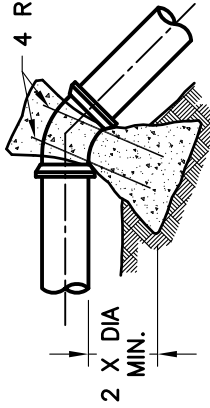


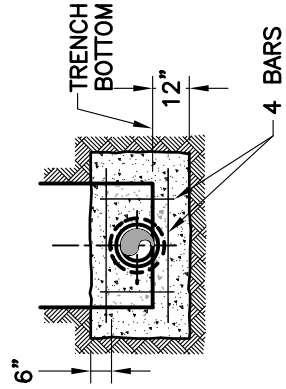
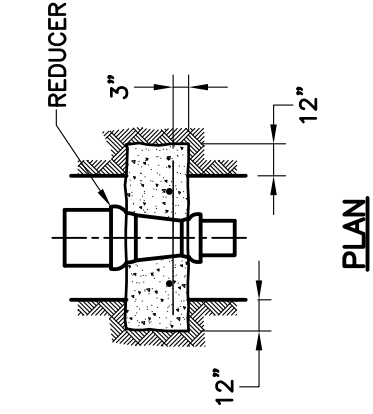
**HORIZONTAL BEND**



**PLAN**

**PROFILE**

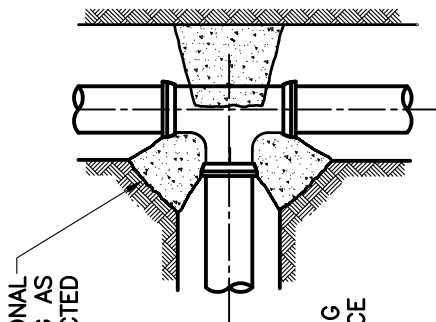
**VERTICAL BEND**



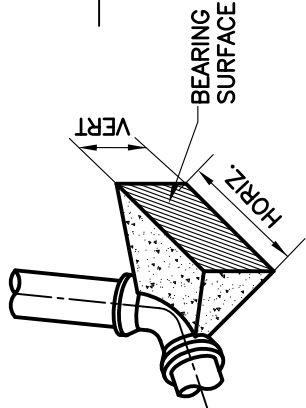
**PLAN**

**END VIEW**  
**REDUCER**

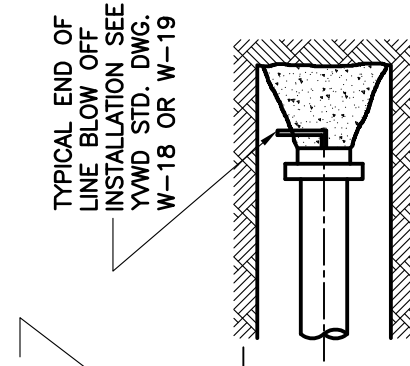
**REDUCER**



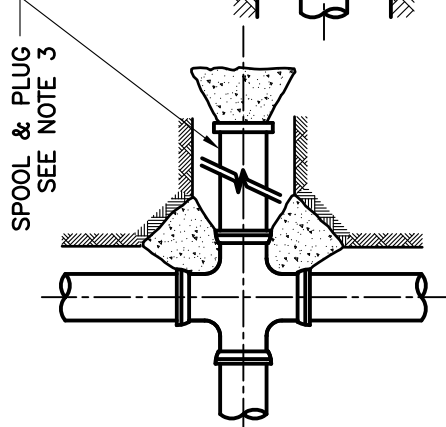
**TEE OR VALVE**



**TYPICAL BEARING SURFACE**



**END CAP**



**CROSS**

SEE SHEET 2 FOR NOTES AND THRUST BLOCK SIZING.

**THRUST BLOCK DETAILS FOR RETROFIT ONLY**

2016



Yucaipa Valley Water District

Approved by the Yucaipa Valley Water District Board of Directors on March 16, 2016 as Resolution No. 2016-13

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Sheet 1 of 2



# THRUST BLOCK DETAILS FOR RETROFIT ONLY

MINIMUM SIZE OF THRUST BLOCK BEARING SURFACE						
PIPE SIZE	END CAP.	TEE	90° BEND	45° BEND	22 1/2" BEND	11 1/4" BEND
4"	HORIZ. VERT. 1'-6" 1'-6"	HORIZ. VERT. 1'-6" 1'-0"	HORIZ. VERT. 2'-3" 1'-3"	HORIZ. VERT. 1'-6" 1'-0"	HORIZ. VERT. 1'-6" 0'-9"	HORIZ. VERT. 1'-6" 0'-9"
6"	HORIZ. VERT. 2'-6" 1'-9"	HORIZ. VERT. 4'-0" 2'-0"	HORIZ. VERT. 4'-6" 2'-3"	HORIZ. VERT. 3'-6" 1'-6"	HORIZ. VERT. 2'-6" 1'-0"	HORIZ. VERT. 2'-6" 1'-0"
8"	HORIZ. VERT. 3'-9" 2'-0"	HORIZ. VERT. 5'-0" 2'-6"	HORIZ. VERT. 5'-6" 3'-0"	HORIZ. VERT. 4'-3" 2'-3"	HORIZ. VERT. 3'-0" 1'-6"	HORIZ. VERT. 3'-0" 1'-6"
10"	HORIZ. VERT. 4'-6" 2'-6"	HORIZ. VERT. 5'-6" 3'-3"	HORIZ. VERT. 7'-0" 3'-6"	HORIZ. VERT. 5'-0" 2'-9"	HORIZ. VERT. 3'-9" 1'-9"	HORIZ. VERT. 3'-9" 1'-9"
12"	HORIZ. VERT. 5'-3" 3'-0"	HORIZ. VERT. 7'-0" 3'-6"	HORIZ. VERT. 8'-3" 4'-0"	HORIZ. VERT. 5'-6" 3'-6"	HORIZ. VERT. 4'-3" 2'-3"	HORIZ. VERT. 4'-3" 2'-3"

**NOTES:**

1. THRUST BLOCK BEARING AREA BASED ON ALLOWABLE SOIL BEARING VALUE OF 1500 psf PRESSURE AND 225 psi LINE PRESSURE WITH 3'-0" COVER MINIMUM.  
FOR BEARING = 1000 psf, 1.5 X AREA SHOWN  
FOR BEARING = 500 psf, 3.0 X AREA SHOWN
2. ALL THRUST BLOCKS SHALL BE 3,250 PSI CONCRETE AND PLACED AGAINST UNDISTURBED SOIL. DESIGN ENGINEER SHALL DETERMINE SIZES NOT SHOWN.
3. THRUST BLOCKS ON CROSSES SHALL BE USED ONLY WHEN THERE IS A STUB-OUT ON ONE OR MORE SIDES.
4. REINFORCING STEEL SHALL CONFORM TO ASTM A15 AND A305 INTERMEDIATE GRADE.
5. CONCRETE SHALL NOT EXTEND ONTO FLANGE OR ADJOINING PIPE.
6. ALL FITTINGS SHALL BE WRAPPED WITH 10 MIL PLASTIC.
7. ALL FITTINGS SHALL BE MECHANICALLY RESTRAINED UNLESS APPROVED BY YVWD.