

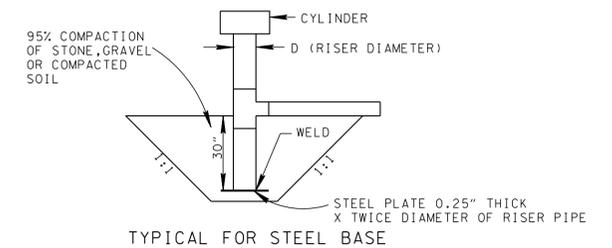
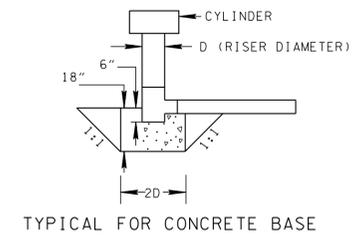
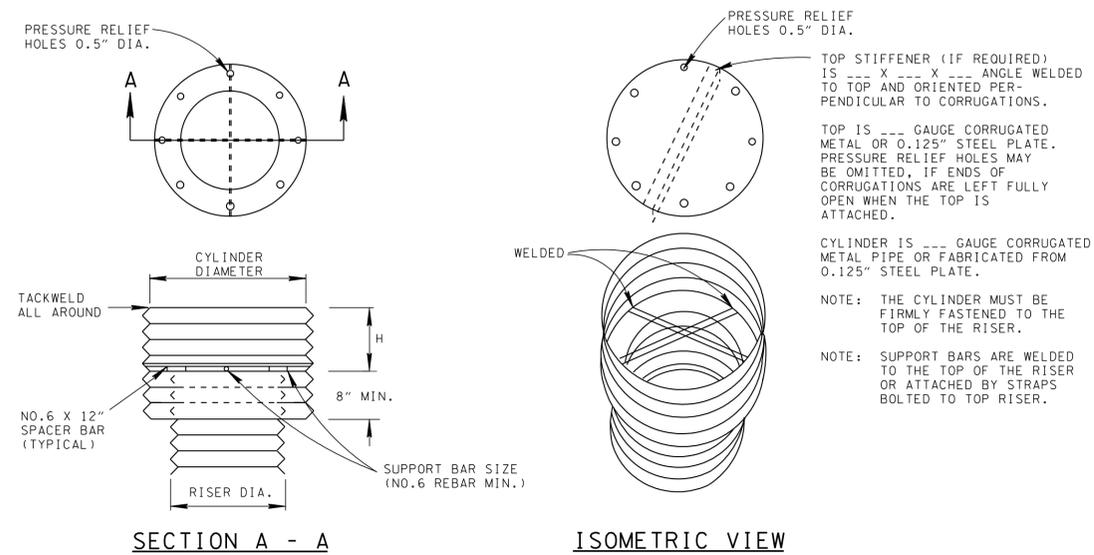
CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE DESIGN TABLE						
RISER DIA. (IN)	CYLINDER		HEIGHT (INCHES)	MINIMUM SUPPORT BAR	MINIMUM TOP	
	DIAMETER (INCHES)	THICKNESS (GAUGE)			THICKNESS	STIFFENER
12	18	16	6	NO. 6 REBAR OR 1.5 X 1.5 X 0.19 ANGLE	16 GA. (F&C)	-
15	21	16	7	NO. 6 REBAR OR 1.5 X 1.5 X 0.19 ANGLE	16 GA. (F&C)	-
18	27	16	8	NO. 6 REBAR OR 1.5 X 1.5 X 0.19 ANGLE	16 GA. (F&C)	-
21	30	16	11	NO. 6 REBAR OR 1.5 X 1.5 X 0.19 ANGLE	16 GA. (C) 14 GA. (F)	-
24	36	16	13	NO. 6 REBAR OR 1.5 X 1.5 X 0.19 ANGLE	16 GA. (C) 14 GA. (F)	-
27	42	16	15	NO. 6 REBAR OR 1.5 X 1.5 X 0.19 ANGLE	16 GA. (C) 14 GA. (F)	-
36	54	16	17	NO.8 REBAR	14 GA. (C) 12 GA. (F)	-
42	60	16	19	NO.8 REBAR	14 GA. (C) 12 GA. (F)	-
48	72	16	21	1.25" PIPE OR 1.25 X 1.25 X 0.25 ANGLE	14 GA. (C) 10 GA. (F)	-
54	78	16	25	1.25" PIPE OR 1.25 X 1.25 X 0.25 ANGLE	14 GA. (C) 10 GA. (F)	-
60	90	14	29	1.5" PIPE OR 1.5 X 1.5 X 0.25 ANGLE	12 GA. (C) 8 GA. (F)	-
66	96	14	33	2" PIPE OR 2 X 2 X 0.19 ANGLE	12 GA. (C) 8 GA. (F) W/STIFFENER	2 X 2 X 0.25 ANGLE
72	102	14	36	2" PIPE OR 2 X 2 X 0.19 ANGLE	12 GA. (C) 8 GA. (F) W/STIFFENER	2.5 X 2.5 X 0.25 ANGLE
78	114	14	39	2.5" PIPE OR 2 X 2 X 0.25 ANGLE	12 GA. (C) 8 GA. (F) W/STIFFENER	2.5 X 2.5 X 0.25 ANGLE
84	120	12	42	2.5" PIPE OR 2.5 X 2.5 X 0.25 ANGLE	12 GA. (C) 8 GA. (F) W/STIFFENER	2.5 X 2.5 X 0.31 ANGLE

NOTE: THE CRITERION FOR SIZING THE CYLINDER IS THAT THE AREA BETWEEN THE INSIDE OF THE CYLINDER AND THE OUTSIDE OF THE RISER IS EQUAL TO OR GREATER THAN THE AREA INSIDE THE RISER. THEREFORE, THE ABOVE TABLE IS INVALID FOR USE WITH CONCRETE PIPE RISERS.

NOTE: CORRUGATION FOR 12" THRU 36" PIPE MEASURE 2.67" X 0.5"; FOR 42" THRU 84" THE CORRUGATION MEASURES 5" X 1" OR 8" X 1".

NOTE: C = CORRUGATED; F = FLAT.

ANTI-VORTEX DEVICE DETAIL



TYPICAL ANTI-FLOTATION BLOCK DETAILS FOR RISERS TEN FEET OR LESS IN HEIGHT

NOTE: THE BASE OF THE PRINCIPAL SPILLWAY MUST BE FIRMLY ANCHORED TO PREVENT ITS FLOATING. IF THE RISER OF THE SPILLWAY IS GREATER THAN 10 FEET IN HEIGHT, COMPUTATIONS MUST BE MADE TO DETERMINE THE ANCHORING REQUIREMENTS. A MINIMUM FACTOR OF 1.25 SHALL BE USED (DOWNWARD FORCES = 1.25 X UPWARD FORCES).

ANTI-SEEP COLLAR DIAPHRAGM DIMENSION TABLE

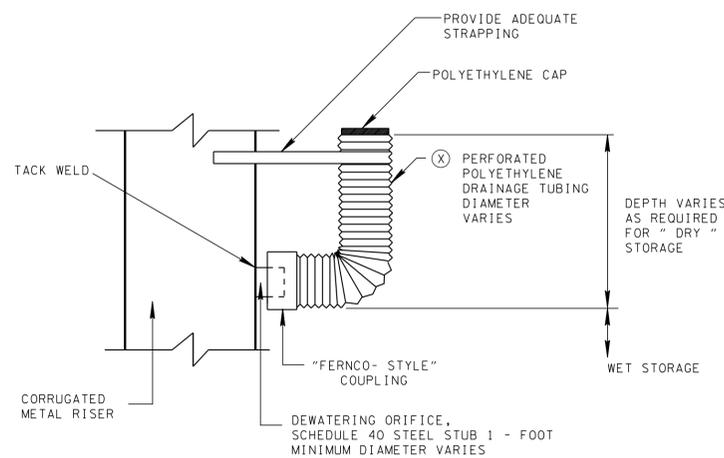
DIA (IN)	GAUGE	MINIMUM DIAPHRAGM SIZE (IN)	FABRICATION DIM. FOR 1/2 DIAPHRAGM (INCH)	
			W (WIDTH)	H (HEIGHT)
8	16	58 X 58	58.5	30.5
10	16	58 X 58	58.5	30.5
12	16	60 X 60	64	32.5
15	16	63 X 63	68	34
18	16	66 X 66	69.25	35.5
21	16	69 X 69	72	37
24	14	72 X 72	72	38.5
30	14	78 X 78	82.5	41.5
36	14	84 X 84	88	44.5
42	14	90 X 90	93.25	47.5
48	14	96 X 96	96	50.5
54	14	102 X 102	101.25	53.5

ANTI-SEEP COLLAR DETAIL ASSEMBLY NOTES

- (A1) UNASSEMBLED DIAPHRAGMS SHALL BE MARKED BY PAINTING OR TAGGING WHEN NECESSARY TO IDENTIFY MATCHING PAIRS TO SECURE A PROPER INSTALLATION.
- (A2) THE LAP BETWEEN THE TWO HALF SECTIONS AND BETWEEN THE PIPE AND COUPLING BAND SHALL BE CAULKED WITH BITUMINOUS MASTIC AT TIME OF INSTALLATION. NEOPRENE GASKET 0.375" X 7" MINIMUM WIDTH MAY BE USED IN LIEU OF MASTIC.
- (A3) ALL WELDS AND ALL HEAT AFFECTED AREAS ON ZINC COATED METAL SHALL BE THOROUGHLY CLEANED AND TREATED IN ACCORDANCE WITH SPECIFICATIONS (STEEL ONLY).
- (A4) EACH DIAPHRAGM SHALL BE FURNISHED WITH TWO RODS AND NUTS AND TWO STANDARD TANK LUGS OR "L" LUGS FOR SECURING DIAPHRAGMS TO PIPE.
- (A5) RODS FOR COLLAR COUPLING BANDS AND DIAPHRAGMS FOR 6" THRU 15" DIAMETER PIPE SHALL BE 0.375" DIAMETER AND FOR PIPE LARGER THAN 15" DIAMETER THE RODS SHALL BE 0.5" DIAMETER.

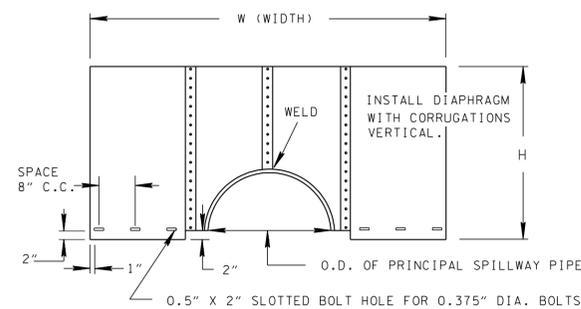
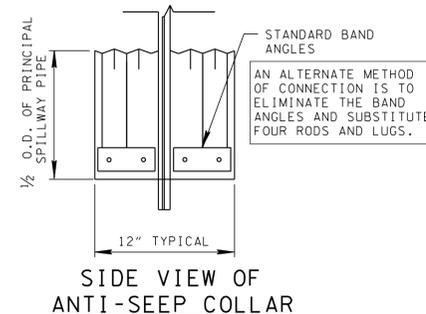
SEDIMENT BASIN GENERAL NOTES

- (C1) THE LENGTH, L, AND WIDTH, W, OF THE BASIN MAY VARY TO CONFORM TO THE SPECIFIC SITE CONDITIONS, PROVIDED THE REQUIRED VOLUME IS MAINTAINED.
- (C2) THE MINIMUM LENGTH TO WIDTH RATIO OF THE BASIN SHALL BE 2:1.
- (C3) THE SEDIMENT STORAGE DEPTH SHALL BE A MINIMUM OF 4' - 0".
- (C4) THE EMERGENCY SPILLWAY SHOULD BE LOCATED IN A CUT AREA WHENEVER POSSIBLE.
- (C5) THE DIAMETER OF THE RISER SHALL BE DETERMINED BY THE RISER INFLOW CURVES SHOWN IN THE DESIGN DIVISION DRAINAGE MANUAL.
- (C6) THE PRINCIPAL SPILLWAY CAPACITY SHALL BE BASED ON THE DESIGN STORM FREQUENCY WHEN AN EMERGENCY SPILLWAY IS USED, OR THE TWENTY-FIVE (25) YEAR STORM WHEN AN EMERGENCY SPILLWAY IS NOT USED. IF AN EMERGENCY SPILLWAY IS USED, IT SHALL BE DESIGNED FOR A 25-YEAR FLOOD. THE RIPRAP PLACED AT THE OUTFALL OF THE PRINCIPAL SPILLWAY OUTLET PIPE SHALL BE DESIGNED TO REMAIN STABLE UNDER THE FLOW CONDITIONS IMPOSED BY THE DESIGN PEAK FLOW RATE.
- (C7) SEDIMENT BASIN VOLUME IS MEASURED FROM THE CREST OF THE PRINCIPAL SPILLWAY TO THE BOTTOM OF THE BASIN.
- (C8) SEDIMENT SHALL BE REMOVED AND THE SEDIMENT BASIN RESTORED TO THE ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 OF THE WET STORAGE VOLUME. A SUITABLE MARKER SHALL BE INSTALLED IN THE BASIN TO INDICATE WHEN THE BASIN REQUIRES MAINTENANCE.
- (C9) THE PIPE USED IN THE CONSTRUCTION OF THE PRINCIPAL SPILLWAY BARREL WILL BE PAID FOR IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 607, PIPE CULVERT AND STORM SEWERS.
- (C10) SEE STANDARD DRAWINGS EC-STR-15 AND EC-STR-17 FOR ADDITIONAL DETAILS AND GENERAL NOTES NOT SHOWN ON THIS DRAWING.



NOTE: WITH CONCRETE RISER, USE PVC SCHEDULE 40 STUB FOR DEWATERING ORIFICE

(X) DRAINAGE TUBING SHALL COMPLY WITH ASTM F667 AND AASHTO M294



NOTE: UPPER ONE HALF DIAPHRAGM SHOWN, OTHER HALF SAME EXCEPT SLOTS ARE VERTICAL

ANTI-SEEP COLLAR DETAIL

ANTI-SEEP COLLAR GENERAL NOTES

- (B1) THE ANTI-SEEP COLLAR IS TO BE USED ON THE BARREL OF THE PRINCIPAL SPILLWAY TO REDUCE SEEPAGE LOSS AND PIPING FAILURE.
- (B2) USE IF PIPE BARREL IS LARGER THAN 10 INCHES IN DIAMETER.
- (B3) USE A MINIMUM OF ONE ANTI-SEEP COLLAR, IF THE EMBANKMENT IS 15 FEET OR LESS IN HEIGHT AND A MINIMUM OF TWO ANTI-SEEP COLLARS, IF THE EMBANKMENT IS GREATER THAN 15 FEET IN HEIGHT.
- (B4) USE MAXIMUM SPACING BETWEEN COLLARS OF FOURTEEN TIMES THE PROJECTION OF THE COLLAR ABOVE THE PIPE, FROM THE DETAILS - THE COLLAR SPACING WOULD BE ONE - HALF THE DIAMETER OF THE PRINCIPAL SPILLWAY PIPE TIMES FOURTEEN.
- (B5) COLLARS SHOULD NOT BE CLOSER THAN 2 FEET TO A PIPE JOINT.
- (B6) PRECAUTIONS SHOULD BE TAKEN TO ENSURE 95% COMPACTION IS ACHIEVED AROUND THE COLLARS.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

SEDIMENT BASIN RISER AND COLLAR APPURTENANCES