

- | NO. | DESCRIPTION |
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| 1 | TAPPING SLEEVE WITH CONCRETE THRUST BLOCKING (REQUIRED) (SEE SPECIFICATIONS FOR APPROVED MODELS. SIZE ON SIZE TAPPING SLEEVES SHALL BE MECHANICAL JOINT FULL BODY DUCTILE / CAST IRON ONLY. |
| 2 | WRAP TAPPING SLEEVE WITH 2 LAYERS HDPE PLASTIC FILM (HDCLPE PER AWWA C-105) - 4 MILS. EACH LAYER - EXTEND HDPE 3 FT. EACH WAY FROM FITTINGS - DUCT TAPE ENDS. |
| 3 | TAPPING VALVE - FLANGE X R.M.J. |
| 4 | D.I.P. SHORT L ≥ 18" |
| 5 | R.M.J. DUCTILE IRON 90° BEND - ROTATE DOWN, AS APPROVED |
| 6 | DUCTILE IRON PIPE - RESTRAINED |
| 7 | R.M.J. DUCTILE IRON 90° BEND - ROTATE UP, AS APPROVED, CONCRETE THRUST BLOCKING MAY ALSO BE REQUIRED. SEE NOTE IN CHART A BELOW |
| 8 | DUCTILE IRON PIPE - RESTRAINED - SEE CHART A |
| 9 | STEEL CASING - SEE CHART B |
| 10 | EXISTING WATER MAIN |
| 11 | EXISTING INFRASTRUCTURE THAT PREVENTS FRONT SIDE TAP - BACKSIDE TAP WILL BE PERMITTED ONLY WHERE EXISTING INFRASTRUCTURE PREVENTS FRONT SIDE TAP, AND REQUIRES APPROVAL OF THE CITY'S DIRECTOR OF WATER RESOURCES |
| 12 | STANDARD VALVE BOX ASSEMBLY |
| 13 | VALVE EXTENSION (WHEN OPERATING NUT IS GREATER THAN 4.5 FEET DEEP) |

CHART A - RESTRAINED LENGTH REQUIREMENTS

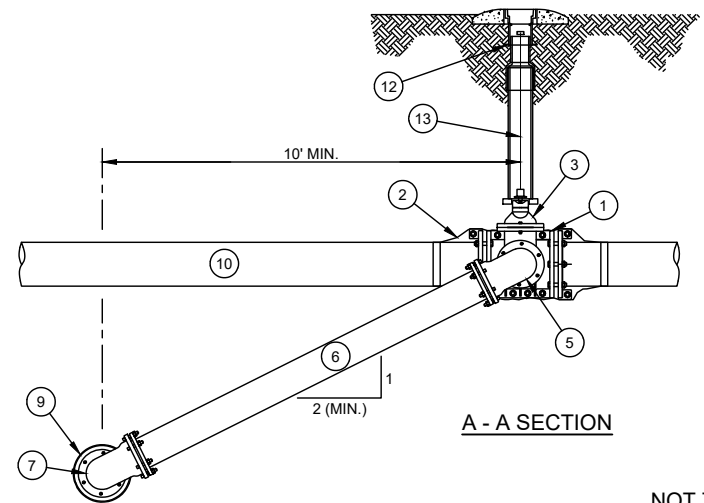
PIPE DIA. (INCHES)	TOTAL RESTRAINED LENGTH - R.L. - (FT)
3"	64' + CASING LENGTH (C.L.)
4"	77' + CASING LENGTH (C.L.)
6"	109' + CASING LENGTH (C.L.)
8"	140' + CASING LENGTH (C.L.)
10"	169' + CASING LENGTH (C.L.)
12"	196' + CASING LENGTH (C.L.)
16"	249' + CASING LENGTH (C.L.)

CONCRETE THRUST BLOCK (WRAP BEND PER 2) REQUIRED AT BOTTOM BEND 7. IF REQUIRED RESTRAINED LENGTH (R.L.) CAN NOT BE COMPLETELY INSTALLED.

CHART B - ROADWAY CASING REQUIREMENTS

PIPE DIA. (INCHES)	HIGHWAY		RAILROAD	
	CASING O.D. (INCHES)	WALL THICKNESS - MIN. (INCHES)	CASING O.D. (INCHES)	WALL THICKNESS - MIN. (INCHES)
6"	12.75"	0.188"	12.75"	0.250"
8"	18"	0.250"	18"	0.312"
12"	24"	0.250"	24"	0.406"
16"	30"	0.312"	30"	0.500"
24"	36"	0.375"	36"	0.5625"

LARGER DIAMETER CASING MAY BE REQUIRED DUE TO LENGTH OF CROSSINGS AND RESTRAINED JOINT DIMENSIONS. SEE PLANS AND SPECIFICATIONS.



NOT TO SCALE

BACK SIDE TAP 16" AND SMALLER MAINS

