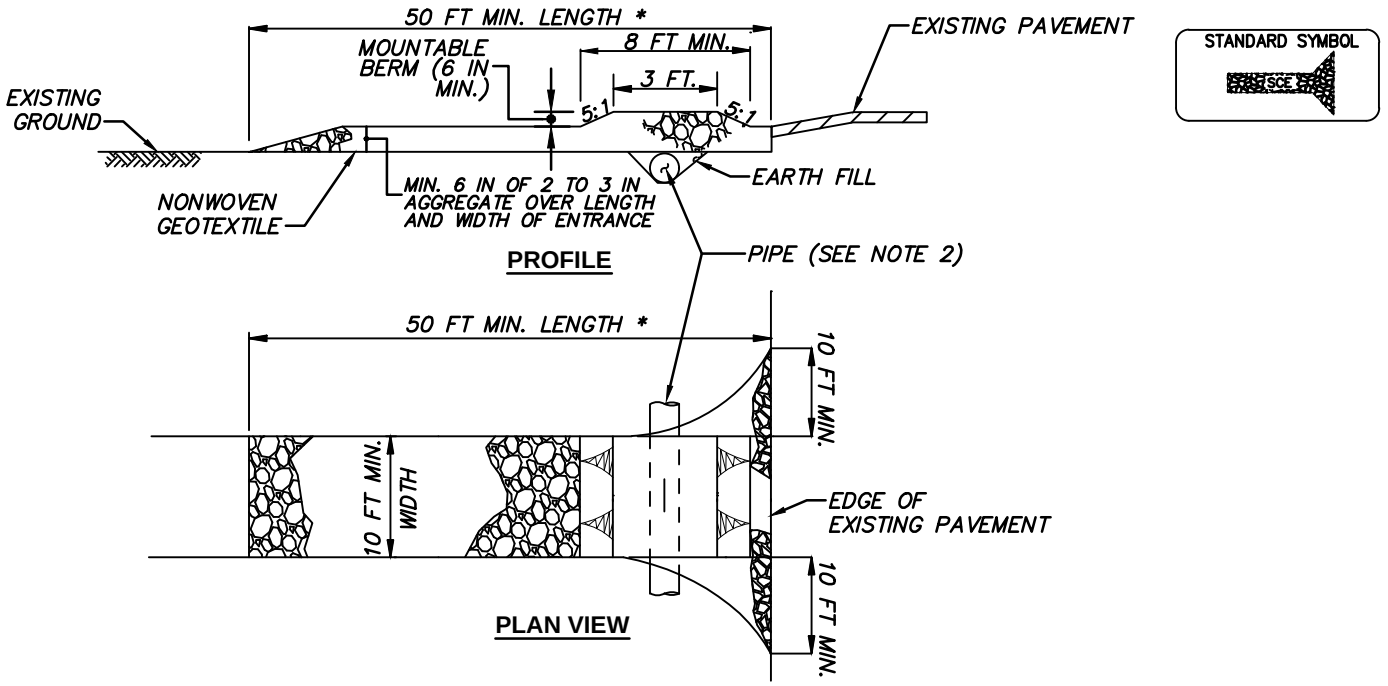


CONSTRUCTION SPECIFICATIONS

1. PLACE THE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE A MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE–FAMILY RESIDENCE LOT) AND A MINIMUM WIDTH OF 10 FEET. FLARE THE SCE AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE MAINTAINING POSITIVE DRAINAGE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. PROVIDE PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN THE SCE IS NOT LOCATED AT A HIGH SPOT.

3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE.

4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.

5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

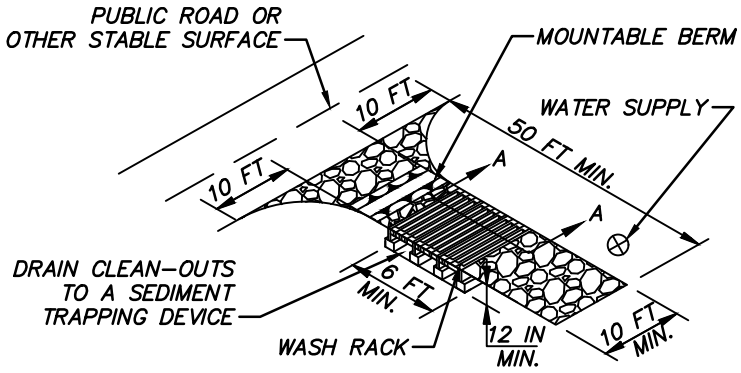
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

STABILIZED CONSTRUCTION ENTRANCE

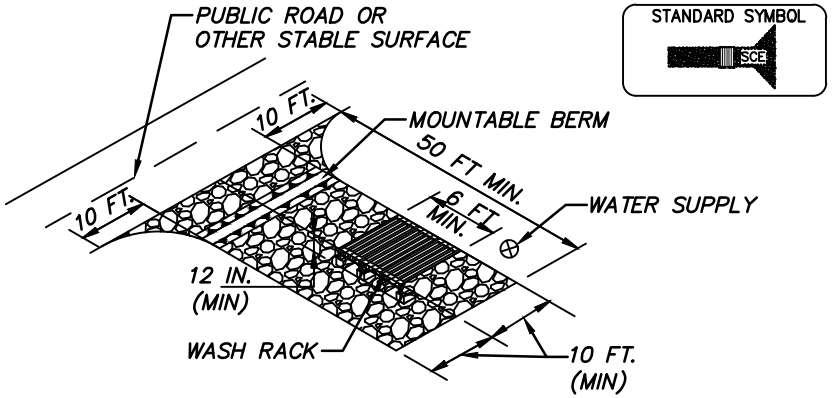
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 201.1

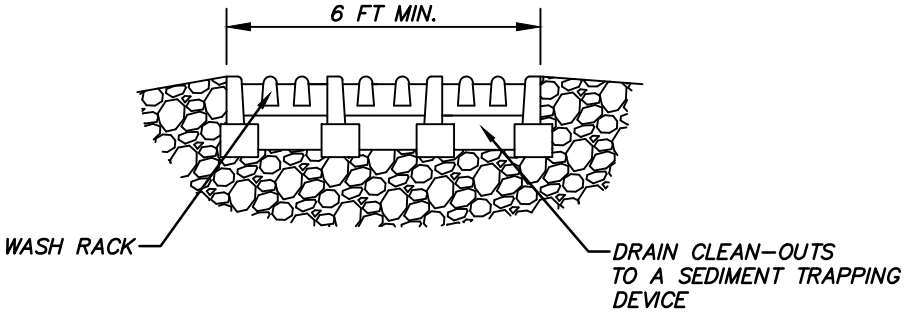
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



ISOMETRIC VIEW - WASH RACK IN SCE



ISOMETRIC VIEW - WASH RACK ALONG SCE



SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. USE A WASH RACK DESIGNED AND CONSTRUCTED/MANUFACTURED FOR THE ANTICIPATED TRAFFIC LOADS. CONCRETE, STEEL, OR OTHER MATERIALS ARE ACCEPTABLE. PRE–FABRICATED UNITS SUCH AS CATTLE GUARDS ARE ACCEPTABLE. USE MINIMUM DIMENSION OF 6 FEET x 10 FEET. ORIENT DIRECTION OF RIBS AS SHOWN ON THE DETAIL. APPROACHES TO THE WASH RACK SHOULD BE A MINIMUM OF 25 FEET ON BOTH SIDES.
2. INSTALL PRIOR TO, ALONG SIDE OF, OR AS PART OF THE SCE.
3. DIRECT WASH WATER TO AN APPROVED SEDIMENT TRAPPING DEVICE.
4. KEEP AREA UNDER WASH RACK FREE OF ACCUMULATED SEDIMENT. IF DAMAGED, REPAIR OR REPLACE WASH RACK.

DATE	APPR	
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ISSUED:		
		REFERENCE

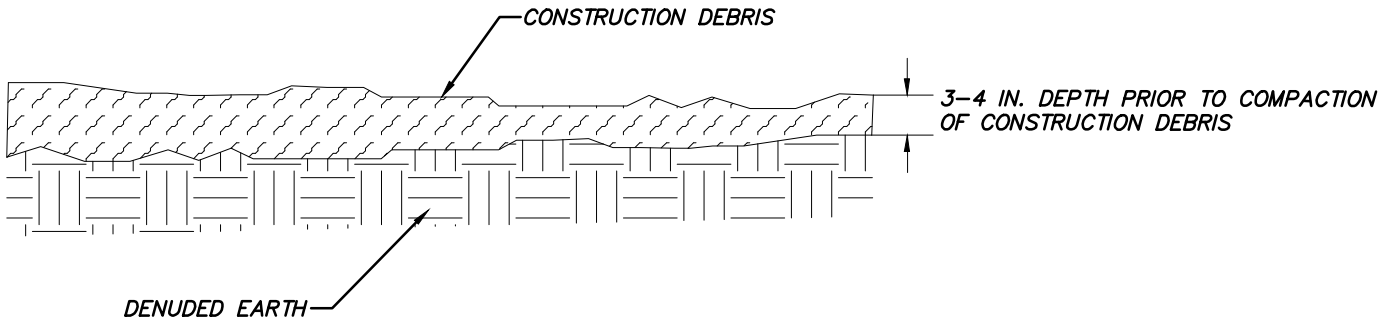
STABILIZED CONSTRUCTION ENTRANCE WITH WASH RACK

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 202.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL



CONSTRUCTION SPECIFICATIONS

1. DURING DEMOLITION, SORT MATERIALS, AND ENSURE THAT MATERIALS USED FOR EROSION CONTROL ARE APPROVED FOR THIS PURPOSE BY THE DESIGN ENGINEER OR THEIR REPRESENTATIVE.
2. ENSURE THAT THE BARE GROUND SURFACE IS DRY AND COMPACTED BEFORE SPREADING THE DEBRIS LAYER.
3. SPREAD AND COMPACT TO A DEPTH OF 3 TO 4 INCHES.
4. DURING CONSTRUCTION, REPLENISH AND COMPACT THE SURFACE WITH ACCEPTABLE MATERIAL IF THE SURFACE IS DISTURBED, EXPOSING BARE SOIL, OR IF SOIL IS TRACKED INTO THE SURFACE AND MAY BE EXPORTED OFF SITE. AT THE CLOSE OF CONSTRUCTION, PROPERLY DISPOSE OF OR REUSE THE MATERIAL, AS INDICATED ON THE CONSTRUCTION PLANS.

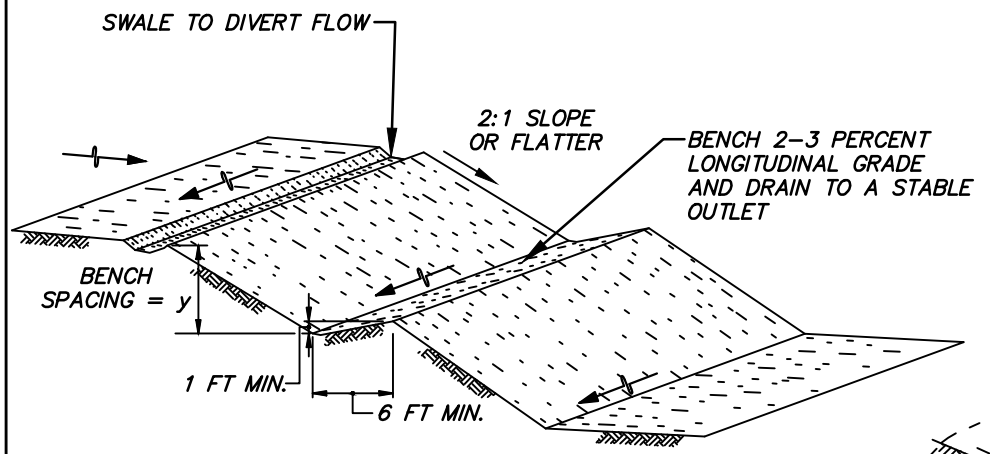
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

CONSTRUCTION DEBRIS GROUND COVER

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 204.1

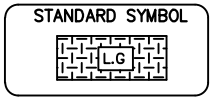
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

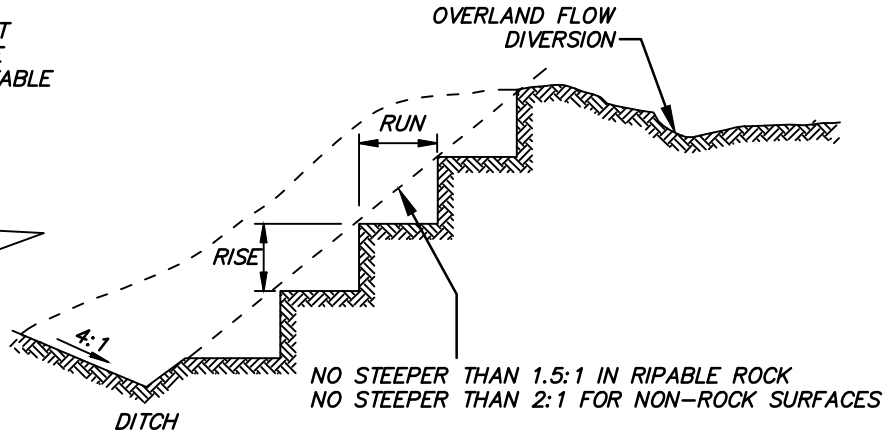


BENCHED SLOPES - ISOMETRIC

SLOPE	y (MAX.)
2:1	20 FT
3:1	30 FT
4:1	40 FT

STANDARD SYMBOL





SERRATED SLOPES - PROFILE VIEW

CONSTRUCTION SPECIFICATIONS

1. INSTALL PERIMETER CONTROLS, DIVERSION DITCHES, AND OTHER EROSION CONTROL MEASURES BEFORE EXPOSING CUT AND FILL SLOPES.
2. COMPLETE SITE CLEARING AND GRADING IN COMPLIANCE WITH THE CONSTRUCTION SEQUENCE IDENTIFIED ON THE EROSION AND SEDIMENT CONTROL PLAN.
3. PROVIDE EROSION AND SEDIMENT CONTROLS ON ALL TEMPORARY FILL PILES GENERATED DURING CONSTRUCTION.
4. ENSURE THAT ALL SUPPLEMENTAL FILL CREATED DURING THE GRADING PROCESS IS DISPOSED OF PROPERLY.
5. IN CASES WHERE FILL SLOPES OR SOIL PILES CANNOT BE STABILIZED BEFORE THE CLOSE OF THE WORK DAY, UTILIZE TEMPORARY EROSION CONTROL MEASURES SUCH AS PLASTIC SHEETING TO ENSURE THAT SOIL IS NOT EXPOSED.
6. CONFIRM THAT ALL FILLS ARE COMPACTED IN COMPLIANCE WITH THE STANDARDS PRESCRIBED ON THE SITE PLAN,
7. REMOVE TEMPORARY DIVERSIONS AND EROSION CONTROLS ONCE SLOPES HAVE BEEN STABILIZED PERMANENTLY.

DATE	APPR	
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		REFERENCE

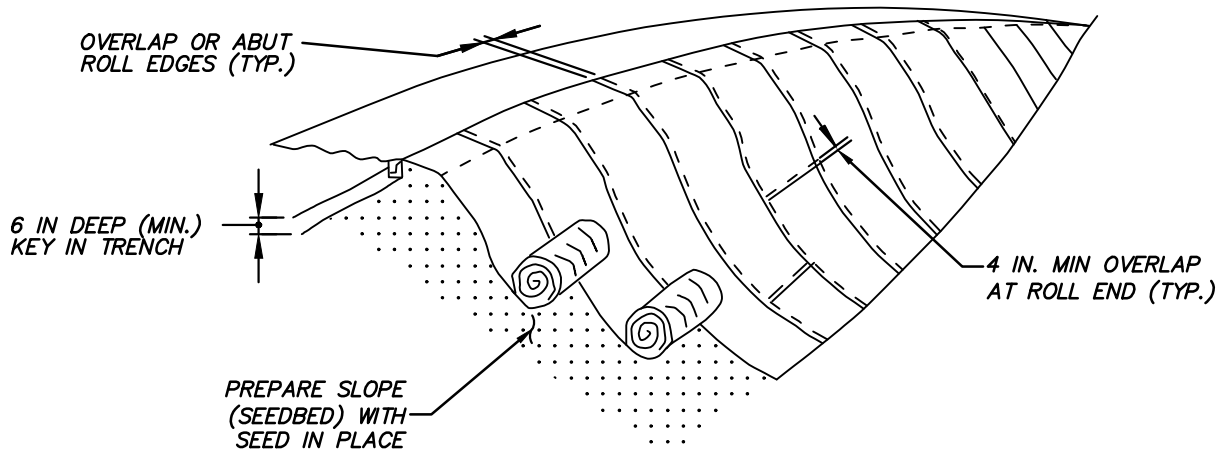
LAND GRADING

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO. 205.1

STANDARD SYMBOL

RECPS – * lb/ft²
*(INCLUDE SHEAR STRESS)



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

1. PREPARE SOIL BEFORE INSTALLING MATTING, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. FOR SOIL–FILLED RECPs, THE PLANTING BED MAY BE INSTALLED AFTER THE PRODUCT IS INSTALLED.
2. START LAYING THE PROTECTIVE COVERING FROM THE TOP OF SLOPE AND UNROLL DOWN–GRADE.
3. BURY THE UP–SLOPE ENDS OF THE PROTECTIVE COVERING IN AN ANCHOR SLOT NO LESS THAN 6 INCHES DEEP. TAMP EARTH FIRMLY OVER THE MATERIAL. STAPLE THE MATERIAL AT A MINIMUM OF EVERY 12 INCHES ACROSS THE TOP END.
4. INSTALL EDGES OF PARALLEL MATS WITH A MINIMUM OF 2–INCH OVERLAP.
5. WHEN MATS NEED TO BE SPLICED DOWN THE SLOPE, INSTALL THEM END OVER END, WITH A MINIMUM 4–INCH OVERLAP, AND STAPLE EVERY 12 INCHES. THE MANUFACTURER'S SPECIFICATIONS WILL INDICATE THE DENSITY OF STAPLES.

DATE	APPR	
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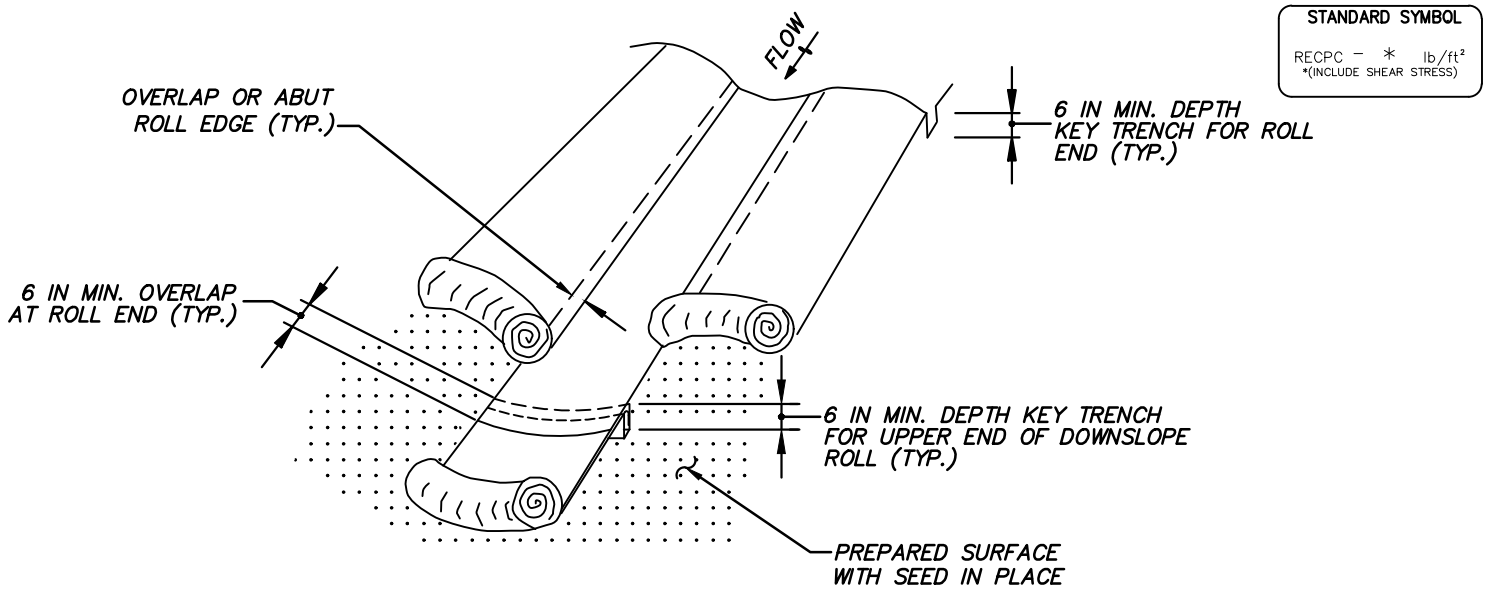
ISSUED:		
		REFERENCE

ROLLED EROSION CONTROL PRODUCTS
SLOPE STABILIZATION

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 209.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

1. PREPARE SOIL BEFORE INSTALLING MATTING, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. FOR SOIL–FILLED RECPs, THE PLANTING BED MAY BE INSTALLED AFTER THE PRODUCT IS INSTALLED.
2. START LAYING THE PROTECTIVE COVERING AT THE CHANNEL INLET (I.E., HIGHEST ELEVATION) ALONG THE BOTTOM OF THE CHANNEL. UNROLL IN THE DIRECTION OF FLOW.
3. AT THE CHANNEL INLET, BURY THE FIRST MATS IN AN ANCHOR SLOT NO LESS THAN 6 INCHES DEEP. TAMP EARTH FIRMLY OVER THE MATERIAL. STAPLE THE MATERIAL AT A MINIMUM OF EVERY 12 INCHES ACROSS THE TOP END.
4. LAY MATS END OVER END WITH A 6–INCH OVERLAP AND SECURED WITH A DOUBLE ROW OF STAGGERED STAPLES 4 INCHES APART.
5. IN HIGH FLOW APPLICATIONS, INSTALL A STAPLE CHECK DAM (A DOUBLE ROW OF STAGGERED STAPLES 4 INCHES APART ACROSS THE ENTIRE CHANNEL WIDTH), AT 30–FOOT TO 40–FOOT INTERVALS.
6. ANCHOR THE TERMINAL END OF EACH MAT IN A 6–INCH BY 6–INCH TRENCH. BACKFILL AND COMPACT AFTER STAPLING.
7. MATS INSTALLED ALONG THE SIDE SLOPES SHOULD OVERLAP THE CENTER MAT BY 4 INCHES. INSTALL WITH A STAPLE DENSITY OR SPACING PER MANUFACTURERS' RECOMMENDATIONS.

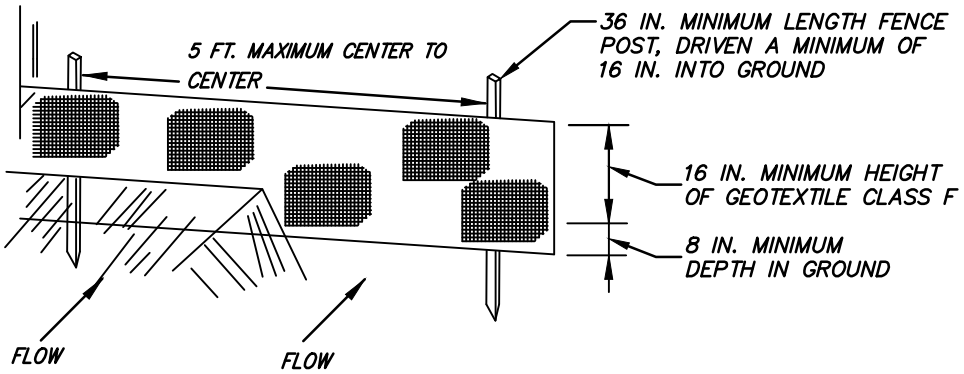
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

ROLLED EROSION CONTROL PRODUCTS
CHANNEL STABILIZATION

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 209.2

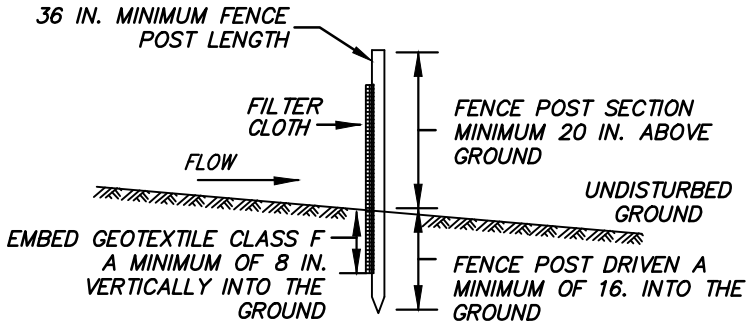
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



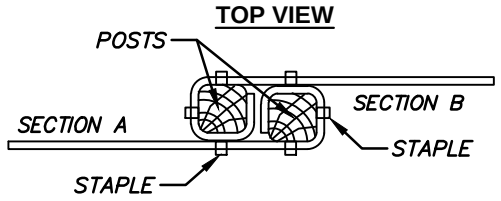
PERSPECTIVE VIEW

STANDARD SYMBOL

SF



CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS

CONSTRUCTION SPECIFICATIONS

1. FENCE POSTS MUST BE A MINIMUM OF 36 IN. LONG DRIVEN 16 IN. MINIMUM INTO THE GROUND. WOOD POSTS MUST BE OF SOUND QUALITY HARDWOOD WITH 1–1/2 IN. MINIMUM WIDTH WHEN SQUARE CUT, OR 1–3/4 IN. MINIMUM DIAMETER WHEN ROUND. STEEL POSTS MUST BE STANDARD T OR U SECTION WEIGHING NOT LESS THAN 1.00 POUND PER LINEAR FOOT.
2. FASTEN GEOTEXTILE SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID–SECTION. GEOTEXTILE MUST MEET THE FOLLOWING REQUIREMENTS (GEOTEXTILE CLASS F):

PROPERTY	VALUE	TEST METHOD
TENSILE STRENGTH	50 LBS/IN (MIN.)	ASTM D–4595
TENSILE MODULUS	20 LBS/IN (MIN.)	ASTM D–4595
FLOW RATE	0.3 GAL/FT^2 /MINUTE (MAX.)	ASTM D–5141
FILTERING EFFICIENCY	75% (MIN.)	ASTM D–5141

3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, OVERLAP, FOLD, AND STAPLE THEM TO PREVENT SEDIMENT BYPASS.
4. INSPECT SILT FENCE AFTER EACH RAINFALL EVENT, AT LEAST DAILY DURING SUSTAINED RAINFALL EVENTS, AND MAINTAIN WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHES 30% OF THE FABRIC HEIGHT.

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

SILT FENCE-1

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 301.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

SILT FENCE DESIGN CRITERIA:

TABLE 3.1: SILT FENCE SLOPE LENGTH AND FENCE LENGTH CONSTRAINTS		
SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM) (FEET)	SILT FENCE LENGTH (MAXIMUM) (FEET)
FLATTER THAN 50:1 (2%)	UNLIMITED	UNLIMITED
> 50:1 TO 10:1 (2% to 10%)	125	1,000
> 10:1 TO 5:1 (10% to 20%)	100	750
> 5:1 TO 3:1 (20% to 33%)	60	500
> 3:1 TO 2:1 (33% to 50%)	40	250
> 2:1 (> 50%)	20	125

NOTE:

- IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL REQUIRED.
- TO AVOID CIRCUMVENTION, EXTEND THE ENDS OF THE SILT FENCE UPSLOPE TO PREVENT WATER AND SEDIMENT FROM FLOWING AROUND THE ENDS OF THE FENCE.

DATE	APPR	
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SILT FENCE-2

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

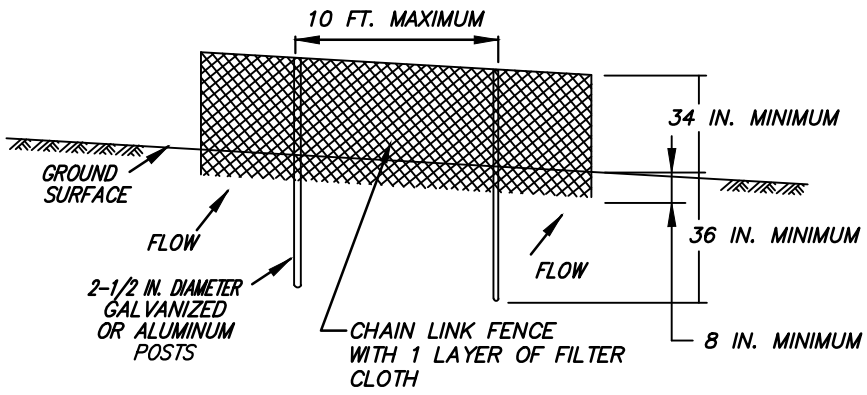
DWG. NO 301.2

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

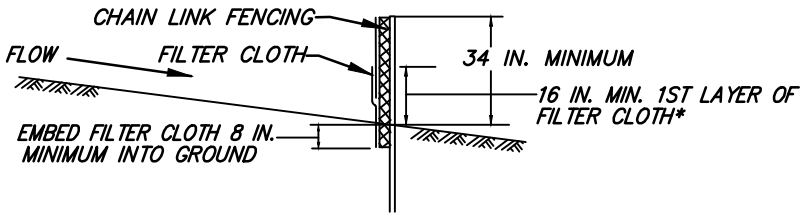
STANDARD SYMBOL

SSF

PERSPECTIVE VIEW



CROSS SECTION



NOTE:

- IF MULTIPLE LAYERS ARE REQUIRED TO ATTAIN NECESSARY HEIGHT.
- FENCE POST SPACING SHALL NOT EXCEED 10 FT. CENTER TO CENTER.

CONSTRUCTION SPECIFICATIONS

1. FENCING MUST BE AT LEAST 42 INCHES IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST DISTRICT DEPARTMENT OF TRANSPORTATION (DDOT) DETAILS FOR CHAIN LINK FENCING. THE DDOT SPECIFICATION FOR A 6-FOOT FENCE MUST BE USED, SUBSTITUTING MINIMUM 42-INCH FABRIC AND 6-FOOT LENGTH POSTS. POSTS DO NOT NEED TO BE SET IN CONCRETE.
2. SECURELY FASTEN CHAIN LINK FENCE TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
3. SECURELY FASTEN GEOTEXTILE TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID-SECTION.
4. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES INTO THE GROUND.
5. WHEN TWO SECTIONS OF GEOTEXTILE FABRIC ADJOIN EACH OTHER, FOLD AND OVERLAP BY 6 INCHES.
6. GEOTEXTILE MUST MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F (FROM TABLE 3.2-SEE BELOW):

PROPERTY	VALUE	TEST METHOD
TENSILE STRENGTH	50 LBS/IN (MIN.)	ASTM D-4595
TENSILE MODULUS	20 LBS/IN (MIN.)	ASTM D-4595
FLOW RATE	0.3 GAL/FT^2 /MINUTE (MAX.)	ASTM D-5141
FILTERING EFFICIENCY	75% (MIN.)	ASTM D-5141

7. INSPECT SUPER SILT FENCE AFTER EACH RAINFALL EVENT, AT LEAST DAILY DURING SUSTAINED RAINFALL EVENTS, AND MAINTAIN WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHES 30% OF THE FABRIC HEIGHT.

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

SUPER SILT FENCE-1

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 302.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

SUPER SILT FENCE DESIGN CRITERIA:

TABLE 3.3: SUPER SILT FENCE SLOPE LENGTH AND FENCE LENGTH CONSTRAINTS			
SLOPE	SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM) (FEET)	SUPER SILT FENCE LENGTH (MAXIMUM) (FEET)
0 – 10%	0 – 10:1	Unlimited	Unlimited
10 – 20%	10:1 – 5:1	200	1,500
20 – 33%	5:1 – 3:1	150	1,00
33 – 50%	3:1 – 2:1	100	500
> 50%	> 2:1	50	250

NOTE:

- TO AVOID CIRCUMVENTION, EXTEND THE ENDS OF THE SILT FENCE 5 HORIZONTAL FEET UPSLOPE AT 45–DEGREE ANGLES RELATIVE TO THE MAIN FENCE ALIGNMENT TO PREVENT SEDIMENT ACCUMULATION.

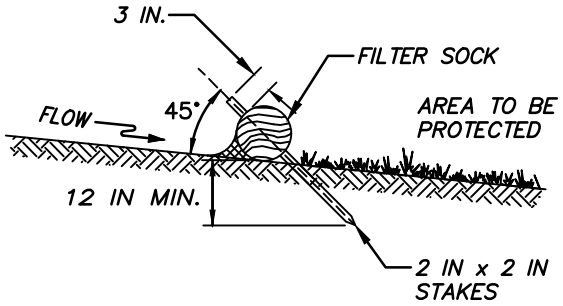
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

SUPER SILT FENCE-2

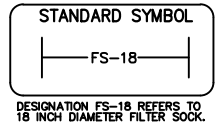
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

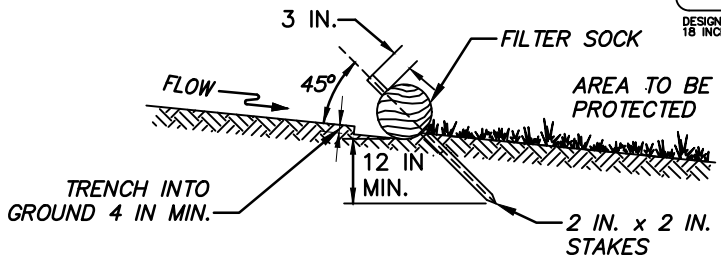
DWG. NO 302.2

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



SECTION





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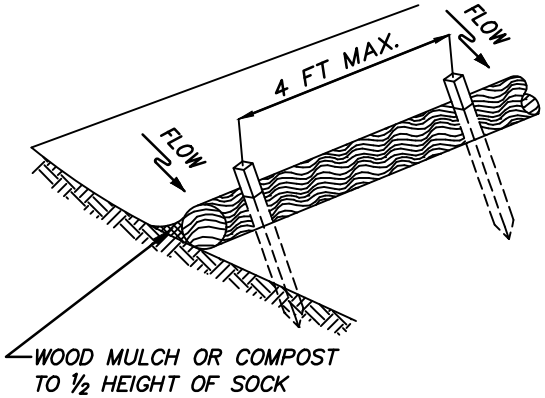
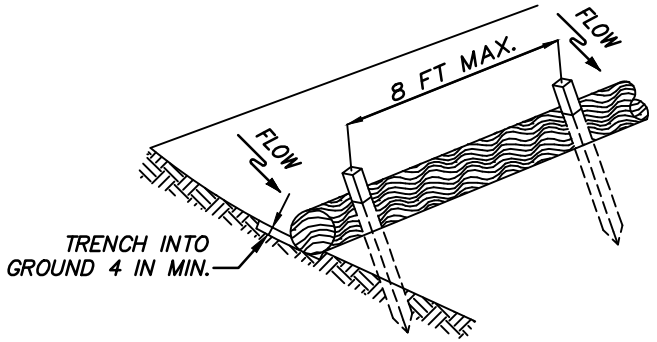
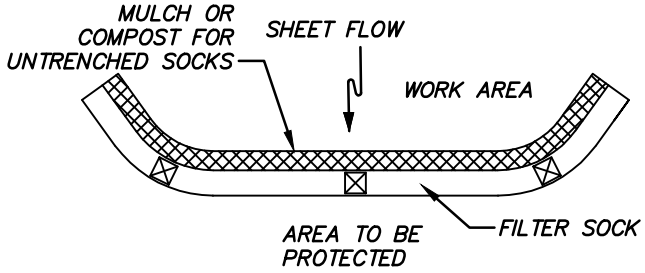


UNTRENCHED INSTALLATION



***ENTRENCHED INSTALLATION**



PLAN VIEW

*NOTE:
- THIS APPLICATION MAY NOT BE USED WITH SOCKS SMALLER THAN 12 IN.

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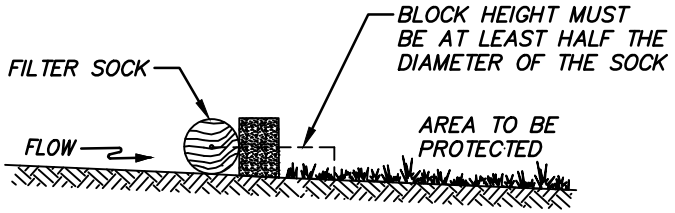
FILTER SOCK - 1

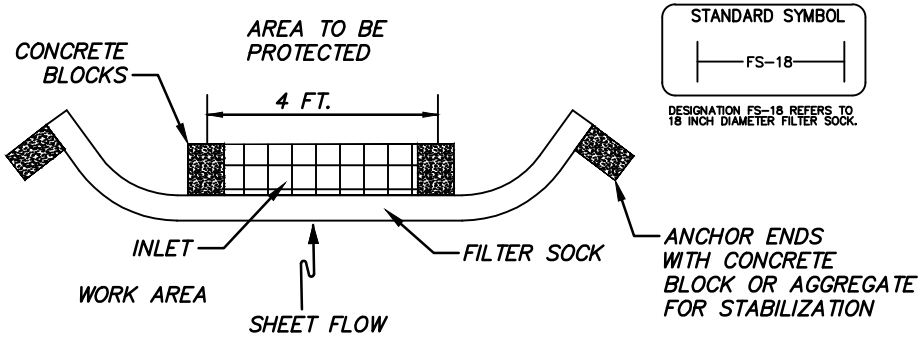
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 303.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



HARD SURFACE INSTALLATION SECTION



HARD - SURFACE INSTALLATION PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. BEFORE INSTALLING, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN 1–INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF THE FILTER SOCK.
2. FILL SOCK UNIFORMLY WITH COMPOST OR ALTERNATE FILTER MEDIA TO DESIRED LENGTH, WITH ENOUGH MATERIAL THAT THE SOCKS DO NOT DEFORM.
3. PLACE SOCKS ALONG CONTOURS, WITH THE ENDS TURNED UPSLOPE AT 30 TO 45 DEGREES FOR A LENGTH OF AT LEAST 5 FEET TO PREVENT RUNOFF BYPASS.
4. FOR UNTRENCHED INSTALLATION, BACKFILL MULCH OR COMPOST ON THE UPSTREAM SIDE OF THE SOCK AND TAMP TO PREVENT UNDERCUTTING AND PIPING.
5. ANCHORING MUST CONFORM TO THE FOLLOWING LIST: (a) MINIMUM 2–INCH SQUARE CROSS SECTION HARDWOOD; (b) DRIVEN AT LEAST 12 INCHES BELOW GRADE, OR 8 INCHES IF IN DENSE CLAY SOILS; (c) PROTRUDE ABOVE FILTER SOCKS AT LEAST 3 INCHES; (d) DRIVEN IN AT 45–DEGREE ANGLE UPSLOPE; (e) SPACED AT NO MORE THAN 4 FEET APART, OR 8 FEET APART IF THE FILTER SOCK IS ENTRENCHED 4 INCHES INTO THE GROUND.
6. DO NOT USE ENTRENCHED INSTALLATION ON FILTER SOCKS SMALLER THAN 12 INCHES IN DIAMETER.
7. FOR HARD SURFACE INSTALLATION, SUCH AS ON PAVEMENT, ANCHORING MAY BE NECESSARY WHERE STRAIGHT SECTIONS EXCEED 4 FEET. SEE DETAIL ABOVE, AND GREATER INSTRUCTION IN THE FILTER SOCK SPECIFICATION. WHEN NO ANCHORING IS USED, THE PRACTICE MUST BE CHECKED DAILY, REGARDLESS OF WHETHER RAINFALL OCCURS. ANCHORED INSTALLATION IS ALWAYS PREFERRED TO NON–ANCHORED INSTALLATION, IF POSSIBLE.
8. FOR AT–GRADE INLET PROTECTION, FILTER SOCKS MUST COMPLETELY ENCLOSE THE DRAIN. IF USED AS CURB INLET PROTECTION, THE EFFECTIVE HEIGHT OF THE FILTER SOCK MUST NOT BE HIGHER THAN THE HEIGHT OF THE CURB; USE 8–INCH DIAMETER FILTER SOCK FOR STANDARD HIGHWAY APPLICATIONS.
9. IF MULTIPLE SECTIONS OF FILTER SOCK ARE NEEDED FOR A CONTINUOUS RUN, OVERLAP ENDS OF SEPARATE SECTIONS A MINIMUM OF 2 FEET AND STAKE ENDS.
10. TO REACH TALLER HEIGHTS, IT IS POSSIBLE TO STACK FILTER SOCKS. SEE SPECIFICATION FOR MORE DETAIL.
11. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF HALF THE EXPOSED HEIGHT OF SOCK AND REPLACE SOCK. REPLACE FILTER SOCK IF TORN. REINSTALL FILTER SOCK IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER SOCKS.
12. FOR VEGETATED, PERMANENT OR SEMI–PERMANENT INSTALLATIONS, MAINTAIN THE PLANTS AS IS APPROPRIATE FOR THE SPECIES USED.

DATE	APPR	
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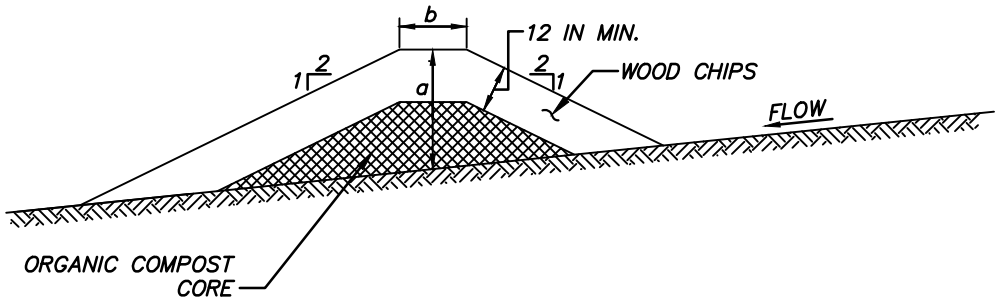
ISSUED:		
		REFERENCE

FILTER SOCK - 2

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 303.2

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

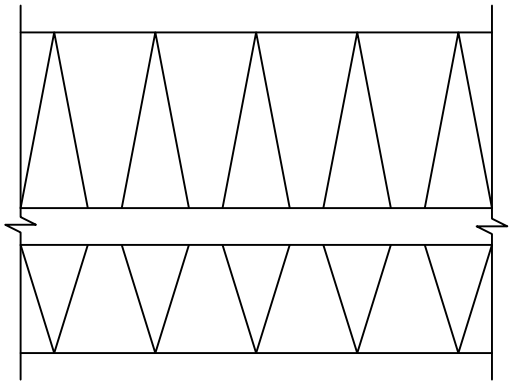


STANDARD SYMBOL

FB-A

FB-B

CROSS SECTION



PLAN VIEW

TABLE 3.7 : ORGANIC FILTER BERM DESIGN CRITERIA		
DESIGN CRITERIA	BERM A	BERM B
BERM HEIGHT (a)	30 INCHES	42 INCHES
BERM TOP WIDTH (b)	36 INCHES	48 INCHES
SIDE SLOPES	2:1 OR FLATTER	2:1 OR FLATTER

CONSTRUCTION SPECIFICATIONS

1. PLACE BERM ON THE CONTOUR WITH ENDS TURNED UPGRADE TO PREVENT BYPASS. DO NOT EXCEED GRADES OF 5 PERCENT ALONG THE BERM FOR A DISTANCE GREATER THAN 50 FEET.
2. CONSTRUCT BERM OF CLEAN WOOD CHIPS A MINIMUM SIZE OF 1 x 2 INCHES AND A MAXIMUM SIZE OF 3 x 3 INCHES.
3. COMPACT AND SHAPE MATERIAL TO CONFORM TO DIMENSIONS SPECIFIED ON THE APPROVED PLAN.
4. DO NOT PLACE UN-CHIPPED TREE PIECES, BRUSH, OR STUMPS IN THE BERM. BERM MUST BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES.
5. THE BERM MAY CONTAIN UP TO 50% COMPOST MATERIAL AS SPECIFIED IN DESIGN CRITERION #2.
6. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD WOOD CHIPS OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN THEY REACH 25% OF BERM HEIGHT, AND DISPOSE AT PERMITTED SITE.

DATE	APPR	
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ISSUED:		
		REFERENCE

ORGANIC FILTER BERM

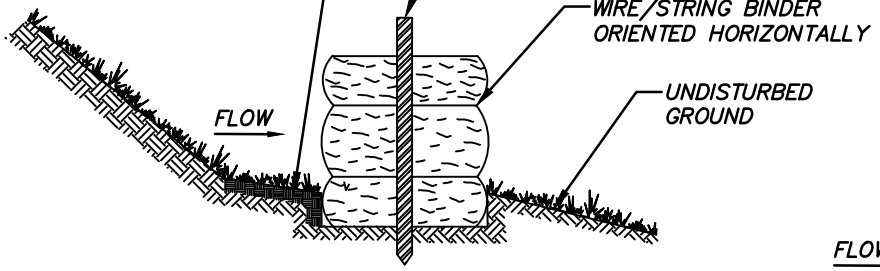
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 304.1

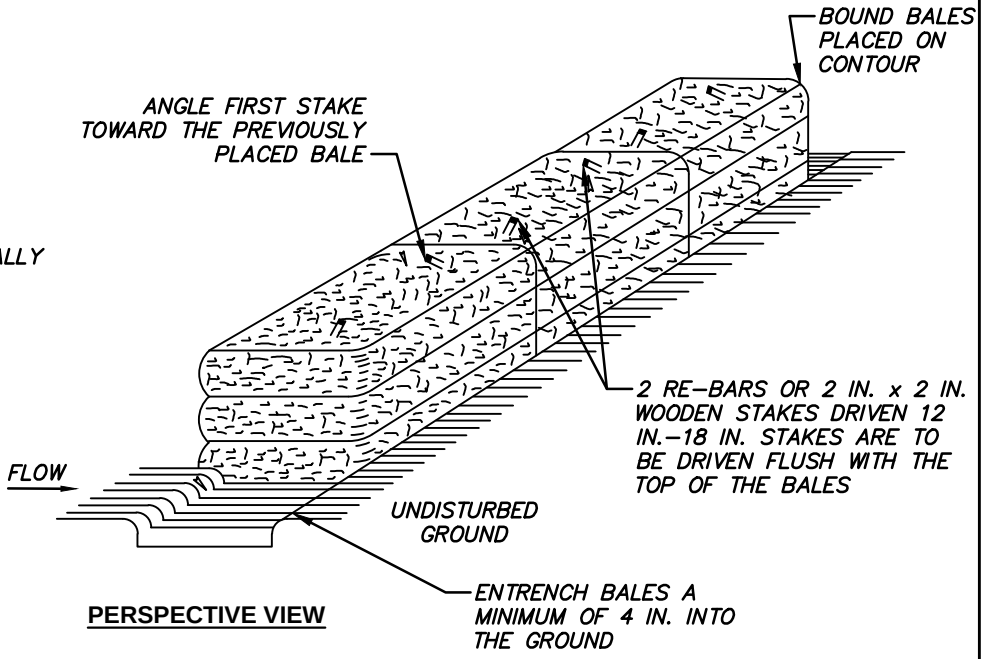
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL

|----SBD----|



SECTION



PERSPECTIVE VIEW

CONSTRUCTION SPECIFICATIONS

1. PLACE BALES IN A ROW ON THE CONTOUR WITH THE ENDS OF EACH BALE TIGHTLY ABUTTING THE ADJACENT BALES.
2. ENTRENCH EACH BALE 4 INCHES MINIMUM INTO THE SOIL AND PLACE SO THE BINDINGS ARE HORIZONTAL. SOME OF THE EXCAVATED SOIL MUST BE BUILT UP AND COMPACTED AT THE UPSTREAM EDGE OF THE DIKE TO PREVENT PIPING AND UNDERCUTTING.
3. SECURELY ANCHOR BALES IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE 12 TO 18 INCHES INTO THE GROUND. DRIVE THE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. DRIVE THE STAKES FLUSH WITH THE TOP OF THE BALE.
4. IMMEDIATELY INSPECT STRAW BALE BARRIERS AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL EVENTS. RE-DRIVE THE ANCHORING STAKES IF THEY BECOME EXPOSED. REMOVE SEDIMENT WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER.
5. REMOVE ALL BALES WHEN THE SITE HAS BEEN STABILIZED. GRADE FLUSH AND STABILIZE THE TRENCH WHERE THE BALES WERE LOCATED.

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

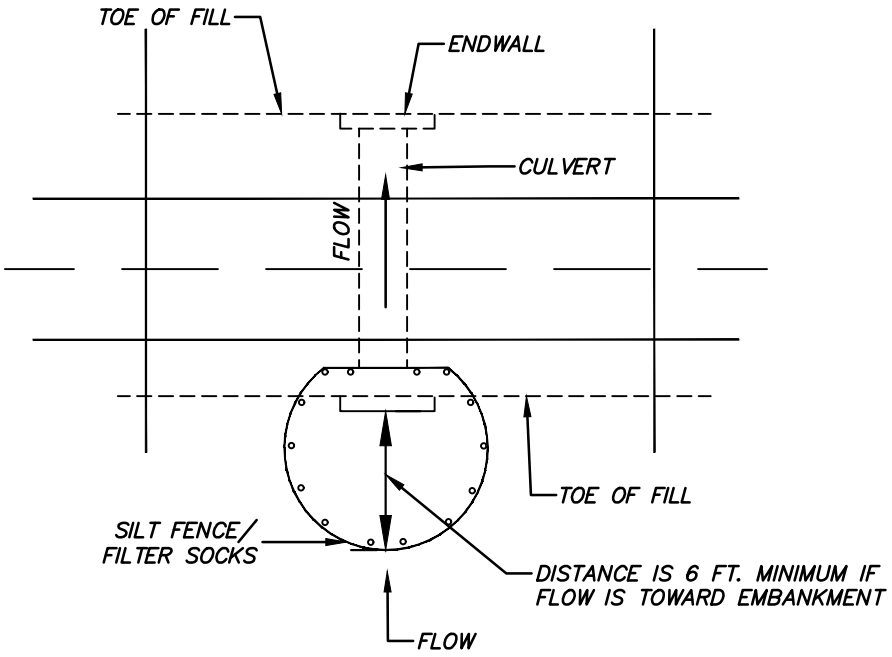
STRAW BALE DIKE

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

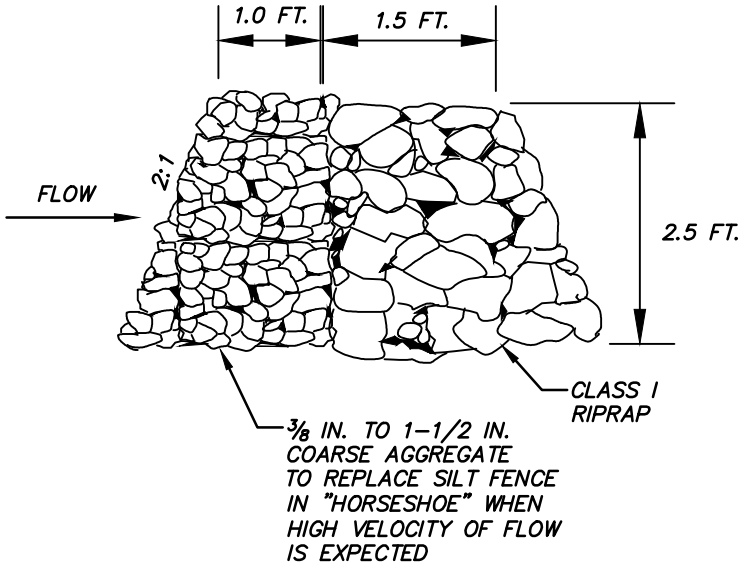
DWG. NO 305.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL



PLAN VIEW



OPTIONAL STONE COMBINATION

DATE	APPR	
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ISSUED:		
		REFERENCE

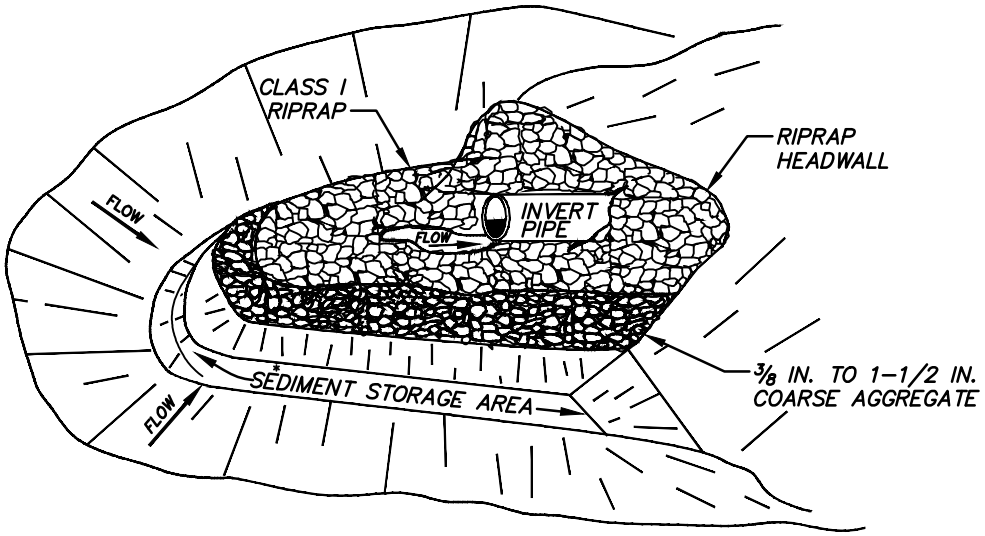
CULVERT INLET PROTECTION - 1

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

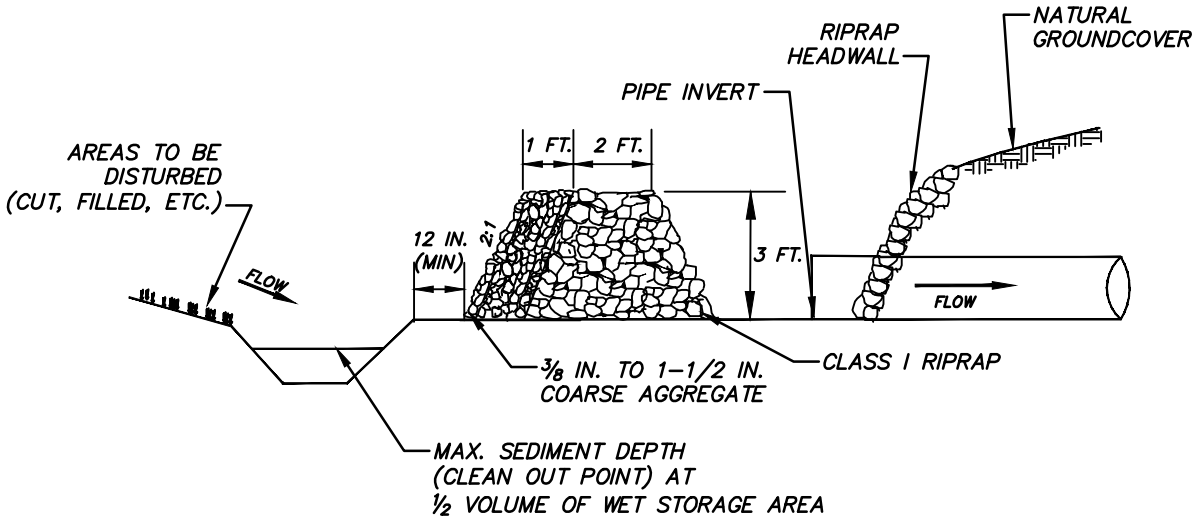
DWG. NO 306.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL



PERSPECTIVE VIEW



ELEVATION VIEW

NOTE:

- THE MAXIMUM AREA DRAINING TO THIS PRACTICE SHALL NOT EXCEED 3 ACRES.
- 67 C.Y./ACRE WET STORAGE (BELOW BASE OF STONE)
- 67 C.Y./ACRE DRY STORAGE (BASE OF STONE TO TOP OF STONE BERM)

DATE	APPR	
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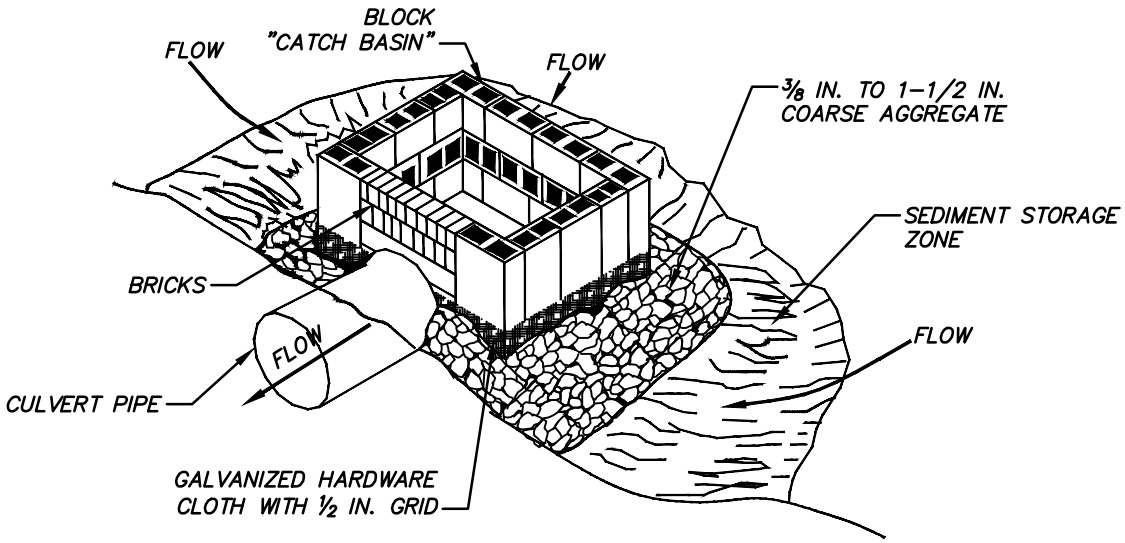
ISSUED:		
		REFERENCE

CULVERT INLET PROTECTION-2

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

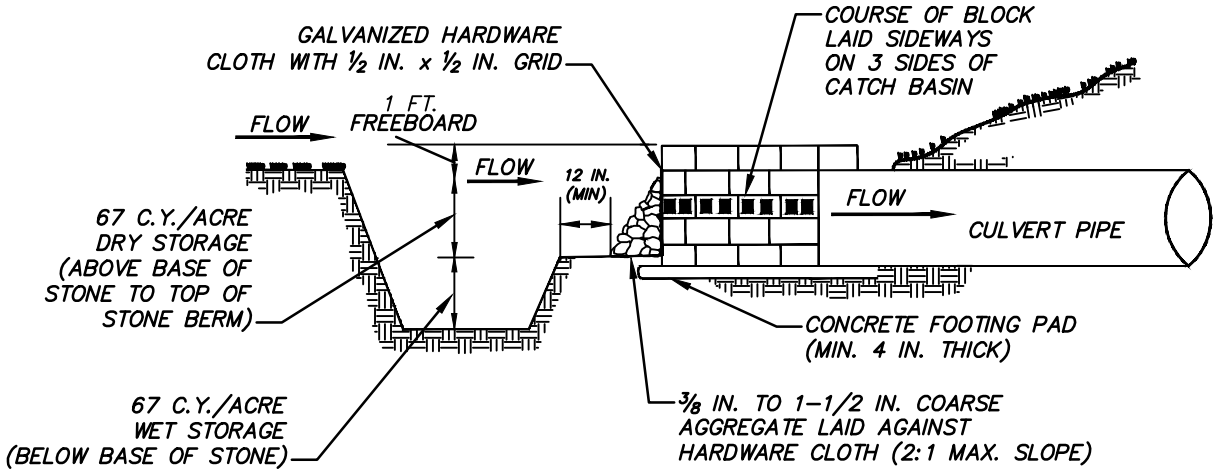
DWG. NO 306.2

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



STANDARD SYMBOL

PERSPECTIVE VIEW



CROSS SECTION THROUGH "CATCH BASIN"

NOTE:
- ALL BLOCKS AND BRICKS MORTARED SIMILAR TO BUILDING FOUNDATION.

DATE	APPR	
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ISSUED:		
		REFERENCE

CULVERT INLET PROTECTION-3

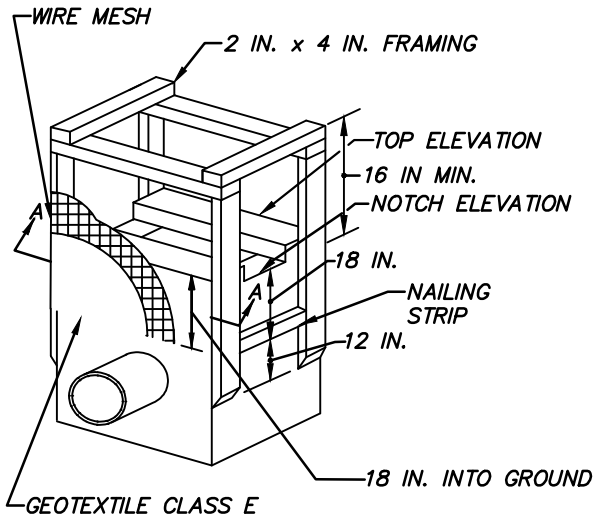
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 306.3

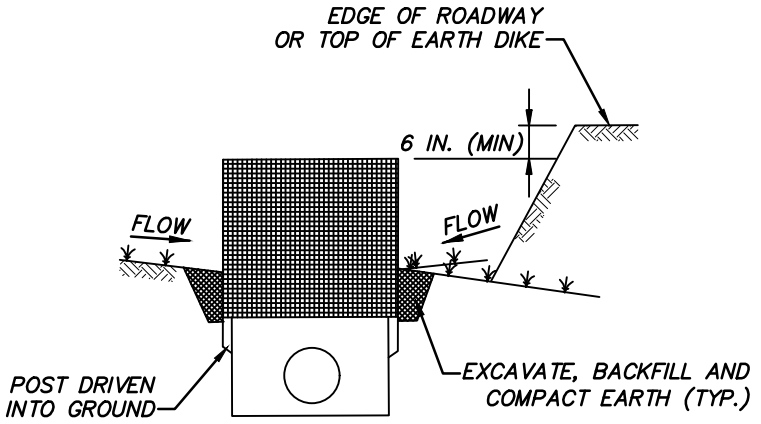
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

MAXIMUM DRAINAGE AREA = ¼ ACRE

STANDARD SYMBOL
SIP



ISOMETRIC



SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
2. DRIVE 2–INCH x 4–INCH CONSTRUCTION GRADE LUMBER POSTS 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2–INCH x 4–INCH FRAME USING THE OVERLAP JOINT SHOWN ON DETAIL 307.1. THE TOP OF THE FRAME (WEIR) MUST BE 6 INCHES BELOW ADJACENT ROADWAYS WHERE FLOODING AND SAFETY ISSUES MAY ARISE.
3. STRETCH 1/2–INCH x 1/2–INCH WIRE MESH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. THE ENDS MUST MEET AND OVERLAP AT A POST.
4. STRETCH THE GEOTEXTILE CLASS E TIGHTLY OVER THE WIRE MESH WITH THE GEOTEXTILE EXTENDING FROM THE TOP OF THE FRAME TO 18 INCHES BELOW THE INLET NOTCH ELEVATION. FASTEN THE GEOTEXTILE FIRMLY TO THE FRAME. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED DOWN.
5. BACKFILL AROUND THE INLET IN COMPACTED 6–INCH LAYERS UNTIL THE LAYER OF EARTH IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
6. IF THE INLET IS NOT IN A SUMP, CONSTRUCT A COMPACTED EARTH DIKE ACROSS THE DITCH LINE DIRECTLY BELOW IT. THE TOP OF THE EARTH DIKE SHOULD BE AT LEAST 6 INCHES HIGHER THAN THE TOP OF THE FRAME.
7. THE STRUCTURE MUST BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND THE GEOTEXTILE REPLACED WHEN IT BECOMES CLOGGED.

DATE	APPR	
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		REFERENCE

STANDARD INLET PROTECTION
STORM DRAIN INLET PROTECTION

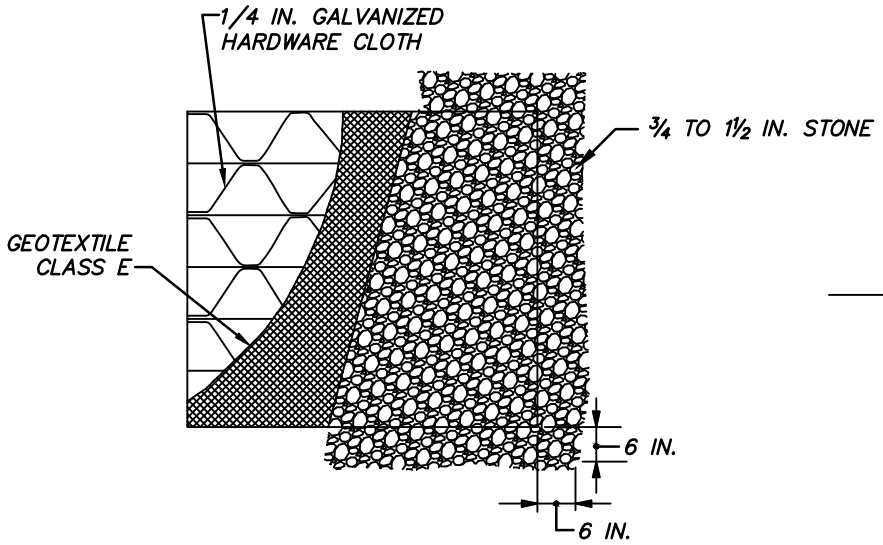
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 307.1

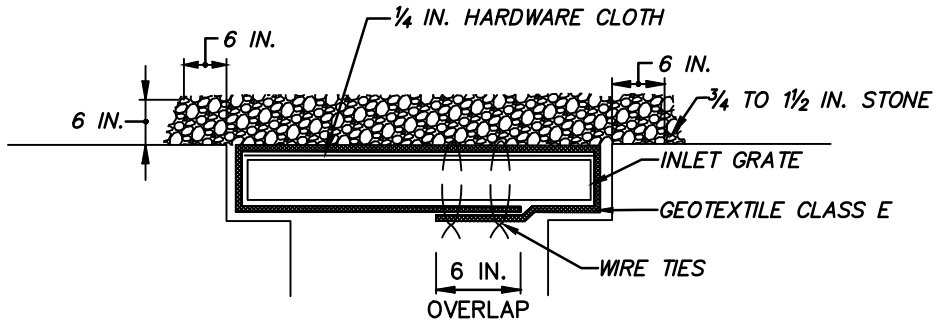
SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

MAXIMUM DRAINAGE AREA = ¼ ACRE

STANDARD SYMBOL
AGIP



PLAN/CUT AWAY VIEW



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. LIFT GRATE AND WRAP WITH GEOTEXTILE CLASS E TO COMPLETELY COVER ALL OPENINGS, SECURE WITH WIRE TIES, THEN SET GRATE BACK IN PLACE.
2. PLACE CLEAN ¾ TO 1–½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 4 TO 6 INCHES THICK ON THE GRATE TO SECURE THE FABRIC.
3. IF THERE ARE ANY SIGNS OF STREET FLOODING OR WATER PONDING, THIS STRUCTURE MUST BE CLEANED OR REPLACED, OR REDESIGNED WITH A VIABLE ALTERNATIVE.

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ISSUED:		
		REFERENCE

AT GRADE INLET PROTECTION
STORM DRAIN INLET PROTECTION

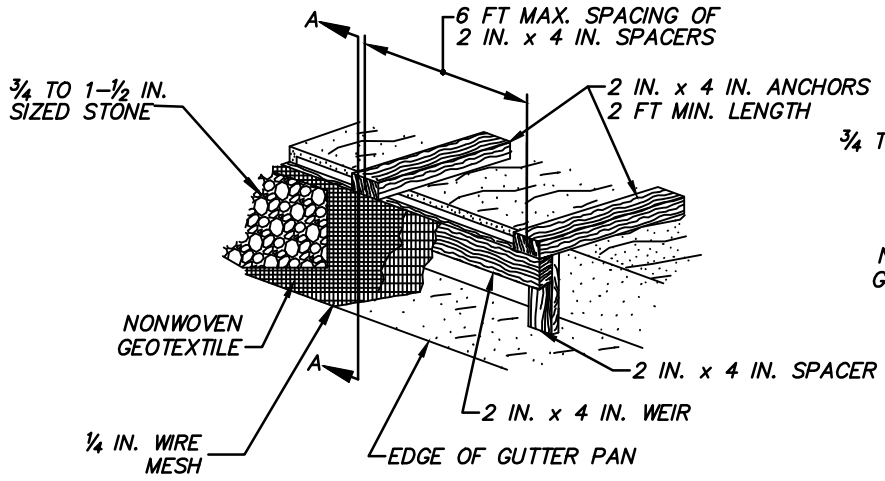
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 307.2

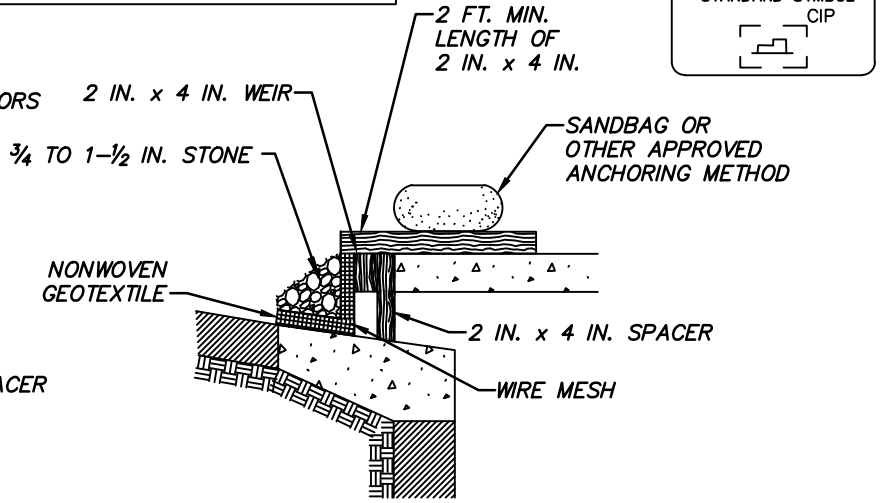
SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

MAXIMUM DRAINAGE AREA = ¼ ACRE

STANDARD SYMBOL
CIP



ISOMETRIC



SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. ATTACH A CONTINUOUS PIECE OF 1/2 INCH x 1/2 INCH WIRE MESH, (30 INCHES MINIMUM WIDTH BY THROAT LENGTH, PLUS 4 FEET) TO THE 2–INCH x 4–INCH WEIR (MEASURING THROAT LENGTH PLUS 2 FEET) AS SHOWN ON THE STANDARD DRAWING.
2. PLACE A CONTINUOUS PIECE OF GEOTEXTILE CLASS E OF THE SAME DIMENSIONS AS THE WIRE MESH OVER THE WIRE MESH AND SECURELY ATTACH TO THE 2–INCH x 4–INCH WEIR.
3. SECURELY NAIL THE 2–INCH x 4–INCH WEIR TO A 9–INCH LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAXIMUM 4 FEET APART).
4. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL (MINIMUM 2–FOOT LENGTHS OF 2–INCHES x 4–INCHES TO THE TOP OF THE WEIR AT SPACER LOCATIONS). EXTEND THESE 2–INCH x 4–INCH ANCHORS ACROSS THE INLET TOP AND BE HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHT.
5. PLACE THE ASSEMBLY SO THAT THE END SPACERS ARE 1 FOOT BEYOND BOTH ENDS OF THE THROAT OPENING.
6. FORM THE 1/2–INCH x 1/2–INCH WIRE MESH AND THE GEOTEXTILE FABRIC TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN 3/4 TO 1–1/2 INCH STONE OVER THE WIRE MESH AND GEOTEXTILE IN SUCH A MANNER AS TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.
7. THIS TYPE OF PROTECTION MUST BE INSPECTED FREQUENTLY AND THE GEOTEXTILE FABRIC AND STONE REPLACED WHEN CLOGGED WITH SEDIMENT.
8. ASSURE THAT STORM FLOWS DO NOT BYPASS THE INLET BY INSTALLING A TEMPORARY EARTH OR ASPHALT DIKE TO DIRECT THE FLOW TO THE INLET.
9. IF THERE ARE ANY SIGNS OF STREET FLOODING OR WATER PONDING, THIS STRUCTURE MUST BE CLEANED OR REPLACED, OR REDESIGNED WITH A VIABLE ALTERNATIVE SUCH AS 3.3 FILTER SOCK.

*NOTE: FILTER SOCK IS AN ALTERNATIVE WHICH IS EASIER TO INSTALL AND MAINTAIN THAN THIS STANDARD DESIGN.

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CURB INLET PROTECTION
STORM DRAIN INLET PROTECTION

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

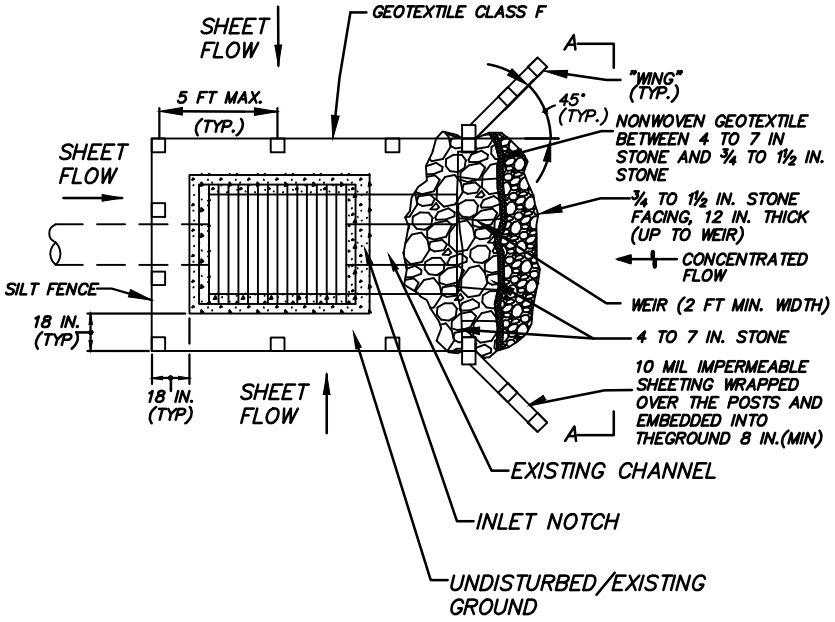
DWG. NO 307.3

SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

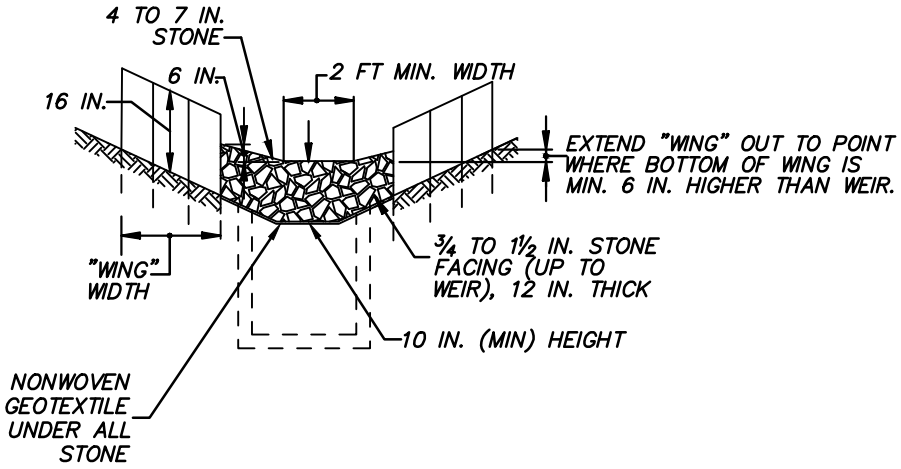
MAXIMUM DRAINAGE AREA = 1 ACRE

STANDARD SYMBOL

MIP



PLAN VIEW



SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT STANDARD SILT FENCE APPROPRIATE FOR THE SLOPES LEADING TO THE INLET AND HAVING 5–FOOT POST SPACING 1–1/2 FEET AWAY FROM THE EXISTING INLET ONLY ON THE SIDES OF THE INLET RECEIVING SHEET FLOW AND IN THE LOCATION OF THE "WINGS".
2. IN THE LOCATION OF CONCENTRATED FLOW, CONSTRUCT A STONE CHECK DAM USING 4 TO 7–INCH STONE FOR THE BASE FACED ON THE UPSTREAM SIDE WITH 3/4–INCH TO 1–1/2 INCH AGGREGATE, 1 FOOT THICK. THE STONE CHECK DAM MUST BE 16 INCHES HIGH WITH THE WEIR 10 INCHES ABOVE THE INVERT OF THE DITCH OR VALLEY GUTTER AND MUST BE THE SAME WIDTH AS THE DITCH OR GUTTER BOTTOM OR 2 FEET (MINIMUM). WHERE THE END OF THE "WINGS" MEET THE GROUND MUST BE AT OR ABOVE THE WEIR ELEVATION.
3. IF THERE ARE ANY SIGNS OF STREET FLOODING OR WATER PONDING, THIS STRUCTURE MUST BE CLEANED OR REPLACED OR REDESIGNED WITH A VIABLE SOLUTION.

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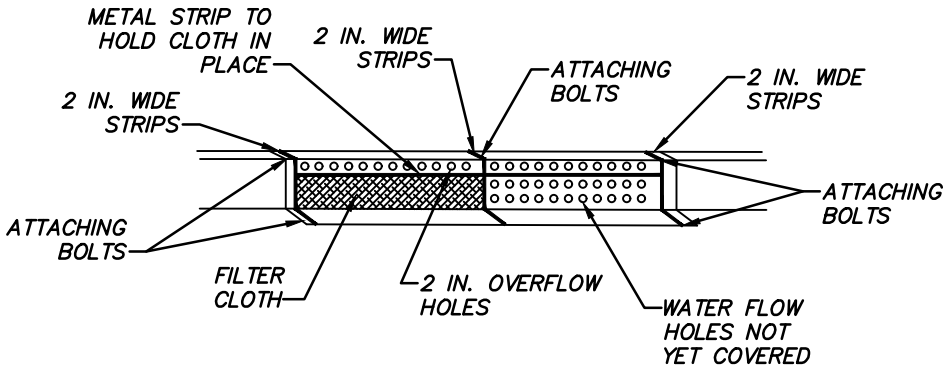
		REFERENCE

MEDIAN INLET PROTECTION
STORM DRAIN INLET PROTECTION

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 307.4

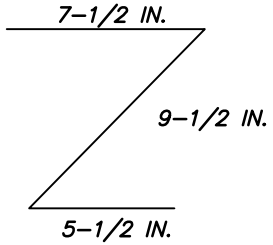
SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS



STANDARD SYMBOL
SIG

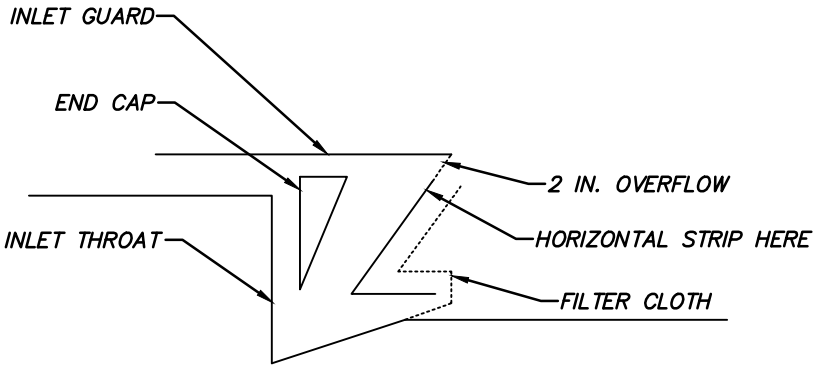
NOTE:
- AT EACH INTERSECTION OF INLET PROTECTION OVERLAP A MINIMUM OF 2 IN.

STANDARD INLET GUARD ATTACHMENT METHOD



NOTE:
- THE TOP MEASUREMENT OF 7–1/2 IN. IS SET TO PROVIDE A 2 IN. EXTENSION FOR OVERFLOW WHILE AVOIDING BLOCKAGE OF THE MANHOLE COVER.
- MAKE A WATERTIGHT CONNECTION ALONG THE SIDES AND BOTTOM OF THE INLET GUARD WITH THE STREET AND CURB.

STANDARD INLET GUARD DIMENSIONS



STANDARD INLET GUARD CROSS SECTION

DATE	APPR	
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		REFERENCE

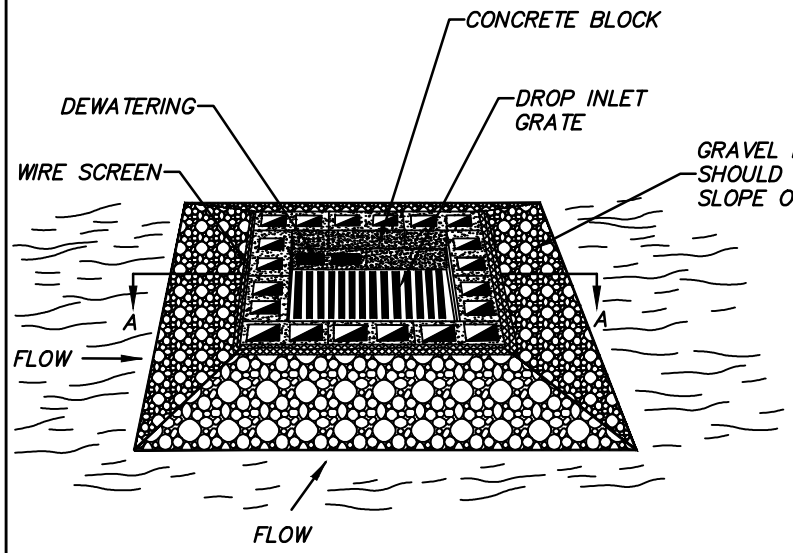
STANDARD INLET GUARD
STORM DRAIN INLET PROTECTION

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

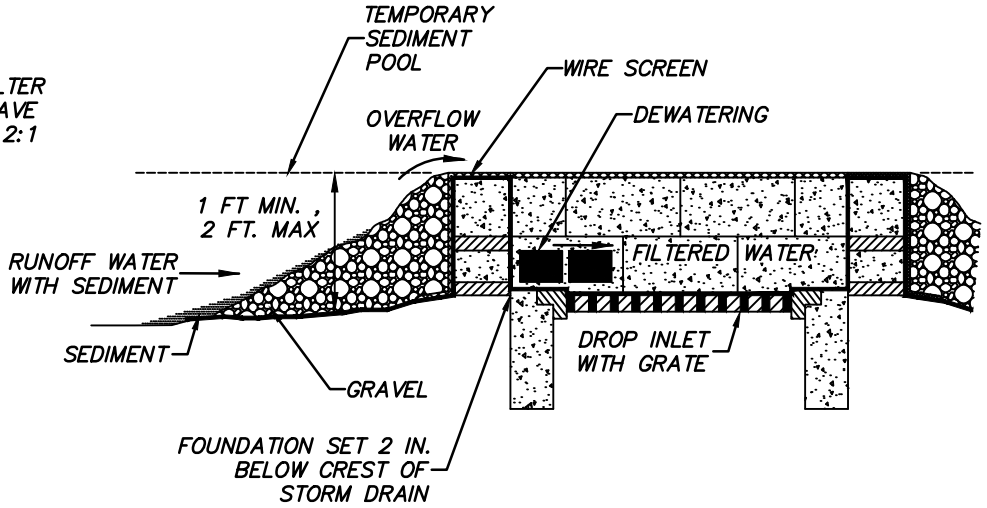
DWG. NO 307.5

SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

STANDARD SYMBOL



BLOCK AND GRAVEL ISOMETRIC VIEW



BLOCK AND GRAVEL SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 2 INCHES BELOW THE CREST OF THE STORM DRAIN.
2. THE BOTTOM ROW OF BLOCKS IS PLACED AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. ONE BLOCK IS PLACED ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. IF NEEDED, LATERAL SUPPORT MAY BE GIVEN TO SUBSEQUENT ROWS BY PLACING 2 INCH x 4 INCH WOOD STUDS THROUGH BLOCK OPENINGS.
3. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH ½ INCH OPENINGS MUST BE FITTED OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
4. PLACE CLEAN #57 GRAVEL 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH TO AN EVEN GRADE.
5. FOR SEDIMENT STORAGE, PROVIDE A MINIMUM EXCAVATED DEPTH OF 1.5 FEET. SIDE SLOPES SHOULD NOT BE STEEPER THAN 2:1.

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REVISED		
ISSUED:		
		REFERENCE

BLOCK AND GRAVEL DROP INLET PROTECTION
STORM DRAIN INLET PROTECTION

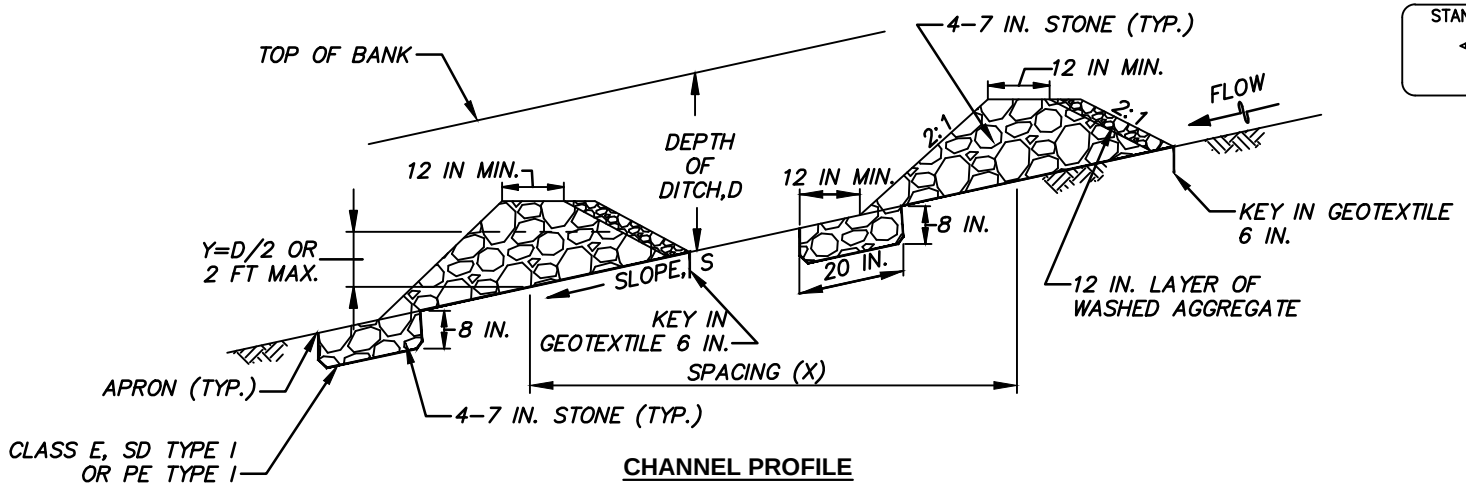
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 307.6

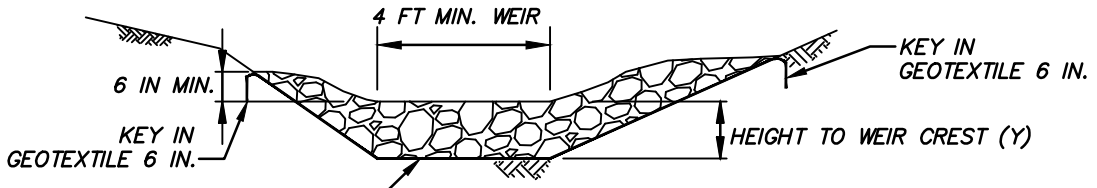
SOURCE: MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA

STANDARD SYMBOL

CD



CHANNEL PROFILE



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. PREPARE SWALES IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS DESCRIBED IN SECTION 4.4, FOR TEMPORARY SWALE, OR AS SPECIFIED ON PLAN.
2. CONSTRUCT THE CHECK DAM OF 4–7 INCH STONE. PLACE THE STONE SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL AND IS KEYED INTO THE CHANNEL BANKS.
3. CONSTRUCT THE TOP OF THE CHECK DAM SO THAT THE CENTER IS APPROXIMATELY 6 INCHES LOWER THAN THE OUTER EDGES, FORMING A WEIR THAT WATER CAN FLOW ACROSS.
4. THE MAXIMUM HEIGHT OF THE CHECK DAM AT THE CENTER MUST NOT EXCEED 2 FEET OR HALF THE HEIGHT OF THE CHANNEL.
5. LINE THE UPSTREAM SIDE OF THE CHECK DAM WITH APPROXIMATELY 1 FOOT OF ¾ TO 1–1/2 INCH AGGREGATE.
6. REMOVE ACCUMULATED SEDIMENT WHEN IT HAS BUILT UP TO HALF OF THE ORIGINAL HEIGHT OF THE WEIR CREST.

DATE	APPR	
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		REFERENCE

STONE CHECK DAM

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

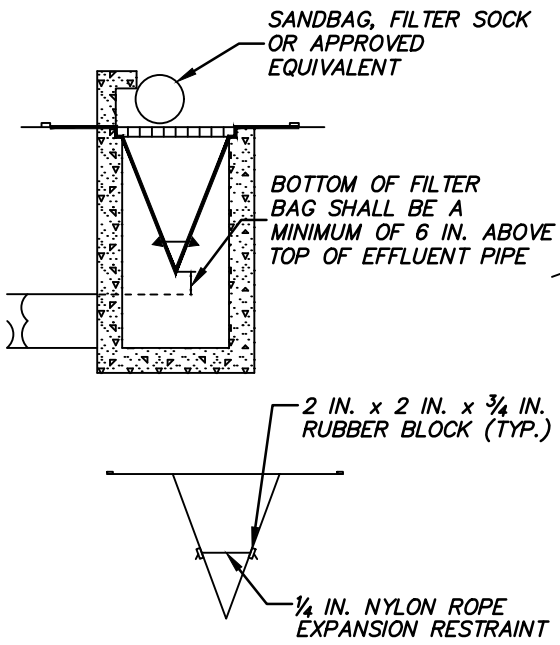
DWG. NO 308.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

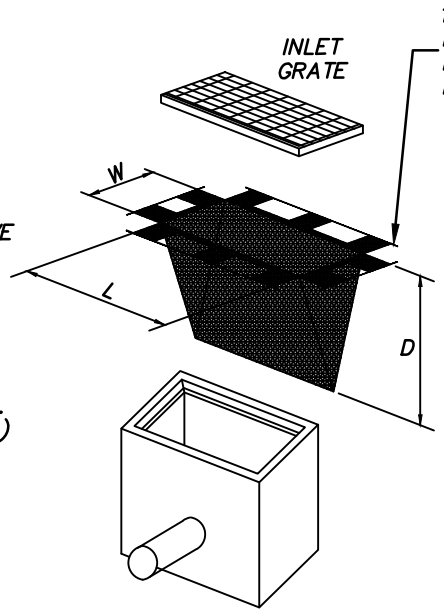
MAXIMUM DRAINAGE AREA = ½ ACRE

STANDARD SYMBOL

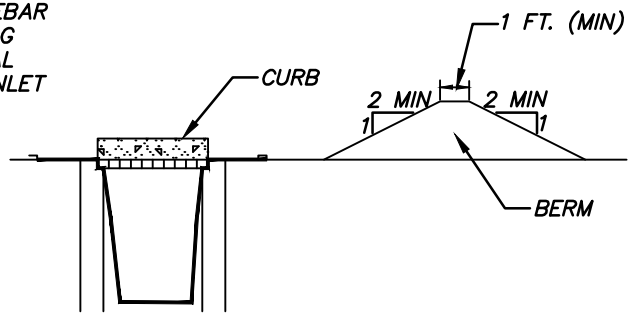
F.B.S



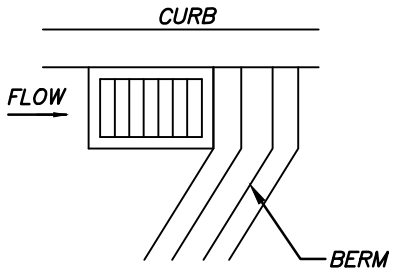
INSTALLATION DETAIL



ISOMETRIC VIEW



ELEVATION VIEW



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. INSTALL PROPRIETARY FILTER BAG PRODUCTS PER MANUFACTURER'S RECOMMENDATIONS.
2. GEOTEXTILE MUST MEET THE SPECIFICATIONS OUTLINED IN TABLE 3.9– GEOTEXTILE MATERIAL PROPERTIES FOR INLET FILTER BAG.
3. INSPECT FILTER BAGS ON A WEEKLY BASIS OR AFTER EACH RAINFALL EVENT, WHICHEVER IS SOONER.
4. CLEAN FILTER BAGS AND/OR REPLACE WHEN THE BAG IS HALF FULL.
5. REPLACE DAMAGED FILTER BAGS IMMEDIATELY.
6. INITIATE NEEDED REPAIRS IMMEDIATELY AFTER THE INSPECTION.

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		REFERENCE

INLET FILTER BAG
CURBED ROADWAY

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

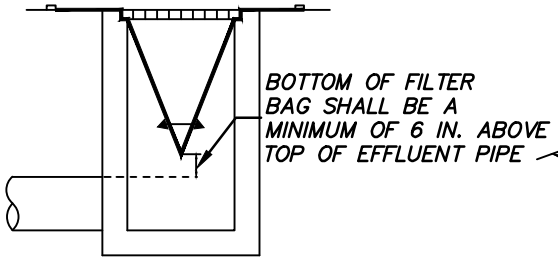
DWG. NO 309.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

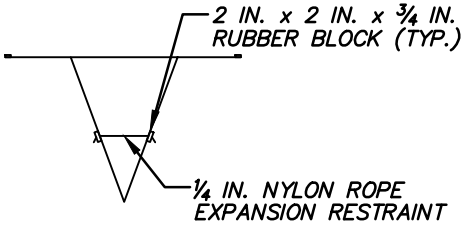
MAXIMUM DRAINAGE AREA = ½ ACRE

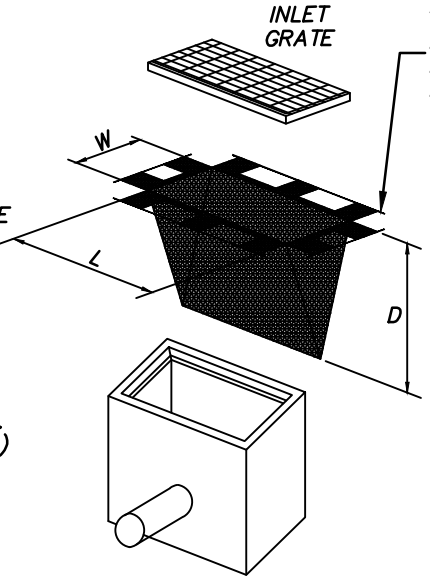
STANDARD SYMBOL

F.B.C

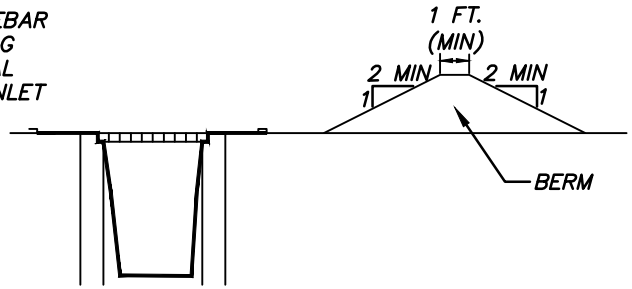


INSTALLATION DETAIL

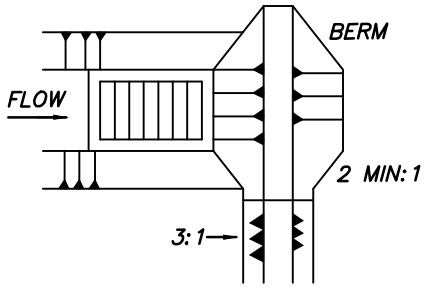




ISOMETRIC VIEW



ELEVATION VIEW



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. INSTALL PROPRIETARY FILTER BAG PRODUCTS PER MANUFACTURER'S RECOMMENDATIONS.
2. GEOTEXTILE MUST MEET THE SPECIFICATIONS OUTLINED IN TABLE 3.9– GEOTEXTILE MATERIAL PROPERTIES FOR INLET FILTER BAG.
3. INSPECT FILTER BAGS ON A WEEKLY BASIS OR AFTER EACH RAINFALL EVENT, WHICHEVER IS SOONER.
4. CLEAN FILTER BAGS AND/OR REPLACE WHEN THE BAG IS HALF FULL.
5. REPLACE DAMAGED FILTER BAGS IMMEDIATELY.
6. INITIATE NEEDED REPAIRS IMMEDIATELY AFTER THE INSPECTION.

DATE	APPR	
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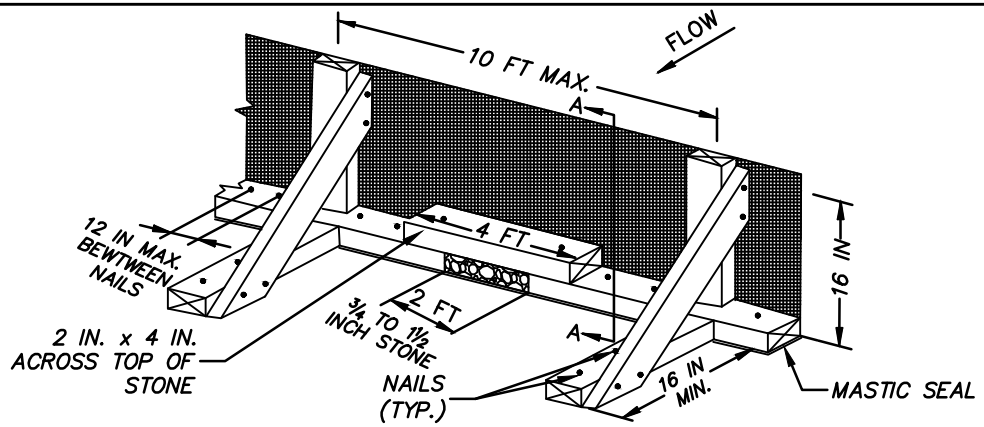
		REFERENCE

INLET FILTER BAG
CHANNEL OR ROADWAY SWALE

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 309.2

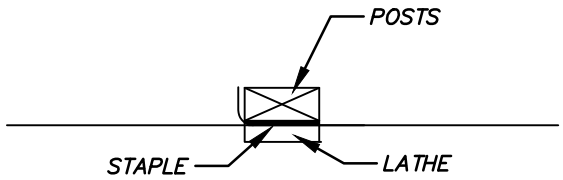
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



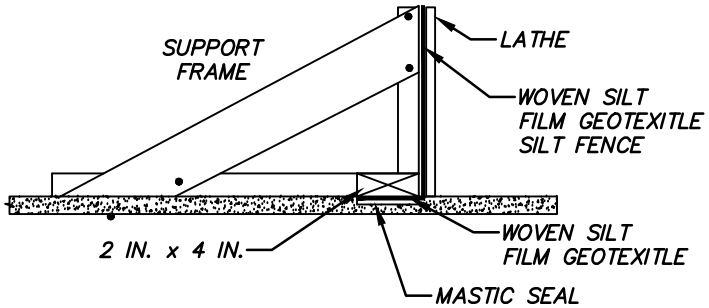
STANDARD SYMBOL

SFOP

ISOMETRIC VIEW



JOINING ADJACENT SECTIONS OF GEOTEXTILE



SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH BY 4 INCH LUMBER.
2. USE WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN APPENDIX A.
3. SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART.
4. PROVIDE A 2–FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE STONE IN THE OPENING OVER GEOTEXTILE.
5. KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN – OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH LATHE.
7. PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT–LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.
8. SECURE BOARDS TO PAVEMENT WITH 40D 5–INCH MINIMUM LENGTH NAILS.
9. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

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SILT FENCE ON PAVEMENT

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

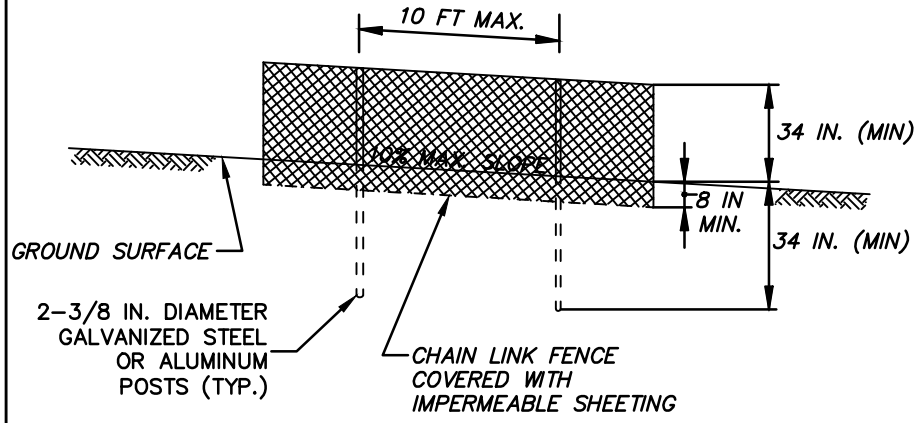
DWG. NO 310.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

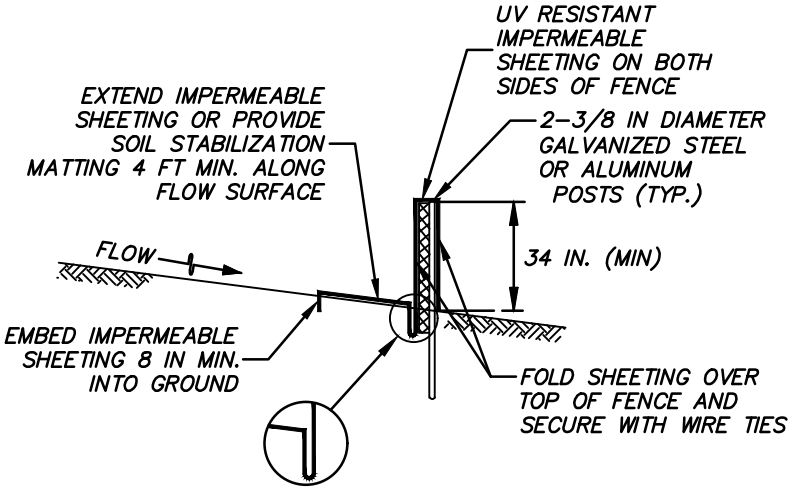
MAXIMUM DRAINAGE AREA = 2 ACRES

STANDARD SYMBOL

—DF—



ELEVATION



SECTION

CONSTRUCTION SPECIFICATIONS

1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2–3/8 INCH MAXIMUM OPENING).
2. USE 2–3/8 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

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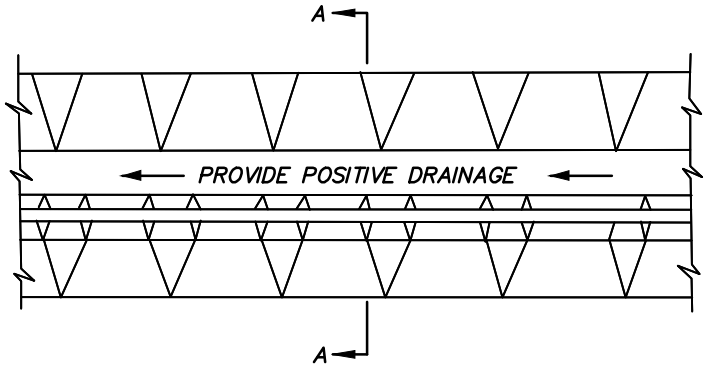
DIVERSION FENCE

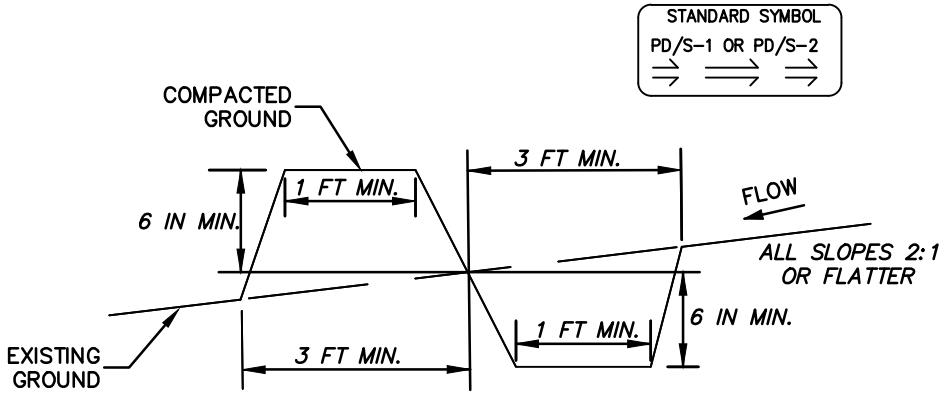
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 401.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



PLAN VIEW



CROSS SECTION

PD/S TYPE	DRAINAGE AREA	STABILIZATION
PD/S-1	≤ 1 ACRE	SEED & MULCH
PD/S-2	1-2 ACRES	SEED COVER W/ EROSION CONTROL MATTING, OR LINE W/ SOD

CONSTRUCTION SPECIFICATIONS

1. EXCAVATE OR SHAPE THE SWALE TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED IN THE STANDARD.
2. COMPACT THE FILL BY EARTH MOVING EQUIPMENT IN MAXIMUM 6-INCH LIFTS, WHERE THE HEIGHT OF THE FILL IS GREATER THAN 6 INCHES.
3. COMPLETE THE STABILIZATION OF THE AREA DISTURBED BY THE DIKE AND SWALE WITHIN 7 DAYS AND IN ACCORDANCE WITH THE STABILIZATION SPECIFICATIONS ON THE PLANS.
4. A PERIMETER DIKE/SWALE MUST HAVE AN OUTLET THAT FUNCTIONS WITHOUT CAUSING EROSION.
5. OUTLET RUNOFF DIVERTED FROM A PROTECTED OR STABILIZED UPLAND AREA DIRECTLY ONTO AN UNDISTURBED STABILIZED AREA.
6. CONVEY RUNOFF DIVERTED FROM A DISTURBED OR EXPOSED UPLAND AREA TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN.
7. THE LOCATION OF A DIKE/SWALE MAY NEED TO BE ADJUSTED IN THE FIELD IN ORDER TO PROVIDE POSITIVE DRAINAGE TO A TRAPPING DEVICE AND TO UTILIZE THE MOST SUITABLE OUTLET.
8. PROVIDE INSPECTION AND REQUIRED MAINTENANCE PERIODICALLY, AFTER EACH RAIN EVENT, AND DAILY DURING A PROLONGED RAIN EVENT.

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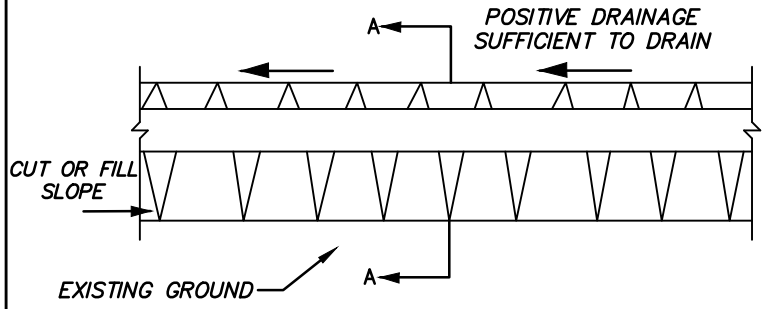
DIKE-SWALE

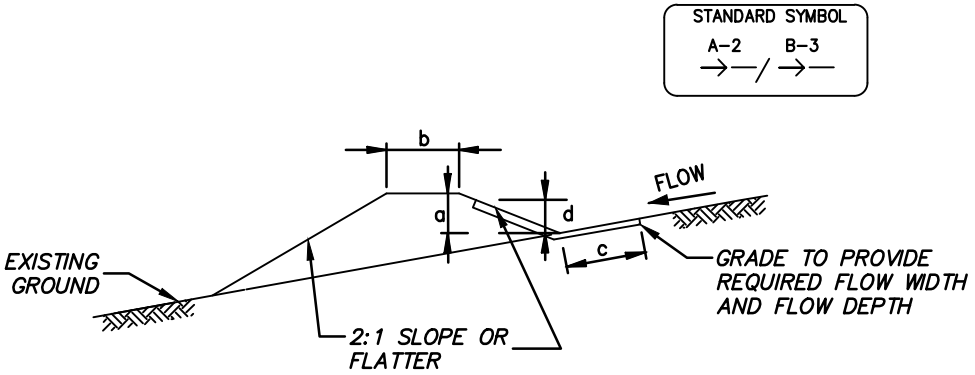
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 402.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



PLAN VIEW



CONTINUOUS GRADE
0.5% MIN. TO 10% MAX. SLOPE

SECTION A-A

FLOW CHANNEL STABILIZATION LINING OPTIONS

GRADE 0.5% MIN. 10% MAX

1. SEED AND COVER WITH STRAW MULCH.
2. SEED AND COVER WITH EROSION CONTROL MATTING, OR LINE WITH SOD.
3. 4 TO 7–INCH STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO SOIL USING CONSTRUCTION EQUIPMENT IN A MINIMUM 7–INCH LAYER.

DIKE TYPE

	A	B
a – DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b – DIKE WIDTH	24 IN MIN.	36 IN MIN.
c – FLOW WIDTH	4 FT MIN.	6 FT MIN.
d – FLOW DEPTH	12 IN MIN.	24 IN MIN.

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY EARTH DIKES MUST HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. EARTH DIKES HAVING LONGITUDINAL SLOPES FLATTER THAN 1% SHOULD HAVE SPOT ELEVATIONS ALONG THE FLOW LINE.
2. DIRECT DIVERTED RUNOFF FROM DISTURBED AREAS TO A SEDIMENT TRAPPING DEVICE.
3. OUTLET DIVERTED RUNOFF FROM UNDISTURBED AREAS DIRECTLY ONTO AN UNDISTURBED, STABILIZED AREA AT A NON–EROSIVE VELOCITY (≤ 4 FEET PER SECOND FOR WELL–ESTABLISED TURFGRASS).
4. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE EARTH DIKE BERM AND FLOW CHANNEL.
5. EXCAVATE OR SHAPE THE DIKE TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. COMPACT THE FILL BY EARTH MOVING EQUIPMENT IN MAXIMUM 12–INCH LIFTS.
7. PLACE ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE EARTH DIKE BERM AND FLOW CHANNEL.
8. STABILIZE FLOW CHANNEL AS REQUIRED BY DESIGN SELECTION USING TABLE 4.3 OR TABLE 4.4. STONE LINING MUST HAVE GEOTEXTILE UNDERLAYMENT OF CLASS SD TYPE I NON–WOVEN OR PE TYPE I NON–WOVEN FABRIC.
9. PROVIDE INSPECTION AND MAINTENANCE PERIODICALLY, AFTER EACH RAIN EVENT, AND DAILY DURING A PROLONGED RAIN EVENT.

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EARTH DIKE - 1

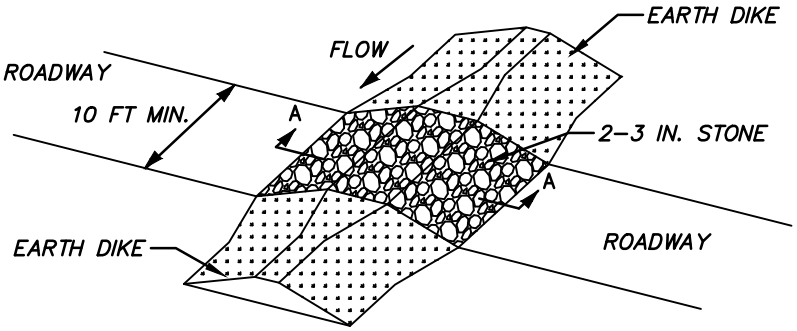
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 403.1

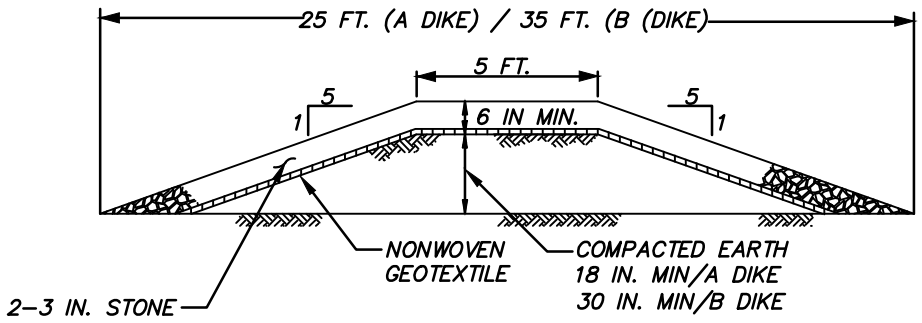
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL

MB



ISOMETRIC VIEW



SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NON–WOVEN GEOTEXTILE OF CLASS SD TYPE I NON–WOVEN OR PE TYPE I NON–WOVEN FABRIC OVER THE EARTH MOUND PRIOR TO PLACING STONE. IF THE FLOW CHANNEL LINING NECESSARY ACCORDING TO TABLE 4.3 AND THE CHANNEL CHARACTERISTICS IS 4 TO 7–INCH STONE, INSTALL THIS AS THE BASE LAYER, AND APPLY THE 2 TO 3–INCH STONE FOR THE MOUNTABLE BERM ON TOP OF THE 4 TO 7–INCH STONE FOR THE VEHICLE CROSSING SURFACE MAINTAINING A SMOOTH FLOW PATH LINE. THE GEOTEXTILE UNDERLAYMENT IS ONLY NECESSARY WHERE THERE IS NOT ALREADY A STONE BASE.
3. PLACE 2 TO 3–INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM. ENSURE A SMOOTH TRANSITION TO AND FROM THE FLOW CHANNEL ABOVE AND BELOW THE MOUNTABLE BERM SECTION.
4. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE INSPECTION AND MAINTENANCE PERIODICALLY, AFTER EACH RAIN EVENT, AND DAILY DURING A PROLONGED RAIN EVENT.

DATE	APPR	
REVISED		
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		REFERENCE

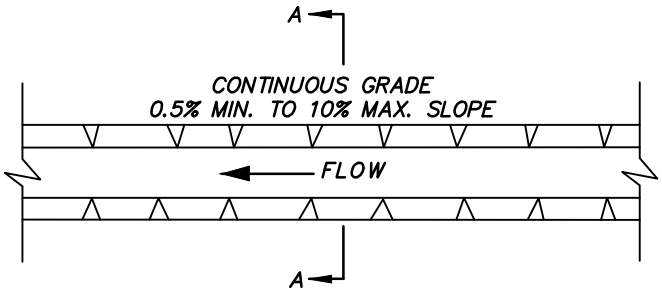
EARTH DIKE - 2
MOUNTABLE BERM

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

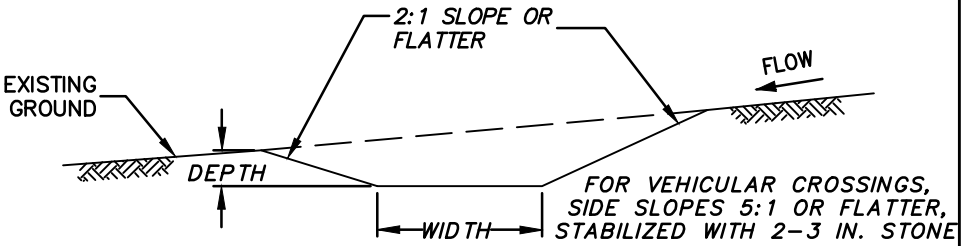
DWG. NO 403.2

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL
A-2 B-3



PLAN VIEW



CROSS SECTION

FLOW CHANNEL STABILIZATION LINING OPTIONS

GRADE 0.5% MIN. 10% MAX

1. SEED AND COVER WITH STRAW MULCH.
2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOD.
3. 4 TO 7-INCH STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO SOIL IN A MINIMUM 7-INCH LAYER.

SWALE TYPE

	A	B
MIN. DEPTH	1 FT MIN.	1 FT MIN.
BOTTOM WIDTH	4 FT MIN.	6 FT MIN.

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES MUST HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. SWALES HAVING LONGITUDINAL SLOPES FLATTER THAN 1% SHOULD HAVE SPOT ELEVATIONS ALONG THE FLOW LINE.
2. CONVEY DIVERTED RUNOFF FROM DISTURBED AREAS TO A SEDIMENT TRAPPING DEVICE.
3. OUTLET DIVERTED RUNOFF FROM AN UNDISTURBED AREA DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT A NON-EROSIVE VELOCITY (≤ 4 FEET PER SECOND FOR WELL-ESTABLISHED TURFGRASS).
4. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE FLOW CHANNEL.
5. EXCAVATE OR SHAPE THE SWALE TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.
6. COMPACT FILL, IF NECESSARY, BY EARTH MOVING EQUIPMENT IN MAXIMUM 12-INCH LIFTS.
7. PLACE ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE FLOW CHANNEL.
8. FOR VEHICLE OR MACHINE CROSSINGS, REDUCE THE SIDE SLOPES OF THE SWALE TO 5:1 HORIZONTAL TO VERTICAL, AND 2 TO 3-INCH STONE MUST BE PLACED AT LEAST 6 INCHES DEEP OVER A LAYER OF CLASS SD TYPE I OR PE TYPE I NON-WOVEN GEOTEXTILE. IF THE FLOW CHANNEL LINING MATERIAL IS TYPE 3 (4 TO 7-INCH STONE), THE GEOTEXTILE IS NOT REQUIRED, AND THE 2 TO 3-INCH STONE CAN BE LAID DIRECTLY ON TOP OF THE 4 TO 7-INCH STONE LINING. FLOW CHANNEL DEPTH OF 1 FT MINIMUM MUST BE MAINTAINED THROUGH CROSS SECTION.

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

TEMPORARY SWALES

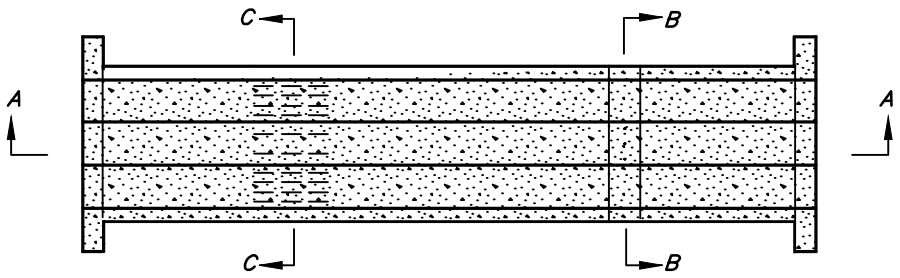
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 404.1

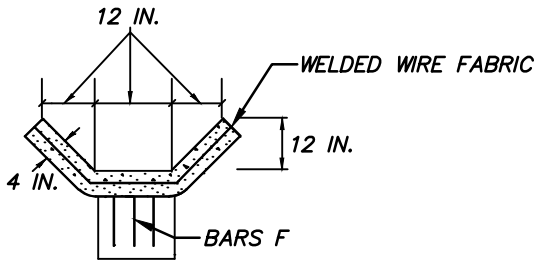
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL

PF



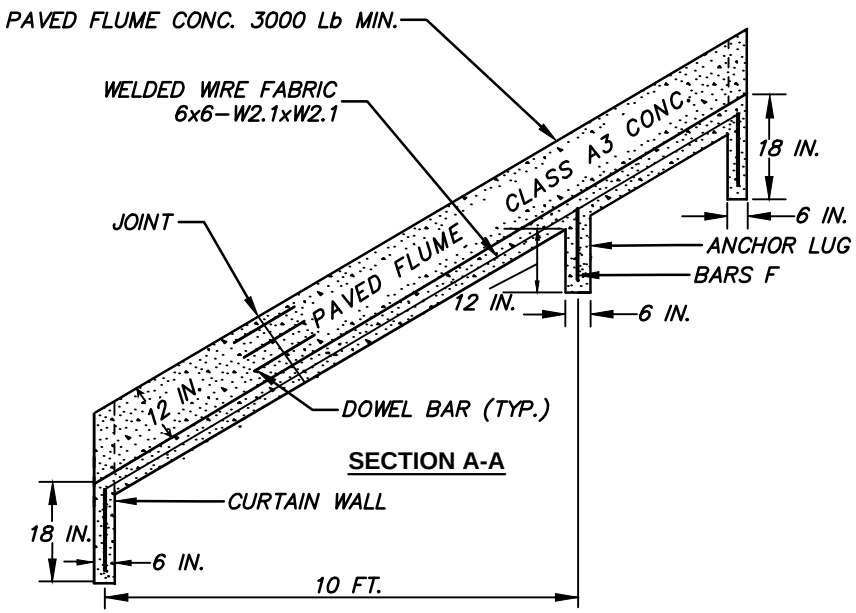
PLAN VIEW



SECTION B-B

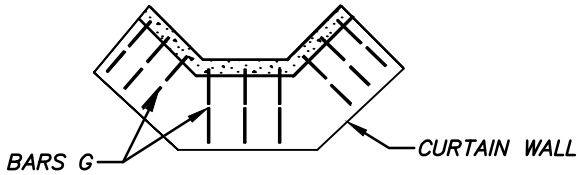
NOTE:

- ONLY REPRESENTATIVE CROSS SECTIONS ARE SHOWN, NOT ALL FLUMES ARE 1 FT. x 3 FT. WITH 1:1 SIDE SLOPES



SECTION A-A

*10 FT. C–C MAXIMUM TYPICAL SPACING BETWEEN ANCHOR LUGS WHERE CURTAIN WALL IS NOT REQUIRED ANCHOR LUG IS TO BE A MAXIMUM OF 2 FT. FROM END OF CHANNEL



SECTION C-C

SCHEDULE OF REINFORCING STEEL

MARK	NO.	LENGTH		SIZE	SPACING C–C	SHAPE
		2:1	1 1/2:1			
F	3	1 FT.–2 IN.	1 FT.–2 IN.	4	4 IN.	STRAIGHT
G	9	1 FT.–5 IN.	1 FT.–5 IN.	4	6 IN.	STRAIGHT
DOWELS	10	1 FT.–6 IN.	1 FT.–6 IN.	4	5 IN.	STRAIGHT

NO. SHOWN ARE FOR ONE ANCHOR LUG, CURTAIN WALL AND JOINT

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		REFERENCE

PAVED FLUME

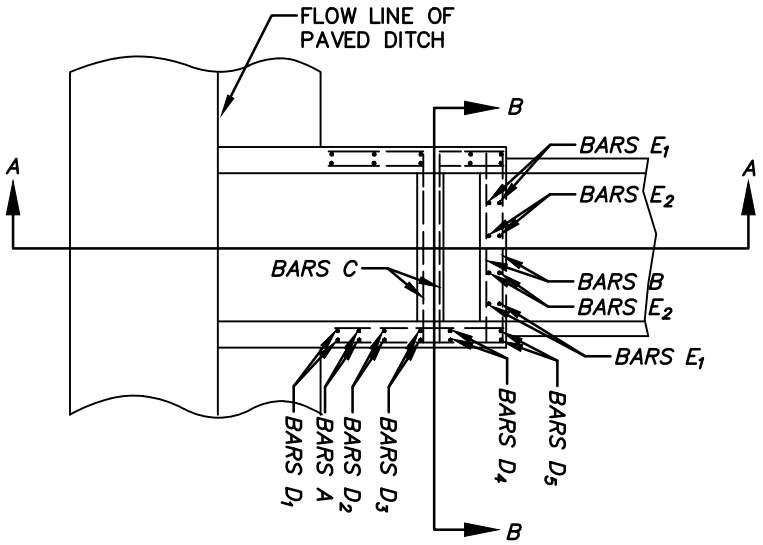
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 405.1

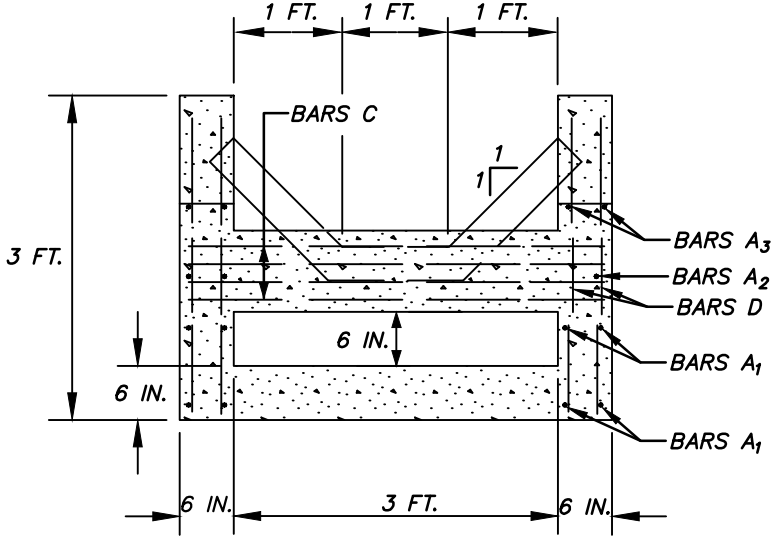
SOURCE: VDOT ROAD AND BRIDGE STANDARDS

STANDARD SYMBOL

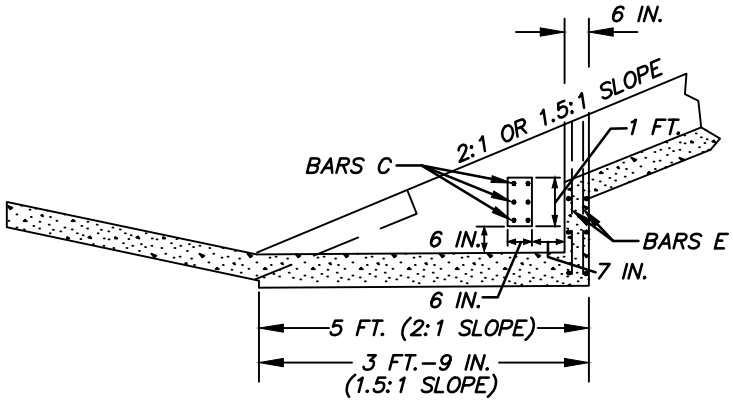
ED



PLAN VIEW



SECTION B-B



SECTION A-A

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

ENERGY DISSIPATOR - 1

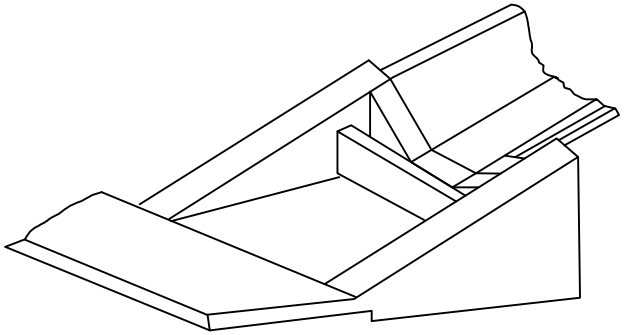
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 405.2

SOURCE: VDOT ROAD AND BRIDGE STANDARDS

STANDARD SYMBOL

ED



ISOMETRIC

APPROXIMATE QUANTITIES			
		CONCRETE	REINFORCING STEEL
		CU. YDS.	LBS.
ENERGY DISSIPATOR	2:1	0.7479	61.20
	1.5:1	0.5921	57.63

SCHEDULE OF REINFORCING STEEL

MARK	NO.	LENGTH		SIZE	SPACING C–C	SHAPE
		2:1	1.5:1			
A_1	8	2 FT.–10 IN.	2 FT.–10 IN.	3	8 IN.	STRAIGHT
A_2	4	2 FT.–6 1/4 IN.	1 FT.–10 IN.	3	8 IN.	STRAIGHT
A_3	4	1 FT.–0 3/4 IN.	0 FT.–10 IN.	3	8 IN.	STRAIGHT
B	6	3 FT.–9 IN.	3 FT.–9 IN.	3	8 IN.	STRAIGHT
C	8	3 FT.–8 IN.	3 FT.–8 IN.	3	2–1/2 IN.	STRAIGHT
D_1	4	1 FT.–2 1/2 IN.	0 FT.–8 IN.	3	8 IN.	STRAIGHT
D_2	4	1 FT.–6 1/2 IN.	1 FT.–1 1/2 IN.	3	8 IN.	STRAIGHT
D_3	4	1 FT.–10 1/2 IN.	1 FT.–7 IN.	3	8 IN.	STRAIGHT
D_4	4	2 FT.–2 1/2 IN.	2 FT.–0 1/2 IN.	3	8 IN.	STRAIGHT
D_5	4	2 FT.–6 1/2 IN.	2 FT.–6 IN.	3	8 IN.	STRAIGHT
E_1	4	1 FT.–11 1/2 IN.	1 FT.–11 1/2 IN.	3	8 IN.	STRAIGHT
E_2	4	1 FT.–5 1/2 IN.	1 FT.–5 1/2 IN.	3	8 IN.	STRAIGHT

DATE	APPR	
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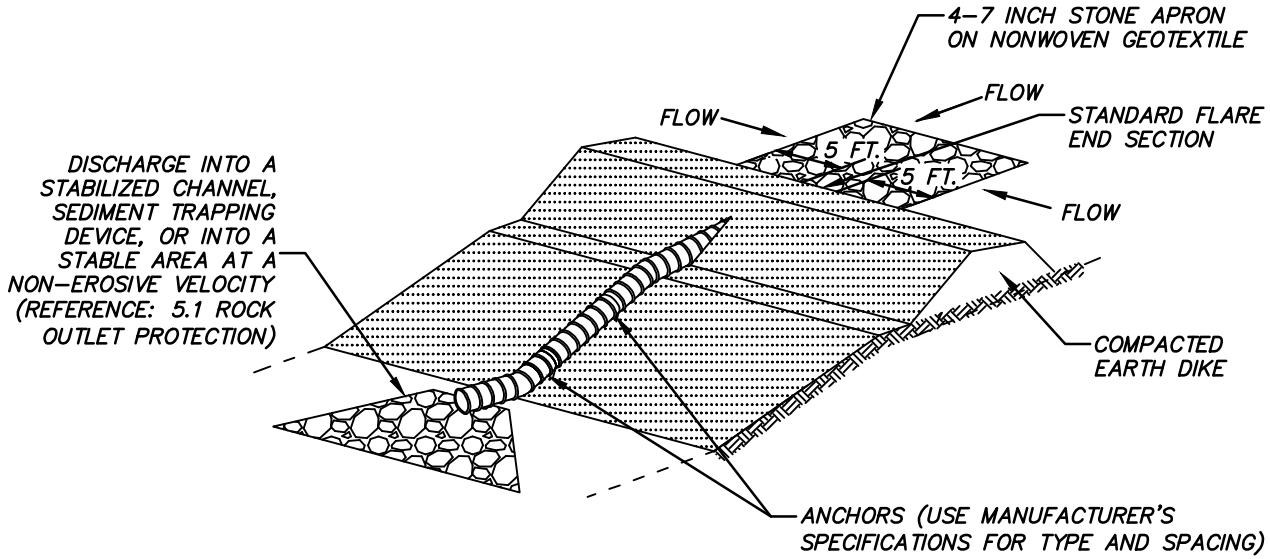
ISSUED:		
		REFERENCE

ENERGY DISSIPATOR - 2

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 405.3

SOURCE: VDOT ROAD AND BRIDGE STANDARDS

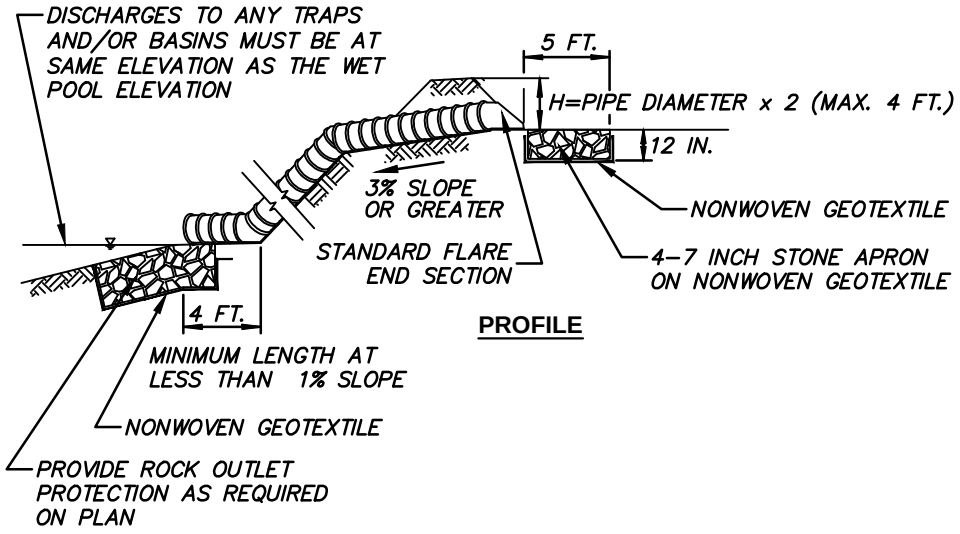


STANDARD SYMBOL

PSD – 12

DESIGNATION PSD–12 REFERS TO 12 IN PIPE SLOPE DRAIN.

ISOMETRIC VIEW



PROFILE

TABLE 4.9 DESIGN CRITERIA FOR PIPE SLOPE DRAIN		
SIZE	PIPE/TUBING DIAMETER (D) IN	MAXIMUM DRAINAGE AREA (ACRES)
PSD–12	12	0.4
PSD–18	18	1.2
PSD–21	21	1.8
PSD–24	24	2.5
PSD–24(2)	24(x2)	5.0

DATE	APPR	
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ISSUED:		
		REFERENCE

PIPE SLOPE DRAIN

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

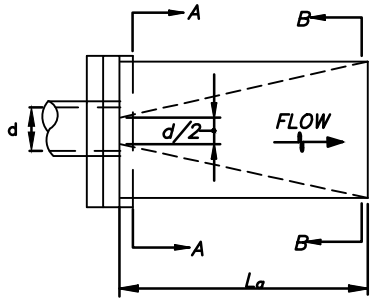
DWG. NO 407.1

SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

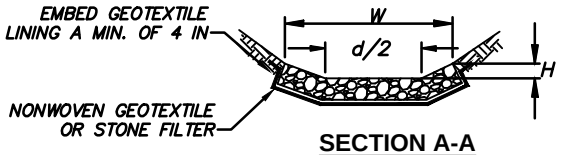
STANDARD SYMBOL

ROP-1

DISCHARGE TO SEMI CONFINED CHANNEL SECTION



PLAN VIEW

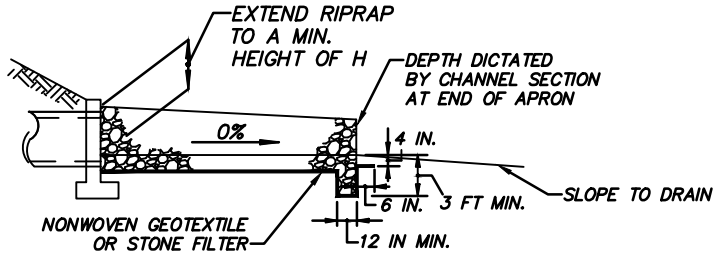


SECTION A-A

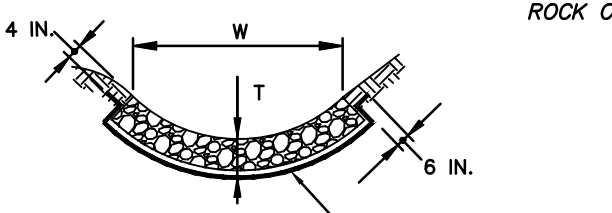
CHANNEL CROSS SECTION WILL TRANSITION FROM A–A TO B–B

NOTE:

- VARIABLE DEFINITIONS CAN BE FOUND IN CHAPTER 5.1– ROCK OUTLET PROTECTION



PROFILE



SECTION B-B

RIPRAP	
CLASS	THICKNESS (T)
I	19 IN.
II	32 IN.
III	46 IN.

CONSTRUCTION SPECIFICATIONS

1. PREPARE THE SUBGRADE FOR THE RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
2. CONFORM THE ROCK OR GRAVEL TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED IN THE RIPRAP.
3. USE FILTER STONE OR NONWOVEN GEOTEXTILE AS SPECIFIED AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC MUST BE A MINIMUM OF 1 FOOT. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
4. STONE FOR THE RIPRAP OUTLETS MAY BE PLACED BY EQUIPMENT. CONSTRUCT THE OUTLETS TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR RIPRAP IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER THAT PREVENTS DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
5. PLACE THE STONE SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

ROCK OUTLET PROTECTION - 1

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

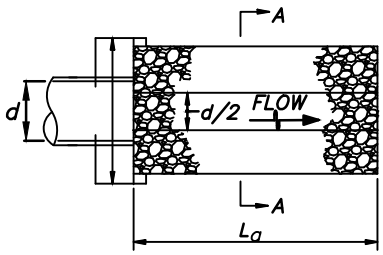
DWG. NO 501.1

SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

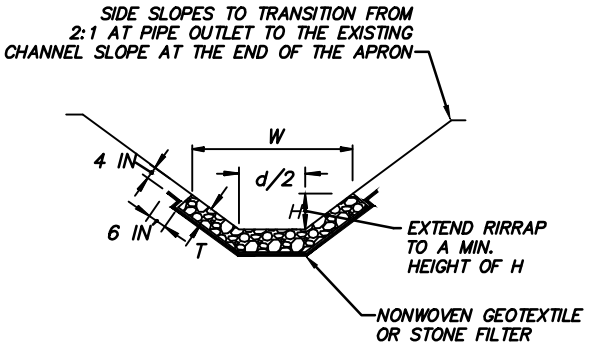
STANDARD SYMBOL

ROP–II

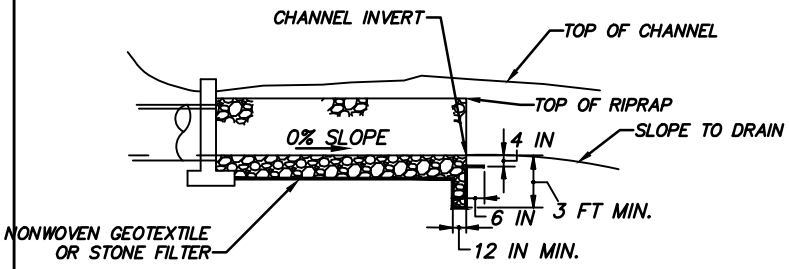
DISCHARGE TO CONFINED CHANNEL SECTION



PLAN VIEW



SECTION A-A



PROFILE

RIPRAP	
CLASS	THICKNESS (T)
I	19 IN.
II	32 IN.
III	46 IN.

NOTE:

- VARIABLE DEFINITIONS CAN BE FOUND IN CHAPTER 5.1– ROCK OUTLET PROTECTION

CONSTRUCTION SPECIFICATIONS

1. PREPARE THE SUBGRADE FOR THE RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
2. CONFORM THE ROCK OR GRAVEL TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED IN THE RIPRAP.
3. USE FILTER STONE OR NONWOVEN GEOTEXTILE AS SPECIFIED AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC MUST BE A MINIMUM OF 1 FOOT. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
4. STONE FOR THE RIPRAP OUTLETS MAY BE PLACED BY EQUIPMENT. CONSTRUCT THE OUTLETS TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR RIPRAP IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER THAT PREVENTS DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
5. PLACE THE STONE SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

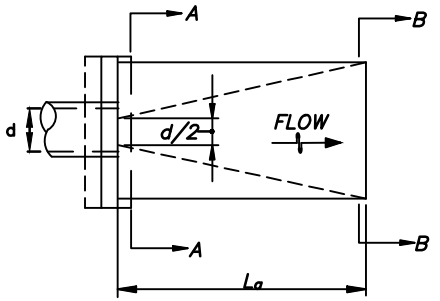
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

ROCK OUTLET PROTECTION - 2

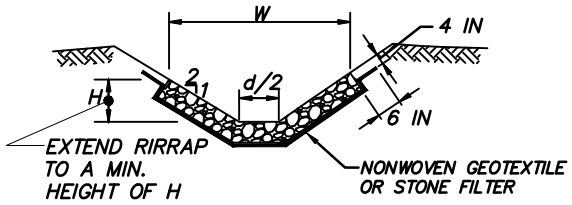
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 501.2

SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS



PLAN VIEW



SECTION A-A

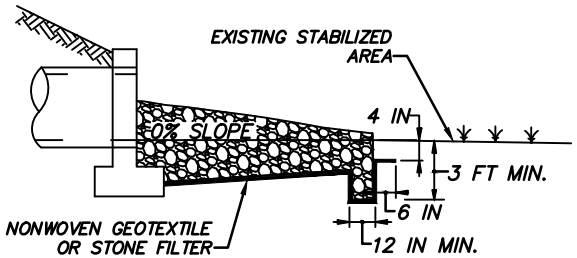
STANDARD SYMBOL

ROP–III

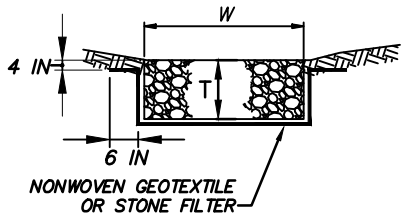
DISCHARGE TO AN UNCONFINED CHANNEL OR FLAT AREA

NOTE:

- VARIABLE DEFINITIONS CAN BE FOUND IN CHAPTER 5.1– ROCK OUTLET PROTECTION



PROFILE



SECTION B-B

RIPRAP	
CLASS	THICKNESS (T)
I	19 IN.
II	32 IN.
III	46 IN.

CONSTRUCTION SPECIFICATIONS

1. PREPARE THE SUBGRADE FOR THE RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
2. CONFORM THE ROCK OR GRAVEL TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED IN THE RIPRAP.
3. USE FILTER STONE OR NONWOVEN GEOTEXTILE AS SPECIFIED AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC MUST BE A MINIMUM OF 1 FOOT. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
4. STONE FOR THE RIPRAP OUTLETS MAY BE PLACED BY EQUIPMENT. CONSTRUCT THE OUTLETS TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR RIPRAP IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER THAT PREVENTS DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
5. PLACE THE STONE SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

DATE	APPR	
REVISED		
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		REFERENCE

ROCK OUTLET PROTECTION - 3

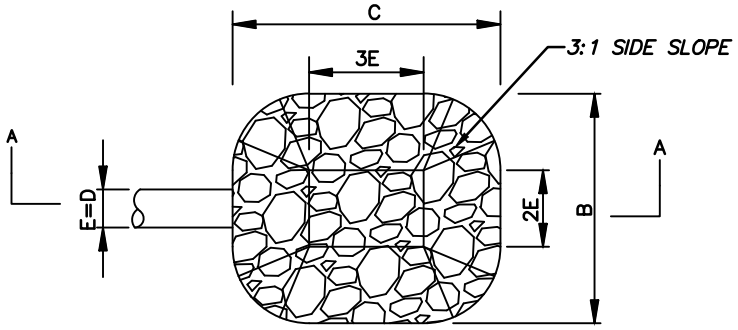
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 501.3

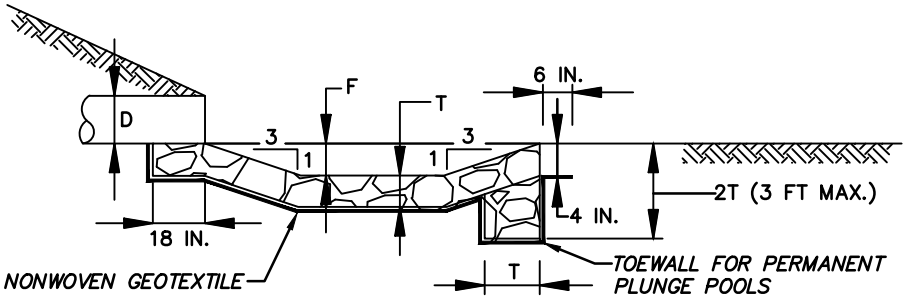
SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

STANDARD SYMBOL

PP



PLAN VIEW



SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. USE SPECIFIED CLASS OF RIPRAP.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
3. PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
5. STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.

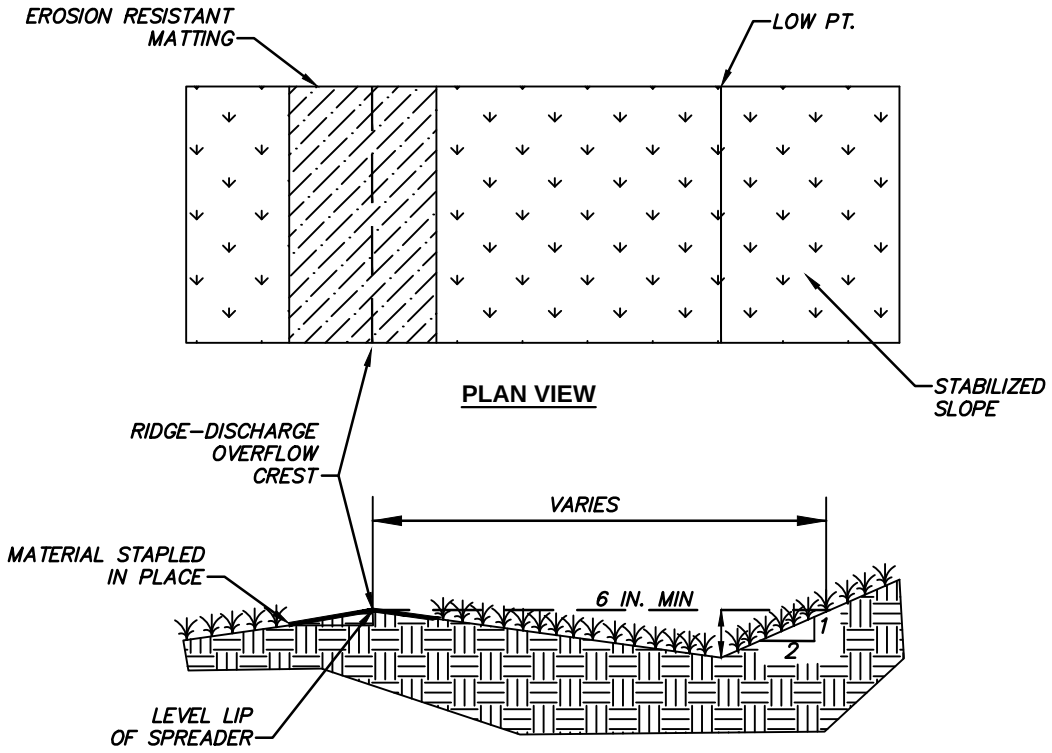
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

PLUNGE POOL

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 502.1

SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS



CONSTRUCTION SPECIFICATIONS

1. THE MATTING SHOULD BE A MINIMUM OF 4 FT WIDE EXTENDING 6 INCHES OVER THE LIP AND BURIED 6 INCHES DEEP IN A VERTICAL TRENCH ON THE LOWER EDGE. THE UPPER EDGE SHOULD BUTT AGAINST SMOOTH CUT SOD AND BE SECURELY HELD IN PLACE WITH CLOSELY SPACED HEAVY DUTY WIRE STAPLES AT LEAST 12 INCHES LONG.
2. ENSURE THAT THE SPREADER LIP IS LEVEL FOR UNIFORM SPREADING OF STORM RUNOFF.
3. CONSTRUCT THE LEVEL SPREADER ON UNDISTURBED SOIL (NOT ON FILL).
4. CONSTRUCT A 20 FT TRANSITION SECTION FROM THE DIVERSION CHANNEL TO BLEND SMOOTHLY TO THE WIDTH AND DEPTH OF THE SPREADER.
5. DISPERSE RUNOFF FROM THE SPREADER ACROSS A PROPERLY STABILIZED SLOPE NOT TO EXCEED 10%. MAKE SURE THE SLOPE IS SUFFICIENTLY SMOOTH TO KEEP FLOW FROM CONCENTRATING.
6. IMMEDIATELY AFTER ITS CONSTRUCTION, APPROPRIATELY SEED AND MULCH THE ENTIRE DISTURBED AREA OF THE SPREADER.

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

LEVEL SPREADER

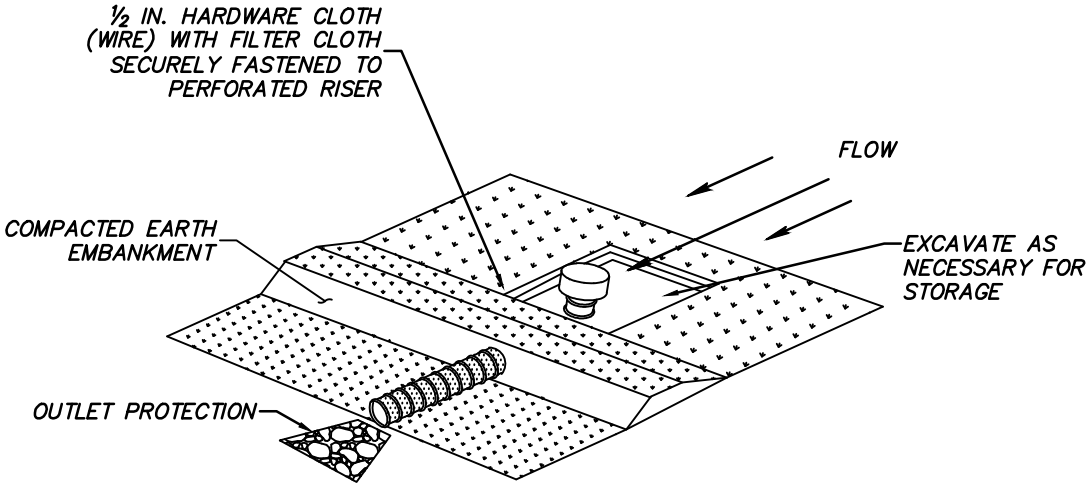
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 503.1

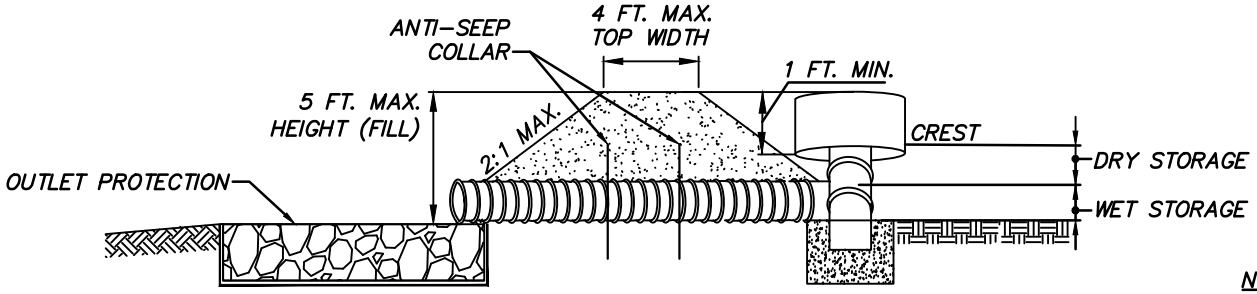
SOURCE: VA DCR STORMWATER MANAGEMENT HANDBOOK

STANDARD SYMBOL

ST–I



PERSPECTIVE VIEW



EMBANKMENT SECTION THROUGH RISER

NOTE:

- RISER EMBEDDED 9 INCH INTO CONCRETE OR ¼ INCH STEEL PLATE ATTACHED TO RISER WITH A CONTINUOUS WELD ON BOTTOM AND 2 FT. OF STONE PLACED ON STEEL PLATE. EACH SIDE OF PLATE IS THE RISER DIAMETER PLUS 24 IN. (MIN.).

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

PIPE OUTLET SEDIMENT TRAP - ST I

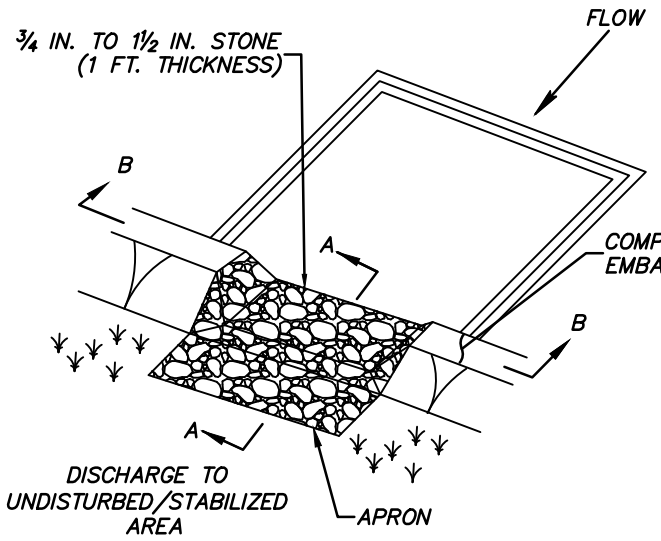
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 601.1

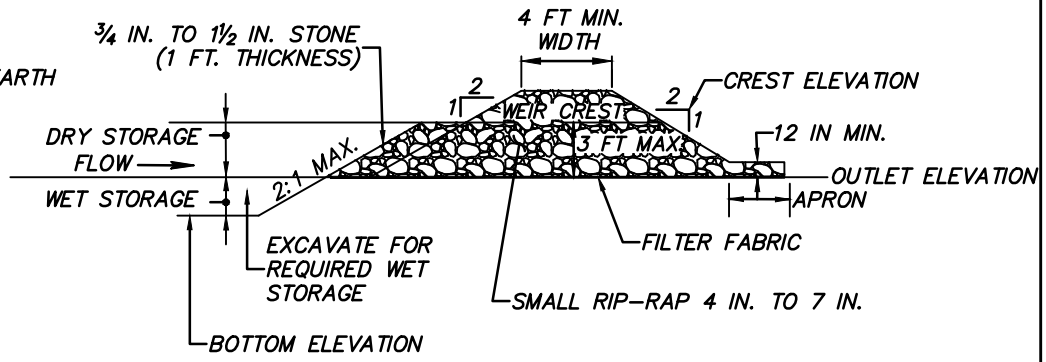
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL

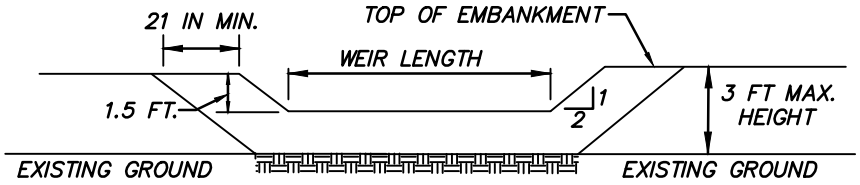
ST–II



PERSPECTIVE VIEW



SECTION A-A



SECTION B-B

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

STONE OUTLET SEDIMENT TRAP - ST II

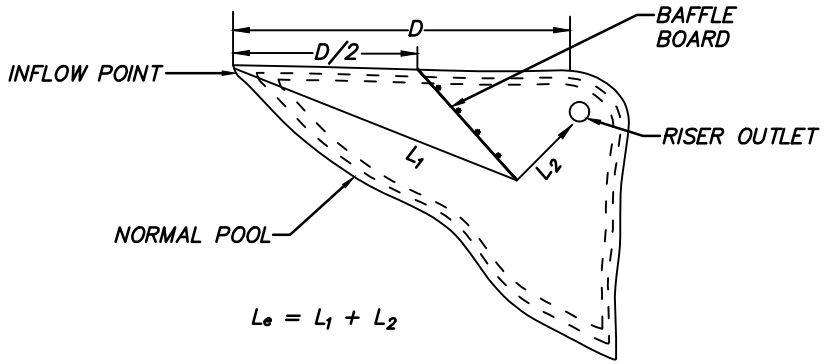
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY &
ENVIRONMENT

DWG. NO 601.2

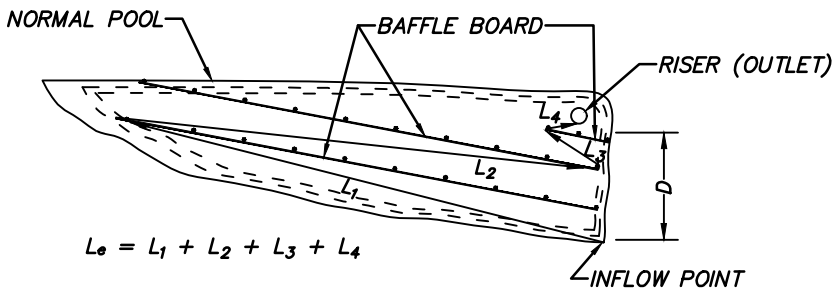
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL

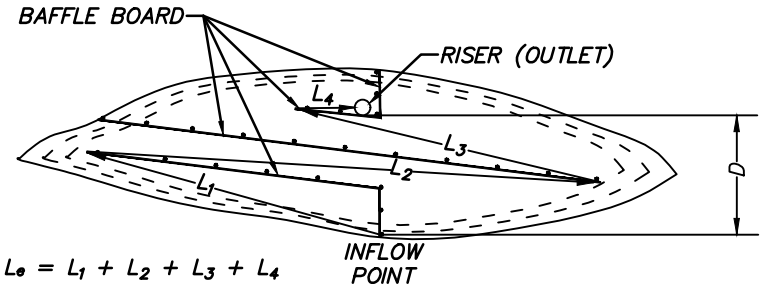
BB



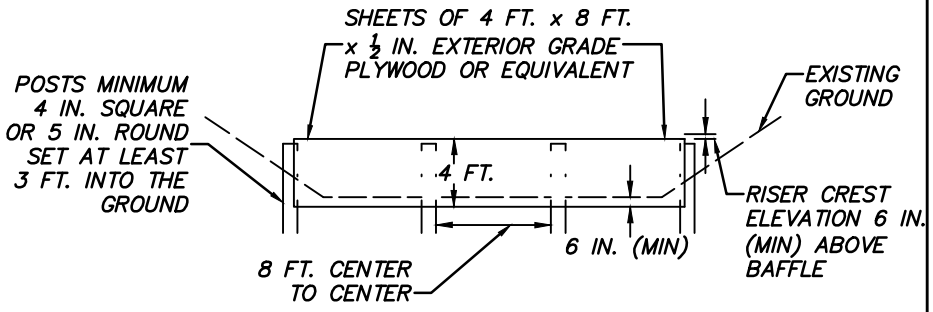
PLAN VIEW



PLAN VIEW



PLAN VIEW



BAFFLE DETAIL

D = DISTANCE BETWEEN INFLOW AND OUTFLOW

A = AREA OF PERMANENT POOL

W_e = EFFECTIVE WIDTH

L_e= TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER.

FORMULA: $W_e = (A/2)^{1/2}$

$L_e \geq W_e \times 2$

DATE	APPR	
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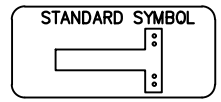
		REFERENCE

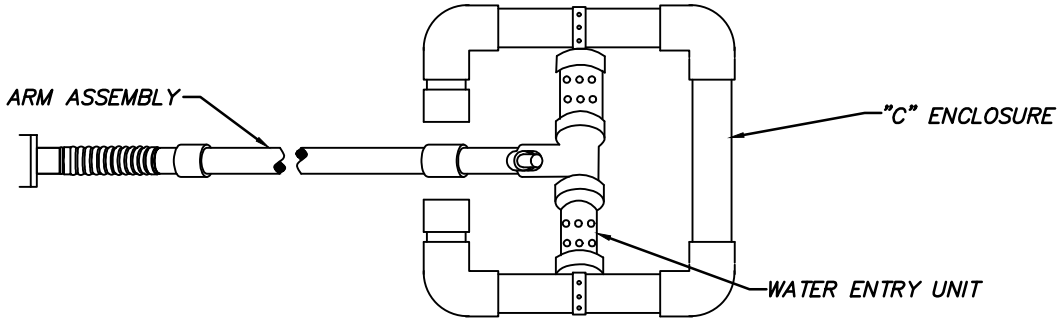
BAFFLE BOARDS
SEDIMENT BASIN

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

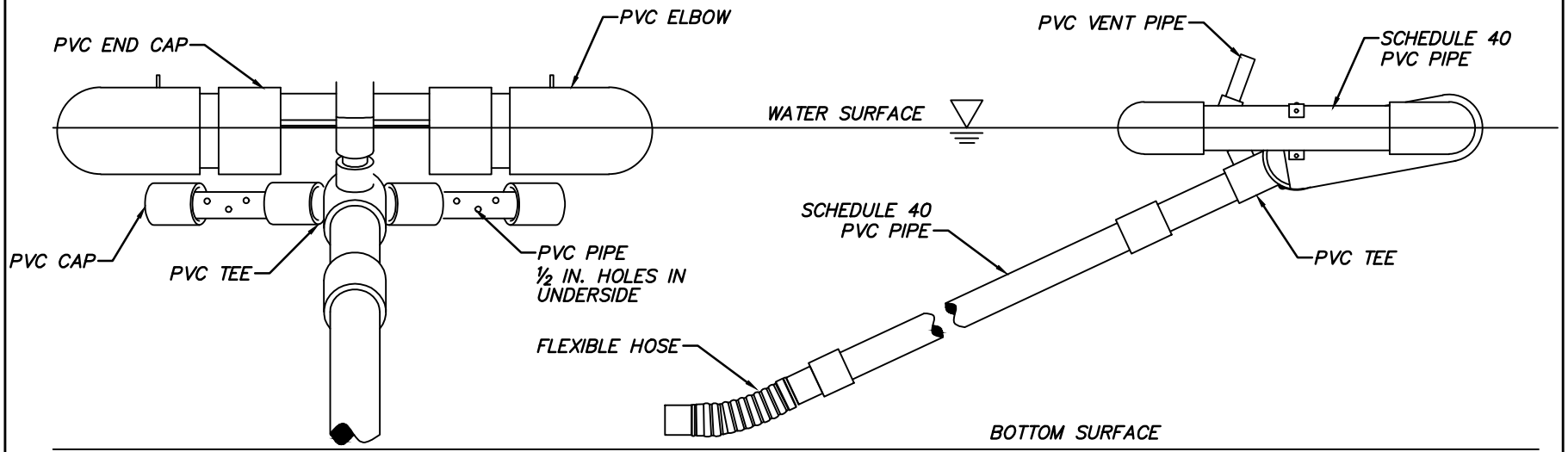
DWG. NO 602.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS





PERSPECTIVE VIEW



END VIEW

FRONT VIEW

DATE	APPR	
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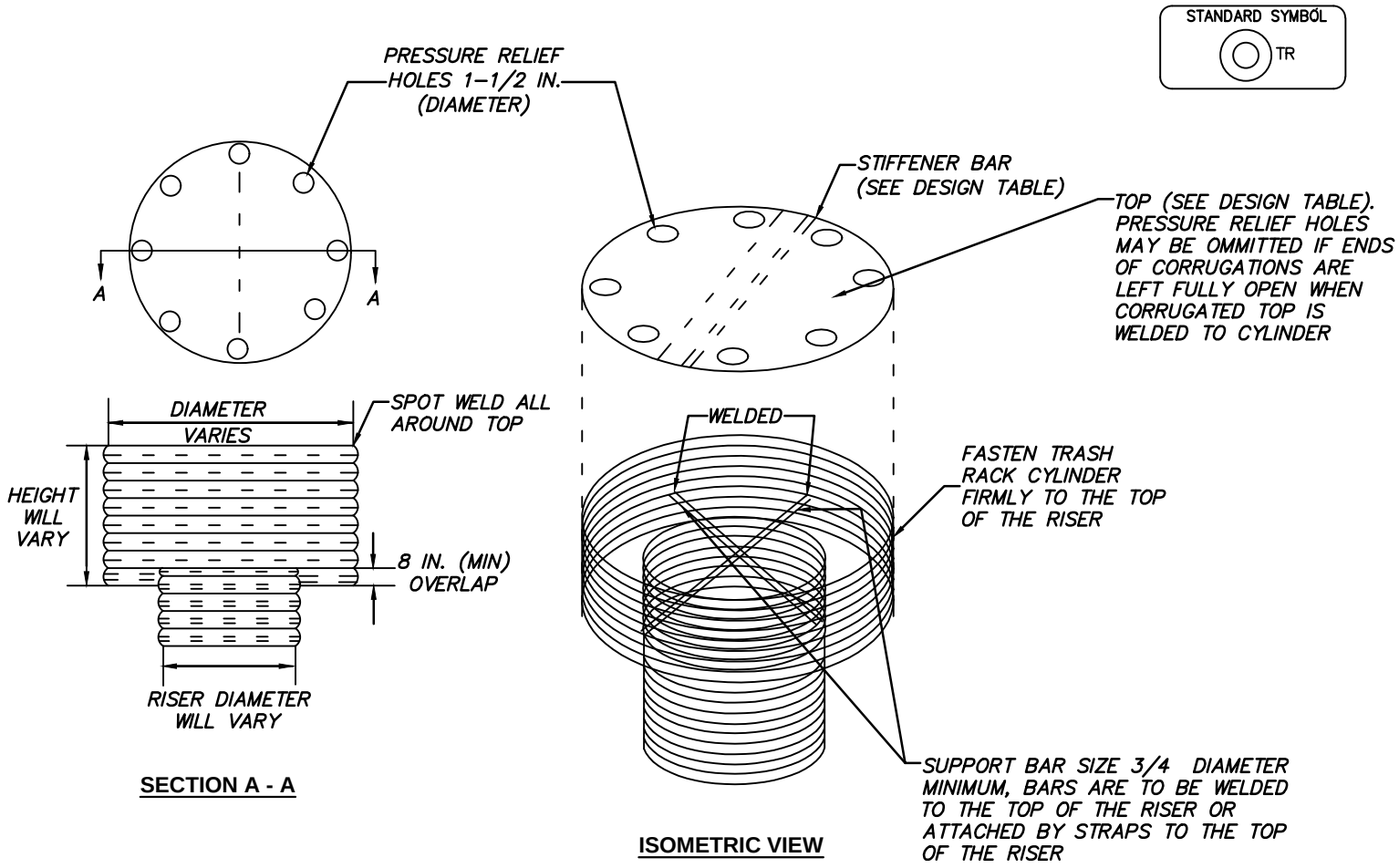
ISSUED:		
		REFERENCE

SKIMMER
SEDIMENT BASIN

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 602.2



DATE	APPR	
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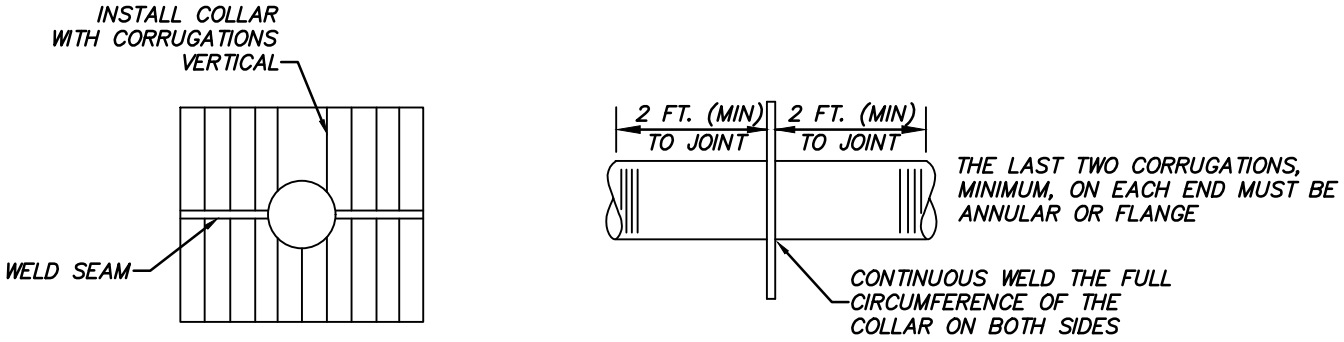
		REFERENCE

CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE SEDIMENT BASIN

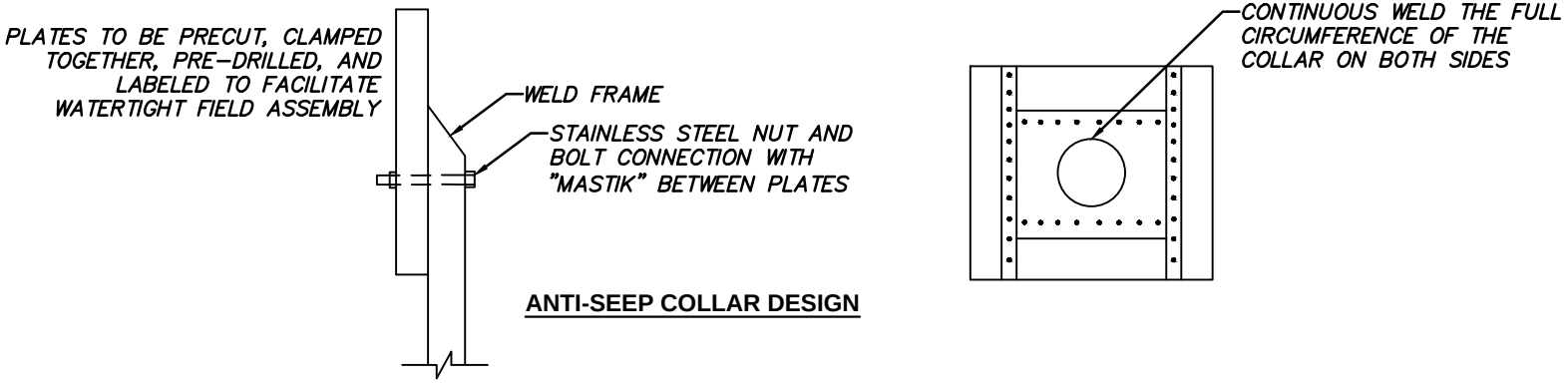
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 602.3

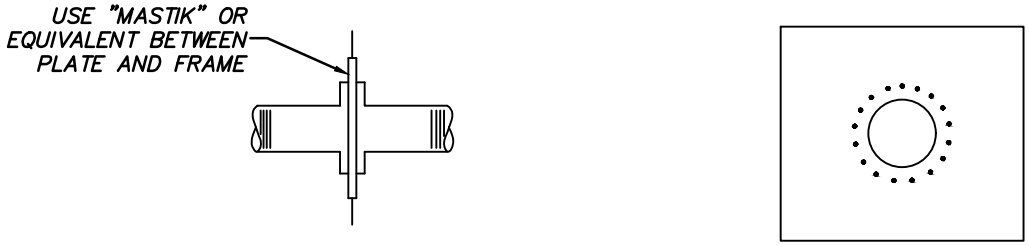
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



COLLAR WELDED IN PLACE ON BARREL SECTION



ANTI-SEEP COLLAR DESIGN



COLLAR FOR FLANGE JOINT PIPE

DATE	APPR	
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ISSUED:		
		REFERENCE

TYPICAL ANTI-SEEP COLLARS SEDIMENT BASIN

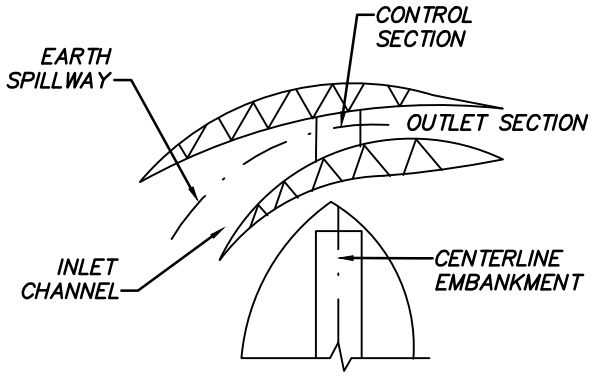
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 602.4

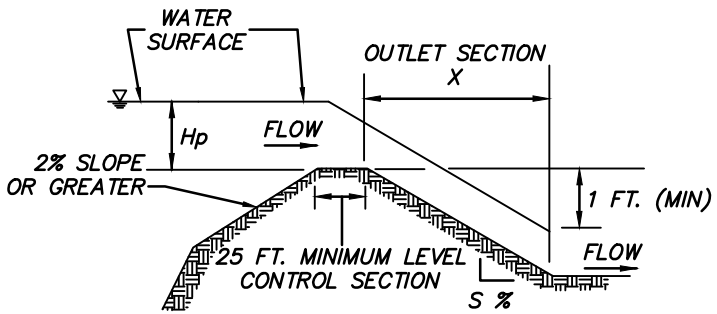
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL

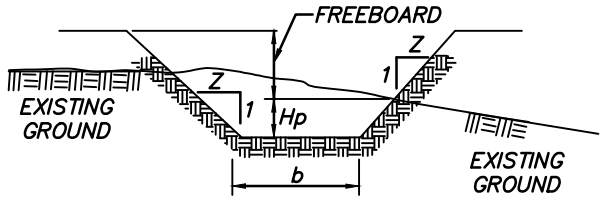
ES



PLAN VIEW OF EMERGENCY SPILLWAY



PROFILE ALONG CENTERLINE OF EMERGENCY SPILLWAY



CROSS SECTION OF EMERGENCY SPILLWAY AT CONTROL SECTION

LEGEND

n = MANNING'S COEFFICIENT OF ROUGHNESS
Hp = DIFFERENCE IN ELEVATION BETWEEN THE CREST OF THE EMERGENCY SPILLWAY AND THE CONTROL SECTION AND WATER SURFACE OF THE RESERVOIR, IN FEET.
b = BOTTOM WIDTH OF EMERGENCY SPILLWAY AT THE CONTROL SECTION, IN FEET. (8 FT. MINIMUM)
Q = TOTAL DISCHARGE, IN CFS
V = VELOCITY, IN FEET PER SECOND, THAT WILL EXIST IN THE CHANNEL BELOW THE CONTROL SECTION, AT DESIGN Q, IF CONSTRUCTED TO SLOPE (S) THAT IS SHOWN. (VMAX = 5FPS.)
S = FLATTEST SLOPE (S), IN %, ALLOWABLE FOR THE CHANNEL BELOW THE CONTROL SECTION.
X = MINIMUM LENGTH OF THE CHANNEL BELOW THE CONTROL SECTION, IN FEET.
Z = SIDE SLOPE RATIO (MIN. Z=3)

NOTE

1. FOR A GIVEN Hp A DECREASE IN THE EXIT SLOPE FROM S AS GIVEN IN THE TABLE DECREASES THE SPILLWAY DISCHARGE BUT INCREASING THE EXIT SLOPE FROM S DOES NOT INCREASE THE DISCHARGE. IF AN EXIT SLOPE (Se) STEEPER THAN S IS USED, THEN THE VELOCITY (Ve) IN THE EXIT CHANNEL WILL INCREASE ACCORDING TO THE FOLLOWING RELATIONSHIP:

$$Ve = V\left(\frac{Se}{S}\right)^{0.3}$$

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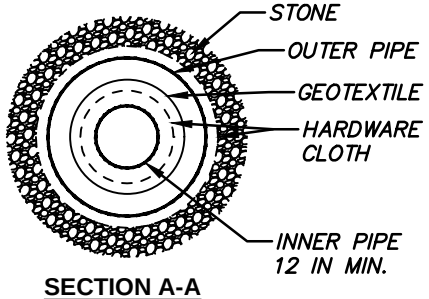
		REFERENCE

EMERGENCY SPILLWAY SEDIMENT BASIN

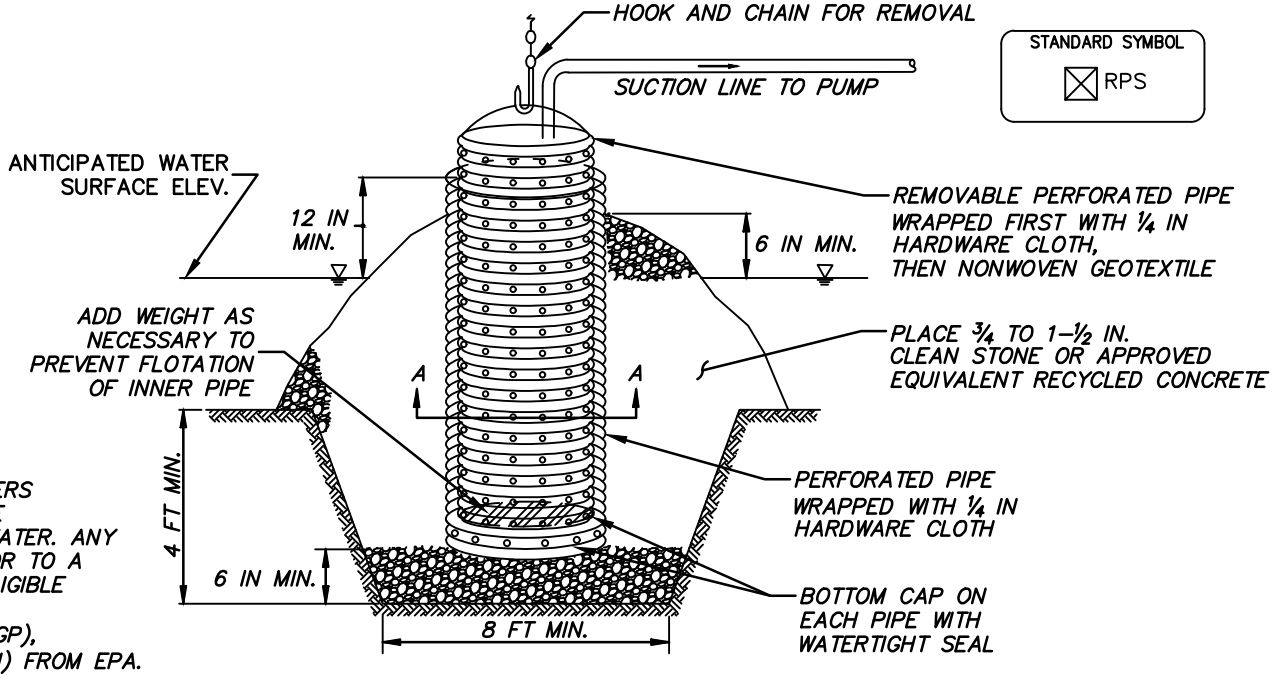
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 602.5

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



SECTION A-A



ELEVATION

NOTE:

- ANY DISCHARGE TO COMBINED SEWERS REQUIRES A TEMPORARY DISCHARGE AUTHORIZATION PERMIT FROM DC WATER. ANY DISCHARGE TO THE DISTRICT MS4 OR TO A SURFACE WATER BODY FROM AN ELIGIBLE PROJECT, AS REGULATED BY THE CONSTRUCTION GENERAL PERMIT (CGP), REQUIRES A NOTICE OF INTENT (NOI) FROM EPA. ONCE DETERMINED THAT THE PROJECT HAS STORMWATER RUNOFF THAT MUST BE DISCHARGED ON A TEMPORARY BASIS, CONTACT DC WATER OR EPA FOR PERMIT INFORMATION.

CONSTRUCTION SPECIFICATIONS

1. WRAP THE INNER PIPE WITH ¼ INCH HARDWARE CLOTH AND THEN GEOTEXTILE OVER THE HARDWARE CLOTH. WRAP THE OUTER PIPE WITH ¼ INCH HARDWARE CLOTH
2. EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN ¾ TO 1–½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
3. BOTH INNER AND OUTER PIPES MUST EXTEND A MINIMUM OF 12 INCHES ABOVE THE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN.)
4. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1–1/2 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
5. PLACE THE SUCTION HOSE FROM THE PUMP INSIDE THE INNER PIPE TO BEGIN DEWATERING. PLACE THE DISCHARGE HOSE IN A STABILIZED AREA DOWNSLOPE OF UNSTABLILZED AREAS TO PREVENT EROSION. MEADOW OR WOODED AREAS ARE PREFERRED DISCHARGE LOCATIONS BUT STORM DRAINS AND PAVED AREAS ARE ACCEPTABLE.

DATE	APPR	
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		REFERENCE

REMOVABLE PUMPING STATION

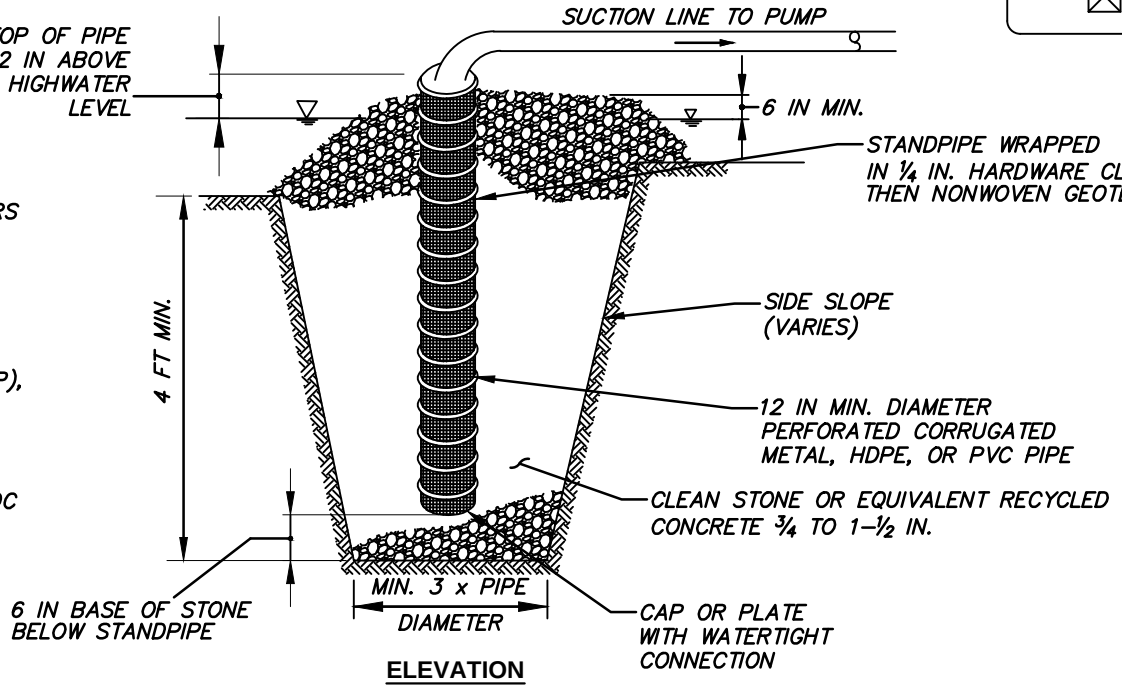
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 701.1

SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

STANDARD SYMBOL

SP



ELEVATION

NOTE:

- ANY DISCHARGE TO COMBINED SEWERS REQUIRES A TEMPORARY DISCHARGE AUTHORIZATION PERMIT FROM DC WATER. ANY DISCHARGE TO THE DISTRICT MS4 OR TO A SURFACE WATER BODY FROM AN ELIGIBLE PROJECT, AS REGULATED BY THE CONSTRUCTION GENERAL PERMIT (CGP), REQUIRES A NOTICE OF INTENT (NOI) FROM EPA. ONCE DETERMINED THAT THE PROJECT HAS STORMWATER RUNOFF THAT MUST BE DISCHARGED ON A TEMPORARY BASIS, CONTACT DC WATER OR EPA FOR PERMIT INFORMATION.

CONSTRUCTION SPECIFICATIONS

1. WRAP THE PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH AND THEN GEOTEXTILE OVER THE HARDWARE CLOTH.
2. EXCAVATE THE PIT TO 3 TIMES THE PIPE DIAMETER AND 4 FEET IN DEPTH. PLACE CLEAN ¾ TO 1–½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
3. SET THE TOP OF PIPE A MINIMUM OF 12 INCHES ABOVE THE ANTICIPATED WATER SURFACE ELEVATION.
4. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1–½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
5. PLACE THE SUCTION HOSE FROM THE PUMP INSIDE THE PIPE TO BEGIN DEWATERING. PLACE THE DISCHARGE HOSE IN A STABILIZED AREA DOWNSLOPE OF UNSTABILIZED AREAS TO PREVENT EROSION. MEADOW OR WOODED AREAS ARE PREFERRED DISCHARGE LOCATIONS BUT STORM DRAINS AND PAVED AREAS ARE ACCEPTABLE.

DATE	APPR	
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ISSUED:		
		REFERENCE

SUMP PIT

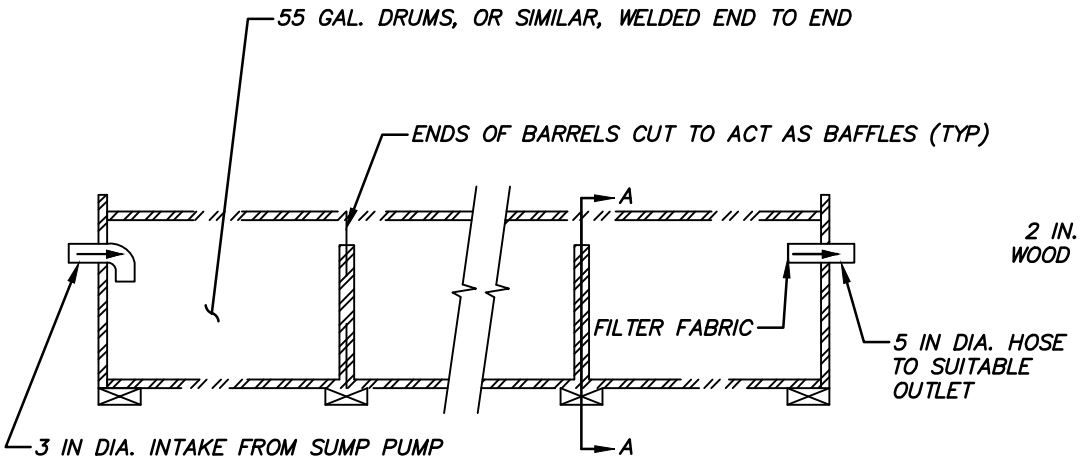
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 702.1

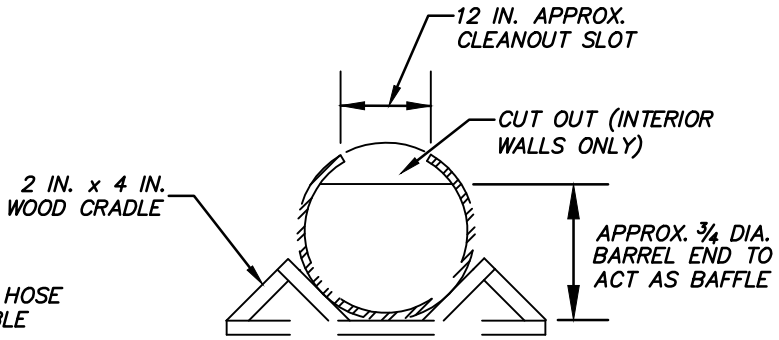
SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

STANDARD SYMBOL

PST



ELEVATION



SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT THE STRUCTURE WITH STEEL DRUMS, STURDY WOOD, OR OTHER MATERIAL SUITABLE FOR HANDLING THE PRESSURE EXERTED BY THE VOLUME OF WATER.
2. SEDIMENT TANKS HAVE A MINIMUM DEPTH OF 2 FEET.
3. ONCE THE WATER LEVEL NEARS THE TOP OF THE TANK, SHUT OFF THE PUMP WHILE THE TANK DRAINS AND ADDITIONAL CAPACITY IS MADE AVAILABLE.
4. DESIGN THE TANK TO ALLOW FOR EMERGENCY FLOW OVER TOP OF THE TANK.

DATE	APPR	
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ISSUED:		
		REFERENCE

PORTABLE SEDIMENT TANK - 1 (HORIZONTAL)

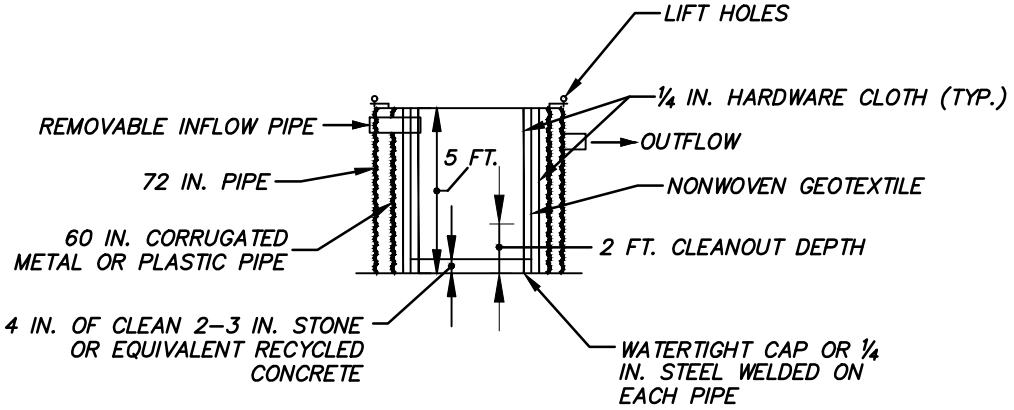
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 703.1

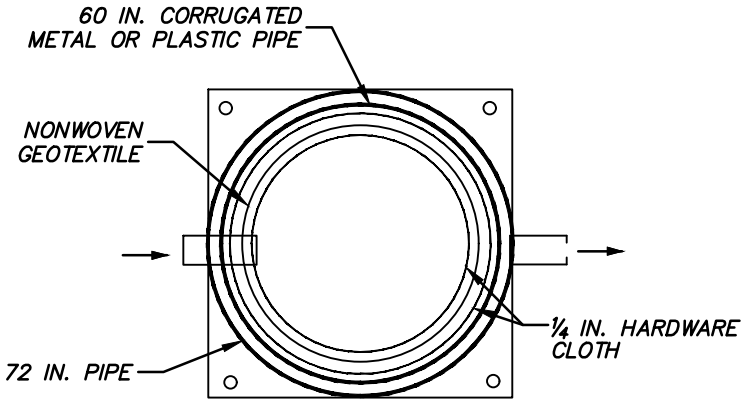
SOURCE: USDA-NRCS

STANDARD SYMBOL

PST



ELEVATION



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. USE 60 INCH CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER FOR THE INNER PIPE. LINE PIPE WITH NONWOVEN GEOTEXTILE SANDWICHED BETWEEN, AND ATTACHED TO, ¼ INCH HARDWARE CLOTH.
2. OVERLAP GEOTEXTILE 8 INCHES MINIMUM AT VERTICAL SEAM AND AT THE BOTTOM PLATE.
3. ANCHOR GEOTEXTILE AT BOTTOM OF TANK WITH 4 INCHES OF 2 TO 3 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE.
4. USE 72 INCH CORRUGATED METAL OR PLASTIC OUTER PIPE WITH PERMANENT OUTFLOW PIPE WITH INVERT LOWER THAN INFLOW PIPE.
5. INFLOW PIPE MUST DISCHARGE INTO INNER PIPE AND BE REMOVABLE.
6. PLACE TANK ON LEVEL SURFACE AND DISCHARGE TO A STABLE AREA AT A NON–EROSIVE RATE.

DATE	APPR	
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PORTABLE SEDIMENT TANK - 2 (VERTICAL)

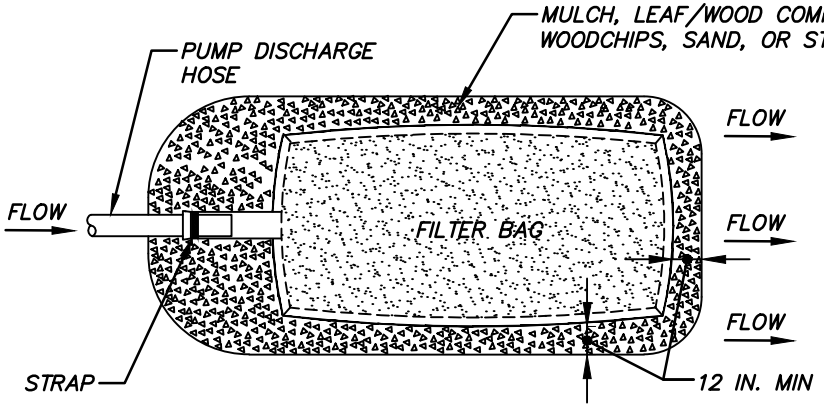
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 703.2

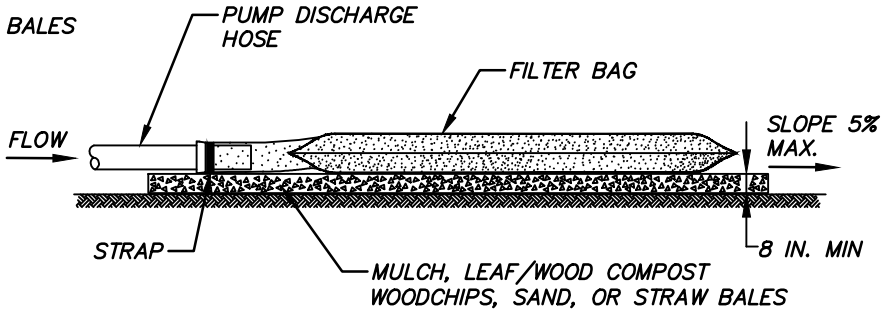
SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

STANDARD SYMBOL

FB



PLAN VIEW



ELEVATION

CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON 8 INCHES SUITABLE BASE LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. AND DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.

DATE	APPR	
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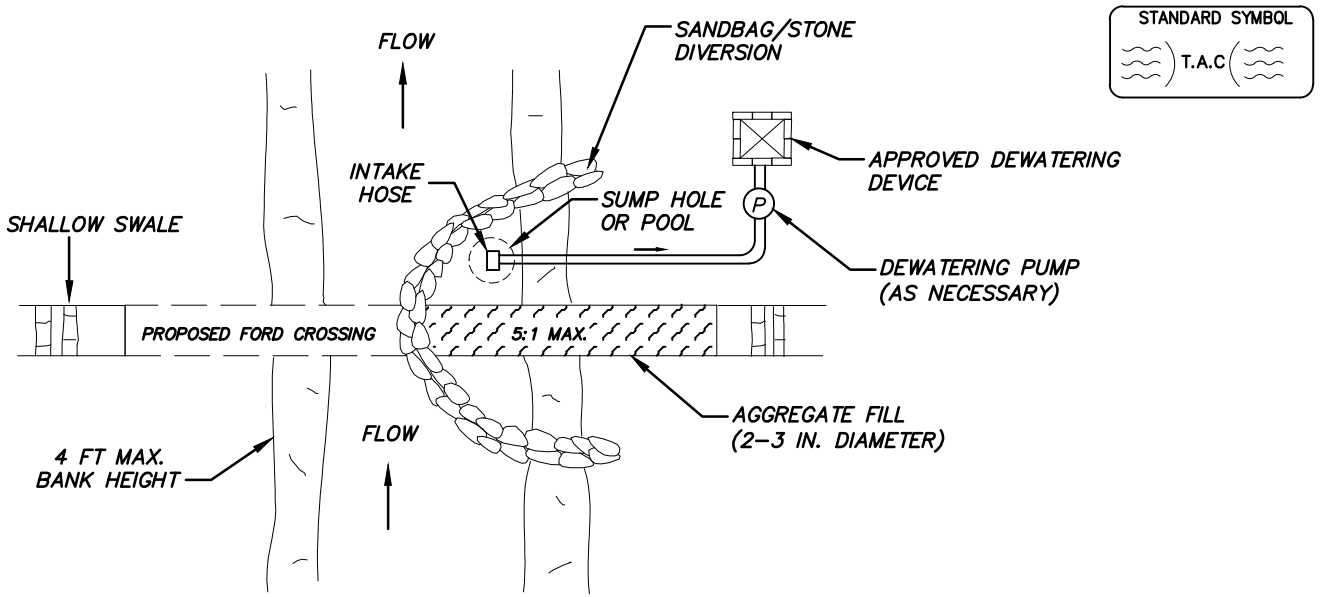
		REFERENCE

PUMPED WATER FILTER BAGS

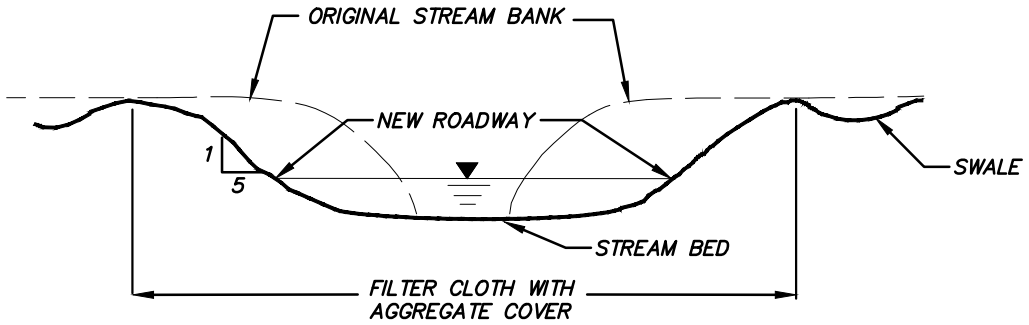
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 704.1

SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS



PLAN VIEW



SECTION VIEW

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

TEMPORARY ACCESS FORD

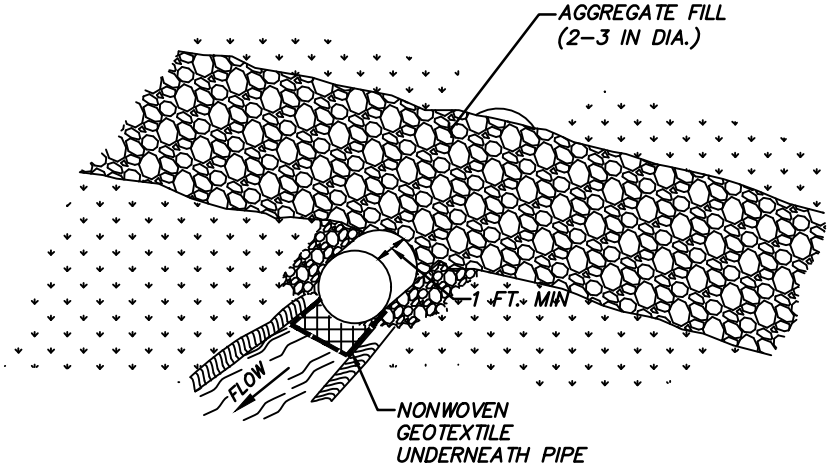
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 803.1

SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

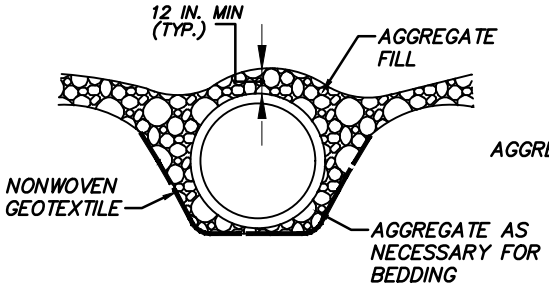
STANDARD SYMBOL

T.A.C

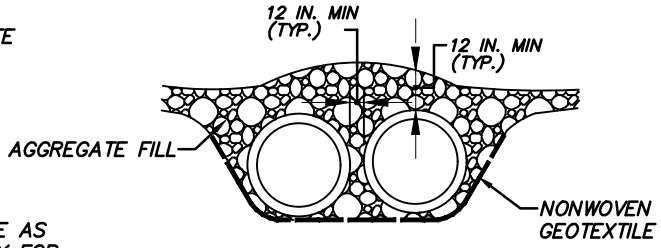


PLAN

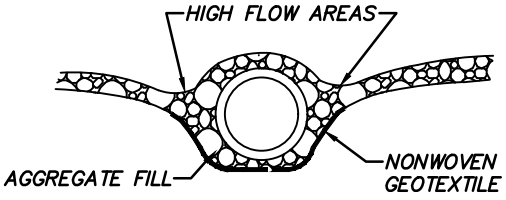
NOTE: FOR INSTALLATION PROCEDURES (SEE DETAIL 818.1 & 818.2)



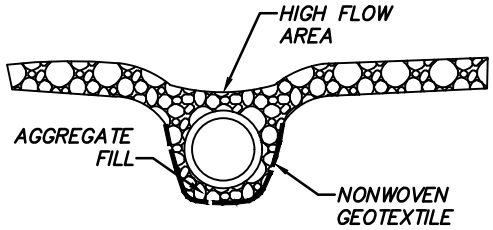
SINGLE PIPE



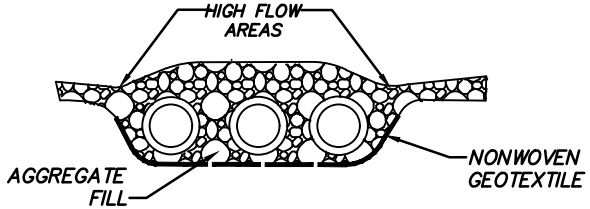
DUAL PIPES



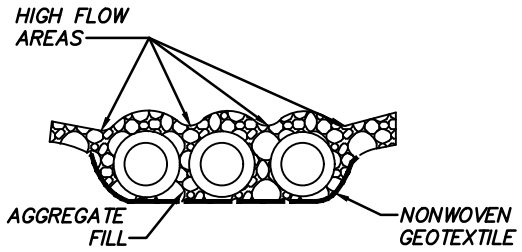
SINGLE PIPE



SINGLE PIPE



MULTIPLE PIPES



MULTIPLE PIPES

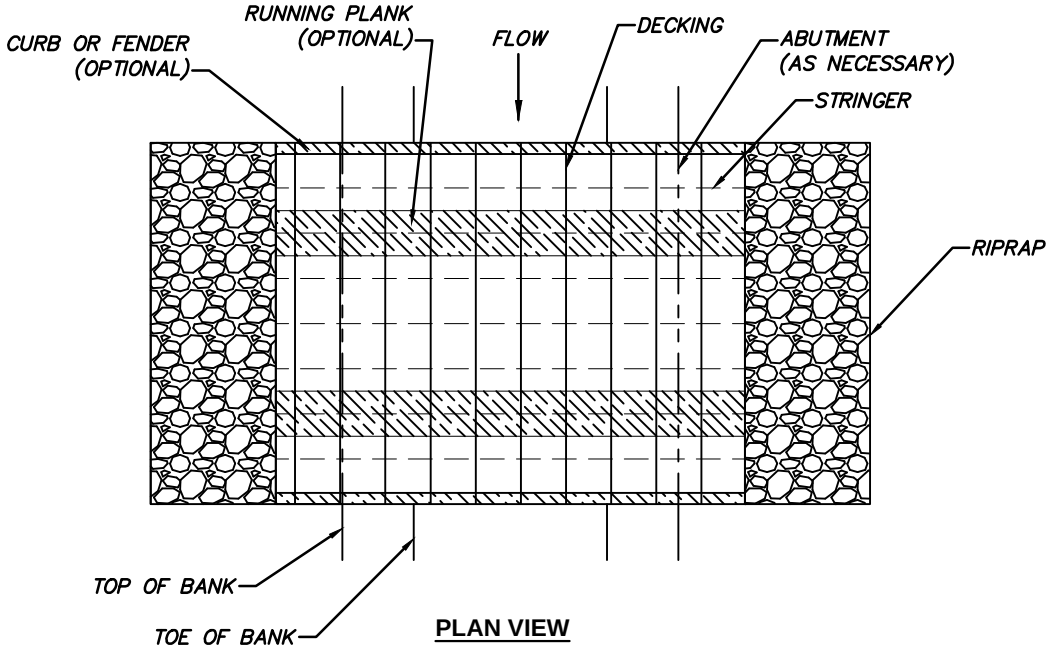
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

TEMPORARY ACCESS CULVERT

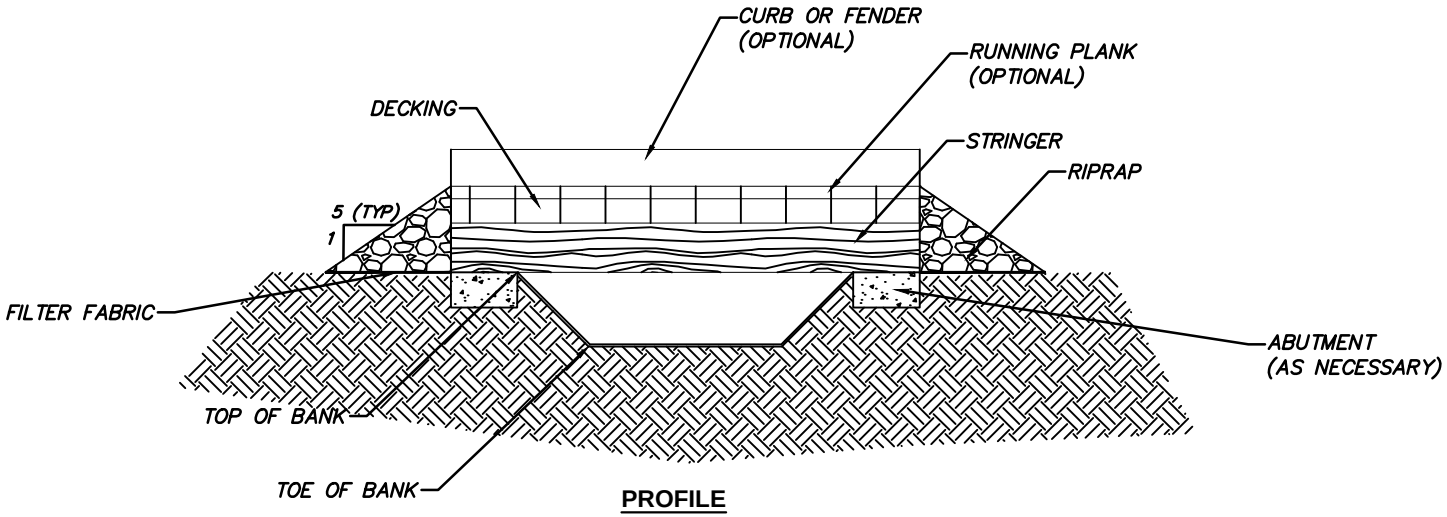
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 804.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



PLAN VIEW



PROFILE

STANDARD SYMBOL

T.A.B

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

TEMPORARY ACCESS BRIDGE

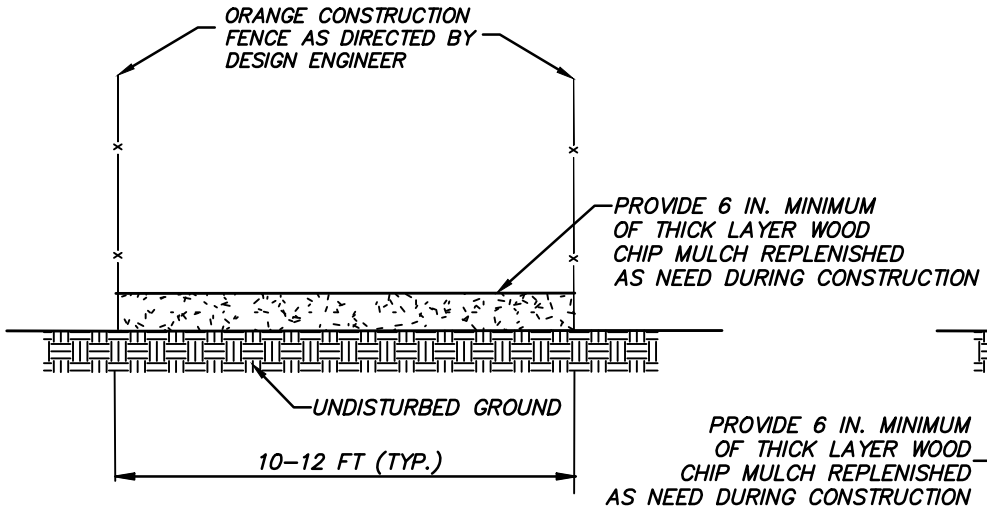
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 805.1

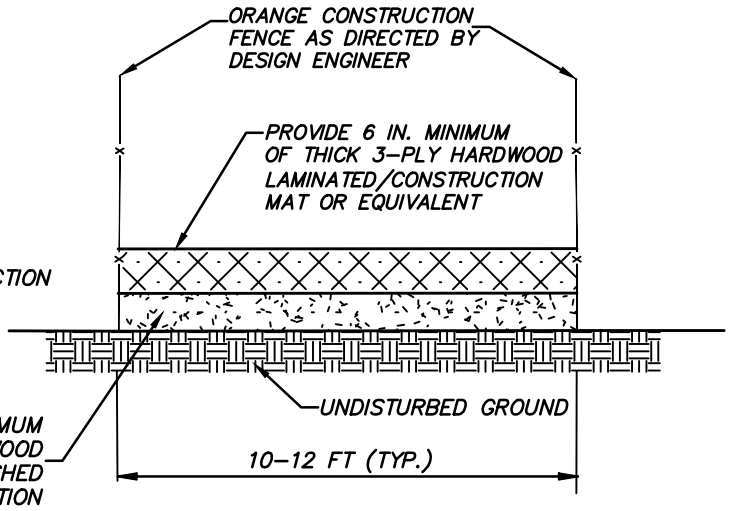
SOURCE: ECOSYSTEM SERVICES, BAKER, CITY OF CHARLOTTE

STANDARD SYMBOL

x
A.R
x



MULCH ACCESS ROAD
NOT TO SCALE



HARDWOOD MAT AND MULCH ACCESS ROAD
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. ACCESS ROUTES TO BE VERIFIED BY ENGINEER AT PRE–CONSTRUCTION MEETING. REVISIONS TO THE ALIGNMENT THAT MINIMIZE TREE DISTURBANCE ARE ENCOURAGED AND REQUIRE REVIEW AND APPROVAL BY DESIGN ENGINEER.
2. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD.
3. THE HAUL ROAD IS DESIGNED TO PREVENT COMPACTION OF EXISTING SOILS USING LOW GROUND PRESSURE EQUIPMENT WHICH EXERTS NO MORE THAN 8 PSI. IF THE CONTRACTOR INTENDS TO USE ANY EQUIPMENT WITH HIGHER LOADS ADDITIONAL PROTECTION MEASURES MUST BE PROVIDED SUCH AS HARDWOOD MATS. (SEE DETAILS ABOVE).

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

ACCESS ROADS

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

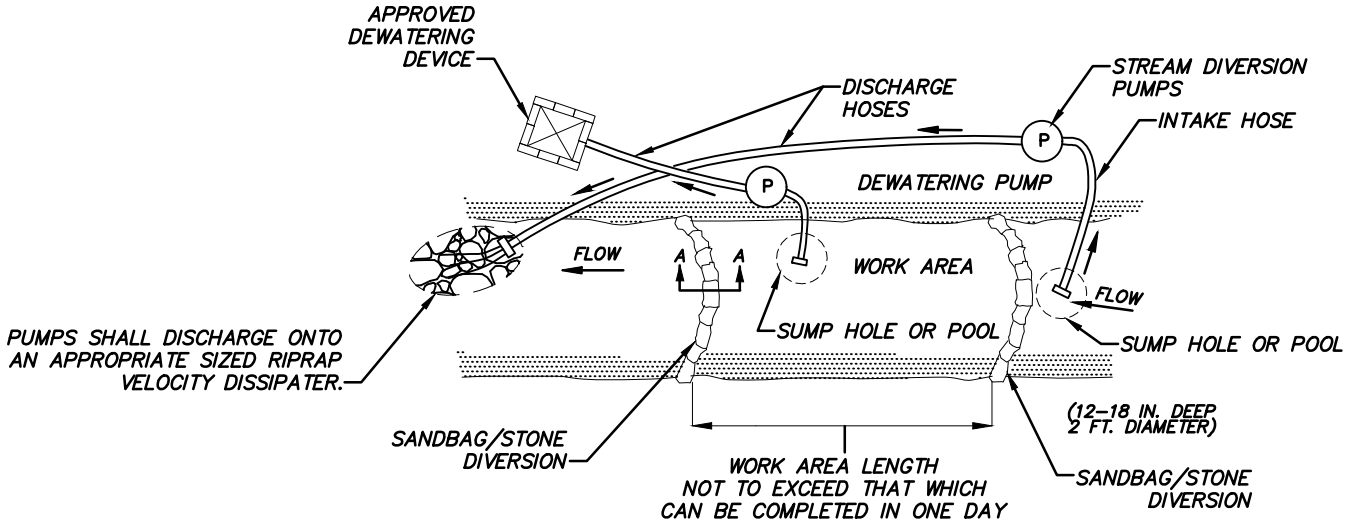
DWG. NO 806.1

SOURCE: ECOSYTEM SERVICES, BAKER, CITY OF CHARLOTTE

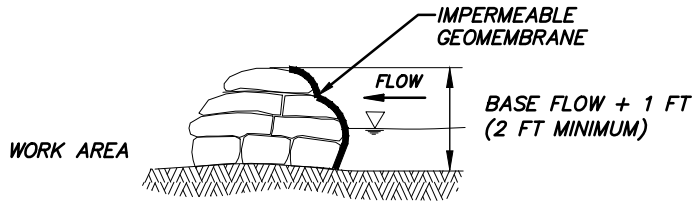
STANDARD SYMBOL

PUMP

PLAN VIEW



SECTION A-A



CROSS SECTION OF SANDBAG/STONE DIVERSION

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

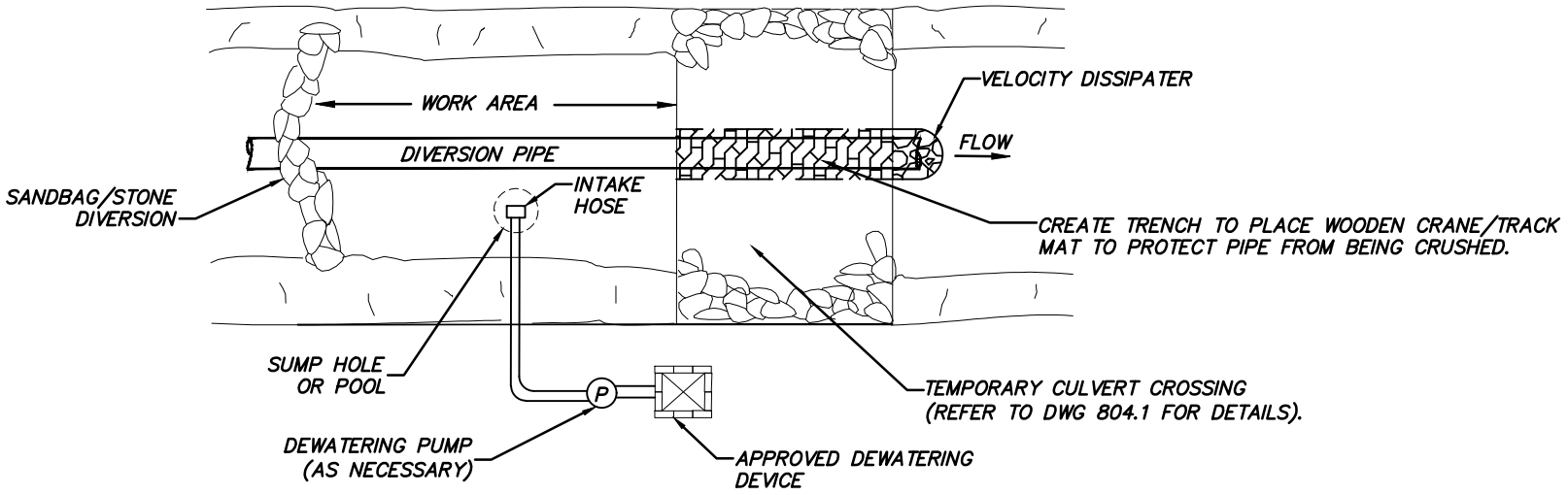
PUMP AROUND PRACTICE

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

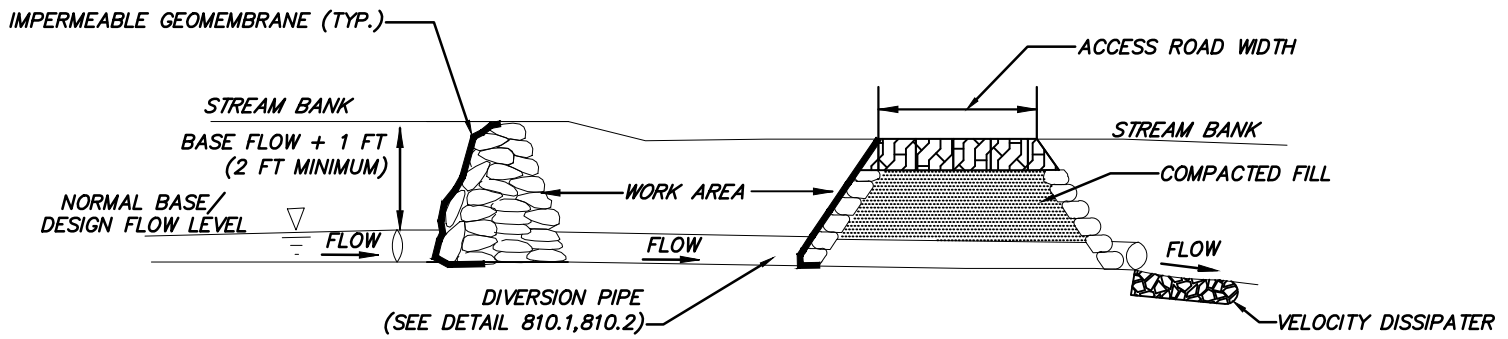
DWG. NO 808.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL



PLAN VIEW



PROFILE VIEW

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

CULVERT PIPE WITH ACCESS ROAD

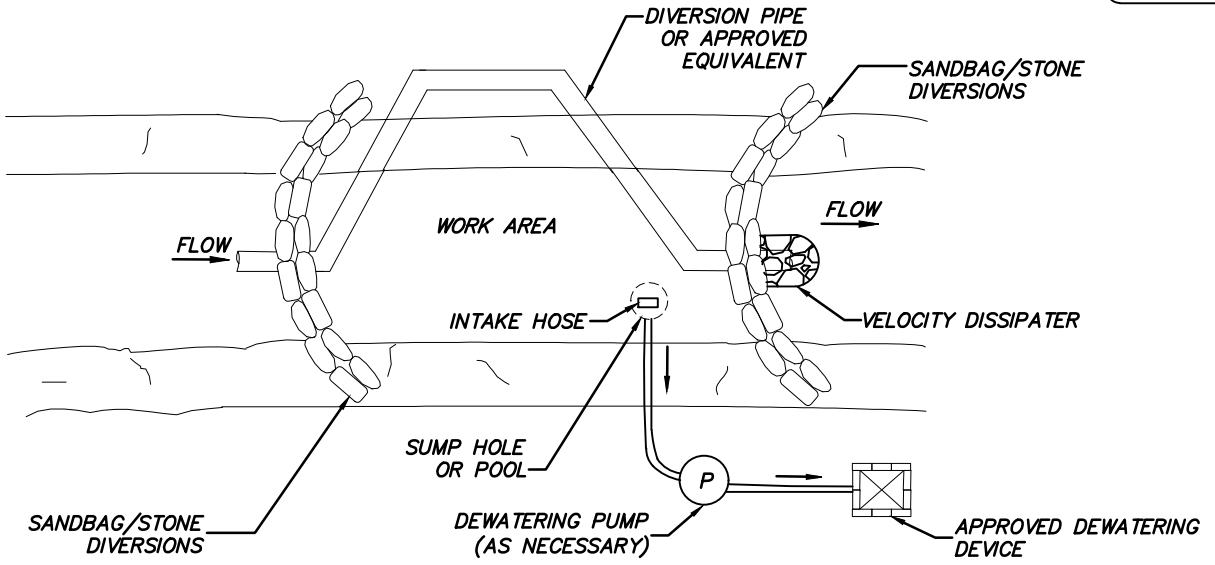
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 809.1

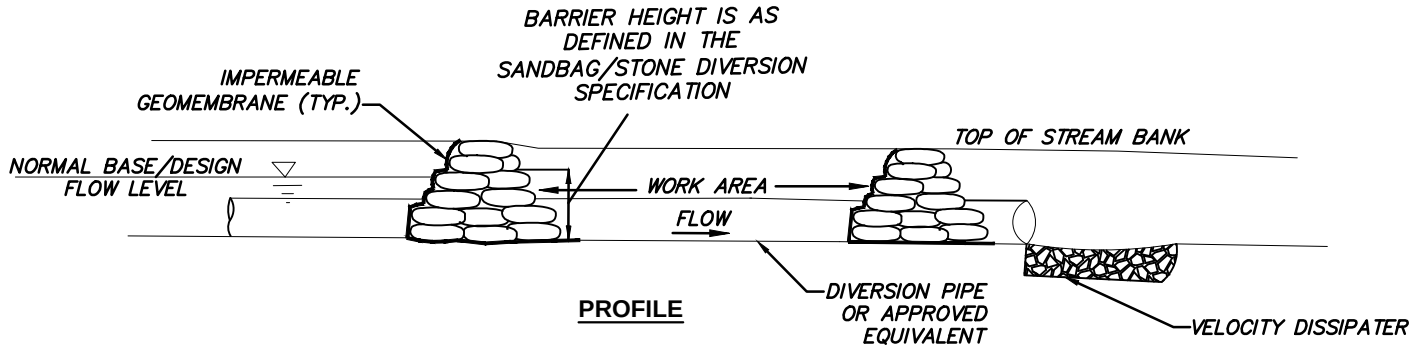
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL

D.P



PLAN VIEW



PROFILE

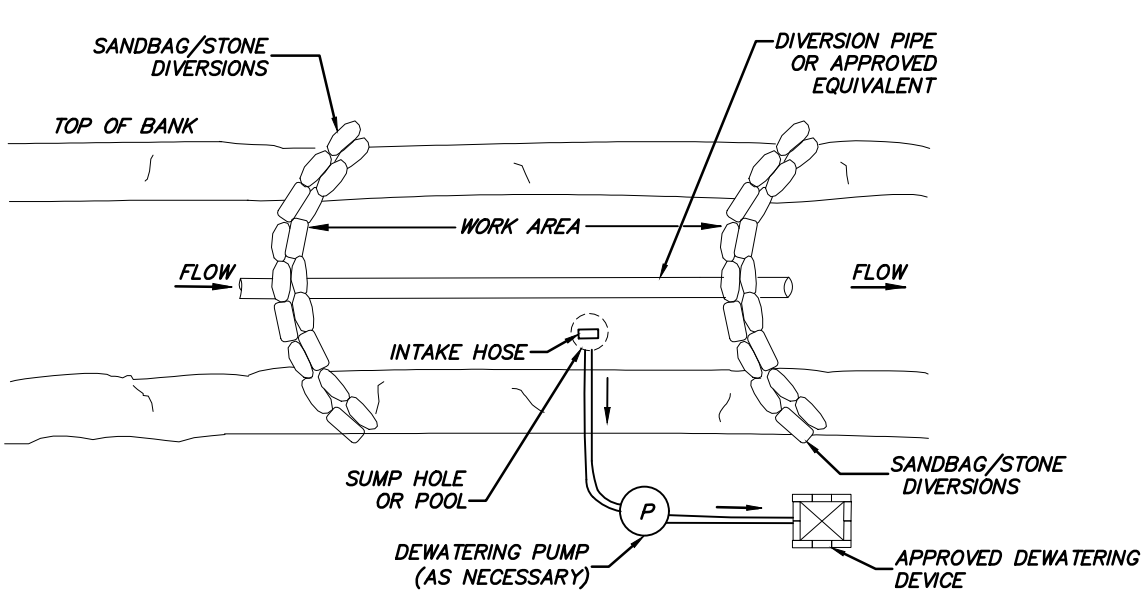
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

DIVERSION PIPE-1

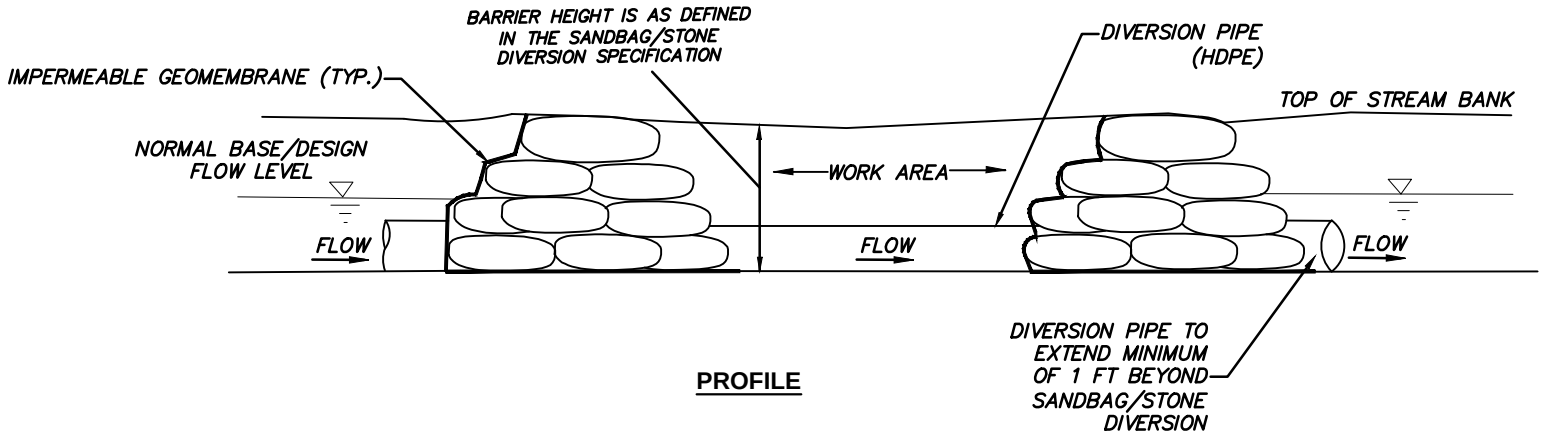
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 810.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



PLAN VIEW



PROFILE

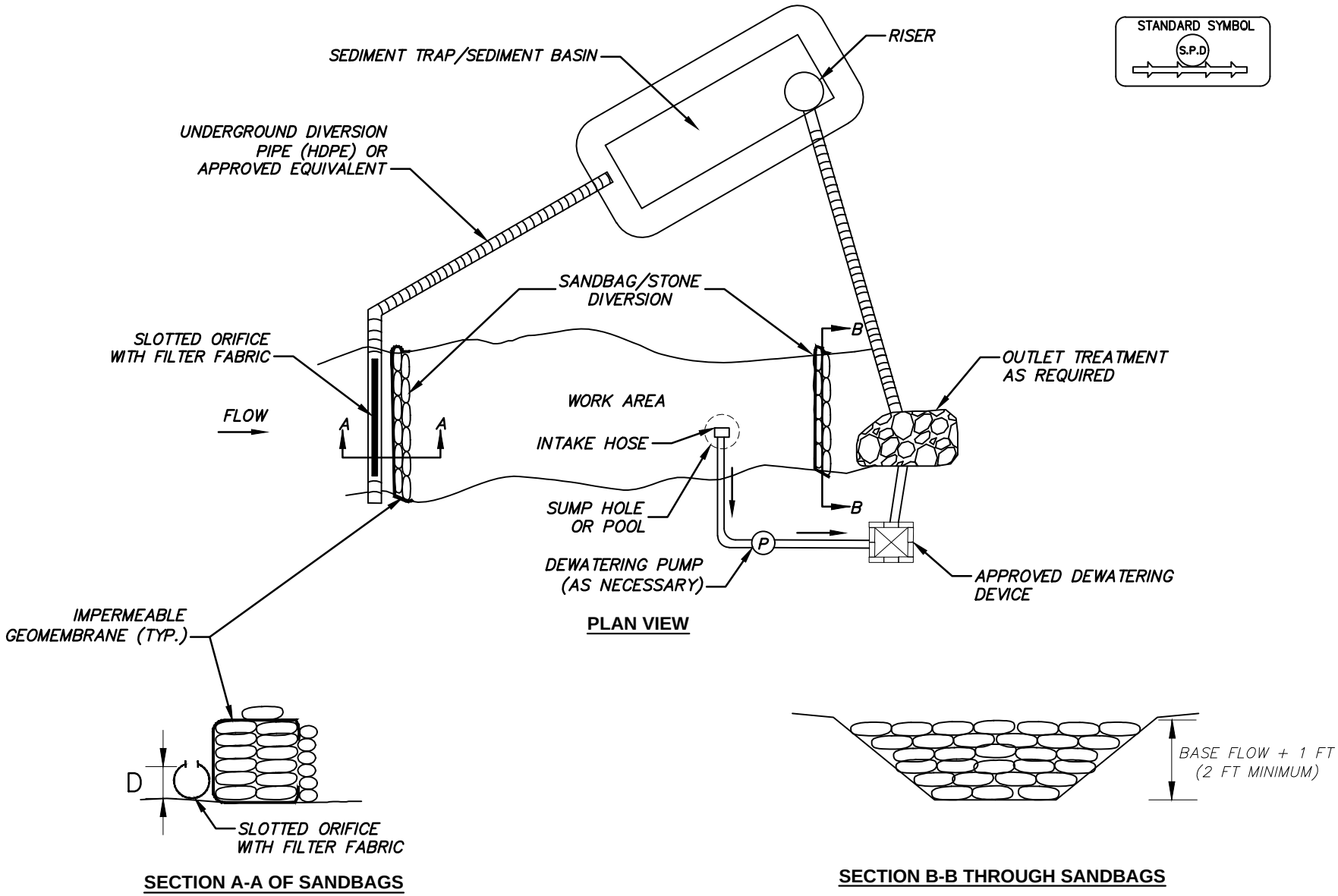
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

DIVERSION PIPE- 2

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 810.2

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS



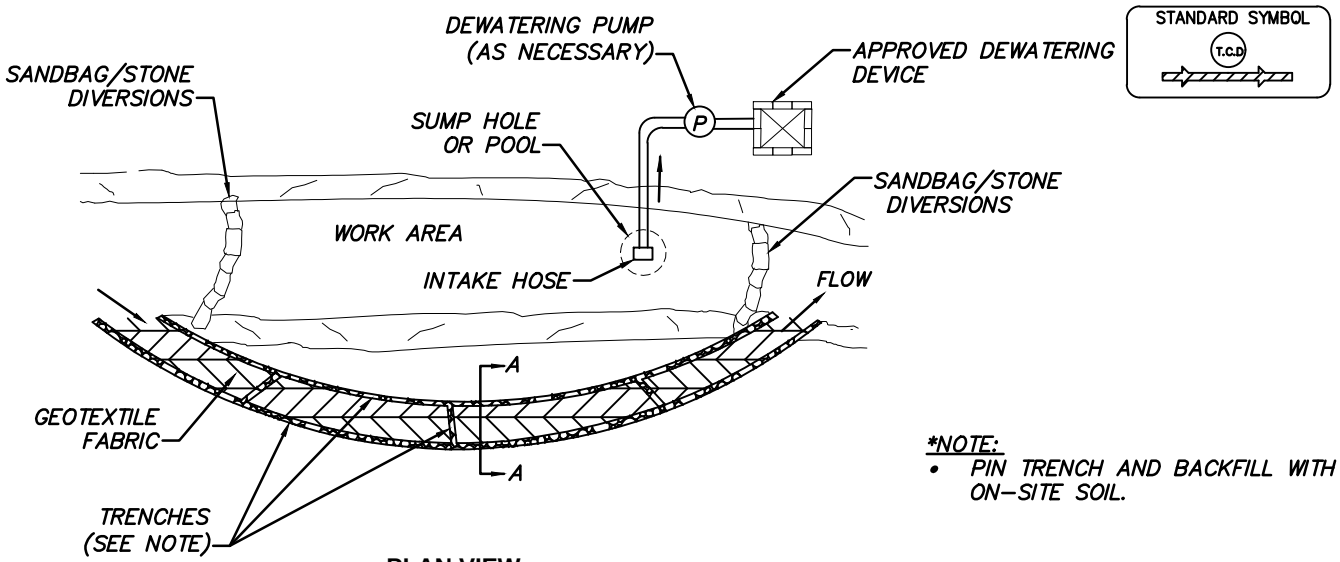
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

SLOTTED PIPE DIVERSION

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

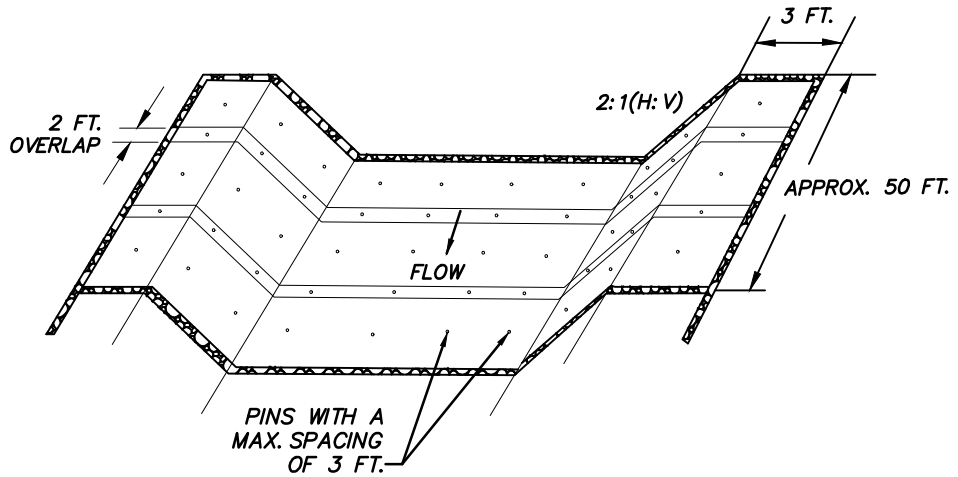
DWG. NO 811.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

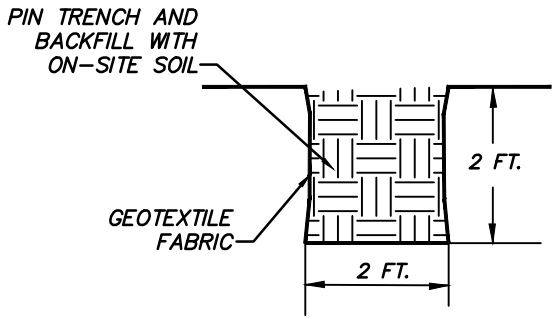


PLAN VIEW

*NOTE:
- PIN TRENCH AND BACKFILL WITH ON-SITE SOIL.



SECTION A-A



TRENCHING DETAIL

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

TEMPORARY CHANNEL DIVERSION

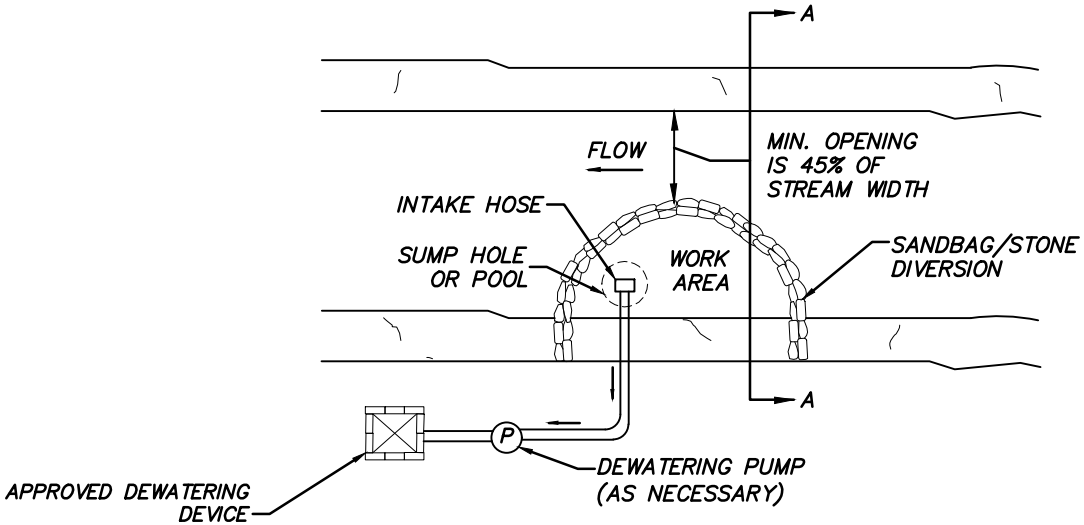
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 812.1

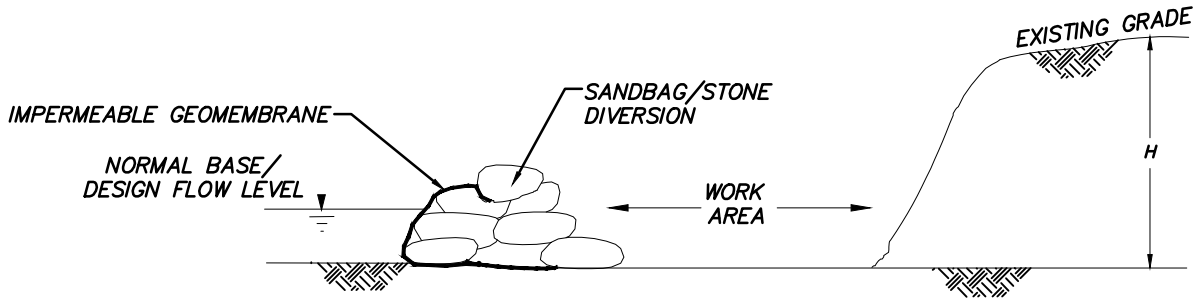
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL

SAND



PLAN VIEW



H/(2+1) FT FOR PROJECTS OF DURATION 2 WEEKS;
2-YEAR FLOOD ELEVATION FOR PROJECTS OF LONGER DURATION

TRANSVERSE SECTION A-A

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

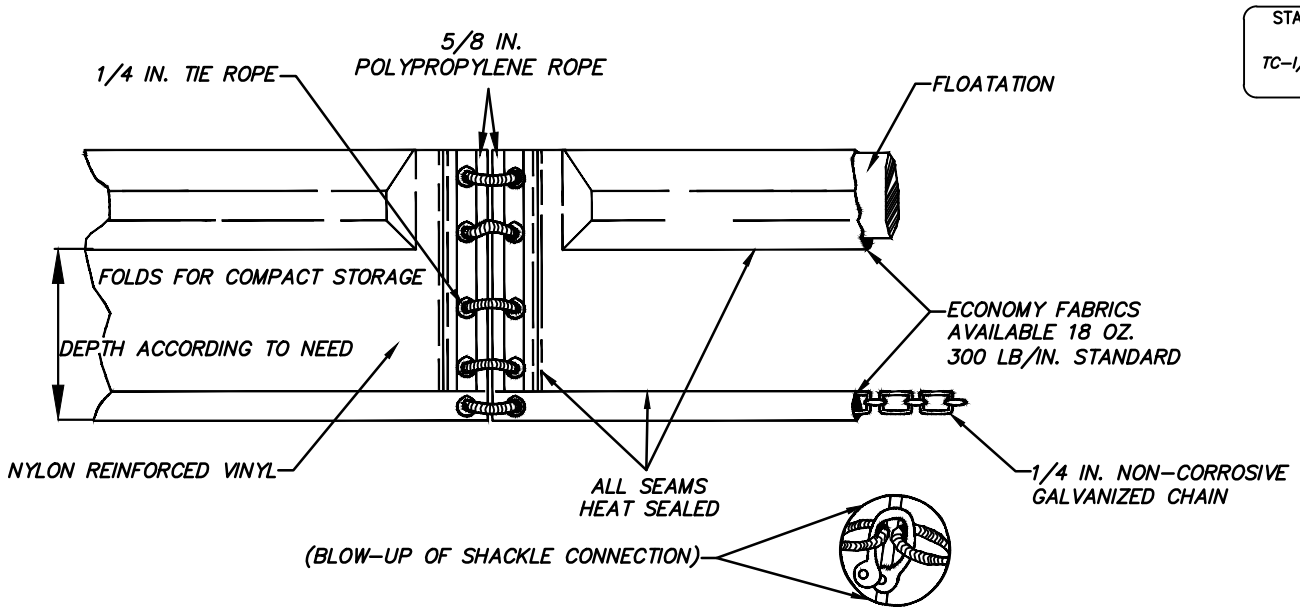
SANDBAG/STONE CHANNEL DIVERSION

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

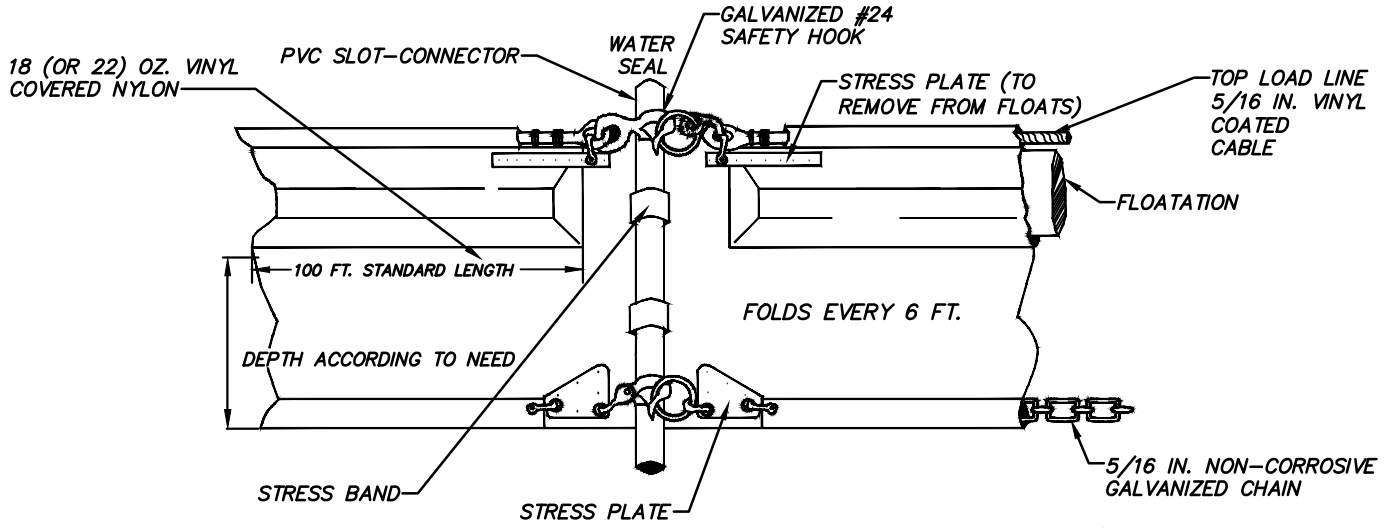
DWG. NO 813.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

TYPE I



TYPE II



DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

TURBIDITY CURTAIN-1

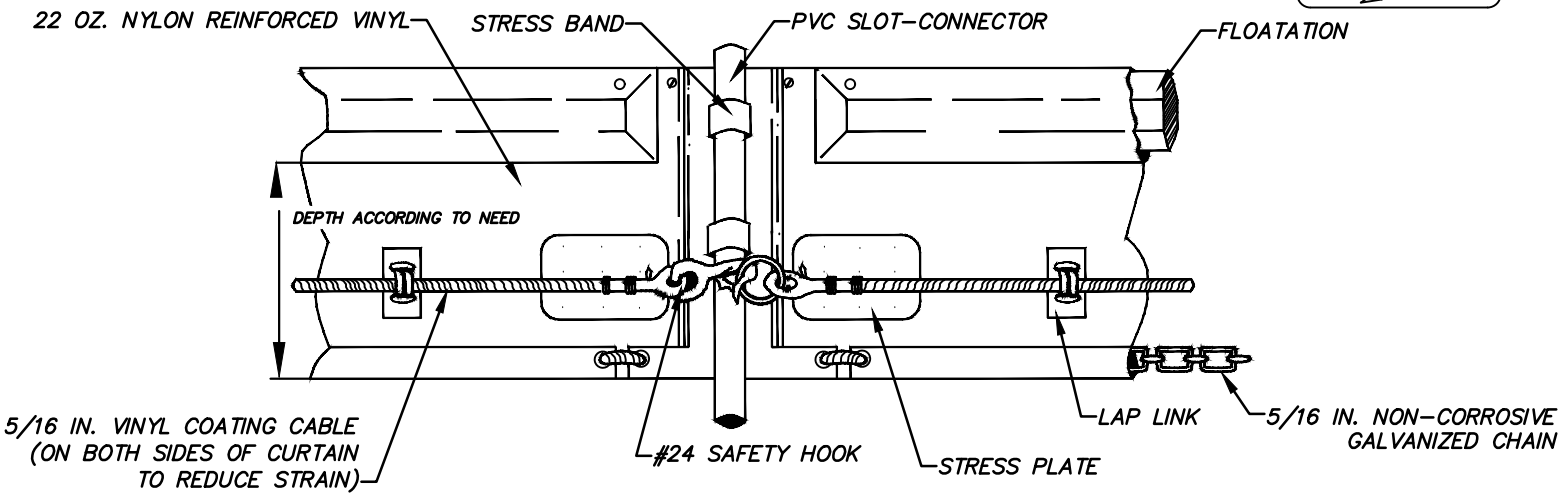
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 814.1

SOURCE: 2003 DISTRICT OF COLUMBIA GUIDEBOOK

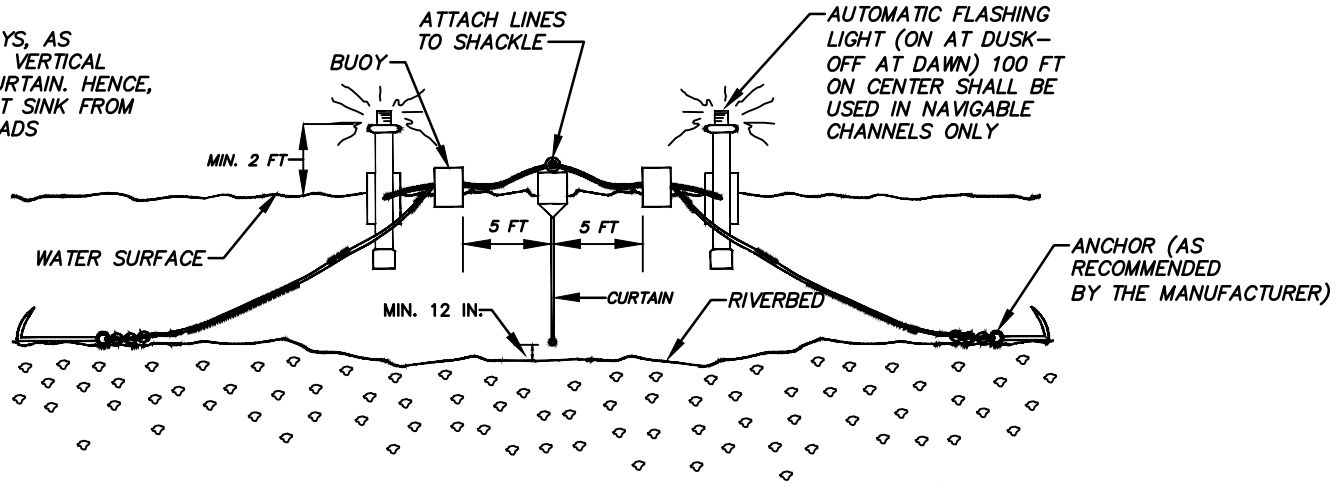
TYPE III

STANDARD SYMBOL
TC–III



ORIENTATION WHEN INSTALLED (TIDAL SITUATION-TYPE III)

NOTE:
- ANCHORING WITH BUOYS, AS SHOWN, REMOVES ALL VERTICAL FORCES FROM THE CURTAIN. HENCE, THE CURTAIN WILL NOT SINK FROM WIND OR CURRENT LOADS



DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

TURBIDITY CURTAIN-2

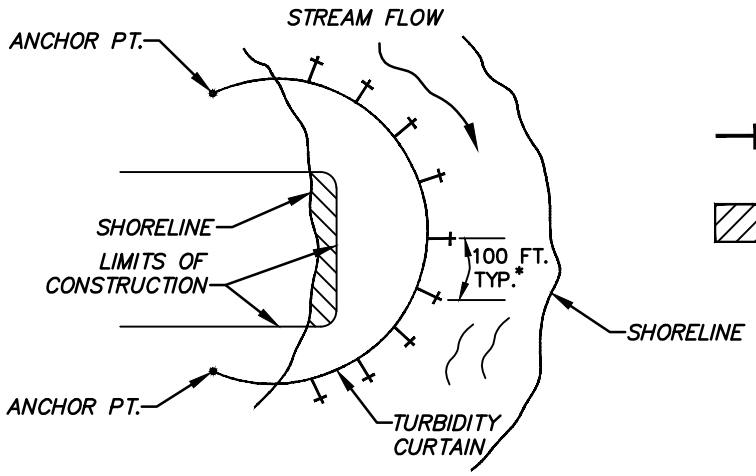
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 814.2

SOURCE: 2003 DISTRICT OF COLUMBIA GUIDEBOOK

TYPICAL LAYOUTS:
STREAMS, PONDS & LAKES (PROTECTED & NON-TIDAL)

STANDARD SYMBOL
N/A

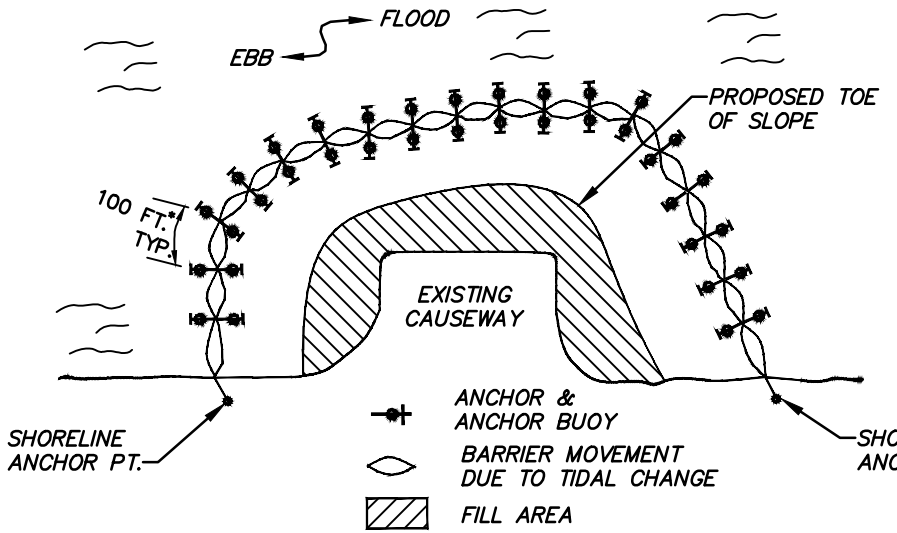


STAKE OR ANCHOR, EVERY 100 FT (TYP).

FILL AREA

*THIS DISTANCE IS VARIABLE

TIDAL WATERS AND/OR HEAVY WIND & WAVE ACTION)



ANCHOR & ANCHOR BUOY

BARRIER MOVEMENT DUE TO TIDAL CHANGE

FILL AREA

*THIS DISTANCE IS VARIABLE

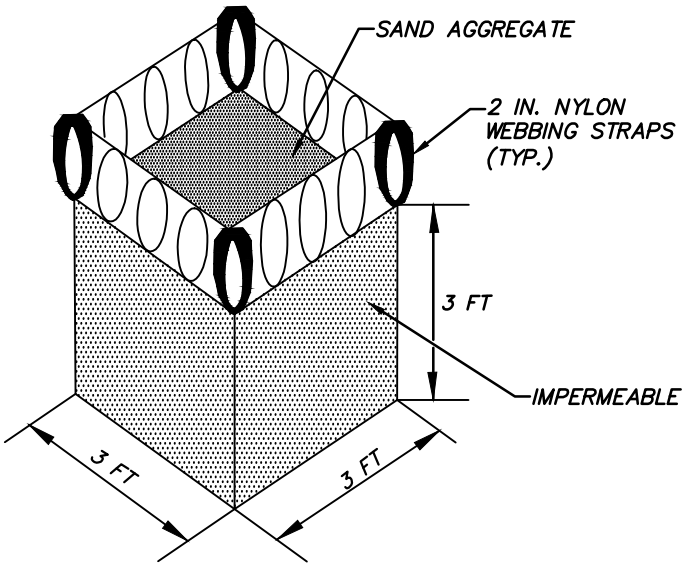
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

TURBIDITY CURTAIN-3

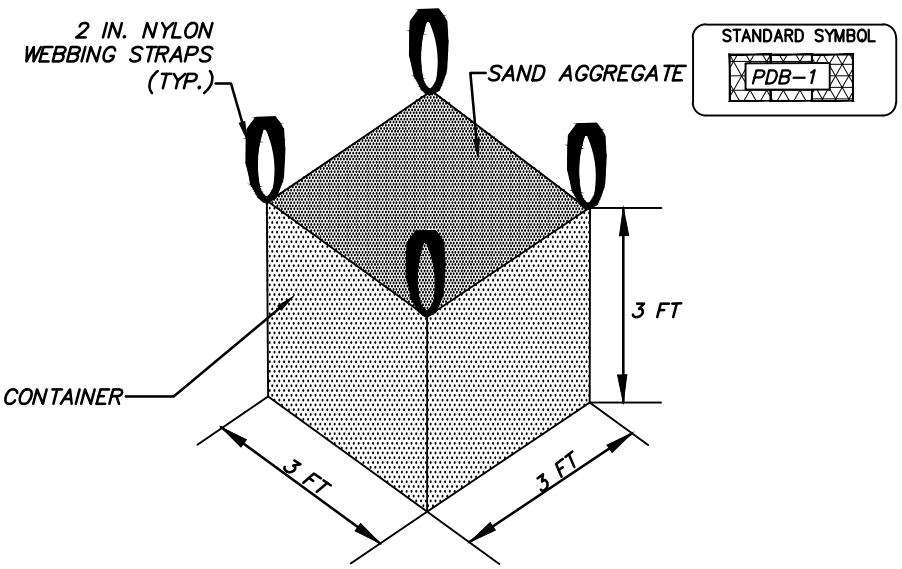
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 814.3

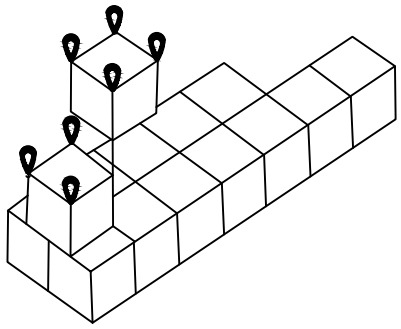
SOURCE: 2003 DISTRICT OF COLUMBIA GUIDEBOOK



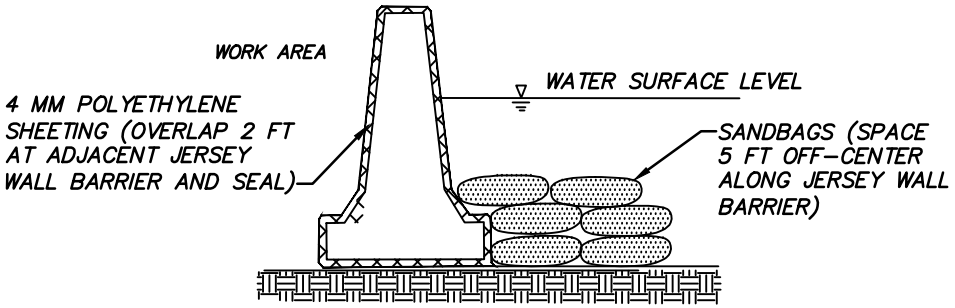
MODULAR DAM DUFFLE TOP STYLE



MODULAR DAM OPEN TOP STYLE



STACKING CONFIGURATION ISOMETRIC VIEW



MODULAR DAM SECTION VIEW

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

PORTABLE DAMS/BARRIERS-1

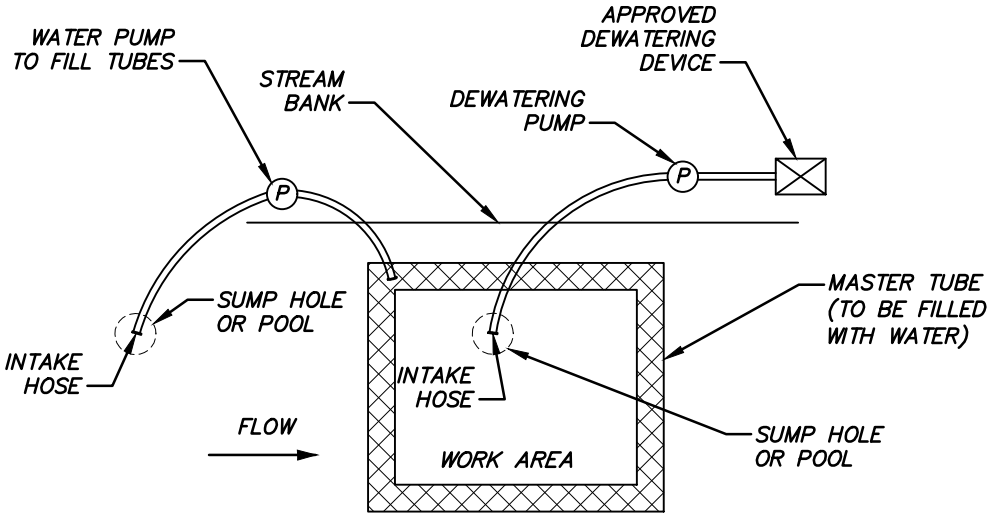
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 815.1

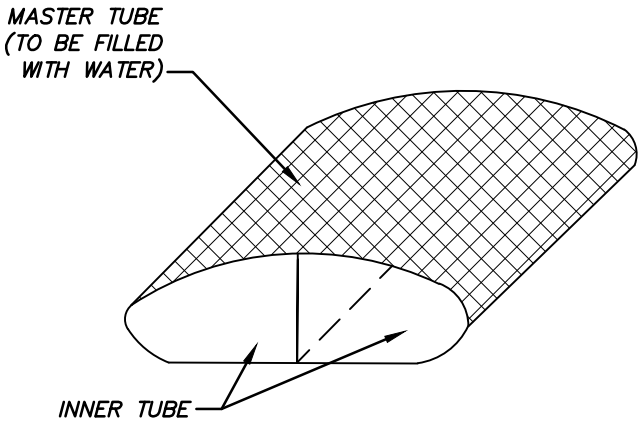
SOURCE: VIRGINIA DEPARTMENT OF CONSERVATION RECREATION

STANDARD SYMBOL

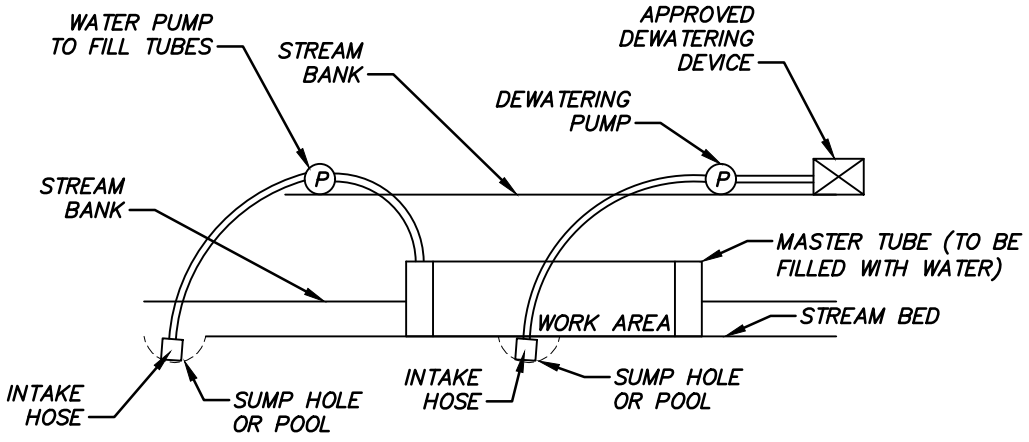
PDB-2



PLAN VIEW



ISOMETRIC VIEW



PROFILE VIEW

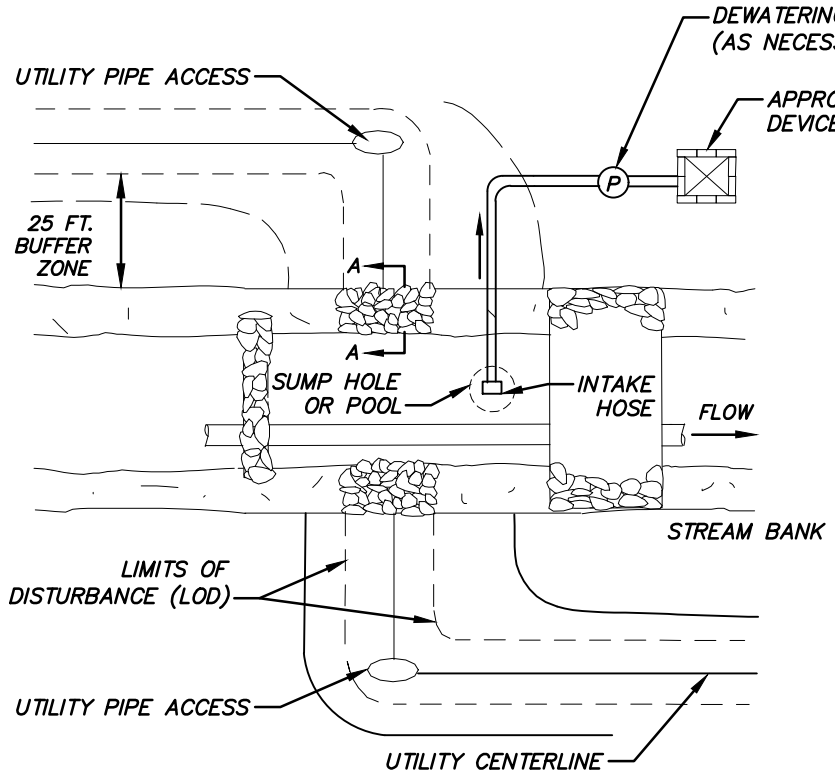
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

PORTABLE DAMS/BARRIERS-2

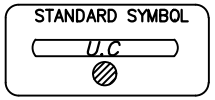
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 815.2

SOURCE: VIRGINIA DEPARTMENT OF CONSERVATION RECREATION

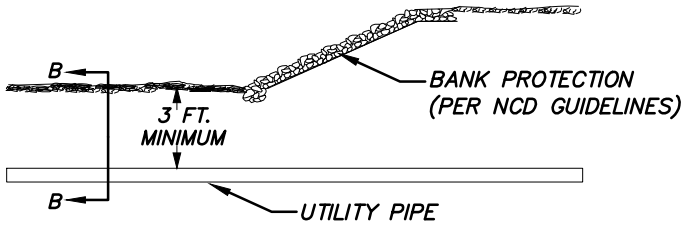


PLAN VIEW

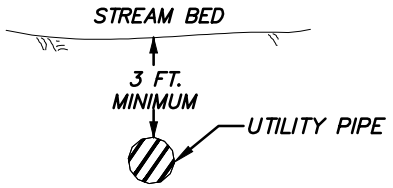


NOTE:

- FOR ADDITIONAL BANK PROTECTION NOTES REFER TO NATURAL CHANNEL DESIGN (NCD)FOR GUIDELINES ON STANDARD SIZING AND SPECIFYING MATERIALS.



SECTION A-A



SECTION B-B

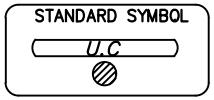
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

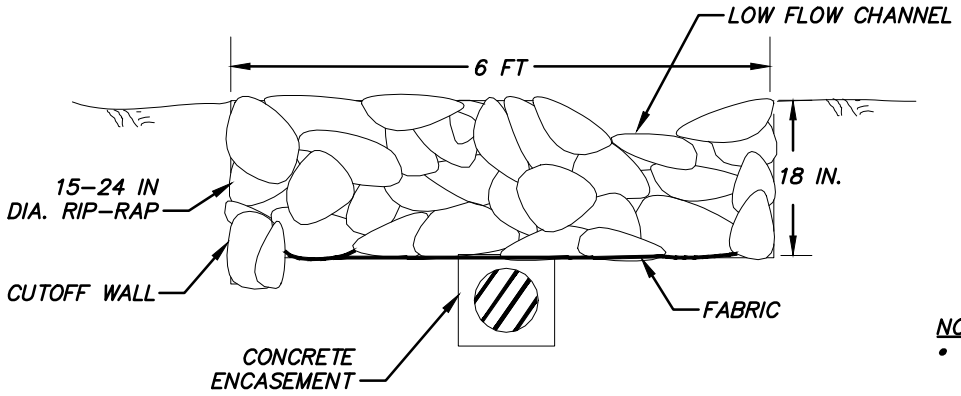
UTILITY CROSSING -1

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 817.1

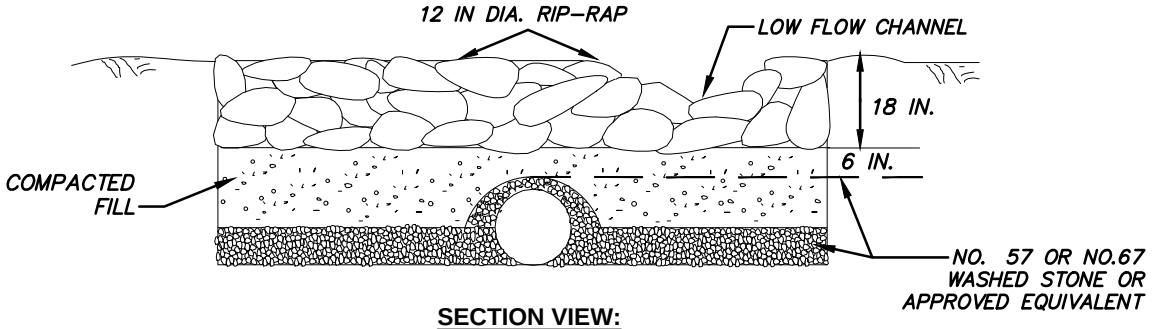
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS





SECTION VIEW:
ALTERNATE OPTION 1

NOTE:
- FOR ADDITIONAL BANK PROTECTION NOTES REFER TO NATURAL CHANNEL DESIGN (NCD) FOR GUIDELINES ON STANDARD SIZING AND SPECIFYING MATERIALS.



SECTION VIEW:
ALTERNATE OPTION 2

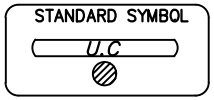
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

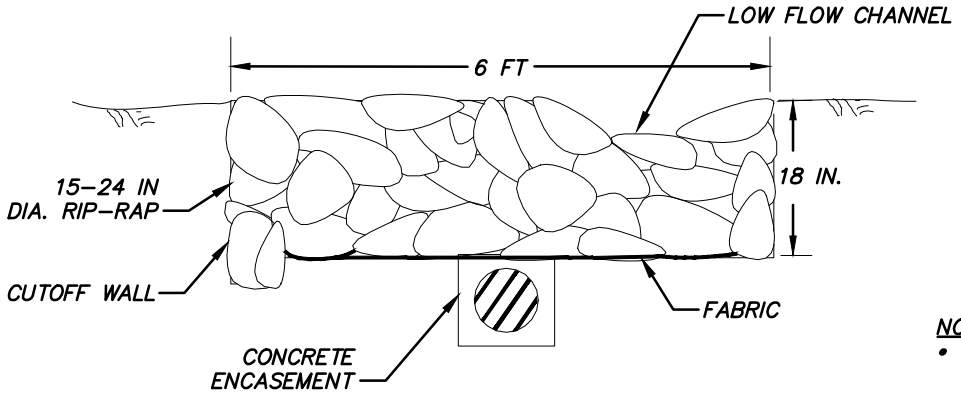
UTILITY CROSSING -2

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 817.2

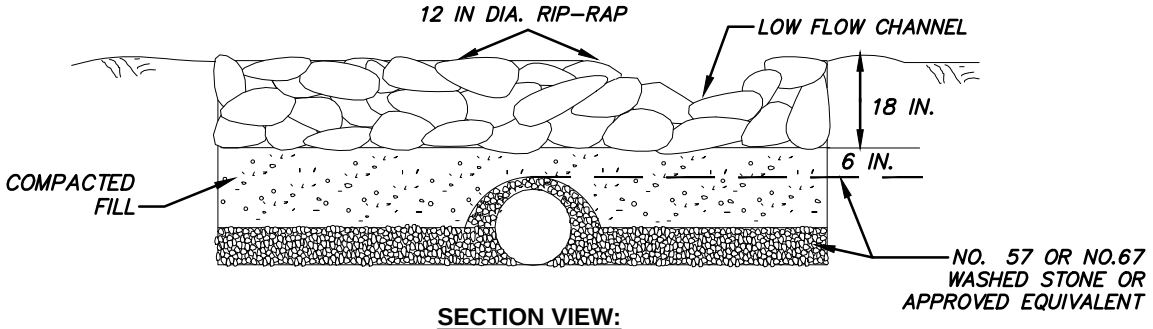
SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS





SECTION VIEW:
ALTERNATE OPTION 1

NOTE:
- FOR ADDITIONAL BANK PROTECTION NOTES REFER TO NATURAL CHANNEL DESIGN (NCD) FOR GUIDELINES ON STANDARD SIZING AND SPECIFYING MATERIALS.



SECTION VIEW:
ALTERNATE OPTION 2

DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

UTILITY CROSSING -2

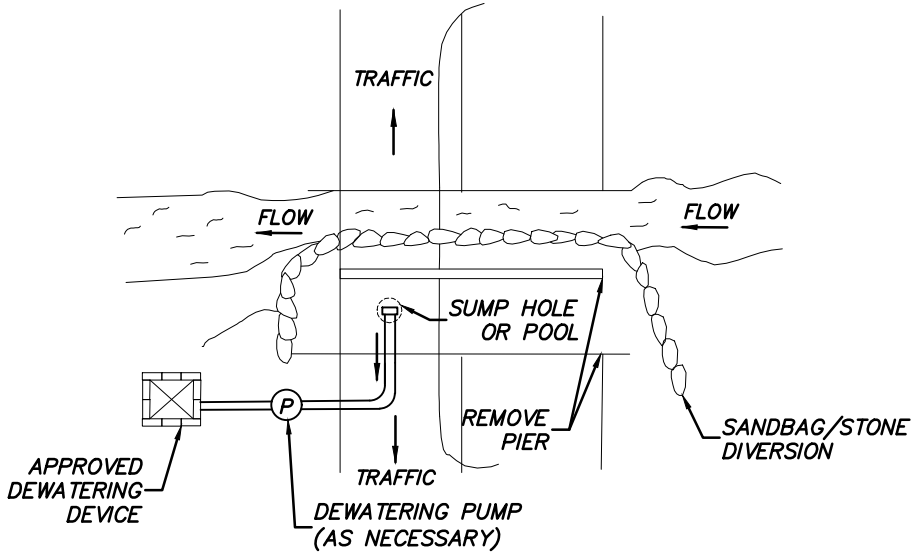
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 817.2

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL

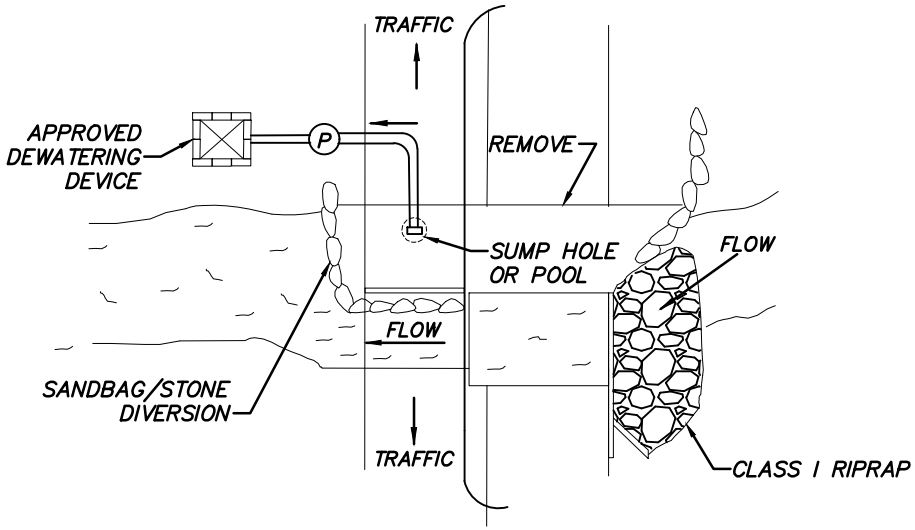
N/A



STAGE 1

STAGE 1 INSTALLATION GUIDE:

1. PROVIDE SANDBAGS OR STONES TO DIVERT THE CHANNEL.
2. REMOVE THE PORTION OF PIER AND THE SOUTHEAST ABUTMENT AND HEADWALL.
3. INSTALL THE FIRST SEGMENT OF PIPE AND BUILD THE HEADWALL.
4. STABILIZE THE STREAM BED INLET WITH CLASS 1 RIPRAP.



STAGE 2

STAGE 2 INSTALLATION GUIDE:

1. REDIVERT THE CHANNEL AS SHOWN.
2. REMOVE THE NORTHEAST ABUTMENT AND HEADWALL.
3. INSTALL THE PIPE AND BUILD THE HEADWALL.
4. STABILIZE THE REMAINING STREAM INLET CLASS 1 RIPRAP.

DATE	APPR	
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		REFERENCE

CULVERT INSTALLATION-1 STAGES 1 & 2

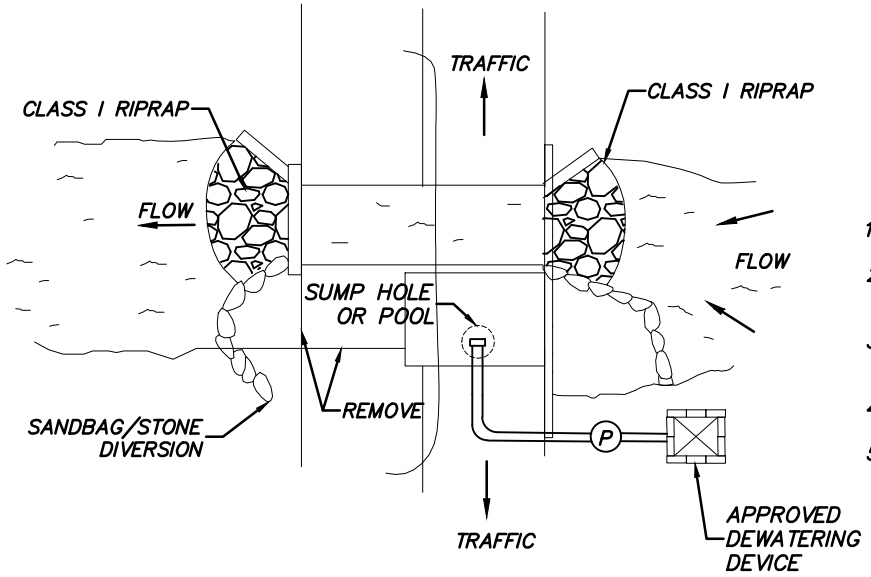
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 818.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

STANDARD SYMBOL

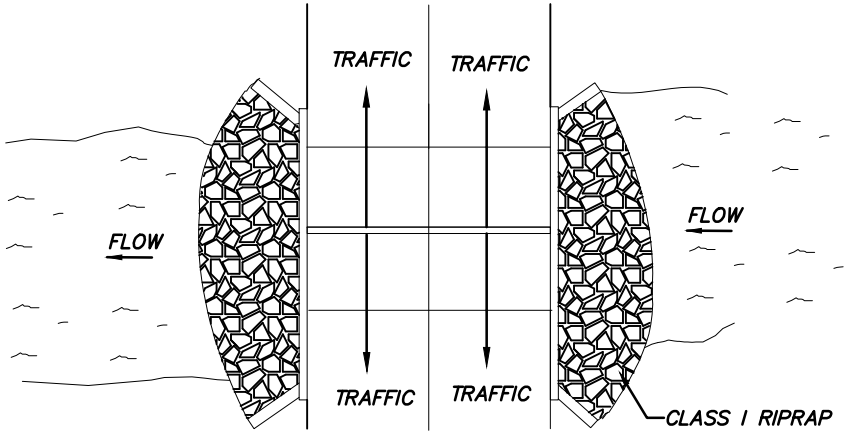
N/A



STAGE 3

STAGE 3 INSTALLATION GUIDE:

1. REDIVERT THE CHANNEL AS SHOWN.
2. REMOVE THE REMAINING ABUTMENT AND WINGWALL.
3. BUILD THE LAST PORTION OF PIPE AND HEADWALL.
4. STABILIZE THE OUTLET WITH RIPRAP.
5. RESTORE THE ROAD SURFACE.



STAGE 4

STAGE 4 INSTALLATION GUIDE:

1. REMOVE TRAFFIC BARRIERS.
2. STABILIZE ALL DISTURBED AREAS WITH SEED AND MULCH.
3. REMOVE SEDIMENT CONTROL DEVICES.

DATE	APPR	
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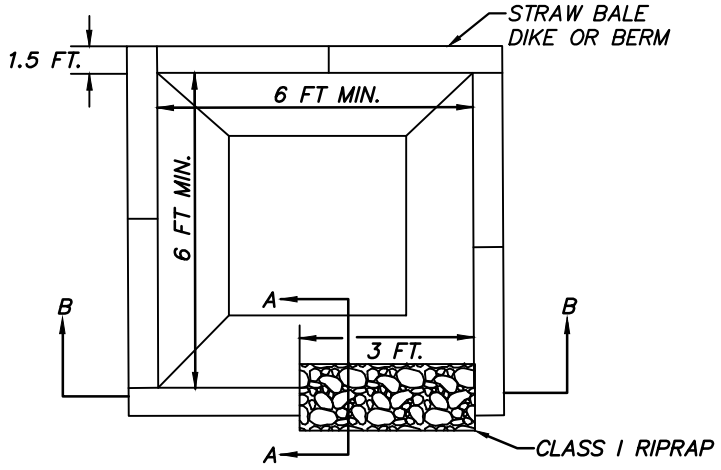
		REFERENCE

CULVERT INSTALLATION-2 STAGES 3 & 4

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

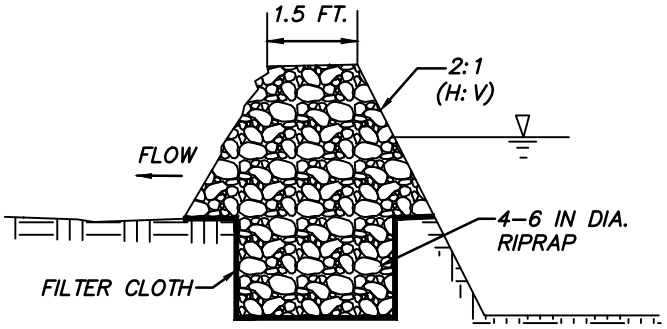
DWG. NO 818.2

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

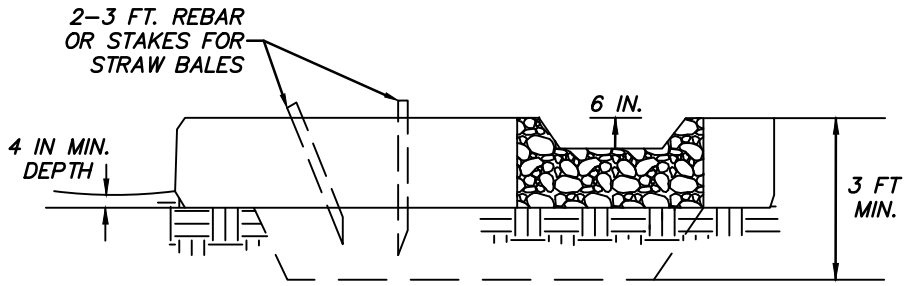


STANDARD SYMBOL

PLAN VIEW



SECTION A-A



SECTION B-B

CONSTRUCTION SPECIFICATIONS

INSTALLATION MUST MEET THE FOLLOWING GUIDE:

1. *STORE EXCAVATED SUBSOIL AND TOPSOIL SEPARATELY AND REPLACE IN THEIR NATURAL ORDER.*
2. *PREVENT THE EXCAVATED SEDIMENTS FROM ENTERING THE WATERWAY BY USING SEDIMENT PERIMETER CONTROLS OR OTHER MEASURES.*
3. *THE DEWATERING BASIN MUST HAVE A MINIMUM DEPTH OF 3 FEET WHERE BASIN DEPTH IS MEASURED FROM THE TOP OF THE STRAW BALES TO THE BOTTOM OF THE EXCAVATION.*
4. *ONCE THE DEWATERING BASIN BECOMES FILLED TO ONE–HALF OF THE EXCAVATED DEPTH, REMOVE THE ACCUMULATED SEDIMENT AND DISPOSE IN AN APPROVED AREA OUTSIDE THE 100–YEAR FLOODPLAIN.*

DATE	APPR	
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DEWATERING BASINS

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

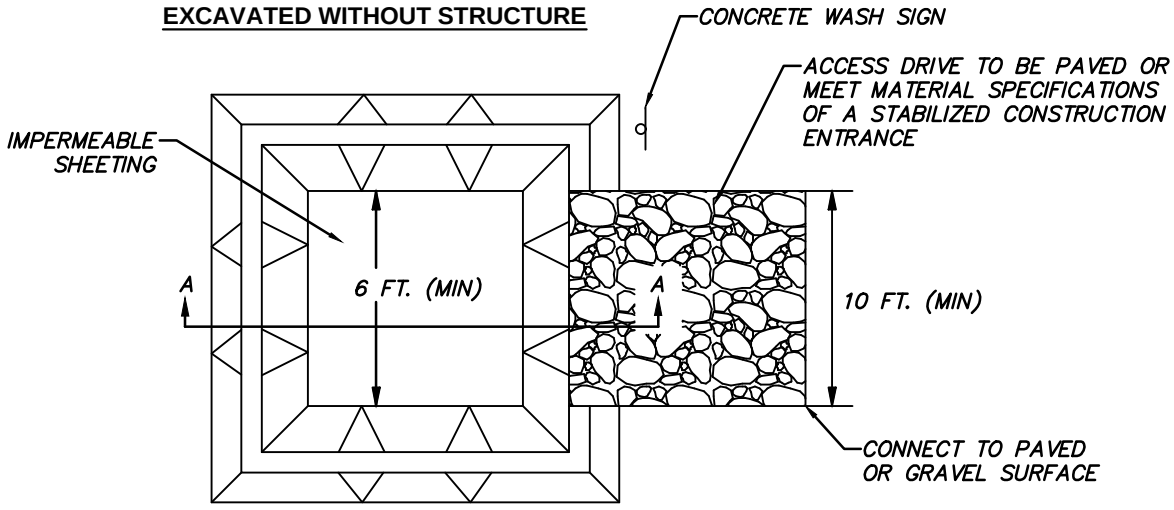
DWG. NO 819.1

SOURCE: 2011 MARYLAND STANDARDS & SPECIFICATIONS

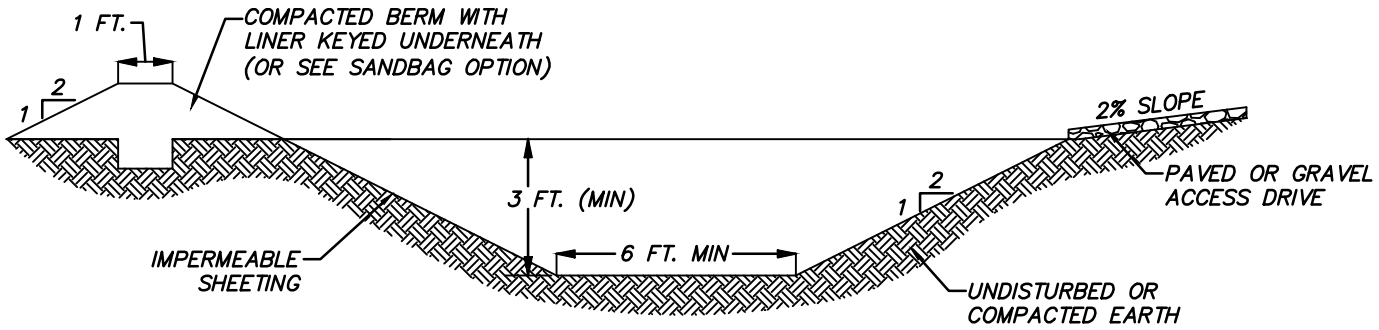
STANDARD SYMBOL

CWS

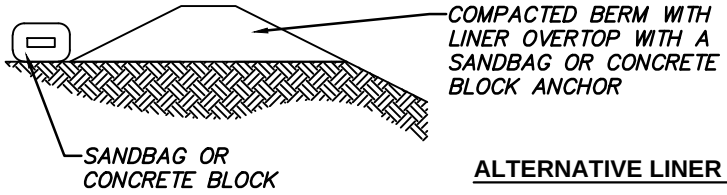
EXCAVATED WITHOUT STRUCTURE



PLAN



SECTION A - A



ALTERNATIVE LINER OPTION

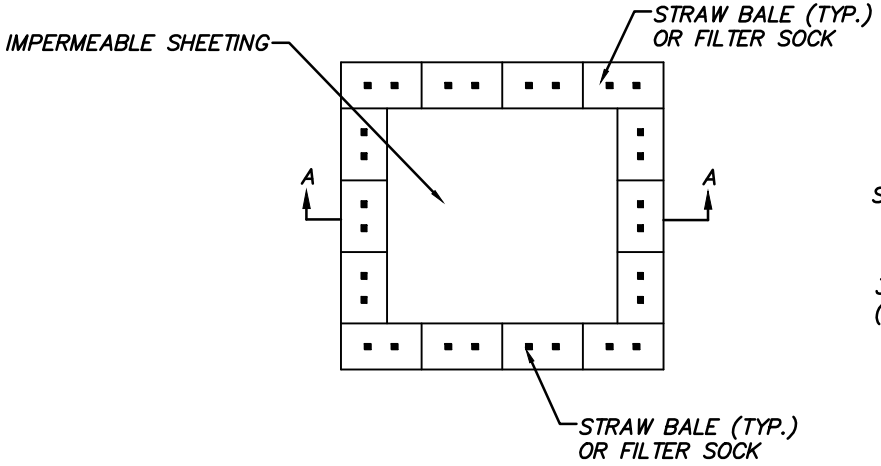
DATE	APPR	
REVISED		
ISSUED:		
		REFERENCE

ONSITE CONCRETE WASHOUT STRUCTURE - 1

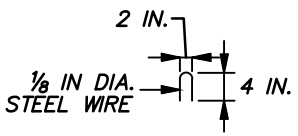
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 902.1

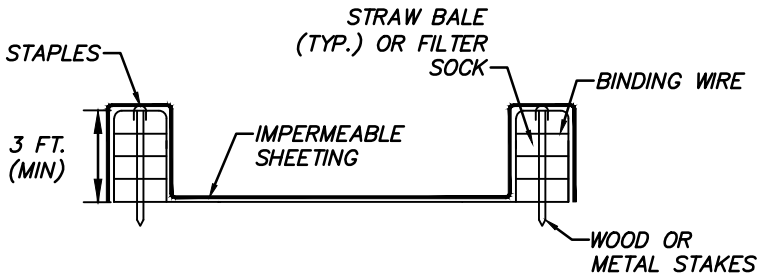
SOURCE: 2013 DELAWARE STANDARDS AND SPECIFICATIONS



PLAN



STAPLE DETAIL



SECTION A - A

STANDARD SYMBOL

CWS

NOTE:

- CAN BE STACKED BALES OR FILTER SOCKS OR PARTIALLY EXCAVATED TO REACH 3 FOOT DEPTH.

WASHOUT STRUCTURE WITH STRAW BALES OR FILTER SOCK

CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. APPLY A NEW LINER BEFORE REUSING THE STATION FOR ADDITIONAL WASHOUTS AFTER MAINTENANCE HAS OCCURRED.

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		REFERENCE

ONSITE CONCRETE WASHOUT STRUCTURE - 2

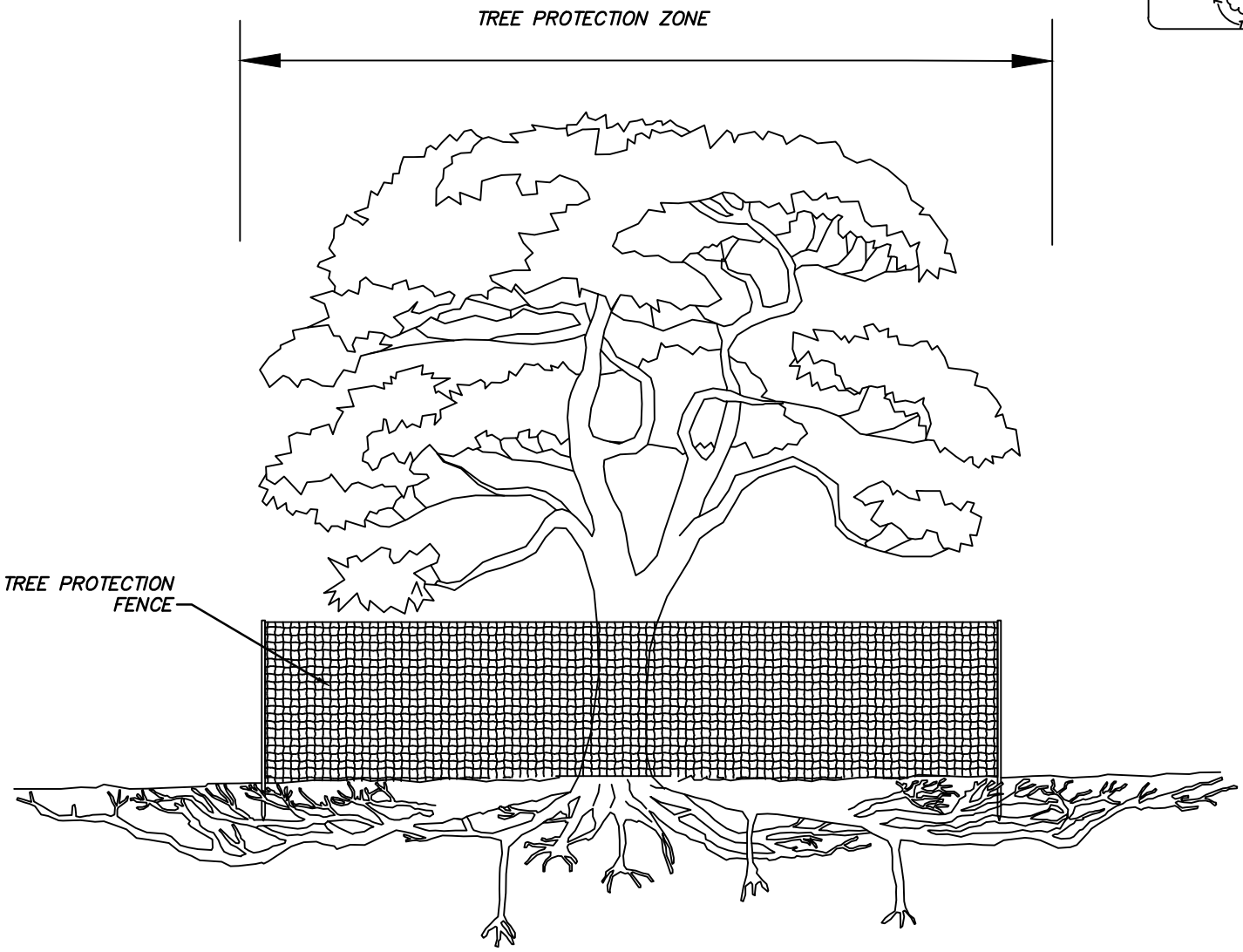
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 902.2

SOURCE: 2011 MARYLAND STANDARDS AND SPECIFICATIONS

STANDARD SYMBOL

TP



SECTION VIEW

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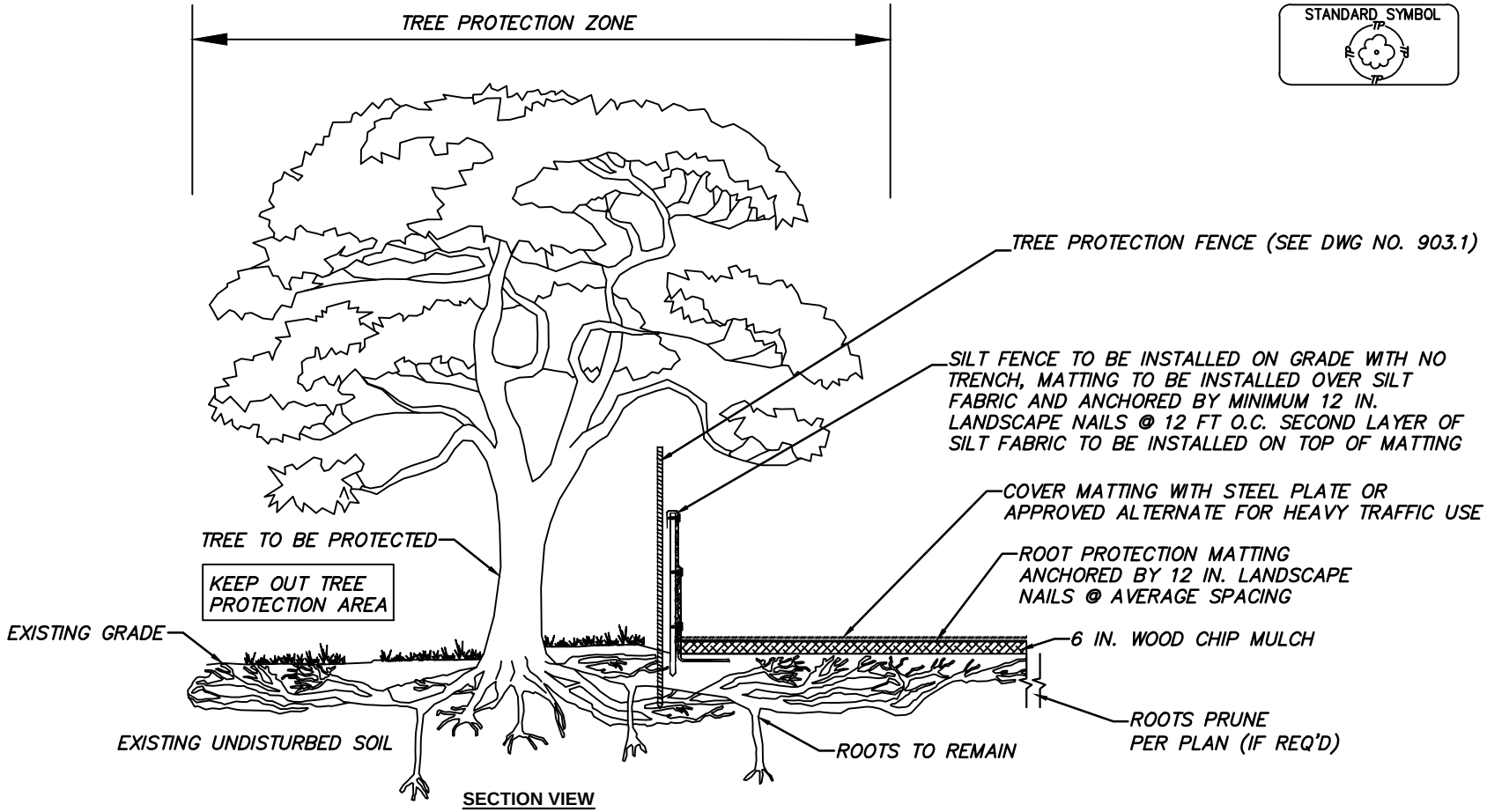
		REFERENCE

TREE PROTECTION

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 903.1

SOURCE: URBAN TREE FOUNDATION 2014



CONSTRUCTION SPECIFICATIONS

1. MATTING MATERIAL MUST BE DOUBLE SIDED GEOCOMPOSITE, GEONET CORE WITH NON–WOVEN COVERING (SUCH AS TENSAR ROADRAIN RD7) OR APPROVED EQUIVALENT.
2. INSTALL ROOT PROTECTION MATTING BY A CERTIFIED ARBORIST.
3. TO BE USED FOR DESIGNATED TEMPORARY CONSTRUCTION ACCESS AND STOCKPILE AREAS.
4. PLACE MATTING ON 6 IN. WOOD CHIP MULCH UNLESS OTHERWISE DIRECTED.
5. FOR HEAVY TRAFFIC AREAS, COVER MATTING WITH STEEL PLATES.

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		REFERENCE

TREE ROOT PROTECTION WITH SILT FENCE

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT

DWG. NO 903.2

SOURCE: URBAN TREE FOUNDATION 2014