

## **Deerwood Service Company – Your Water Company**

We are an HOA-owned LLC serving the Deerwood Ranches, Creek Ranch and Wilkerson subdivisions. The DSC is overseen by a volunteer Board of Managers and maintained and improved by our Water System Manager, Bruce Thompson.

As you prepare to build and hook up to our pipeline, it is necessary to have your general contractor:

1. Complete and return the attached Notice of Intent to Begin Construction form to Bruce Thompson (yvwater@gmail.com; 970-846-4137), and obtain his approval before beginning work.
2. Read the attached Water System Specifications which we require contractors to follow.

You can learn more about our water system from our website:

<http://deerwoodservice.com/>

**NOTICE OF INTENT TO BEGIN CONSTRUCTION  
for Deerwood Service Company**

(Applies to: Deerwood Ranches / Creek Ranch / Wilkerson Subdivision)

**Return this completed page to:** Bruce Thompson (yvwater@gmail.com; 970-846-54137) and obtain his approval before installation of the home water hookup.

**Attached** is a copy of the **Water System Specifications** to be followed when installing the water line to the subject Lot.

Owner's Name \_\_\_\_\_

Owner's Mailing Address \_\_\_\_\_

Lot Legal Description: \_\_\_\_\_

Lot Street Address: \_\_\_\_\_

General Contractor's Name: \_\_\_\_\_

General Contractor's Address: \_\_\_\_\_

General Contractor's Phone Number \_\_\_\_\_

Excavation Contractor's Name\*: \_\_\_\_\_

Excavation Contractor's Address: \_\_\_\_\_

Excavation Contractor's Phone Number: \_\_\_\_\_

GENERAL CONTRACTOR HEREBY ACKNOWLEDGES receipt of the Deerwood Service Company Domestic Water Service Specifications.

Name of Company: \_\_\_\_\_

Signature: \_\_\_\_\_ Printed name: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

# WATER SYSTEM SPECIFICATIONS

## PART 1 - GENERAL

### 1.1 DESCRIPTION AND BACKGROUND INFORMATION

- A. All references to DSC shall refer to the *Deerwood Service Company*; all references to *specifications* refer to this document.
- B. All water demands, materials, and connections to the DHC water system shall comply with these *Specifications*.
- C. All main line installations have been completed by DSC. Any additional main line extensions must be approved by DSC.
- D. All water service connections to the main line in Creek Ranch have been completed and extended to the property. Service taps to DSC mains shall be made using a tapping saddle. This does not apply to Deerwood Ranches and the Wilkerson Subdivision, where contractors must connect directly to the main line after consultation with Bruce Thompson, the Water System Manager (970-846-4137). Water service line extensions to the home site will be necessary at the time of home construction. The distance of extension varies on a lot-by-lot basis.
- E. Each lot owner is responsible for all extension installation, subsequent repairs, and all associated costs of water service line materials and equipment starting at the connection to the water main and including the corporation stop. All service line installations and extensions shall be completed by a qualified contractor that is experienced in this type of work.

### 1.2 QUALITY ASSURANCE

- A. Building Codes and Regulations: Lot owners shall comply with all applicable state and local codes, regulations, and ordinances as interpreted by the local inspection authority having final jurisdiction.
- B. Only contractors that have been accepted by the DSC Water System Manager are authorized to make connections to the DSC water system.
- C. No connections shall be made to the DSC water system without prior notification and approval by the DSC Water System Manager [Bruce Thompson (970) 846-4137].
- D. All installations and system disinfection shall meet current Colorado Department of Public Health and Environment (CDPHE) requirements and all materials shall be suitable for conveying potable water under high pressure.
- E. No substitutions for the specified parts and materials are acceptable without prior approval of the DSC Water System Manager.

### 1.3 GENERAL DESIGN CRITERIA

- A. Water pressures vary from 45 psi to 217 psi throughout the system; the lot owner and service line contractor are responsible for taking all necessary precautions.
- B. Available flow to fire hydrants varies throughout the main water system depending upon location. Contact the DSC Water System Manager if more detailed information is needed.
- C. Design of each homeowner's water system shall be governed by the following design criteria:
  - 1. Maximum zone demand for the fire suppression systems shall be limited to 85 gpm,
  - 2. Maximum instantaneous turf irrigation system demand shall be limited to 10 gpm,
  - 3. Maximum instantaneous domestic demand for each household fixture shall be limited to 15 gpm,
  - 4. Maximum daily water demand 2,500 gallons.
  - 5. All water using systems shall be designed to operate properly given the available DSC system pressure and water flow rate. If additional water pressure and/or water flow rate is desired, the homeowner must provide private, auxiliary water storage and pumping system within the home; see section 4.3.

## PART 2 – PRODUCTS

### 2.1 GENERAL

- A. All materials, installation, and testing shall be in accordance with the *Specifications*, except as modified herein.
- B. All materials shall be rated for a minimum working pressure of 200 psi.
- C. NSF 61 certification is required for all brass-containing fixtures including the water meter, brass valves, exterior hose bibs, interior faucets, *etc.* This certification assures a higher quality brass, which has a lower lead content and is less prone to corrosion.

### 2.2 SERVICE LINE MATERIALS

- A. All service taps to DSC water system mains shall be made using a tapping saddle.
- B. All buried service line extensions shall be Type K, seamless soft copper tubing or HDPE SIDR 7. All water service lines greater than 2" diameter shall be C900 PVC. The actual diameter required shall be as calculated by the homeowner's plumber, architect, or mechanical engineer to meet the specific needs of the residential fixtures, fire suppression system, and turf irrigation system, and will be based on the pressure available at the home location and these *Specifications*.

### 2.3. INTERNAL SHUTOFF VALVE

- A. All water service lines must have a shutoff valve located where the service line enters the structure. This valve shall be easily accessible.

#### 2.4. CROSS-CONNECTION CONTROL

- A. Purpose: Backflow preventers avoid the potential risk for contamination of the distribution system water from end uses at each home.
- B. Backflow prevention is required for fire sprinkler systems, hot tubs/spas, and turf irrigation systems, etc., see local building codes for installation and inspection requirements. Copies of inspection reports shall be provided to the DSC water system operator.
- C. All service lines shall be equipped with at least one check valve (CV) to prevent reverse flow, double check valves are recommended. Check valve shall be selected to protect equipment from reverse flows and sized to provide suitable flow capacity; brass or bronze; NSF 61 certified.

#### 2.6 PRESSURE-REDUCING VALVE

- A. All service lines shall be equipped with at least one pressure-reducing valve (PRV) such that all meters, fixtures, and equipment are protected from system pressures.
- B. Pressure reducing valve shall be bronze; *Watts Regulator* Model LFU5B, or equal as the use may require.
- D. The recommended pressure setting on the PRV should not exceed 60 psi. It is recommended that pressure gauges are placed upstream and downstream of the PRV.
- E. Redundant PRVs in series are recommended.

#### 2.7 DOMESTIC WATER METER

- A. All service lines shall be equipped with a water meter and remote readout. These devices belong to the homeowner, who is required to maintain them in working order.
- B. All water used at each lot, including domestic and turf irrigation, shall be metered with the exception of water that will be used by a fire suppression system.
- C. Water meter and Touch Read shall be manufactured by *SensusMeter*. The meter shall be a SR2 bronze disc meter, (5/8"), (3/4") or (1"), equipped with a Touch Read Remote Meter Reading System; actual meter size to be determined by the homeowner's plumber, architect, or mechanical engineer to meet the specific needs of the residential fixtures. The material of the meter shall be NSF 61 certified. The remote readout register shall be a Touch Read. (The vendor contact as of 2/2013 is Dana Kepner, 303-623-6161).

### **PART 3 – INSTALLATION**

#### 3.1. WATER METER INSTALLATION

- A. The water meter shall be installed inside the home, in a location that is easily accessible for service and inspection and is protected against frost, flooding, damage and tampering. The remote readout must be installed on the building exterior at a location that is accessible by DSC staff and not subject to flooding. See manufacturer's Installation Data for additional information.

### 3.2. WATER SERVICE LINE INSTALLATION

- A. General: Comply with all applicable portions of ANSI/DIPRA/AWWA C600 / C900 and product manufacturer's recommendations. Each water supply tap shall include a corporation stop, curb stop and box, and copper or HDPE tubing. All service taps to DSC mains shall be made using a tapping saddle.
- B. Location: All service line locations are subject to review and approval by the DSC Water System Manager prior to backfill and placing in service. The curb stop shall be placed near the property line. The water service shall be aligned by the most direct route, laid at uniform grade and a minimum cover of 7 ft, and shall not be placed parallel to any bearing wall at a distance closer than 5 ft.
- C. Disinfection: Comply with AWWA C651.
- D. The service line from the corporation stop to the home shall not leak; coordinate for inspection by the DSC Water System Manager prior to backfill. A pressure test on the water service at system pressure is required.
- E. All trench backfill and road gravels within DSC roads and shoulders shall be placed in lifts and compacted to 95%. All road gravels shall be salvaged and replaced, if gravels are lost or contaminated the Contractor shall import and place additional gravels to provide at least 12" of suitable gravels. Percent compaction shall be as determined by ASTM D 1557.
- F. The lot owner is responsible for the repair of any trench settlement.

### 3.3 LANDSCAPING

- A. Landscaped area. The DSC limits the size of irrigated areas to no more than 4,000 sq. ft. in Creek Ranch, and 10,000 sq. ft. in Deerwood Ranches. However, we strongly recommend that landscaping throughout the DSC water district including the Wilkerson Subdivision be limited to 4,000 sq. ft. to avoid loss of landscaping should water restrictions become necessary.
- B. Xeriscape and drought-tolerant plants are highly recommended for water conservation.
- C. Drip irrigation is recommended for plants, shrubs and trees while sprinkler irrigation is recommended for lawns.
- D. Unsoftened water is recommended for use in watering outside plants.

## **PART 4. OPTIONAL FEATURES**

### **4.1. WATER SOFTENERS**

- A. The water provided by Deerwood Service Company is extremely “hard” (high in calcium and magnesium ions). These dissolved minerals can cause deposits that clog plumbing. To avoid this, many DSC customers have installed water softeners. If a water softener is installed, it is recommended that the resulting hardness be set at a minimum of 50-100 mg/l to avoid creating corrosive environment within the interior piping.
- B. Softened water is not recommended for watering plants, lawns, and gardens. It is recommended that exterior water be unsoftened.
- C. Water quality test results are available from the DSC Water System Manager for distribution to home water treatment system suppliers.

### **4.2 FIRE SPRINKLER SYSTEMS**

- A. Homeowners or their builders should consult with a licensed fire sprinkler contractor for the design of a fire sprinkling system appropriate for their homes.
- B. The design and installation of home fire sprinkler systems are subject to review, approval, and inspection by the Steamboat Springs Rural Fire District; comply with appropriate building codes.
- C. For structures requiring both domestic and fire protection water, a single fire sprinkler line and domestic water line can be utilized from the main to the structure if desired, although the domestic water line shall split from the fire sprinkler line within the structure and from that point on, the domestic line shall meet all applicable project architectural specifications, building codes, and the requirements of the *Specifications*. The Fire Sprinkler line need not be metered.

### **4.3 WATER STORAGE AND BOOSTER PUMPING**

- A. Purpose: In unusual circumstances, an auxiliary water storage and booster pumping system may be necessary to ensure compliance with maximum allowable demands on the central system. This auxiliary system will allow the homeowner to provide higher instantaneous flow rates and use of several fixtures simultaneously at adequate pressures.
- B. Sizing. This auxiliary system should be sized by the homeowner’s plumber, architect, or mechanical engineer to pump the maximum instantaneous demand projected for the house and to store the volume of water expected to be used during a maximum day demand. The required capacity of the system components is dependent on the actual fixtures and maximum occupancy anticipated for the house. Each homeowner should consult with their mechanical engineer, builder or general contractor, and plumber during their house design process to appropriately accommodate their anticipated requirements.

- C. A bypass for the booster pumping system should be installed to allow for servicing the house with water in the case that the pump or storage tanks are temporarily down for repairs.
- D. The auxiliary booster pumping and storage system should be designed in compliance with all applicable plumbing codes.

#### 4.4 COPPER CORROSION CONTROL

- A. Purpose: If copper is used, this section lists precautionary measures to reduce copper corrosion.
- B. A licensed plumber is recommended; refer to local codes for requirements.
- C. Electrical grounding – do not use the interior copper plumbing or copper service lines as an electrode for grounding – use an alternate method contained in the current edition of the National Electric Code (Article 250.52)
- D. Brass fixtures – use fixtures with NSF 61 approval.
- E. Design - Design for flow velocities from 1.5-3 ft/s for hot water plumbing and 1.5-6.5 fps for cold water to avoid erosion corrosion at higher velocities and debris settlement at lower velocities. These maximum velocities are lower than the maximum design flow rates recommended to reduce noise from pipework.
- F. All lubricants, flux, solder, and other materials used for installation purposes must be suitable for use with potable water. Solder must be lead free as required by federal regulations. Always use sufficient materials to do a proper job; but do not use excessive amounts of flux, solder or lubricant. Flush the copper plumbing and visually check for leaks soon after the installation is complete.
- G. Corrosion of copper can be associated with the presence of flux runs in the bore of the tube. Many types of fluxes contain chemicals that are aggressive toward copper, as is necessary to create and maintain oxide free surfaces during jointing for a sound bond to be achieved with the solder. If residues of flux are left in the tube after the joint is made, these may continue to corrode the copper. When heat is applied to melt the solder, any excess flux may flow down the tube producing a “run”. If this is not flushed out, subsequent pitting corrosion may occur. Use minimum amount of flux. Use water soluble fluxes and flush out any internal excess flux after jointing. Installation defects (burrs, solder beads, etc.) can change flow patterns and should be avoided.
- H. Drain newly completed copper plumbing after testing if it is not to be used within a few days. If this is not feasible, flushing is recommended at least weekly. For protective layers to develop on the inside surface of the pipe, periods of prolonged static water conditions have to be avoided. It is for this reason, those systems that have been initially filled to establish their hydraulic soundness, but then left standing full of water until the building becomes occupied, often give unsatisfactory long-term performance.



(Revised February, 2013; update 3/2018)