

MINIMUM SQUARE FEET OF BEARING SURFACE REQUIRED FOR HORIZONTAL THRUST BLOCKING AND VERTICAL THRUST DOWNWARD (150 # P.S.I. TEST PRESSURE)

PIPE SIZES TYPE OF BEARING MATERIAL & ALLOWABLE LOADS	6" AND 8"				10" AND 12"			
	DEGREE BEND OR DEFLECTION				DEGREE BEND OR DEFLECTION			
	11 1/4'	22 1/2'	45'	90'	11 1/4'	22 1/2'	45'	90'
SAND 1 TON/50 FT	1.50	3.00	6.00	12.00	3.00	6.00	12.00	24.50
SOFT CLAY 1 TON/50 FT	1.00	1.50	3.00	6.00	1.50	3.00	6.00	12.00
SAND & GRAVEL 2 TON/50 FT	1.00	1.50	3.00	6.00	1.50	3.00	6.00	12.00
CLAY 3 TON/50 FT	1.00	1.00	2.00	4.00	1.00	2.00	4.00	8.00
SOFT ROCK 5 TON/50 FT	1.00	1.00	1.00	2.50	1.00	1.00	2.50	3.00
ROCK 20 TON/50 FT	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

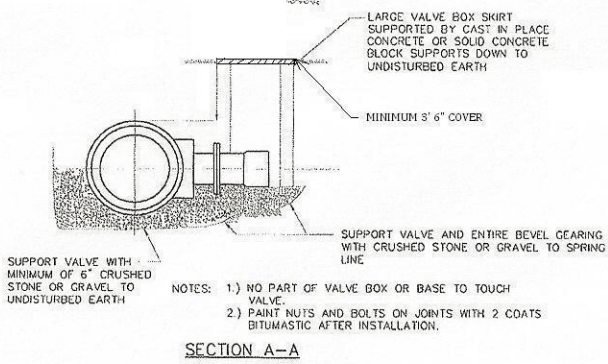
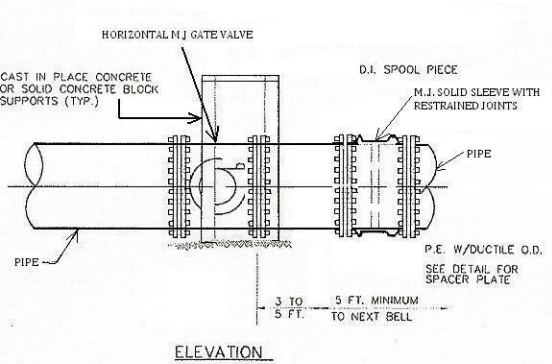
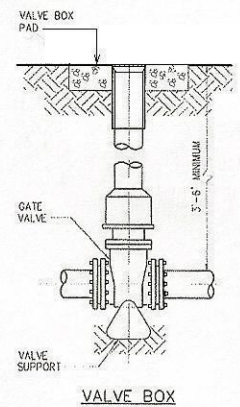
DIMENSIONS OF CONCRETE BLOCKING FOR VERTICAL BENDS WITH AN UPWARD THRUST (150 P.S.I. TEST PRESSURE) #

PIPE SIZE	6" AND 8"				10" AND 12"			
DEGREE BEND OR DEFLECTION	11 1/4'	22 1/2'	45'	90'	11 1/4'	22 1/2'	45'	90'
LENGTH	3'	4'	6'	4.5'	3'	4'	6'	4.5'
WIDTH	2'	3'	4'	3'	3'	4.5'	5'	4'
DEPTH	0.15	0.20	0.27	0.33	0.06	1.20		
SD. IN. REBAR	0.66	1.33	2.00	1.5	3.0	5.9		

REINFORCING

BAR NO.	CROSS SECTION INP. PER BAR	VERTICAL INCREMENT
5	0.31	15 IN.
6	0.44	19 IN.
7	0.60	26 IN.
8	0.79	35 IN.
9	1.00	44 IN.
10	1.27	56 IN.
11	1.56	68 IN.

- THRUST BLOCKING NOTES:
- 1) ALL CONCRETE SHALL BE CLASS B
  - 2) ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 P.S.I. AT THE END OF 28 DAYS
  - 3) ALL REINFORCING STEEL SHALL BE DEFORMED BARS
  - 4) NO COUPLING OR JOINTS SHALL BE COVERED WITH CONCRETE
  - 5) PAINT ALL EXPOSED STEEL WITH TWO COATS ASPHALT PAINT



TYPICAL HORIZONTAL MAIN - LINE GATE VALVE INSTALLATION DETAIL

- TRENCH NOTES:
- 1) ALL NEW WATER MAINS, HOUSE SERVICE LINES, AND TEMPORARY WATER MAIN BYPASS LINES SHALL BE DISINFECTED IN ACCORDANCE WITH ANWA STANDARD C-651-86 AS AMENDED AND SUPPLEMENTED. MAINS AND SERVICES SHALL NOT BE PLACED INTO SERVICE UNTIL ACCEPTABLE BACTERIOLOGICAL RESULTS ARE OBTAINED AND PERMISSION TO PLACE THE SERVICES IN OPERATION HAS BEEN RECEIVED BY NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION.
  - 2) ALL NEW WATER MAINS SHALL HAVE A HORIZONTAL SEPARATION FROM SEWERS AND DRAINS OF 10 FEET AND WHERE MAINS CROSS VERTICALLY, CLEARANCE OF 18-INCHES (OUTSIDE OF PIPE TO OUTSIDE OF PIPE), WHERE THESE CLEARANCES CANNOT BE ACHIEVED THE CONTRACTOR WILL ENCASE THE PIPE IN CLASS B CONCRETE.
  - 3) TRENCHES MUST BE BACKFILLED AT THE END OF EACH DAY, EXCEPT IN EMERGENCY SITUATIONS. STEEL PLATES WILL BE USED ATLANTIC CITY AND/OR NJDOT PERMIT. ENGINEER MUST BE NOTIFIED OF EMERGENCY SITUATIONS WITHIN CITY AND/OR STATIC R.O.W.

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TYPICAL WATER MAIN VALVE AND FITTING THRUST BLOCK DETAIL

DESIGN GUIDE

DATE-OCTOBER 2009  
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