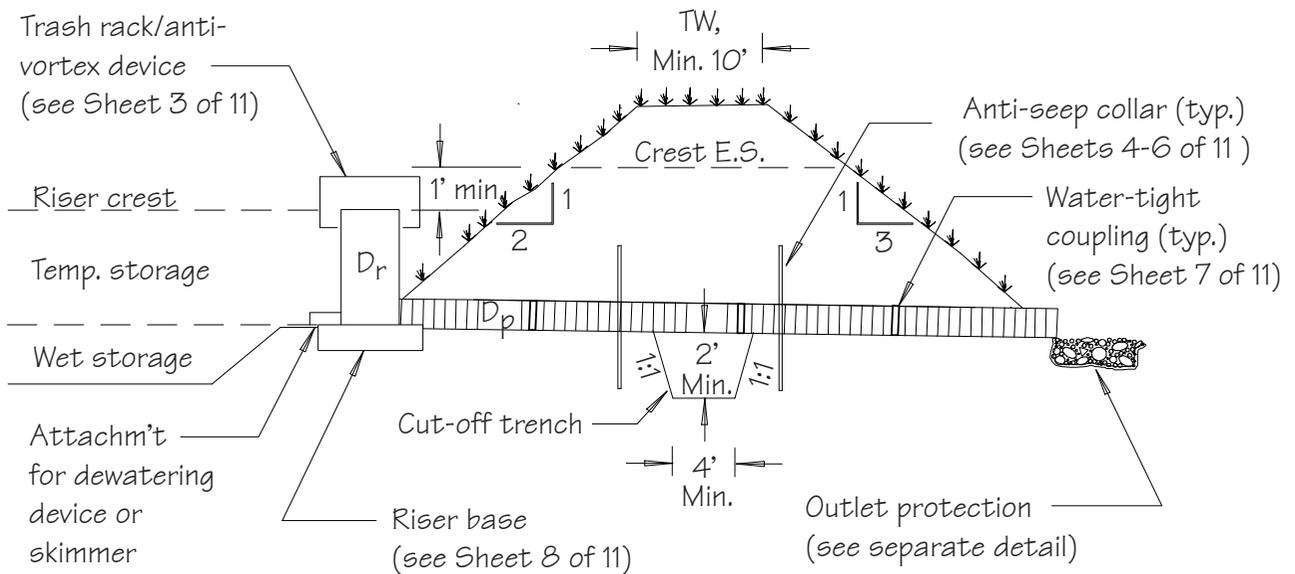


Temporary Sediment Basin



Section thru Principal Spillway

DATA

Drainage area (D.A.)	Crest of riser (El)	Crest of e.s. (El)
Required storage (V_s)	Riser dia. (D_r)	E.S. depth (d)
Design dimensions ($L \times W \times D$)	Pipe material	E.S. width (b)
Clean-out elev. (El)	Length of pipe (L)	Anti-seep collars (No.)
Embankment top width (TW)	Pipe dia. (D_p)	Collar dim. ($L \times W$)
Top of embankment (El)	Pipe inverts (El)	Collar spacing (Ft)
Angle of pipe at riser (Deg.)		

See Sheet 3 of 11 for req'd trash rack/anti-vortex device data

Source:

DE ESC Handbook

Symbol:

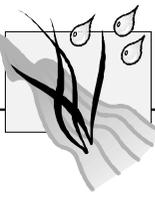
TSB

Detail No.

DE-ESC-3.1.4

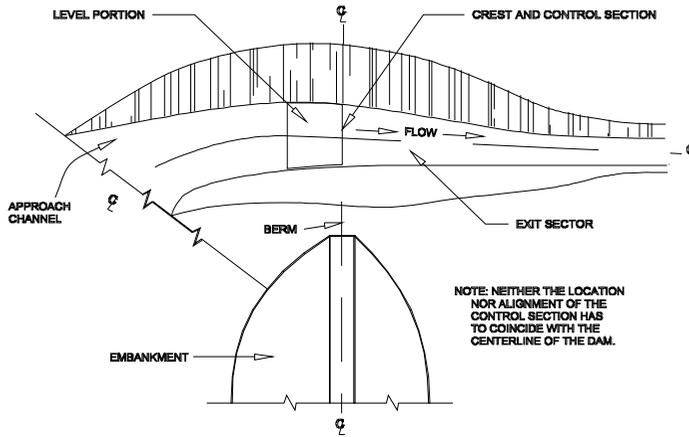
Sheet 1 of 11

Effective FEB 2019

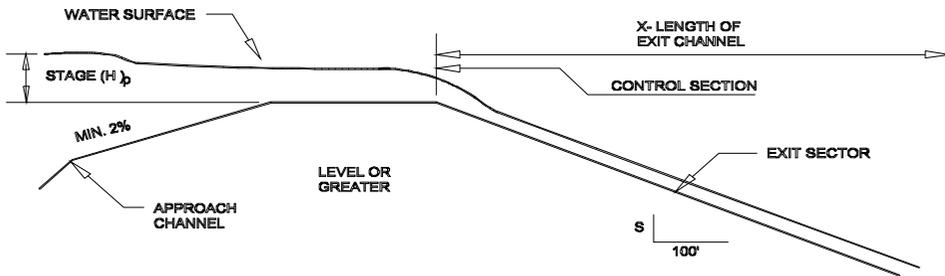


Standard Detail & Specifications Temporary Sediment Basin

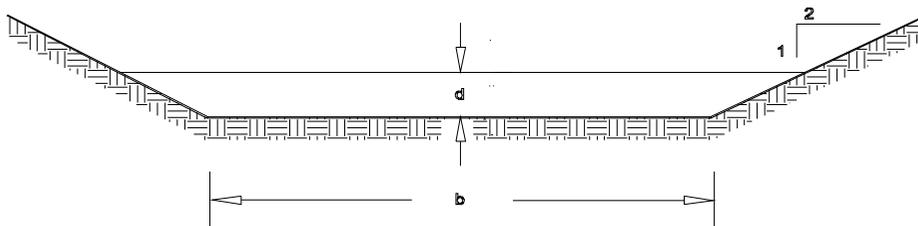
Emergency Spillway Details



Plan



Profile



Cross-section

Source:

Adapted from
USDA-NRCS

Symbol:



Detail No.

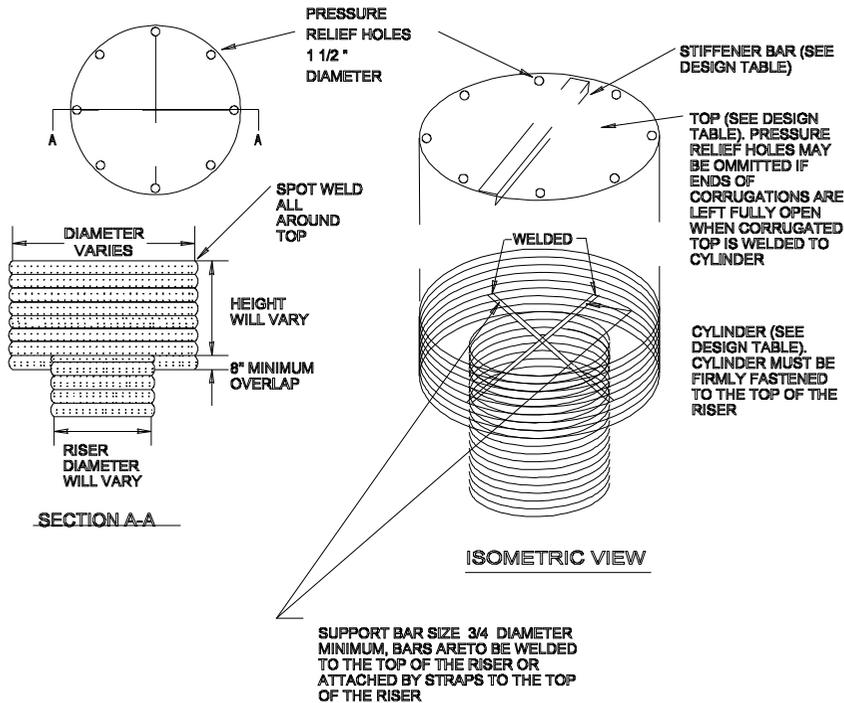
DE-ESC-3.1.4

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Effective FEB 2019

Temporary Sediment Basin

Detail - Trash Rack and Anti-Vortex Device



Data

Top stiffener (if required) is ___x___x___ angle welded to top and oriented perpendicular to corrugations.

Top is ___ gage corrugated metal or 1/8" steel plate. Pressure relief holes may be omitted, if ends of corrugations are left fully open when corrugated top is welded to cylinder.

Cylinder is ___ gage corrugated metal pipe or fabricated from 1/8" steel plate.

Dia. = _____

H = _____

Notes: 1. The cylinder must be firmly fastened to the top of the riser.

2. Support bars are welded to the top of the riser or attached by straps bolted to top of riser.

Source:

Adapted from
MD Stds. & Specs. for ESC

Symbol:

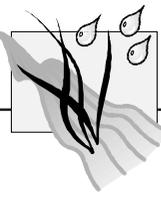


Detail No.

DE-ESC-3.1.4

Sheet 3 of 11

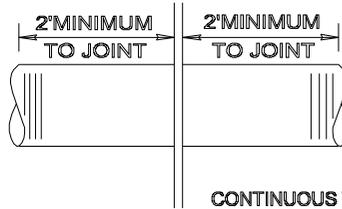
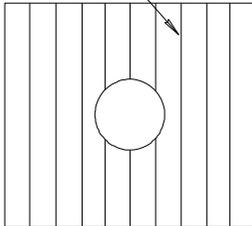
Effective FEB 2019



Standard Detail & Specifications Temporary Sediment Basin

Detail - One-Piece Metal Anti-Seep Collar

INSTALL COLLAR WITH
CORRUGATIONS
VERTICAL

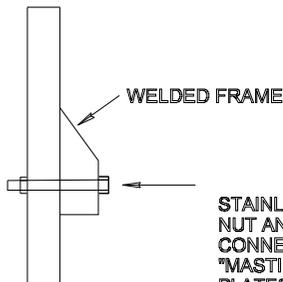


MINIMUM LAST
TWO
CORRUGATIONS
ON EACH END
MUST BE
ANNULAR OR
FLANGE

CONTINUOUS WELD THE FULL
CIRCUMFERENCE OF THE
COLLAR ON BOTH SIDES

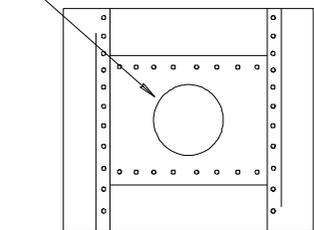
COLLAR WELDED IN PLACE ON BARREL SECTION

PLATES TO BE PRE-
CUT, CLAMPED
TOGETHER, PRE-
DRILLED AND
LABELLED TO
FACILITATE
WATERTIGHT FIELD
ASSEMBLY



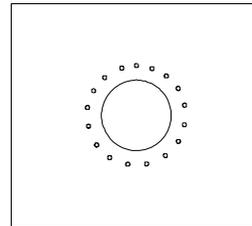
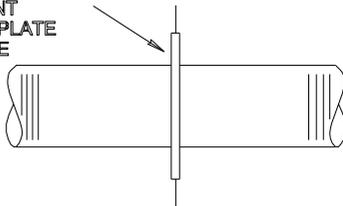
CONTINUOUS WELD THE FULL
CIRCUMFERENCE OF THE
COLLAR ON BOTH SIDES

STAINLESS STEEL
NUT AND BOLT
CONNECTION WITH
"MASTIK" BETWEEN
PLATES



ANTI-SEEP COLLAR DESIGN

USE "MASTIK" OR
EQUIVALENT
BETWEEN PLATE
AND FRAME



COLLAR FOR FLANGE JOINT PIPE

Source:

Adapted from
MD Stds. & Specs. for ESC

Symbol:



Detail No.

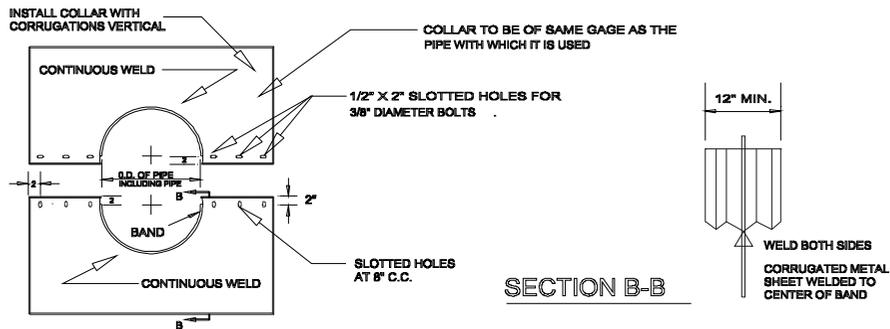
DE-ESC-3.1.4

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Effective FEB 2019

Temporary Sediment Basin

Detail - Two-Piece Corrugated Metal Anti-Seep Collar



ELEVATION OF UNASSEMBLED COLLAR

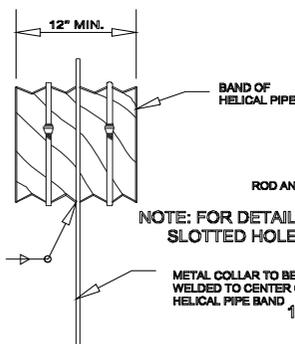
NOTES FOR COLLARS:

1. ALL MATERIALS TO BE IN ACCORDANCE WITH CONSTRUCTION AND CONSTRUCTION MATERIAL SPECIFICATIONS.
2. WHEN SPECIFIED ON THE PLANS, COATING OF COLLARS SHALL BE IN ACCORDANCE WITH CONSTRUCTION AND CONSTRUCTION MATERIAL SPECIFICATIONS.

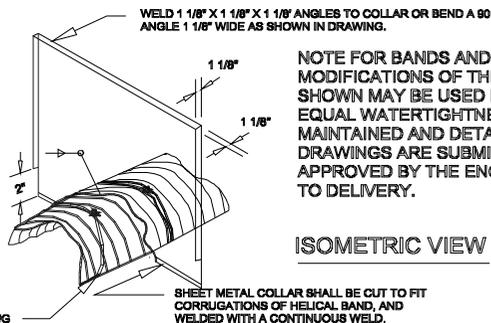
3. UNASSEMBLED COLLARS SHALL BE MARKED BY PAINTING OR TAGGING TO IDENTIFY MATCHING PAIRS.
4. THE LAP BETWEEN THE TWO HALF SECTIONS AND BETWEEN THE PIPE AND CONNECTING BAND SHALL BE CAULKED WITH ASPHALT MASTIC AT TIME OF INSTALLATION.
5. EACH COLLAR SHALL BE FURNISHED WITH TWO 1/2" DIAMETER RODS WITH STANDARD TANK LUGS FOR CONNECTING COLLARS TO PIPE.

Detail - Two-Piece Helical Pipe Anti-Seep Collar

SIZE AND SPACING OF SLOTTED OPENINGS SHALL BE THE SAME AS SHOWN FOR CM COLLAR
USE RODS AND LUGS TO CLAMP BANDS SECURELY TO PIPE.



PARTIAL ELEVATION



NOTE FOR BANDS AND COLLARS:
MODIFICATIONS OF THE DETAILS SHOWN MAY BE USED PROVIDING EQUAL WATERTIGHTNESS IS MAINTAINED AND DETAILED DRAWINGS ARE SUBMITTED AND APPROVED BY THE ENGINEER PRIOR TO DELIVERY.

ISOMETRIC VIEW

NOTE: FOR DETAILS OF FABRICATION DIMENSIONS, MINIMUM GAGES, SLOTTED HOLES, AND NOTES, SEE DETAIL ABOVE.

NOTE: TWO OTHER TYPES OF ANTI-SEEP COLLARS ARE:

1. CORRUGATED METAL, SIMILAR TO UPPER, EXCEPT SHOP WELDED TO A SHORT (4FT.) SECTION OF THE PIPE AND CONNECTED WITH CONNECTING BANDS TO THE PIPE.
2. CONCRETE, SIX INCHES THICK FORMED AROUND THE PIPE WITH #3 REBAR SPACED 15" HORIZONTALLY AND VERTICALLY.

Source:

Adapted from
VA ESC Handbook

Symbol:

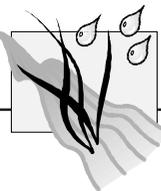


Detail No.

E-ESC-3.1.4

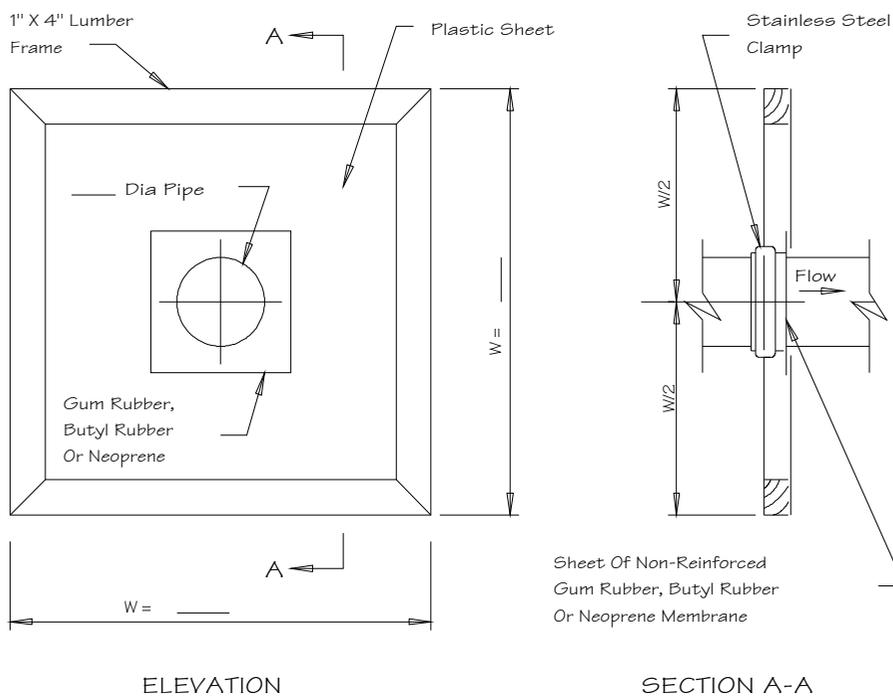
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Temporary Sediment Basin

Detail - Flexible Anti-Seep Collar



NOTES:

1. Helical pipe shall have a mastic sealer applied at the collar location. The sealer will not be required for PVC or annular pipe.
2. The center membrane section may be 1/16 inch gum rubber, butyl rubber or neoprene. The entire antiseep may be made of these materials.
3. The outer portion of the antiseep collar, away from the pipe, may be made of a minimum 20 mil plastic sheet.
4. Cut a hole, 3 inches smaller than the diameter of the pipe, centered on the material used at the pipe and force it over the end of the pipe.
5. The antiseep material shall be fastened to the pipe using a stainless steel clamp.
6. Completed installation must be watertight.
7. Care must be taken to back fill equally on both sides of the antiseep collar.

Source:

Adapted from
IL Urban Manual

Symbol:

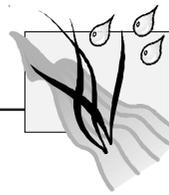


Detail No.

DE-ESC-3.1.4

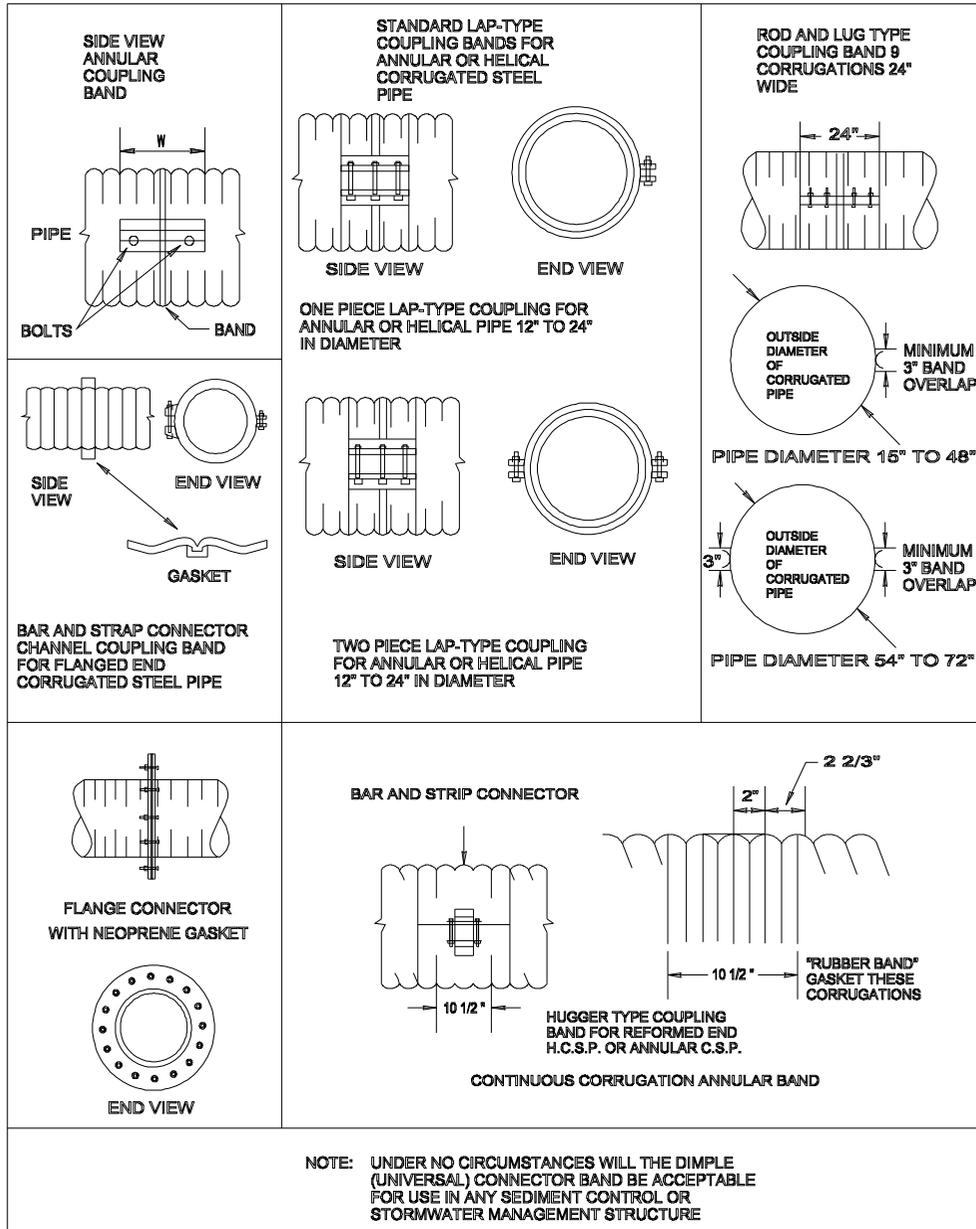
Sheet 6 of 11

Effective FEB 2019



Temporary Sediment Basin

Detail - Water-Tight Connectors



Source:

Adapted from
MD Stds. & Specs. for ESC

Symbol:

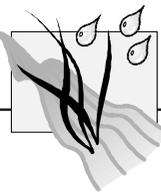


Detail No.

DE-ESC-3.1.4

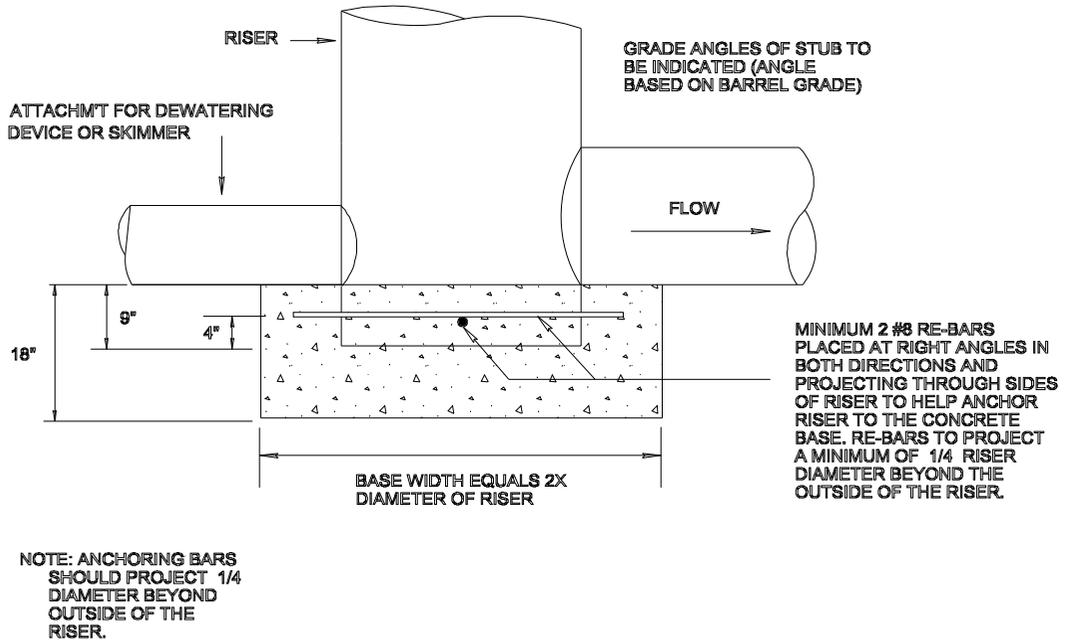
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Effective FEB 2019



Temporary Sediment Basin

RISER BASE DETAIL



Notes:

1. The concrete base shall be poured in such a manner to insure that the concrete fills the bottom of riser to the invert of the outlet pipe to prevent the riser from breaking away from the base.
2. With aluminum or aluminized pipe, the embedded section must be painted with zinc chromate or equivalent.
3. Riser base may be sized as computed using floatation with a factor of safety of 1.2.

Source:

Adapted from
MD Stds. & Specs. for ESC

Symbol:

TSB

Detail No.

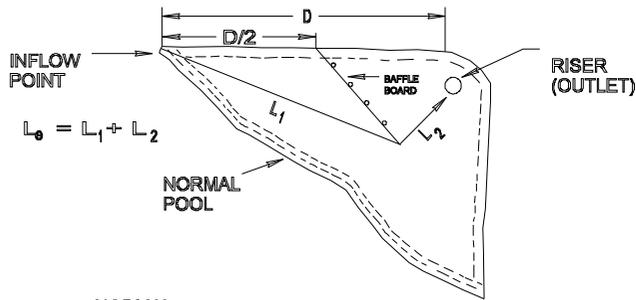
DE-ESC-3.1.4

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Temporary Sediment Basin

Example Baffle Configurations



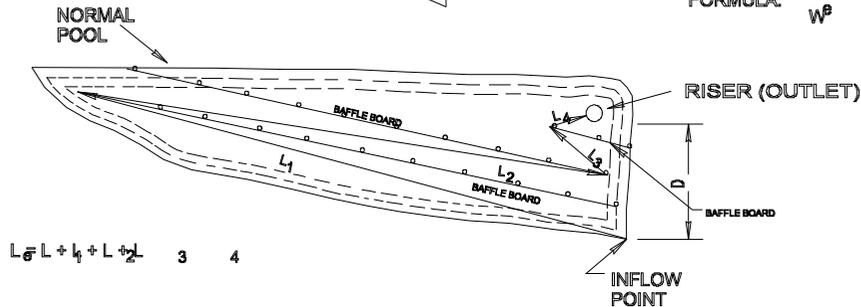
D = DISTANCE BETWEEN INFLOW AND OUTFLOW

A = AREA OF NORMAL POOL

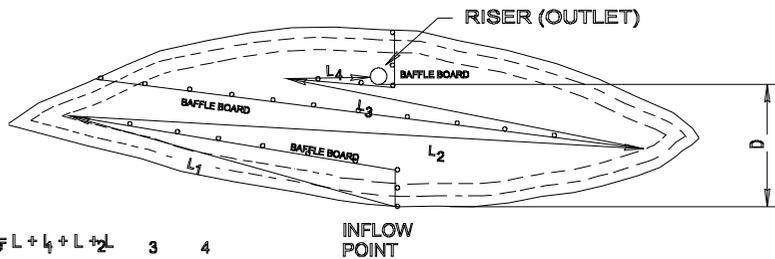
W^E = EFFECTIVE WIDTH = A/D

L^E = TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER

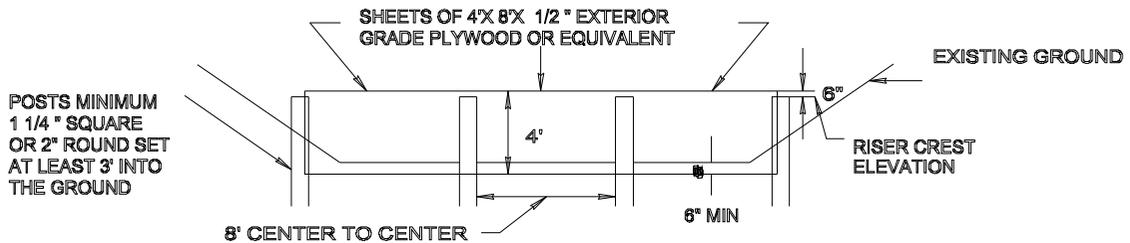
FORMULA: $\frac{L^E}{W^E} \geq 2$



$L^E = L_1 + L_2 + L_3$



$L^E = L_1 + L_2 + L_3 + L_4$



Source:

Adapted from
MD Stds. & Specs. for ESC

Symbol:

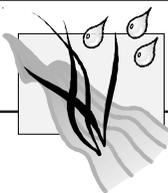


Detail No.

DE-ESC-3.1.4

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Temporary Sediment Basin

Construction Notes:

1. Site Preparation

Areas under the embankment shall be cleared, grubbed, and stripped of topsoil. In order to facilitate clean-out and restoration, the pool area (measured at the top of the pipe spillway) will be cleared of all brush, trees, and other objectionable materials.

2. Cut-off-trench

A cut-off trench shall be excavated along the centerline of earth fill embankments. The minimum depth shall be two feet. The cut-off trench shall extend up both abutments to the riser crest elevation. The minimum bottom width shall be four feet, but wide enough to permit operation of excavation and compaction equipment. The side slopes shall be no steeper than 1:1. Compaction requirements shall be the same as those for embankment. The trench shall be dewatered during the backfilling and compaction operations.

3. Embankment

The fill material shall be taken from approved areas shown on the plans. It shall be clean mineral soil free of roots, woody vegetation, oversized stones, rocks, or other objectionable material. Relatively pervious materials such as sand or gravel (Unified Soil Classes GW, GP, SW & SP) shall **not** be placed in the embankment. Areas on which fill is to be placed shall contain sufficient moisture so that it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction. Fill material shall be placed in six-inch to eight-inch thick continuous layers over the entire length of the fill. Compaction shall be obtained by routing and hauling the construction equipment over the fill so that the entire surface of each layer of the fill is traversed by at least one wheel or tread track of the equipment or by the use of a compactor. The embankment shall be constructed to an elevation 10 percent higher than the design height to allow for settlement.

4. Pipe Spillways

The riser shall be securely attached to the barrel or barrel stub by welding the full circumference making a watertight connection. The barrel stub must be attached to the riser at the same percent (angle) of grade as the outlet conduit. The connection between the riser and the riser base shall be water tight. All connections between barrel sections must be achieved by approved watertight band assemblies. The barrel and riser shall be placed on a firm, smooth foundation of impervious soil. Pervious materials such as sand, gravel, or crushed stone shall not be used as backfill around the pipe or anti-seep collars. The fill material around the pipe spillway shall be placed in four inch layers and compacted by means of a manually directed power tamper under and around the pipe to at least the same density as the adjacent embankment. A minimum depth of two feet of hand compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment. Steel base plates on risers shall have at least 2-1/2 feet of compacted earth, placed over it to prevent flotation.

Source:

DE ESC Handbook

Symbol:

TSB

Detail No.

DE-ESC-3.1.4

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Temporary Sediment Basin

Construction Notes (cont.)

5. Emergency Spillway

The emergency spillway shall be installed in undisturbed ground. The achievement of planned elevations, grades, design width, entrance and exit channel slopes are critical to the successful operation of the emergency spillway and must be constructed within a tolerance of + 0.2 feet.

6. Vegetative Treatment

Stabilize the embankment and emergency spillway in accordance with the appropriate Vegetative Standard and Specifications immediately following construction. In no case shall the embankment remain unstabilized for more than seven (7) days.

7. Safety

State and local requirements shall be met concerning fencing and signs, warning the public of hazards of soft sediment and floodwater.

8. Maintenance

- a. Repair all damages caused by soil erosion and construction equipment at or before the end of each working day.
- b. **An approved dewatering device shall be considered an integral part of the basin. Dewatering operations shall be conducted in accordance with any and all regulatory requirements.**
- c. Sediment shall be removed from the basin when it reaches the specified distance below the top of the riser. This sediment shall be placed in such a manner that it will not erode from the site. The sediment shall not be deposited downstream from the embankment, or adjacent to a stream or floodplain.

9. Final Disposal

When temporary structures have served their intended purpose and the contributing drainage area has been properly stabilized, the embankment and resulting sediment deposits are to be leveled or otherwise disposed of in accordance with the approved sediment control plan. The proposed use of a sediment basin site will often dictate final disposition of the basin and any sediment contained therein. If the site is scheduled for future construction, then the basin material and trapped sediments must be removed, safely disposed of, and backfilled with a structural fill. When the basin area is to remain open space the pond may be pumped dry, graded and backfilled.

Source:

DE ESC Handbook

Symbol:



Detail No.

DE-ESC-3.1.4

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