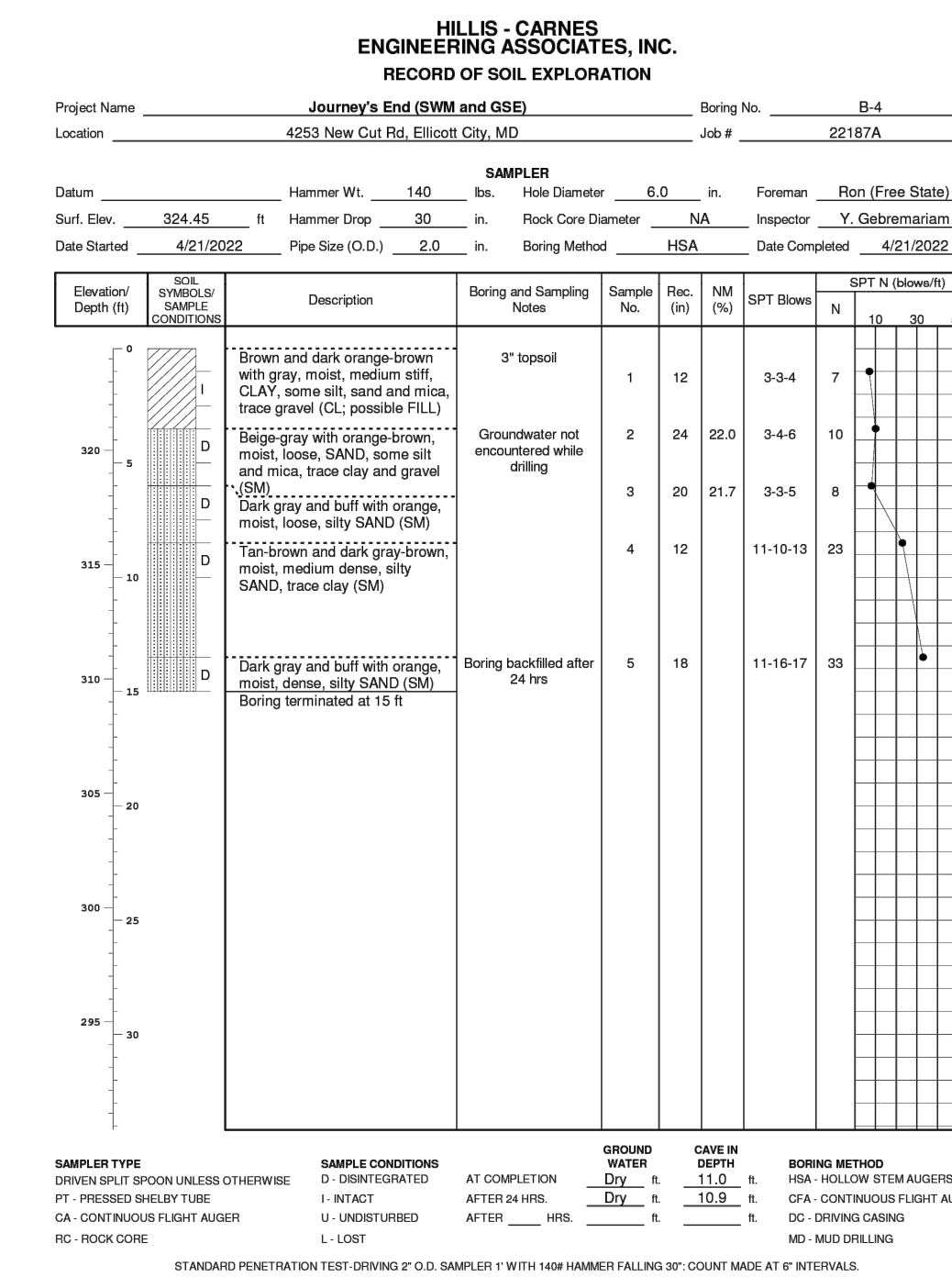
**SAMPLER TYPE:** DRIVEN BELLY TUBE  
**SAMPLE CONDITIONS:** D: ORIENTATED, I: INTACT, U: UNDEFORMED, L: LOST  
**GROUND WATER:** DRY  
**DEPTH:** 10.0 ft  
**CAVE IN:** 10.0 ft  
**BORING METHOD:** HSA  
**DATE COMPLETED:** 4/21/2022



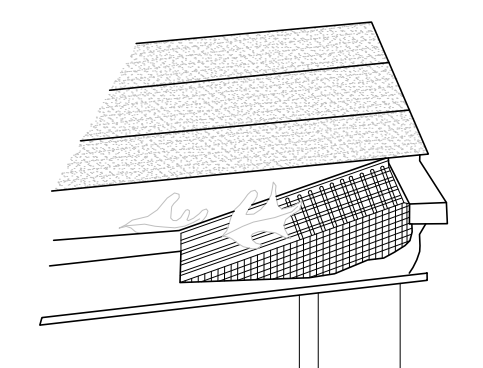
**SAMPLER TYPE:** DRIVEN BELLY TUBE  
**SAMPLE CONDITIONS:** D: ORIENTATED, I: INTACT, U: UNDEFORMED, L: LOST  
**GROUND WATER:** DRY  
**DEPTH:** 15.0 ft  
**CAVE IN:** 18.0 ft  
**BORING METHOD:** HSA  
**DATE COMPLETED:** 4/21/2022



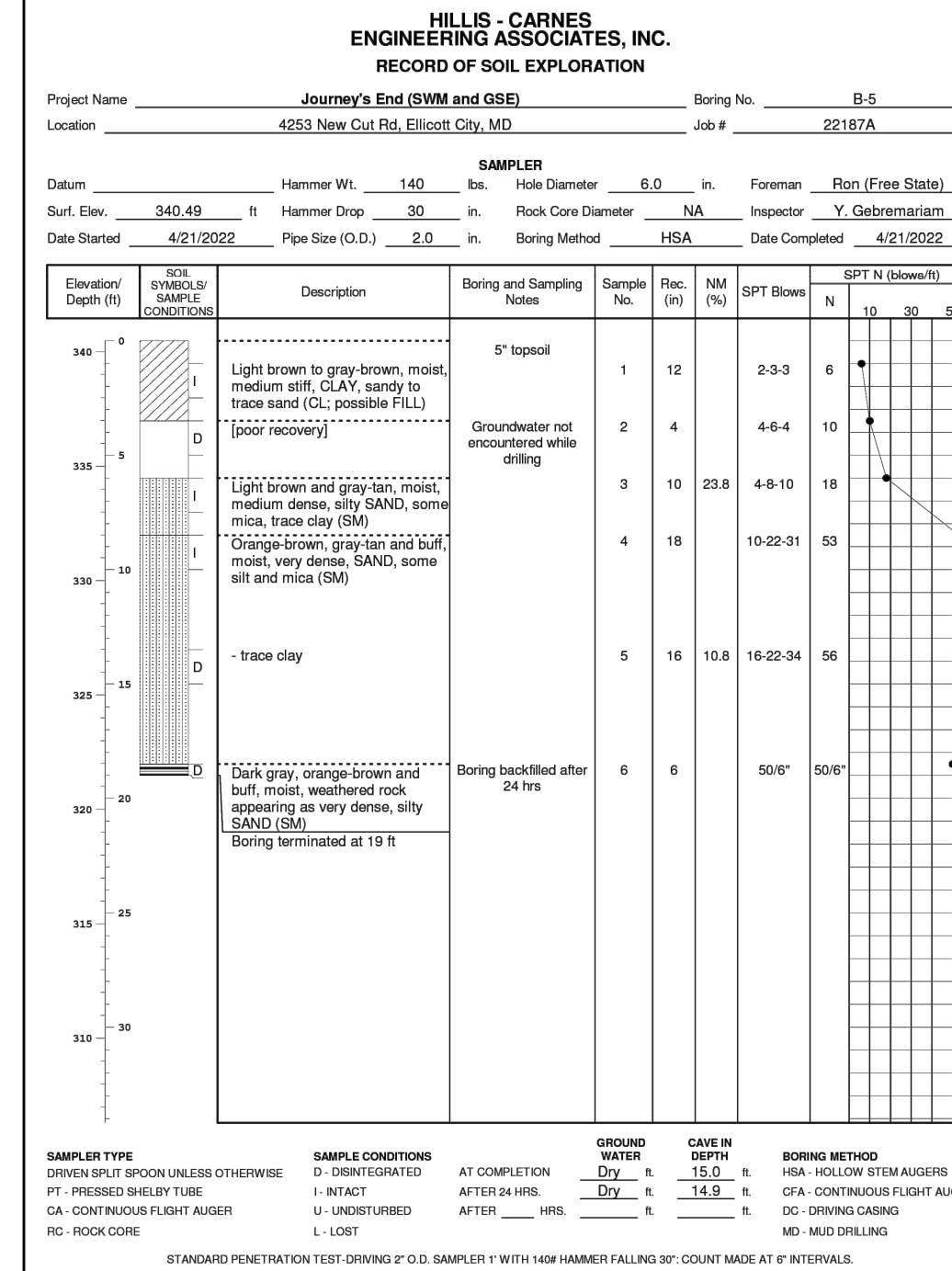
**SAMPLER TYPE:** DRIVEN BELLY TUBE  
**SAMPLE CONDITIONS:** D: ORIENTATED, I: INTACT, U: UNDEFORMED, L: LOST  
**GROUND WATER:** DRY  
**DEPTH:** 13.5 ft  
**CAVE IN:** 16.2 ft  
**BORING METHOD:** HSA  
**DATE COMPLETED:** 4/21/2022



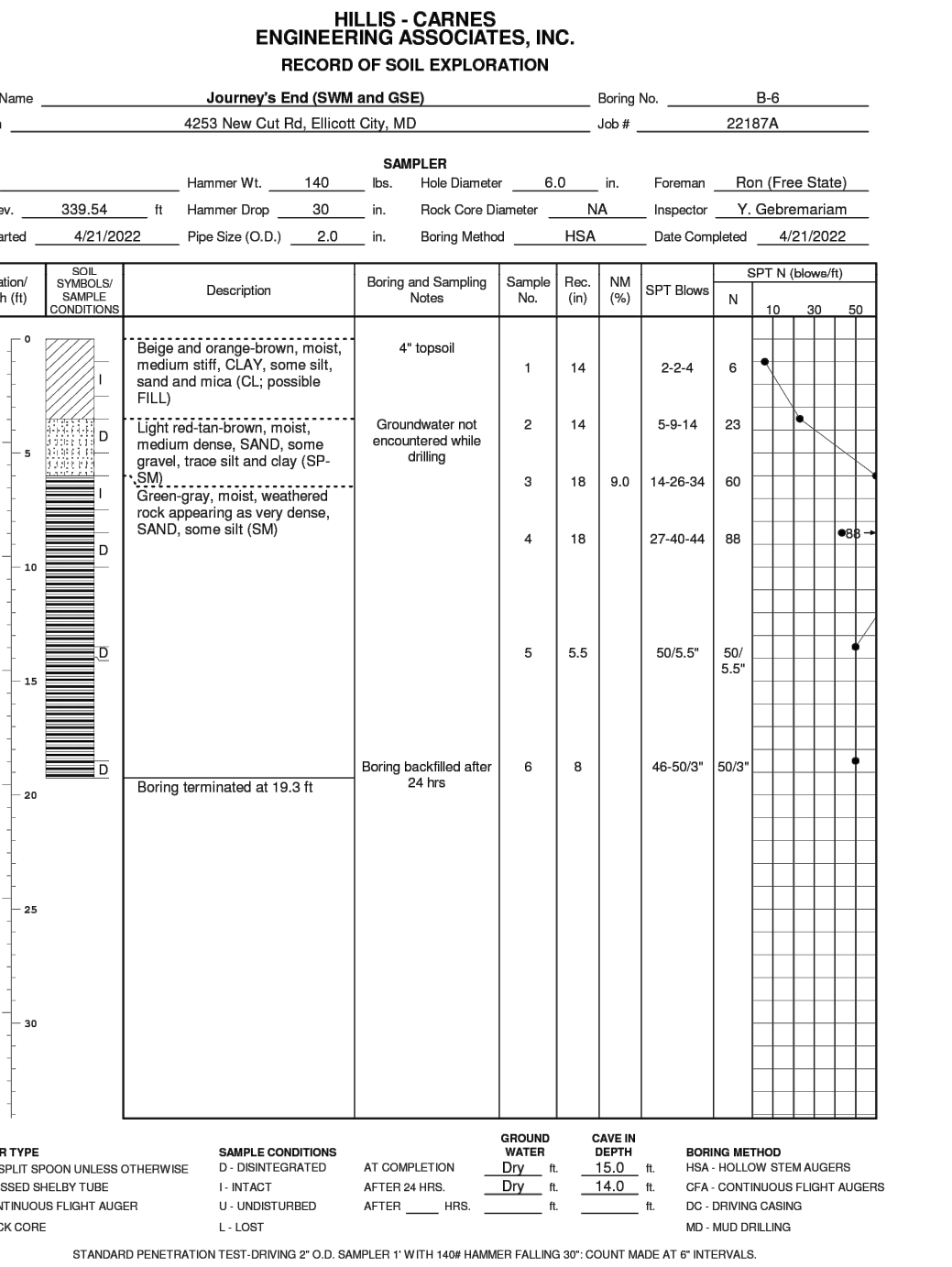
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**SAMPLE CONDITIONS:** D: ORIENTATED, I: INTACT, U: UNDEFORMED, L: LOST  
**GROUND WATER:** DRY  
**DEPTH:** 11.0 ft  
**CAVE IN:** 10.0 ft  
**BORING METHOD:** HSA  
**DATE COMPLETED:** 4/21/2022



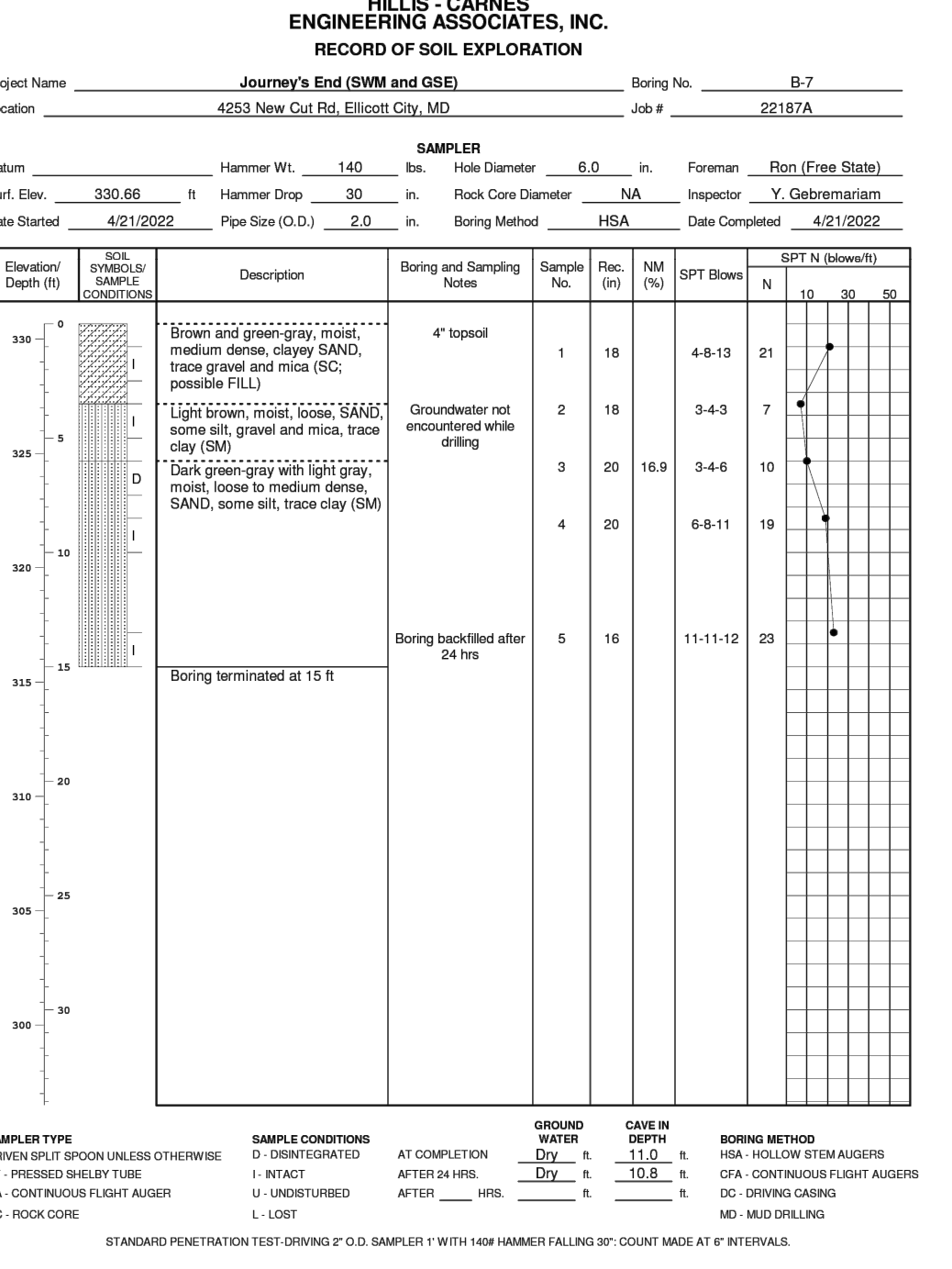
**GUTTER DRAIN FILTER DETAIL**  
NOT TO SCALE



**SAMPLER TYPE:** DRIVEN BELLY TUBE  
**SAMPLE CONDITIONS:** D: ORIENTATED, I: INTACT, U: UNDEFORMED, L: LOST  
**GROUND WATER:** DRY  
**DEPTH:** 15.0 ft  
**CAVE IN:** 14.0 ft  
**BORING METHOD:** HSA  
**DATE COMPLETED:** 4/21/2022



**SAMPLER TYPE:** DRIVEN BELLY TUBE  
**SAMPLE CONDITIONS:** D: ORIENTATED, I: INTACT, U: UNDEFORMED, L: LOST  
**GROUND WATER:** DRY  
**DEPTH:** 15.0 ft  
**CAVE IN:** 14.0 ft  
**BORING METHOD:** HSA  
**DATE COMPLETED:** 4/21/2022



**SAMPLER TYPE:** DRIVEN BELLY TUBE  
**SAMPLE CONDITIONS:** D: ORIENTATED, I: INTACT, U: UNDEFORMED, L: LOST  
**GROUND WATER:** DRY  
**DEPTH:** 13.0 ft  
**CAVE IN:** 13.0 ft  
**BORING METHOD:** HSA  
**DATE COMPLETED:** 4/21/2022

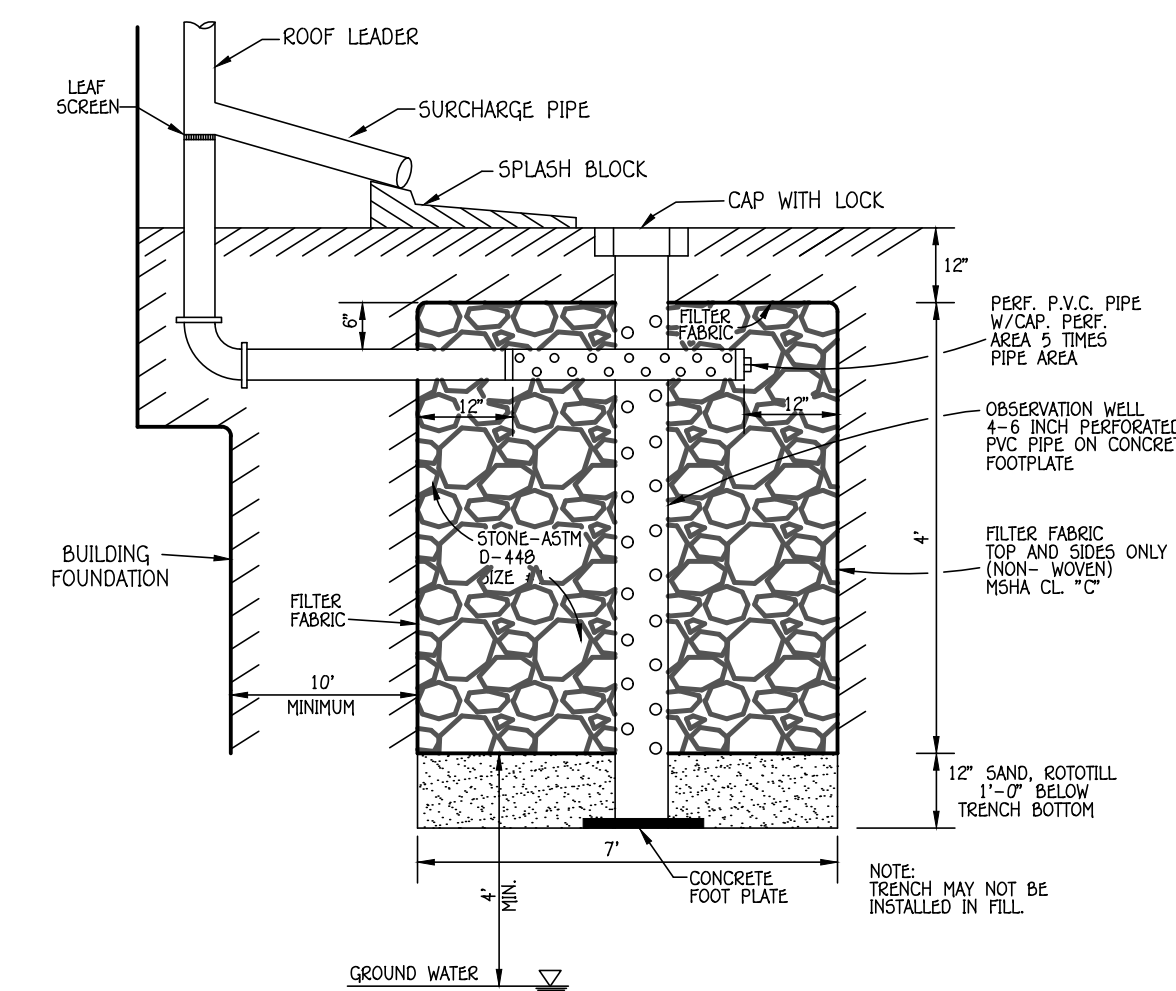
**DRY WELL CHART**

LOT No.	DRYWELL No.	AREA OF ROOF PER DRYWELL	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L x W x D
LOT 1	1	532 SQ. FT.	76 C.F.	78 C.F.	100%*	7' x 7' x 4'
LOT 1	2	532 SQ. FT.	76 C.F.	78 C.F.	100%*	7' x 7' x 4'
LOT 2	3	532 SQ. FT.	76 C.F.	78 C.F.	100%*	7' x 7' x 4'
LOT 2	4	532 SQ. FT.	76 C.F.	78 C.F.	100%*	7' x 7' x 4'
LOT 3	5	532 SQ. FT.	76 C.F.	78 C.F.	100%*	7' x 7' x 4'
LOT 3	6	532 SQ. FT.	76 C.F.	78 C.F.	100%*	7' x 7' x 4'

\* AREA OF TREATMENT EXCEEDS THAT REQUIRED.

**OPERATION AND MAINTENANCE SCHEDULE FOR DRYWELLS (M-5)**

- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY TWO (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.



**DRYWELL (M-5)**  
NO SCALE

**FISHER, COLLINS & CARTER, INC.**  
ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PLACE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2955

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Decommissioned by: Carl E. Edmondson 4/2/2024  
Chief, Development Engineering Division

Decommissioned by: Linda Eisenberg 4/4/2024  
Chief, Division of Land Development

Decommissioned by: Linda Eisenberg 4/4/2024  
Director



Aldo M. Vitucci, P.E. 9/19/2023  
Date

Aldo M. Vitucci, P.E.

"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. 20748, Expiration Date 2-22-25."

**OWNER**  
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c/o Taylor Property Group  
6 Park Center Ct.  
Suite 200  
Owings Mills, Maryland 21117-5616  
Tel: 410-465-3500

**DEVELOPER**  
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c/o Taylor Property Group  
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Owings Mills, Maryland 21117-5616  
Tel: 410-465-3500

SUBDIVISION		SECTION/AREA		LOT No.	
JOURNEY'S END		N/A		LOTS 1 THRU 3	
PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
26307	N/A	R-ED	25	2	602700

**STORMWATER MANAGEMENT DETAILS & BORING LOGS**

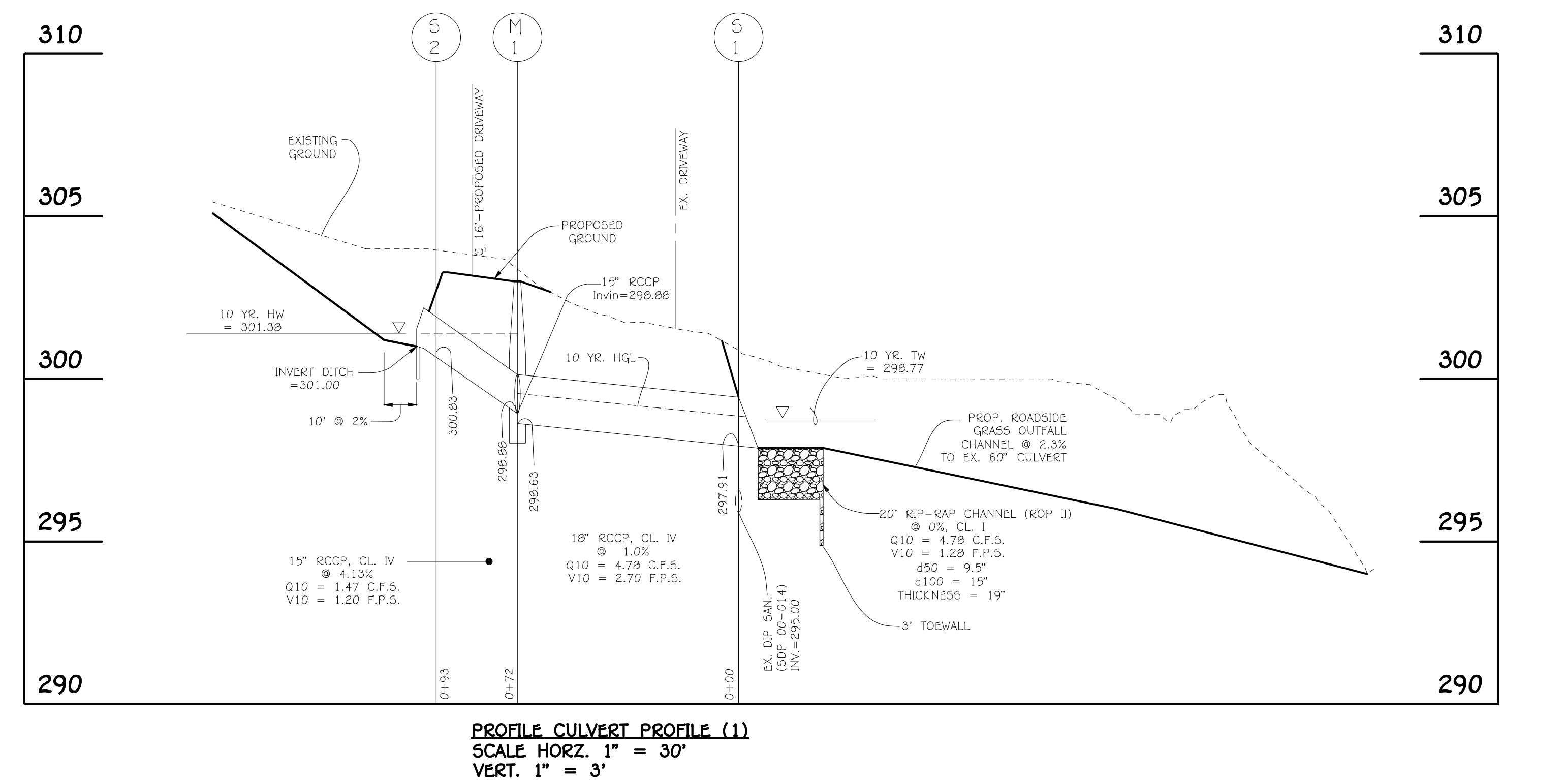
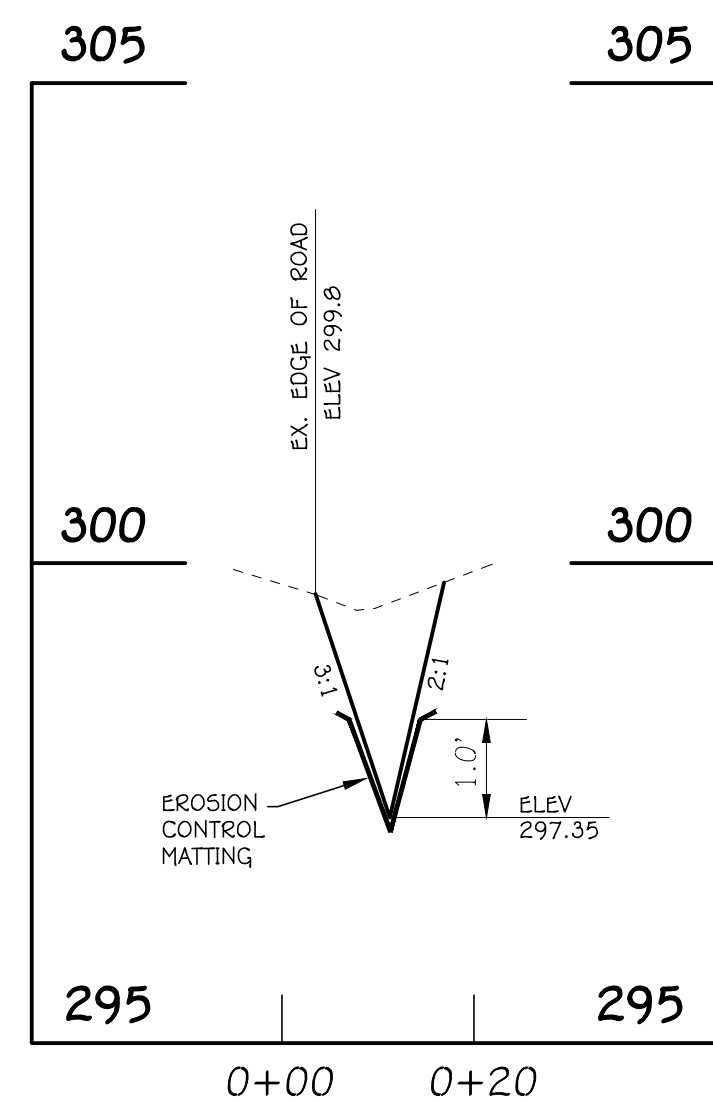
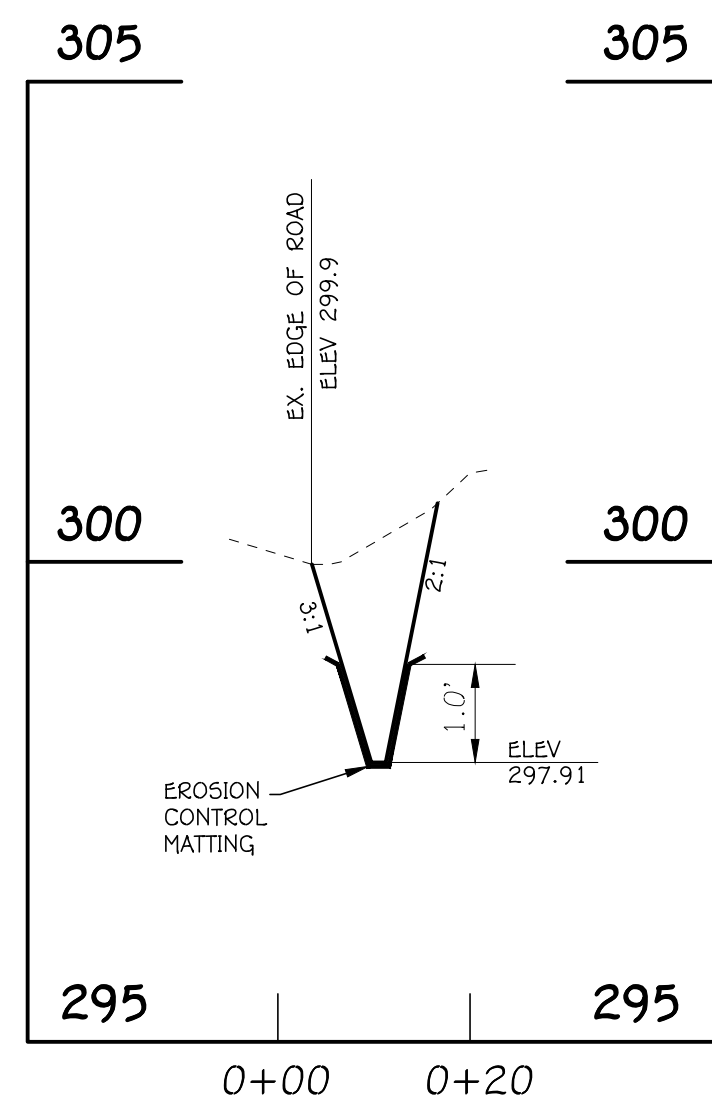
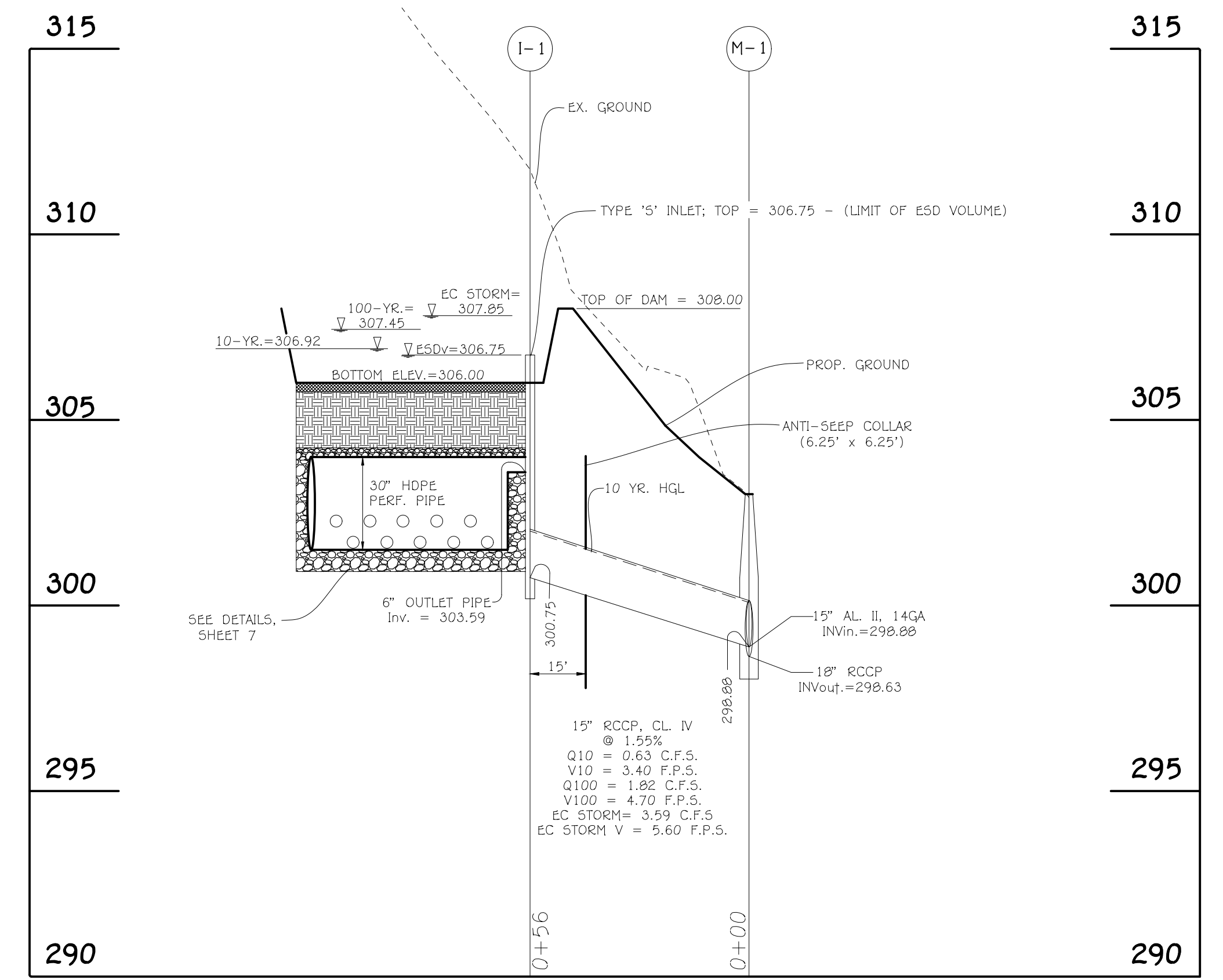
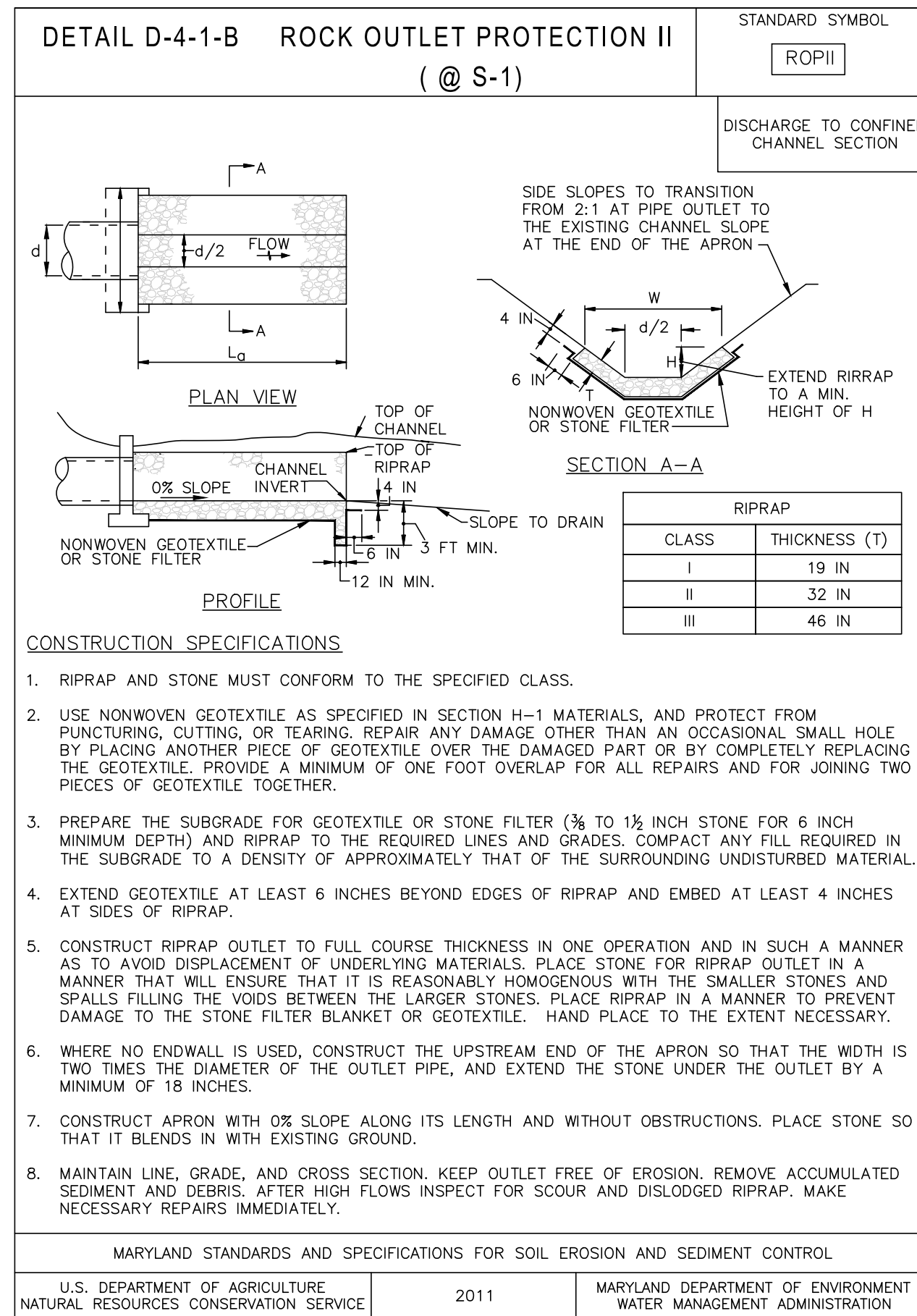
**JOURNEY'S END**  
LOTS 1 THRU 3 AND  
OPEN SPACE LOTS 4 & 5

ZONED: R-ED

TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO.: 72  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 6, 2023  
SHEET 8 OF 16



STRUCTURE SCHEDULE									
STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	LOCATION		ROAD STA.	OFFSET	TYPE	REMARKS
				NORTH	EAST				
I-1	306.75	303.59 (6")	300.75 (15')	578197.0907	1369725.0369	----	----	5" INLET	D - 4.24
I-2	315.75	-----	313.00 (12')	578181.2783	1369807.2612	----	----	5" INLET	D - 4.24
M-1	303.00	298.88 (15'), 298.88 (15')	298.63 (18')	578252.2746	1369701.6058	----	----	5" DIA. SHALLOW MANHOLE	G - 5.13
S-1	299.41	297.91 (18')	-----	578313.9719	1369727.7073	----	----	18" CONC. END SECTION	D - 5.51
S-2	302.08	-----	300.83 (15')	578225.7833	1369691.1346	----	----	15" CONC. END SECTION	D - 5.51
S-3	307.25	306.25 (12')	-----	578170.2866	1369783.8158	----	----	12" FLARED END SECTION	ADS OR EQUAL



PIPE SCHEDULE		
SIZE	CLASS	LENGTH
4"	PVC, SCH. 40 (PERFORATED)	103 L.F.
30"	HDPE (PERFORATED)	234 L.F.
12"	HDPE	25 L.F.
15"	RCCP, CL. IV	77 L.F.
18"	RCCP, CL. IV	72 L.F.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Decalsigned by: **Carl Edmondson** 4/2/2024  
Chief, Development Engineering Division

Decalsigned by: **Lynda Eisenberg** 4/4/2024  
Chief, Division of Land Development

Director



**Aldo M. Vitucci, P.E.** 9/19/2023  
Aldo M. Vitucci, P.E. Date

\*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. 20748, Expiration Date 2-22-25.\*

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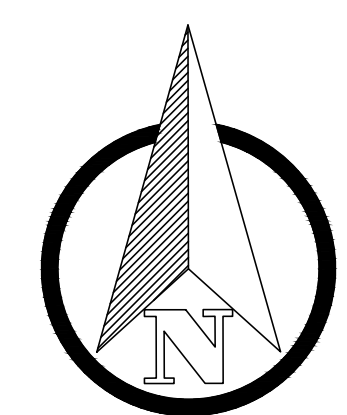
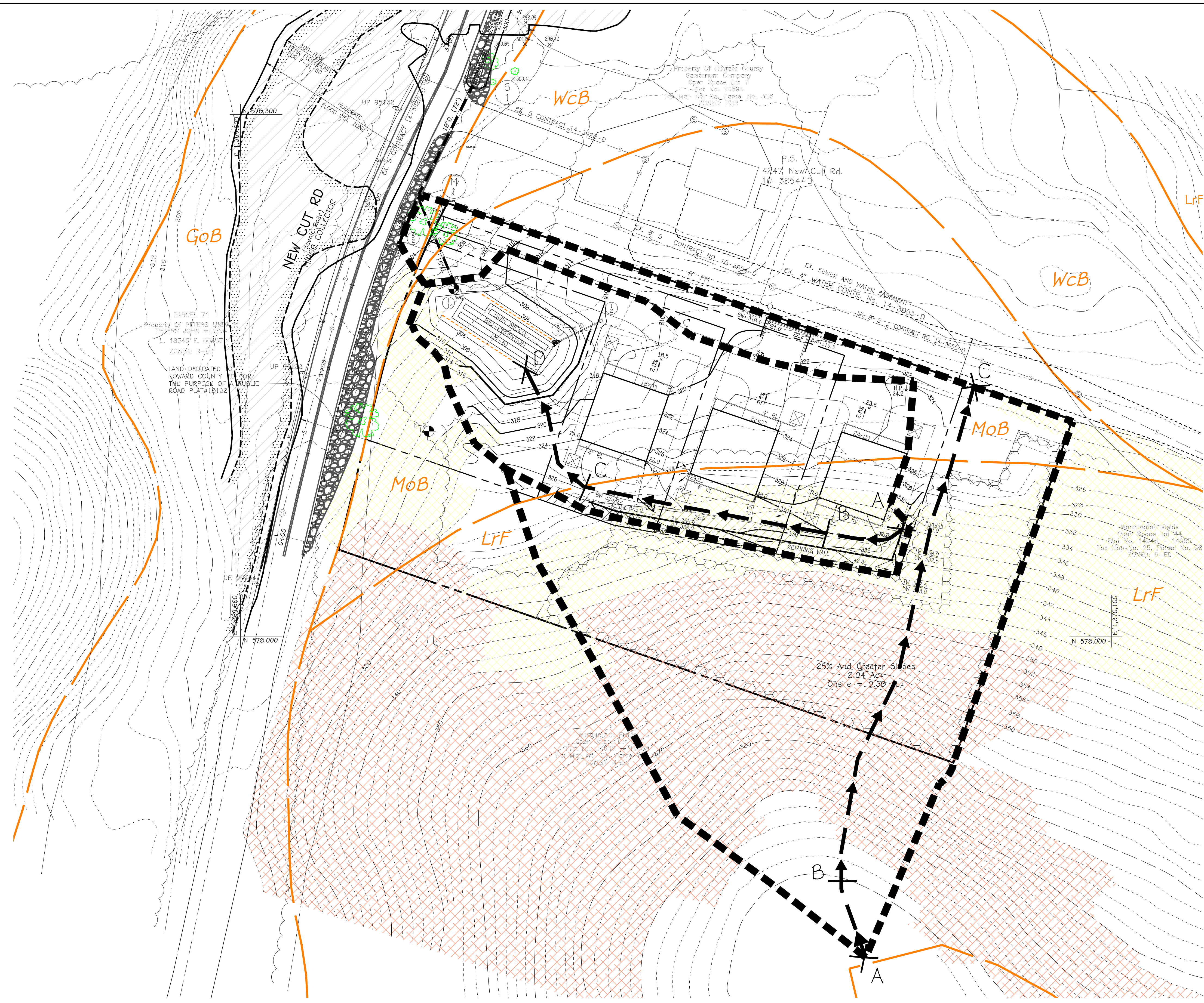
NO.		REVISION		DATE	
SUBDIVISION	JOURNEY'S END	SECTION/AREA	N/A	LOT No.	
PLAT NO.	26307	BLOCK NO.	N/A	LOTS 1 THRU 3	
ZONE	R-ED	TAX/ZONE	25	ELEC. DIST.	2
CENSUS TR.	602700				

STORM DRAIN PROFILES

**JOURNEY'S END**  
LOTS 1 THRU 3 AND  
OPEN SPACE LOTS 4 & 5

SCALE: AS SHOWN DATE: APRIL 6, 2023 SHEET 9 OF 16

SCALE: 1" = 30'  
VERT. 1" = 3'



**EXISTING CONDITION**

**SWM DRAINAGE AREA SUMMARY TABLE**

DRAINAGE AREA	AREA AC. +/-	RCN	T/c Hrs.	10-YR. Q cfs	100-YR. Q cfs	EC Flood Q cfs
A	1.93	70	0.18	4.53	8.57	14.15

**PROPOSED CONDITION**

**SWM DRAINAGE AREA SUMMARY TABLE**

DRAINAGE AREA	AREA AC. +/-	RCN	T/c Hrs.	10-YR. Q cfs	100-YR. Q cfs	EC Flood Q cfs
A-1 to Bio	0.68	84	0.16	2.68	4.01	7.09
A-2 Outlet	-	-	-	0.63 c.f.s. @ 306.92'	1.02 c.f.s. @ 307.45'	3.59 c.f.s. @ 307.85'
A-2 Bypass	1.25	72	0.15	3.40	6.12	10.04
Total Addhyd				3.80	7.07	12.13

\*-16.7% Decrease

**Tc PATH DATA**

AREA	SEG. ID	LENGTH	FLOW TYPE	SLOPE
A - 1	A - B	50'	OVERLAND FLOW	2.0%
	B - C	140'	SWALE FLOW, N=0.24	2.98%
	C - D	80'	SHALLOW CONC. FLOW - UNPAVED	17.72%
A - 2	A - B	45'	OVERLAND FLOW	4.50%
	B - C	290'	SWALE FLOW, N=0.24	29.00%

**LEGEND**

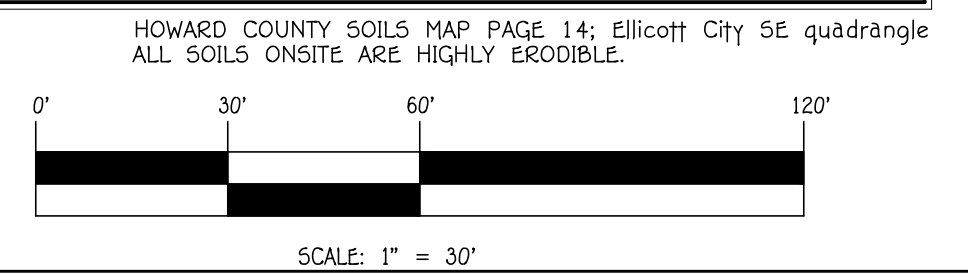
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
x 448.5	SPOT ELEVATION
18" 50'	EXISTING STORM DRAIN
12" 30'	PROPOSED STORM DRAIN PIPE
---	EXISTING WATER LINE
---	EXISTING SEWER LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING OVERHEAD WIRE
---	PROPOSED PAVING/PATH
---	PROPOSED SIDEWALKS
---	FOREST CONSERVATION EASEMENT (RETENTION)
---	FOREST CONSERVATION EASEMENT FENCING
---	EXISTING TREE LINE
---	PROPOSED TREE LINE
---	DRYWELL (M-5)-TYPICAL
---	SOIL LINES AND TYPES
---	EXISTING WETLANDS & WETLAND BUFFER
---	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
---	PROPOSED ROOF LEADER
---	DENOTES EXISTING TREES TO BE REMOVED
---	DENOTES EXISTING TREES TO REMAIN
---	CRITICAL ROOT ZONE
---	15%-24.99% STEEP SLOPES
---	25% AND GREATER STEEP SLOPES

**SWM SUMMARY**

	ESD Volume Req. cu.ft.	ESD Volume Provided cu.ft.	Remarks
Bio-retention #1	607	1,786	Refer to Bio comp
Dry wells	456	468	
TOTAL SITE ESDV Required	1,063		Rev Required 234 cu.ft.
TOTAL SITE ESDV Provided		2,254	Cpv. Rev Provided Rev = 388 cu.ft.
TOTAL QUANTITY			ESDV has been met and quantity is required

**SOILS LEGEND**

SOIL	NAME	CLASS	K VALUE
GoB	Glenville-Codorus silt loams, 0 to 8 percent slopes	C	0.49
LrF	Legore-Relay gravelly loams, 25 to 65 percent slopes, very stony	B/C	0.64
MoB	Mount Lucas silt loam, 3 to 8 percent slopes, stony	C	0.37
WcB	Watchung silt loam, 3 to 8 percent slopes, stony	D	0.43



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Decommissioned by: **Carl D. Edmondson** 4/2/2024  
 Chief, Development Engineering Division  
 Decommissioned by: 4/4/2024  
 Chief, Division of Land Development  
 Decommissioned by: **Lynnda Eisenberg** 4/4/2024  
 Director



**Aldo M. Vitucci, P.E.** 9/19/2023  
 Aldo M. Vitucci, P.E. Date  
 "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. 20748, Expiration Date 2-22-25."

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NO.	REVISION	DATE
SUBDIVISION	SECTION/AREA	LOT No.
JOURNEY'S END	N/A	LOTS 1 THRU 3
PLAT NO.	BLOCK NO.	ZONE
26307	N/A	R-ED
TAX/ZONE	ELEC. DIST.	CENSUS TR.
25	2	602700

**SOILS & SWM DRAINAGE AREA MAP**

**JOURNEY'S END**  
 LOTS 1 THRU 3 AND  
 OPEN SPACE LOTS 4 & 5

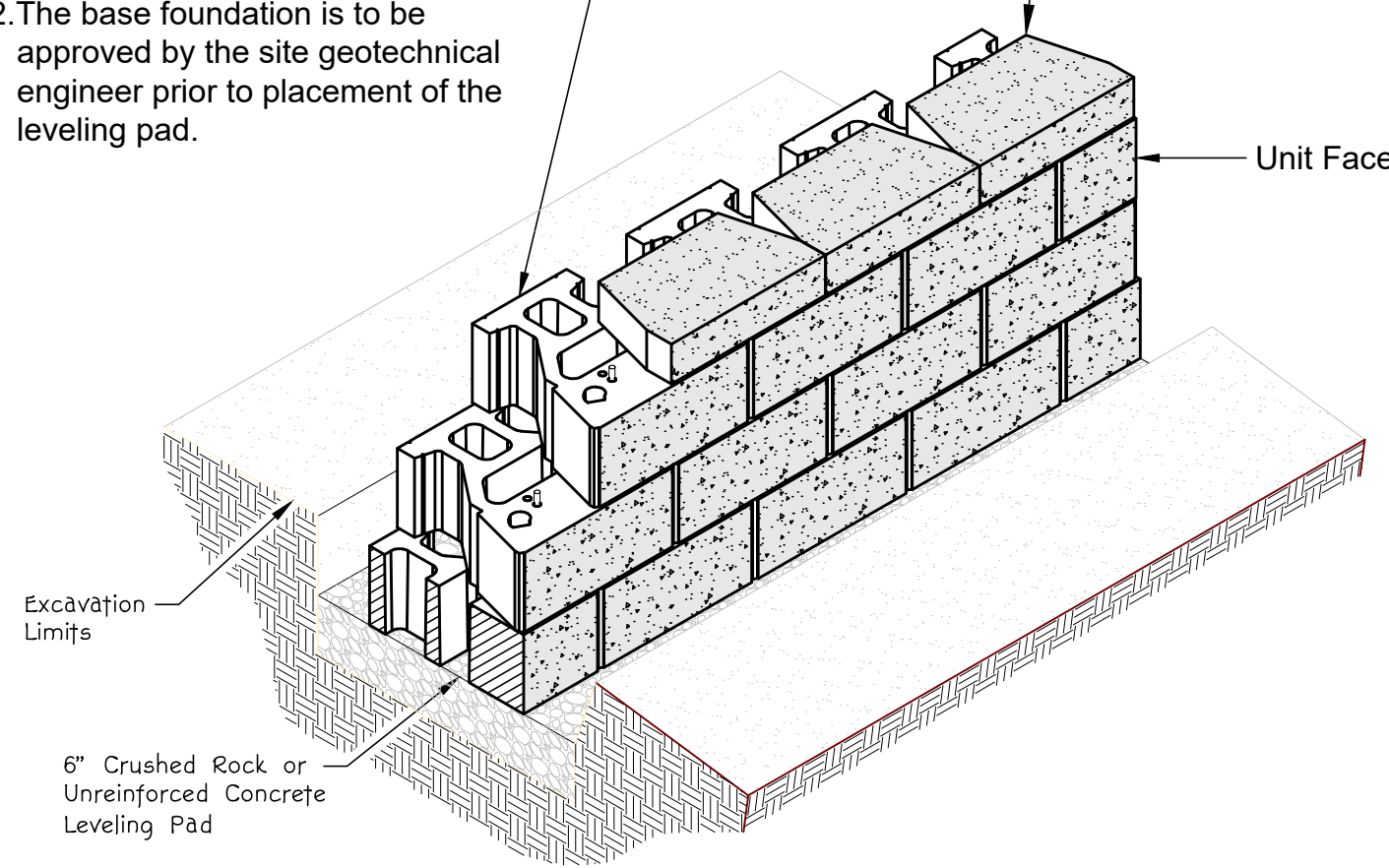
ZONED: R-ED  
 TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO.: 72  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: APRIL 6, 2023  
 SHEET 10 OF 16



**Base Leveling Pad Notes:**

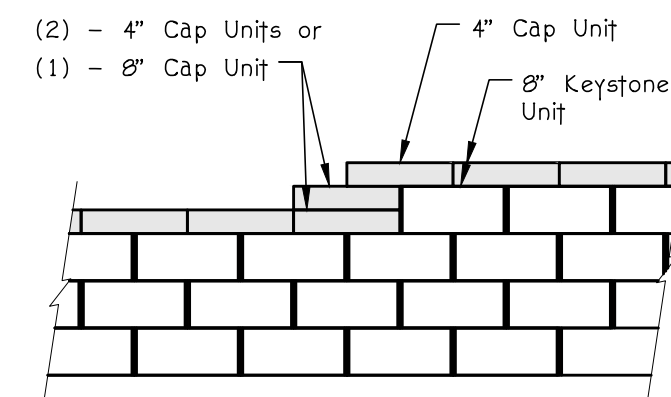
- The leveling pad is to be constructed of crushed stone or 2,000 psi± unreinforced concrete
- The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.

Standard Unit		Cap Unit	
Width:	18"	Width:	18"
*Depth:	18"	*Depth:	10 1/2"
Height:	8"	Height:	4"
*Weight:	108 lbs	*Weight:	50 lbs



**Standard Unit/Base Pad Isometric Section View**

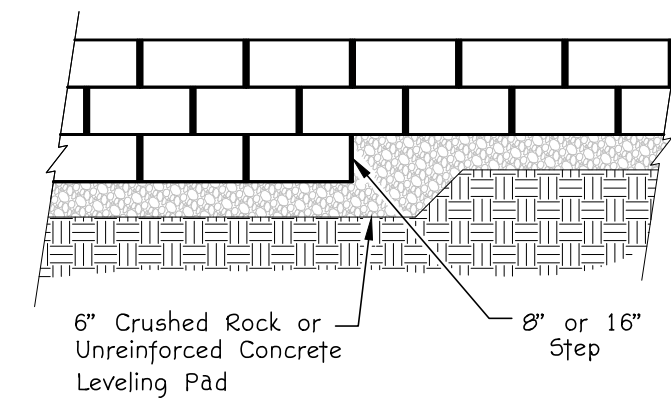
\*Dimensions & Weight May Vary by Region



**Note:**

- Secure all cap units with keystone keystone or equal.

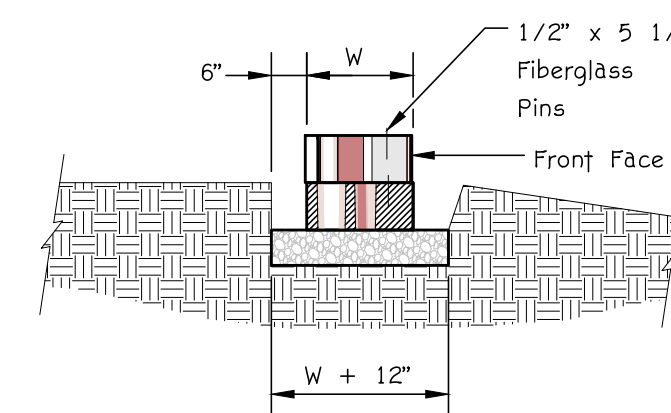
**Top of Wall Steps**



**Elevation**

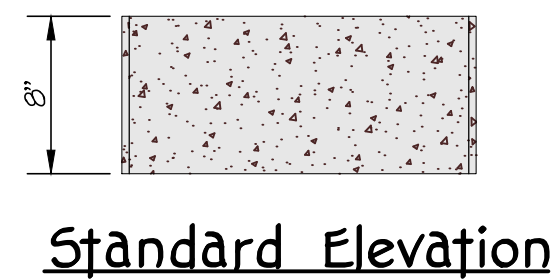
**Note:**

- The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced concrete.

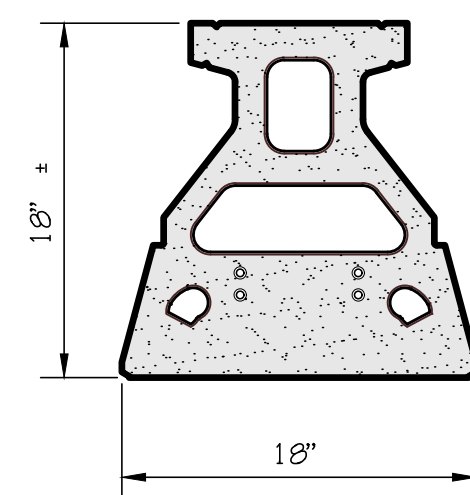


**Section**

**Leveling Pad Detail**



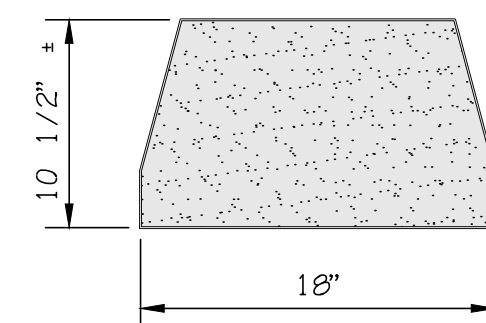
**Standard Elevation**



**Standard Plan**

**Standard Unit**

\*Dimensions May Vary by Region



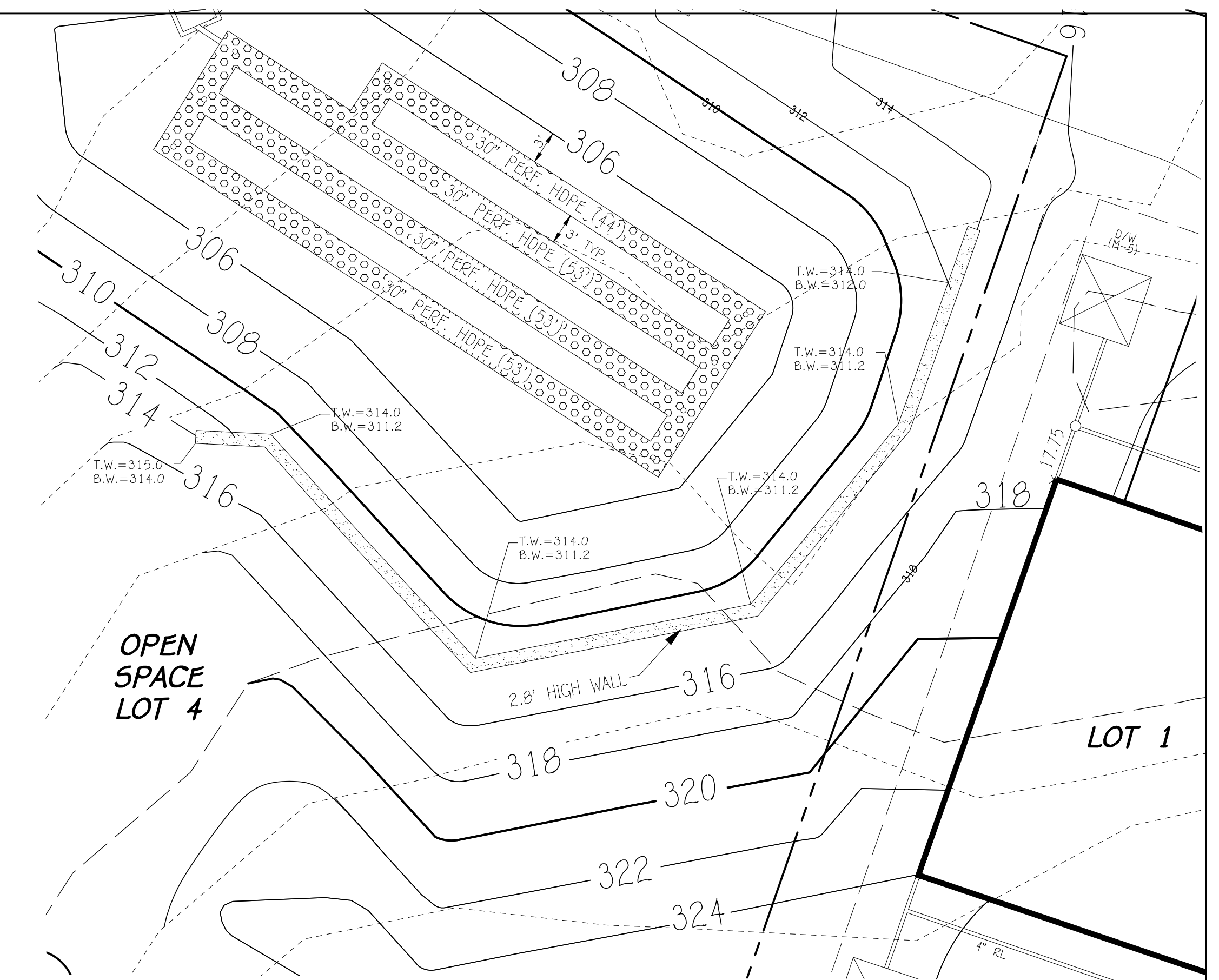
**Cap Unit Plan**

**Straight Split Cap Unit Option**

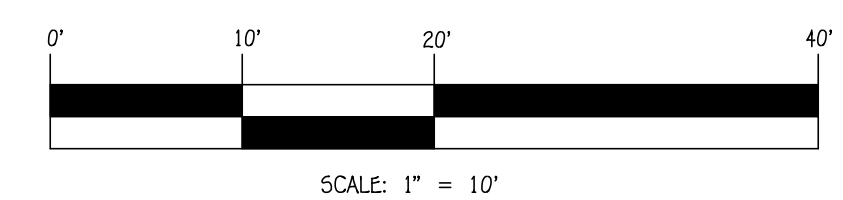
Dimensions & Availability Will Vary by Region



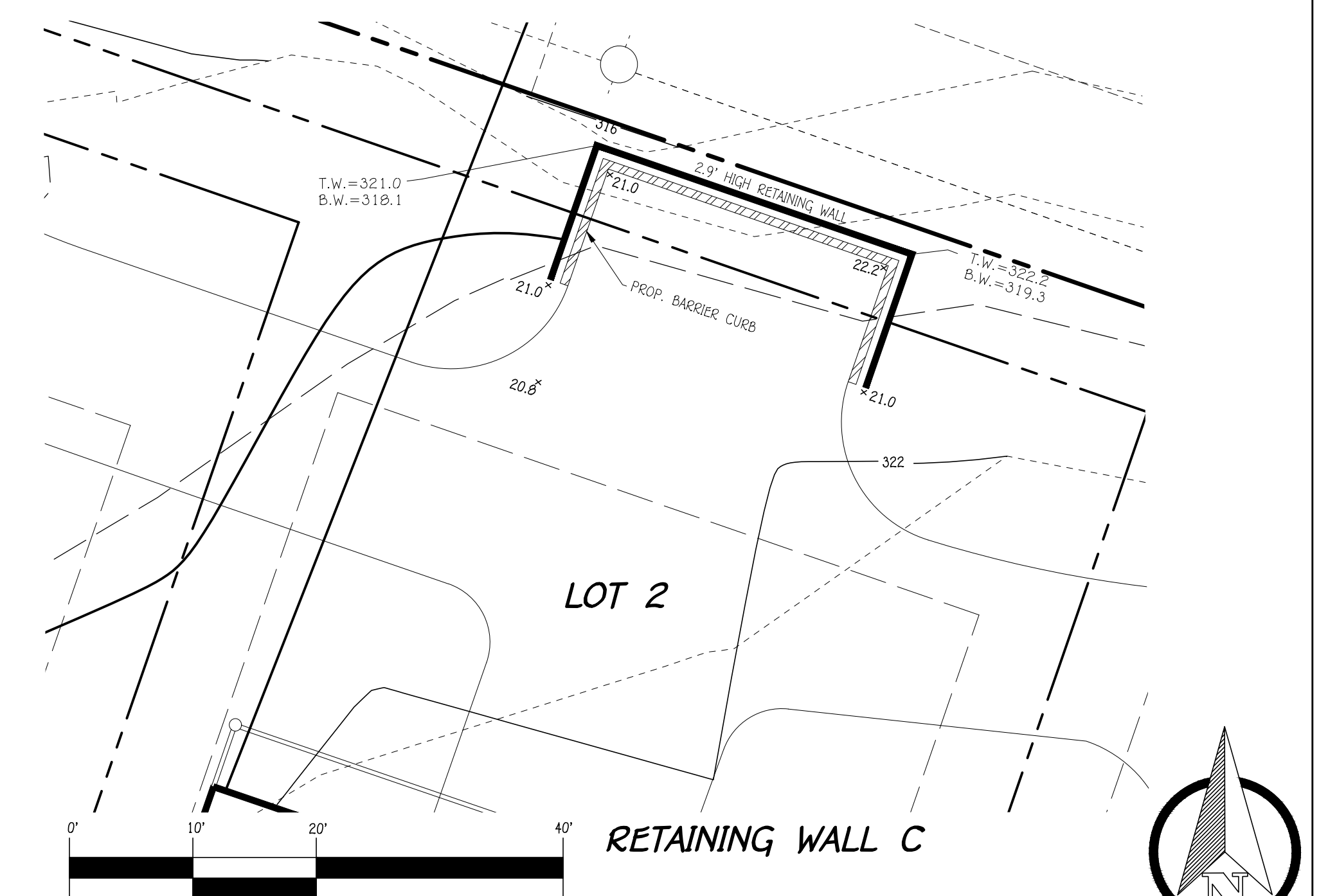
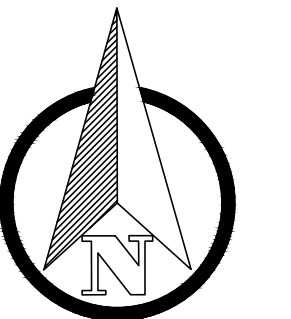
**Cap Unit Elevation**



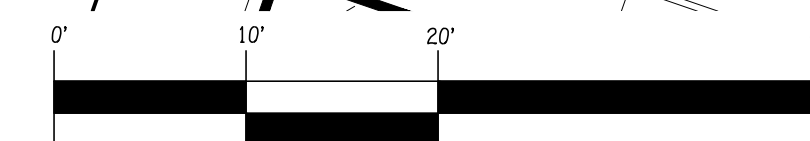
**RETAINING WALL A**



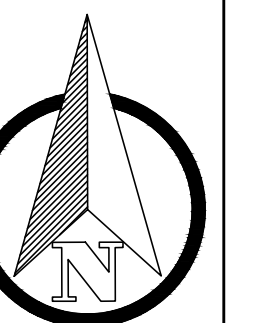
SCALE: 1" = 10'



**RETAINING WALL C**

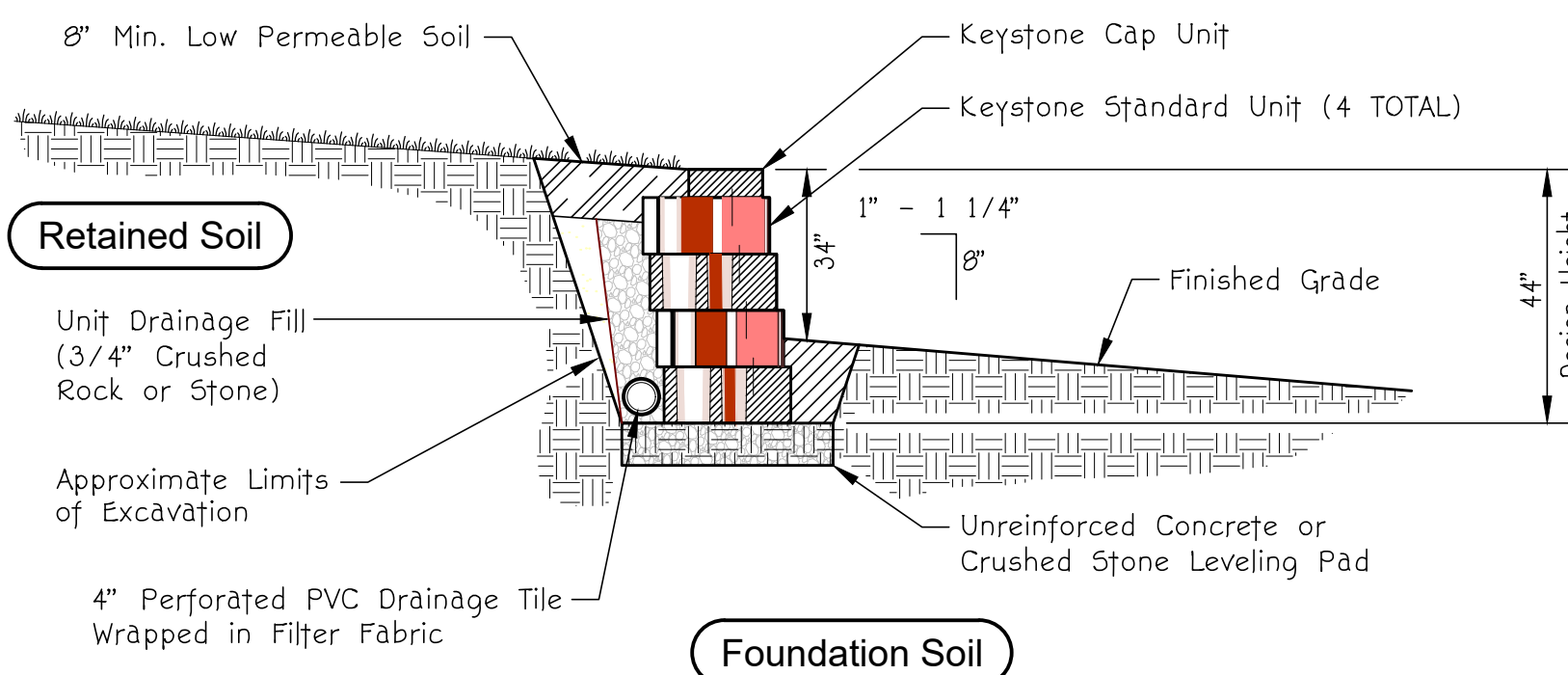


SCALE: 1" = 10'



**Construction Notes:**

- Retaining walls shall only be constructed under the observation of a Registered Professional Engineer and a (NICET, WACEL or equivalent) certified soils technician
- The required bearing pressure beneath the footing of the wall shall be verified in the field by a certified soils technician. Testing documentation shall be provided to the Howard County Inspector prior to the start of construction. The required test procedure shall be the Dynamic Cone Penetrometer Test ASTM STP-399
- The suitability of fill material shall be confirmed by the onsite soils technician. Each eight (8) inch lift shall be compacted to a minimum of 95% Standard Proctor Density and the testing report shall be made available to the Howard County Inspector upon completion of construction
- For "CRITICAL" walls, one soil boring shall be required every 100' along the entire length of the wall. Copies of all boring reports shall be provided to the Howard County Inspector prior to the start of construction
- "THIS WALL IS NOT DESIGNED FOR SURCHARGE LOADS"

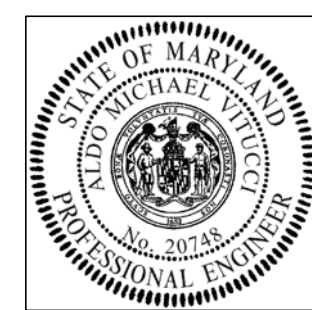


**Typical Gravity Wall Section**

Standard Unit - 1" Setback

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 Chief, Development Engineering Division	4/2/2024
 Director	4/4/2024



*Aldo M. Vitucci, P.E.*  
Aldo M. Vitucci, P.E. 9/19/2023 Date

"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. 20748, Expiration Date 2-22-25."

**OWNER**

Historic Ellicott Properties, Inc.  
c/o Taylor Property Group  
9 Park Center Ct.  
Suite 200  
Owings Mills, Maryland 21117-5616  
Tel: 410-465-3500

**DEVELOPER**

Autumn Development Corporation  
c/o Taylor Property Group  
9 Park Center Ct.  
Suite 200  
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Tel: 410-465-3500

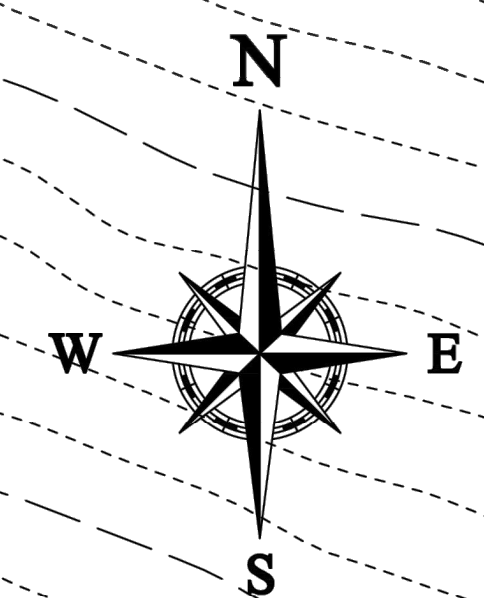
NO.	REVISION	DATE
SUBMISSION	JOURNEY'S END	LOT No. 1 THRU 3
PLAT NO.	BLOCK NO.	ZONE
26307	N/A	R-ED
TAX/ZONE	ELEC. DIST.	CENSUS TR.
25	2	602700

**RETAINING WALL DETAIL SHEET**

**JOURNEY'S END**  
LOTS 1 THRU 3 AND  
OPEN SPACE LOTS 4 & 5

ZONED: R-ED

TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO: 72  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 6, 2023  
SHEET 11 OF 16



**WALL LOCATION PLAN**  
1" = 20'

**JOURNEY'S END**  
LOTS 1 THRU 3 AND  
OPEN SPACE LOTS 4 & 5  
ZONED: R-ED  
PREVIOUS HOWARD COUNTY FILES: PLAT #18132, F-05-134  
TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO.: 72  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 6, 2023



**PROFESSIONAL CERTIFICATION**  
I HEREBY CERTIFY THAT THESE PLANS 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. 14808  
EXPIRATION DATE: 02/27/24



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 Designated by: *Chad Edmondson* 4/2/2024  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 4/4/2024  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 4/4/2024  
 DIRECTOR: *Lynnda Eschenberg*

SUBDIVISION		SECTION/AREA		LOT No.	
JOURNEY'S END		N/A		LOTS 1 THRU 3	
PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
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**HILLIS-CARNES**  
ENGINEERING ASSOCIATES  
10975 Guilford Road, Suite A Annapolis Junction, Maryland  
Phone: (410) 880-4788 www.hcea.com Fax: (410) 880-4098

**MAGNUMSTONE RETAINING WALL LOCATION PLAN**  
**JOURNEY'S END**  
HOWARD COUNTY, MARYLAND

REVISION NO.	DESCRIPTION	DATE

JOB NUMBER:	22181B	DESIGNED BY:	HM/AM
SCALE:	1" = 20'	DRAWN BY:	AM
DATE:	12/19/2022	APPROVED BY:	HM

# SPECIFICATIONS FOR MAGNUMSTONE™ GRAVITY SEGMENTAL RETAINING WALL SYSTEM

## PART 1: GENERAL

### 1.01 DESCRIPTION

- A. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED TO INSTALL A PRECAST CONCRETE GRAVITY SEGMENTAL RETAINING WALL (SRW) WITH MAGNUMSTONE™ UNITS AS SPECIFIED IN THE CONSTRUCTION DRAWINGS OR AS ESTABLISHED BY THE OWNER, ARCHITECT OR ENGINEER.
- B. WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING LEVELING PAD, UNIT FACING SYSTEM, UNIT DRAINAGE FILL AND REINFORCED BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS.

### 1.02 DELIVERY, STORAGE AND HANDLING

- A. CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAS BEEN RECEIVED.
- B. CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOB SITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS SHALL NOT BE INCORPORATED INTO THE WORK.

### 1.03 REFERENCE STANDARDS

- A. ENGINEERING DESIGN
  - 1. AASHTO M288 GEOTEXTILE SPECIFICATION FOR HIGHWAY APPLICATIONS
  - 2. AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES
  - 3. NCMA DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS (SRW)
  - 4. ASTM D 6638 STANDARD TEST METHOD FOR DETERMINING CONNECTION STRENGTH BETWEEN GEOSYNTHETIC REINFORCEMENT AND SEGMENTAL CONCRETE UNITS (MODULAR CONCRETE BLOCKS)
  - 5. ASTM D 6916 STANDARD TEST METHOD FOR DETERMINING THE SHEAR STRENGTH BETWEEN SEGMENTAL CONCRETE UNITS
- B. SOILS
  - 1. ASTM D 698 TEST METHODS FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT
  - 2. ASTM D 422 GRADATION ANALYSIS OF SOIL PARTICLES
  - 3. ASTM D 4318 TEST METHODS FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS
  - 4. ASTM D 51 TESTING METHODS FOR MEASURING PH OF SOIL
  - 5. ASTM D 2487 STANDARD CLASSIFICATION OF SOILS (UNIFIED SOIL CLASSIFICATION SYSTEM)
- C. DRAINAGE PIPE
  - 1. ASTM D 3034 SPECIFICATION FOR TYPE PSM POLYVINYL CHLORIDE (PVC) PIPE
  - 2. ASTM D 1248 CORRUGATED PLASTIC PIPE
- D. THE OWNER OR OWNER'S REPRESENTATIVE SHALL DETERMINE THE FINAL APPLICATION, IF THE SPECIFICATIONS AND REFERENCE DOCUMENTS CONFLICT.

## PART 2: MATERIALS

### 2.01 CONCRETE SEGMENTAL RETAINING WALL (SRW) UNITS

- A. SRW CONCRETE UNITS SHALL BE MAGNUMSTONE™ UNITS AS MANUFACTURED BY LICENSED PRODUCER IN ACCORDANCE WITH NCMA, ASTM AND/OR AASHTO STANDARDS AND CONFORM TO THE NCMA QUALITY CONTROL MANUAL FOR PRECAST CONCRETE PLANTS OR PER PROJECT ENGINEER SPECIFICATIONS.
- B. MAGNUMSTONE™ UNITS SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE OF EQUAL TO 4,000 PSI (28 MPA) (OR GREATER IF SPECIFIED) AND A MAXIMUM ABSORPTION OF 5 PCF (OR LESS IF SPECIFIED) (ASTM C 140). (SUGGESTED AIR CONTENT BETWEEN 5 AND 7%)

- C. COLOR FOR THE MAGNUMSTONE™ UNITS SHALL BE DETERMINED BY OWNER.
- D. ASTM C 1262 SHALL BE STANDARD FOR AREAS SUBJECT TO MANY FREEZE-THAW CYCLES.
- E. THE MAXIMUM WATER ABSORPTION SHALL BE LESS THAN 5%. A WATER-CEMENTITIOUS RATIO OF 0.45OR LESS IS SUGGESTED.
- F. THE HEIGHT SHALL NOT VARY MORE THAN ±3/16TH OF AN INCH (5 MM) FOR EVERY 4 FEET (1.2 M); LENGTH SHALL NOT VARY MORE THAN ±1/2" (13 MM) PER UNIT; AND DEPTH SHALL NOT VARY MORE THAN ±1/4" (6 MM) PER UNIT. ALL OTHER SPECIFICATIONS MUST MEET ASTM C 1372.
- G. THE MAGNUMSTONE™ STANDARD UNITS SHALL HAVE A FACE AREA OF 8 SQ FT (0.75 M2) AND MAGNUMSTONE™ HALF HIGH UNITS SHALL HAVE A FACE AREA OF 4 SQ FT (0.375 M2)
- H. THE MAGNUMSTONE™ STANDARD UNIT WEIGHT SHALL BE APPROXIMATELY ±1400 LBS (635 KG) WITH A GRAVEL INFILL WEIGHT OF ±800 LBS (363 KG).
- I. THE MAGNUMSTONE™ UNITS SHALL BE SOUND AND FREE OF CRACKS, CHIPS OR OTHER DEFECTS THAT MAY PREVENT THE CONTRACTOR FROM PROPERLY INSTALLING THE WALL UNITS OR REDUCE THE LONG TERM STRENGTH OF THE WALL STRUCTURE.
- J. CONCRETE SAMPLING SHALL BE IN ACCORDANCE WITH AASHTO T-141. COMPRESSION TESTING SHALL BE IN ACCORDANCE WITH AASHTO T-23 AND AASHTO T-22. AIR CONTENT TESTING SHALL BE IN ACCORDANCE WITH AASHTO T-152 OR AASHTO T-196. SLUMP TESTING SHALL BE IN ACCORDANCE WITH AASHTO T-119. 28 DAY TESTING SHALL BE IN ACCORDANCE WITH AASHTO T-23 AND AASHTO T-22 OR AS SPECIFIED BY THE PROJECT ENGINEER.
- K. REINFORCING MESH (IF REQUIRED) SHALL BE SHOP-FABRICATED OF COLD DRAWN STEEL WIRE CONFORMING TO THE MINIMUM REQUIREMENTS OF ASTM A-82 (AASHTO M-32) AND SHALL BE WELDED INTO THE FINISHED MESH FABRIC IN ACCORDANCE WITH ASTM A-185 (ASHTO M-55). GALVANIZATION SHALL BE APPLIED AFTER THE MESH IS FABRICATED AND CONFORM TO THE MINIMUM REQUIREMENTS OF ASTM A-123 (AASHTO M-111). CONNECTOR BARS SHALL BE FABRICATED OF COLD DRAWN STEEL WIRE conforming to the requirements of ASTM A-82 (AASHTO M-32) and galvanized in accordance with ASTM A-123 (AASHTO M-111).
- L. ELECTROCHEMICAL REQUIREMENTS, IF APPLICABLE, WILL FOLLOW THE AASHTO SPECIFICATIONS.

### 2.02 FOUNDATION SOIL

- A. THE FOUNDATION SOILS SHALL BE UNDISTURBED NATIVE SITE SOILS.
- B. THE FOUNDATION SOILS SHALL BE INSPECTED AND TESTED BY AN ENGINEER BEFORE INSTALLING BASE LEVELING GRAVEL.
- C. DISTURBED OR UNSUITABLE FOUNDATION SOILS SHALL BE PROPERLY COMPACTED OR REPLACED WITH ACCEPTABLE SOILS AS SPECIFIED BY THE ENGINEER.

### 2.03 BACKFILL SOIL

- A. BACKFILL SOILS SHALL BE FREE OF ORGANIC MATERIALS AND OTHER UNSUITABLE MATERIALS.
- B. SOILS CLASSIFIED AS GP, GW, SP, SW, OR SM TYPES IN ACCORDANCE WITH ASTM D 2487 ARE SUITABLE. ALL SOILS SHALL BE APPROVED BY THE ENGINEER.
- C. THE PLASTICITY INDEX OF THE BACKFILL SOILS SHALL HAVE A FINE FRACTION OF LESS THAN 20.

### 2.04 BASE LEVELING MATERIALS

- A. THE BASE LEVELING GRAVEL SHALL BE WELL GRADED COMPACTED GRAVEL (GW).
- B. UNREINFORCED CONCRETE BASE LEVELING PAD CAN ALSO BE USED IF SPECIFIED.
- C. AASHTO SPECIFICATIONS SHALL BE FOLLOWED WHEN CONSTRUCTING CONCRETE FOOTING FOR DOT PROJECTS.

### 2.05 DRAINAGE AND UNIT INFILL AGGREGATE

- A. DRAINAGE AGGREGATE SHALL BE CLEAN CRUSHED GRAVEL MEETING THE GRADATION IN ACCORDANCE WITH ASTM D 448.
- B. DRAINAGE AGGREGATES SHALL BE PLACED IN ALL UNIT VOIDS AND WEDGE BETWEEN UNITS WITH UNIFORM PARTICLE SIZE NO LESS THAN 1" (25 MM) AND NOT MORE THAN 5% PASSING THROUGH THE NO. 200 SIEVE.

### 2.06 DRAINAGE PIPE

- A. DRAINAGE PIPE SHALL BE PERFORATED PVC OR CORRUGATED HDPE PIPE WITH A MINIMUM SIZE OF 4" (0.1 M) IN DIAMETER.
- B. GEOTEXTILE WRAP AROUND THE DRAINAGE PIPE MAY BE USED AS SPECIFIED BY THE ENGINEER.
- C. DRAINAGE PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM D 3034 AND/OR ASTM D 1248.

### 2.07 GEOTEXTILE FABRIC

- A. GEOTEXTILES SHALL BE NON-WOVEN AS SPECIFIED BY THE SPECIFICATIONS AND CONSTRUCTION DRAWINGS.
- B. GEOTEXTILES WHEN USED AS A SOIL SEPARATOR SHALL BE PERMEABLE, ALLOWING WATER TO EFFECTIVELY PASS THROUGH THE FABRIC OPENINGS.

## PART 3 EXECUTION

### 3.01 EXCAVATION

- A. THE CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE PROJECT GRADING PLANS.
- B. RETAINING WALL EXCAVATIONS SHALL BE PERFORMED IN COMPLIANCE WITH MOSH AND OSHA REQUIREMENTS. CARE SHALL BE EXERCISED TO PROPERLY SHORE OR SLOPE BACK EXCAVATIONS TO MAINTAIN STABILITY. IF SLOPE FLATTENING IS NOT ACHIEVABLE, TEMPORARY SUPPORT OF EXCAVATION FOR THE RETAINING WALL CONSTRUCTION SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AND PERFORMED IN ACCORDANCE WITH ANY JURISDICTIONAL SAFETY STANDARDS.
- B. BACK EXCAVATION CUTS SHALL BE NOTCHED BENCHES OF 5 FEET (1.5 M) VERTICAL FOR EVERY 2 FEET (0.6 M) HORIZONTAL BENCH, OR AS PER THE ENGINEER'S SPECIFICATIONS.
- C. OVER-EXCAVATED OR FILLED AREAS SHALL BE WELL COMPACTED AND INSPECTED BY AN ENGINEER.
- D. EXCAVATED MATERIALS THAT ARE USED FOR THE BACKFILLING REINFORCEMENT ZONE SHALL BE PROTECTED FROM WEATHER.
- E. ORGANIC OR OTHER NON-GRAVEL MATERIALS SHALL NOT BE USED IN THE BACKFILLED REINFORCEMENT ZONE.

### 3.02 FOUNDATION PREPARATION

- A. THE FOUNDATION TRENCH SHALL BE EXCAVATED TO THE DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS.
- B. THE REINFORCED ZONE AND LEVELING PAD FOUNDATION SOIL SHALL BE EXAMINED BY THE ON-SITE ENGINEER TO ENSURE PROPER BEARING STRENGTH.
- C. SOILS NOT MEETING THE REQUIRED STRENGTH SHALL BE REMOVED AND REPLACED WITH PROPER MATERIALS.
- D. FOUNDATION MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DRY DENSITY, OR GREATER, BEFORE PLACING LEVELING PAD (ASTM D 698).

### 3.03 BASE LEVELING PAD

- A. GRANULAR AGGREGATE MATERIALS, MINIMUM 6 INCHES (0.15 M) THICK AND WIDTH SPECIFIED ON THE CONSTRUCTION DRAWINGS, SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DRY DENSITY, OR GREATER (AN UNREINFORCED CONCRETE PAD MAY BE USED).
- B. THE BASE LEVELING PAD SHALL BE LEVEL HORIZONTALLY AND BACK TO FRONT TO ENSURE THE FIRST COURSE OF UNITS ARE LEVEL.
- C. THE TOP OF BASE LEVELING PAD ELEVATION AND INSTALLATION OF GRANULAR MATERIALS SHALL BE IN

ACCORDANCE WITH THE SPECIFICATIONS AND CONSTRUCTION DRAWINGS. THE TOE OF THE WALL BURIAL DEPTH SHALL BE CONSTRUCTED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

- D. WHERE CONCRETE REINFORCED FOOTING IS REQUIRED, THEY SHALL BE INSTALLED BELOW THE FROST LEVEL AND CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS AND CONSTRUCTION DRAWINGS.

### 3.04 UNIT INSTALLATION

- A. THE FIRST COURSE OF MAGNUMSTONE™ UNITS SHALL BE CAREFULLY PLACED ON A WELL-GRADED GRAVEL OR CONCRETE LEVELING PAD.
- B. THE FIRST ROW OF UNITS SHALL BE LEVEL FROM UNIT TO UNIT AND FROM BACK TO FRONT.
- C. A STRING LINE CAN BE USED TO ALIGN A STRAIGHT WALL. PVC FLEX PIPES CAN BE USED TO ESTABLISH SMOOTH CONVEX OR CONCAVE CURVED WALLS.
- D. THE SMOOTH BACK OF THE UNITS SHALL BE USED FOR ALIGNMENT AND MEASURING TO ENSURE SMOOTH CURVES AND STRAIGHT WALLS.
- E. THE SECOND COURSE OF UNITS SHALL HAVE THE CONCRETE CONNECTING LUGS IN THE UNIT VOIDS OF THE FIRST COURSE BELOW, AND PULLED FORWARD RESTING THE LUGS AGAINST THE FRONT EDGE OF THE TWO LOWER UNIT VOIDS.
- F. ALL UNITS SHALL BE LAID SNUGLY TOGETHER AND PARALLEL TO THE STRAIGHT OR CURVED LINES.
- G. THE MAGNUMSTONE™ UNITS SHALL BE SWEEP CLEAN OF ALL DIRT OR ROCKS BEFORE INSTALLING THE NEXT LAYER OF UNITS OR PLACING THE GEOSYNTHETICS.
- H. AFTER LAYING EACH COURSE, PERFORM A VISUAL OR STRING LINE STRAIGHTNESS CHECK.

### 3.05 DRAINAGE COMPONENTS

- A. DRAINAGE PIPE AND GEOTEXTILE SHALL BE INSTALLED AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- B. MAGNUMSTONE™ UNIT VOIDS SHALL BE FILLED WITH A FREE-DRAINING GRANULAR MATERIAL, SUCH AS ¾" (19 MM) CLEAR ROCK (CLEAN GRAVEL).
- C. CLEAN GRAVEL DOES NOT REQUIRE MECHANICAL COMPACTION.

### 3.06 BACKFILL

- A. REINFORCED BACKFILL MATERIALS SHALL BE PLACED IN MAXIMUM LIFTS OF 8" (0.2 M) AND SHALL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY OR GREATER, IN ACCORDANCE WITH ASTM D 698 TO THE LINES AND GRADES SHOWN ON THE PROJECT GRADING PLANS.
- B. ONLY HAND-OPERATED COMPACTION EQUIPMENT SHALL BE USED WITHIN 2 FEET (0.6 M) OF THE BACK OF THE WALL.
- C. SOIL DENSITY TESTING SHALL NOT BE TAKEN WITHIN THIS 2 FOOT (0.6 M) AREA.
- D. THE TOE OF THE WALL SHALL BE FILLED AND COMPACTED AS THE WALL IS BEING CONSTRUCTED.

### 3.07 CAP INSTALLATION

- A. THE MAGNUMSTONE™ FULL SIZE CAP UNITS SHALL BE PLACED IN THE SAME INSTALLATION PROCEDURES AS THE REGULAR MAGNUMSTONE™ UNITS.
- B. GEOTEXTILES SHOULD BE USED AS A SOIL SEPARATOR BETWEEN THE FINAL LAYER OF DRAINAGE MATERIALS AND THE TOPSOIL MATERIALS TO PREVENT FINES FROM MIGRATING INTO THE DRAINAGE GRAVEL OR THROUGH THE WALL FACE.
- C. A MAGNUMSTONE™ 6" (0.15 M) HIGH CAP CAN BE USED TO COMPLETE THE TOP OF THE WALL. CONCRETE ADHESIVE SHALL BE USED TO GLUE THE CAP UNITS TO THE REGULAR UNITS.

## NOTES:

- NO TREES SHALL BE PLANTED WITHIN 10 FEET OF THE TOP OF THE RETAINING WALL.
- RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIV.) CERTIFIED SOILS TECHNICIAN.
- ONE SOIL BORING SHALL BE REQUIRED EVERY ONE HUNDRED FEET ALONG THE ENTIRE LENGTH OF THE WALL. COPIES OF ALL BORING REPORTS SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION.
- THE REQUIRED BEARING PRESSURE BENEATH THE WALL SYSTEM SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO START OF CONSTRUCTION. THE REQUIRED BEARING TEST SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM STP-399.
- THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH 8" LIFT MUST BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
- WALLS SHALL NOT BE CONSTRUCTED ON UNCERTIFIED FILL MATERIALS.
- WALLS SHALL NOT BE CONSTRUCTED WITHIN A HOWARD CO. RIGHT-OF-WAY OR EASEMENT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chad Edmondson* 4/2/2024  
CHIEF, DEVELOPMENT AND ENGINEERING DIVISION

*Lynnda Eisenberg* 4/4/2024  
CHIEF, DIVISION OF DEVELOPMENT

DIRECTOR

SUBDIVISION		SECTION / AREA	LOT No.
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LOTS 1 THRU 3 AND  
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PROFESSIONAL HOWARD COUNTY FILES: PLAT #18132, F-05-134  
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**HILLIS-CARNES**  
ENGINEERING ASSOCIATES

10975 Guilford Road, Suite A Annapolis Junction, Maryland  
Phone: (410) 880-4788 www.hcea.com Fax: (410) 880-4098

**MAGNUMSTONE SPECIFICATIONS AND NOTES**

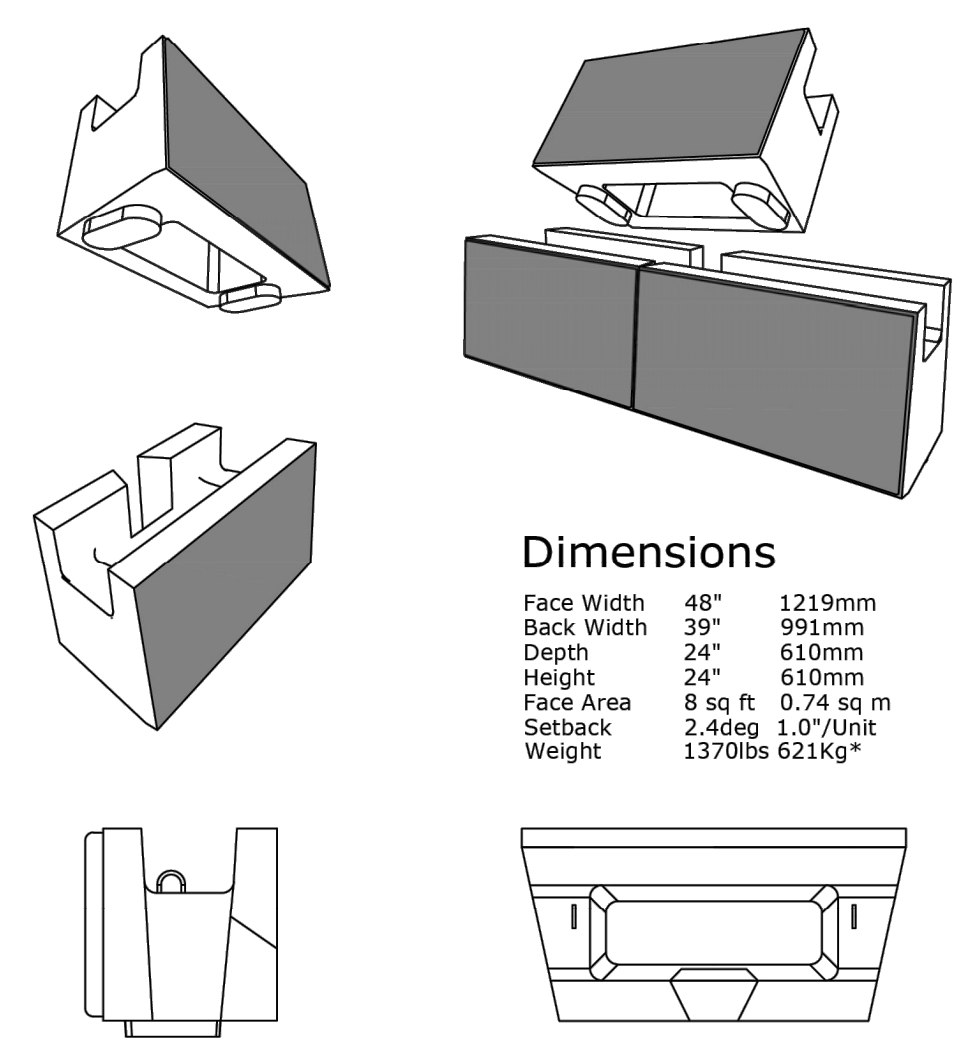
**JOURNEY'S END**

HOWARD COUNTY, MARYLAND

REVISION NO.	DESCRIPTION	DATE	JOB NUMBER:	DESIGNED BY:
			22181B	HM/AM
			SCALE:	DRAWN BY:
			AS SHOWN	AM
			DATE:	APPROVED BY:
			12/19/2022	HM

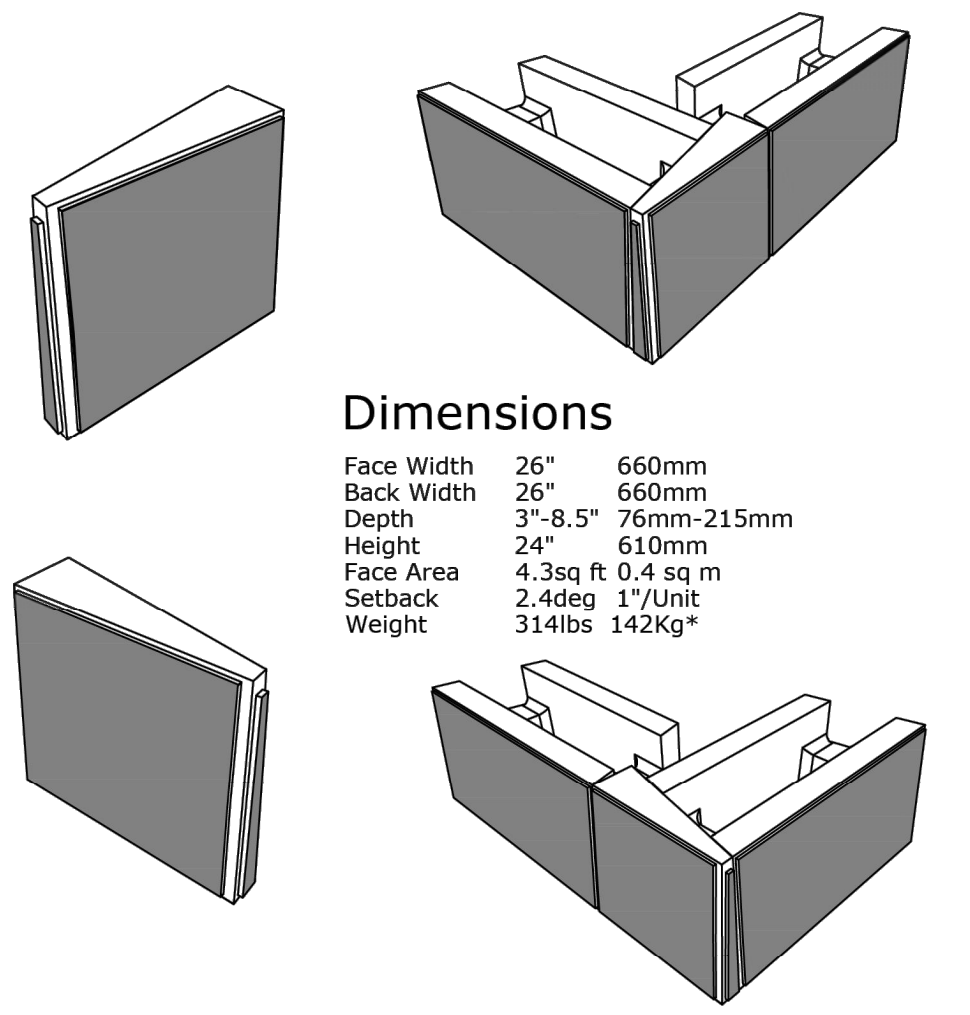
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: <i>[Signature]</i>	4/4/2024
Chief, Division of Land Development DocuSigned by: <i>[Signature]</i>	Date
Chief, Development Engineering Division DocuSigned by: <i>[Signature]</i>	4/2/2024
DocuSigned by: <i>[Signature]</i>	Date
Director - Department of Planning and Zoning DocuSigned by: <i>[Signature]</i>	4/4/2024
	Date



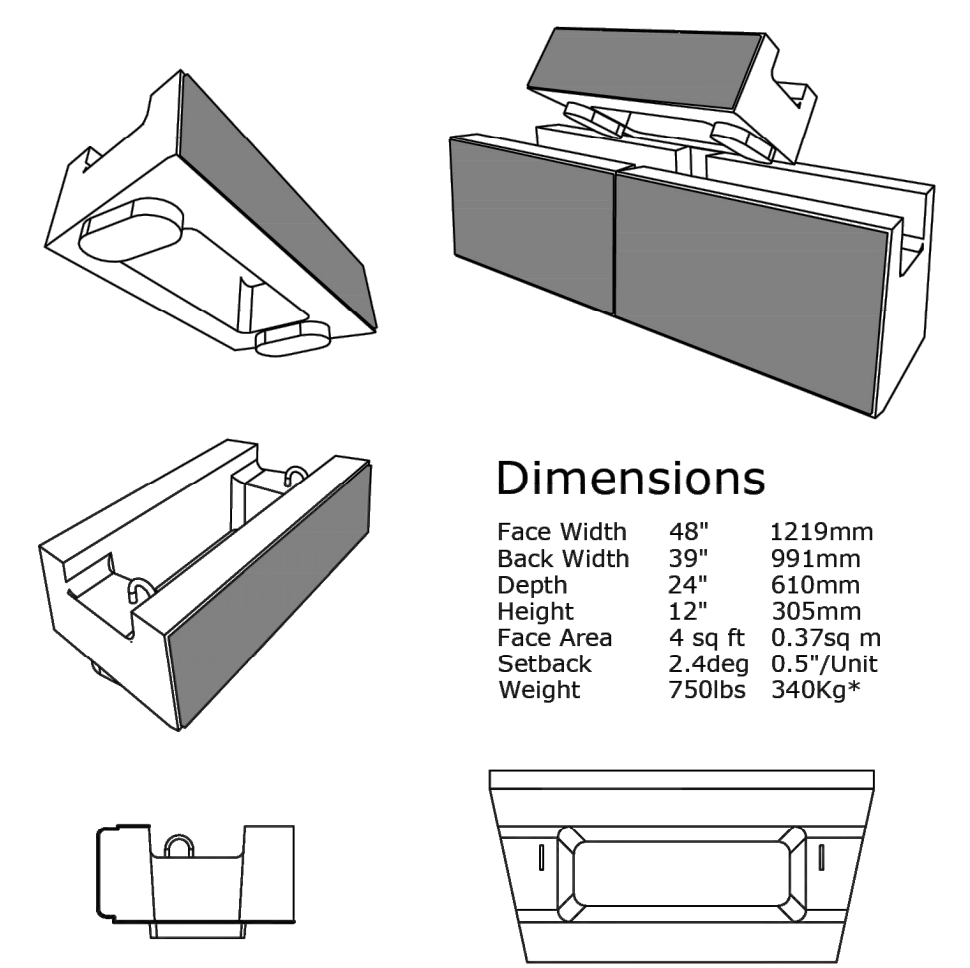
**Dimensions**  
 Face Width 48" 1219mm  
 Back Width 39" 991mm  
 Depth 24" 610mm  
 Height 24" 610mm  
 Face Area 8 sq ft 0.74 sq m  
 Setback 2.4deg 1.07/Unit  
 Weight 1370lbs 621Kg\*

**STANDARD UNIT**



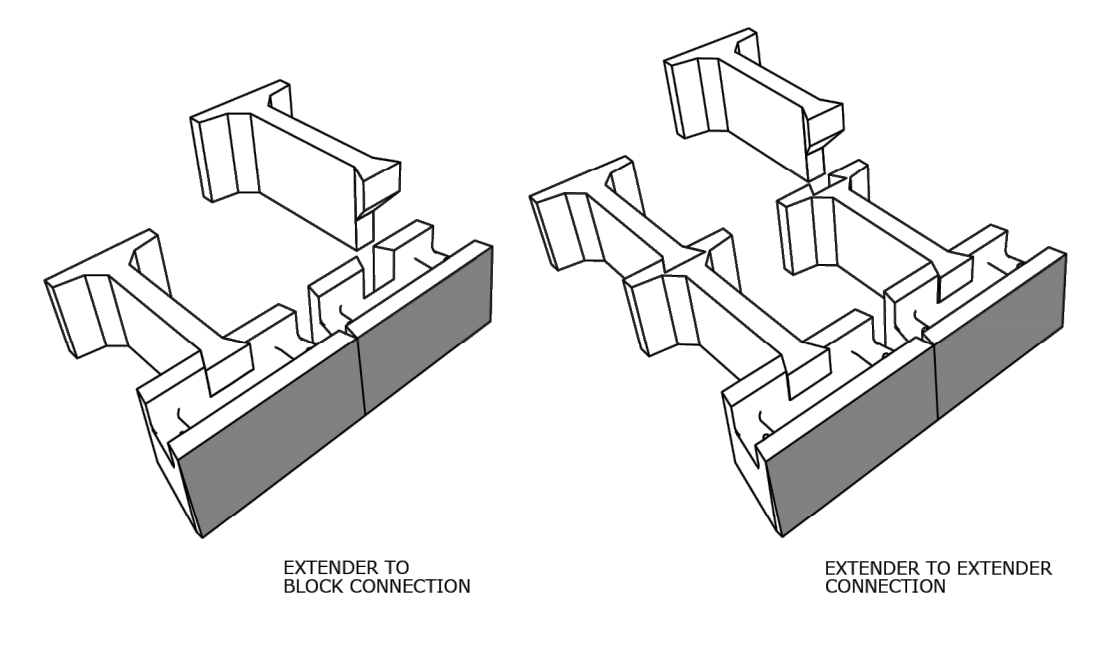
**Dimensions**  
 Face Width 26" 660mm  
 Back Width 26" 660mm  
 Depth 3"-8.5" 76mm-215mm  
 Height 24" 610mm  
 Face Area 4.3sq ft 0.4 sq m  
 Setback 2.4deg 1.17/Unit  
 Weight 314lbs 142Kg\*

**CORNER/END UNIT**

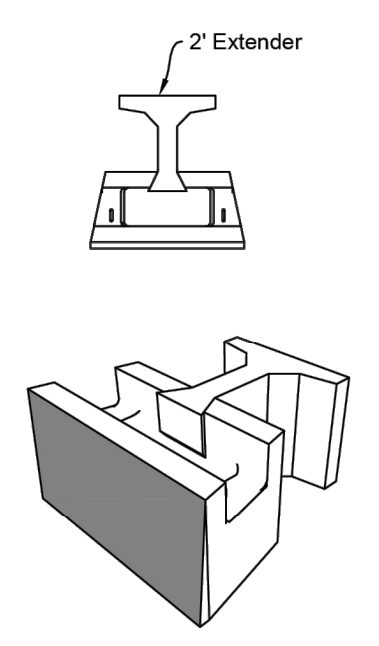


**Dimensions**  
 Face Width 48" 1219mm  
 Back Width 39" 991mm  
 Depth 24" 610mm  
 Height 12" 305mm  
 Face Area 4 sq ft 0.37sq m  
 Setback 2.4deg 0.57/Unit  
 Weight 750lbs 340Kg\*

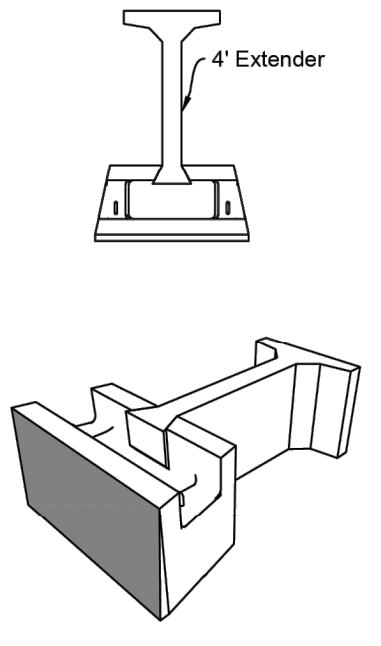
**HALF HIGH UNIT**



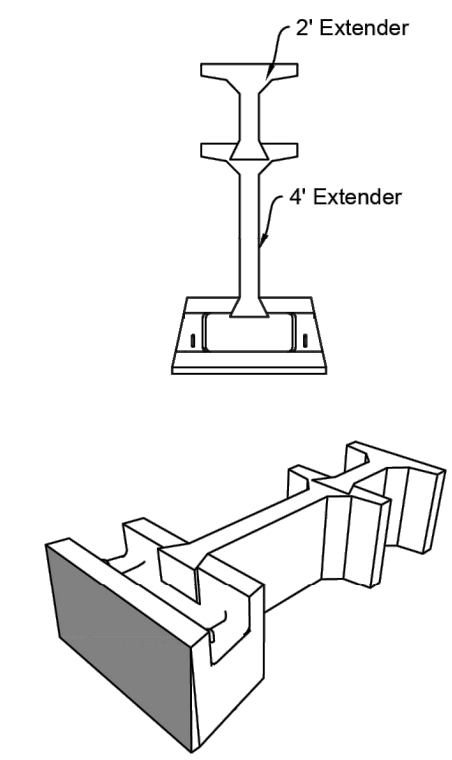
**EXTENDER INSTALLATION**



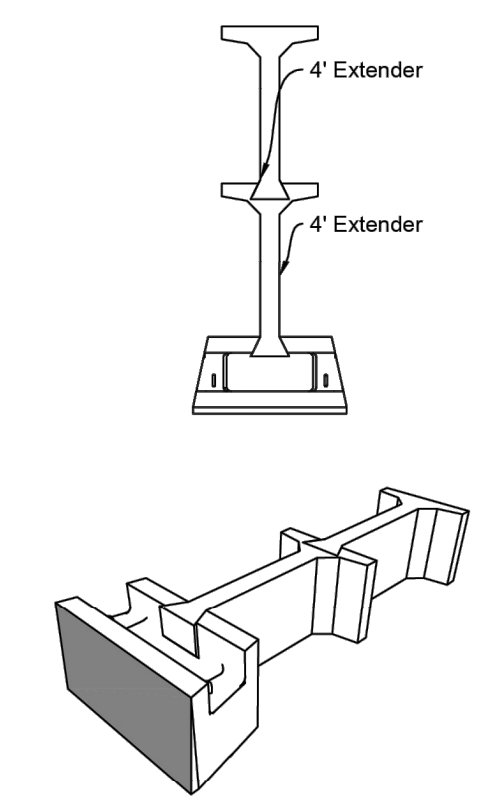
**24" (610MM)**



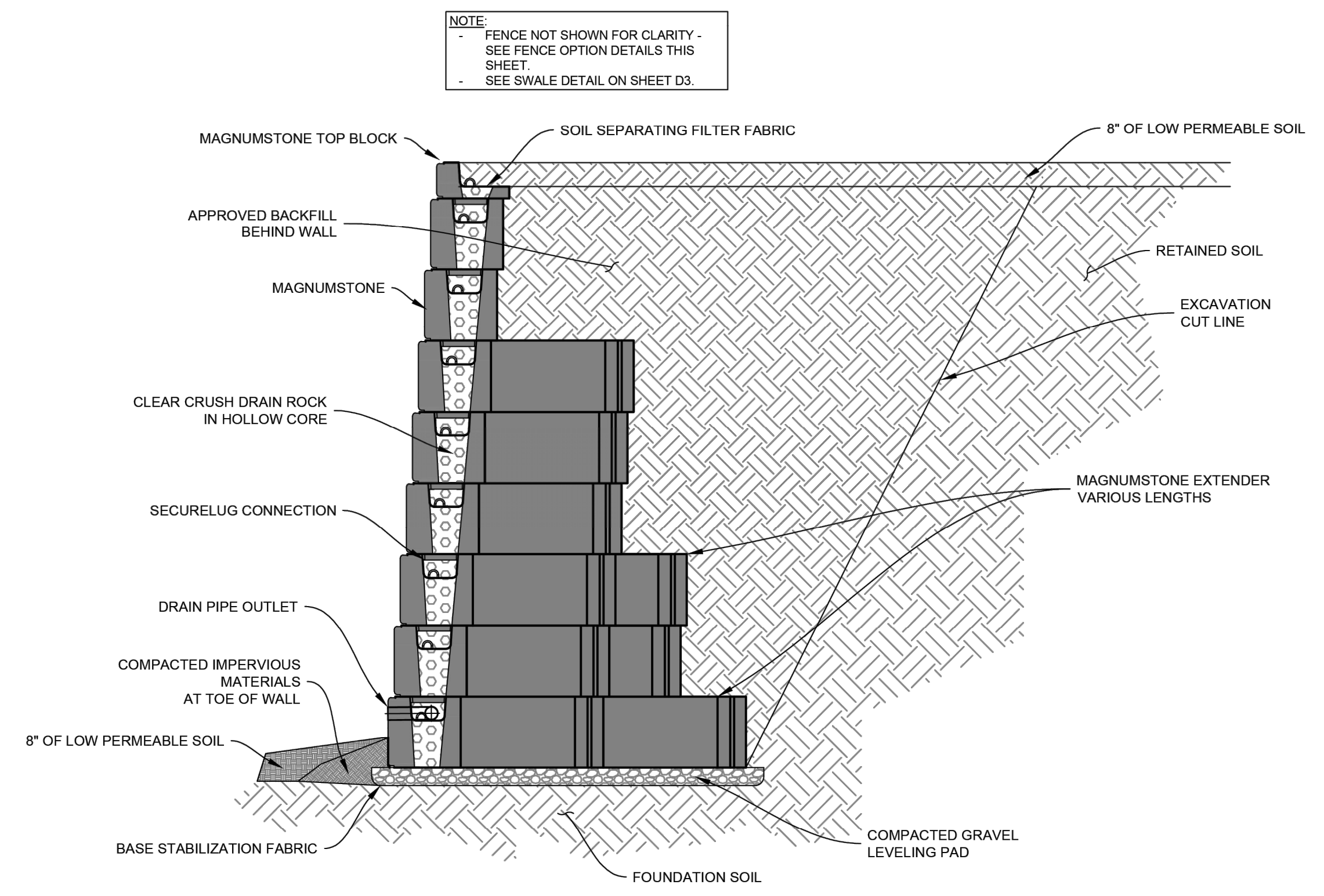
**72" (1829MM)**



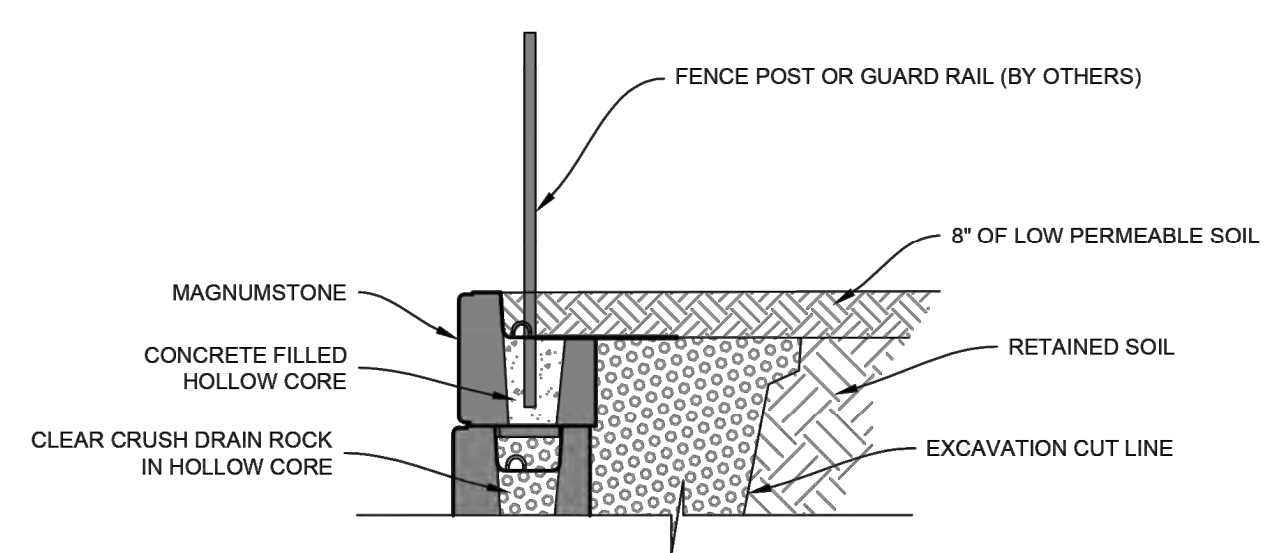
**96" (2438MM)**



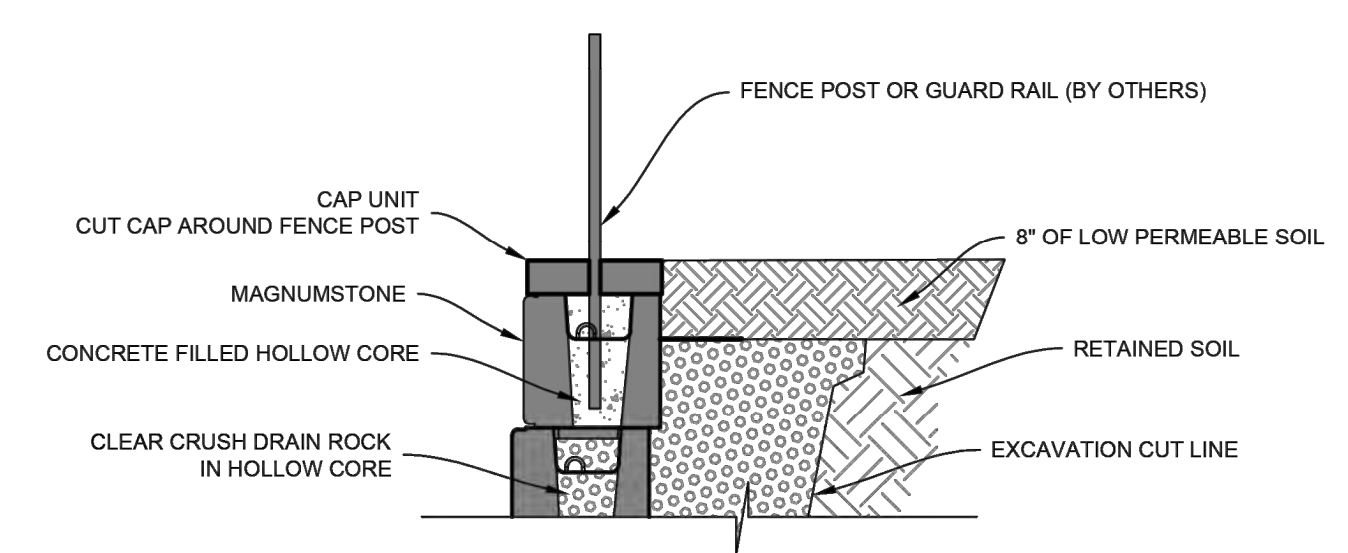
**120" (3048MM)**



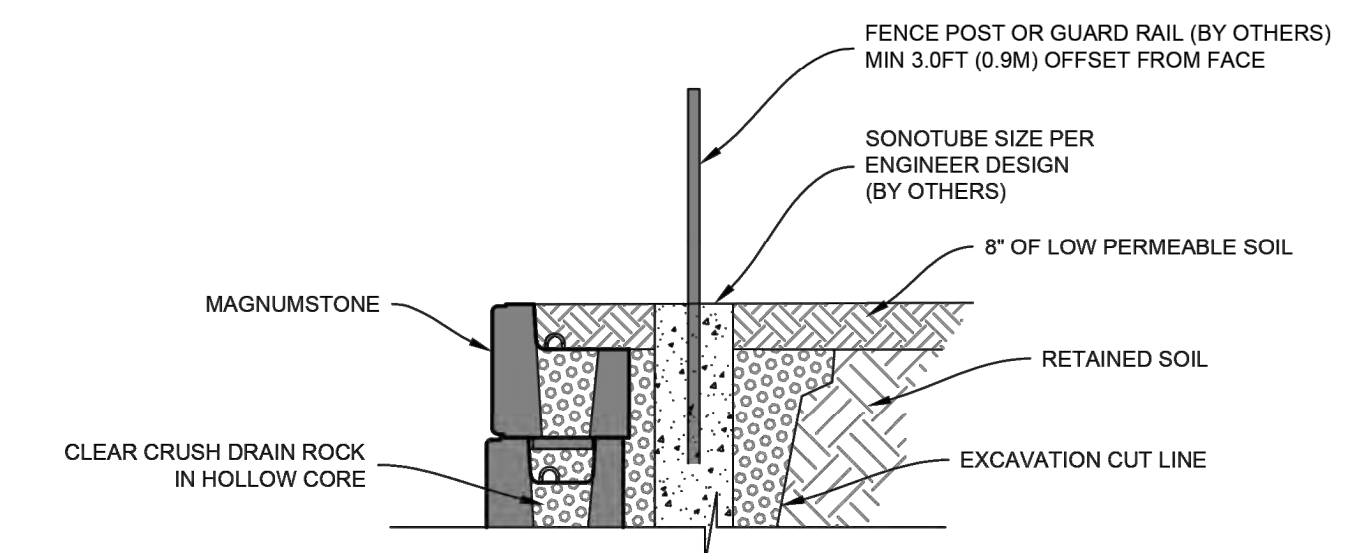
**GRAVITY WALL TYPICAL SECTION WITH EXTENDERS**



**FENCE THROUGH HOLLOW CORE**



**FENCE THROUGH HOLLOW CORE W /CAP**



**FENCE WITH SONOTUBE BEHIND BLOCK**

SUBDIVISION		SECTION/AREA		LOT No.	
JOURNEY'S END		N/A		LOTS 1 THRU 3	
PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
26307	N/A	R-ED	25	2	602700

<b>OWNER</b>	<b>DEVELOPER</b>
Historic Ellicott Properties, Inc. c/o Taylor Property Group 8 Park Center Ct. Suite 200 Owings Mills, Maryland 21117-5616 Tel: 410-465-3500	Ajumn Development Corporation c/o Taylor Property Group 8 Park Center Ct. Suite 200 Owings Mills, Maryland 21117-5616 Tel: 410-465-3500

**JOURNEY'S END**  
 LOTS 1 THRU 3 AND  
 OPEN SPACE LOTS 4 & 5

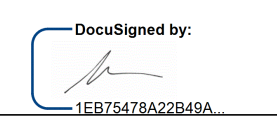
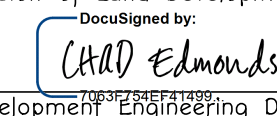
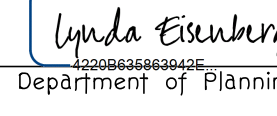
ZONED: R-ED  
 PREVIOUS HOWARD COUNTY FILES: PLAT #18132, F-05-134  
 TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO: 72  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: APRIL 6, 2023

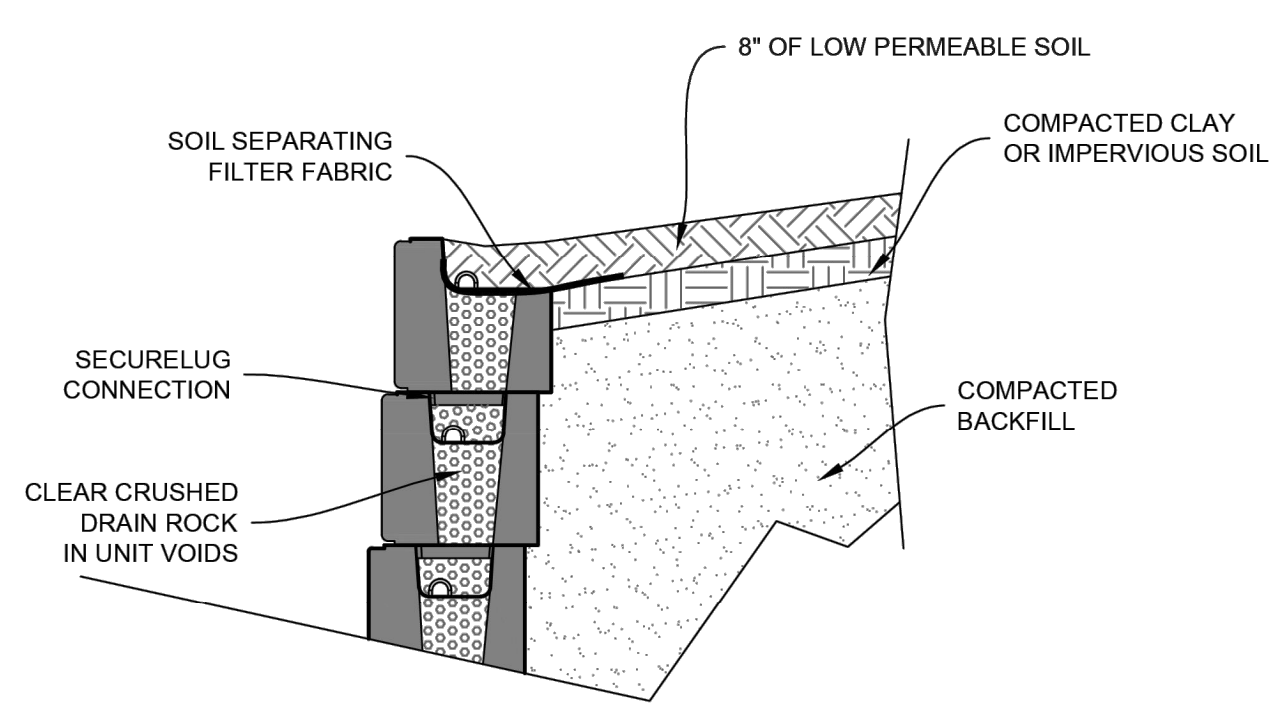
**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14808, EXPIRATION DATE: 02/27/24.



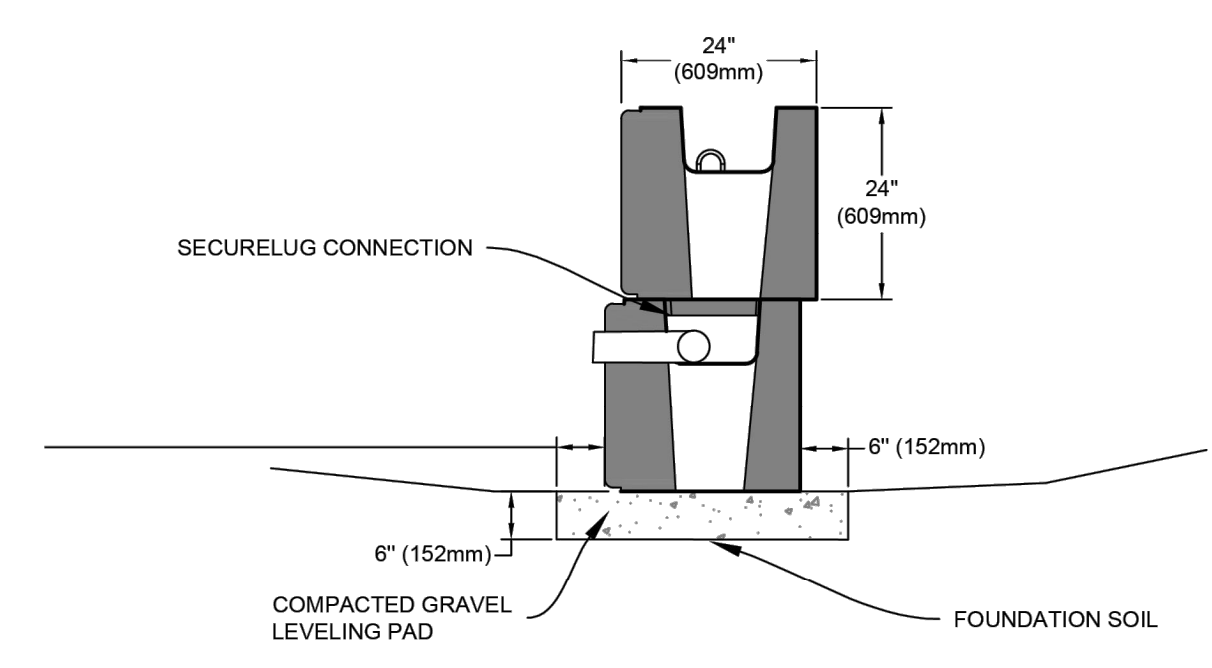
REVISION NO.	DESCRIPTION	DATE	JOB NUMBER: 22181B	DESIGNED BY: HM/AM
			SCALE: AS SHOWN	DRAWN BY: AM
			DATE: 12/19/2022	APPROVED BY: HM

14 of 16 SHEET

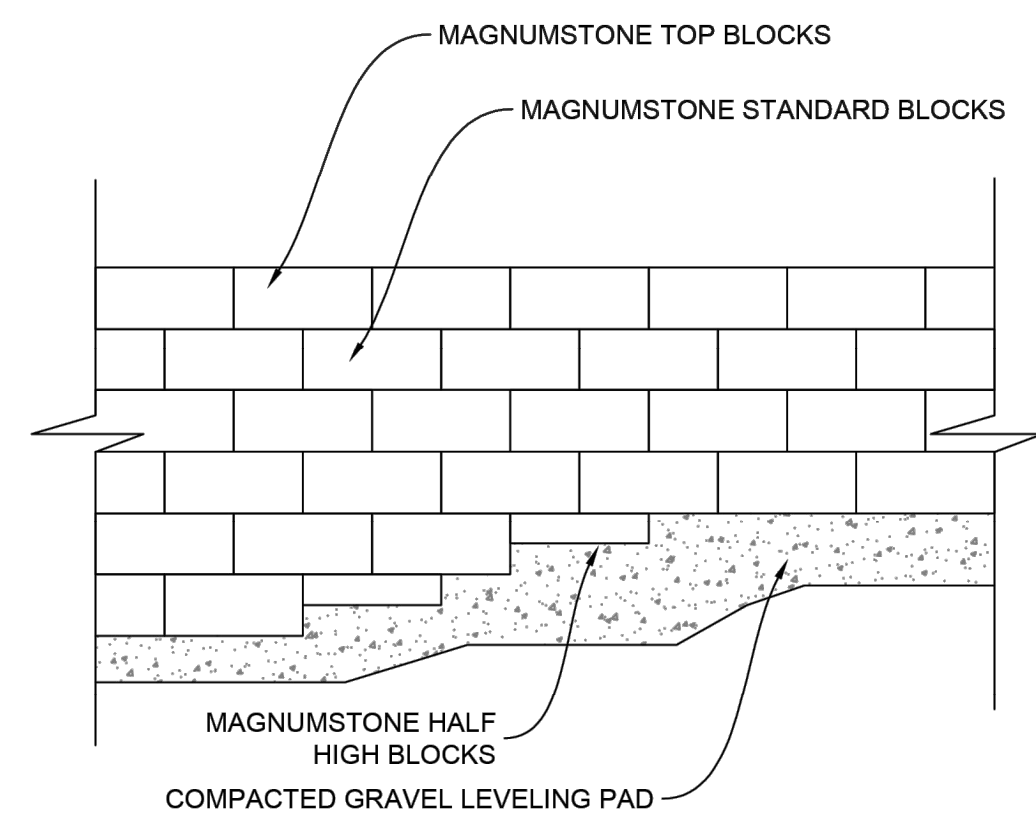
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
Designed by: 	4/4/2024
Chief, Division of Land Development	Date
Designed by: 	4/2/2024
Chief, Development Engineering Division	Date
Designed by: 	4/4/2024
Director - Department of Planning and Zoning	Date



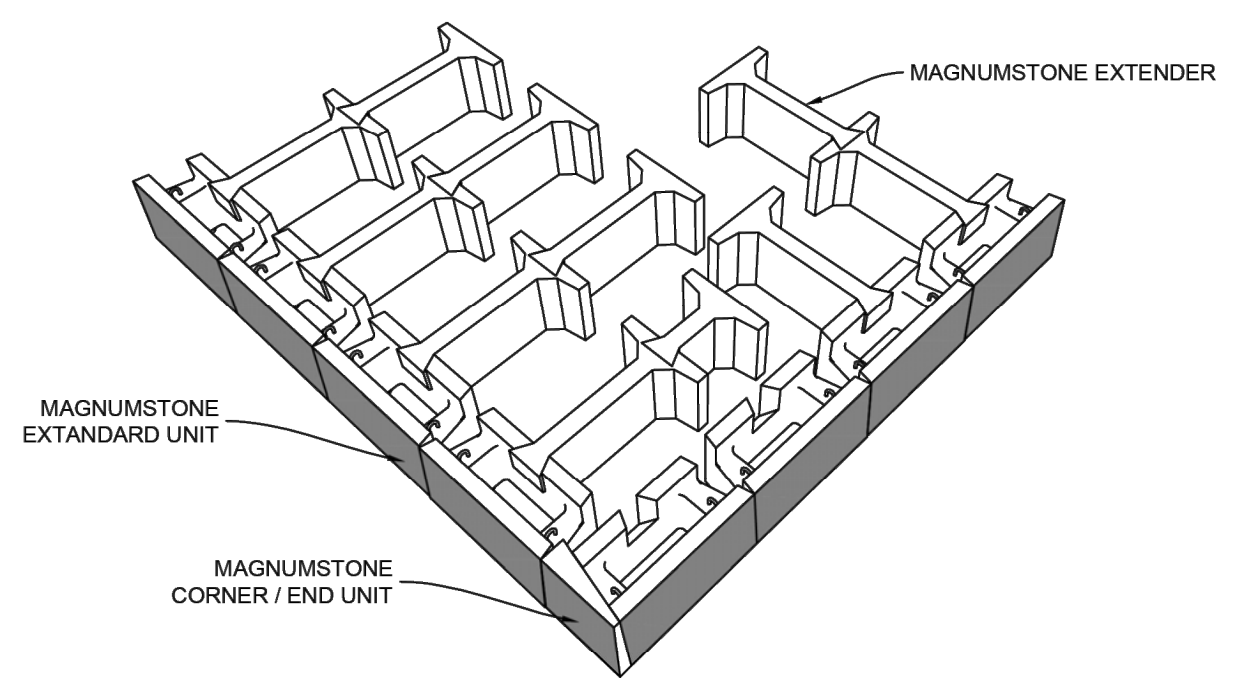
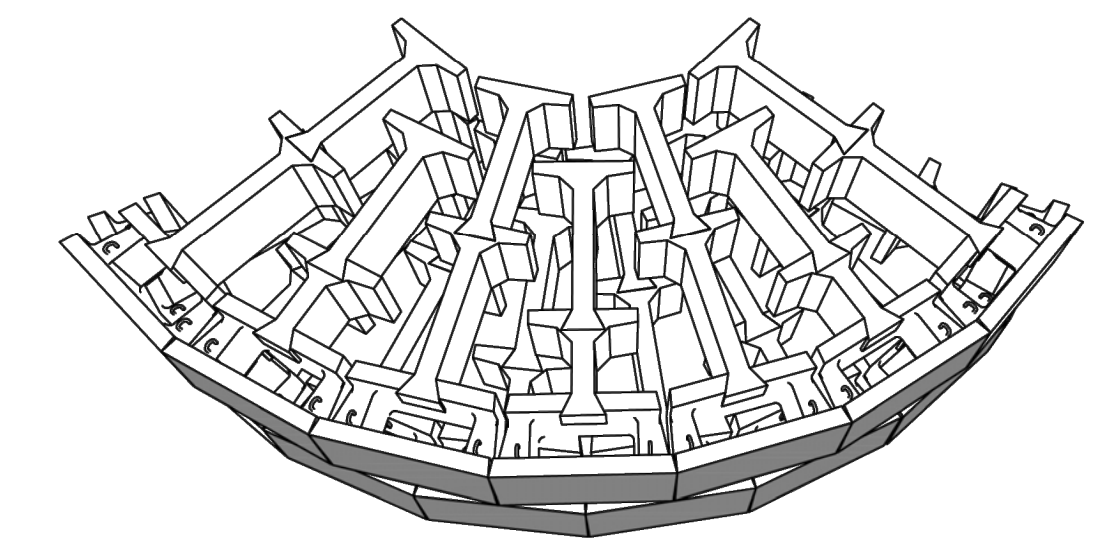
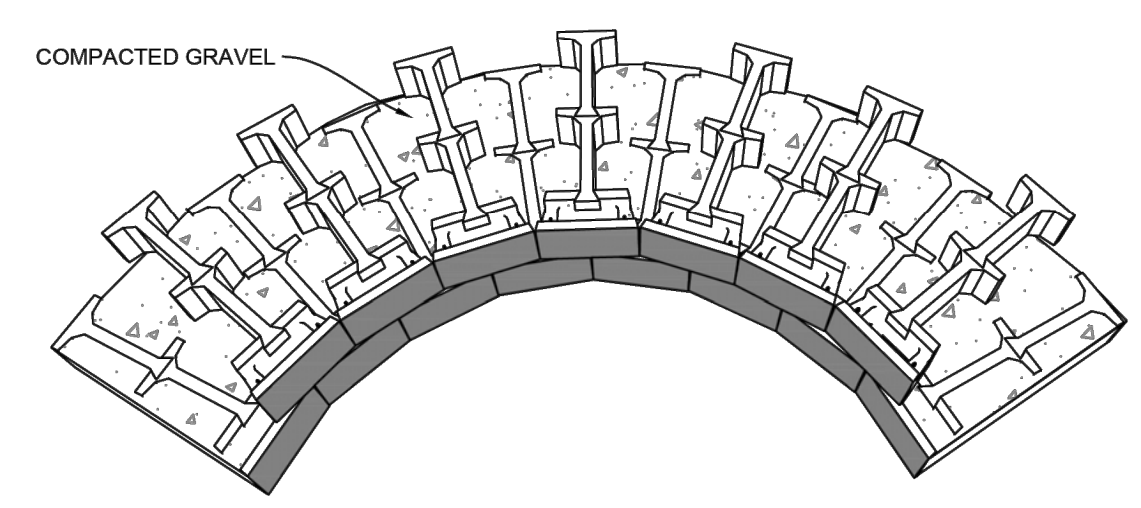
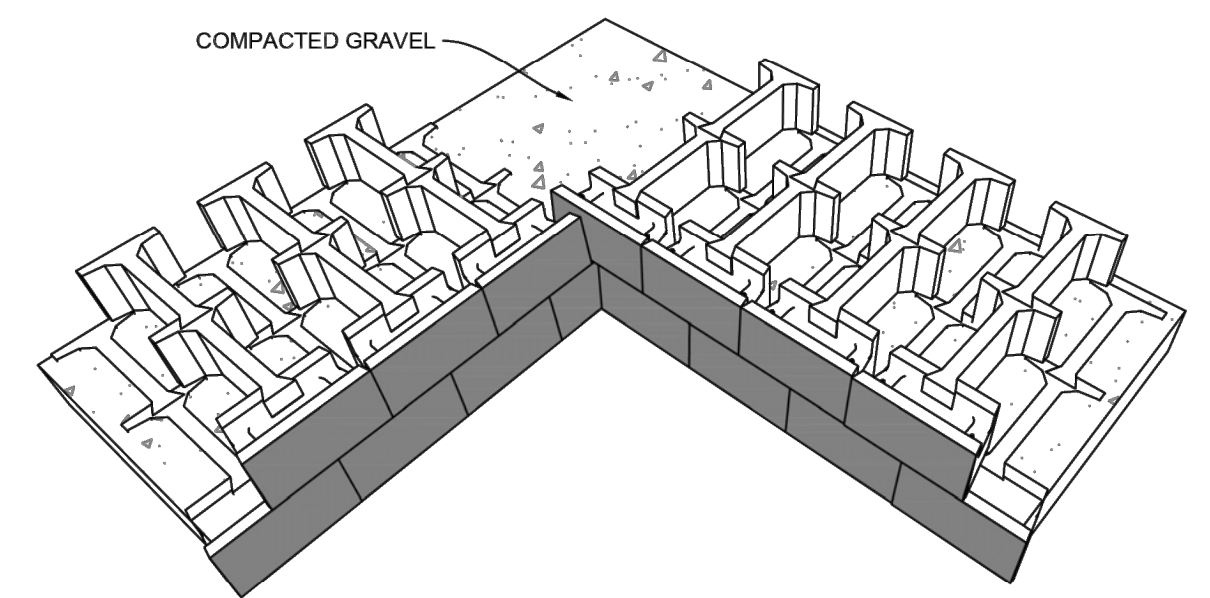
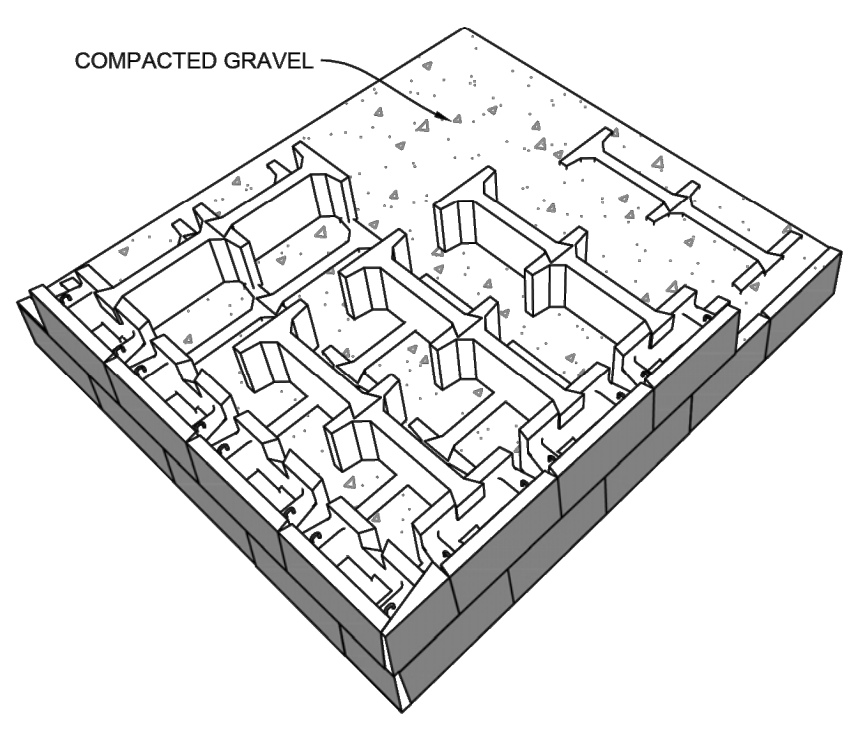
**CLAY / IMPERVIOUS SWALE**



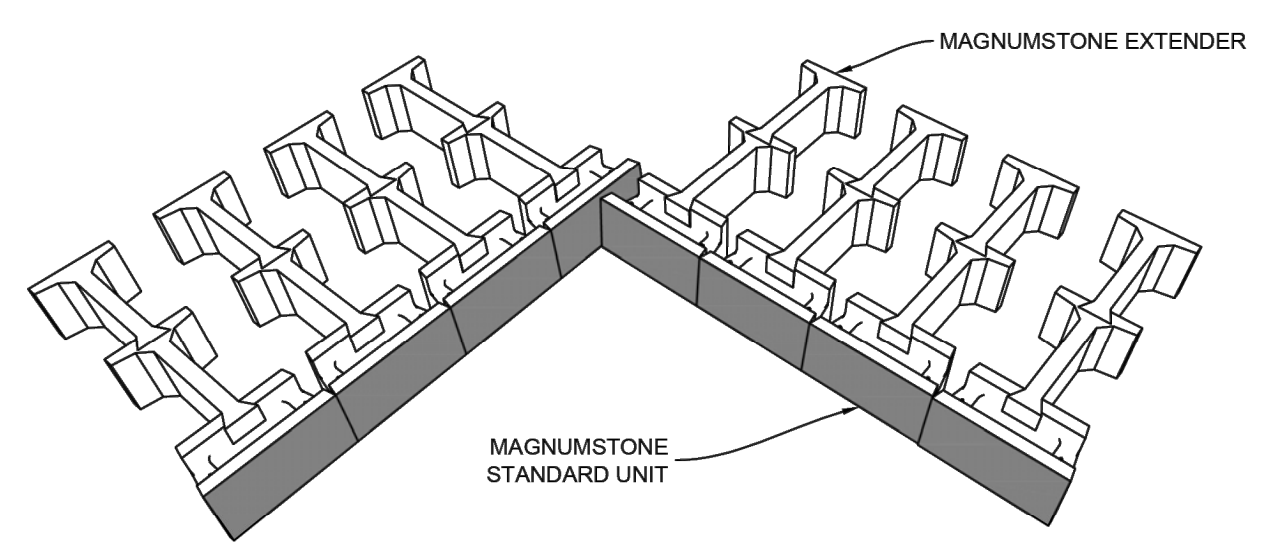
**LEVELING PAD**



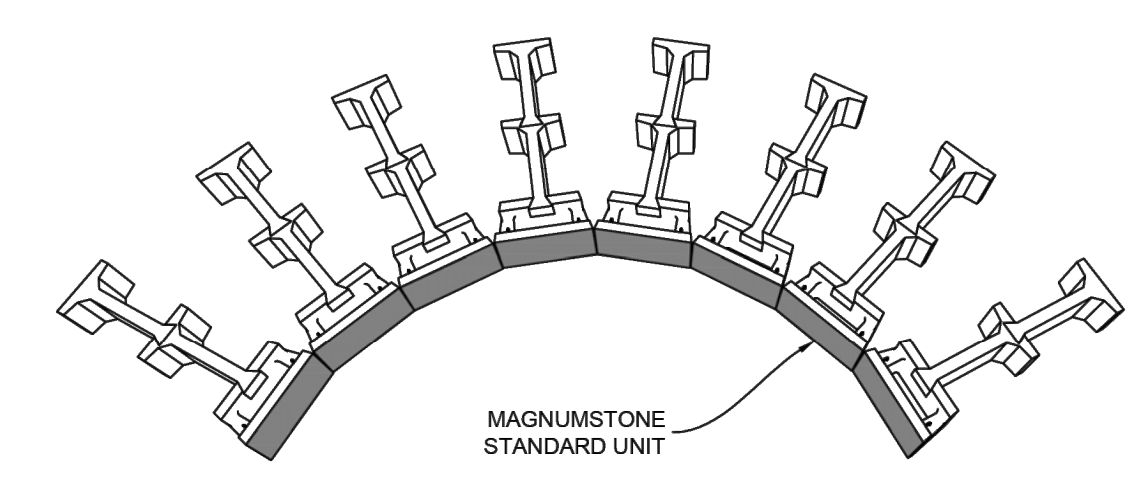
**BASE STEP UP**



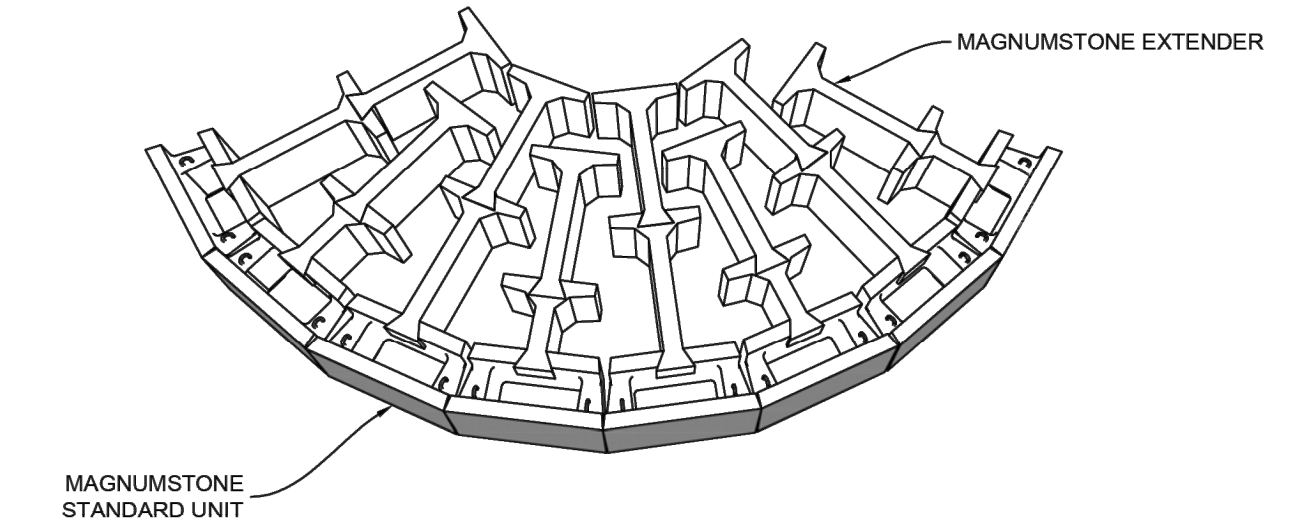
**OUTSIDE CORNER**



**INSIDE CORNER**



**INSIDE CURVE**



**OUTSIDE CURVE**

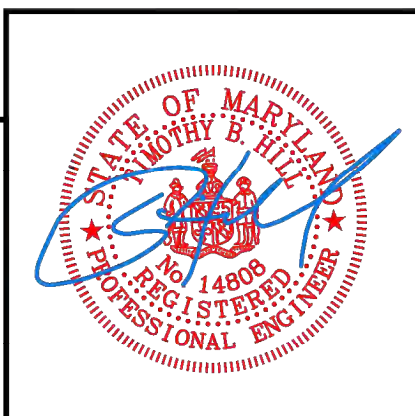
SUBDIVISION		SECTION / AREA		LOT No.	
JOURNEY'S END		N/A		LOTS 1 THRU 3	
PLAT NO.	BLOCK NO.	ZONE	TAX / ZONE	ELEC. DIST.	CENSUS TR.
26307	N/A	R-ED	25	2	602700

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**JOURNEY'S END**  
**LOTS 1 THRU 3 AND**  
**OPEN SPACE LOTS 4 & 5**  
 ZONED: R-ED  
 PREVIOUS HOWARD COUNTY FILES: PLAT #18132, F-05-134  
 TAX MAP NO.: 25 GRID NO.: 20 PARCEL NO.: 72  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: APRIL 6, 2023

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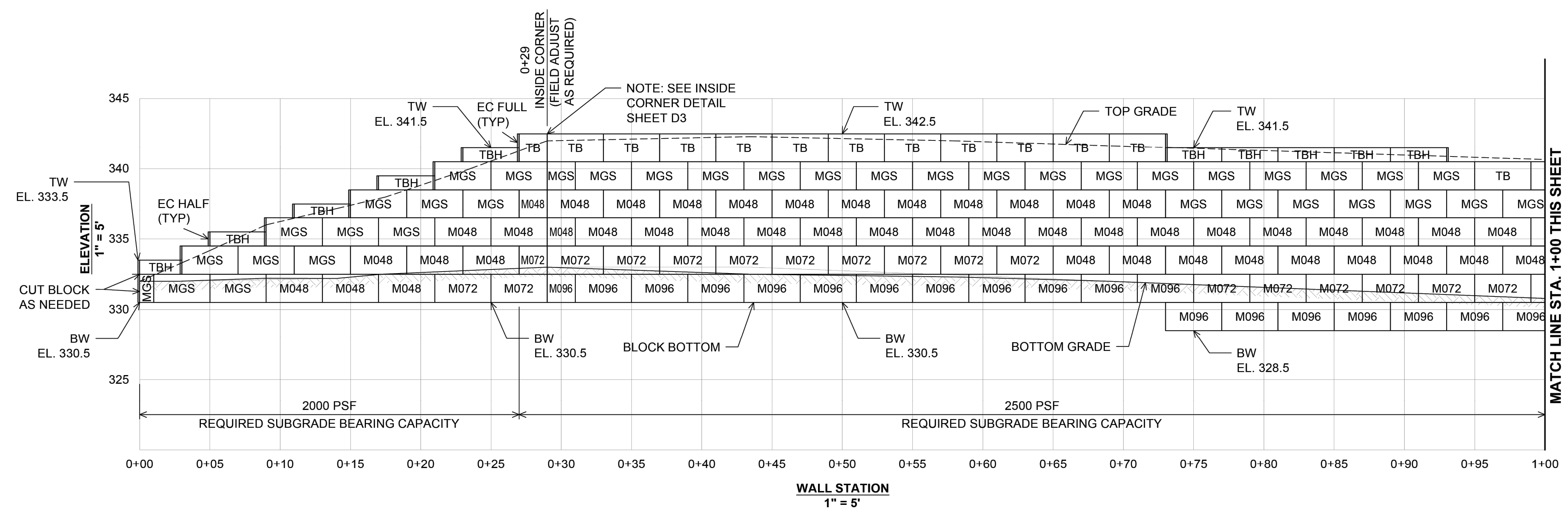


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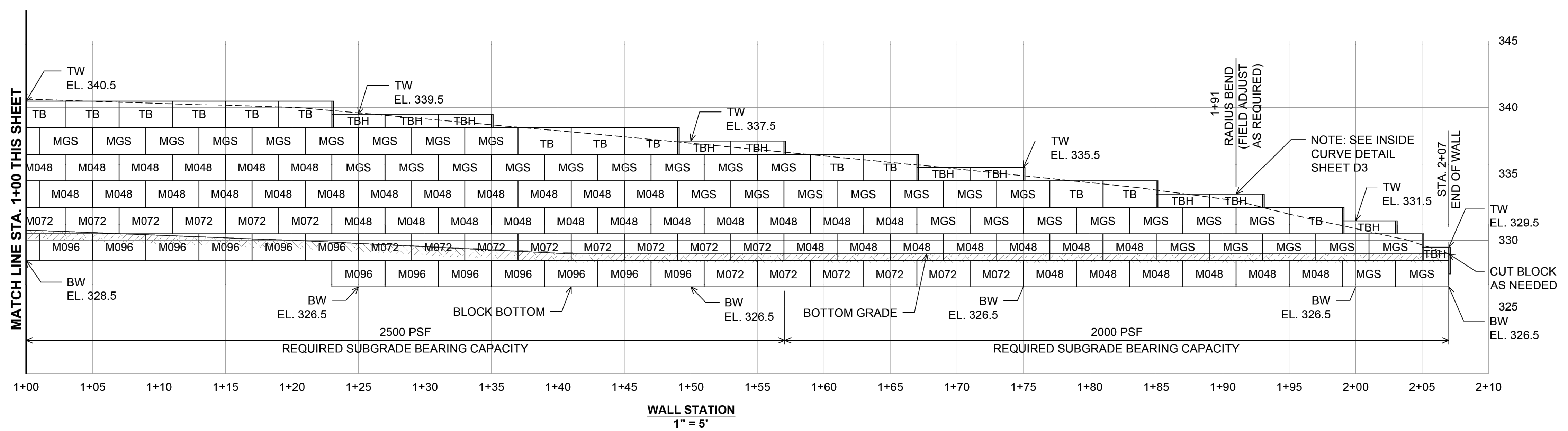
**MAGNUMSTONE GRAVITY RETAINING WALL TYPICAL DETAILS**  
**JOURNEY'S END**  
 HOWARD COUNTY, MARYLAND

REVISION NO.	DESCRIPTION	DATE	JOB NUMBER: 22181B	DESIGNED BY: HM/AM
			SCALE: AS SHOWN	DRAWN BY: AM
			DATE: 12/19/2022	APPROVED BY: HM

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
DocuSigned by: <i>[Signature]</i>	4/4/2024
Chief, Division of Land Development Developed by: <i>[Signature]</i>	Date 4/2/2024
Chief, Development Engineering Division Developed by: <i>[Signature]</i>	Date 4/4/2024
Director - Department of Planning and Zoning <i>[Signature]</i>	Date



**MAGNUMSTONE WALL ELEVATION**  
1" = 5'



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1" = 5'

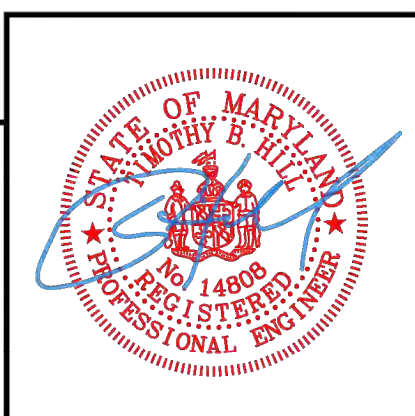
SUBDIVISION		SECTION/AREA		LOT No.	
JOURNEY'S END		N/A		LOTS 1 THRU 3	
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**MAGNUMSTONE RETAINING WALL ELEVATION**  
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HOWARD COUNTY, MARYLAND

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