Public water supply system pdf

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A home irrigation system can solve several landscaping and other problems in a single installation. First, it saves you the time and trouble of having to tend sprinklers and drag hoses around the yard. Second, matching your landscape's watering needs to your schedule, climate, and plantings saves you money that would be wasted by inefficient manual watering. Your savings will increase even more if you've been leaving soakers and sprinklers on all night. Installing an irrigation system requires some manual labor, but it's not backbreaking stuff, especially if you don't rush it. You probably can't get the whole thing done in one weekend, so you might as well take your time. Furthermore, modern technology has made assembly of the system itself—the valves, fittings, piping, and spray heads—easier than ever. Before you begin, you'll need to plan your system. Planning starts when you begin to map your irrigation system—making a careful sketch of your yard, designating trees, shrubs, sidewalks, fences, slopes, sunny and shaded areas, and all permanent structures and planting beds, along with dimensions between them and a brief description of what's planted where. That information will help your supplier determine what kind of sprinkler head will meet the specific watering needs of each area. Your map will also need to show where the manifold (connection/distribution) point ) will be, usually in an inconspicuous spot close to the water line. Your supplier also will need to know something about the water pressure and flow rate matter because you can't have more than 60 to 75 percent of the total pressure going into an irrigation system. If you need more heads than this general rule allows, you can establish subsystems, each with their own dedicated valve, programmed so they water at different times. When it comes to timers, you'll find that manual timers, though inexpensive, require more attention than you may want to give to a system you intended to do the work for you. Automatic timers irrigate your landscape right on schedule, even when you're not there. When you begin installation, your sketch will prove invaluable. You'll still need to lay down mason's lines to guide your excavation, but your irrigation map will show you where to start and stop as well as how many heads to install along a given line and at what intervals. You'll notice that each sprinkler head is designed for a specific watering need. Many are adjustable to allow targeted spot-watering without watering objects such as sidewalks, driveways, or the house. Lay out your entire system with stakes and mason's lines. Use the lines as a guide or mark the ground with paint and move the lines out of your way. Excavate to a depth of 8 to 10 inches (but consult your retailer for depth in a cold climate). Save the sod to re-cover the trench, connect piping to the main water supply pipe, then install a control valve and antisiphon valve at least 6 inches above ground level. When you assemble the lines and heads in the trench, start here and work from this location outward. Install a control valve for each circuit in the system. Some types are made to be wired to the timer. Manual control valves are less expensive but far less convenient. If budget allows, get the low-voltage models. Make sure the covers of all the valve boxes are at ground level. Lay out the pieces on the ground in the order they will be installed. Cut pipe to length and dry-assemble the pieces outside of the trench in sections. Lay a section in the trench to make sure it fits. Then disassemble, glue (or clamp), and reassemble must be level with each other or gravity will favor one over the other and prevent pop-ups from operating properly. Clamp-on spray head fittings employ a self-piercing tip that screws into the fitting to punch a hole in the line. Wherever the flow of water will change directions, install the appropriate fitting—either a tee fitting, four-way cross, or elbow. If using glued pipe, make sure the surfaces of the joints are clean before gluing. If using clamped fittings, do not overtighten the clamps. When you reach a spray head location, install the head specified by your irrigation map. Install lawn heads just above ground level but lower than mower blades. Cut the risers for shrub heads long enough to position the head above the foliage. Once you have installed all the system permanently, attach a hose and flush out the system. Make sure all heads are operating properly and provide the coverage required. Connect the control valve and antisiphon valve wires, following the manufacturer's instructions. One of the advantages of low-voltage wiring is that you can lay it directly in the trench—it doesn't require separate conduit. Seal the connections to keep out moisture. Mount the timer at its location and finish wiring the control valves and the power source of the timer. Program the timer to water the various zones of your system at the times of your choice. Cover the valves with the manufacturer's covers, then backfill the trench in soil layers of about 2 inches, tamping the soil gently as you go. Do not disturb the orientation of the spray heads. Re-cover the trench with sod. Select sprinkler heads based on the coverage needed for a given area. Large areas need one style, corners need another, and areas under shrubs need still another type. Don't put a shrub head or spray head on a riser anywhere a person could trip on it. Pop-up style sprinkler heads are installed just below ground level so mowers or foot traffic won't damage them. The best ones are adjustable. Shrub sprinklers are taller for use in flower and shrub beds. When selecting the proper height to install, keep in mind the mature size of the plants. In climates where winter weather doesn't bring freezing temperatures, tapping your irrigation system into an outside water line makes an easy installation, especially because you won't have to cut any existing water lines. Unscrew the outdoor faucet and install a tee fitting whose outlet diameter matches the size of your shutoff valve piping. Install nipples on either side of the shutoff valve that will put the connecting elbow exactly at the bottom of the trench. In cold climates, the best location for the irrigation service is indoors, close to the water meter. Cut the water meter and the house service line and install a tee fitting and shutoff valve that will service the irrigation line. Note the drain cap at the bottom of the line before it goes into the irrigation field. This allows you to drain the system before winter freezes. Install lawn heads so they recede to ground level when not activated but pop up high enough that their spray pattern rises above the grass. Shrub heads should be installed on risers that put their spray pattern above the foliage. Bubblers let water out just above ground level. Different spray heads are installed in a given area, make sure you have enough heads installed so their patterns overlap. Failure to overlap will cause dry spots in the irrigated field. Thanks for your feedback!

