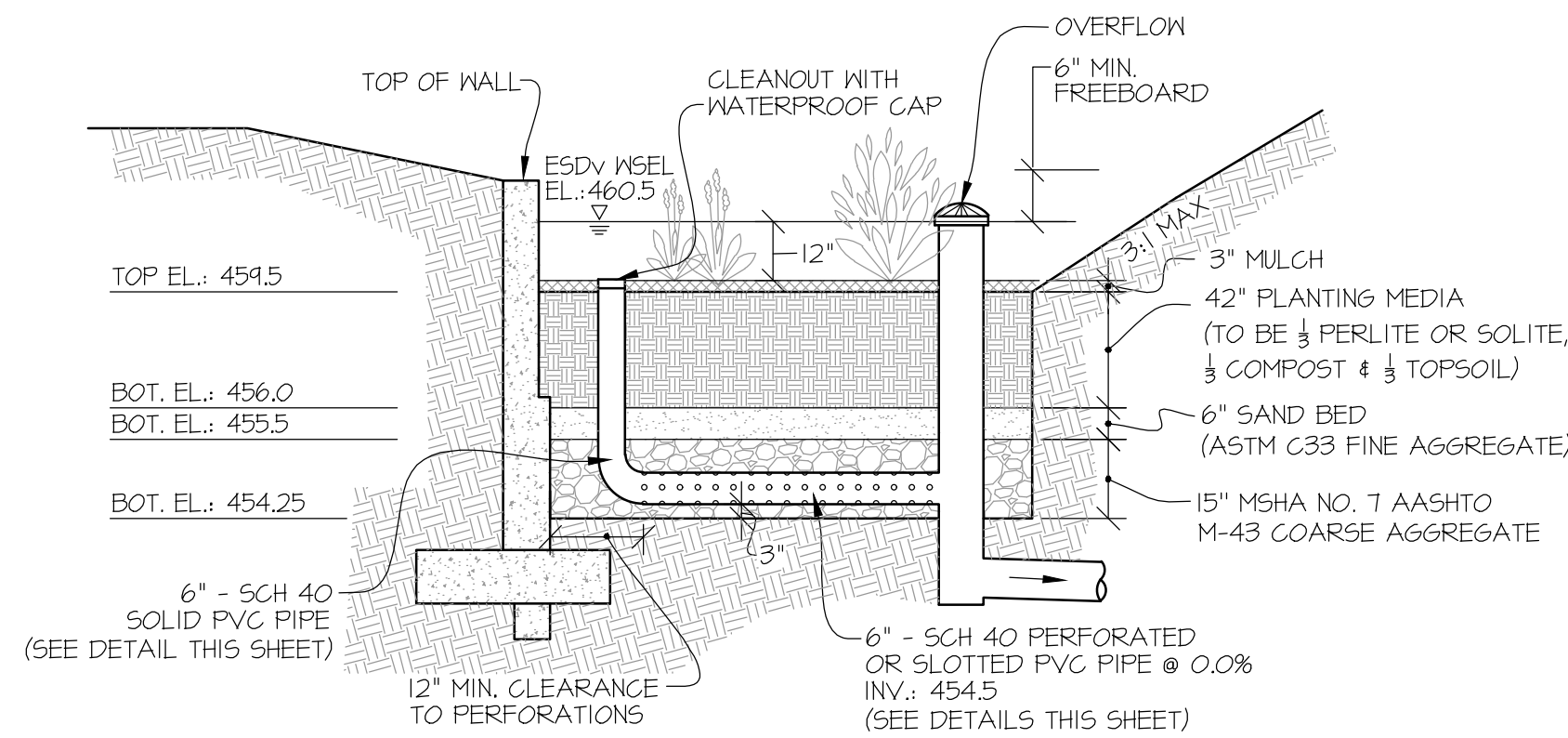
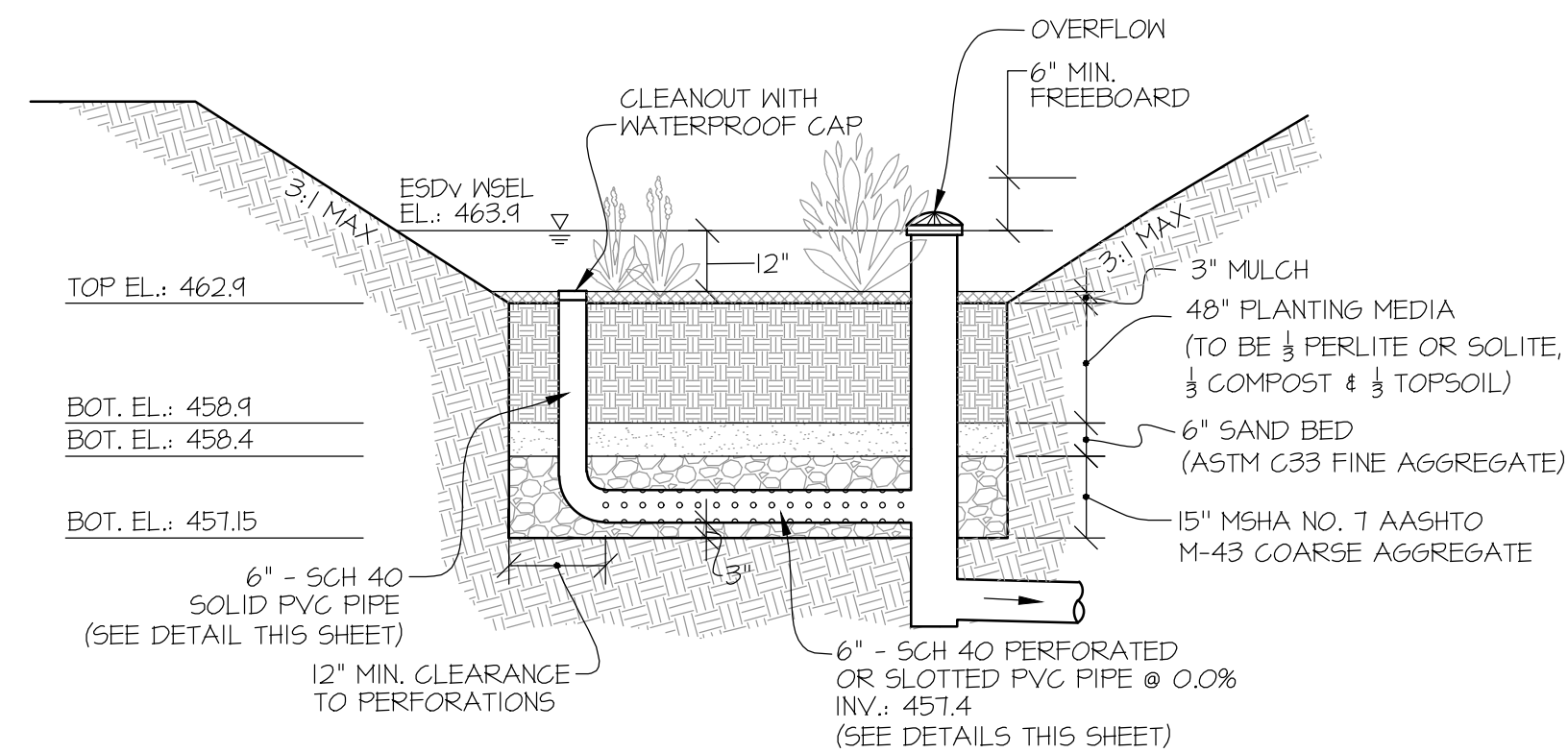


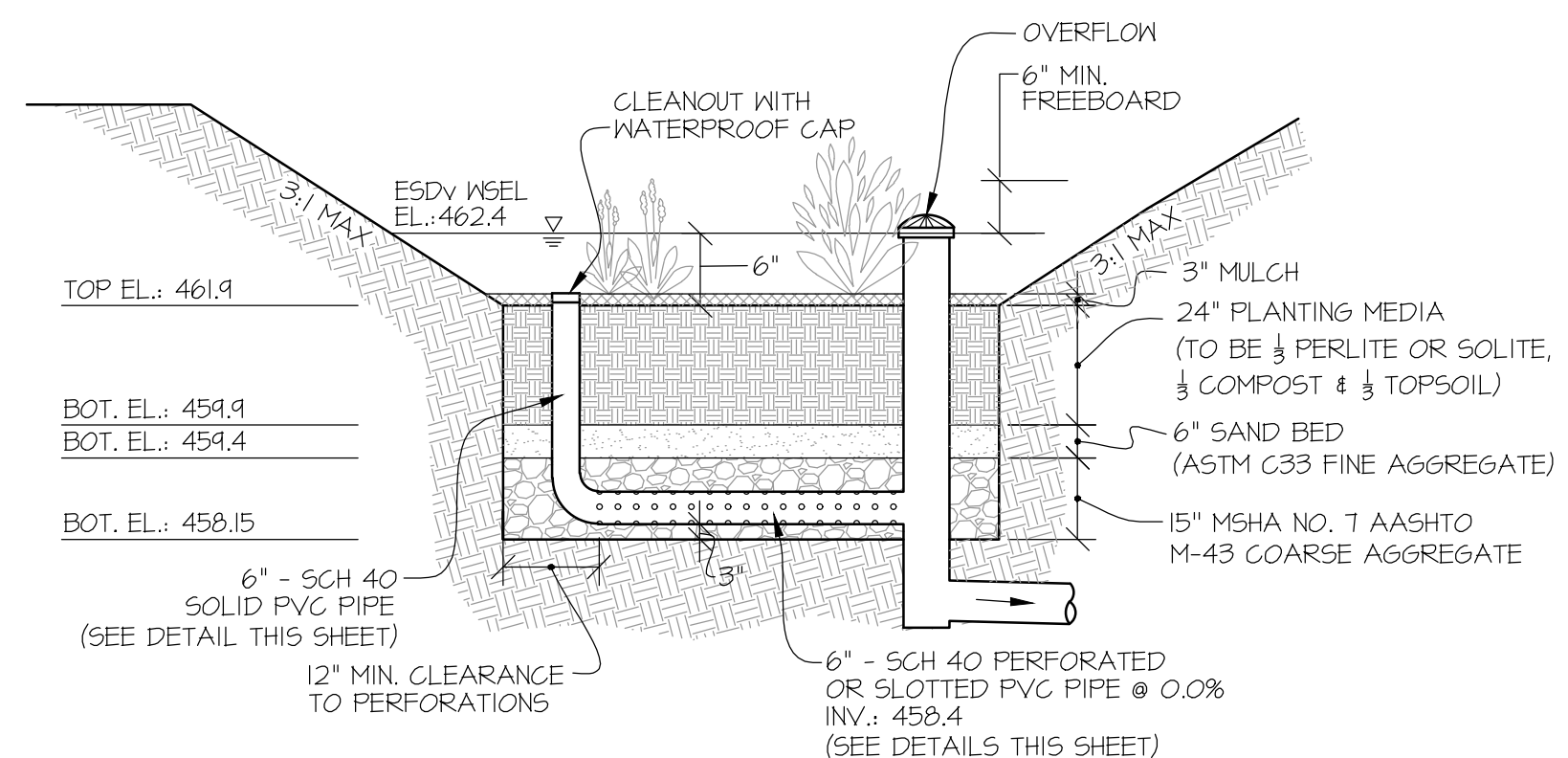
**MICRO-BIORETENTION #1
TYPICAL CROSS SECTION**
NTS



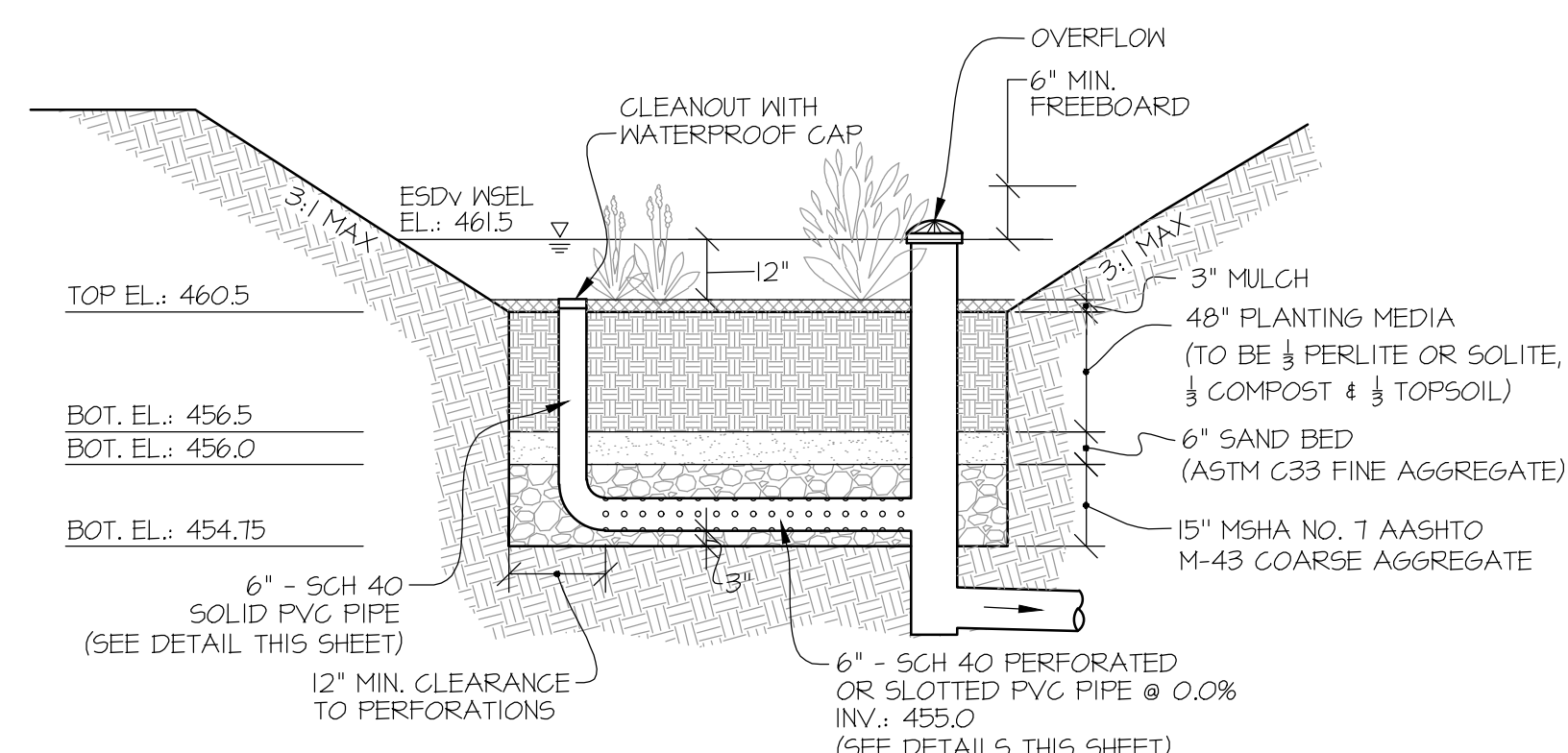
**MICRO-BIORETENTION #4
TYPICAL CROSS SECTION**
NTS



**MICRO-BIORETENTION #2
TYPICAL CROSS SECTION**
NTS



**MICRO-BIORETENTION #5
TYPICAL CROSS SECTION**
NTS



**MICRO-BIORETENTION #3
TYPICAL CROSS SECTION**
NTS

UNDERDRAIN PIPE SPECS:

1) THE UNDERDRAIN PIPE CONSISTS OF 6" DIAMETER SCHEDULE 40 OR STRONGER PERFORATED PVC PIPE AT 0.00% SLOPE. THE UNDERDRAIN PIPE WILL BE PLACED WITHIN THE GRAVEL LAYER. A MINIMUM OF 3" OF GRAVEL MUST BE PLACED UNDER THE PIPE, WITH A MINIMUM OF 6" OF GRAVEL OVER THE PIPE. PERFORATIONS MUST BE 3/8" IN DIAMETER AND MUST BE LOCATED 4" ON CENTER, EVERY 90° AROUND THE PIPE. PERFORATED PIPE MUST BEGIN AT LEAST 12" INSIDE THE FILTER MEDIA. IF THIS CANNOT BE ACHIEVED, THEN SIDES OF THE FILTER MEDIA MUST BE LINED WITH FILTER FABRIC. FILTER FABRIC MUST NOT BE WRAPPED AROUND THE UNDERDRAIN PIPE. AN ACCEPTABLE ALTERNATIVE TO PERFORATED PIPE IS 6" DIAMETER SCHEDULE 40 SLOTTED PVC PIPE WITH 0.125 INCH SLOTS. SLOTS SHALL BE 0.125" WIDE AND A MINIMUM OF 1.4" IN LENGTH, WITH A MINIMUM OF 4 SLOTS PER ROW AND 4 ROWS PER LINEAR FOOT OF PIPE.

MICRO BIORETENTION MATERIALS & SPECS:

1) GRAVEL BED:
THE GRAVEL LAYER SURROUNDING THE UNDERDRAIN PIPE(S) MUST MEET MSHA SIZE #1 (TABLE 901A), AND MUST PROVIDE A MINIMUM OF 6 INCHES COVER OVER THE PIPE(S), AND MINIMUM 3 INCHES UNDER THE PIPE. NO GEOTEXTILE OR FILTER FABRIC IS ALLOWED TO BE PLACED HORIZONTALLY ANYWHERE WITHIN THE FILTER MEDIA. THE GRAVEL MUST BE CLEAN AND MUST BE STORED AND INSTALLED IN SUCH A MANNER THAT IT DOES NOT BECOME CONTAMINATED WITH SEDIMENT BEFORE OR AFTER REGULATIONS.

2) SAND BED:
A MINIMUM 6 INCH FINE AGGREGATE SAND LAYER SHALL BE PROVIDED BELOW THE PLANTING MEDIUM. ASTM C33 OR AASHTO M6 FINE AGGREGATE CONCRETE SAND IS REQUIRED PER MONTGOMERY COUNTY SAND SPECIFICATIONS.

3) PLANTING MEDIUM:
THE PLANTING MEDIUM SHALL BE 24"-48" THICK AND SHALL CONSIST OF 1/3 PERLITE OR SOLITE, 1/3 COMPOST AND 1/3 TOPSOIL. THE PERLITE SHALL BE COARSE GRADE HORTICULTURAL PERLITE. THE COMPOST SHALL BE HIGH GRADE COMPOST FREE OF STONES AND PARTIALLY COMPOSTED WOODY MATERIAL. THE TOPSOIL COMPONENT SHALL MEET THE FOLLOWING CRITERIA: CONTAIN NO MORE THAN 10% CLAY, 10-25% SILT AND 60-75% SAND AND BE FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 2 INCHES.

THE FIRST LAYER OF THE PLANTING MEDIUM SHALL BE LIGHTLY TILLED TO MIX IT INTO THE 6" SAND LAYER, SO AS NOT TO CREATE A DEFINITIVE BOUNDARY. THE PLANTING BED SHALL BE FLOODED AFTER PLACEMENT. ANY SETTLEMENT THAT OCCURS SHALL BE FILLED BACK TO THE DESIGN ELEVATION.

4) MULCH:
THE MULCH LAYER IS AN IMPORTANT PART OF THE MICRO-BIORETENTION DEVICE. MUCH OF THE POLLUTANT REMOVAL CAPACITY OF THE MICRO-BIORETENTION SYSTEM IS WITHIN THE MULCH LAYER. THE SURFACE MULCH LAYER WILL CONSIST OF STANDARD DOUBLE SHREDDED AGED HARDWOOD MULCH. THE MULCH SHOULD BE APPLIED UNIFORMLY TO A DEPTH OF 3 INCHES. YEARLY REPLISHING MAY BE NECESSARY. PINE BARK IS NOT ACCEPTABLE.

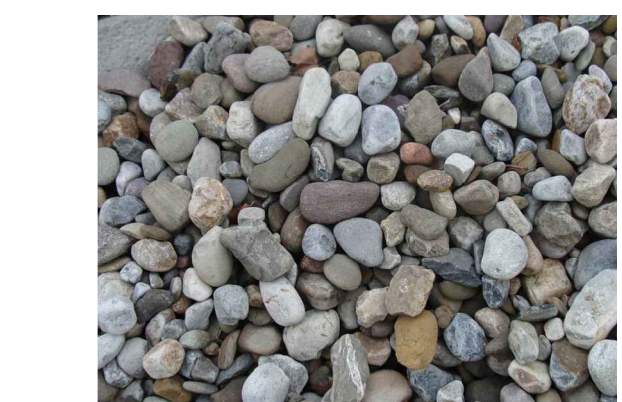
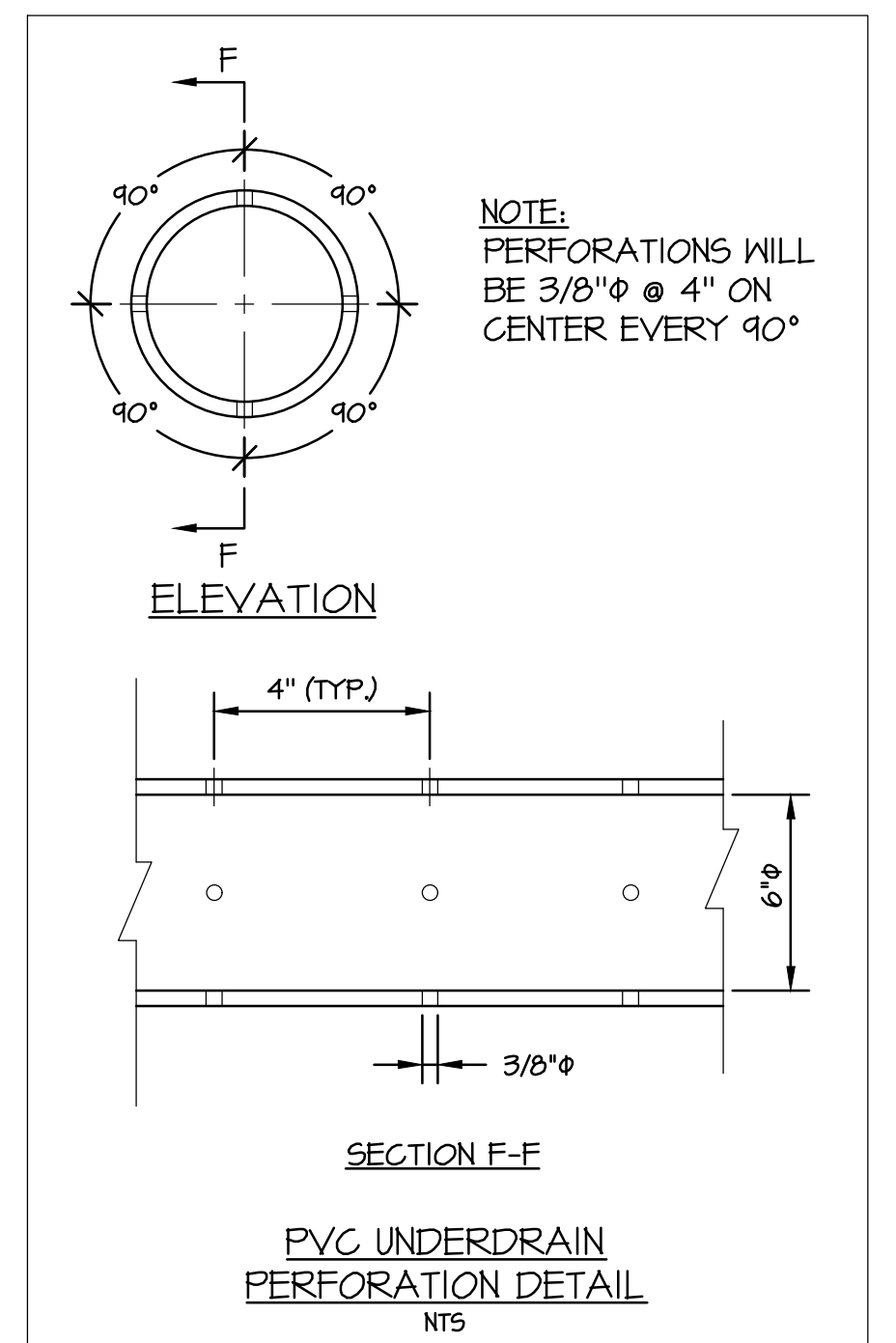
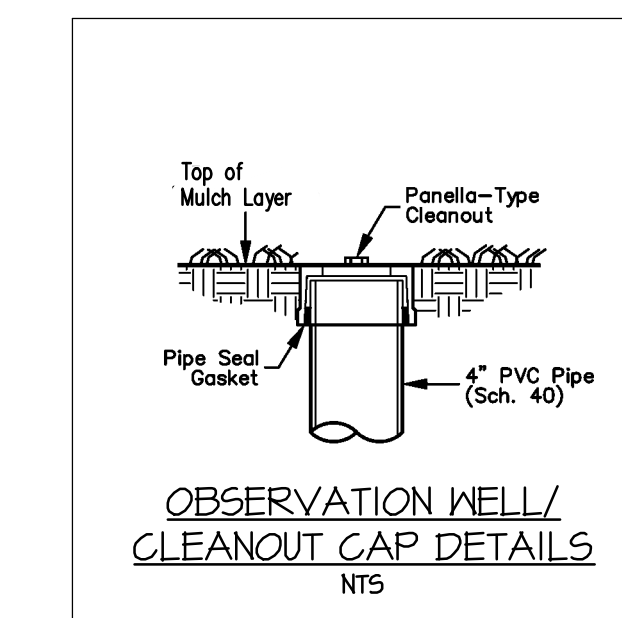
OBSERVATION WELL/CLEAN OUT:

1) THE MICRO BIO-RETENTION FACILITY MUST INCORPORATE AN OBSERVATION WELL/CLEAN OUT IN ACCORDANCE WITH THE MICRO BIO-RETENTION DETAIL AND THE LOCATION MUST BE AS SPECIFIED BY THE DESIGNER AND SHOWN ON THE PLANS.

SAND SPECIFICATIONS:

WASHED ASTM C33 FINE AGGREGATE CONCRETE SAND IS UTILIZED FOR STORMWATER MANAGEMENT APPLICATIONS IN MONTGOMERY COUNTY. IN ADDITION TO THE ASTM C33 SPECIFICATION, SAND MUST MEET ALL OF THE FOLLOWING CONDITIONS:

- SAND MUST MEET GRADATION REQUIREMENTS FOR ASTM C33 FINE AGGREGATE CONCRETE SAND. AASHTO M-6 GRADATION IS ALSO ACCEPTABLE.
- SAND MUST BE SILICA BASED... NO LIMESTONE BASED PRODUCTS MAY BE USED. IF THE MATERIAL IS WHITE OR GRAY IN COLOR, IT IS PROBABLY NOT ACCEPTABLE.
- SAND MUST BE CLEAN. NATURAL UNWASHED SAND DEPOSITS MAY NOT BE USED. LIKEWISE, SAND THAT HAS BECOME CONTAMINATED BY IMPROPER STORAGE OR INSTALLATION PRACTICES WILL BE REJECTED.
- MANUFACTURED SAND OR STONE DUST IS NOT ACCEPTABLE UNDER ANY CIRCUMSTANCE.



DETAIL RIVER JACK STONE (3"-6")
FOR CURB CUTS AND LANDSCAPE WALL
OUTLET SECTIONS

SM# 289127

GLW
PLANNING | ENGINEERING | SURVEYING
3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20886 | (GLW)PA.COM
PHONE: 301-421-4024 | BAL: 410-880-1820 | DC&VA: 301-989-2524 | FAX: 301-421-4188

DESIGNED BY	WDN			
DRAWN BY	WDN			
CHECKED BY	TML			
DATE		REVISION	BY	APP'R.

Tim Longfellow
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. 28914, EXPIRATION DATE: JANUARY 20, 2024.

PREPARED FOR:	SCALE	ZONING
Hamere Birhan Kidus Yohannes Metmiq Ethiopian Orthodox Tewahedo Church 4115 MUNCASTER MILL ROAD ROCKVILLE, MD. 20853 ATTN: MR. GIZACHEW TIRUNEH	1"=40'	RE - 1
	DATE	TAX MAP - GRID
	AUG., 2023	HS - 342

SITE DEVELOPMENT - STORMWATER MANAGEMENT PLANS		G. L. W. FILE NO.
HBKY METMIQ ETHIOPIAN ORTHODOX TEWAHEDO CHURCH		20151
4115 MUNCASTER MILL ROAD		SHEET
PARCELS P. 915, P.867, P.868, P.805		2 OF 2
& A MAJORITY OF PRIVATE RIGHT-OF-WAY		
OLNEY ELECTION DISTRICT No. 08		MONTGOMERY COUNTY, MARYLAND