Drainage and Irrigation

DRAINAGE AND GRADING

Maintain proper drainage and grading to best protect your landscaping, home, and property from water damage. Your lot has been graded to facilitate drainage of water to the street or other approved drainage structures. It is essential that you maintain proper grading and drainage to prevent pooling that could affect your foundation slab. Furthermore, you could be liable for any damage from water diverted to your neighbor's property. If you choose to add rain gutters and downspouts to your home, make sure that water is properly directed away from your home and to the proper drainage channels. Water should not stand near your home's foundation.

Caution: Water is the #1 potential hazard to your home!
Be sure to keep the adjacent grade sloped away from your home to allow water to drain properly.

Important Information

- **Maintain the Grade.** Be sure to keep the grade sloped away from your foundation per local codes (typically a slope of 2% to 5%). Check local codes to see what is required for the city or county your home is located in.
- **Keep Area Drains Clear.** Drains may be a part of your drainage system, and are often installed around your home to remove excess surface water from the landscape. Keep drains free from blockage in order to prevent clogging and flooding. Wood chips may float up and block drains; consider using landscaping stones for 2–3' around drains if wood chips are used in a landscaped area.

Effects of Deferred Maintenance

Landscape drain blockages may lead to flooding in lower ground areas, surrounding lawns, or plants. Severe flooding may also affect nearby hardscape or structures, as well as contribute to soil erosion.

DRIP SYSTEM

Drip emitters disperse water from the irrigation system to the plants. Every attempt has been made to provide efficient coverage for all areas irrigated by the drip emitters. However, because every area is a unique shape, with varying sun, wind, and soil conditions, dry (or wet) spots may develop.

Drip System Emitter

Important Information

- **Monitor for Oversaturation.** The drip irrigation system is extremely efficient at delivering water to the plants' root system. As the plants mature, they typically require less water from the drip emitters. Inspect the plants for signs of oversaturation, and adjust the drip irrigation system as needed.

Recommended Maintenance Tasks	Frequency
After any irrigation repair, flush piping and re-test for proper function.	As needed
Check for broken or clogged emitters.	Monthly
Operate the air and flush valves.	Quarterly

Effects of Deferred Maintenance

Failure to examine, replace, and adjust irrigation system components may result in inadequate or surplus water supply, affecting nearby grass, trees, and other plant life. Over watering will eventually lead to soil erosion, and could harm nearby structures and/or hardscape surfaces.

HOSE BIBS

Hose bibs are located at various points on the exterior of your home. Hose bibs require very little maintenance, but should be regularly inspected to ensure they are not leaking and that the valve is working properly. If a leaking or damaged hose bib is discovered, repair it *immediately* to prevent water damage to adjacent surfaces and components.

Some hose bibs are equipped with anti-siphon valves, which is in essence a small backflow preventer. These devices prevent non-potable water from flowing back into the water system, and are most often found in hose bibs used for irrigation.

Hose Bib

Recommended Maintenance Tasks	Frequency
Inspect the hose bibs to ensure they are not leaking.	Regularly
Test the valves to ensure they are working properly and close tightly. Repair or replace parts as needed.	Quarterly

Effects of Deferred Maintenance

Failure to inspect and maintain the component may result in higher repair or replacement costs and damage to adjacent components and systems.

IRRIGATION PUMP

Your community's irrigation systems may use well water for irrigating the landscaping. The irrigation pump for your lot is your responsibility. The irrigation pump requires little to no maintenance; however, should it stop working properly, refer to the Owner's Manual for troubleshooting and repair information.

Important Information

- **Prime the Pump.** Before performing maintenance or repairs, prime the pump according to the product Owner's Manual.
- **Motor Replacement.** If the motor is replaced, replace the shaft seal per the Owner's Manual.
- **Lubrication.** Check motor label for lubrication instructions. The mechanical shaft seal in the pump is water lubricated and self-adjusting.
- **Drain the Pump.** Drain pump when disconnecting from service or when it might freeze.

Effects of Deferred Maintenance

Failure to maintain the pump may result in premature failure of the unit.

IRRIGATION SYSTEM AND CONTROLLER

A comprehensive maintenance program will help ensure the reliability of the irrigation system. The irrigation system includes all of the components necessary for distributing water to your landscaping. When installing additional irrigation equipment, make sure the new equipment is compatible with the system that is already installed.

Irrigation Controller

How the System Works

The irrigation controller is the master control that regulates the irrigation process. It maintains the time of day and controls how often the irrigation system disperses water. It turns the irrigation valves on and off according to a programmed watering schedule. The controller has a battery backup, which should be inspected after power outages to verify that the timing schedule has not been lost if the battery is not fresh.

Only water when plants and weather conditions require. Watering is typically best done in the early morning when wind and temperatures are low. Evening watering may encourage plant diseases such as fungus when foliage is wet all night. Also, once plants are established, watering tends to be more effective when done less often and deeper, if weather and soil conditions allow.

Changing short-term weather conditions and seasonal changes will require fine-tuning the program for proper watering. During wet seasons or extended rainy periods, shut down the controller until additional water is needed in the landscaped areas. Your system utilizes a rain sensor that will turn off the system while it is raining. The goal is to apply only as much water as the plants need for healthy growth.

Because plant growth and weather vary by month, inspect water application amounts on a monthly and seasonal basis and adjust as needed to allow for site-specific conditions. Exposure, weather, soil variables, and other factors which cannot be predicted will affect the amounts of water needed and irrigation schedules should be adjusted accordingly.

Note: Apply water only in amounts necessary to meet plant needs, without excess. Unusual increases in water bills can be indications of leaks in the irrigation system.

Caution: Check the system after electrical storms, as lightning strike may affect the system.

Mainline and Lateral Pipes

The mainline and lateral pipes carry water from the water source to, and between, the disbursement points (sprinkler heads). Mainline (supply) pipes are “hot” (always pressurized) and connect the valves to the water source. Lateral pipes are filled with water only when a remote control valve is opened to serve a group of sprinkler heads.

Caution: Repair plastic (PVC) irrigation supply and lateral pipes immediately if leaking is detected. As with the other components of the irrigation system, repairs that are not attended to immediately could result in long-term damage to plant life and cause soil erosion in the affected areas.

Recommended Maintenance Tasks	Frequency
Examine controller for moisture damage and corrosion. Inspect for dead backup batteries, loose connections, deteriorated weatherproofing or damaged hardware.	Monthly
Check the controller to ensure the scheduled program is working properly, and adjust for proper watering.	Monthly
Adjust each irrigation station run time in response to changing weather conditions and plant needs. Record changes to irrigation settings.	Monthly and as needed
Reset the controller schedule for Daylight Saving Time (where applicable) and after any power failures. Keep a fresh battery in the controller to minimize the need for resetting.	Twice per year and as needed
Replace the backup battery.	Annually
Replace the controller(s) as they fail.	Every 4–5 years and as needed

Effects of Deferred Maintenance

Failure to examine the controllers may result in inadequate or overwatering which, even for a short period of time, may be disastrous to surrounding landscaping. Overwatering may cause water accumulation that may lead to plant death, pavement failures, slippery pavements, and surface waterproofing problems.

SPRINKLER HEADS

Irrigation sprinklers disperse water from the irrigation system to the plants. Irrigation systems are designed to provide double-coverage for all areas irrigated by the sprinkler system. However, because every area has a unique shape with varying sun, wind, and soil conditions, dry (or wet) spots may develop.

Irrigation Sprinkler Head

Important Information

- **Risers.** As shrubs grow, it may be necessary to add risers to some sprinkler heads or trim shrubbery so spray patterns are not blocked. It may be necessary to stake irrigation heads for risers 12'' or taller to maintain performance. Heads can start to tilt or sway if tall risers are not secured.
- **Prevent Overspray.** While the sprinkler patterns have been chosen to keep overspray to a minimum, windy conditions, plant growth, and other factors will sometimes result in isolated overspray or underspray problems. Regular inspections will identify such areas. Make necessary adjustments immediately. Use the manual run function of your sprinkler system to inspect the coverage and flow of your sprinkler heads.
- **Flush the System After Repairs.** Flush and re-test the piping after repairs to the irrigation system to ensure the sprinklers are functioning properly and providing adequate coverage.

Caution: Keep water off structures and hardscape to prevent damage and slipping hazards.

Recommended Maintenance Tasks	Frequency
Check the amount of water being applied and adjust, if necessary.	Weekly
Examine for broken or improperly adjusted sprinkler heads, clogged or worn nozzles and gear drives, grit in seals or moving parts, mower or other physical damage, and broken sprinkler lines.	Monthly and as needed
Inspect for appropriate sprinkler coverage. Check for proper spray pattern, and ensure that structure walls are not in the spray pattern. Adjust the riser height of sprinklers as needed.	Monthly
Compare and analyze the site and plant conditions to determine if the water amounts are appropriate. Make adjustments if necessary.	Annually

Effects of Deferred Maintenance

Failure to examine, replace, and adjust sprinkler system components may result in inadequate or surplus water supply, affecting nearby grass, trees, and other plant life. Overwatering will eventually lead to soil erosion, and could harm your house and/or hardscape surfaces.

VALVES

Valves are the remotely controlled irrigation valves that, in conjunction with the irrigation controller, regulate the flow of water throughout the system.

Valve Boxes

Note: The water pressure supplied to the valve should be at least 50 psi, not to exceed 60 psi. Test the system upstream of the valve connection and adjust/ install a pressure regulator as needed.

Recommended Maintenance Tasks	Frequency
Manually operate and visually inspect the valves to ensure they are operating properly. Check quick coupling valves, and ball or gate valves.	Monthly
Schedule a thorough inspection for diaphragm or seat wear, sticking solenoids or diaphragm, corrosion of wire connections, clogged screens and orifices, and debris or stones lodged under the valve.	Annually

Effects of Deferred Maintenance

Because the remote control valves control the disbursement of water, repairs that are not attended to could result in long term damage to landscaping in the affected areas.