

SHEET INDEX

Table with 2 columns: NO, TITLE. Rows 1-4 detailing supplemental plans for grading, landscape, stormwater, and sediment control.

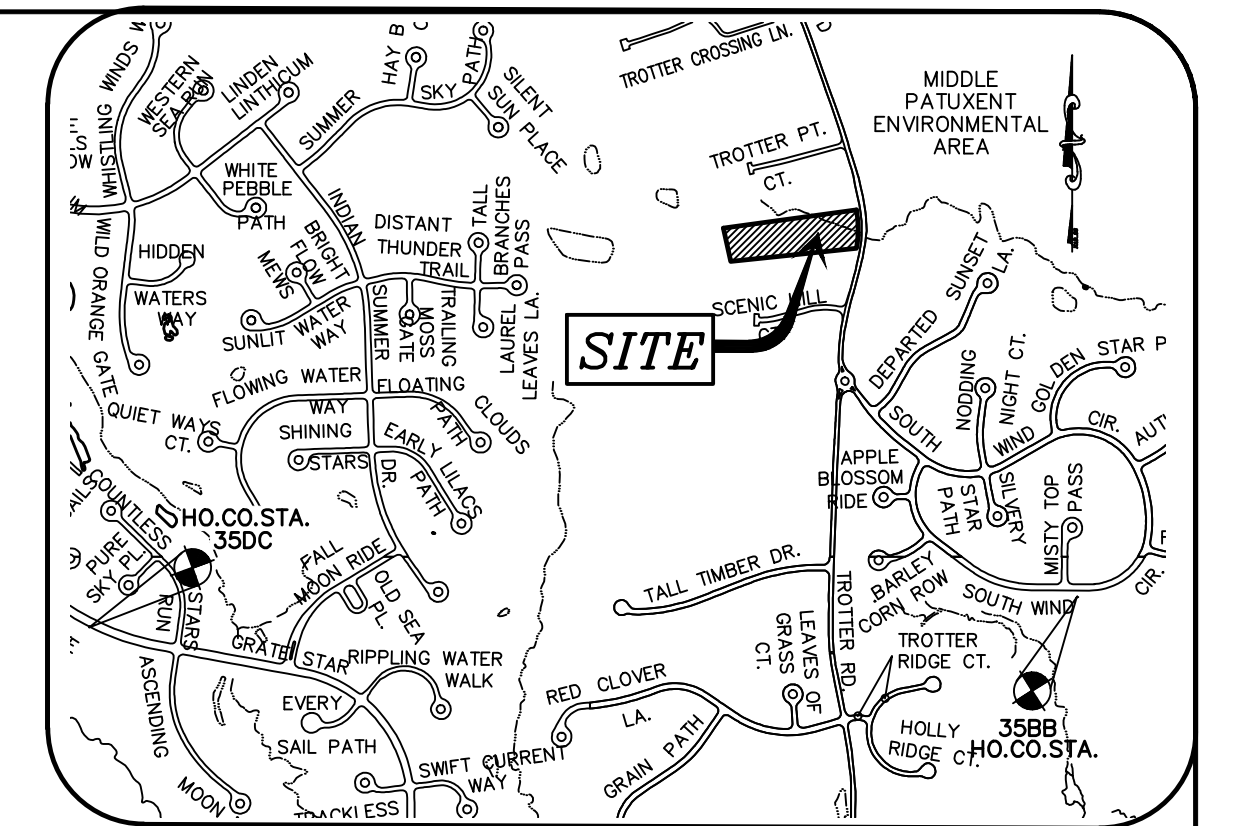
Table with 5 columns: SYMBOL, RATING, NAME, Kw FACTOR, MAP. Lists soil descriptions like Gladstone loam and Glenville-baile silt loams.

DENSITY AND OPEN SPACE CALCULATIONS:

GROSS AREA OF THE SITE = 2.95 AC
AREA OF FLOODPLAIN (ON-SITE) = 0.62 AC
NET AREA OF THE SITE = 2.33 AC

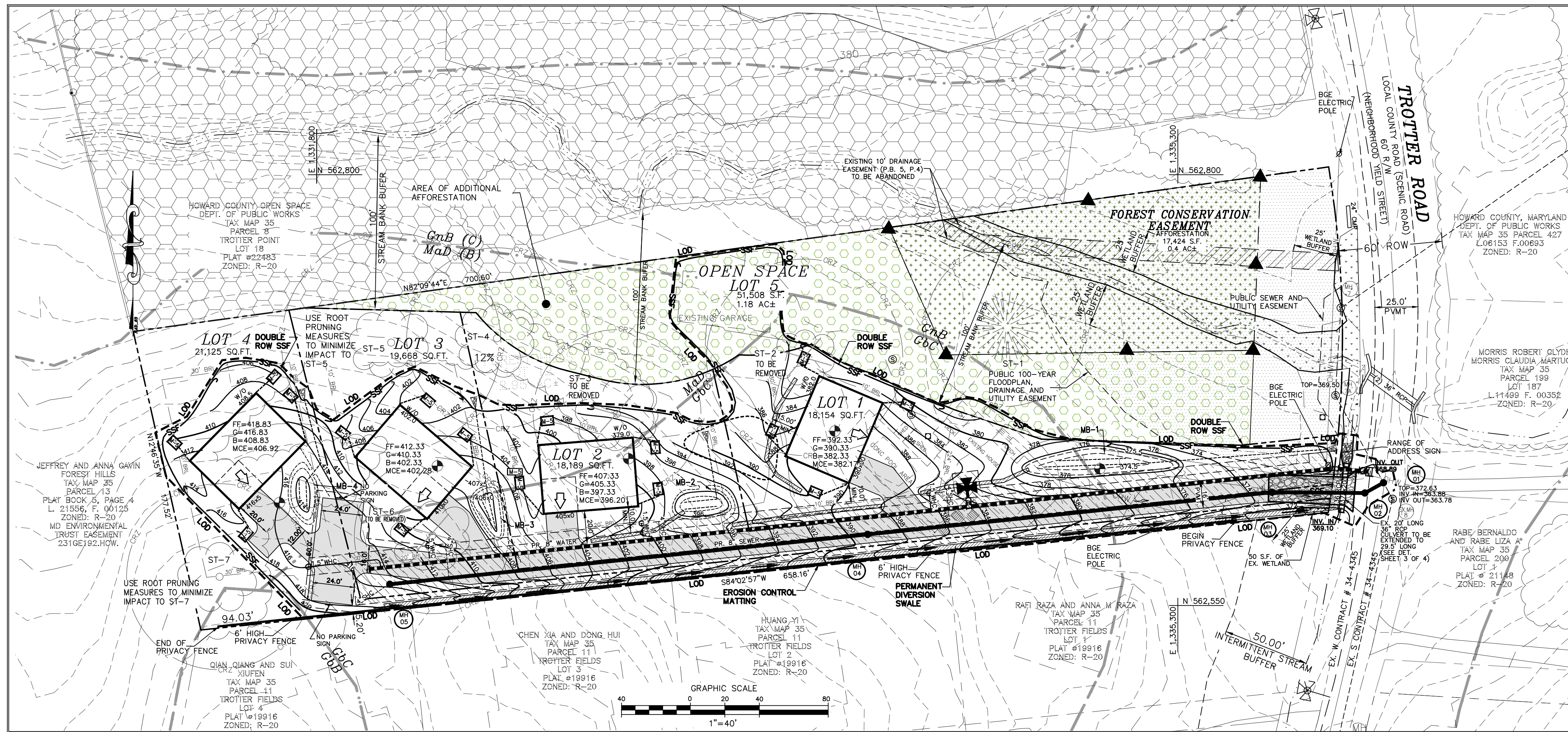
MIHU TRACKING CHART

Table with 2 columns: CATEGORY, QUANTITY. Lists MIHU tracking items like number of lots, MIHU provided onsite, and MIHU fee-in-lieu.



GENERAL NOTES:

- 1. THIS SUBJECT PROPERTY IS ZONED R-20 PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
2. PARCEL BACKGROUND: ADDRESS: 5808 TROTTER ROAD, CLARKSVILLE MD.
3. PROJECT BOUNDARY IS BASED ON A FIELD RAIN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT JUNE, 2021 BY MILDENBERG, BOENDER & ASSOC.



LEGEND: AREA OF WETLANDS, FOREST CONSERVATION EASEMENT, 100-YEAR FLOODPLAIN LIMIT, SUPER SILT FENCE, etc.

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION: CHANGELINE SIGNS, ROAD BLOCKS, etc.

DEMOLITION PLAN: EX. STRUCTURE TO BE REMOVED, EX. 30.5' CHERRY TO BE REMOVED, etc.

EXISTING/PROPOSED SWALE: EX. 20' LONG 36" RCP CULVERT TO BE EXTENDED TO 26.5' LONG.

ENGINEER'S CERTIFICATION: I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS.

OWNER/DEVELOPER CERTIFICATION: I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN.

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING. Chief, Development Engineering Division: Paul Dimario.

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION FLAGGING OPERATION 2-LANE, 2-WAY EQUALS THAN 40 MPH.

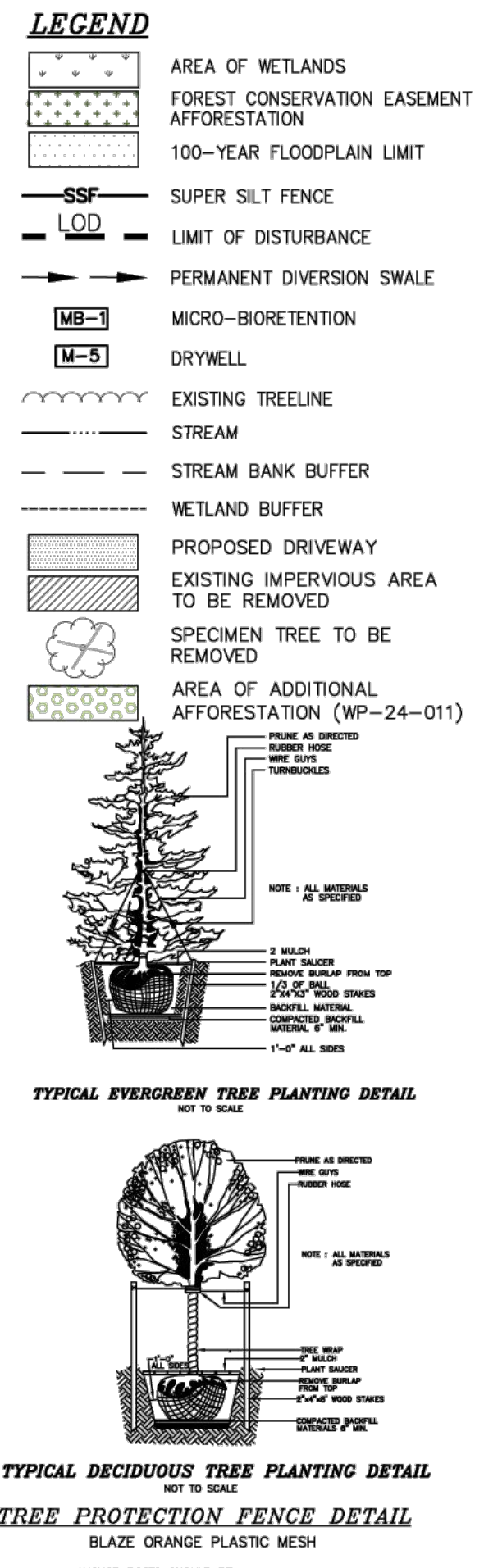
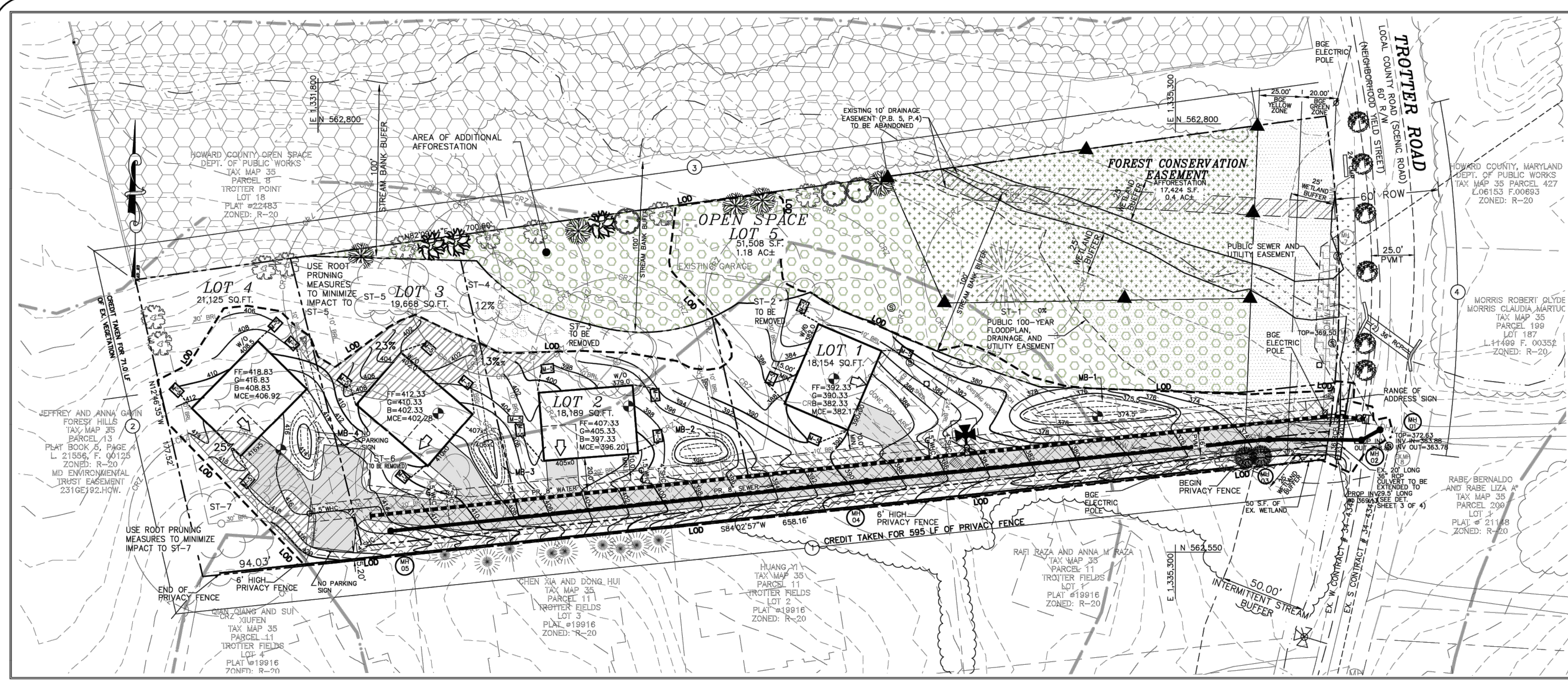
DEVELOPER/OWNER: TROTTER ESTATES, LLC BY AD&C MANAGEMENT CO. GREENBELT, MD 20768.

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.

31. THIS PROJECT IS A SUBJECT TO ALTERNATIVE COMPLIANCE (WP-24-011) TO SECTIONS: 16.120(B)(4)(iii)(B) WHICH PROHIBITS THE PLACEMENT OF ENVIRONMENTAL FEATURES AND FOREST CONSERVATION EASEMENTS ON RESIDENTIAL LOTS LESS THAN 10 ACRES IN SIZE.

APPROVAL OF ALTERNATIVE COMPLIANCE TO SECTION 16.1205(a)(3) IS SUBJECT TO FOLLOWING CONDITIONS: THE REMOVAL OF SPECIMEN TREES #2, #3 AND #6 IS HEREBY PERMITTED, AS SHOWN ON THE ALTERNATIVE COMPLIANCE PLAN EXHIBIT.

MILDENBERG, BOENDER & ASSOC., INC. Engineers Planners Surveyors. 8318 FOREST STREET, SUITE 300, ELICOTT CITY, MD 21043. Project: 21-018, date: FEB. 2024.



CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT PROGRAM. ALL FOREST RETENTION AREAS AND ISOLATED POTENTIAL SPECIMEN TREES SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE ORANGE PLASTIC MESH FENCING AND SIGNS AS INDICATED ON THE PLANS.

GENERAL NOTES. 1. WETLANDS AND FOREST STAND DELINEATION PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. IN SEPTEMBER 2021.

SPECIMEN TREE CHART table with columns: KEY, SPECIES, SIZE (IN DBH), CRZ (FEET), STATE CHAMPION IN DBH, % CRZ DISTURBED, COMMENTS.

PRE-CONSTRUCTION MEETING. AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION OF THE FENCING IN THIS MANNER WILL BE INSTALLED, THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL TAKE PLACE ON THE SITE.

SCHEDULE A: PERIMETER LANDSCAPE EDGE table with columns: CATEGORY, ADJACENT TO PERIMETER PROPERTIES, ADJACENT TO ROADWAY, TOTAL.

STREET TREE PLANTING SCHEDULE table with columns: QUANTITY, SYMBOL, BOTANICAL NAME, COMMON NAME, SIZE.

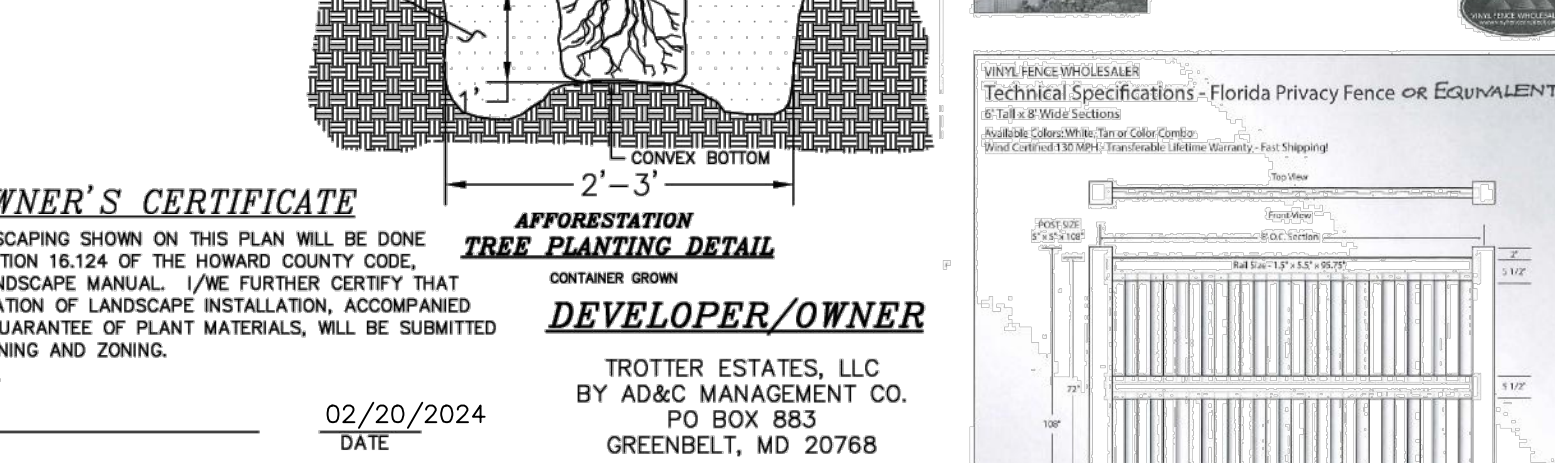
STREET TREE CALCULATIONS table with columns: STREET NAME, PERIMETER LENGTH, PLANTING REQUIREMENT, TREES REQUIRED, TREES PROVIDED.

ADDITIONAL AFFORESTATION PLANT LIST-WP-24-011 (OPEN SPACE LOT 5, 0.6 AC) table with columns: QTY, SPECIES, SHADE, MOIST., WET., MIN. O.C., SIZE & SPACING, REMARKS.

MITIGATION TREE PLANTING SCHEDULE (WP-24-011) table with columns: QUANTITY, SYMBOL, BOTANICAL NAME, COMMON NAME, SIZE.

PERIMETER LANDSCAPE PLANTING SCHEDULE table with columns: QUANTITY, SYMBOL, BOTANICAL NAME, COMMON NAME, SIZE.

DEVELOPER'S/OWNER'S CERTIFICATE. I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.12A OF THE HOWARD COUNTY CODE.



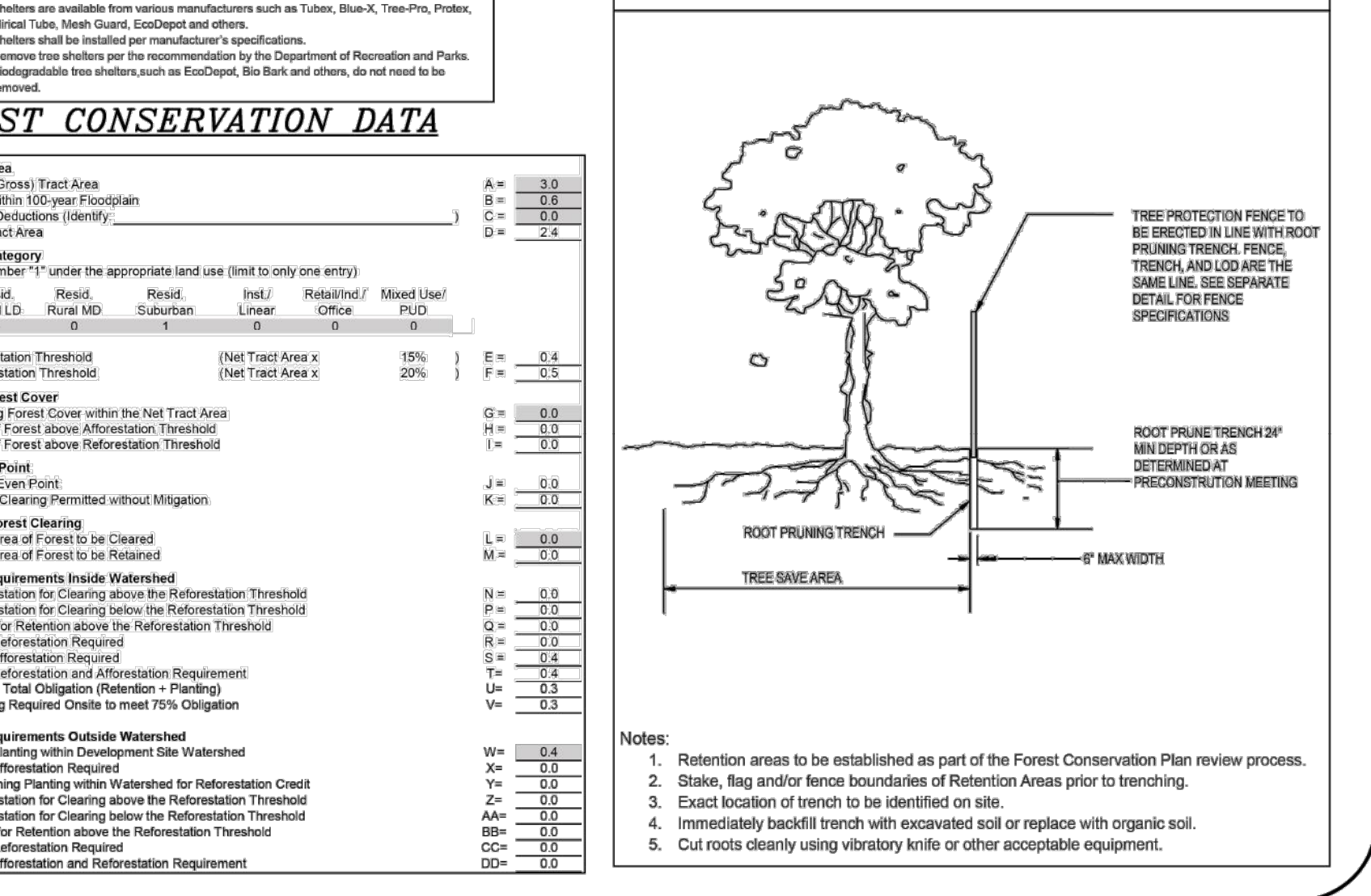
APPROVED: DEPARTMENT OF PLANNING AND ZONING. Chief, Development Engineering Division: Paul McMorris, 3/22/2024.

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. 26859, EXP DATE 08/08/25.

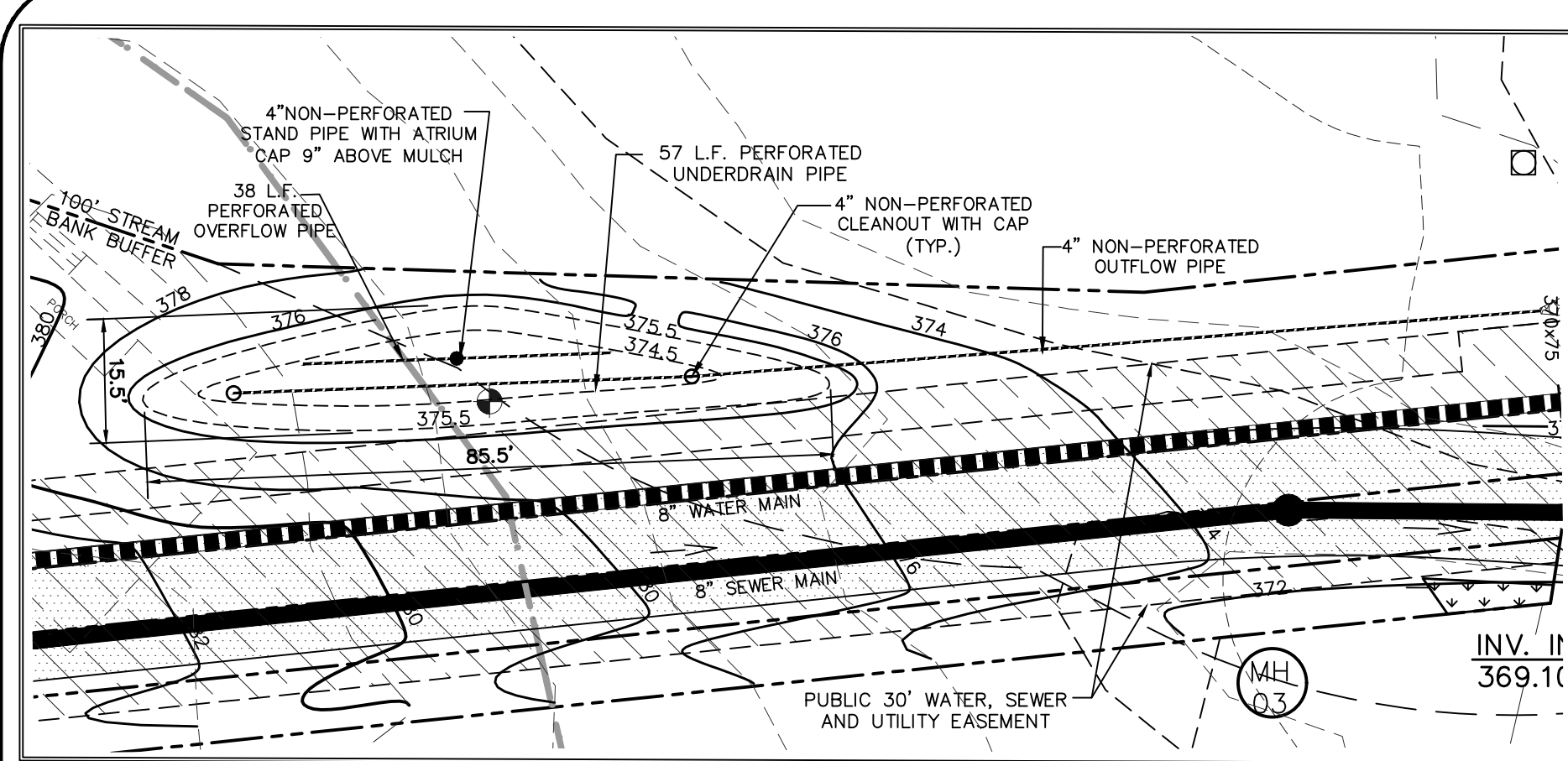
Forest Conservation Easement Signs (continued) and Forest Conservation Data table with columns: Net Total Area, Area within 100-year Floodplain, etc.

POST CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT PROGRAM. ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD. ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.

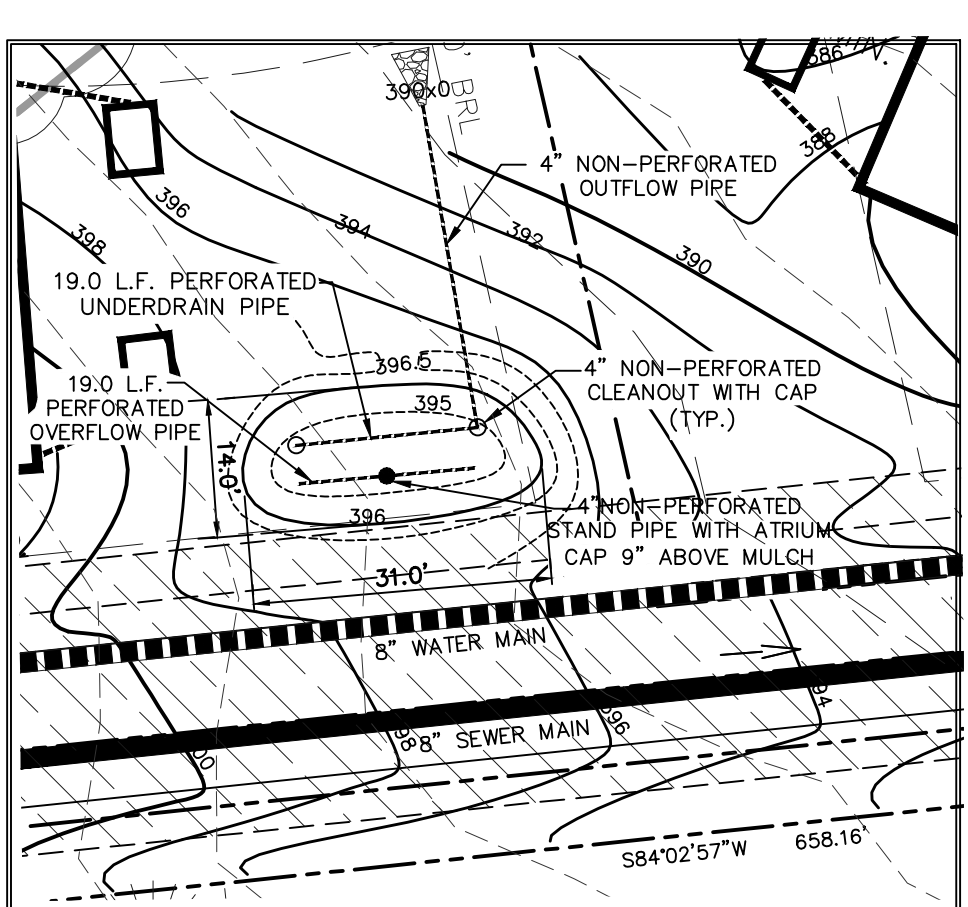
PLANTING SPECIFICATIONS AND NOTES. PROTECTION FENCING AND SILT FENCES FOR SEDIMENT AND EROSION CONTROL ARE TO BE INSTALLED AS A FIRST ORDER OF BUSINESS. SEE PLAN FOR LOCATIONS.



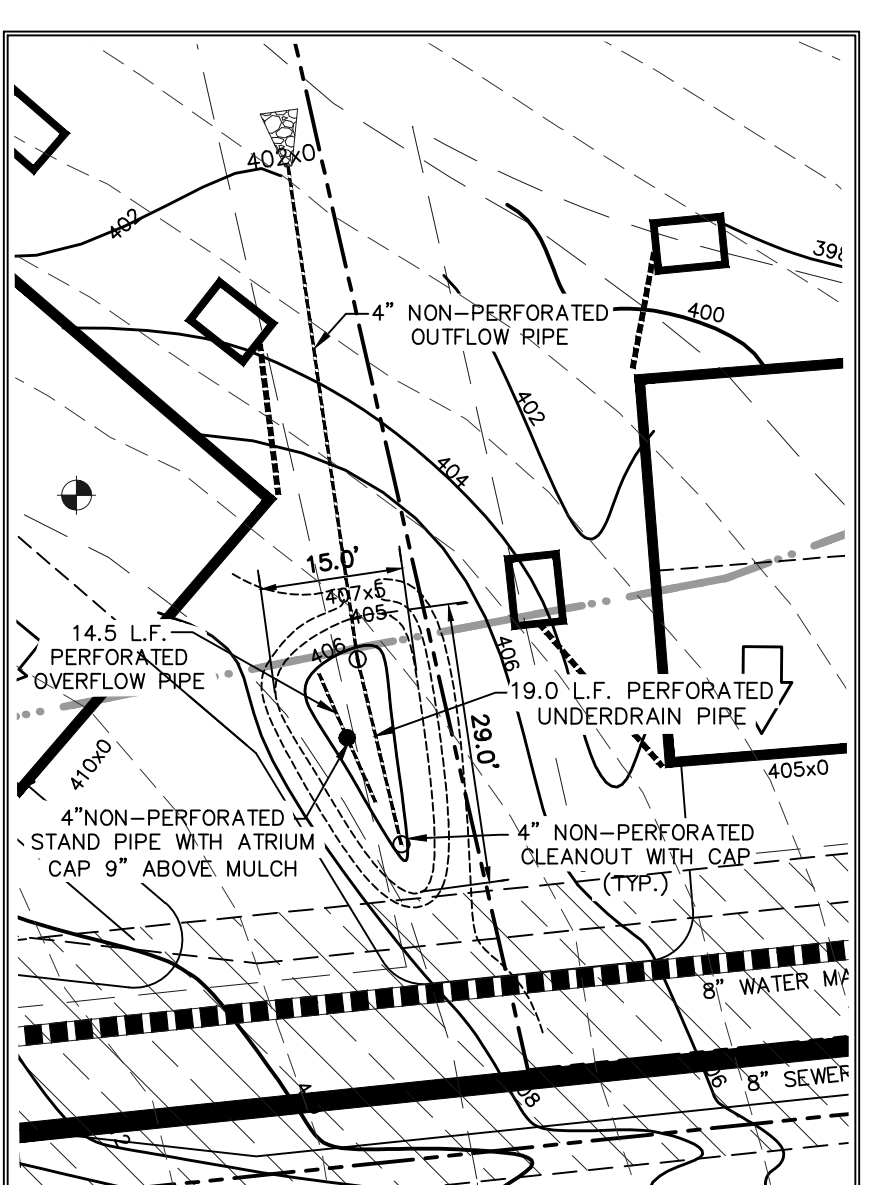
Project information block including date (FEB. 2024), project name (TROTTER ESTATES), and contact information for MILDENBERG, BOENDER & ASSOC., INC. (Engineers, Planners, Surveyors).



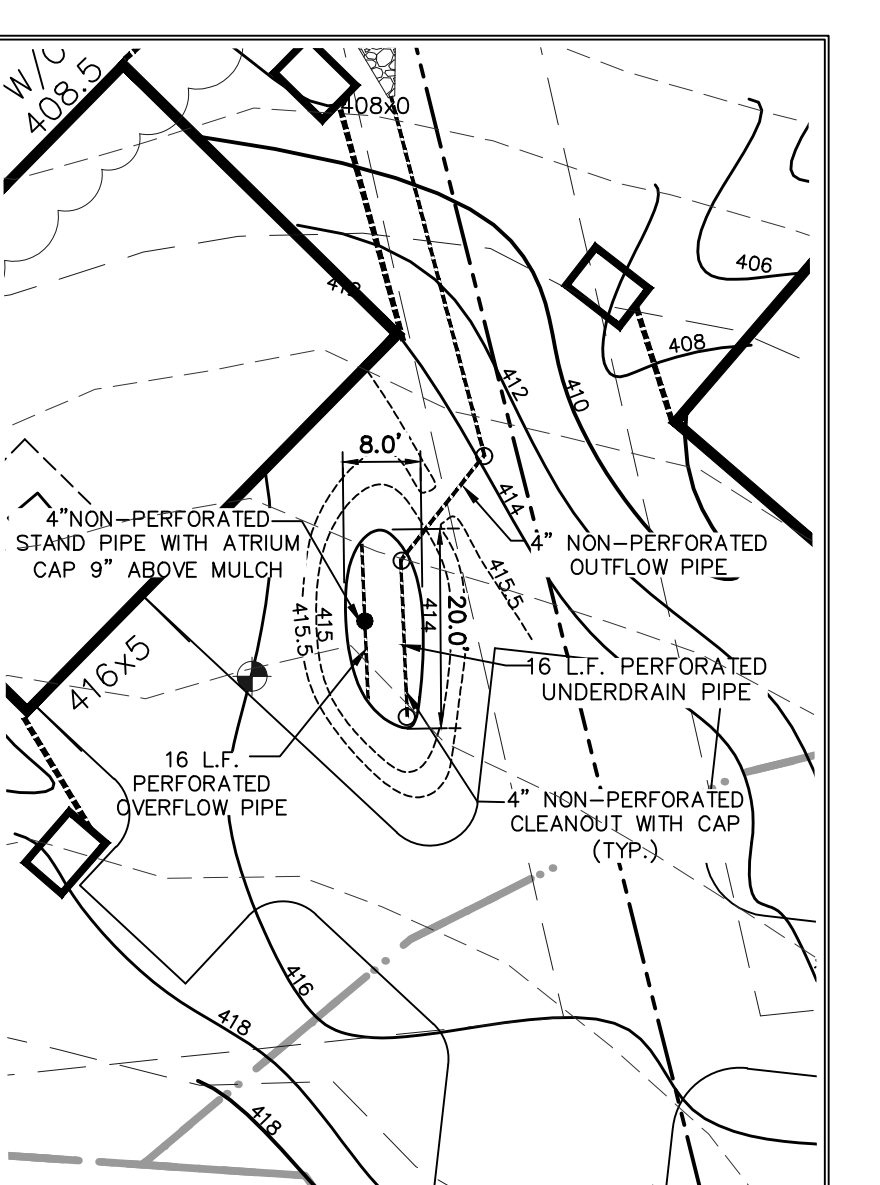
MB-1 DETAIL
GRAPHIC SCALE
1"=20'



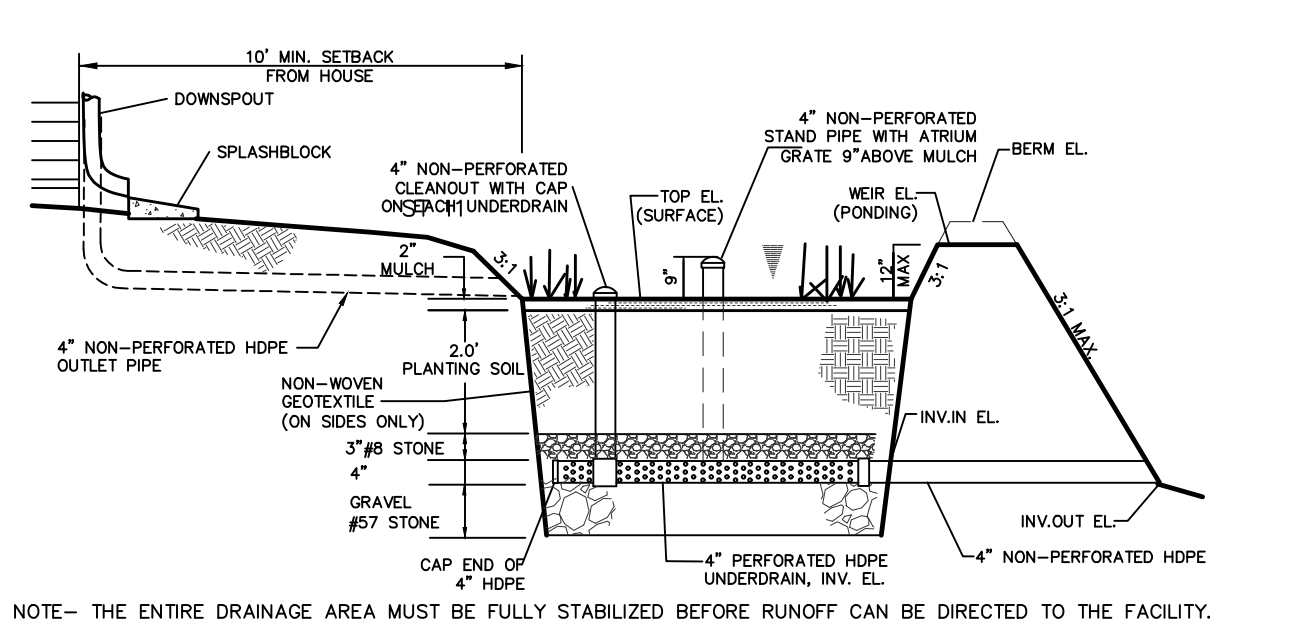
MB-2 DETAIL
GRAPHIC SCALE
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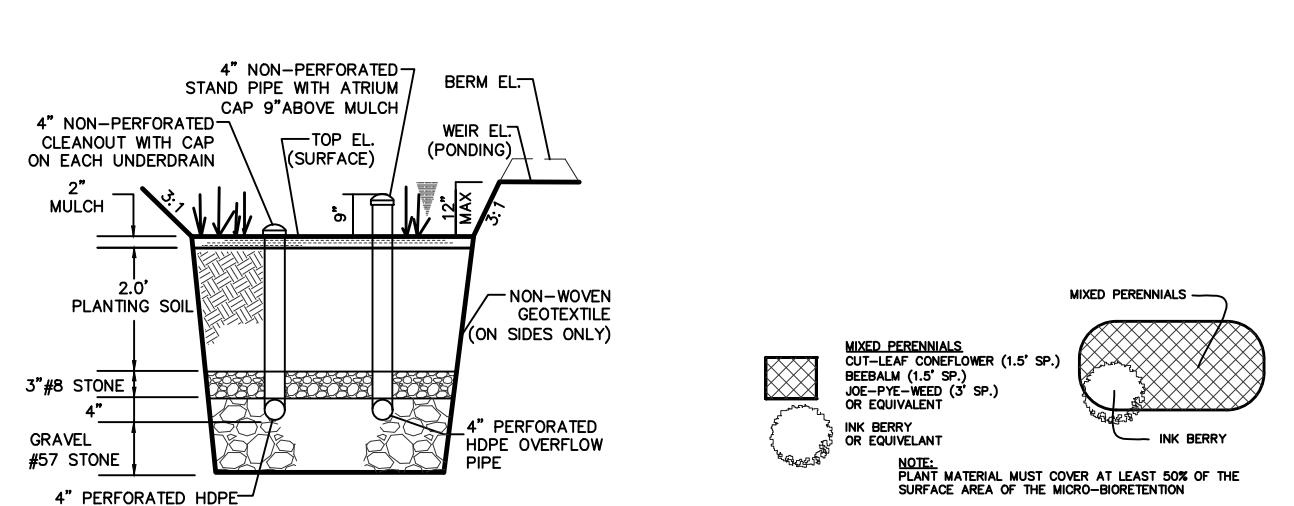
MB-3 DETAIL
GRAPHIC SCALE
1"=20'



MB-4 DETAIL
GRAPHIC SCALE
1"=20'

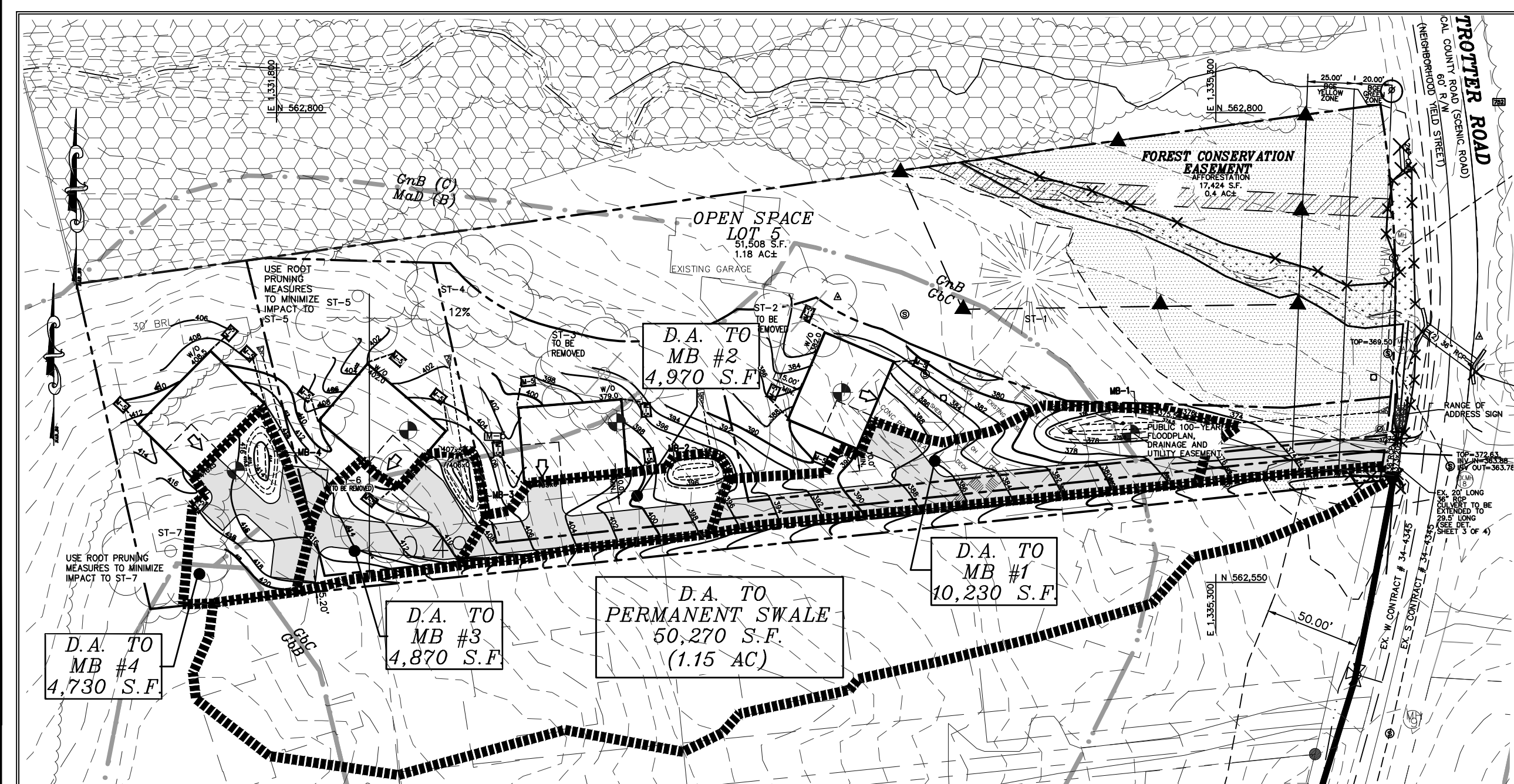


TYPICAL MICRO-BIORETENTION PROFILE
NTS

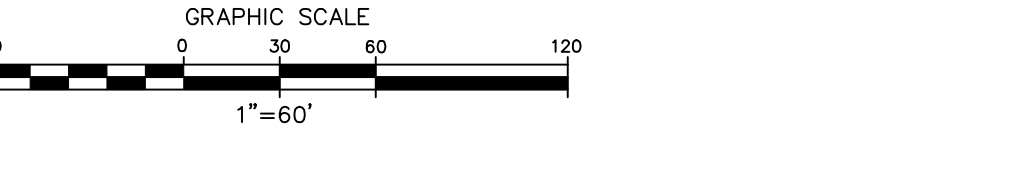
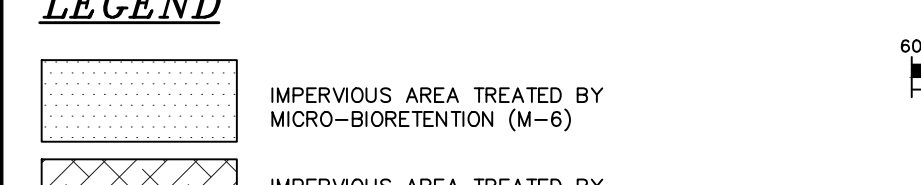


TYP. SECTION MICRO-BIORETENTION (M-6)
NTS

TYP. MICRO-BIORETENTION (M-6) PLANTING DETAIL
NOT TO SCALE



DRAINAGE AREA MAP TO SWM AND PERMANENT SWALE



PERMANENT DIVERSION SWALE TSSM #1 DATA

DRAINAGE AREA:	1.15 AC.	SHEAR STRESS	
C FACTOR:	0.31	$t = (V)(R)(S_w)$	
I (10-YEAR STORM):	6.6	$v_c = 52.4$	
Q = CIA:	2.35 CFS	$R = 0.17$	
CHANNEL SLOPE:	7.3%	$S = 7.3%$	
MANNING'S N:	0.035	$t = 0.77$	
CHANNEL DEPTH:	1.0'		
CHANNEL WIDTH:	3.0'		
CHANNEL SIDES SLOPE:	3:1		
FLOW DEPTH:	0.17'		
10-YEAR VELOCITY:	3.07 FPS		

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

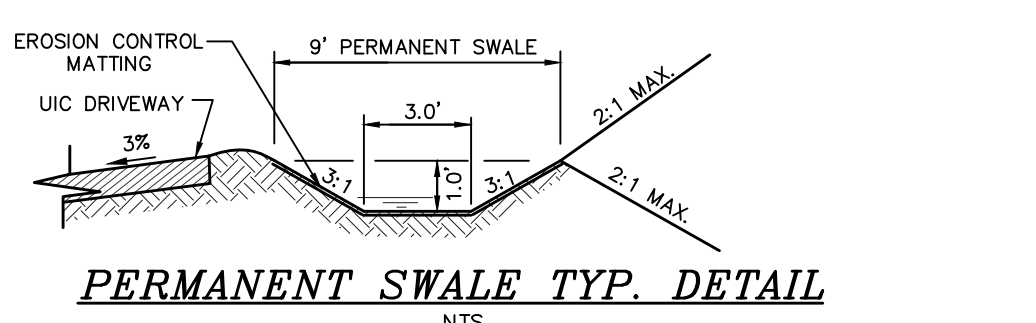
03/12/24 **Sam Alomer** DATE: 02/20/2024
PRINTED NAME: Alomer MD REGISTRATION NO. (P.E.): 26859

OWNER/DEVELOPER CERTIFICATION
I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR 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.

OWNERS/DEVELOPER'S SIGNATURE: AMIR AHMAD DATE: 02/20/2024
PRINTED NAME & TITLE: AMIR AHMAD

HOWARD SCD SIGNATURE BLOCK
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Alexander Bratchie 3/20/2024
HOWARD SOIL CONSERVATION DISTRICT DATE:

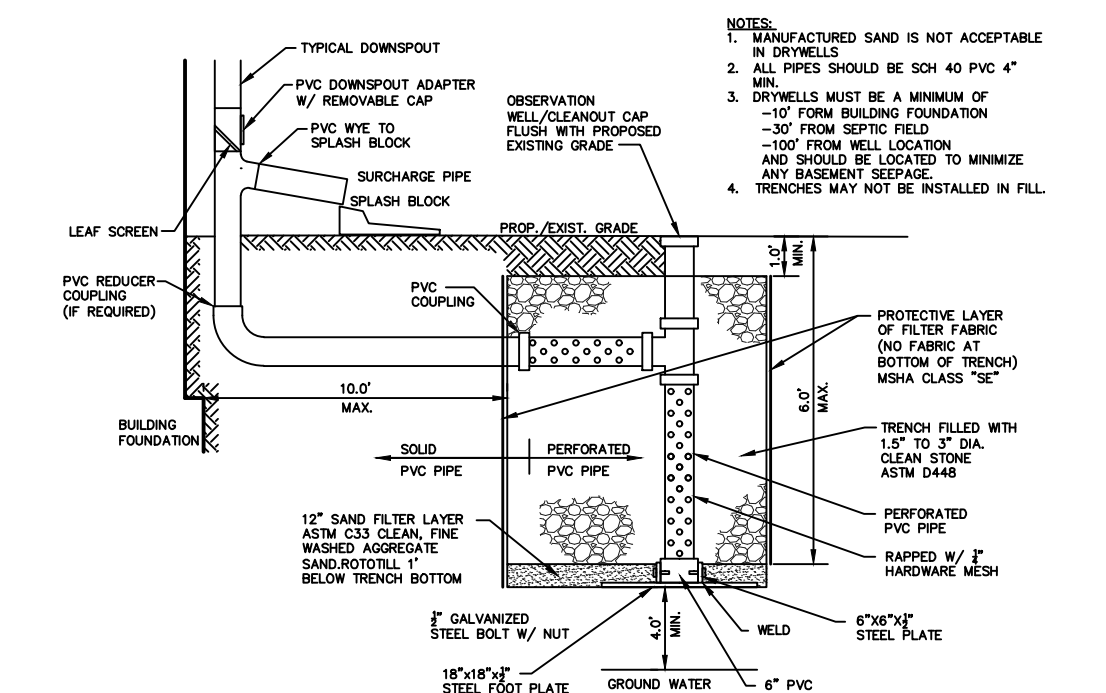
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Douglass By: **Paul DiMarco** 3/22/2024
CHIEF, DEVELOPMENT AND PLANNING DIVISION DATE: 3/22/2024
CHIEF, DIVISION OF LAND DEVELOPMENT DATE:



PERMANENT SWALE TYP. DETAIL
NTS

DEVELOPER/OWNER
TROTTER ESTATES, LLC
BY AD&C MANAGEMENT CO.
PO BOX 883
GREENBELT, MD 20768

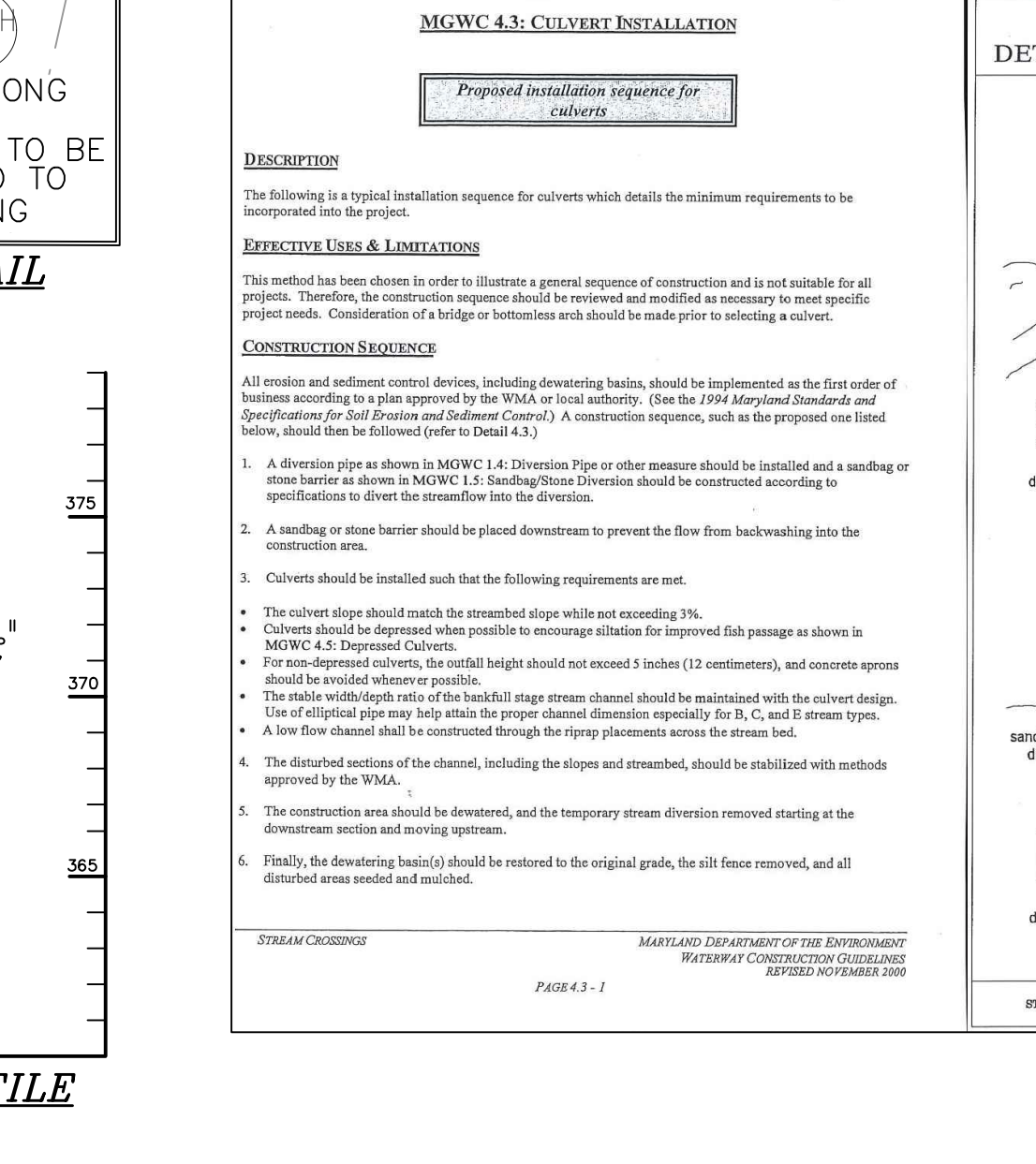
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 26859, EXP. DATE 08/08/25
03/12/24 **Sam Alomer** DATE: 02/20/2024
SAMER A. ALOMER, P.E. DATE:



DRYWELL (M-5) TYP. DETAIL
NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (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 ENSURE 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 PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO ENSURE 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.



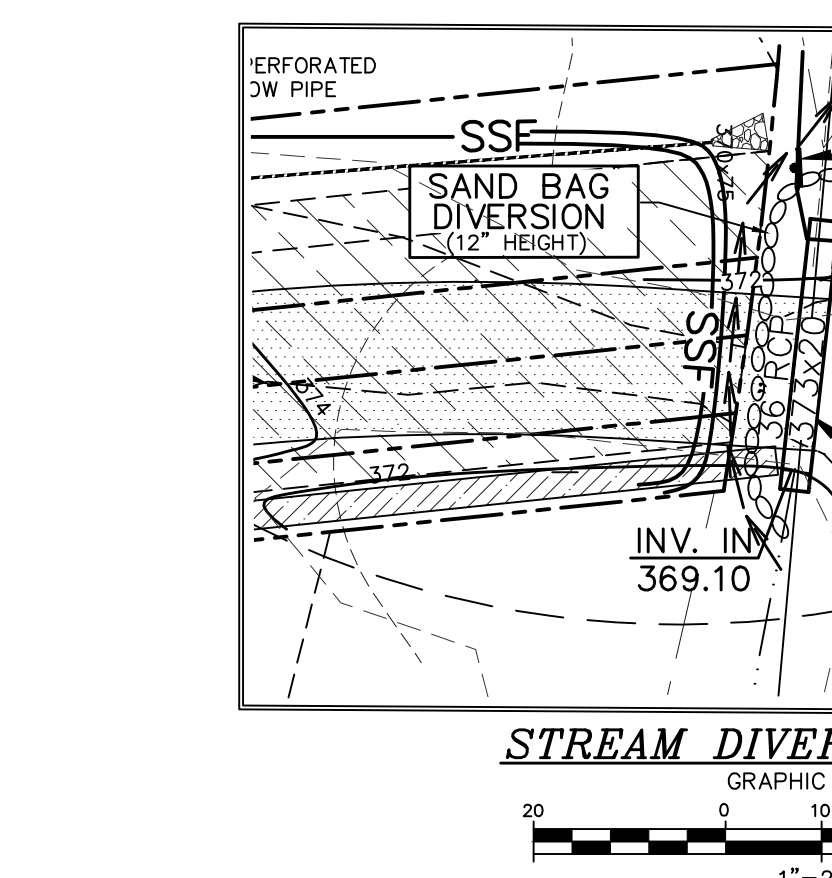
36\"/>

MICRO-BIORETENTION SCHEDULE

FACILITY	TOP EL. (SURFACE)	WIR EL. (PONDING)	BERM EL.	INV. IN	INV. OUT	SURFACE AREA	PONDING AREA	PONDING DEPTH	GRAVEL BELOW UNDERDRAIN	SIDE SLOPE
MB-1	374.50	375.50	376.00	371.67	371.75	380 S.F.	880 S.F.	12"	18"	3:1
MB-2	395.00	396.00	396.50	392.17	390.00	170 S.F.	360 S.F.	12"	15"	3:1
MB-3	406.00	407.00	407.50	403.17	402.00	120 S.F.	310 S.F.	12"	15"	3:1
MB-4	414.50	415.50	416.00	411.67	408.00	130 S.F.	320 S.F.	12"	15"	3:1

SWM PRACTICES SCHEDULE

AREA	PROPOSED PRACTICES	REQUIRED ESD	PROVIDED ESD	REQUIRED Pa	PROVIDED Pa
LOT 1	M-5, MICRO-BIORETENTION (MB-2) M-5, DRYWELLS (4 EACH)	918 CF	888 CF	1.6"	1.66"
LOT 2	M-5, MICRO-BIORETENTION (MB-2) M-5, DRYWELLS (4 EACH)	331 CF	350 CF	1.6"	1.65"
LOT 3	M-5, MICRO-BIORETENTION (MB-2) M-5, DRYWELLS (4 EACH)	263 CF	279 CF	1.6"	1.68"
LOT 4	M-5, MICRO-BIORETENTION (MB-2) M-5, DRYWELLS (4 EACH)	282 CF	298 CF	1.6"	1.65"
TOTAL:		2,800 CF	2,905 CF	1.6"	1.66"



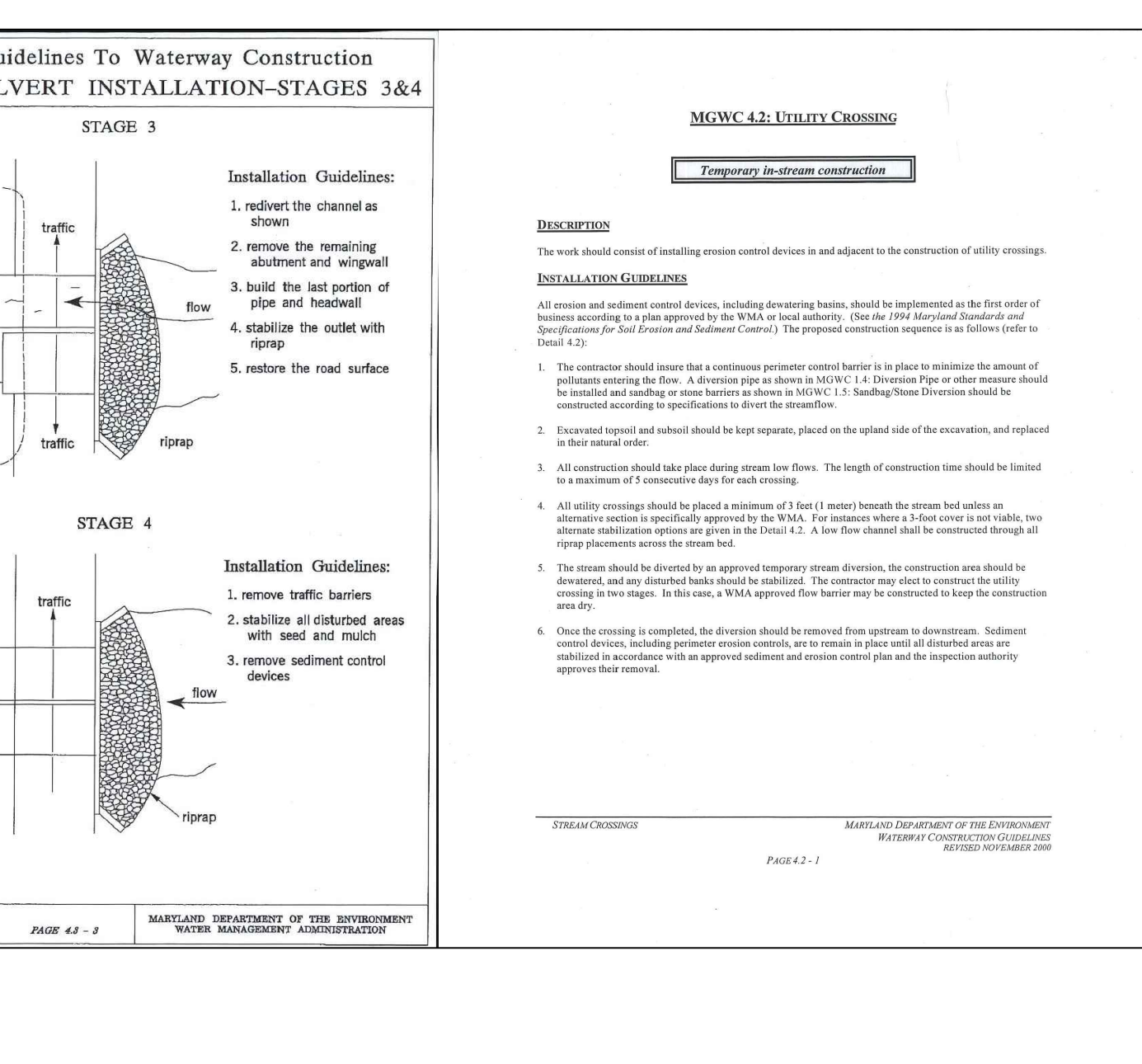
STREAM DIVERSION DETAIL
GRAPHIC SCALE
1"=20'

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

- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL. LATER 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 INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED MAINTENANCE. TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREES OR SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS AND 100-YEAR FLOODPLAINS

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS OR 100-YEAR FLOODPLAIN.
- PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN.
- DO NOT USE EXCAVATED MATERIALS AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSOLIDIFIED DEBRIS, TOXIC MATERIALS, OR ANY OTHER DELETTERIOUS SUBSTANCE. ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSOLIDIFIED DEBRIS, TOXIC MATERIALS, OR OTHER DELETTERIOUS SUBSTANCE.
- PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN.
- REPAIR AND MAINTAIN ANY SIGNIFICANT STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- ALL STABILIZATION IN THE NONTIDAL WETLANDS AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LULIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.) OATS (UNOLA SP.) OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTED, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. SEEDLINGS OF LEGUMES SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDING AND MULCHED TO REDUCE EROSION IN CONSTRUCTION ACTIVITY.
- AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM. USE 1 WATERWAY: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR. USE 2 WATERWAYS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR. USE 3 WATERWAYS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACE SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- CULVERTS SHALL BE CONSTRUCTED AND ANY RIP RAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF ACTIVITY IS TO IMPROVE WATER.



MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION
PAGE 4.1-1 TO 4.1-4
MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Project: FEB. 2024
date: 21-018
illustration: MAM
scale: MAM
approval: AS SHOWN SAA

description: revisions
date: rev.:

TROTTER ESTATES
LOTS 1-4 AND OPEN SPACE LOT 5
TAX MAP: 35 - GRID: 02 - PARCEL: 10 - LOT: 12
HOWARD COUNTY, MARYLAND
STORMWATER MANAGEMENT DETAILS
FIFTH ELECTION DISTRICT

MILDENER & ASSOC., INC.
Engineers Planners Surveyors
8318 FORREST STREET, SUITE 300, ELLICOTT CITY, MD 21043
(410) 997-0296 Fax

