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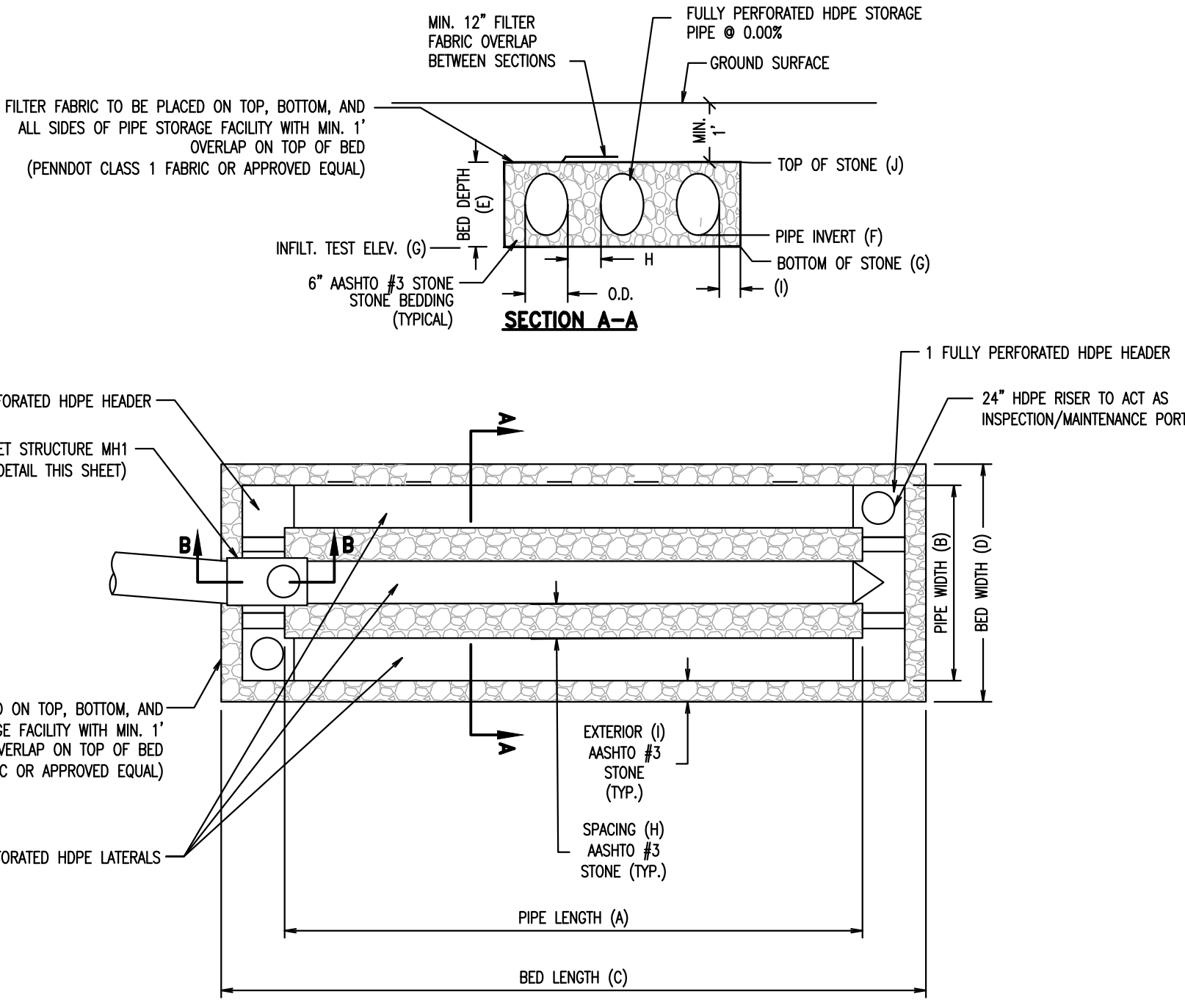
1250 Wrights Lane  
West Chester, PA 19380  
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### BMP 6.4.3: SUBSURFACE INFILTRATION BED

THE INSTALLATION OF THIS BMP IS A CRITICAL STAGE WHERE THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT.

BED	PIPE MATERIAL	PIPE SIZE (D)	PIPE LENGTH	NUMBER OF PIPES	PIPE WIDTH	PIPE LENGTH	PIPE WIDTH	PIPE INVERT	PIPE SPACING	EXTERIOR STONE	TOP OF STONE	BASIN SLOPE	INLET TO			
1	HDPE	2.5	3.0	5	30	18.2	38	19	4	305.00	305.00	0.80	0.40	309.00	0.0000	311.50
2	HDPE	3	3.5	8	27	30	35	32	4	305.50	305.00	1.00	1.00	309.00	0.0000	311.50
3	HDPE	2.5	3.0	5	36	18.2	44	19	4	307.50	307.00	0.80	0.40	311.00	0.0000	312.00

NOTES: ALL DIMENSIONS ARE IN FEET.



GENERAL NOTES:  
1. ALL PIPE WITHIN BED LISTED AS HDPE SHALL BE FULLY PERFORATED HIGH DENSITY POLYETHYLENE PIPE.  
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE TOWNSHIP ENGINEER'S APPROVAL PRIOR TO INSTALLATION.

#### SUBSURFACE INFILTRATION BED

NOT TO SCALE

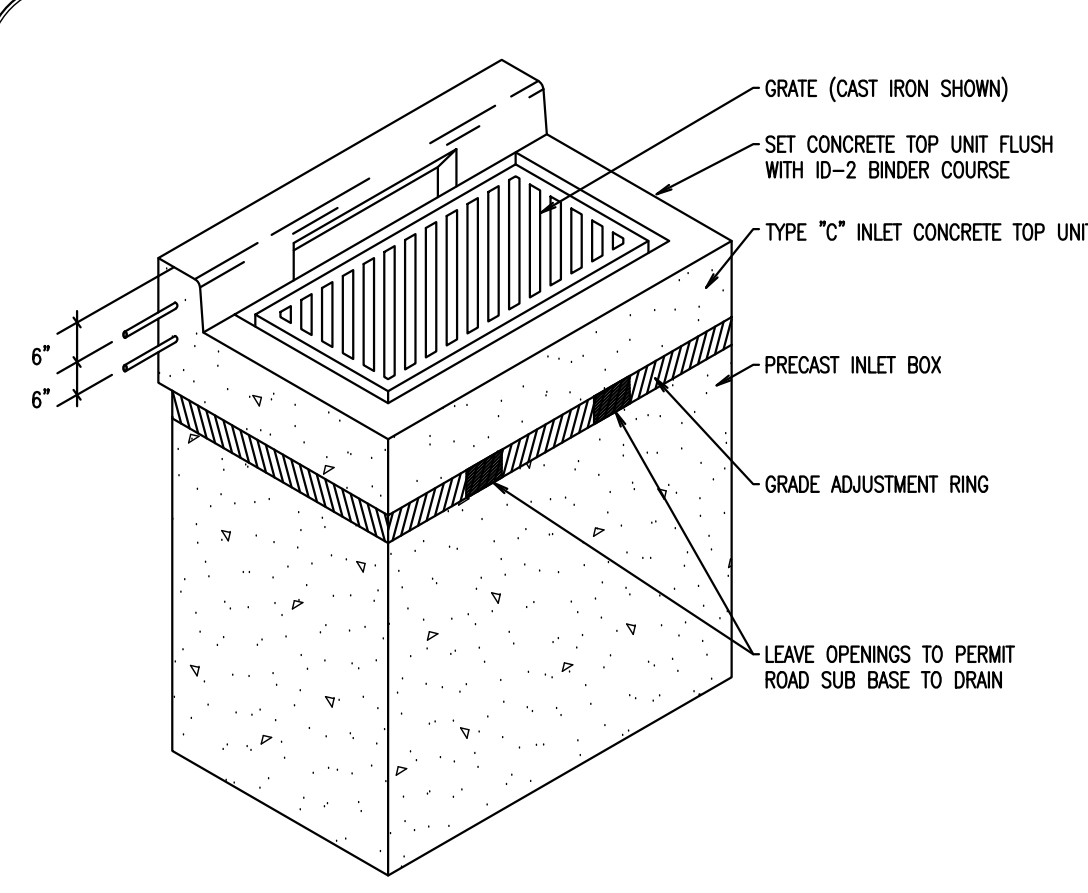
#### CONSTRUCTION SEQUENCE

- PROTECT INFILTRATION BED AREA FROM COMPACTION PRIOR TO INSTALLATION.
- IF DURING THE INSTALLATION OF THE PROPOSED INFILTRATION FACILITY, UNFAVORABLE CONDITIONS ARE ENCOUNTERED, THE OWNER AND ENGINEER SHALL BE NOTIFIED AND THE PROPOSED FACILITY SHALL BE RELOCATED TO A MORE SUITABLE LOCATION ON THE PROPERTY.
- IF GROUNDWATER OR BEDROCK IS ENCOUNTERED DURING THE INSTALLATION OF THE INFILTRATION SYSTEMS STOP WORK AND CONTACT THE TOWNSHIP AND DESIGN ENGINEER FOR AN ALTERNATE SEEPAGE BED LOCATION OR NEW DESIGN.
- IF POSSIBLE, INSTALL INFILTRATION BED DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY.
- INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
- IF NECESSARY, EXCAVATE INFILTRATION BED BOTTOM TO AN UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE. PRIOR TO PLACEMENT OF AGGREGATE, THE SOIL SURFACE AT THE BOTTOM OF THE BED SHALL BE SCARIFIED TO FURTHER PROMOTE INFILTRATION.
- SEED AND STABILIZE TOPSOIL.

- COMPACTION IS TO BE MINIMIZED IN THE AREAS DESIGNATED FOR INFILTRATION.
- SEEPAGE BED FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL/SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, APPROPRIATE MEASURES (I.E. CLEANING THE SOIL/SEDIMENT FROM THE FABRIC, STONE, BED ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.
- ALL STONE FOR THE CONSTRUCTION OF THE STONE SEEPAGE BEDS SHOULD BE UNIFORMLY GRADED AND CLEAN WASHED AGGREGATE.
- THE BOTTOM OF ALL SEEPAGE BEDS SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE.

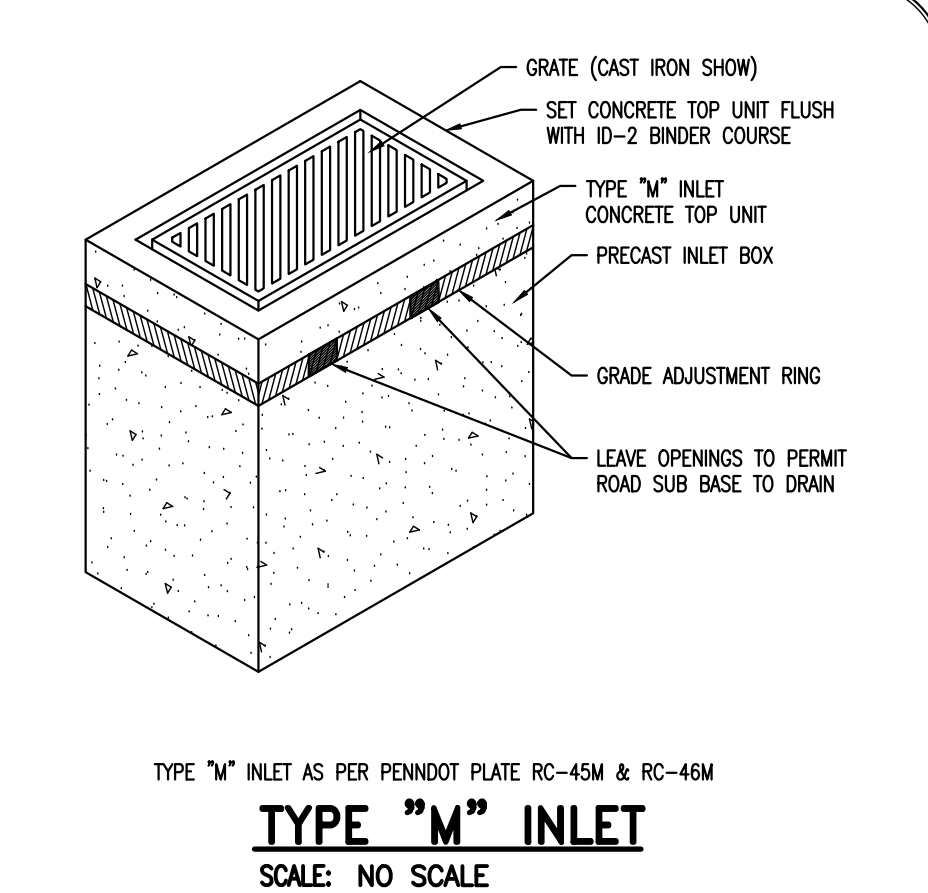
#### OPERATION AND MAINTENANCE - SUBSURFACE INFILTRATION BED:

- SEEPAGE BED FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL/SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, APPROPRIATE MEASURES (I.E. CLEANING THE SOIL/SEDIMENT FROM THE FABRIC, STONE, BED ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.
- INFLOW AND OUTFLOW POINTS INTO THE INFILTRATION SYSTEMS SHOULD BE KEPT CLEAR OF LEAVES AND OTHER DEBRIS. ANY LEAVES OR DEBRIS WILL NEGATIVELY IMPACT THE PERFORMANCE OF THESE SYSTEMS. ALL DOWNSPUTS AND OVERFLOW PIPES SHOULD BE ADDRESSED.
- IF GROUNDWATER OR BEDROCK IS ENCOUNTERED DURING THE INSTALLATION OF THE ON-LOT SEEPAGE BEDS STOP WORK AND CONTACT THE TOWNSHIP AND DESIGN ENGINEER FOR AN ALTERNATE SEEPAGE BED LOCATION OR NEW DESIGN.
- COMPACTION IS TO BE MINIMIZED IN AREAS DESIGNATED FOR INFILTRATION.
- CATCH BASINS AND INLETS (UPGRADE) OF INFILTRATION BED (I21, I21.3, I21.4, I21.5, I21.6, I21.6.1, I21.7, I22, I22.4, I22.5, I22.6, & I22.7) SHOULD BE INSPECTED AND CLEANED AT LEAST TWICE PER YEAR AND AFTER MAJOR RUNOFF EVENTS.
- INSPECT THE BED AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITOES SHOULD NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WHICH RELATIVELY STAYS WATER LEVELS.
- ALSO INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURE MH, EROSION CONTROL MEASURES, AND SIGNS OF WATER CONTAMINATION/SPILLS.
- REMOVE ACCUMULATED SEDIMENT FROM BED AS REQUIRED. RESTORE ORIGINAL CROSS SECTION AND INFILTRATION RATE. PROPERLY DISPOSE OF SEDIMENT.
- THE PERMITTEE OR CO-PERMITTEE SHALL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OR REPLACEMENT OF PCSM BMPs UNLESS A DIFFERENT PERSON IS IDENTIFIED IN THE NOTICE OF TERMINATION AND HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs.
- PROPOSED PVC GATE VALVES SHALL ONLY BE OPENED FOR DEMONSTRATION AND MAINTENANCE AND SHALL BE CLOSED IMMEDIATELY AFTER.



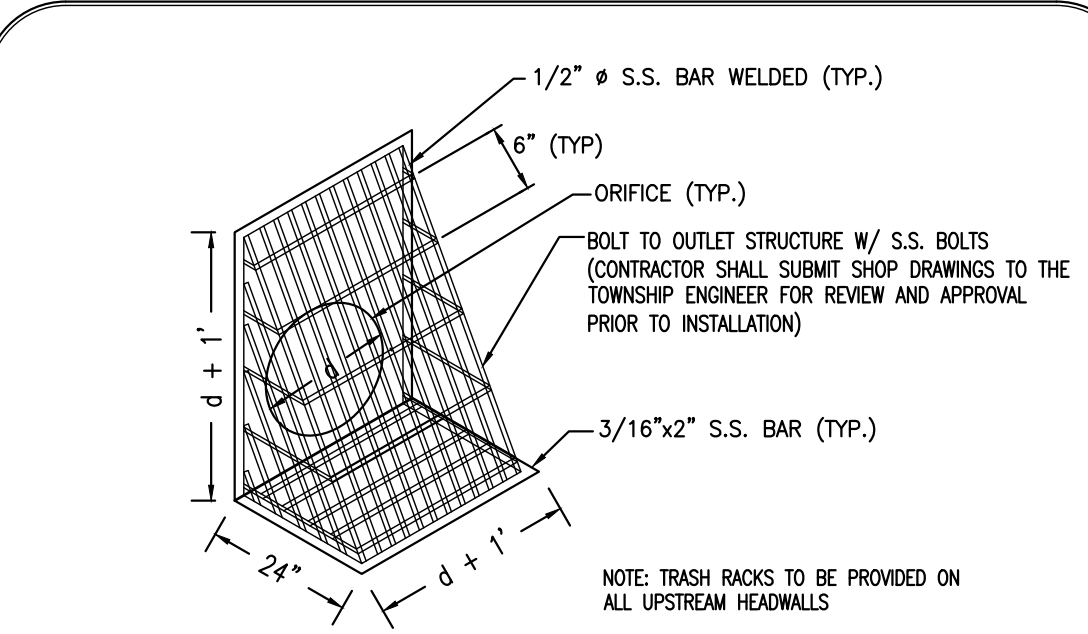
#### TYPE "C" INLET

SCALE: NO SCALE



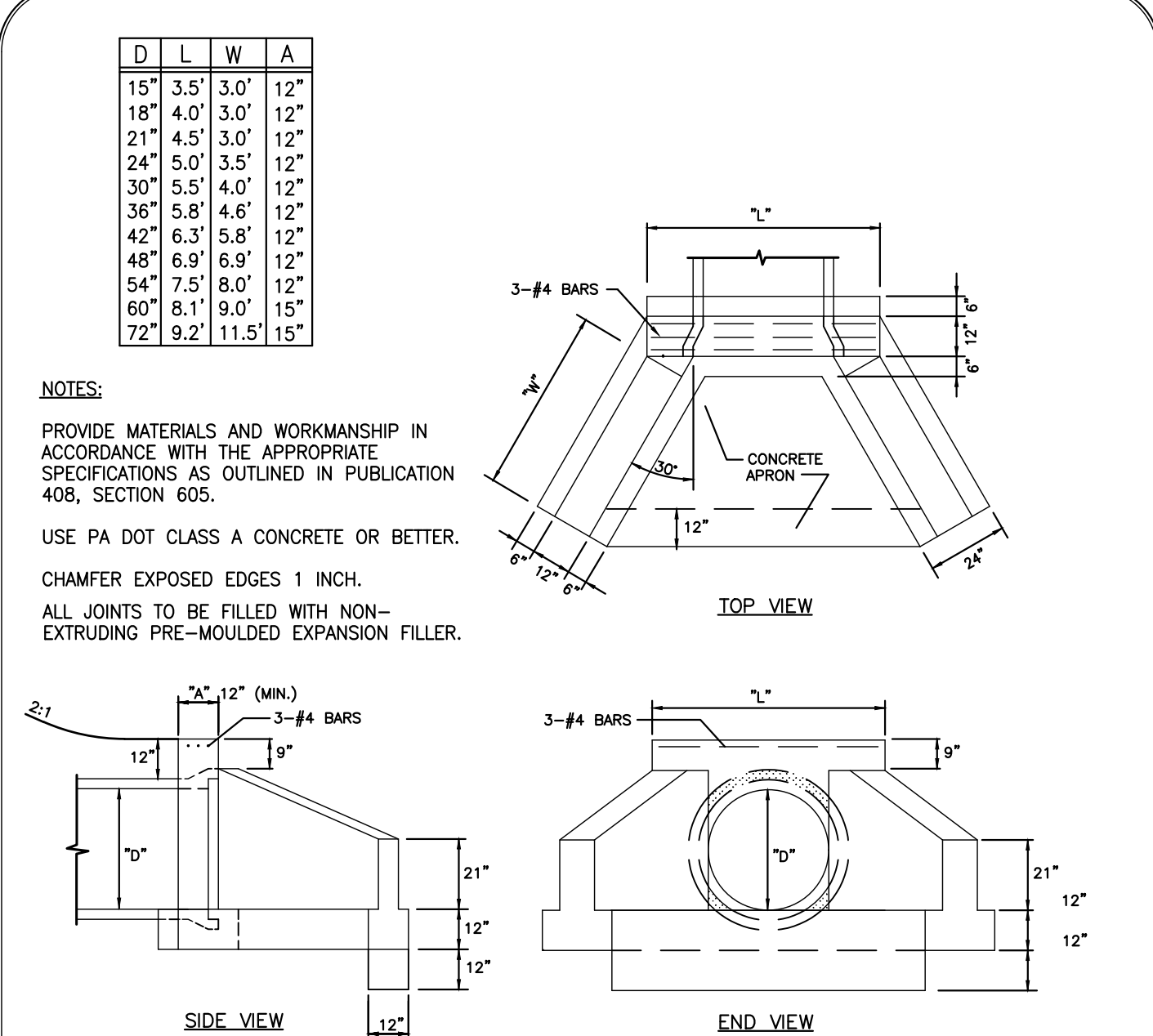
#### TYPE "M" INLET

SCALE: NO SCALE



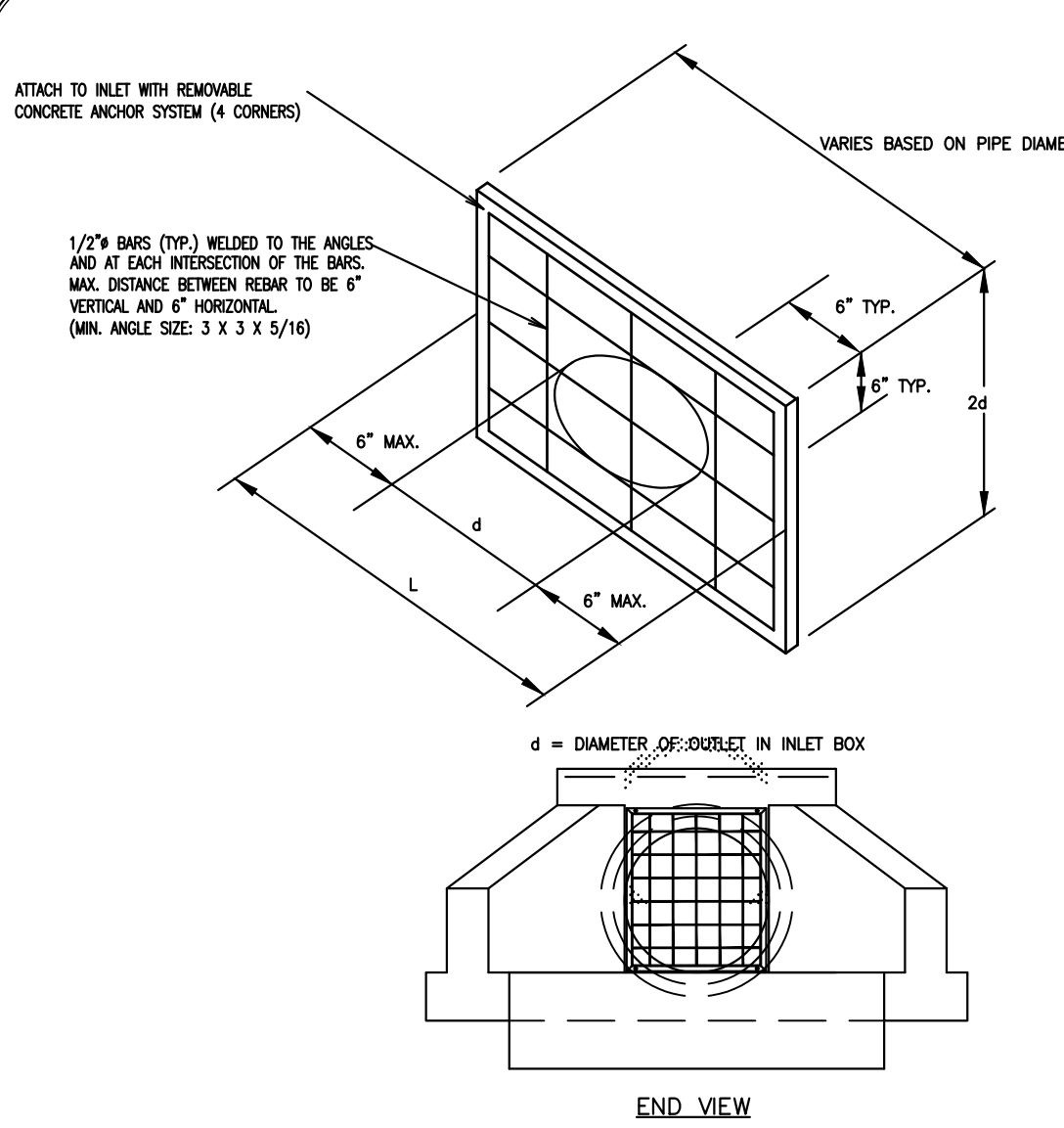
#### TRASH RACK - BASIN OUTLET STRUCTURES

NOT TO SCALE



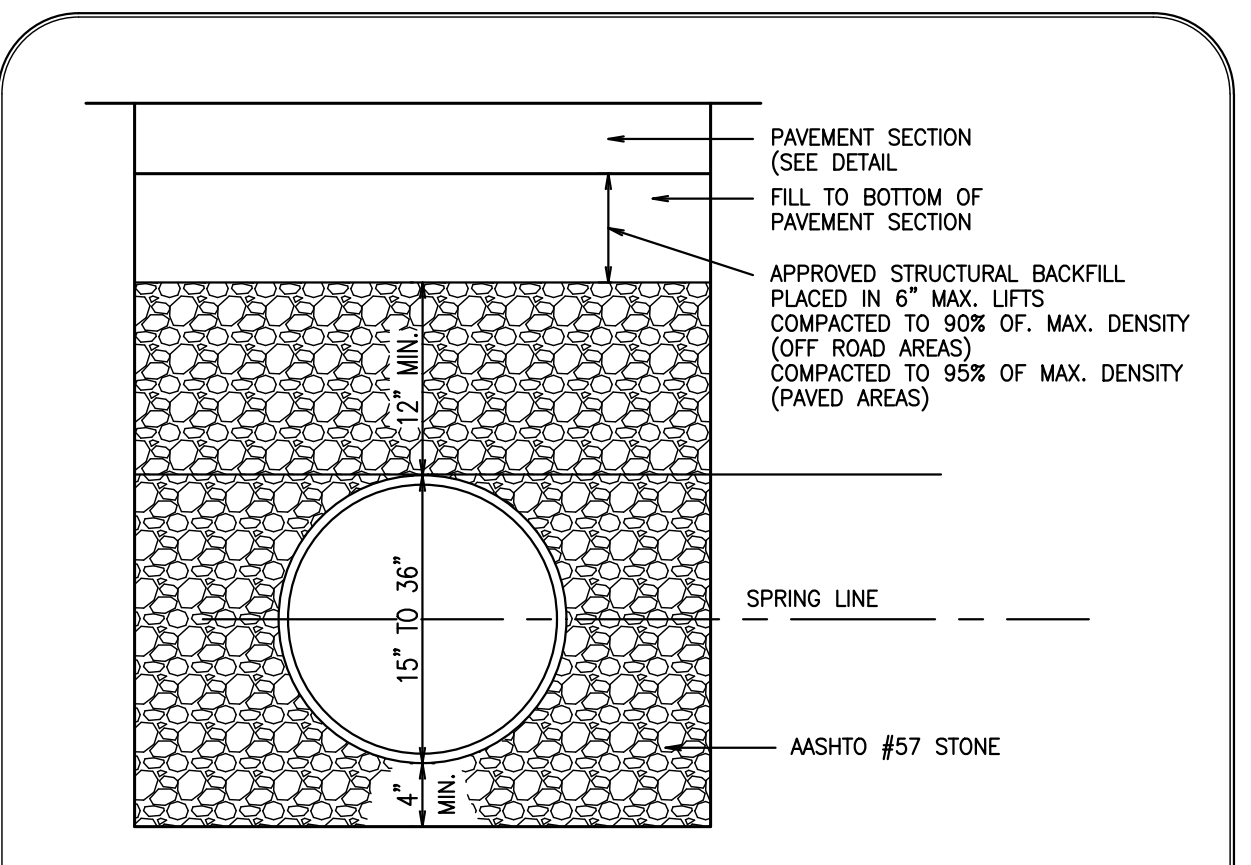
#### TYPE D-W ENDWALL

NO SCALE



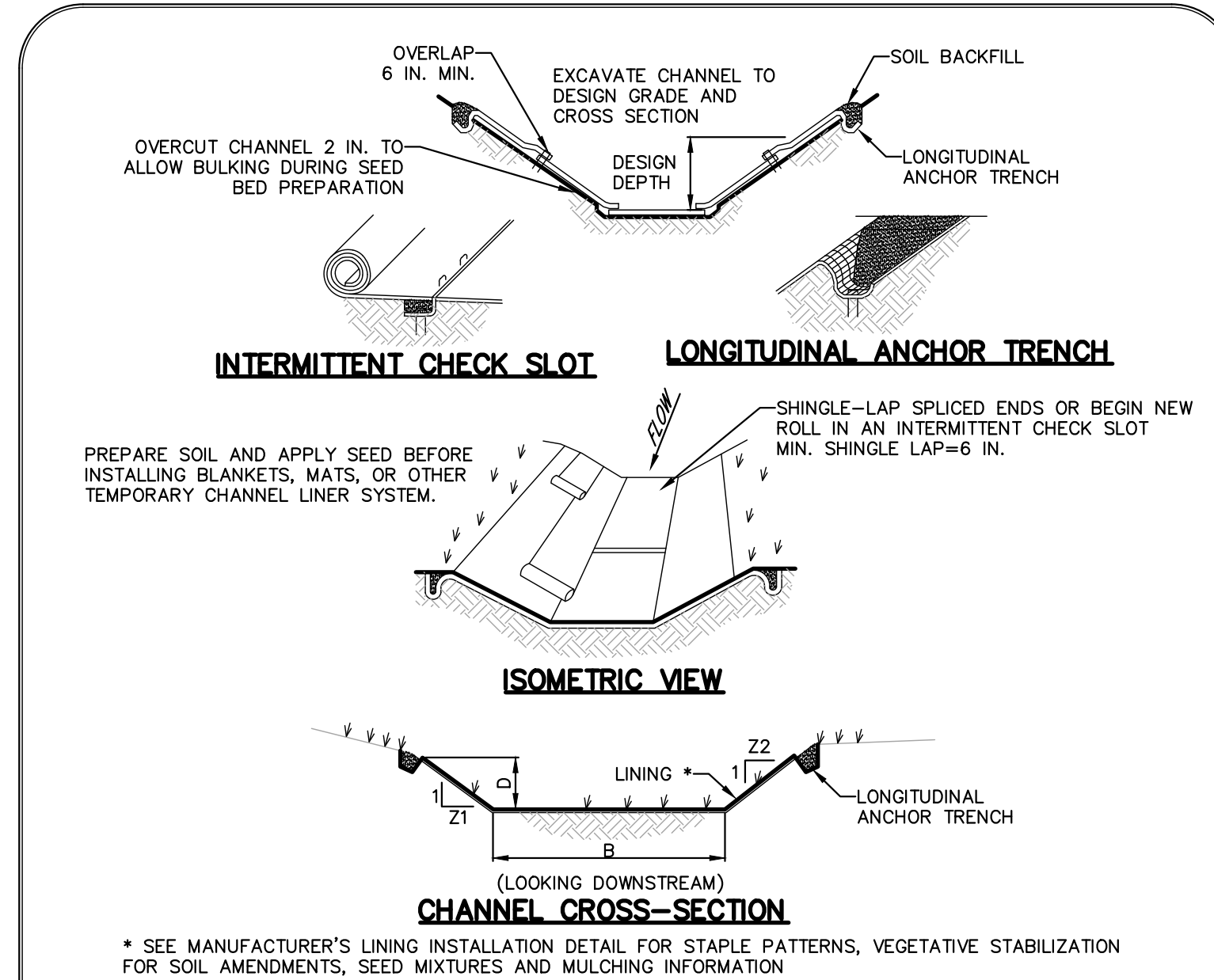
#### CHILD PROOF TRASH RACK

NOT TO SCALE



#### HDPE STORM PIPE TRENCH DETAIL

NO SCALE



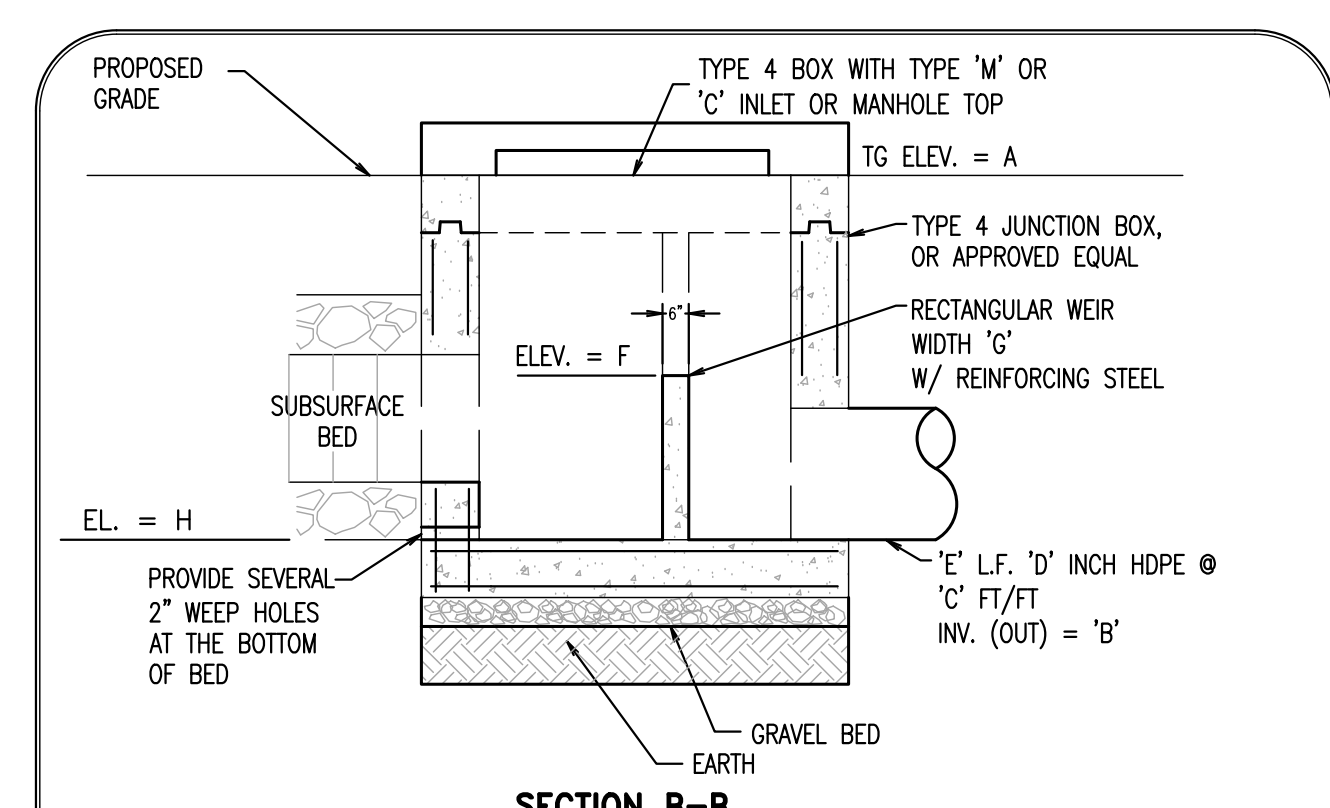
#### STANDARD CONSTRUCTION DETAIL #6-1

VEGETATED CHANNEL

NOT TO SCALE

CHANNEL NO.	STATIONS	BOTTOM WIDTH (B)	DEPTH (D)	TOP WIDTH (Z1)	Z2	LINING
1	ALL	0	1.25	4	3	GRASS
2	ALL	0	1.25	3.45	3	GRASS
3	ALL	0	1	2.24	3	GRASS
4	ALL	0	1	2.55	3	GRASS
5	ALL	0	1	2	3	GRASS

NOTES:  
ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.  
CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.  
SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.  
NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.



#### OUTLET STRUCTURES

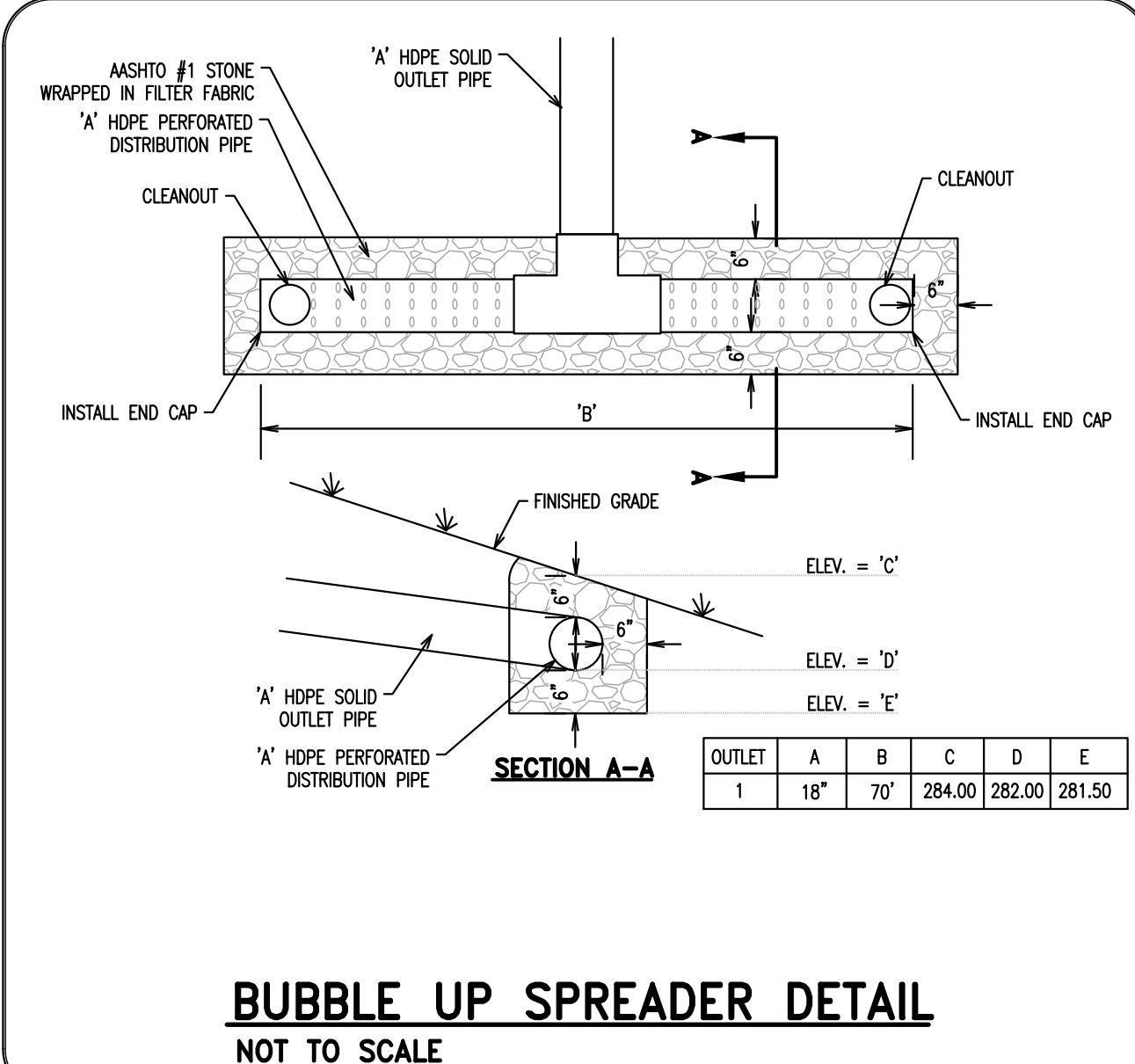
	TG/RIM	PIPE INVERT OUT	PIPE SLOPE (FT/FT)	PIPE SIZE	PIPE LENGTH	KNEE WALL ELE.	WEIR WIDTH	STONE BOTTOM	NOTES
	A	B	C	D	E	F	G	H	
BED 1	311.50	305.00	0.0050	15"	58'	308.40	3.85'	305.00'	MANHOLE TOP
BED 2	313.00	305.00	0.0050	15"	43'	308.20	3.85'	305.00'	MANHOLE TOP
BED 3	312.00	307.00	0.0050	15"	53'	310.40	3.85'	307.00'	MANHOLE TOP

#### OUTLET STRUCTURE DETAIL

NO SCALE

#### SPECIFICATIONS

- STONE:  
SHALL BE 2-INCH TO 1-INCH UNIFORM GRADED COARSE AGGREGATE WITH A WASH LOSS OF NO MORE THAN 0.5% ASHTO SIZE NUMBER 3 PER ASHTO SPECIFICATIONS, PART 1, 19TH ED., 1998, OR LATER AND SHALL HAVE VOID% 40% AS MEASURED BY ASTM-C69.
- NON-WOVEN GEOTEXTILE:  
SHALL CONSIST OF HESZLED NON-WOVEN POLYPROPYLENE FIBERS AND MEET THE FOLLOWING PROPERTIES:  
a. GRAB TENSILE STRENGTH (ASTM-D4632) 120 LBS  
b. WALL TEN BURET STRENGTH (ASTM-D3786) 225 PSF  
c. FLOW RATE (ASTM-D4491) 55 GAL/MIN/FT<sup>2</sup>  
d. UV RESISTANCE AFTER 500 HRS (ASTM-D4355) 70%  
e. HEAT-SET OR HEAT-CALCINDED FABRICS ARE NOT PERMITTED.  
ACCEPTABLE TYPES INCLUDE MWR#1 140N, AM00 4547, AND GEOTEX 451.
- TOPSOIL:  
MAY BE AMENDED WITH COMPOST (IF APPLICABLE)
- PIPE:  
SHALL BE CONTINUOUSLY PERFORATED, SMOOTH INTERIOR, WITH A MINIMUM INSIDE DIAMETER OF 6-INCHES.  
HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL MEET ASHTO M252, TYPE S OR ASHTO M284, TYPE S.
- STORM DRAIN INLETS AND STRUCTURES:  
CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 1001, PENNDOT SPECIFICATIONS, 1995 OR LATEST EDITION.  
a. PRECAST CONCRETE INLETS AND MANHOLES: PRECAST CONCRETE INLETS MAY BE SUBSTITUTED FOR CAST-IN-PLACE STRUCTURES AND SHALL BE CONSTRUCTED AS SPECIFIED FOR CAST-IN-PLACE. PRECAST STRUCTURES MAY BE USED IN ONLY THOSE AREAS WHERE THERE IS NO CONFLICT WITH EXISTING UNDERGROUND STRUCTURES THAT MAY NECESSITATE REVISION OF INVERTS. TYPE 'M' STANDARD PENNDOT INLET BOXES WILL BE MODIFIED TO PROVIDE MINIMUM 12 INCH STUMP STORAGE AND BOTTOM LEADING BASINS, OPEN TO GRAVEL SLUMPS IN SUB-GRADE, WHEN SITUATED IN THE RECHARGE BED.  
b. ALL PVC CATCH BASINS/CLEANOUTS/INLET DRAINS SHALL HAVE H-10 OR H-20 RATED GRATES, DEPENDING ON THEIR PLACEMENT (H-20 IF VERTICAL LOADING).  
c. STEEL REINFORCING BARS OVER THE TOP OF THE OUTLET STRUCTURE SHALL CONFORM TO ASTM A615, GRADES 60 AND 40.  
d. PERMANENT TIE-REINFORCEMENT MATING SHALL BE INSTALLED ACCORDING TO MANUFACTURERS SPECIFICATIONS. (IF APPLICABLE)
- ALTERNATIVE STORAGE MEDIA (IF APPLICABLE):  
FOLLOW MANUFACTURER'S SPECIFICATIONS



#### BUBBLE UP SPREADER DETAIL

NOT TO SCALE

OUTLET	A	B	C	D	E
1	18"	70"	284.00	282.00	281.50

#### PRELIMINARY PCSM DETAILS

CLIENT: MITCHELL HOMES  
PROJECT: SMITH PROPERTY  
LOCATION: 548 ROSEDALE ROAD  
KENNETT TOWNSHIP, CHESTER COUNTY, PA

DATE: 04/30/19  
SCALE: 1"=50'  
DRAWN BY: JTE  
CHECKED BY: JWB  
PROJECT NO.: 3388  
C/D FILE: 06 PCSM PLAN.dwg  
PLOTTED: 10/18/19  
DRAWING NO.: C06.6  
SHEET 22 OF 31