

## Town of Silverthorne Water and Sewer information For Building Permit applications and Inspections



Welcome to Silverthorne!

Our goal is to make finding water and sewer construction requirements and the application and inspection process as simple as possible. You can always call or email us with any questions:

Chris Shelden - Operations Superintendent      Zach Margolis - Utility Manager  
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Getting Started:

**Town of Silverthorne Water Design Standards can be found at:**

<http://www.silverthorne.org/Modules/ShowDocument.aspx?documentid=345>

**Sewer Design Standards:**

<http://www.silverthorne.org/Modules/ShowDocument.aspx?documentid=346>

**Calculations of EQRs (Equivalent Residential Units – or “Taps”) required for your project:**

[https://www.municode.com/library/co/silverthorne/codes/charter\\_and\\_municipal\\_code?nodeId=CD\\_CH3PUWO\\_ARTIIWASEAD](https://www.municode.com/library/co/silverthorne/codes/charter_and_municipal_code?nodeId=CD_CH3PUWO_ARTIIWASEAD)

**Costs for water and sewer EQRs (“tap fees”), quarterly fees, and use fees:**

<http://www.silverthorne.org/index.aspx?page=98>

### **BUILDING PERMIT SUBMITTAL:**

When construction plans have been submitted to the Town, ideally as a digital file in addition to the paper plans, the Utilities Department Staff will review them within three days for conformance with Town Standards. Here’s what we look for:

1. **Structure is NOT to be grounded via water line**
2. Mechanical room detail and location with water meter and backflow preventer installation and design specifications including reduced pressure back-flow equipment for any fire suppression system. Pressure and Flow data at water service connection that was used as basis of design for fire sprinkler systems, if any. If using pressure booster pumps, specify type.
3. Water meter size specified by the mechanical engineer. A single family residence water meter is usually ¾ inch (15gpm max). large homes or homes located near the top of a pressure zone may use 1” (25gpm max) Spec Sheets for Badger Meters can be found at: <https://goo.gl/Sb7HQR> or <https://goo.gl/YUysLp>
4. Size, materials, and location of water and sewer service lines, valves, cleanouts, protection of cleanouts and valves, and construction details for connections to TOS mainlines.
5. Individual sewer lift station and low pressure force main design and details if applicable
6. Sewer service line grease and sand trap design if applicable
7. Number of bedrooms and bathrooms, total square footage. For modification of existing residences, let us know if there is a change in Bedroom/Bathroom count.
8. Any change of use such as warehouse to retail etc., so that we can evaluate changes to EQRs and backflow prevention requirements

Once construction has begun, Town inspections are required for the entire length of both water and sewer service lines. Please give us at least 2 business days' notice for these inspections so that the lines can then be covered as quickly as possible. Here's what we'll be looking for:

## **WATER**

### **Material**

- Water service lines are to be K Copper or Plastic Poly Ethylene (PE) only, no copper pipe larger than 1" in diameter is permitted - use PE or Ductile Iron Pipe (DIP) above 1" diameter
- If PE pipe is used, a 12-gauge copper trace wire must run from the curb box cap to the water meter and all PE pipe must have stainless steel stiffener inserts at all compression fittings
- Provide one continuous pipe from curb-stop to water meter location in building
- Service lines are to be all new material without kinks, or any damage
- No services shall have in-line couplings unless approved in advance by inspector
- Only compression type Corporation and Curb-stop valves and fittings are permitted underground, no Solder or glue joints are permitted on underground water pipes
- Service valve must have a McDonald type curb box with stem. The cap must be protected and be at or above finished grade, provide flat 12" stone or concrete pad under valve, located within 1' property line.
- Any extension couplings to curb box must be welded. Cap is to be "hand tight".
- **Bedding and Cover**
- 4" minimum bedding under pipe, 6" over top - ¾" minus screened aggregate, back fill with 6" minus structural fill or 6" minus pit run.
- Minimum 8' depth below finish grade without insulation. 10' maximum bury
- If approved by the Town, insulation must be 2" thick x 4' wide, 60psi if water line is less than 8' below finish grade in areas without vehicular traffic, 100psi insulation is required under driven surfaces, if less than 7' below finished pavement grade, the water line must be box insulated

### **Installation and Separation**

- Water lines must be at least 10' from sewer lines. See sewer materials required for crossings.
- Service taps to Town Water Mains must be performed with TOS inspector on site
- Tapping saddles 2" and less are to be all stainless steel or all brass "lead free" (no epoxy or iron)
- Tapping saddles larger than 2", where permitted, must be Ford or Romac All Stainless Steel material – 250 Psi minimum (no epoxy or iron)
- Contractor must provide as-built drawing of all new private service lines

## SEWER

### Material

- 4" SDR-26 (strongly recommended) or SDR-35 or C-900, Push-On Gasket Joint, PVC Pipe Only
- No Glue together Pipe joints underground outside foundation beyond first cleanout

### Bedding and Cover

- 4" minimum bedding under pipe, 6" over top - ¾" minus screened aggregate, back fill with 6" minus structural fill or 6" minus pit run.
- Minimum 8' depth below finish grade without insulation. 12' maximum bury
- If approved by the Town, insulation must be 2" thick x 4' wide, 60psi if sewer line is less than 8' below finish grade in areas without vehicular traffic, 100psi insulation is required under driven surfaces, if less than 7' below finished pavement grade, the sewer line must be box insulated

### Installation

- Sewer tapping saddles must be GENCO brand, appropriately sized
- Bell ends must face up-hill, all joints fully inserted
- Use food grade lubricant "duck butter" at all slip joints
- Sewer lines must be at least 10' from water lines
- If crossing water lines center a 20' stick of C-900 or SDR26 of sewer service pipe at the crossing
- If approved by the Town, insulation must be 2" thick x 4' wide, 60psi if sewer line is less than 8' below finish grade in areas without vehicular traffic, 100psi insulation is required under driven surfaces, if less than 7' below finished pavement grade, the sewer line must be box insulated
- Slope must be greater than 2%
- Maximum of 12' of depth unless approved in advance by TOS
- No 90 Degree fittings.
- Minimum of 8' of straight continuous pipe between 45's
- Clean out with "Y" every 100' of pipe run or every 180 degrees of bends.
- Clean out with "Y" within 5' of outside building foundation wall
- Flat 12" stone or concrete pad under each clean out "Y" for support.
- Access to clean out will be at 4" (+/-1") above finish grade, capped and marked with wood lathe. Access within paved areas will req. street box
- Contractor will provide as-built drawing of all new private service lines

Construction Water, if needed, must be metered and paid for per the Town Bulk water program. Once the permanent heated and protected location for the water meter and backflow prevention is built, construction water may be taken through this meter, and will show up on the first water bill. Please call us 2 business days in advance to schedule pick up of the water meter at the Town Shop at 264 Brian Ave., Silverthorne.

When you call for and pass a final inspection, the water meter Automatic Meter Reading Device will be programmed and installed. We will also verify location(s) and operation of the water service valve ("curb stop") and sewer cleanout(s).