Concrete Thrust Collar Plan View

Concrete thrust collar

(2) Total MJ wedge restraints installed in opposite directions, centered in thrust collar

New restrained DI pipe

1'-6" min bar

Polyethylene encasement not shown for clarity

MJ wedge restraint

Polyethylene encasement not shown for clarity

Concrete thrust collar

Side Elevation B-B

NTS

18" max

H (full height)

A

If full height collar:
(2) total #5 bar cages, one each end.
(6) #7 longitudinal bars

If partial height collar:
(2) total #5 bar cages, one each end.
(4) #7 longitudinal bars

△ longitudinal bars run parallel to pipe

1'-6" min bar

Reinforcing Plan

NTS

Note: Rebar hairpins not shown for clarity

Pipe

Pipe springline

Provide 6 rebar hairpins @ all MJ restraint bolt holes below pipe springline

Concrete thrust collar

End Elevation A-A

NTS

Thrust Collar Size

Use of table requires:
1. Top of pipe 3 feet min below surface;
2. Water pressure 150 psi max; and
3. Tie-in connection 3W min length from collar.

If these required conditions are not met contact Project Engineer.

<table>
<thead>
<tr>
<th>Pipe Diameter (Inches)</th>
<th>Width W (ft)</th>
<th>Length L (ft)</th>
<th>Height H (ft)</th>
<th>H1 (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>2.5</td>
<td>2.5</td>
<td>2</td>
<td>0*</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>3.5</td>
<td>2</td>
<td>0*</td>
</tr>
<tr>
<td>12</td>
<td>4.5</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>5.5</td>
<td>6</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>6.5</td>
<td>6.5</td>
<td>2</td>
<td>2**</td>
</tr>
<tr>
<td>24</td>
<td>6.5</td>
<td>9</td>
<td>4.5</td>
<td>2**</td>
</tr>
</tbody>
</table>

Notes:
1. All reinforcing steel to be ASTM A615, Grade 60 (60ksi).
2. Concrete compressive strength to be 3,000 psi prior to the thrust force.
3. When possible, excavation should match thrust collar dimensions so concrete is placed directly against native soil on sides and bottom. When side forms are necessary, pull forms and compact according to note 5.
4. Polyethylene wrap (AWWA C102) to prevent concrete intrusion into wedge pocket of the retainer gland. Keep wrap loose to allow concrete bearing against retainer.
5. Compact excavation backfill to 95% of the maximum density according to Standard Proctor (ASTM D696) or to 90% of the maximum density according to the Modified Proctor (ASTM D1557).
6. For split ring couplings H1 shall be 1 ft min.
7. The excavation competent person shall approve site conditions. For pipe diameter greater than 16" the Project Engineer must also approve site conditions.
8. For alternate dimensions of thrust collar, contact Project Engineer of Record for project specific design.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

PORTLAND WATER BUREAU
CITY OF PORTLAND, OREGON

Concrete Thrust Collar
Di Pipe

Standard Drawing Title

Note: All material and workmanship shall be in accordance with City of Portland Standard Construction Specifications.

Effective Date 11/02/2017
Calc. Book No. PWB 1
Baseline Report Date 11/02/2017

Standard Drawing No.
P-795