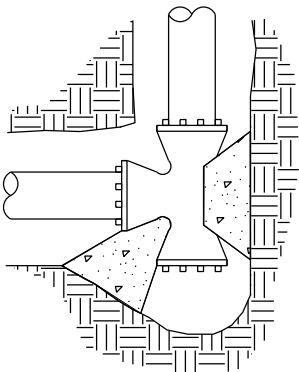


THRUST BLOCKING

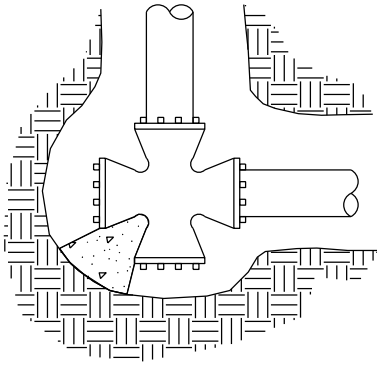
TABLE A						
CONCRETE THRUST BLOCKING (HORIZONTAL)						
		Thrust (T) at fittings in Pounds				
		A	B	C	D	E
PIPE DIA.	Table Pressure PSI	Tee & Dead Ends	90 deg Bend	45 deg Bend	22.5 deg Bend	11.25 deg Bend
4"	250	3035	4320	2315	1215	610
6"	250	6860	9735	5215	2720	1375
8"	250	12185	17310	9265	4835	2430
10"	250	19045	27045	14480	7560	3800
12"	250	27405	38940	20840	10880	5465
14"	250	37320	53010	28370	14815	7445
16"	250	48740	69245	37050	19360	9735

TABLE B	
Soil Type	Soil Bearing Capacity (B) in PSF
Muck, peat, etc.	0
Soft Clay	1000
Sand	2000
Sand and gravel	3000
Sand and gravel cemented with clay	4000
Hard shale	10,000

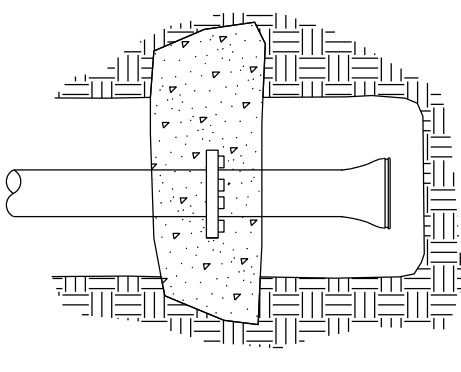
TABLE C							
CONCRETE BLOCKING FOR CONVEX VERTICAL BENDS							
DIMENSION TABLE							
PIPE DIA. in.	Table Pressure PSI	Bend Angle (deg)	Concrete Volume (cy)	Cube Size (ft)	Stirrup Dia. (in)	Stirrup Embmt. (in)	Stirrup Bar #
4"	250	11.25	0.21	1.8	5/8	17	5
		22.5	0.43	2.3			
		45	0.77	2.8			
6"	250	11.25	0.48	2.4	5/8	17	5
		22.5	0.95	3.0			
		45	1.79	3.6			
8"	250	11.25	0.86	2.9	5/8	17	5
		22.5	1.65	3.5			
		45	3.22	4.4			
10"	250	11.25	1.39	3.3	5/8	17	5
		22.5	2.62	4.1			
		45	4.97	4.1			
12"	250	11.25	1.94	3.7	5/8	17	5
		22.5	3.91	4.7			
		45	6.89	5.7			
14"	250	11.25	2.62	4.1	5/8	17	5
		22.5	5.26	5.2	3/4	20	6
		45	9.70	6.4	1	27	8
16"	250	11.25	3.44	4.5	5/8	17	5
		22.5	6.89	5.7	7/8	24	7
		45	12.63	7.0	1 1/8	30	9



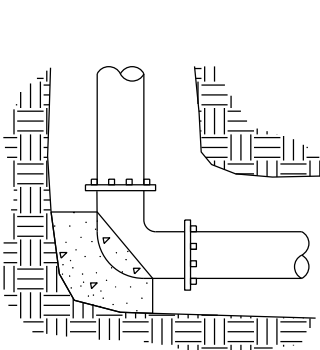
TEE



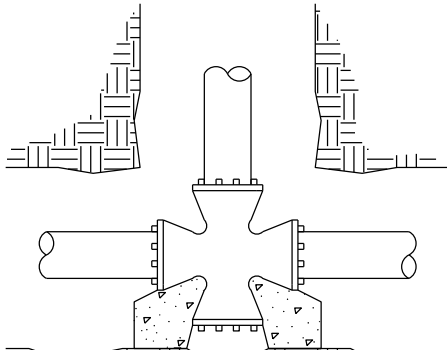
CROSS



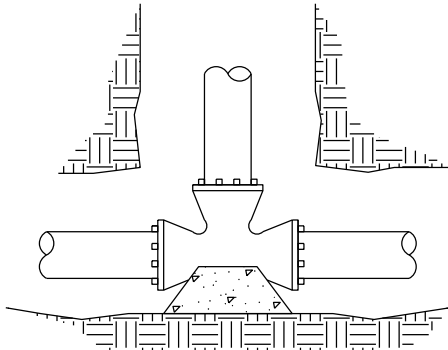
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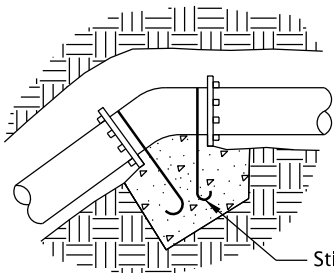
BEND



CROSS

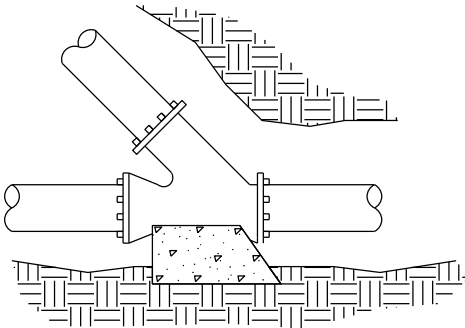


TEE



CONVEX VERTICAL BEND

(See Table C)



WYE

THRUST BLOCK BEARING AREA EQUATION

NOTE: WHEN THRUST BLOCK BEARING AREA IS NOT SPECIFIED ON THE PLANS OR DETERMINED BY THE ENGINEER, USE THE FOLLOWING PROCEDURE TO DETERMINE REQUIRED BEARING AREA.

1. Determine thrust (T) for type of fitting or joint and size of pipe from Table A.
2. Determine Design (Test) Pressure from Standard Specifications or Special Provisions.
3. Determine Table Pressure from Table A.
4. Determine Soil Bearing Capacity (B) of soil from Table B.
5. Determine required bearing area (A) in sq. ft. as follows:

Thrust Block Bearing Area = $A = \left(\frac{T}{B} \right) \left(\frac{\text{Design (Test) Pressure}}{\text{Table Pressure}} \right)$

Example: Design (Test) Pressure = 150 PSI From Table A, T = 37320
Pipe = 14" From Table B, B = 2000
Fitting = Tee
Soil = Sand $A = \left(\frac{37320}{2000} \right) \left(\frac{150}{250} \right) = 11.2 \text{ sq.ft.}$

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Contractor to provide blocking adequate to withstand full test pressure.
2. Pour concrete blocking against undisturbed earth.
3. All concrete shall be commercial grade concrete.
4. Wrap pipe and/or fittings with 2 layers of polyethylene film where in contact with concrete
5. Keep concrete clear of all joints and accessories.
6. Stirrups shall be deformed galvanized cold rolled steel AASHTO M31 (ASTM A615), Grade 60. Coat with coal tar epoxy after installation.
7. See project plans for details not shown.

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 and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.			
OREGON STANDARD DRAWINGS			
THRUST BLOCKING			
2024			
DATE	REVISION DESCRIPTION		
CALC. BOOK NO.	N/A	SDR DATE	25-JUL-2017
RD250			