CAP OR PLUG  TEE  90° BEND  45° BEND  22-1/2° BEND  11-1/4° BEND

THRUML BLOCK REQUIREMENTS

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>PIPE SIZE</th>
<th>90° DEGREE BEND</th>
<th>45° DEGREE BEND</th>
<th>22-1/2° DEGREE BEND</th>
<th>11-1/4° DEGREE BEND</th>
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<tbody>
<tr>
<td></td>
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<td>BEARING AREA REQUIRED IN SQUARE FEET</td>
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<td>200</td>
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<td>4</td>
<td>6.5</td>
<td>8.5</td>
<td>10.3</td>
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<tr>
<td>5/6/14</td>
<td>3-05-05</td>
<td>REVISED:</td>
<td>DRAWN BY:</td>
<td>APPROVED BY:</td>
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NOTES:
1. ALL CONCRETE BLOCKING SHALL BE POURED AGAINST DRY, UNDISTURBED SUBGRADE. TABLE IS BASED ON 2000 POUNDS PER SQUARE FOOT ALLOWABLE SOIL BEARING. WEAVER SOIL WILL REQUIRE INCREASED BEARING AREA, SEE SOIL BEARING LOAD CHART.
2. KEEP CONCRETE CLEAR OF JOINTS AND ACCESSORIES. USE FORMING AS NECESSARY.
3. HORIZONTAL ANCHOR BLOCKING CONFIGURATIONS FOR FITTINGS NOT SHOWN SHALL HAVE APPROVAL OF THE P.U.D.
4. THE SQUARE FOOT AREAS REQUIRED FOR BEARING ARE CALCULATED BY THE FOLLOWING FORMULAS:
   FORMULA AT TEE & CAP OR PLUG:
   \[ T = P \times A \]
   \[ T = K \times BEARING AREA REQUIRED IN SQUARE FEET \]
   FORMULA AT ALL PIPE BENDS:
   \[ T = 0.5 \times A \times \theta \]
   \[ \theta = \text{DEGREE BEND OF THE FITTING} \]
   \[ T = K \times \text{BEARING AREA REQUIRED IN SQ. FEET} \]
   \[ K = \text{THRUML IN POUNDS} \]
   \[ P = \text{TEST PRESSURE IN PSI} \]
   \[ A = \text{CROSS-SECTIONAL AREA OF PIPE IN SQ. INCHES} \]
   \[ \text{W} = \text{ASSUMED 2000 PSF SOIL BEARING PRESSURE} \]
5. FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE ENCASMENT WITH A MIN. OF 8-MIL. THICKNESS. IT MUST BE INSTALLED AS PER W.S.D.O.T. STANDARDS AND IN ACCORDANCE WITH A.W.W.A. C105.

BEARING AREA REQUIRED IN SQUARE FEET

THE SAFE SOIL BEARING LOADS SHOWN BELOW ARE FOR HORIZONTAL THRUMS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2 FEET.

SOIL  SAFE BEARING LOAD

| MUCK, PEAT, ETC. | 0
| SOFT CLAY, SILT | 1000
| SAND, SANDY SILT | 2000
| SAND AND GRAVEL | 3000
| SAND AND GRAVEL CEMENTED W/ CLAY | 4000
| HARD SHALE | 10000

"KEY BLOCKING SPECIFICATION:

MATERIALS SHALL INCLUDE 3/4- INCH RESTRAINING RODS, HEX NUTS AND WASHERS OF HIGH STRENGTH LOW ALLOY STEEL.
MEETING AWWA C-111-90 COMPOSITION SPECIFICATIONS.
ROMAC "DUCTILE LUG" OR 90° EYE BOLTS AND "600 SERIES PIPE RESTRAINING SYSTEM. THRUST RESTRAINT TO BE CALCULATED AT 7500 POUNDS PER BOLT OR AS RECOMMENDED BY ENGINEER.
ALL RODS, EYE BOLTS AND PIPE RESTRAINTS ARE TO BE LAND TWO SEPARATE BRUSH COATS OF ASPHALT COATING AS APPROVED BY THE ENGINEER TO BE APPLIED.
A 3-INCH MINIMUM CLEARANCE IS REQUIRED BETWEEN WATER PIPE AND CONCRETE. SOIL IS TO BE COMPACTED TO 95% REBAR TO BE MINIMUM #8 (3/4") SIZE AND HAVE A MINIMUM 3-INCH CLEARANCE FROM ANY CONCRETE SURFACE.

KEY BLOCK USE

THE INSTALLATION OF A KEY BLOCK IS TO BE CONSIDERED ONLY FOR TEMPORARY BLOCKING FOR 5-10 YEARS. IF THE PIPELINE IS TO REMAIN A DEADEND OR AN EXTENSION IS LIKELY TO BE MORE THAN 10 YEARS AWAY, THEN A STANDARD BLOCK FOR CAP OR PLUG WILL BE INSTALLED. USE OF KEY BLOCK IS TO BE APPROVED BY THE DISTRICT.