



*Evergreen*  
**Water & Sewer**  
DISTRICT 1.®

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**Water Specifications & Standards**

1. Mains shall be designed, constructed, and tested in accordance with these specifications and standards, Montana Circular DEQ 1, and Montana Public Works Standard Specifications. Where discrepancies exist between these documents, The District standards take priority, followed by Circular DEQ 1, and then MPWSS. Water mains will be AWWA C-900 PVC, Class 235. Minimum size shall be 8" in diameter. Actual size to be determined by the District based on hydraulic analysis, in accordance with DEQ 1, fire flow requirements, or upsizing based on further growth.
2. All mechanical joints shall be restrained with EBAA Iron Mega-Lugs, or equivalent, and thrust blocks. Restrain all tees, plugs, caps, reducers, valves, hydrants, and bends 22 ½ degrees and greater with concrete thrust blocks per Montana Public Works Standard Specifications, drawings 02660-1, 3 and 4.
3. Mainline hydrant valves will be Mueller Resilient Wedge Gate Valves in accordance with AWWA C-509. Tapping valves (*All Sizes*), shall be flange by flange to accommodate District's tapping machine. Mueller Resilient Wedge Gate Valves will also be used for mainlines valves on 6 inch and 8 inch mains. Ten inch and larger mains, other than tapping valves, will require Mueller 3211 Lineseal III, AWWA C504 butterfly valves with MDT Actuator with 2 inch nut for buried service.
4. Tapping sleeves for 4inch diameter and larger taps will be Romac SST III or Mueller H304 with stainless steel or ductile iron flange.
5. Hydrants will be Mueller Centurion 250 hydrants, red in color. The number of hydrants required, and location of hydrants will be determined by a representative of fire department, Evergreen Fire & Rescue, Kalispell Fire Department in city annexed areas, and West Valley Volunteer Fire Department in the areas north of West Reserve Drive, subject to final review and approval of the Flathead County Water & Sewer District No.1.
6. Valve boxes will Tyler 6860 Series 26" X36" screw to valve boxes with a #6 base, and a 5 ¼" lid marked 'Water'.

7. Fittings will be Class 350 ductile iron, SSB, AWWA C-153, typically MJ with polyethylene wrap.
8. In the event the extended main is a 'dead end main', a minimum 4" blow off or fire hydrant will be installed on the end of main. For any extension that a dead-end main that will be extended later in a subsequent phase, a minimum of 10 feet of main line pipe shall be extended past the shut off valve and a 4" blow-off will be installed on the end.
9. Bedding Material shall be clean washed well-graded gravel not to exceed ¾". Depth of bedding below the pipe will be 4" below the pipe and a at least 6" above the pipe.
10. All mains will be laid with locating tape and continuous loop of 14 gauge stranded or solid copper toner wire.
11. Minimum depth of mains, as measured from finished ground surface to the top of pipe shall be 6 feet. Depth of bury shall not exceed a maximum depth of 8 feet. Depths between 6.5 and 8 feet will require stem risers and box extensions for gate valves.
12. Hydrostatic and leak testing shall conform with MPWSS 02660-3.4A. After successfully completing hydrostatic and leak test, the mains must hold line pressure for a period of 24 hours to demonstrate the absence of leaks. All line valves must be open, and testing will be performed through the entire water main up to valves of hydrants and to service line curb-stops.
13. Water mains will be disinfected using the continuous feed method per the MPWSS 02660-3.4-3a (2). Samples tested after the 24-hour minimum testing period must maintain required minimum free chlorine residual of 10 mg/l. Perform Disinfection after successfully completing hydrostatic and leak testing. Provide saddle tap and corporation stop, or suitable means to inject and or drain disinfection solution and collect 2 sets of samples at the beginning and the end of each water main segment, taken a minimum of 24 hours apart in accordance with AWWA C-651 Section 5.1. These disinfection injection sites are to be abandoned at the corporation stop, shut off and capped, after disinfection has passed.

## **WATER SERVICES**

1. Corporation stops will be Mueller 300 Series Valves CC X Flare. (B25005, B25000)
2. Curb stops will be Mueller 300 Series Ball Valves ¼ turn IPFe X IPFe B-20283, or Mueller Mark II Oriseal Instatite X Instatite IPS PE H-15213.
3. Service connections will be Mueller Instatite or other Mueller brass fittings as approved.

4. Services lines ¾" to 2" in diameter will be AWWA C-901 polyethylene iron pipe size 200 psi Pure-Core or approved equal. Service lines 4" and greater in diameter will be AWWA C-900 Class 235 PVC pipe.

5. Curb boxes will be Mueller H-10308, or District approved equivalent, 1 ¼" or 1 ½" I.D. upper section, minimum of 6 1/2Ft bury. This will include respective 42" shut off rod and lid with brass pentagon nut.

6. Fittings 4" and greater in diameter will be Class 350 ductile iron, SSB AWWA C-153 typically MJ, with polyethylene wrap.

7. All meters for services will be supplied by the District at the owner's / contractor's expense. Meters will be the size of the service supplied from the main.

8. Meter will be installed in a Mueller or Ford Meter Pit with aluminum bottom, insulation pad, and bolt down lid. For some larger meters and multiple large meters will be installed in concrete pit. The meter pit will be installed 3-4 feet from curb stop in the boulevard or on the house side of sidewalk if the meter pit is in conflict with the curb stop in the boulevard. If driveway conflicts with pit location, contact District for alternative placement. Meter Pits and curb stops that will be in traffic area will have to be protected. (Cast iron rings and covers, bollards, curbing, etc.)

9. The size of meters will correspond or be equivalent with size of District service line to curb stop.

10. The type of backflow prevention device for domestic service will be determined by the District. Multi-unit services and other commercial buildings will have a minimum of a testable double check assembly that is on the District's approved backflow list. Irrigation service backflow assemblies will also be determined by the District and the District's approved backflow list.

11. All services will be laid with locating tape and continuous loop of 14-gauge wire.

12. All services will be installed at a minimum depth of 6 feet, measured from top of pipe to finished ground surface.

13. Tapping saddles used for service ranging from ¾" to 2" will be Romac 101NS or Smith Blair 315, single strap with nylon or epoxy coating on ductile iron saddle body and stainless-steel mounting strap.

14. Tapping saddles used service lines 4" and larger will be Romac SST III or Mueller H304.

15. Water taps will be made until October 15. Taps requested after October 15, will be based on availability of hot plant mix and or weather.

16. All water lines (lateral services) will be adjacent to a District water Main and will not be located on any other property other than the property to be served by the service line. In the event a requested service is not adjacent to a District water main, a main line extension will be required at the developer's /owner's expense.

## **Fire Protection**

1. The need for fire sprinkler system lines will be determined by the appropriate fire department (Evergreen Fire & Rescue for areas outside city limits, Kalispell Fire Department for City annexed areas, and West Valley Volunteer Fire Department for areas north of West Reserve Dr on the Bluff.
2. Size of the fire sprinkler supply pipe, (when required) design system flow, necessary residual pressure, and overall sprinkler system design will be determined by a licensed fire sprinkler designer working for the owner/developer at the expense of the owner/developer.
3. Potable water service lines will not be connected to fire service lines. Both potable and fire system and service taps will completely be separate and independent from water main to structure.
4. Fire service lines must be pressure tested and disinfected according to the same procedures for water mains (See items 12 and 13 page 2).
5. Reduce Pressure (RP) type backflow protection devices will be installed on fire protection lines. The assembly shall be designed to protect against both a non-hazard, pollution and or contaminants. The devices shall be tested once a year for proper operation and maintenance at owner's expense.
6. Required fire flows from hydrants, the number and location shall be determined by a representative of the appropriate fire department. If required fire flows are greater than the capacity of the existing water distribution system, off site water system improvements will be necessary. Required improvements will be determined by the District and will be at owner's/developer's expense.

**ANY VARIATION OF THE ABOVE MAY ONLY BE AT THE DISCRETION OF THE DISTRICT**