



Alvarez Residence

1611 West El Portal Drive

La Habra, CA 90631

Landscape Maintenance Package

04/10/2023

Client ID: TR16-R-LH-48288-46837

Municipal Water District of Orange County (MWDOC)

Landscape Maintenance Assistance Program (LMAP)

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Maintenance Package Objective

It is our overall objective to deliver the property owner with a landscape maintenance package addressing all their questions or areas of concern as it pertains to the limit of work where the turf rebate program was applied. It is our responsibility to go above and beyond in delivering a package addressing future maintenance issues as well. We hope to inform the property owner about the proper way of maintaining their landscape for the reason of saving water, conserving energy, harboring sustainable practices, enhancing aesthetics, and bringing value to the community.

We will also be making recommendations based on the site visit and our observations considering our combined professional experience. These recommendations are of the views and beliefs of TerraWorks Studio but are subject to proper installation techniques, maintenance practices, and cultural habits. The property owner is not required to make any changes or modifications to their landscapes from these recommendations and suggestions.

We hope to see all landscapes thrive and with our help as well as the help of an active property owner, we think this is not only possible but also very exciting.

-TerraWorks Studio



SITE MAP



Plant Palette

The images and descriptions below are TerraWorks' best judgment and research at identifying plant material based on one site visit and photos taken during the site visit. The photos and names are meant to help the property owner in future research and connecting their plants with our maintenance, irrigation, and plant schedules in this package.

Ornamental Grasses



Festuca Glauca 'Blue Fescue'

Ornamental Shrubs



Asparagus Densiflorus 'Asparagus Fern'



Hesperaloe Parviflora 'Red Yucca'



Lavandula Stoechas 'French Lavender'





Philodendron Bipinnatifidum 'Split-Leaf'



Phormium 'Baby Bronze'

Succulents



Aeonium Arboreum 'Sunburst'



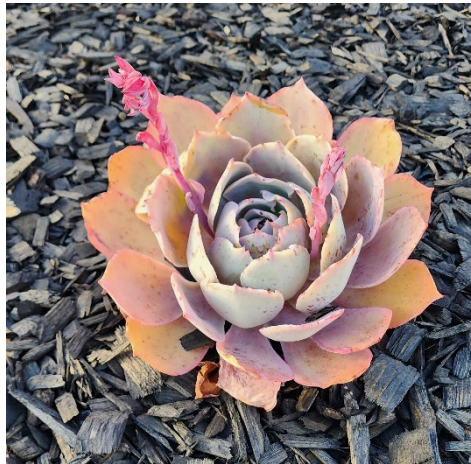
Crassula Capitella 'Campfire Crassula'



Dudleya Cymosa 'Rock Lettuce'



Dudleya Pulverulenta 'Chalk Lettuce'



Echeveria 'Afterglow'



Echeveria 'Party Dress'



Echeveria 'Perle Von Nurnberg'



Peperomia Ferreyrae 'Pincushion Peperomia'



Portulaca Oleracea 'Garden Purslane'



Portulacaria Afra 'Elephant Bush'



Senecio Serpens 'Dwarf Blue Chalksticks'

Plant palette suggestions

Refer to Appendix E for detailed information on the plant material provided by the water wise center.

Plant removal recommendations

N/A



Irrigation

Our approach to irrigation is grounded in sustainability and the efficient use of supplemental water. During our site visit we identify potential irrigation leaks, over-watering, under-watering, and evaluated the equipment being used. We also helped with immediate questions or concerns as it pertains to the irrigation, scheduling, and maintenance of the irrigation system within the turf removal area. We will make suggestions with regards to any replacement of inappropriate equipment, repairs, or added enhancement equipment (weather controller, moisture sensor, weather station)

Please refer to appendix A and appendix B for Irrigation Inspection sheet and Irrigation Maintenance Schedule, respectively.

Homeowner recommendations:

- Irrigation for weed control
- Upgrade to weather-based irrigation controller
- Hand watering recommendations
- General irrigation valves maintenance
- General drip system maintenance
- Drip line should be covered with mulch

Overall analysis

Plant material seems to be receiving proper irrigation for the most part. Recent rain has been more than usual which may cause plants to “stress” because too much water. Once the rain stops, recommend monitoring plants to see if they bounce back and if they don’t, confirm drip line emitter is at the base of the plant to properly distribute water.

Existing valves are a bit on the older side and we recommend for them to be replaced with new ones. Once new ones are installed, confirm that they are installed at a correct height. Best to install them at least 6” from the ground. Existing ones are buried and should be raised if new ones are not desired.

Drip lines have been installed. Hard to tell with the mulch covering most of the mulch but hopefully each plant has at least 1 emitter from the drip line at the base of the plant. Main concern is that the existing valves do not have Drip Filter Kits installed. The Drip Filter Kits help prevent debris from entering the drip lines. Once debris enters the drip lines, it will eventually cause sections of drip line to “clog” and not properly distribute water. Whether new valves are installed or not, recommend installing drip filter kits.

Lastly, upgrading the irrigation controller to a Wi-Fi, weather base controller would be a benefit. One is able to make adjustments, review irrigation data, or just simply turn off the time from your phone/computer. Using a “smart” controller would give you the opportunity to make adjustments for the whole year based on seasons and with the proper programming, it will help save water. There will be information on this option in the next section.

Current Controller: Current Controller: Orbit

The Orbit controller is a basic controller. This model is still current and available. However, this model does not have Wi-Fi capability or weather-based information.

In order for basic programming to irrigate properly, the homeowner needs to calculate irrigation runtimes, irrigation frequency, and seasonal adjustments. Terraworks has gathered the necessary field observations and done the math. In the following pages you will find drip and tree irrigation recommendations. Follow the next series of bullet points to ensure proper programming.

- Verify controller time due to daylight savings or loss of power
- Calculate base irrigation schedules using charts provided and program controller appropriately

Weather based programming uses a base schedule added by the user and is then adjusted up or down depending on the weather. That base schedule should be calculated for the hottest month of the year. We recommend homeowner use the steps in basic programming for program the JULY base numbers.



Upgrading Controller

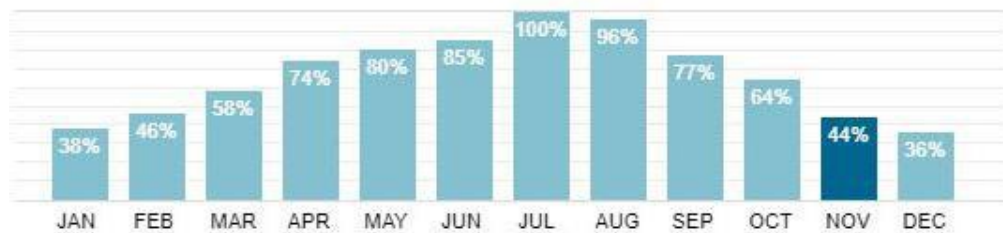
- If owner wants to replace the existing controller, we suggest taking advantage of a local city, county, or HOA rebate program. Many controllers now allow micro programming (plant type, sun exposure, slope factor, soil type) which calculate irrigation schedules based on these factors. The RACHIO controller can be found on amazon and is highly recommend for homeowners. The controller is app based, for easier programming and manual operation of system.
- When shopping for a new smart controller verify controller can calculate irrigation run times based on field observations and make automatic schedule adjustments based on weather. The RACHIO uses Wi-Fi to gather local weather data and make daily adjustments to your generic schedule based on micro programming. It is also approved for the rebate program through the local water agency.
- We recommend the homeowner uses all the advanced zone setting features within the app. Program the individual stations with the necessary parameters use the following standard numbers.
 - Precipitation Rate: Spray 1.7 in/hr ; Drip .60 in/hr
 - Distribution Uniformity: drip 80%, spray 50%
 - Root depth: all shrubs 6"
 - Plant type: See appendix C
 - Soil type: See soil amendment section
 - Microclimate: based on site conditions
- Rachio overview
 - <https://www.youtube.com/watch?v=QKaXsr1U7sE>
 - <https://support.rachio.com/hc/en-us/articles/115010542148-What-are-Advanced-Zone-Settings-#advanced-zone-settings-inputs>



- Once all the station parameters we recommend placing the controller in advanced automatic settings, as the Rachio has the ability to change the watering times daily based on local weather.
- Program the controller's Seasonal adjustment factor. Seasonal adjust is used to make global or overall time changes to the entire controller without reprogramming every single station. Scientists have already



determined the percent adjustment based on regional areas, and these percentages can be programmed to maximize watering schedules and help save water.



- We recommend taking pictures of the site and uploading them to the app. This way anyone who uses the app, including gardener, knows which valves irrigate where.
- Programs will irrigate whether they are displayed or not. Please verify programs not in use be in the OFF mode. We recommend only using Program A.
- Verify program start times. One of the biggest causes of over irrigation is multiples start times. We recommend drip be run during the day on days homeowner is home. This way leaks and breaks can be caught.

Drip/Micro Irrigation systems

Drip irrigation is designed to do one thing; deliver water at the proper pressure and volume to each emission device. A drip system delivers droplets of water at low pressure and low flow rates rather than projecting into the air. The droplets are applied slowly in gallons per hour rather than gallons per minute like spray heads. This delivery method reduces water waste related to wind drift and evaporation. Because of this delivery method drip has an irrigation efficiency of over 80%, making it the highest rated emission device in the industry.

Its popularity is based on the perception that it will reduce landscape water usage. Unfortunately, the benefits of drip irrigation are often offset by poor installation. Most notably, emitters and tubing installed at random will create uneven wet and dry spots. The random placement leads to plant loss due to water being applied in the wrong location. Additionally, unlike spray and rotor sprinklers, drip irrigation systems operate at much lower pressure and therefore need proper installation. On average drip system operates between 10 and 30 psi.

Drip emission devices are broken down into two categories; point source and inline tubing. Point source can be emitters, bubblers or micro sprays installed to inline tubing or spaghetti tubing. Inline tubing has built in emitters into the wall of the tubing which are spaced evenly throughout the line. Familiarize yourself with the equipment installed. Many manufacturers provide online catalogs with specifications for their products. Manufacturers will imprint the flow into the emitter and color code the emitter for flow. Most importantly, become familiar with the pressure requirements for the system and the flow rate of the emitters.

Inline drip tubing

When determining run times there are many factors to consider; water requirement by species, size of plant, time of the year, microclimate, and soils. However, a constant in the equation is the rate on which the system applies water (when properly installed and maintained). In order to apply the same amount of water in a given time the entire station should have the same spacing and same drip tubing. Under the plant care section of this package, you will find the plant water needs for each species in your home.

Design:

- Spacing: 18" emitter spacing
- Tube spacing: 24" spacing. If planter is smaller than 24" evenly space two drip lines from center of plant.
- Emitter GPH: 0.4 GPH recommended, 0.6 GPH ideal, never use 0.9 GPH or higher.
- Typically planter should have one more row of drip for every row of planting. Ex. One row of planting should have 2 drip lines. Two rows of planting should have 3 drip lines.

Fun note: A 12" by 12" spacing with .09 emitter (most typically sold) puts down more water per square inch than spray head irrigation. This leads to over irrigation and extremely high water bills as people set runtimes to 30-60 minutes when they only need 10 minutes.



Below are a few images of the most used drip components.

Drip components



Air relief



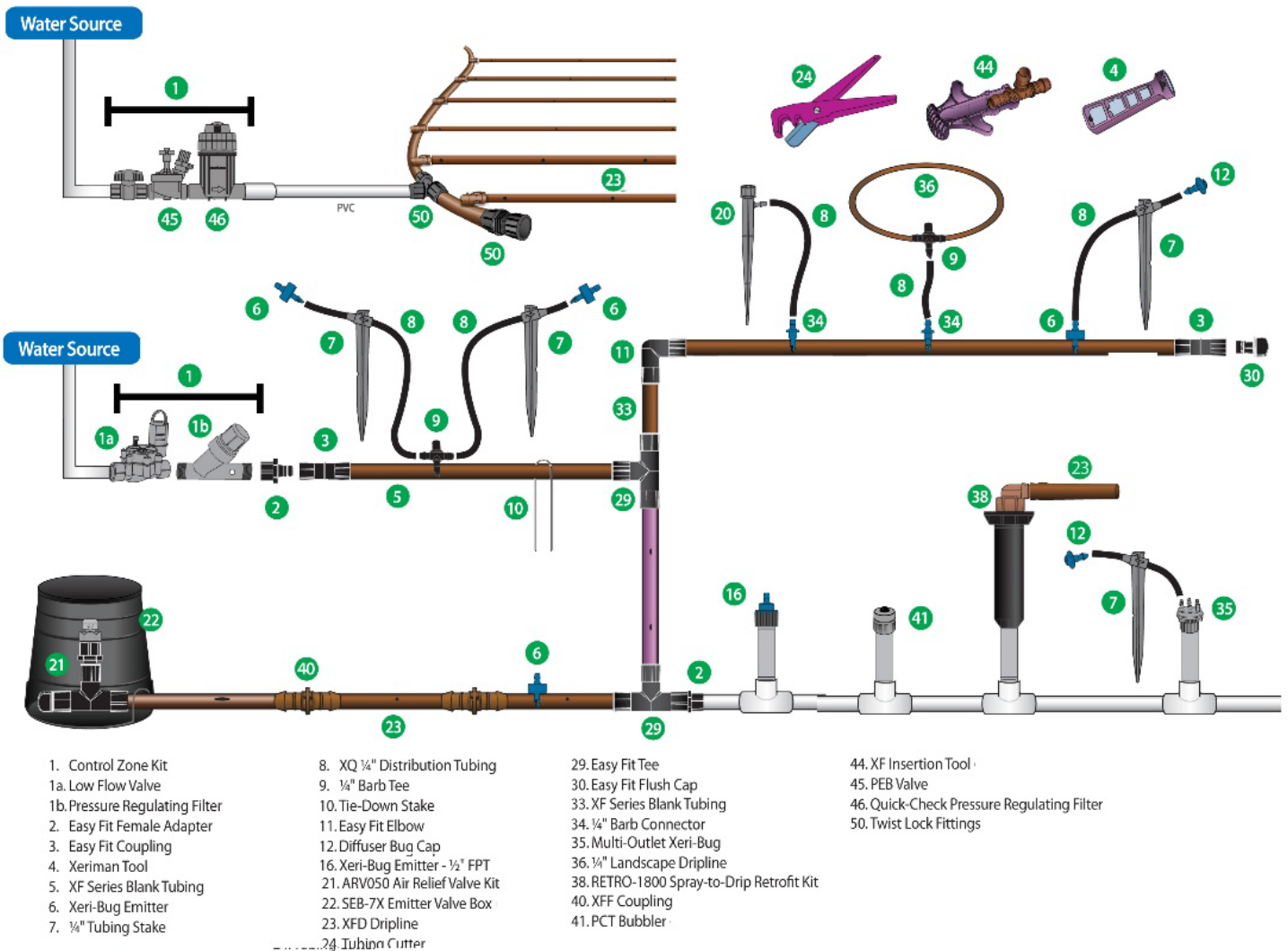
Drip tubing



Drip valve assembly



Flush valve



General maintenance recommendations

Valves/Point of Connection

- Wire connections should use large waterproof inserts.
- Recommend installing new anti-syphon valves
- Existing valves are buried and recommend to be raised
- Valves do not drip filter kits and if new valves are not installed, highly recommend installing filter kits
- Filter kits help prevent debris from entering the drip lines and clogging them



Distribution system

- We encourage running all drip during the day. This way leaks and breaks can be detected more easily.
- Confirm that the emitters from the drip line are aligned with the base of a plant. This will help the proper water coverage
- Drip line which is exposed should be covered with mulch as much as possible. Exposing drip lines to the sun will lessen the life cycle. Drip line become brittle with sun exposure.



Drip system maintenance (see image on sheet 10 for product references)

- Flush out drip line: Locate and open flush component. Should be located at the end of the line. Manually bleed main valve/station for 5 minutes. Close up flush component.
- Air relief: Locate and press down on-air relief to purge line. Should be located at the end of the line. Hold cap down until all air is out and only water is coming out. Purging line should be done after every repair, and after every line flush.



General Maintenance procedures

- The operating pressure of each drip valve should be tested at the very end of the line or circuit along with the highest points in the system. The pressure in these areas will be the lowest in the system.
- When installing drip irrigation, press all drip lines and fittings tightly to avoid leaks.
- The number of emitters on a plant should be proportional to the canopy of the tree or shrub.
- Material
 - All PVC fittings shall be same materials as PVC pipe
 - All drip fittings shall be same materials as drip tube
 - All materials used for repairs shall remain same brand
 - All laterals shall be ¾" schedule 40
 - Use Teflon tape on all male pipe threads
- Wiring connections:
 - All connections shall be waterproof
 - All connections at valve should be free from rust
 - All connections at controller should be free from rust
- Controller:
 - Install back up 9V battery. This will keep the controller running temporarily during an outage and not reset the controller programming.
 - Check time and date regularly. Especially after daylight savings time.
 - Change programming seasonally. 4 times a year minimal.
- Drip system valve:
 - Clean out or change out filter: Locate and open filter. Should be located at the valve connection on valve manifold. Wash out, if ripped and old best if replaced.
 - Check pressure regulator and confirm the setting meet system requirements.
 - Flush out anti-siphon valve at least once a year. Remove screws, open up top and run water manually to flush out components.
 - Flush out diaphragm at least once a year. Remove screws, open top and run water manually to flush out components.



Schedule Recommendations

Tree Schedule:

When using drip irrigation for trees on the same valve as shrubs it is best to use that water as supplemental water. The water requirements needed should be met with manual irrigation, preferably a hose. Later in this section we show you how to calculate the gallons used by your hose.

RECOMMENDED TREE WATERING SCHEDULE				
TREE TRUNK WIDTH SIZE	RECOMMENDED WATER VOLUME	WATERING FREQUENCY BASED ON SPECIES	MONTHS	MONTHS
			APRIL TO OCTOBER	NOVEMBER TO MARCH
NEWLY PLANTED (LESS THAN 5")	10 to 20 GALLONS	NEWLY PLANTED TREE	WEEKLY	BI-WEEKLY
AVERAGE STREET TREE(16")	160 GALLONS	MINIMAL	ONCE/ TWICE A MONTH	NONE
SMALL (5" TO 12")	80 GALLONS	MINIMAL	ONCE/ TWICE A MONTH	NONE
		MODERATE	TWICE/THREE A MONTH	ONCE A MONTH
		HIGH	WEEKLY	ONCE/TWICE A MONTH
MEDIUM (13" TO 21")	160 GALLONS	MINIMAL	ONCE/ TWICE A MONTH	NONE
		MODERATE	TWICE/THREE A MONTH	ONCE A MONTH
		HIGH	WEEKLY	ONCE/ TWICE A MONTH
LARGE (22" TO 30")	260 GALLONS	MINIMAL	ONCE/ TWICE A MONTH	NONE
		MODERATE	TWICE/THREE A MONTH	ONCE A MONTH
		HIGH	WEEKLY	ONCE/ TWICE A MONTH

** WIDTH OF TREE TRUNK AT FOUR FEET FROM GROUND LEVEL

Drip tubing schedules:

The schedules below are for **Low water use** plants. Each chart is a different emitter flow rate. Irrigation schedules below were created using the government sponsored tool to meet requirements. (bewaterwise.com)

Recommended Schedule												
Low Water Use Sand Drip 1.0 Gal/Hour												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum Minutes per start time	28	28	28	28	28	28	28	28	28	28	28	28
Start times per week*	1	2	2	3	3	4	4	4	3	2	2	2
Total minutes per week	28	56	56	84	84	112	112	112	84	56	56	56

*Start times per week may not equal days per week. Multiple start times per day may be needed to avoid runoff.



The schedules below are for **Moderate water use** plants. Each chart is a different emitter flow rate. Irrigation schedules below were created using the government sponsored tool to meet requirements. (bewaterwise.com)

Recommended Schedule												
Moderate Water Use Sand Drip 1.0 Gal/Hour												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum Minutes per start time	28	28	28	28	28	28	28	28	28	28	28	28
Start times per week*	2	2	3	4	4	5	5	5	4	3	2	2
Total minutes per week	56	56	84	112	112	140	140	140	112	84	56	56

*Start times per week may not equal days per week. Multiple start times per day may be needed to avoid runoff.

Notes and Comments

- The project area has a mixture of low water and moderate water plants. We recommend following the schedule for low and moderate water plants.
- It is best to use drip with lower flows to have the ability to run longer runtimes and encourage deep root growth. Eventually this will allow larger gaps between irrigation days and lower watering times as the plant material finds its own underground water
- Valves/drip zones should also be separated by sun level exposure, i.e. sun and shade.
- Trees and shrubs should be irrigated from different valves.
- Recommend installing drip tree rings to help properly water trees
- Shrubs showing signs of drought or decline should have a soil moisture probe to check soil moisture and irrigation should be adjusted accordingly.



Hand watering for Weed control and new plant:

TerraWorks encourages hand watering while weed treatment is taking place. Due to its sustainability efforts and because it keeps homeowners engaged with their landscape. Part of a healthy landscape is monitoring for diseases, pests, weeds, and overall plant health.

We recommend every time the garden is hand watered the weed infested areas are spot treated. Spot treating means only applying the chemical to the weeds and not the surrounding areas especially non impervious surfaces.

When it comes to hand watering there are no defined rules only guidelines one can follow.

- Water each plant based on water needs. When hand watering you can tailor the water requirements for each plant. Some plants might require water daily, while others weekly.
- Water early in the morning or late afternoon. Avoid night watering,
- Avoid overwatering.
 - Over watering leaches valuable soil amendments and fertilizer deep into the soil away from the root ball. This can easily be avoided with hand watering, because one is observing the soil conditions before each watering cycle.
 - Letting plants sit in water to long causes root rot.
- Water to soil conditions. Letting soils dry out before the next watering is key for plants to receive the proper amount of water and oxygen.
 - Larger plants tend to dry out soils quicker
 - For larger plants drench and let water soak in. Repeat until soil is saturated
 - Desert natives and succulents like to stay dry and benefit from less water. Drench with water every 2.5-4 weeks
- Keep foliage dry, by watering from beneath. This will help reduce fungal diseases by keeping moisture off the leaves
- Ideally soak plants down to about 8-12 inches. Use a soil moisture meter or probe to read soil conditions. See images below as reference.



Calculating watering needs for hand watering

Applying 1" of water will roughly give you 6-8 inches of moisture depth. One inch of water is equivalent to 623 gallons per 1,000 square feet. The most important question is how long will applying 1 inch of water take? Use the following methods to determine how much water you are applying.

1. Do the math: Multiply the square footage to be watered (overall planter/planting area) by .62. This will tell you how many gallons to apply. Then divide that number by the gallons per minute (gpm) from your hose. See chart below. The average hose is 25 GPM.

For example: 1,000 square foot plating area x .62 = 620 gallons

620 Gallons / 25 GPM (3/4" 25' hose) = 26 minutes

Distribute the 26 minutes of water over the required week or month. (Terraworks will provide water needs per month) following the guidelines from the prior section. If your plant requires more than 1" of water per month, simply multiply your minutes by the number of inches.

From example above: 26 minutes for 1" or 52 minutes for 2"

Garden Hose Diameter	Garden hose length	Flow rate (gpm)
1/2"	100'	6
5/8"	100'	11
3/4"	100'	18
1/2"	50'	12
5/8"	50'	22
3/4"	50'	36
1/2"	25'	24
5/8"	25'	44
3/4"	25'	72

To more accurately read the output of water from your hose, Terraworks recommends purchasing a flow timer that connects to the spigot. These units read the flow passing through the hose. They can be found online or at your local gardening store. Please use image below as a reference. We do not promote any particular brand or make.





Plant Fertilization

We believe heavily in fertilizing plant material and our approach to fertilizing the plant material is going to be looked at on a plant-to-plant basis. We will make recommendations on the type of fertilizer and the timing for when the property owner should apply the fertilizer.

Fertilizer normally consists of a combination of 3 products which associate to a numerical number. The three products used, in order, are Nitrogen, Phosphate and Potassium. Plants will differ in the amount of each nutrient is required to properly maintain the plant.

Ornamental Grasses

Festuca Glauca would benefit from a 10-10-10 blend of fertilizer. Apply Fertilizer at the end of the winter season, right before the beginning of the Spring Season. Water thoroughly after applying and spread evenly at the base of the plant.

Ornamental Shrubs

Asparagus Densiflorus should use a balance this fertilizer but half the recommend dosage. Best to fertilize at the beginning of the growing spring season and keep the soil moist

Hesperaloe Parviflora, Philodendron, and Phormiums will have best results when fertilized every Spring using a well balance Fertilizer such as 10-10-10. Follow instructions on the back of the bag.

Lavandula can be fertilized once a year using a general purpose 15-15-15 fertilizer. Best results will occur if fertilized during the early Spring season. Pictured is a sample fertilizer that can be purchased at your local gardening store. Please follow instructions on the back of the bag.



Succulents

Aeonium plants should only be fertilized during their growing seasons Winter and Spring. If desired, plants can be fertilized once a month and should only be fertilized while watering the plants.

Crassula plants should be fertilized once every six months. The plant should never be fertilized while the soil is dry thus fertilizing while watering the plant

Dudleya and Echeveria plants do not require much fertilization but should only be fertilized during the warmer growing months.

Portulacaria should be fertilized in the late winter or early spring using half the strength recommended on the back of the bottle.

Senecio Repens and Peperomia Ferrevrae should only be fertilized once a year, during the beginning of the Spring season. Do only apply a light amount of fertilizer, so, we recommend applying half the recommended amount on the bottle. If over fertilized, plant material can become very leggy causing less foliage to produce.



Recommend using cactus juice for the items listed above for "*Succulents*"





Pruning and Trimming

Like fertilizing, there are different pruning and trimming techniques for different types of trees and plants. We believe it is important to utilize the different techniques combined with a schedule we will help create. The type of pruning and the frequency can play a critical role in the development and success of the plant material. Combining a schedule and routine for pruning and trimming will also help cut down on the cost of long-term maintenance.

Most shrubs require annual pruning to keep them from overgrowing and developing thick branches. It is important to start pruning plants at a young age because once plants are overgrown pruning becomes obsolete. Below you will find definitions on the types of pruning methods we will recommend.

Refer to Appendix C: General plant maintenance for a schedule of pruning, deadheading, and hard pruning.

Pruning: Thinning out interior of old wood and removal of large overgrown stems. This type of pruning removes lateral branches at the origin or shortening a branches length.

Hard Pruning: Cutting back main stems or canes to about 6-12" above ground or main trunk/branch. This promotes vigorous growth for the next season. This method only works on plants which have several stems growing from the ground or main trunk. This process is usually done in steps but can be done all at once.

- 1st year- Remove half the large stems to at least 6" from the ground. Prioritize overgrown, damaged, diseased, or decaying stems. If entire shrub is overgrown prune the remaining stems up to 24-36" from the ground.
- 2nd year- Remove the remaining half of the old stems. Also, thin out the new growth from prior year. Prune larger stems for uniform look.
- 3rd year- Thin out all new growth. And repeat starting from year 1.



Dead heading: This process allows for selective removal of only the stems with decaying flowers and fruit. Cut will be made 2-3" after the bloom or fruit. Cut should be made prior to the bud or node of the stem. This type of pruning encourages vigorous growth from below the cut

Making the cut

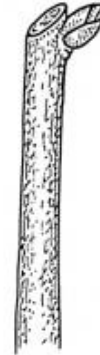
Proper equipment is needed when pruning shrubs. Pruning shears or loppers for large diameter branches will be needed. Refer to Appendix D for a detailed guide on pruning.



INCORRECT
Cut is made too far from bud. Dead stub will remain.



INCORRECT
Cut is made too close to bud. Bud will dry out.



CORRECT
Cut is made just beyond bud and at an angle.

Tree trimming

Tree trimming is a delicate and tedious procedure which should be completed by trained professionals. An ISA certified professional should be consulted before any trimming or pruning. They can recommend a tree trimming company for hire. One of the biggest reasons residential trees dies is due to improper pruning.

- For more information visit link below:
 - <https://treecaretips.org/pruning-dos-and-donts/pruning/>
- Refer to the University of California ANR website for Landscape Trees, Shrubs, and Perennials
 - http://ucanr.org/sites/gardenweb/landscape_trees/
- Proper pruning techniques may be found at the Center for Urban Landscape Pruning Trees website.
 - <http://ucanr.org/sites/urbanhort/trees92/>





Soil Amendments

Soils around Southern California can change quite dramatically from one city to another. Having a healthy soil is critical to growing healthy plants and proper water filtration. Part of our due diligence and site visit is to take a sample of the soil and determine its composition, moisture levels, and pH. This will help in creating an irrigation and maintenance plan before planting or making a plant selection decision. This can also save a lot of time and money. This section will give suggested soil amendments to add to your soil to bring it to the optimum performance.

The soil around your residence has been identified as Sandy Loam soil. Sandy soils are made up of larger solid particles which hold no nutrients. Because of these sandy soils tend to drain at quicker rates and leach down valuable nutrients that plants need to survive. Eventually the lack of water and nutrients affects plant health which is why it is important to add amendments. The most effective supplemental amendments are ones that allow the ability to retain water and increase organic matter. Adding well rounded compost, manure, or humus can improve soil conditions the quickest. Below are a few recommendations found at your local garden store.

Soil Amendments

Humus and manure mixture is a soil conditioner or top dresser. Water down with overhead irrigation or manually to allow organic matter to breakdown and filter down. Pictured is a bag of gypsum that can be purchased at your local gardening store. Please follow instruction labeled on the back of the bag.



Compost can be tilled into the soil as an organic additive. Compost is best used with drip irrigation, since it's tilled into the native soil. Organic material will breakdown and provide the necessary nutrients for the plant material. Pictured is a bag that can be found at your local gardening store. Please follow instructions labeled on the back of the bag





Pest and disease control

The identification of pest damage being done to the plant material by pests can be difficult. This portion of the maintenance guide is created to help inform the property owner of potential pests in relation to their plant palette. The chart below will give residents the tools to help prevent pests from thriving in future plant material. TerraWorks Studio encourages and recommends using biological, humane mechanical and organic chemical processes as much as possible in treating pests. The application of a pest control chemical should be used when plant health is jeopardized. We hope to give enough information for the property owner to be proactive and help their landscape thrive.

Rabbit

Natural Plant Repellent

Rabbits tend to stay away from plants with strong scents. Homeowner can incorporate these plants into your landscape or create a planting line along the fence.

- Tulbaghia violacea “Society Garlic”
- Lavender spp.
- Sages
- Berlandiera lyrata

Liquid repellants

Whether using store purchased or homemade repellent it is important to remember the consistent application. Apply twice a month if using overhead irrigation. Apply after every rain event.

- Store bought rabbit and deer repellent. Can be found at your local garden center.
- Homemade: <https://homeguides.sfgate.com/homemade-rabbit-control-gardens-32918.html>
“You can make a homemade spray from three minced jalapeño peppers blended with enough water to become liquid, two tablespoons of vegetable oil, a drop of liquid dishwashing detergent and a squirt of nontoxic glue. Spray this mixture on and around your plants to repel rabbits.”

Root rot

A significant number of plants from the current plant palette are prone to root rot. Best to keep soils dry between irrigation cycles to avoid saturated soils. Soils are sandy and should have longer run times, focus on longer intervals between cycles. Root rot symptoms are best noticed when plants show decay, as if dry, however soils are wet. Roots are no longer absorbing water and nutrients. We recommend using fungicides once a year as preventative care. Use fungicides containing Fosetyl-al. Follow label directions when applying.

Pest and Disease management			
Pest/Disease	Prevention	IPM-biological/Cultural	Synthetic
Aphids	Control ants	<ul style="list-style-type: none"> Lady bugs Praying mantis Avoid high nitrogen fertilizers Till mulch regularly and keep moist until Aphids are gone. Blast with hard spray from hose Orange Oil 	Bayers brand "Tree and Shrub insect control"
Beetles	Hand Pick	<ul style="list-style-type: none"> Spray garlic spray Neem Oil Insecticidal Soap 	Bayers brand "Tree and Shrub insect control"
Cercopides	None	<ul style="list-style-type: none"> Blast with hard spray from hose Garlic, hot pepper, and soap mix Insecticidal Soap 	Bayers brand "Tree and Shrub insect control"
Flatheaded Borer	<ul style="list-style-type: none"> Keep trees in vigorous condition Remove damage and disea limbs 	None	No insecticide treatments are recommended
Horntail	<ul style="list-style-type: none"> Spray Cypermethrin (Synthetic) Keep trees in vigorous condition Remove surrounding dry lumber 	None	No insecticide treatments are recommended
Leafcutter Bees	When roses are pruned, cover pruned canal with sealing wax or white glue	<ul style="list-style-type: none"> Cheesecloth Covering Breeding site to be eliminated 	None
Leaf Hoppers	<ul style="list-style-type: none"> Spray dormant oil during the winter Reflective mulch can repel adult leaf hoppers 	<ul style="list-style-type: none"> Blast with hard spray from hose Insecticidal Soap with teaspoon of alcohol Double sided sticky tape and shake plant 	Bayers brand "Tree and Shrub insect control"
Mealy Bug	Control ants	<ul style="list-style-type: none"> Green lacewings Lady bugs Neem oil Prune to allow air flow Scrape off colonies 	Bayers brand "Tree and Shrub insect control"
Milkweed Beetle Milkweed Bugs Milkweed Leafminers Milkweed Weevils	<ul style="list-style-type: none"> Remove leaf liter and spent stalks in the fall Keep up wit healthy pruning techniques 	<ul style="list-style-type: none"> Blast with hard spray from hose Brush area with detail brush Spray bottle with water and soap 	Bayers brand "Tree and Shrub insect control"
Mites	<ul style="list-style-type: none"> Adequate Irrigation Midseason washing to remove dust 	<ul style="list-style-type: none"> Blast with hard spray from hose Neem Oil Spray bottle with water and soap 	Do not use Insecticide, it promotes rapid growth
Psylid	Remove recently damaged plants	<ul style="list-style-type: none"> Neem oil (weekly) Insecticidal Soap (weekly) Remove mulch from trunk 	Bayers brand "Tree and Shrub disease control"
Rose Slugs	Look during mid-spring for early start of infestation. Look at both top and bottom of leaves, remove leaves that have larva	<ul style="list-style-type: none"> Neem oil Insecticidal Soap Hotricultural Oils Blast with hard spray from hose 	Bayers brand "Tree and Shrub insect control" (When Larva is present)
Spider mites	<ul style="list-style-type: none"> If in pot quarantine plant Mulch to keep soils moist 	<ul style="list-style-type: none"> Green lacewings Lady bugs Neem oil Hose off plant regularly 	Bayers brand "Tree and Shrub insect control"
Thrips	None	<ul style="list-style-type: none"> Green lacewings Lady bug Neem oil 	Bayers brand "Tree and Shrub insect control"
Whiteflies	Alter using products every application	<ul style="list-style-type: none"> Green lacewings Lady bug Neem oil Prune to allow airflow 	Bayers brand "Tree and Shrub insect control"





Mulch

One of the most useful yet forgotten landscape features is mulch. Aside from the aesthetic use of mulch there are many beneficial factors to the soil and plant material. We recommend adding mulch to your landscape at least twice a year to gain year-round benefits. The information in this section will help make the right choice in choosing mulch replacement. Please refer to Appendix C: General maintenance schedule for suggestions on when to add mulch.

General benefits of mulch

- Moisture retention which equates to improved soil moisture. Bare soil exposed to heat and wind lose water faster via evaporation and absorbs less water due to compaction. Higher soil moisture over time will reduce water cycles.
- Sitting on top of the soil mulch reduces soil erosion from runoff and compaction from traffic.
- During the hotter months mulch has been proven to keep soil temperatures slightly cooler. Organic mulch or more coarse material as recommended below will allow proper oxygen and gas exchange which keeps the soil cool.
- Organic mulch as recommended below breaks down with time which increases the nutrient levels of the soil.
- Using mulch for weed control is highly effective. It reduces seed germination due to lack of light and oxygen. This in turn reduces the need to use weed control herbicides.

General mulch recommendations

- Mulch should be 2-3" thick. Replace every 6-9 months.
- All Irrigation drip line should be covered by mulch.
- All weed barriers should be covered by mulch.



Plant benefits of mulch

- Mulch improves plant establishment and growth.
- Most organic plant-based mulch is high in nitrogen which encourages plant growth and bloom after decomposition.
- Mulch, when not overwatered, has shown to reduce disease in plant material. Mostly, due to the large populations of beneficial microbes that help soil quality.
- As mulch decomposes it absorbs metals from the soil. Heavy metals affect root and plant growth which can lead to plant decay.

Forest Blend Mulch

There are different variations of shredded mulch. This mulch is very effective in retaining moisture, helps reduce weed growth, and is the most cost efficient. Due to the light weight of the material, it can blow away or easily be raked up when moving leaf debris. We recommend adding 2 to 3 inches of mulch every 3 to 6 months.



Decorative Bark Mulch

Bark mulch comes in different sizes and color. This type of mulch is heavier and will last longer compared to the shredded mulch.





Weeds

The identification of weeds can be very difficult because of the array of common weeds in any given garden. This portion of the maintenance guide is created to help inform the property owner of potential weeds. The chart below will give residents an overview of general maintenance practices and help prevent weeds from thriving in the future. TerraWorks Studio recommends using biological or mechanical processes as much as possible before applying synthetics. The application of a weed control chemical should be used when plant health is jeopardized. See Appendix F for illustrations and help with Weed Identification.

We recommend the following synthetic for general broad leaf applications. It is ready and easy to use. Simply connect to the hose and apply water over landscape evenly. Proper application is important for synthetics to be beneficial, therefore, follow application rate instruction on bottle. Applying any more than recommended will damage plant health.



Type of Weed	Growth Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<u>Burclover</u>	Annual			■	■	■	■	■	■	■	■	■	■
Common Knotweed	Annual			■	■	■	■	■	■	■	■	■	■
<u>Dallisgrass</u>	Perennial			■	■	■	■	■	■	■	■	■	■
Dandelions	Perennial/ Biennial	■	■	■	■	■	■	■	■	■	■	■	■
Field Bindweed	Perennial				■	■	■	■	■	■	■	■	■
<u>Nutsedge</u>	Perennial				■	■	■	■	■	■	■	■	■
Plantains	Perennial				■	■	■	■	■	■	■	■	■
Yarrow	Perennial			■	■	■	■	■	■	■	■	■	■
<u>Swinecress</u>	Annual/ Biennial			■	■	■	■	■	■	■	■	■	■
Hairy Fleabane (Spring Germinating)	Annual/ Biennial	■		■	■	■	■	■	■	■	■	■	■
Hairy Fleabane (Fall Germinating)	Annual/ Biennial			■	■	■	■	■	■	■	■	■	■
Oxalis	Perennial	■	■	■	■	■	■	■	■	■	■	■	■
Wild Celery	Annual	■	■	■	■	■	■	■	■	■	■	■	■

- * Taken from UC ANR Cooperative Extension publication 4053.
- * For more information on IPM and weed control visit <http://ipm.ucanr.edu/PMG/PESTNOTES/pn74113.html#NEWLY>
- * For more information on IPM and weed control visit <http://www.ipm.ucdavis.edu>

■ Period of active growth ■ Selective preemergence control ■ Selective postemergence control



APPENDIX A

Irrigation inspection sheet

Drip maintenance												
Controller	Station	Valve						Distribution system				Inspection
		Flush irrigation valve	Does the valve leak when off?	Check for corrosion on valve	Minimum of 3" gap between valve and ground?	Is the pressure regulated as recommended via the manufacturer?	Check the filter	Open Flush valve and run drip for 5 minutes	Check drip line for breaks and leaks	Check emitters Clogged? Broken?	Purge line after flushing line or any repairs	Date

APPENDIX B

Irrigation maintenance sheet

General Irrigation Maintenance Schedule (CIMIS Station 75)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Routine inspection												
Valves	x	x	x	x	x	x	x	x	x	x	x	x
Controller time	x	x	x	x	x	x	x	x	x	x	x	x
Drip tubing/emitters	x	x	x	x	x	x	x	x	x	x	x	x
Drip components												
Filter		x			x			x			x	
Air relief		x			x			x			x	
Flush Valve		x			x			x			x	
Frequency												
Winterize (shutoff due to rain)	x										x	x
Change schedule		x		x			x			x		



APPENDIX C

General Landscape Maintenance Schedule

General Landcape Maintenance Schedule - La Habra (USDA 10b / Sunset Zone 24)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	As needed
Plant Care													
Pruning									B	2			1,2,3,4,5,7,8,9 10,11,12,14
Deadheading													7,8,13
Hard prune (every 2 years)				2					B				
Fertilization			All Plants										12
Mulching		x						x					
Pest monitoring	x		x		x		x		x		x		x
Tree													
Trimming													

#	Type(s)	Botanical Name	Common Name	Water Use	ET %	Common Pests	Flowering Season	Watering needs
1	Perennial, Succulent	Aeonium	Aeonium 'Sunburst'	Low	10-30%	Mites Mealy Bugs Aphids	Rare but can occur once	2" a month
2	Perennial	Asparagus Densiflorus	Asparagus Fern	Moderate	40-60	Spider Mites Scale Mealybugs	Summer	4" a month
3	Perennial, Succulent	Crassula Capitella	Crassula Campfire	Low	10-30%	Scale Mealy Bugs Spider Mites	Winter and Spring	2-3" a month
4	Perennial, Succulent	Dudleya spp	Dudleya spp	Low	10-30%	Mealy Bugs Spider Mites Scale	Spring	2-3" a month
5	Perennial, Succulent	Echeveria spp	Echeveria spp	Low	10-30%	Mealy Bugs Spider Mites Scale	Spring	2-3" a month
6	Ornamental Grass	Festuca Glauca	Blue Fescue	Low	10-30%	Rot due to heavy saturation	Summer	3" a month
7	Shrub, Succulent	Hesperaloe parviflora	Red Yucca	Very Low	<10%	Aphids	Summer, Fall, and Winter	2" a month
8	Shrub	Lavandula Stoechas	French Lavender	Low	10-30%	Aphids White Fly Spittle Bugs	Spring	2" a month
9	Perennial, Shrub	Philodendron Bipinnatifidum	Split-Leaf	Moderate	40-60	Mealy Bugs Spider Mites Aphids Scale	N/A	4" a month
10	Succulent	Peperomia Ferreyrae	Pincushion Peperomia	Low	10-30%	Mealybugs Spide Mites	N/A	2" a month
11	Perennial	Phormium tenax	New Zealand flax	Low	10-30	Mealy Bugs Scale	N/A	4" a month
12	Succulent	Portulacaria Afra	Elephant Bush	Very Low	< 10	Mealybugs	Summer	2" a month
13	Succulent	Senecio Serpens	Blue Chalksticks	Low	10-30%	Mealybugs	Summer	2" a month
14	Perennial, Succulent	Portulaca Oleracea	Garden Purslane	Low	10-30%	Scale Mealy Bugs Spider Mites	Winter and Spring	2-3" a month



APPENDIX D

Pruning guide

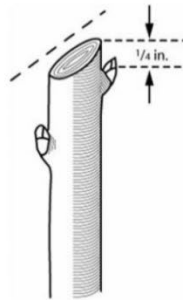


The proper time and technique for pruning roses are subjects of controversy. Certain fundamental pruning practices pertain to all garden roses regardless of type:

- Remove any canes that have been broken or damaged by insects or disease.
- Remove one of two rubbing canes.
- Remove spindly canes or those smaller in diameter than the size of a lead pencil.
- Make clean cuts just above a bud or shoot that points toward the outside of the plant (see fig. 13.8).

Fig. 13.8

Make pruning cuts $\frac{1}{4}$ inch (6mm) above a bud and slightly angled away. Source: After Caldwell et al. 1972, p. 10.



When bare-root roses are planted, the tops should be cut back to 12 to 15 inches (30 to 37.5 cm). Remove any damaged or broken roots. For potted roses, these two pruning practices have probably already been performed before purchase. After pruning hybrid teas, floribundas, and grandiforas according to these general recommendations, cut them to a height of 18 to 24 inches (45 to 60 cm) or to a height in balance with other plants in the rose bed. Climbing roses are generally pruned according to the basic principles described above. In addition, cut out very old, heavy canes growing in the center of the plant that are not producing many leaves or flowers by pruning them completely to the ground. The newer canes will produce more growth and flowers. When the canes become quite long, prune them back to keep them in the desired area.

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APPENDIX D

Pruning guide



University of California Cooperative Extension
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Center for Landscape and Urban Horticulture

Pruning

If the right plant species is selected for the right spot and purpose in the landscape, it is usually unnecessary to prune mature, well-established trees and shrubs. When done improperly, pruning can be one of the most destructive horticultural practices, destroying the shape and structure of a tree and predisposing it to severe future problems. Topping mature trees (heading back the main leader) is not usually recommended because it seriously injures trees and disfigures them. When proper techniques are used, however, judicious pruning of woody plants serves several useful functions. Pruning can be used to train young plants, groom for appearance, control shape and size, influence flowering and fruiting, invigorate stagnant growth, and remove damaged or pest-infested growth.

Types of Pruning Cuts

The two main types of pruning cuts are head, or heading back, and thin, or thinning out, and a woody plant responds differently to each type of cut. Heading back is cutting the plant back to a stub, lateral bud, or small lateral branch (fig. 13.4). Depending on the severity of pruning, heading back results in a flush of vigorous, upright, and dense new growth from just below the cut. New shoots formed on older, larger limbs are weakly attached and split out easily (figs. 13.5 and 13.6). Thinning (fig. 13.7) is removing a lateral branch at its origin or shortening a branch's length by cutting to a lateral large enough to assume the terminal role. A woody plant responds to thinning by becoming more open but retaining its natural growth habit and does not usually produce a flush of new vigorous growth from the cut. Foliage grows more deeply into the tree because more light can penetrate the canopy.

Fig. 13.4

Heading back is cutting to a stub, small lateral, or bud. Source: After Harris et al. 1981, p. 3.

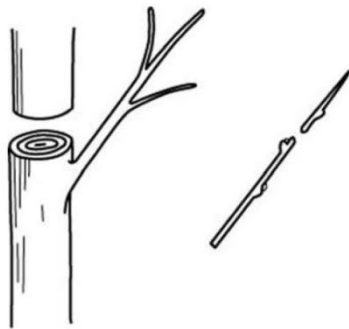
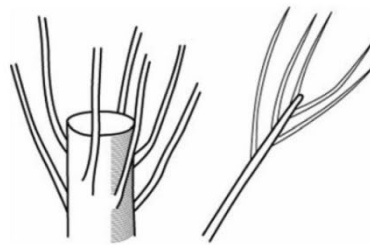


Fig. 13.5

Vigorous upright growth stimulated by heading. Source: After Harris et al. 1981, p. 4.



Large tree limbs must be cut with a saw. The recommended procedure is to remove a limb in two steps involving three cuts (fig. 13.10). Make the first cut on the underside of the branch 1 to 2 feet (30 to 60 cm) from the crotch and at least one-third of the diameter deep. Make the second cut, a downward one, 1 to 3 inches (2.5 to 7.5 cm) farther from the crotch than the first. The limb should then split cleanly between the two cuts without tearing the bark. The third cut to remove the remaining stub is made at the crotch, but its exact position is important to ensure rapid closure of the wound.

Most trees form ridges, called branch bark ridges (BBR) or shoulder rings, on the top and bottom of branches where they are attached to the trunk. The third cut should be made just outside the branch bark ridge (fig. 13.11). The cut will not be flush or parallel to the trunk but will be out from it slightly, with the lower edge of the cut farther away from the trunk than the top one. Such a cut will form a smaller wound than a flush cut and it will close more quickly.

Protecting pruning cuts with an asphalt emulsion or other coating material is of no value and could even be harmful to the tree. Coatings and coverings can trap moisture and increase the chances of decay and retard wound closure. The best practice is simply to let the wound dry in the air.

Painting water-based paint on the southwestern portions of the newly exposed trunk and branches after pruning may prevent bark injury from sunscald.

Fig. 13.10

To remove a large limb, first cut at (A), second at (B), third at branch bark ridge (C). Source: After Harris et al. 1981, p. 5.

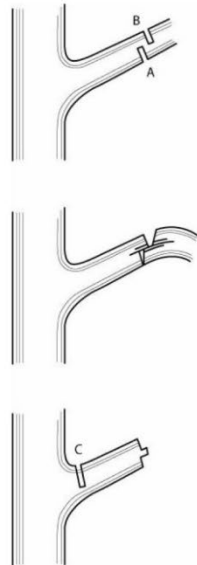
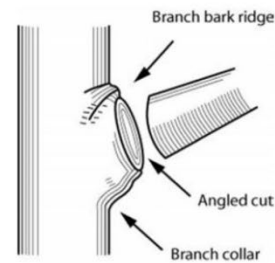


Fig. 13.11



Pruning cuts should be made just outside the branch bark ridge (top of cut) and then the collar (bottom of cut) is angled slightly outward. Source: After International Society of Arboriculture 1995, p.3.

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Fig. 13.6

New shoots forced on older limbs are weakly attached and split out easily. Source: After Harris et al. 1981, p.4.

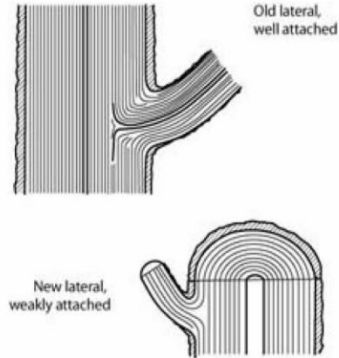
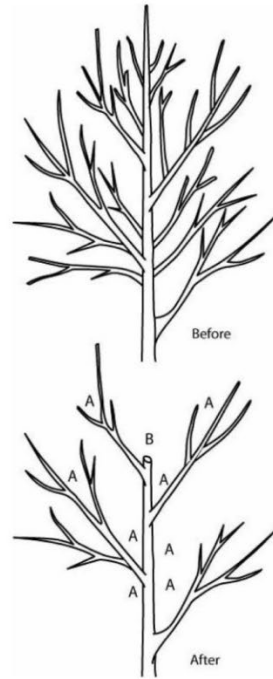


Fig. 13.7

Thinning removes a branch (A) or cuts to a larger one (B). Source: After Harris et al. 1981, p.4.



Making the Cut

Pruning shears (or loppers) are used for cutting small limbs, and saws are used for large ones. If diseased plants are pruned, disinfect pruning equipment after each cut to prevent spreading disease. Denatured alcohol or a chlorine bleach solution can be used to do this. When pruning trees and shrubs that have been grafted, remove new shoots that start below the graft union, but be careful not to remove all of the stems that start above the graft union. Small limbs, including suckers and water sprouts, should be cut close to the trunk or branch from which they arise. Cuts are made most easily with a single, upward cut of the blade. On most kinds of trees, new shoots will be less likely to grow from remaining latent buds if small limbs are cut closely.

When heading back trees or shrubs, cut small stems back to about 1/4 inch (0.6 cm) from a lateral bud or branch. Make the cut on a slight slant away from the bud or branch. New growth will usually grow in the direction the bud or branch points (figs. 13.8 and 13.9).

Fig. 13.8

Make pruning cuts 1/4 inch (6mm) above a bud and slightly angled away. Source: Caldwell et al. 1972, p. 10.

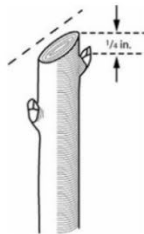
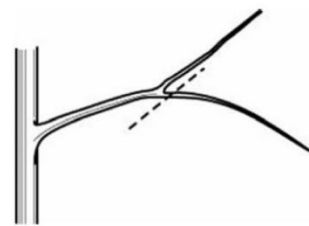


Fig. 13.9

Prune back horizontal limbs to a more upright lateral or to an upward-growing bud. Source: After Harris et al. 1981, p. 10.



APPENDIX E

Plant Suggestions



Autumn sage + cvs Salvia greggii



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Plant Type	Flower Season
Shrub	Winter
	Summer
Foliage Character	Spring
Evergreen	Fall
Habit	Soil Adaptations
Mounding	Well-draining soil
	Sand
Growth Rate	Exposure Adaptations
Moderate	Heat
Size	Frost
Height: 2 ft. - 4 ft.	Drought
Width: 3 ft. - 4 ft.	Aridity
Water Needs	All day sun
Low to Moderate	Function
Foliage Color	Attracts butterflies
Medium green	Wildlife value
	Hummingbird plant
Flower Color	Flowering accent plant
Red	Container plant
	Borders
	Banks

Plant Profile Description

The autumn sage is a evergreen shrub that grows with a mounding habit, 2-4 ft. tall and 4 ft. wide. Deep green leaves grow to 1 in. long and have a light resinous coating on their surface. Colorful flowers are most often cardinal-red and highly attractive to hummingbirds. Flowering occurs spring, fall and intermittently throughout the year. A number of cultivated selections are available from nurseries and garden centers that provide white and salmon flowers.

Autumn sage is one of the most popular sages grown in the Inland Empire gardens and landscapes for use as an almost continuously flowering accent plant . It comes from arid climate regions of the southwest, including Mexico, Texas and New Mexico, where it grows in sandy washes and plains, and tolerates temperatures to 0F. It is easy to grow and very tolerant of heat, sun and aridity. Once established, it requires only low amounts of supplemental water during summer. Most plants become twiggy after 2-3

years and heavy pruning is recommended in late fall to maintain smaller sizes and best foliage character. Several cultivars are available that grow to the same size, but offer different flower colors. These include: S. g. 'Alba' produces white flowers; S. g. 'Furman's Red' has large bright red flowers; and S. g. 'Salmon' has salmon and creamy white flowers.

<https://waterwisegardenplanner.org/plants/salvia-greggii-furmans-red/>

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APPENDIX E

Plant Suggestions



Propeller plant

Crassula perfoliata var. *falcata*



Plant Type	Flower Season
Succulent	Summer
Foliage Character	Soil Adaptations
Succulent	Well-draining soil
Habit	Exposure Adaptations
Trailing	Wind
Rigid	Morning sun
Open	Heat
Irregular branching	Filtered or indirect sunlight
Growth Rate	Drought
Slow	All day sun
Size	Function
Height: 1 ft. - 2 ft.	Rock gardens
Width: 2 ft. - 3 ft.	Residential spaces
Water Needs	Raised planters
Low to Very Low	Near pools and water features
Foliage Color	Grouped
Gray green	Foliage accent plant
Flower Color	Flowering accent plant
Red	Container plant
	Borders

Plant Profile Description

Propeller plant is small to medium size trailing succulent that can reach 1-2 ft. high and 2-3 ft. wide. Distinctive and flat sickle-shaped leaves are gray in color, grow 3-5 in. long and clasp onto stems in an interesting opposite pattern. Striking bright red flowers provide an intense contrast to foliage color in mid summer.

This bold flowering succulent grows well in pots, hanging baskets, banks and rock gardens. It is adapted to full sun, good drainage and low amounts of supplemental water.



APPENDIX E
Plant Suggestions



Blue Glow agave
Agave 'Blue Glow'



Plant Type Agave	Foliage Color Blue green
Foliage Character Evergreen	Flower Color Yellow
Habit Uniform Symmetrical Solitary Rigid Compact	Flower Season Insignificant
Growth Rate Slow	Soil Adaptations Well-draining soil
Size Height: 18 in. - 20 in. Width: 18 in. - 20 in.	Exposure Adaptations Wind Heat Drought Aridity All day sun
Water Needs Low to Very Low	Function Rock gardens Raised planters Hummingbird plant Grouped Foliage accent plant Container plant

Plant Profile Description

Blue Glow agave is a recent introduction into the crowded field of agaves. It is a small growing hybrid between *A. attenuata* and *A. ocahui* that grows to 18-24 in. dia. with narrow and sharply pointed blue-green leaves with red margins. This is a monocarpic cultivar that grows in solitary rosettes, making it useful for containers, rock gardens and mass plantings. Care should be taken to place this plant where its sharp spines can be avoided. Early plantings indicate a tolerance of temperatures of at least 28F.



APPENDIX E

Plant Suggestions



Berkeley sedge

Carex tumulicola



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Plant Profile Description

The Berkeley sedge is a hardy perennial grass-like plant with a clumping growth habit comprised of fine textured green leaves. In a few years time it develops into a graceful mounding plant to 1-1.5 ft. tall and 2-3 ft. wide. This soft textured species is a highly adaptable plant that has been used in understory areas, along pathways and on slopes for erosion control in residential and commercial landscapes.

Plant Type	Exposure Adaptations
Grass	Morning sun
Sedge	Moderate shade
	Heat
Foliage Character	Cold hardy
Evergreen	All day sun
Habit	Function
Symmetrical	Near pools and water features
Mounding	Mass planting
Graceful	Grouped
Clumping	Foundations
Growth Rate	Foliage accent plant
Moderate	Small spaces
Size	Container plant
Height: 1 ft. - 1.5 ft.	Commercial spaces
Width: 1.5 ft. - 3 ft.	Civic spaces
Water Needs	Borders
Low to Moderate	Banks
	Slopes
Foliage Color	Rock gardens
Medium green	Residential spaces
	Raised planters
Flower Color	Parks and open space
Green	
Flower Season	
Winter	
Spring	
Soil Adaptations	
Well-draining soil	
Loam	
Clay	



APPENDIX E

Plant Suggestions



Woolly blue curls *Trichostema lanatum*



Plant Type	Flower Color
Shrub	Purple
Native	
Foliage Character	Flower Season
Evergreen	Spring
Habit	Soil Adaptations
Sprawling	Well-draining soil
Mounding	Clay
Growth Rate	Exposure Adaptations
Moderate	Heat
	Drought
	All day sun
Size	Function
Height: 2 ft. - 3 ft.	Wildlife value
Width: 3 ft. - 4 ft.	Restoration
	Hummingbird plant
Water Needs	Flowering accent plant
Low to Very Low	Borders
Foliage Color	Fragrant foliage
Dark green	

Plant Profile Description

Woolly blue curls is one of the most fascinating and attractive native flowering shrubs to both people and hummingbirds alike. It is small evergreen shrub growing with upright branches 2-3 ft. tall and spreading 3-4 ft. across. Its resinous aromatic foliage is comprised of dark green linear leaves, 2-3 in. long, have glossy and heavily wrinkled surfaces. Tall spikes of striking purple, blue and white flowers are rich in nectar and occur with greatest intensity in early spring and intermittently throughout the year.

Woolly blue curls is a highly popular native plant due to its remarkable flowers and long flowering season, which can be extended by removing older flowers. It requires well-drained soils and grows best with low amounts of supplemental water once established. It serves as a flowering accent shrub in native gardens, on banks, around rocks and in revegetation plantings. Cultivars of this species can sometimes be found at native plant nurseries that offer different

foliage, form and flowering characteristics.

<https://inlandvalleygardenplanner.org/plants/trichostema-lanatum/>

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APPENDIX E

Plant Suggestions



Rock purslane *Cistanthe grandiflora*



Plant Profile Description

Rock purslane is a small mounding succulent with thick blue-green foliage that grows to 12 in. high and spreads 2-3 ft. across. Colorful and intense purple-magenta flowers to 2 in. dia. develop on flexible stems from mid to late spring and intermittently into summer.

Native to Chile, Rock purslane belongs to a small group of succulents with colorful flowers and a tolerance for arid conditions. It is the only species commonly found in cultivation in California where it is a popular accent plant in rock gardens and among other succulents. Both foliage and flowers offer a contrasting character to most plants, particularly with its intense purple-magenta flowers.

This is a short-lived perennial that grows well

<https://inlandvalleygardenplanner.org/plants/cistanthe-grandiflora/>

Plant Type Succulent	Flower Color Magenta
Foliage Character Succulent Evergreen	Flower Season Summer Spring
Habit Spreading Mounding Compact	Soil Adaptations Well-draining soil
Growth Rate Short-lived Moderate	Exposure Adaptations Morning sun Heat Filtered or indirect sunlight Drought All day sun
Size Height: 12 in. Width: 2 ft. - 3 ft.	Function Rock gardens Residential spaces Raised planters Near pools and water features
Water Needs Low to Moderate	Grouped Foliage accent plant Flowering accent plant Container plant Borders

for 2-3 years. It does best in well-drained soils and away from the hottest sun. It flowers best with regular water through the end of spring and less during summer.

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APPENDIX F

Weed Identification

Burclover



Leaves are composed of three leaflets and have a characteristic cloverlike shape with serrated edges. The flower cluster consists of 3-5 small yellow flowers which bloom in early spring. The spiraled fruit of Bur Clover has prickles. Stems and tend to trail along the ground, but may grow upright.

Creeping woodsorrel-Oxalis



Leaves are alternate to one another along the stem; each consisting of three heart-shaped leaflets. Leaf stalks are long. The mature plant is low growing. Flowers are present almost year-round. Two to five yellow flowers form a cluster that develops where leaf stalks and stem meet. The small flowers have five yellow petals.

Dallisgrass



Dallisgrass is a coarse-textured grass that grows in a clump. The leaf blades of dallisgrass are fairly wide. Frequently there is purplish coloration at the base of the grass stems. The flowering stalk grows 14 to 65 inches tall with often dropping flowering heads, which arise from different points along the flower stem.

Dandelion



Leaves are widest near the tip with gradually tapering bases and sparsely-toothed edges. The bright yellow flower head grows on a long leafless stock. Collectively the fruit form a fuzzy, gray-white, spherical fruiting head.



APPENDIX F
Weed Identification

Dichondria



Leaves are composed of three leaflets and have a characteristic cloverlike shape with serrated edges.. The flower cluster consists of 3-5 small yellow flowers which bloom in early spring. The spiraled fruit of Bur Clover has prickles. Stems and tend to trail along the ground, but may grow upright.

Field Bindweed



Leaves are arrowhead shaped and have petioles (leaf stems) that are flattened and grooved on the upper surface. Trumpet shaped flower, white to pink in color, and 1 to 1-1/2 inches wide. One to four dark brown seeds are produced in round, smooth, 1/4-inch capsules. When water is withheld, bindweed competes better than most

Fleabane



Leaves are alternate to one another along the stem; Lower leaves are narrow football shaped and densely covered with soft hairs, Upper leaves are linear to lance shaped. Yellow flowers (disk flowers) that are surrounded by small, cream-colored bristles. Seeds are tiny, narrow, football shaped covered in white bristles.

Knotweed



Leaves are bluish green in color with blades narrowly ovate in shape. The leaf stalk is short, and are slightly swollen giving the typical “knot”-like appearance. Flowers are small and inconspicuous; The colors of the flowers range from white to pinkish tinge. Contains numerous slender, wiry stems that are highly branched to form flat mats



APPENDIX F

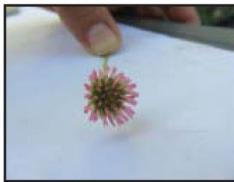
Weed Identification

Nutsedge



Sedge stems are triangular in cross-section, erect and hairless. Yellow nutsedge spikelets are straw-colored to gold-brown with many flowers. Yellow nutsedge has tiny, single-seeded fruit (achenes) that are football shaped, triangular in cross-section, and brown seeds.

Pink/Strawberry Clover



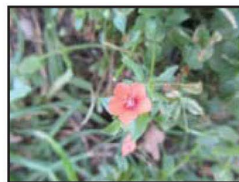
Usually found in moist places, well irrigated. Flowers cluster to form fuzzy looking round- to egg-shaped flower heads. Plants are low growing and either form small patches. Leaves consist of three leaflets that are egg to football shaped with rounded tips. Bees are attracted to the clover blooms and people playing or using the turfgrass may be stung

Plantain



The leaves are broad-oval, pubescent or smooth, and dark green. The leaves are up to 10 inches long. They form long vertical flower stalks. Plantain flowers grow on these stalks and are numerous, inconspicuous, and small. It can be found in compacted and soggy sites where other plants may not thrive.

Scarlet Pimpernel



Leaves are stalkless, oval to football shaped with triangular tips, and sometimes dotted with purplish glands on the lower side; they opposite to one another along the stem, or sometimes around the stem in a whorl. Flowers have five salmon-orange colored petals, slender stalks, and grow singly between the stem and leaf stalks



APPENDIX F

Weed Identification

Swinecress



The leaves of lesser swinecress have an offensive, skunklike odor. Flowers bloom from February through October. Tiny, white, four-petaled, stalked flowers cluster along the flowering stem forming a flower head. Seeds are green oblong to somewhat kidney shaped.

Wild Celery



It has finely-dissected leaves and forms a branched mound up. Leaves are 3-10 cm long. Flowers are small, white, and tinged pink. Fruits are 1-3mm long and wide with five-angled ribs. Plants prefer moist areas, growing well on irrigation ditches and in standing water of production areas.

Yarrow

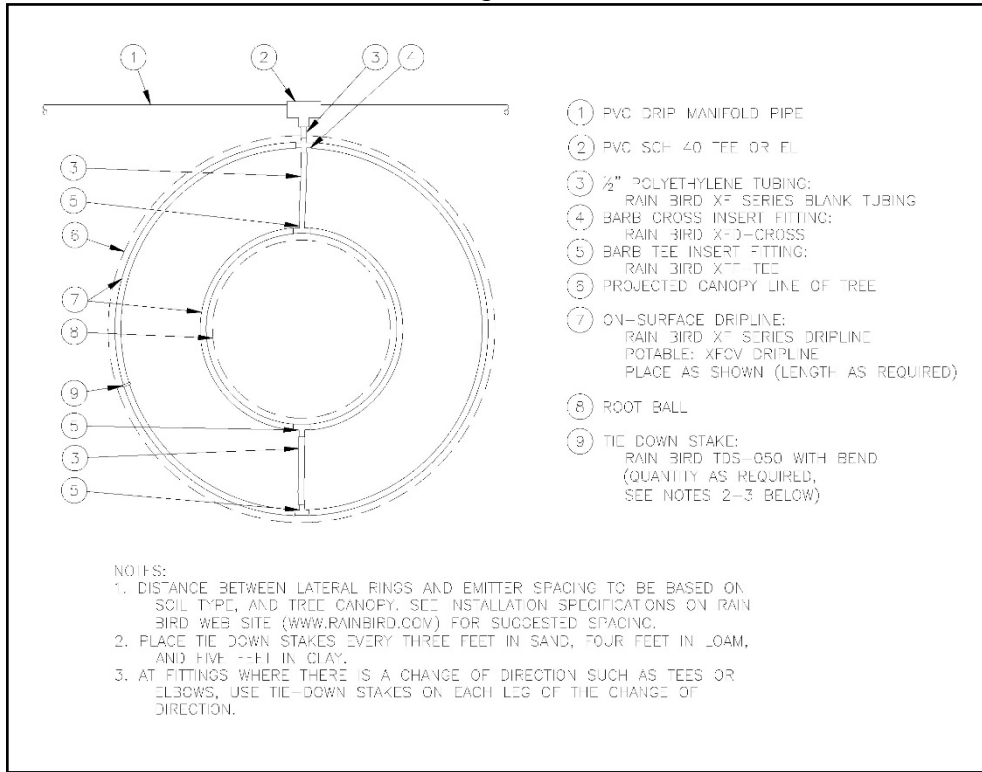


Common yarrow occurs in areas of frequent irrigation. Mature plants grow low to the ground in clumps. Leaves are finely cut into linear segments giving them a feathery appearance. Common yarrow can be distinguished from other weeds that have finely cut leaves by its creeping belowground horizontal stems. Small white or yellow flowers cluster into dense, flat-topped flower heads at the ends of stems.

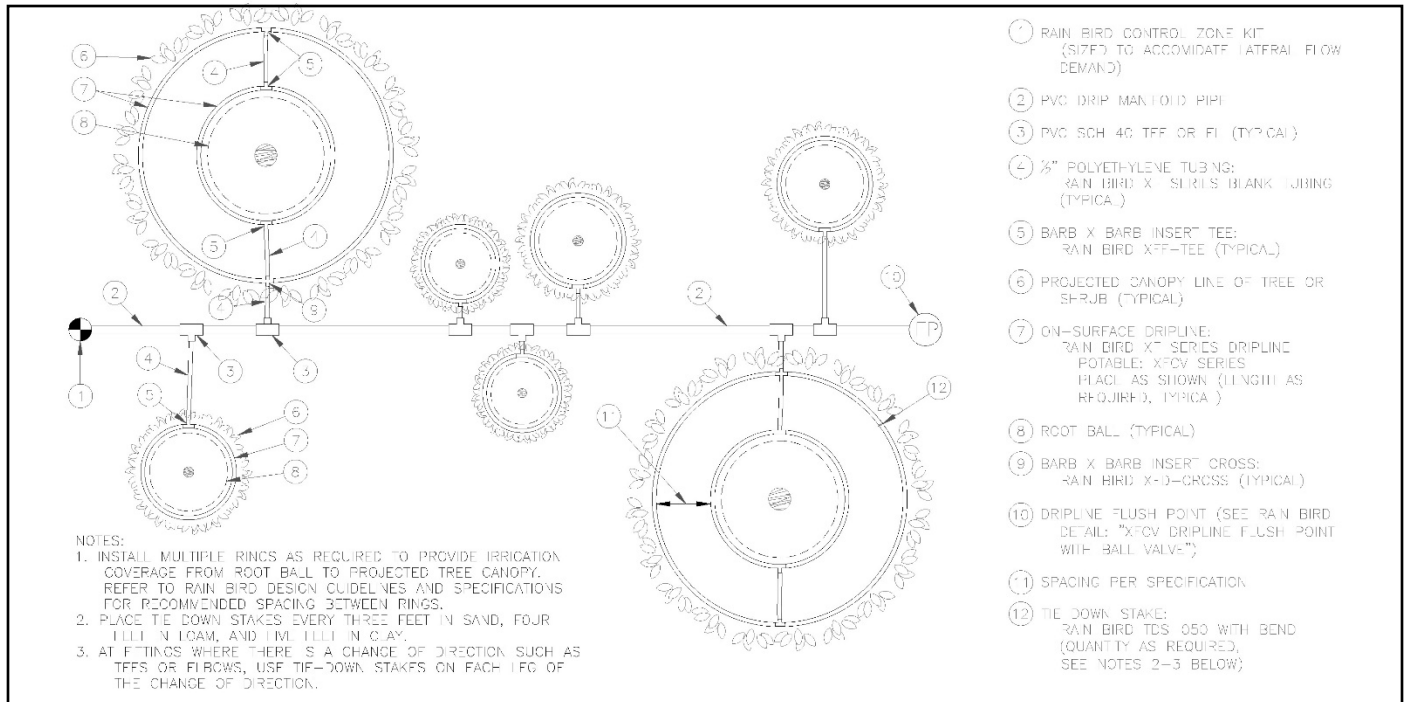


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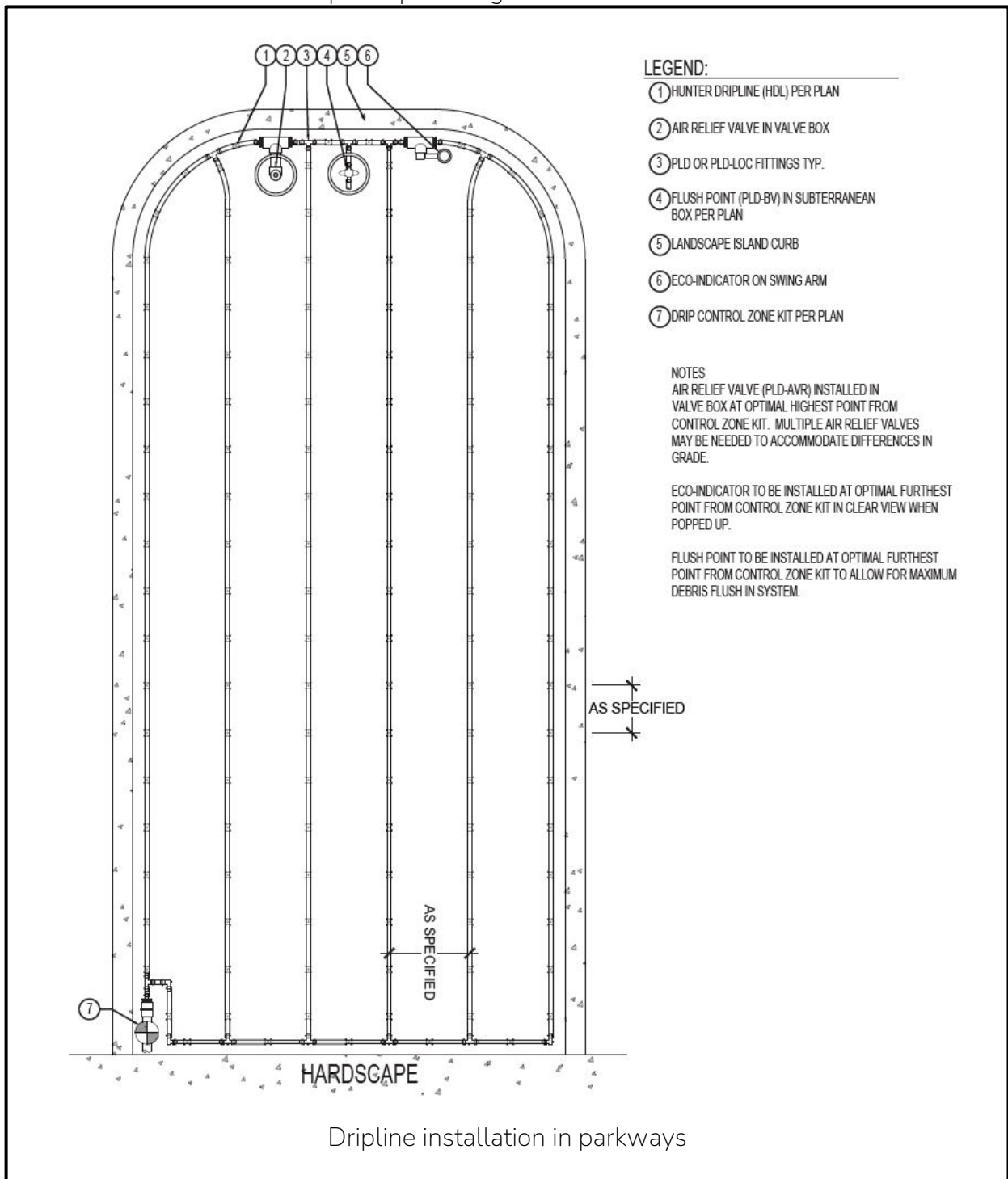
Irrigation Details



Dripline drip ring at tree



Multiple dripline rings at trees and shrubs.



For addition details see:

[https://www.hunterindustries.com/documents/?f\[0\]=im_field_product_type:225&f\[1\]=im_field_related_products:82171](https://www.hunterindustries.com/documents/?f[0]=im_field_product_type:225&f[1]=im_field_related_products:82171)

