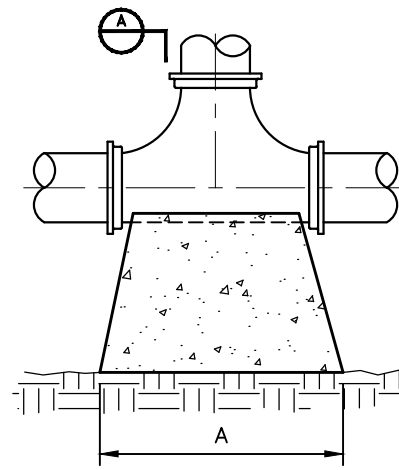
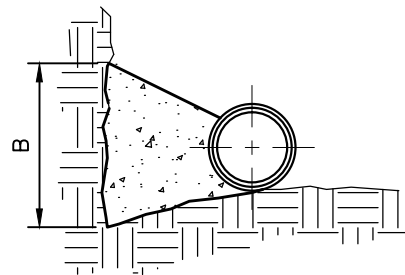


BENDS



TEES



SECTION A  
BENDS AND  
TEES

- NOTES:
- COVER OVER TOP OF PIPE SHALL BE 42". IF GRADING PLANS RECEIVED BY THE ENGINEER/OWNER WITH THE REQUEST FOR WATER MAIN LAYOUT, INDICATE ADJUSTMENTS TO EXISTING GRADE, THEN PIPE SHALL BE INSTALLED TO MEET MINIMUM AND MAXIMUM COVER FROM PROPOSED GRADES SHOWN ON SAID PLANS. TOP OF FINISH CONCRETE TO BE A MINIMUM OF 26" FROM FINISH GRADE.
  - THRUST BLOCKS SHALL BE BUILT AGAINST UNDISTURBED SOIL TO PREVENT MOVEMENT OF FITTING.
  - NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES,.
  - THRUST BLOCKING MUST FIT IN EASEMENT, IN SOME CASES ADDITIONAL RESTRAINT MAY BE REQUIRED.
  - POLYETHYLENE ENCASEMENT ON ALL D.I. PIPE AND FITTINGS.
  - PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE.
  - ALLOW SUFFICIENT CLEARANCE BETWEEN CONCRETE AND BOLTS FOR FUTURE MAINTENANCE.
  - ALL BOLTS SHALL BE PTFE POLYMER COATED BOLTS (EX. XYLAN, FLUOROKOTE #1), MINIMUM 1/2" DIAMETER. COAT EXPOSED ROD WITH APPROVED COATING AFTER CONCRETE HAS SET.
  - THRUST BLOCKING DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED.
  - PORTLAND CEMENT CONCRETE USED FOR THRUST BLOCKS SHALL BE MIN 3000 PSI CONCRETE.
  - FOR UNSTABLE SOIL CONDITIONS, CHECK WITH ENGINEER FOR THRUST BLOCK DIMENSIONS.
  - FOR MAIN SIZES GREATER THAN 12", SEE ENGINEER FOR THRUST BLOCK DIMENSIONS.

REQUIRED MINIMUM BEARING AREA ON UNDISTURBED SOIL

PIPE SIZE	90 DEGREE BENDS	45 DEGREE BENDS	22.5 DEGREE BENDS	11.25 DEGREE BENDS	TEES/PLUGS
	AREA (SQ. FT.)	AREA (SQ. FT.)	AREA (SQ. FT.)	AREA (SQ. FT.)	AREA (SQ. FT.)
6	8.0	4.5	2.0	1.0	6.0
8	14.0	7.5	4.0	2.0	10.0
10	20.5	11.0	6.0	3.0	14.5
12	29.0	16.0	8.0	4.0	20.5

- NOTES:
- BEARING TABLE AREA IS BASED ON 200 PSI MAXIMUM WITH SOIL BEARING CAPACITY OF 2000 LBS/SQUARE FOOT WITH A 1.5 SAFETY FACTOR.
  - FOR HIGHER WATER PRESSURES OR LOWER SOIL PRESSURES, CONSULT ENGINEER FOR ADJUSTMENTS.
  - A SAFETY FACTOR AND ADDITIONAL BEARING AREA MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.
  - FOR DEVELOPER LAY PROJECTS, THE DEVELOPER SHALL VERIFY SOIL BEARING CAPACITIES.
  - SEE DWG. NO. 0201-0601-SD19 AND DWG. NO. 0201-0601-SD20 FOR ADDITIONAL BLOCKING INFORMATION.

	REVISIONS	MISSOURI AMERICAN WATER STANDARD CIVIL THRUST BLOCK DETAILS	
		MISSOURI AMERICAN WATER ST. LOUIS, MO. 63141	
		MISSOURI AMERICAN WATER ENGINEERING 727 CRAIG ROAD ST. LOUIS, MO. 63141	
		DRAWN BY KKM PROJECT ENG'R APPROVED	
		DATE 09-16-11 PROJECT IP	USE DIMENSIONS ONLY SCALE N.T.S.
		USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES	
		0201-0601-SD6	