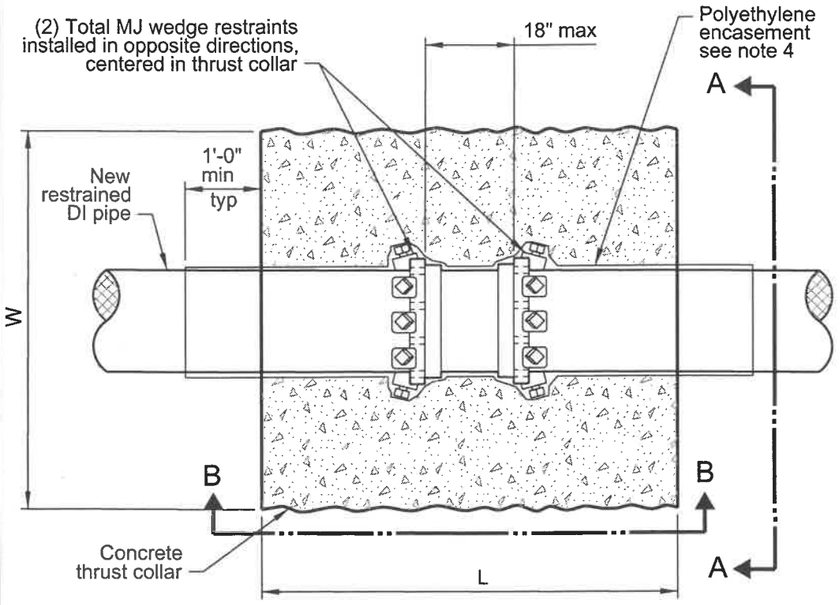
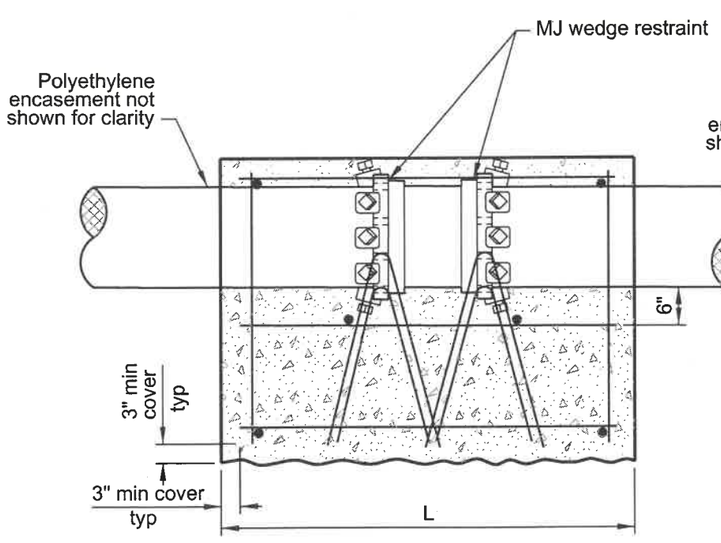


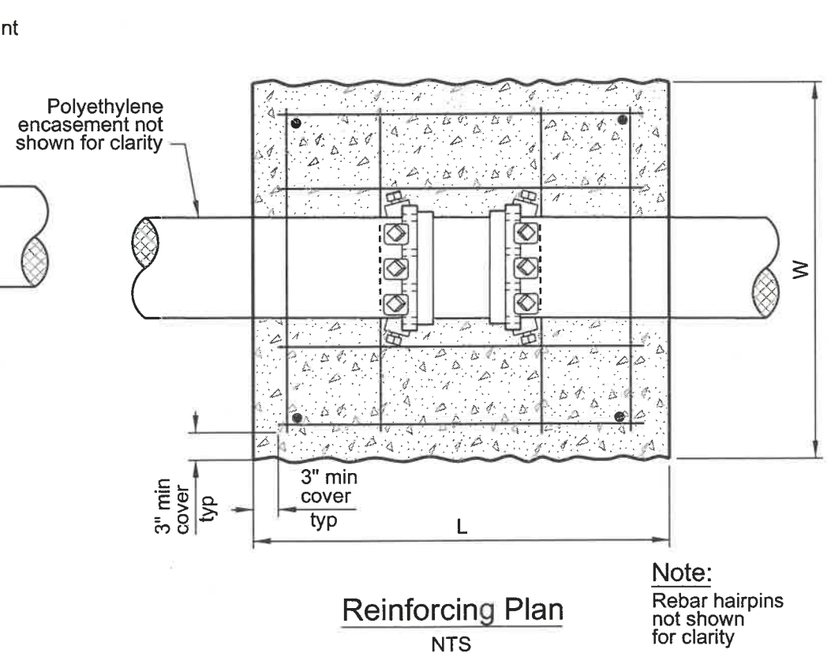
Concrete Thrust Collar Plan View

NTS



Side Elevation B-B

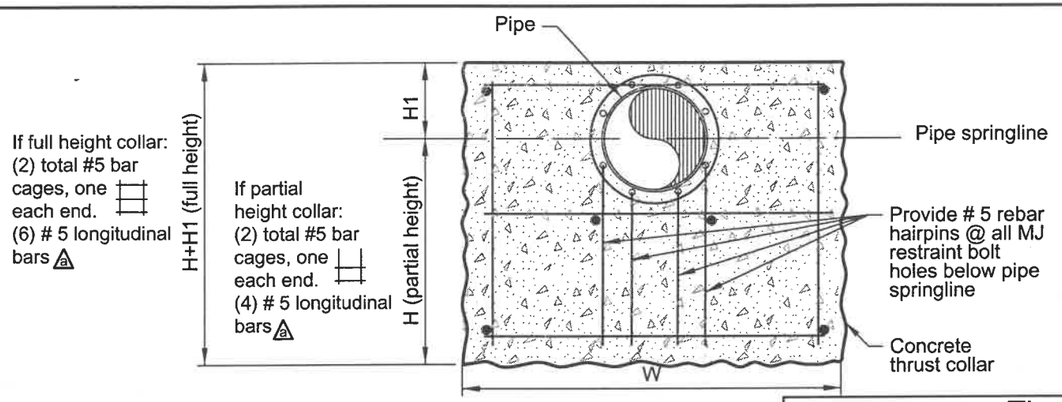
NTS



Reinforcing Plan

NTS

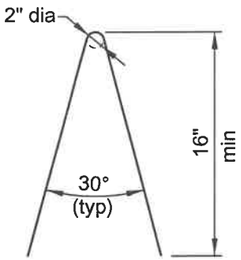
Note:
Rebar hairpins not shown for clarity



△a longitudinal bars run parallel to pipe

End Elevation A-A

NTS



Rebar Hairpins

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.

Pipe Diameter (inches)	Width W (ft)	Length L (ft)	Height H (ft)	H1 (ft) * see note 6 ** see note 7
6	2.5	2.5	2	0 *
8	3	3.5	2	0 *
12	4.5	5	2	1
16	5.5	6	3	1
20	6	6.5	4	2 **
24	6.5	9	4.5	2 **

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 C105) 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 D698) 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

Chief Engineer

Standard Drawing Title

Concrete Thrust Collar DI Pipe

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

Plot Date: 11/2/2017 11:49 PM Filename: J:\Engineering\CAD\Standards\Working_Vaults\P-795_UrbanThrustBlock.dgn