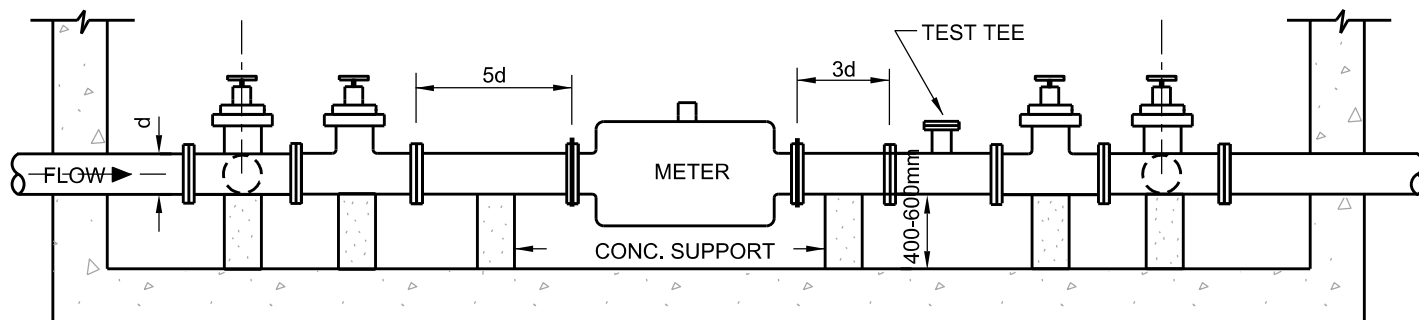


PLAN



ELEVATION

PRIVATE WATER SERVICE PIPE SIZE (mm)	MINIMUM A (m)	MINIMUM B (m)	TEST TEE SIZE
75-100	3.5	2.3	75 mm BRANCH
150	4.3	2.5	75 mm BRANCH
200	5.0	2.7	75 mm BRANCH
250	6.0	3.0	75 mm BRANCH
300	6.6	3.2	75 mm BRANCH

NOTES ON T-1107.02-2 SHEET 2 AND 3 ARE INTERGRAL PART OF THIS DRAWING

All dimensions are in millimetres unless otherwise shown.



ENGINEERING & CONSTRUCTION SERVICES STANDARD DRAWING

PIPING LAYOUT FOR ELECTROMAGNETIC
WATER METER 75 mm TO 300 mm IN CHAMBER

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Notes :

1. All water meters shall be installed in the horizontal position. By-pass piping shall be installed in the horizontal position around the water meter. The inlet tee and outlet tee must be installed within a minimum of 300 mm from the point of entry on the floor or wall where the private water service pipe enters the chamber.
2. Water meters shall be installed with a minimum 900 mm unobstructed clearance in front of water meter to nearest wall.
3. By-pass piping shall be installed with a minimum 300 mm unobstructed clearance from the outside wall of the by-pass pipe to the nearest wall.
4. The working space in front of the water meter shall have a minimum of 2 m unobstructed head clearance.
5. All piping shall be fully supported from the floor and such support shall be suitable for that purpose and shall be supplied and installed by the property owner at the time of the installation of the water meter. The pipe immediately adjacent to the meter, not the meter, shall be fully supported from the floor.
6. All valves, bends and tees shall be flanged or solder type. Victaulic couplings is not permitted. Acid core type solder is not permitted.
7. All piping, including by-pass pipe, tees, bends and valves, except for the tee on the drainage valve shall be the same diameter as the private water service pipe. Pipe reducers required to accommodate a smaller water meter than the private water service pipe shall only be installed between the inlet and outlet valves and shall be attached directly to the valves. All pipe reducers shall be concentric type reducers.
8. After the water meter has been installed, the by-pass and flushing valves shall remain closed at all times and shall be sealed by the City.
9. All valves shall have a handle showing the open and close directions.
10. Only gate valves shall be permitted for inlet, outlet, by-pass or flushing valves. For water services 100 mm in diameter and larger, rising stem gate valves shall be installed. No ball valves or butterfly valves shall be permitted. Valves shall be designed for a minimum cold water working pressure of 1035 kPa. When cement lined ductile iron pipe is used, the valves shall be cast or ductile iron gate valves and shall be according to AWWA C509.
11. Drainage valve shall be a brass ball valve with a brass plug.
12. All pipe shall be either type "L" copper pipe (certified to ASTM B88) or cement lined ductile iron pipe (pipe to comply with ANSI/AWWA C115/A21.15 or ANSI/AWWA C151/A21.51; cement lining to comply with ANSI/AWWA C104/A21.4; fittings to comply with ANSI/AWWA C110/A21.10), or stainless steel pipe rated to a minimum working pressure of 1035 kPa. All pipe flanges shall be threaded or welded to the pipe. Galvanized, polyethylene, PVC and other plastic pipe and fittings shall not be permitted.
13. Strainer is not required for electromagnetic water meter installations.
14. All check valves, backflow preventers, pressure reducing valves, cross connection control devices and all other such devices shall be located downstream of the outlet tee. No other fittings or connections shall be allowed upstream of such devices.
15. With the exception of items number 16 and 17 herein, all meter installations shall conform to the manufacturer's installation instructions.

NOTES CONTINUE ON SHEET 3 OF 3

All dimensions are in millimetres unless otherwise shown.

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16. The minimum distance between the flange on the outlet side of the inlet valve and the flange on the inlet side of the electromagnetic water meter shall be no less than five pipe diameters. No bends or other fittings shall be allowed in this pipe section.
17. The minimum distance between the flange on the outlet side of the electromagnetic water meter and the inlet side of the test tee shall be no less than three pipe diameters. No bends or other fittings shall be allowed in this pipe section.
18. The by-pass valve shall be bolted to the inlet tee, the flushing valve shall be bolted to the outlet tee and the drainage valve shall be bolted to the flushing valve. The test tee shall be bolted to the upstream side of the outlet valve. All valves shall be configured such that their handles shall not interfere with each other and all valves shall be readily accessible for operation, repair or replacement.
19. All water meters measuring both fire and domestic water consumption installed on a water service providing fire protection to a property shall be UL (Underwriters Laboratory) or FM (Factory Mutual) approved according to AWWA C703.
20. Any insulation placed on or around any water meter shall be easily removable and replaceable and shall not contain asbestos or any other toxic or hazardous materials. Such insulation shall not cover or obstruct the water meter register(s). Insulation shall be installed after final inspection. The City shall not be responsible for any damage to such insulation during any removal or replacement of such insulation.
21. The private water service pipe shall be flushed prior to and after the installation of the water meter.
22. For remote readout device wire and conduit installation, refer to City of Toronto specifications.



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