Figure 5A.28
Optional Sediment Basin Dewatering Methods

OPTIONAL SEDIMENT BASIN DEWATERING DEVICE - I WITH 6" PERFORATED RISER

TOP OF FILL

ANTI-VORTEX DEVICE

MIN. 6" DIAMETER CMP

CAP END UNLESS EQUAL TO OR GREATER THAN ELEV. OF PRIMARY RISER CREST

1" PERFORATIONS

FILTER CLOTH OVER WIRE MESH

6" DIA. PIPE

NYS DOT #2 STONE CORE CONTINUOUS BAND

BARREL

RISER BASE

PERFORATIONS OR SLITS MUST NOT BE MADE ANY LOWER THAN 6" ABOVE TOP OF HORIZONTAL OUTFALL BARREL.

PERFORATIONS - 6' SPACING HORIZONTAL & VERTICAL LOCATED IN CONCAVE.

OPTIONAL SEDIMENT BASIN DEWATERING DEVICE - II

6' X 1/2" DIAM. ROD BOLTED OR WELDED TO RISER

8" MIN. DIAMETER PERFORATED PIPE WRAPPED WITH FILTER CLOTH.

12" MIN. LAYER NYS DOT #2 STONE

12" MIN. LAYER NYS DOT #2 STONE

CAP END OF PIPE

WELDED OR CEMENTED JOINT (WITH ADAPTER IF NECESSARY)

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

OPTIONAL SEDIMENT BASIN DEWATERING DEVICES
Figure 5A.29(1)
Concentric Trash Rack and Anti-Vortex Device
(USDA - NRCS)
<table>
<thead>
<tr>
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<td>12</td>
<td>18</td>
<td>16</td>
<td>6</td>
<td>#6 Rebar</td>
<td>16 ga.</td>
<td>—</td>
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<td>15</td>
<td>21</td>
<td>16</td>
<td>7</td>
<td>#6 Rebar</td>
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<td>18</td>
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<td>16</td>
<td>8</td>
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<td>16</td>
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<td>24</td>
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<tr>
<td>27</td>
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<tr>
<td>36</td>
<td>54</td>
<td>14</td>
<td>17</td>
<td>#8 Rebar</td>
<td>12 ga.</td>
<td>—</td>
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<tr>
<td>42</td>
<td>60</td>
<td>14</td>
<td>19</td>
<td>#8 Rebar</td>
<td>12 ga.</td>
<td>—</td>
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<tr>
<td>48</td>
<td>72</td>
<td>12</td>
<td>21</td>
<td>1 1/4&quot; pipe or 1 1/4x1 1/4x1/4 angle</td>
<td>10 ga.</td>
<td>—</td>
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<tr>
<td>54</td>
<td>78</td>
<td>12</td>
<td>25</td>
<td>See 48&quot; Riser</td>
<td>10 ga.</td>
<td>—</td>
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<tr>
<td>60</td>
<td>90</td>
<td>12</td>
<td>29</td>
<td>1 1/2&quot; pipe or 1 1/2x1, 1/2x1/2 angle</td>
<td>8 ga.</td>
<td>—</td>
</tr>
<tr>
<td>66</td>
<td>96</td>
<td>10</td>
<td>33</td>
<td>2&quot; pipe or 2x2x3/16 angle w/stiffener</td>
<td>8 ga.</td>
<td>2x2x1/4 angle</td>
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<tr>
<td>72</td>
<td>102</td>
<td>10</td>
<td>36</td>
<td>See 66&quot; Riser</td>
<td>2 1/2x2, 1/2x1/4 angle</td>
<td>2 1/2x</td>
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<tr>
<td>78</td>
<td>114</td>
<td>10</td>
<td>39</td>
<td>2 1/2&quot; pipe or 2x2x1/4 angle</td>
<td>See 72&quot; Riser</td>
<td>See 72&quot; Riser</td>
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<tr>
<td>84</td>
<td>120</td>
<td>10</td>
<td>42</td>
<td>2 1/2&quot; pipe or 2x2x1/4 angle</td>
<td>See 72&quot; Riser</td>
<td>2 1/2x</td>
</tr>
</tbody>
</table>

Note: The criteria 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.
Figure 5A.30
Riser Base Details

ANGLE OF STUB TO BE SHOWN, ANGLE BASED ON BARREL GRADE

2 #8 (MIN.) BARS PLACED AT RIGHT ANGLES AND PROJECTING INTO SIDES OF RISER TO HELP ANCHOR RISER INTO CONCRETE BASE

BASE WIDTH EQUALS 2x DIAMETER OF RISER

CONSTRUCTION SPECIFICATIONS

1. THE CONCRETE BASE SHALL BE POURED IN SUCH A MANNER TO INSURE THAT THE CONCRETE FILLS THE BOTTOM OF THE 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 CHROMATE OR EQUIVALENT.

3. RISER BASE MAY BE SIZED AS COMPUTED USING FLOATATION WITH A FACTOR OF SAFETY OF 1.2.

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RISER BASE DETAIL SEDIMENT BASIN
Figure 5A.31(1)
Anti-Seep Collar Design

This procedure provides the anti-seep collar dimensions for only temporary sediment basins to increase the seepage length by 15% for various pipe slopes, embankment slopes and riser heights.

The first step in designing anti-seep collars is to determine the length of pipe within the saturated zone of the embankment. This can be done graphically or by the following equation, assuming that the upstream slope of the embankment intersects the invert of the pipe at its upstream end. (See embankment-invert intersection on the drawing below:)

\[ L_S = y \left( z + 4 \right) \left[ 1 + \frac{\text{pipe slope}}{0.25 \cdot \text{pipe slope}} \right] \]

Where:  \( L_S \) = length of pipe in the saturated zone (ft.)

- \( y \) = distance in feet from upstream invert of pipe to highest normal water level expected to occur during the life of the structure, usually the top of the riser.

- \( z \) = slope of upstream embankment as a ratio of \( z \) ft. horizontal to one ft. vertical.

- pipe slope = slope of pipe in feet per foot.

This procedure is based on the approximation of the phreatic line as shown in the drawing below:

![Diagram of Anti-Seep Collar Design](image-url)
Figure 5A.31(2)
Anti-Seep Collar Design Charts (USDA - NRCS)

NOTE: This procedure is for a 15% increase in the length of the flow path.
Figure 5A.32
Anti-Seep Collar Design

TYPICAL ANTI SEEP COLLARS
NOT TO SCALE

AT LEAST THE LAST TWO CORRUGATIONS ON EACH END MUST BE ANGULAR OR FLANGE.

INSTALL WITH CORRUGATIONS VERTICAL

CONTINUOUS WELD (FULL CIRCUMFERENCE BOTH SIDES)

2' MIN. 2' MIN.

COLLAR WELDED IN PLACE ON BARREL SECTION

1. PLATES TO BE PRE-CUT CLAMPED TOGETHER & PRE-DRILLED & Labeled TO FACILITATE WATER TIGHT FIELD ASSEMBLY.

CONTINUOUS WELD (FULL CIRCUMFERENCE BOTH SIDES)

WELDED FLANGE

STAINLESS STEEL NUT & BOLT CONNECTION WITH MASTIK BETWEEN PLATES.

MULTI-PIECE COLLAR FOR LARGE PIPES

USE MASTIK OR EQUIV. BETWEEN PLATE & FLANGE

COLLAR FOR FLANGE JOINT PIPE

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

ANTI SEEP COLLAR