

**PIPING LAYOUT FOR WATER SERVICE PIPE 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.
2. WATER METERS SHALL BE INSTALLED WITH A MINIMUM 600MM UNOBSTRUCTED CLEARANCE IN FRONT OF THE WATER METER TO THE NEAREST WALL.
3. BY-PASS PIPING SHALL BE INSTALLED WITH A MINIMUM 100MM UNOBSTRUCTED CLEARANCE FROM THE OUTSIDE WALL OF THE BY-PASS PIPE TO THE NEAREST WALL.
4. THE WORKING SPACE IN FRONT OF THE METER SHALL HAVE A MINIMUM OF 2M UNOBSTRUCTED HEAD CLEARANCE.
5. ALL METERS AND 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 CONTRACTOR AT THE TIME OF THE INSTALLATION OF THE WATER METER.
6. ALL VALVES, BENDS AND TEES SHALL BE FLANGED, THREADED OR SOLDER TYPE. ACID CORE TYPE SOLDER 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 PARK WATER SERVICE PIPE. PIPE REDUCERS REQUIRED TO ACCOMMODATE A SMALLER WATER METER THAN THE PARK 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. FROM THE TIME THE WATER METER IS INSTALLED, THE BY-PASS AND FLUSHING VALVES SHALL REMAIN CLOSED AT ALL TIMES AND SHALL BE SEALED BY THE CITY.
9. ONLY GATE VALVES SHALL BE PERMITTED FOR INLET, OUTLET, BY-PASS OR FLUSHING VALVES. VALVES SHALL BE DESIGNED FOR A MINIMUM BOLD WATER WORKING PRESSURE OF 1035 KPA.
10. DRAINAGE VALVE SHALL BE A BRASS BALL VALVE WITH A BRASS PLUG.
11. ALL PIPE SHALL BE EITHER TYPE 'L' OR 'K' COPPER PIPE (CERTIFIED TO ASTM B88) 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.
12. CHECK VALVES, BACKFLOW PREVENTERS, CROSS CONNECTION CONTROL DEVICES AND ALL OTHER SUCH DEVICES SHALL BE LOCATED DOWNSTREAM OF THE OUTLET TEE. NO FITTINGS OR CONNECTIONS OTHER THAN INDICATED IN DRAWING T-1130.030 OR T-1130.031 SHALL BE ALLOWED UPSTREAM OF SUCH DEVICES.
13. NO BENDS, TEES OR OTHER FITTINGS SHALL BE ALLOWED BETWEEN THE INLET AND OUTLET VALVES OTHER THAN THE WATER METER.
14. THE BY-PASS VALVE SHALL BE ATTACHED TO THE INLET TEE, THE FLUSHING VALVE SHALL BE ATTACHED TO THE OUTLET TEE AND THE DRAINAGE VALVE SHALL BE POSITIONED BETWEEN THE BY-PASS VALVE AND THE FLUSHING VALVE AS CLOSE AS POSSIBLE TO THE OUTLET TEE. 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.
15. 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. THE CITY SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO SUCH INSULATION DURING ANY REMOVAL OR REPLACEMENT OF SUCH INSULATION.
16. THE PARK WATER SERVICE PIPE SHALL BE FLUSHED PRIOR TO AND AFTER THE INSTALLATION OF THE WATER METER.
17. FOR REMOTE READOUT DEVICE WIRE AND CONDUIT INSTALLATION, REFER TO CITY SPECIFICATIONS.
18. ALL VALVES SHALL BE FACING THE TOP OF THE CHAMBER TO FACILITATE MAINTENANCE WITHOUT ENTRY, IN CASE OF AN EMERGENCY.
19. POTABLE WATER FOR THE WATER BOTTLE FILLING STATION/FOUNTAIN SHALL BE 'T' OFF BEFORE THE BACKFLOW FOR THE SPLASH PAD AND IRRIGATION.
20. THE TYPE OF PREMISE ISOLATION DEVICE MUST BE SELECTED IN ACCORDANCE WITH CSA-B64 SERIES STANDARD AND MUNICIPAL CODE CHAPTER 851.
21. MANUFACTURER'S INSTRUCTIONS MUST BE FOLLOWED WHEN INTRODUCING COMPRESSED AIR INTO BACKFLOW PREVENTERS FOR WINTERIZATION.

**PRECAST SHALLOW METER VAULT NOTES:**

1. FINAL DIMENSIONS OF THE SHALLOW VAULT SHALL ACCOMMODATE ALL SERVICING FOR PARKS AMENITIES, AND MAY BE REDUCED WHERE POSSIBLE. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURING AND INSTALLATION.
2. CONCRETE STRENGTH SHALL BE NO LESS THAN 30 MPA AND WITH 6% AIR ENTRAINMENT.
3. REINFORCING BARS TO HAVE A MINIMUM OF 50MM CONCRETE COVER.
4. PRECAST SECTIONS TO BE AS PER OPSS 1351.
5. BASE CONCRETE STRENGTH SHALL NOT BE LESS THAN 30 MPA.
6. ALL MORTAR MIX TO BE 1:3.
7. ALL JOINTS AND LIFT HOLES IN VAULT SECTIONS TO BE FILLED WITH MORTAR AND POINTED BEFORE BACKFILLING.
8. SOLID ALUMINUM STEPS AS PER OPSD 405.020 AT 300MM CENTER TO CENTER WITH FIRST STEP TO BE 300MM BELOW FRAME.
9. POLYETHYLENE BOND BREAKER TO BE USED BETWEEN CONCRETE AND FITTINGS. AN APPROVED FLEXIBLE SEALANT SHALL BE USED WHERE THE PIPE GOES THROUGH THE CHAMBER WALL. INSTALLATION OF PIPE SEAL SHALL CONFORM TO MANUFACTURER'S DIRECTIONS.
10. ALL EXTERIOR AND INTERIOR BRICKWORK AND FRAME ADJUSTMENT RINGS TO BE PARGED TO A MINIMUM 15MM THICKNESS.
11. FLOOR TO SLOPE SLUMP. SLUMP TO BE POSITIONED ON THE FRONT SIDE OF THE WATER METER.
12. FRAME AND COVER SHALL BE POSITIONED IMMEDIATELY ADJACENT TO THE WALL IN FRONT OF THE METER DIRECTLY OVER THE CLEAR SPACE IN FRONT OF THE METER.
13. REINFORCED CONCRETE DESIGN SHALL BE ADEQUATE FOR VAULT DIMENSIONS SHOWN UNDER H-20 LOADING.
13. THE WORDS 'WATER METER' SHALL BE CAST INTO THE SURFACE OF THE CHAMBER COVER USING MINIMUM 50MM HIGH LETTERS.
14. REFER TO DETAIL T-1130.020 FOR SHALLOW VAULT LID DETAIL.
16. ALL PROPOSED PLASTIC PIPE TO CONTAIN TRACER WIRE.

PARKS, FORESTRY & RECREATION STANDARD DRAWING

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**SHALLOW METER VAULT NOTES**