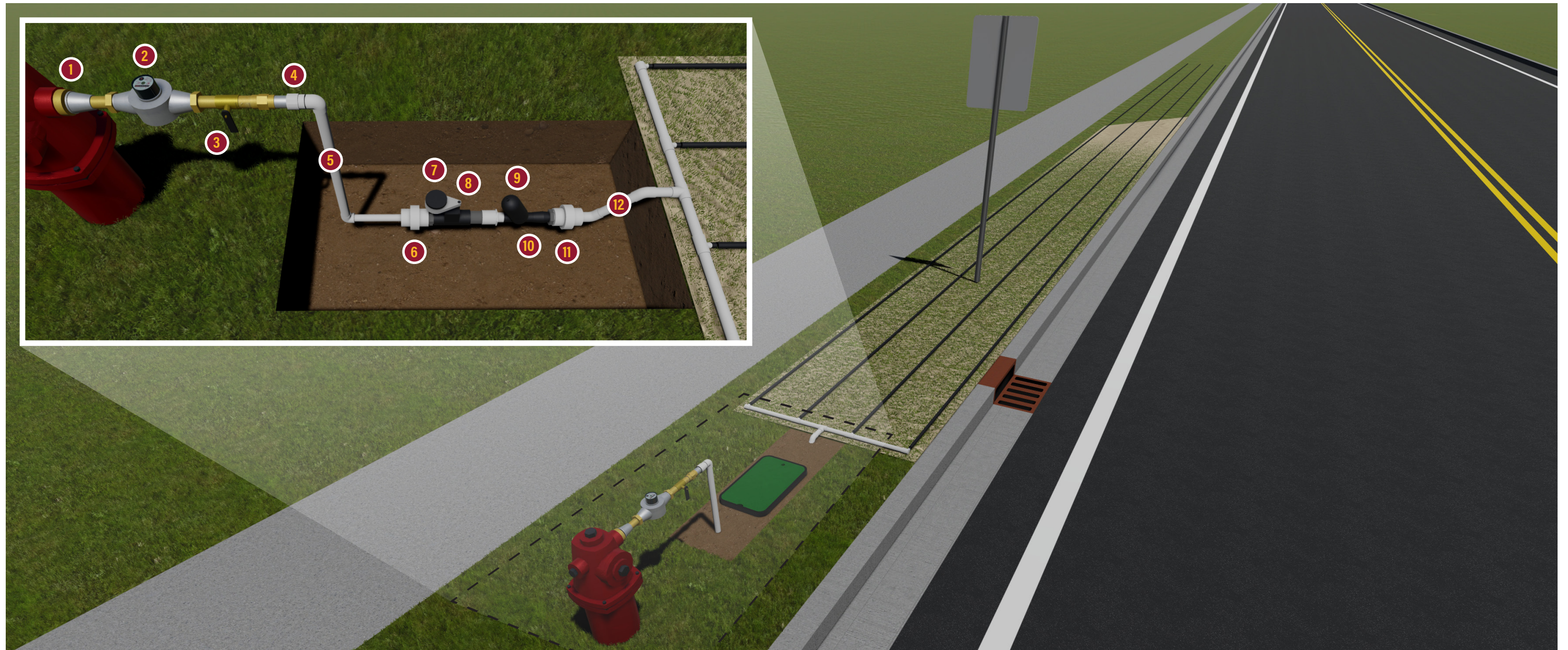


Roadside Irrigation Assembly



1 Check valve/backflow preventer

2 Hydrant meter

3 Ball valve

4 Connection to irrigation control assembly

5 Connection from hydrant meter

6 Union

7 Programmable irrigation controller

8 Irrigation control valve

9 Filter

10 Pressure reducer

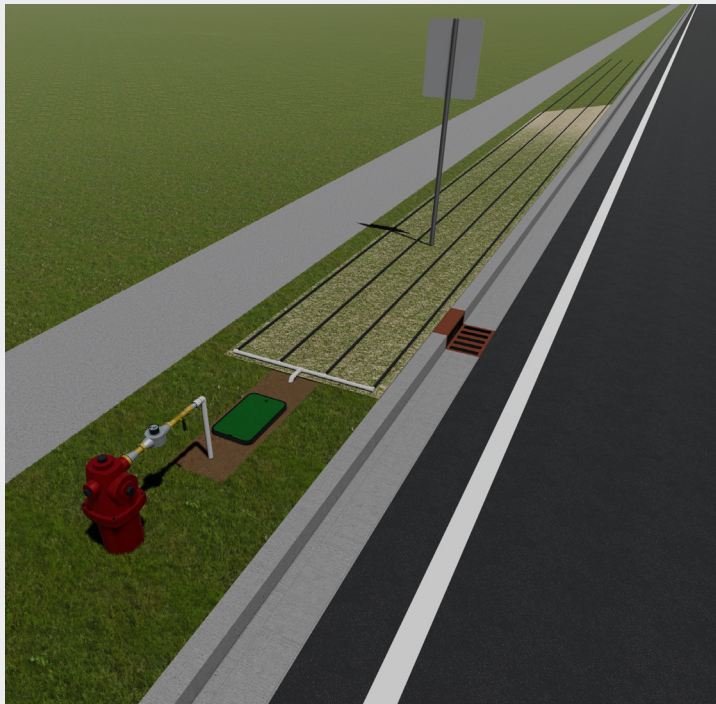
11 Union

12 Connection to header



UNIVERSITY OF MINNESOTA

Arrangement of Meter and Irrigation Control Assemblies



HYDRANT METER ASSEMBLY

The water source may vary, but the setup will be similar. In the case of a hydrant adapter + meter, a saw-horse or stand should be assembled under the hydrant meter to support the weight of the assembly. Unless otherwise noted, all pipe threading used in this report are American Standard Pipe Taper Thread (NPT). All PVC-PVC connections were constructed using PVC primer and glue and Teflon tape was used for all threaded fittings.

Fire hydrant connection: Most fire hydrants have two 2.5 inch connections and one 4.5 inch connection outlets. Hydrants also typically have a unique “fire hose thread” that may not be compatible with standard pipe threading. Most municipalities that rent out a fire hydrant meter will provide a meter with the correct size and threading for the hydrant closest to the site to be irrigated. Check with the municipality for the pipe threading and size options available for the end of the meter assembly that you will be connected.

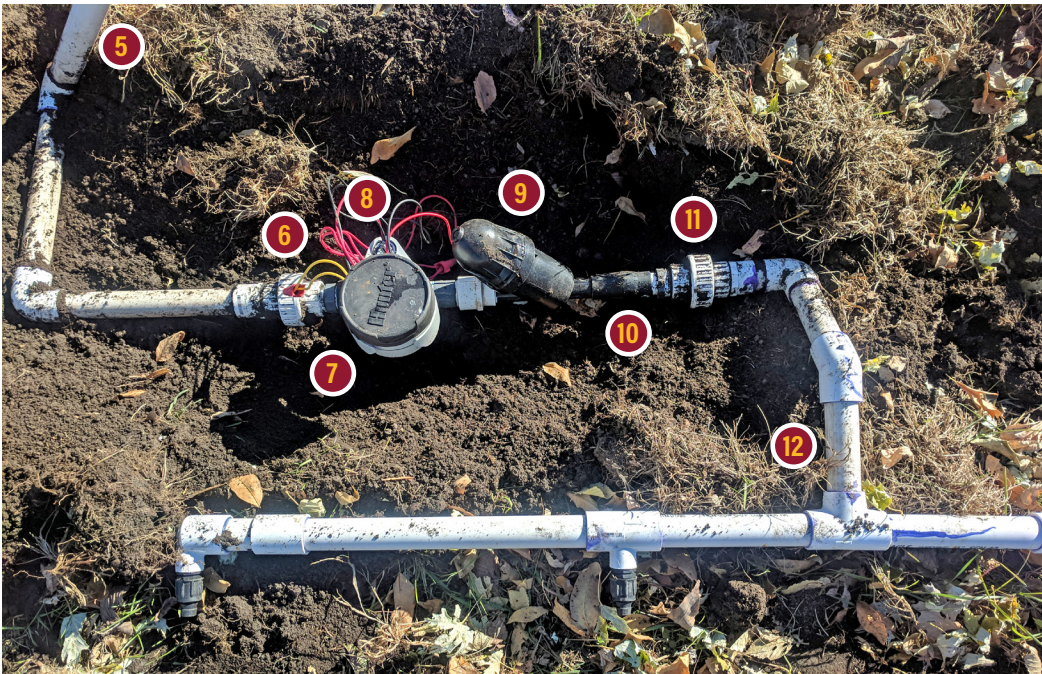
- 1

Check valve/backflow preventer: This can be connected before or after the hydrant meter (if present), but needs to be connected before the ball valve. The check valve is typically constructed of either brass or copper. Verify with the municipal water supplier to determine local ordinances on whether a check valve or a backflow preventer is required between the water source and your connection.
- 2

Hydrant meter: The hydrant meter should be supplied by the local water municipality and will vary in connection and output sizes.
- 3

Ball valve: The ball valve should be constructed of brass and be the final component before the PVC elbow. The ball valve handle should be removed or locked after the system is pressurized or when not in use in order to limit the risk of vandalism.
- 4

Connection to irrigation control assembly.



IRRIGATION CONTROL ASSEMBLY

The irrigation control valve assembly should be contained 4-6” below-ground in a protective case. A 12 X 17” control valve box was large enough to contain the principal irrigation control valve components. A 1” SCH-40 PVC union was used at the start and end of the irrigation control valve assembly to allow for quick assembly and dis-assembly on-site.

- 5

Connection from hydrant meter
- 6

Union
- 7

Programmable irrigation controller: The irrigation controller will likely require battery operation. There are numerous models available that are capable of programming run start times and length, and other “smart” controllers that are capable of working with rainfall sensors, soil moisture sensors, and other water-saving technology.
- 8

Irrigation control valve: The irrigation control valve will be controlled by the irrigation controller that will turn on and turn off the water to the system as directed. The solenoids for the control valves may need to be replaced with 24V DC latching solenoids to allow for the use of a battery operated controller. There are numerous control valve models available.
- 9

Filter: A 120 mesh disc element filter was used to remove any sediments that may plug drip emitters in the irrigation drip tape. Ensure that the filter is appropriate for the drip tape emitter specifications.
- 10

Pressure reducer: In order to ensure proper operating pressure for the drip tape system, a 15 psi pressure reducer was installed after the control valve and filter. Ensure that the pressure reducer is appropriate for the drip tape used.
- 11

Union
- 12

Connection to header