Elmer Avenue Maintenance Manual

Spring 2010

TreePeople

Printed June 25, 2010

How to cite this document:
Los Angeles & San Gabriel Rivers Watershed Council. 2010. *Elmer Avenue, Maintenance Manual*. Los Angeles & San Gabriel Rivers Watershed Council. Los Angeles, CA.

Manual text by Ellen Mackey and Blake Whittington, Los Angeles & San Gabriel Rivers Watershed Council

Maintenance Checklist by Ellen Mackey, Los Angeles & San Gabriel Rivers Watershed Council

Introduction by Guy Stivers, Stivers & Associates, Inc.

Editorial and text contributions by Linda Eremita, TreePeople

Spanish translation by Diana Valori

Graphic layout by Blake Whittington, Los Angeles & San Gabriel Rivers Watershed Council

Photograph by Los Angeles & San Gabriel Rivers Watershed Council except as noted on the **Photo Credits**, page 47

Acknowledgements:

Patricia Araiza, City of Los Angeles, Bureau of Street Services

Edward Belden, Los Angeles & San Gabriel Rivers Watershed Council

Lisa Cahill, TreePeople

Rebecca Drayse, TreePeople

Linda Eremita, TreePeople

Pam Gibson, TreePeople

Chris Imhoff, TreePeople

Jason Schmidt, TreePeople

Send errata to: emackey@mwdh2o.com

Elmer Avenue Maintenance Manual was produced to ensure that the Water Quality and Water Conservation improvements would be cared for and function for years to come. These landscapes were installed as part of the Elmer Avenue Neighborhood Retrofit a demonstration project of the Water Augmentation Study. The manual was produced and project was completed with financial support from U.S. Bureau of Reclamation, California Department of Water Resources-Proposition 50 Grant, County of Los Angeles Department of Public Works, Metropolitan Water District of Southern California, Water Replenishment District of Southern California, Los Angeles Department of Water and Power, City of Los Angeles Bureau of Sanitation, TreePeople, and the City of Santa Monica.

Table of Contents

Resident Responsibilities:

Congratulations! This is the owner's manual for your new landscape!

- You are responsible for the maintenance of the landscape plantings on your property and in the parkway swale. Follow maintenance tasks on the **Maintenance Checklist** (see back of manual).
- Replace dead plants with same species or those of similar water and space needs (see page 9).
- Remove leaves, debris, and litter from storm drains, inlets to swales, trench drains and downspouts to prevent blockages.
- Replace mulch as needed (see page 5).
- Report problems, such as, oil spills, accidents or water main breaks to the City of Los Angeles at 311.
- Be careful to ensure that no oils, soaps or liquids wash off your driveway, as what you do upstream flows to your neighbor.
- Keep the sidewalks, driveways, and curbs free of debris, litter and spreading plants.
- Call TreePeople for tree pruning issues (see below for contacts).

Help/Contacts:

Tree problems, pruning requests or irrigation problems on private property: Marcos Trinidad - TreePeople Tree Care Coordinator; mtrinidad@treepeople.org, (818) 623-4892.

Parkway problems: Jason Schmidt - TreePeople Program Assistant, Natural Urban Systems Group; jschmidt@treepeople.org, (818) 623-4884.

Graffiti and storm drain blockages: City of Los Angeles - call 311 Bureau of Sanitation.

Additional project questions: Edward Belden-Water Programs Manger, Los Angeles & San Gabriel Rivers Watershed Council; edward@lasgrwc.org, (213) 299-9947.

Kids help spread mulch.

Introduction to Your Swales and Landscape

Your front yard landscape was designed to be beautiful, to use low amounts of water for irrigation, and to reduce polluted stormwater from draining into our local creeks, rivers and ocean. The sunken landscape areas of your yard are called "swales." They capture and clean stormwater that drains from the street and your property. Stormwater that drains to the swales provides irrigation for your plants and is naturally cleaned as it filters through the soil to an underground aquifer where it is stored.

Your landscape is "California Friendly." It has a mix of native California and Mediterranean plants that thrive in your climate, soils and region. Once established, this landscape requires less maintenance, 60% less water than a traditional lawn, and ***no*** fertilizer, herbicides, pesticides or insecticides.

However, your new landscape is not maintenance free and will require some work to ensure its long, healthy, and productive life. General maintenance tasks for the plants and irrigation system are covered in this manual as well as the specific tasks to take care of your swales.

What's in this Manual and How to Use It

Your new landscape is unusual and cutting-edge. This manual is designed to assist you in retaining the lovely look and functionality of your landscape. The first page gives you information at a glance. Along with the foldout **Maintenance Checklist**, it contains the minimum information to keep your yards fresh and functional.

Additional information follows for those who want to delve into the information on these unique yards. These pages include information on lawn care, weeding, mulching, irrigation, pest control, rain barrels, porous pavers, and more.

The Appendices contain in-depth information including plant-specific pruning information with pictures. You can bring the manual with you to the nursery should you require plant replacements for your garden.

The **Common Weeds** identification section follows **Plants** in the Appendix (see page 25).

Your manual has the planting, irrigation, and construction plans ***for your home***.

The **Maintenance Checklist** at the end is a comprehensive list of tasks throughout the year to keep your garden looking and working its best. This laminated schedule will probably wear out from overuse – good!

It is our hope that if you should move you will pass on this manual to the next owners or renters.

Parkway Swale.

Watering:

☑ **Overwatering will kill plants.**

☑ **Water plants more in winter and less in summer.**

☑ **Water grass less often but for longer time at each watering.**

☑ **Avoid overhead watering.**

Most of the plants in your new landscape are Mediterranean plants. They thrive in cool, wet winters and hot, dry summers, which means *cool, moist soils and hot, dry soils*. This regimen is different from that we've become accustomed to in Southern California. Mediterranean plants *want winter water,* so ensure that the swales are supplying the plants the rainwater they need when they need it. Some of these plants will die if given routine water in the summer because they do not have the defense systems in their roots to ward off the bacteria and fungus that will sap their strength and kill them in warm, moist soils.

Lawns require more and routine water when compared with these landscape plants.

The irrigation system for the parkway swales is controlled by the City of Los Angeles for the first two years. After these two years (summer 2012), you may connect the swale irrigation system to your own water supply. After the first two years most of the plants in the parkway should be well established, however they might need extra water in the summer. Most of the irrigation is through a sub surface drip irrigation system (see page 11).

The irrigation system for your residence is your responsibility. If you have a Smart-controller, set it for lawns and swales separately. See the controller manual for directions.

- Spring through fall, check soil around the plant base once a week and water plants if dry. Soils should *NOT* be continuously wet or plants will probably die. During the winter no additional water should be needed in normal rain years. In winters of drought years follow the instruction for watering in drier seasons, spring through fall.
- Your irrigation system is set to water the trees in your yard (the parkway swale trees are watered by city irrigation which will also stop after two years). Check them weekly in the summer by digging into the soil 4" deep. If the soil is dry, give them 15 gallons of water.
- After the first three years water plants deeply every three weeks in summer. Occasional, deep watering produces deep roots.

Avoid overhead watering on anything but the lawn. Using a sprinkler gets the leaves wet and can cause diseases, especially when the weather is warm.

If available, use a soil probe to check soil moisture.

Weeding

Pull out weeds when young to prevent weeds from spreading.

☑ **Hand weed regularly.**

☑ **Prevent weeds by replacing mulch as it disappears.**

☑ **Avoid chemical herbicides and fertilizers.**

A weed is a plant growing in the wrong place. If you don't recognize the plant as belonging in your landscape, remove it.

Remove weeds while they are still young and can be removed easily and before they set seed. If you wait and the weed flowers and fruits, you will have a continuous problem with that weed.

Pulling weeds by hand is best and least destructive. Application of mulch will keep weeds out, but there will always be weed seeds finding a way into your garden.

We recommend you try to avoid chemical herbicides and rely on nurturing the natural systems that reduce garden problems.

Also, avoid fertilizers as their addition may favor weeds over your newly installed plants!

See **Common Weeds** on page 25.

Pull out nut sedge as soon as you can

Mulching

Beautiful, fragrant mulch.

☑ **Replace mulch as needed to keep a 3 to 4 inch cover.**

Mulch is a protective layer on soil that serves many purposes:

- Discourages weeds
- Keeps soil moist
- Protects the soil from heat and cold
- Prevents a hard crust from forming on the soil surface
- Reduces soil compaction
- Prevents soil erosion
- Slowly releases nutrients to soil so ***no*** more fertilizers are needed

Mulch is an important part of weed control. Keeping a 3 to 4 inch layer of mulch is key to a weed-free landscape.

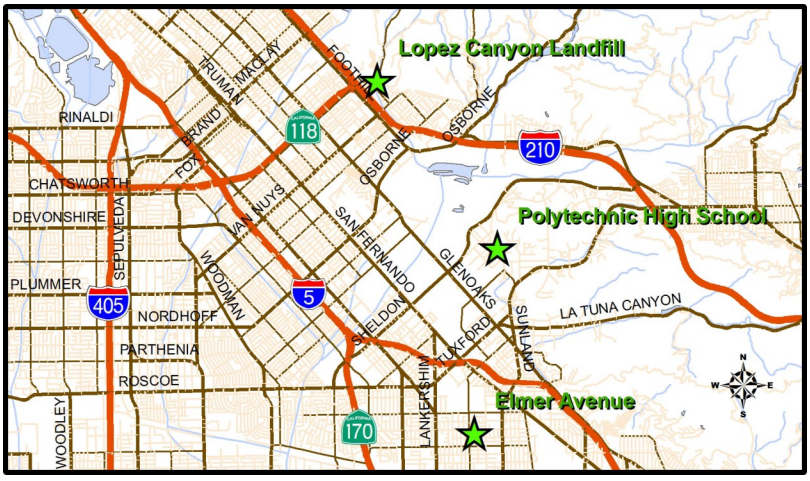
There are 2 types of mulch in your landscape—organic mulch on the swale sides and rock mulch on the bottom of the swales. Replace both kinds as they move or disappear.

Keep mulch 2 to 3 inches away from the base of plants or the plant will rot.

Mulch should be weed-seed free or you will invite more problems to your yard.

Mulch can be made on-site with a shredder or chipper, or picked up at local sites such as:

- The Lopez Canyon Landfill site – 11950 Lopez Canyon Rd. at Paxton St. 7 a.m. to 5 p.m., 7 days a week.
- Behind Polytechnic High School – 12455 Wicks St. Sun Valley; 7 a.m. to 5 p.m., 7 days a week.



Two sources of garden mulch.

Natural Pest, Weed & Disease Control

Insects and Reptiles

☑ **Do nothing! Allow natural systems to control pest damage.**

Many garden insects are controlling (eating) other insects. Ladybug larvae, common black ground beetle, brown and green lacewings, praying mantis, and centipedes are your assistants. Don't kill them with insecticides. One ladybug will eat 5,000 aphids.

Lizards are valuable predators in your garden as they too eat hundreds of insects per day. Make homes for them by adding rocks on the surface of open areas as cover from their predators, cats and children. Remind children that these helpful animals are working daily to keep your garden insects under control.

Lizards and insects are not pests and can't help you if harassed by children. Let them do their job.

Information exists online at various web sites to help correctly identify insect pests. Please see the **Resource** section at the back of this manual for more information.

Disease

Most losses of native plants are caused by overwatering. Avoid overhead watering to manage a number of plant diseases.

Checking soil moisture and watering when needed is the most effective way to reduce bacterial and fungal problems.

If plants have died due to bacterial or fungal problems, remove and dispose of the entire plant.

Please see the **Resource** section at the back of this manual for more information on identifying and preventing disease.

Ladybug larvae – good guy.

Ladybug pupa – good guys.

Common black ground beetle – good guy.

Praying mantis - good guy.

Pruning

The trees, shrubs, groundcovers and perennials will need their branches pruned from time to time. The **Maintenance Checklist** tells you when the best time is to prune the different plants. And the list of **Plants** with photos and definitions in the Appendix gives further information. Gather up pruned material and place in Green Bin.

Trees should be pruned only with thinning or removal cuts. These are cuts just beyond the branch collar (the bulge at the base of the branch) and the branch bark ridge (the ridge of bark where the branch attaches to the trunk).

If you have tree pruning questions, please contact Marcos Trinidad with TreePeople at (818) 623-4892 or mtrinidad@treepeople.org.

Here are some pruning definitions to guide you:

Dead-heading – Removing old or dead flowers.

Divide – A technique to rejuvenate an older clumping plant (such as iris or red yucca). The large, old plant is cut or divided into smaller clumps, making sure to include the roots. A shovel is often used to slice through the plant. These smaller clumps can be planted or composted.

Edging – Pruning a plant back along an edge, such as a driveway or along a path. Typically done for groundcovers.

Heading, Head back, or **Cut back** – Cutting all the branches of the plant back to the same length. Depending on the plant, this may mean cutting it back to the ground (such as with blue-eyed grass), leaving only a few inches (as with Douglas' iris or Matilija poppy), or cutting off only a few inches (as with Spanish lavender). Trees are never headed.

Pinching (also known as **Tipping)** – Removing only the ends or tips of branches. Used to make a plant more full or dense.

Pruning "hard" or "soft" – "Hard" or "soft" refers to how much the plant is being pruned. A plant that is cut back to the ground or only leaving a few inches is said to be cut back "hard." Plants that are cut back only a little are cut back "soft."

Shearing – Heading cuts used to create a hedge, or more uniform shape.

Suckers – small branches that grow from the base of trees. Remove them with thinning cuts.

Thinning cut, Removal cut – The whole branch is removed back to the branch collar (the bulge at the base of the branch). Do not cut the branch flush with the trunk or cut into the branch collar or the branch bark ridge (the ridge of bark on the trunk at the branch connection).

Remember: If you lose a plant, it's just a plant. Replace it with the same species and check the watering.

Lawn Care

New Blue Fescue Lawns

Your new drought tolerant blue fescue lawn requires little care. Once it is established it should need no additional watering.

The grass may be cut back in the spring if desired.

It is often recommended to divide the clumps of blue fescue every few years. This may be done to prolong the life of the lawn.

Traditional Lawns

Newly installed lawn.

Cut grass regularly; set cutting height between three and four inches high.

☑ **Water less often, but for a longer time at each watering.**

☑ **If you**

Lawn care is often seen as a battle between encouraging healthy grass and eliminating weeds. However, a few shifts in lawn care practices can ensure healthy grass and reduce weeds at the same time.

Thick, tall grass with deep roots will naturally choke out weeds. Set your mower high, at least three inches and as much as four inches off the ground. The grass will produce more food for itself. The additional height shades out weeds and keeps the soil cooler reducing the need for watering. Cutting higher reduces the number of seeds cut back and encourages more and thicker grass. Be sure to leave the grass cuttings on the grass to replace organic material and deepen the layer of topsoil.

On the other hand, it is important not to let the grass grow too long between cuttings. Cutting four and a half inch grass to four inches does much less damage to the grass than cutting six inch grass back to four inches.

Over time your lawn will produce thatch. Thatch is a layer of dead roots, crowns and lower grass shoots that forms between the soil surface and the green grass. Grass clippings left on the lawn DO NOT become thatch. Since your lawns are new, do not expect any thatch build up for a few years.

A thin layer of thatch (1/2”) is normal and healthy. It becomes harmful only when the layer is too thick thus preventing water, nutrients and air to get down into the soil. Thick thatch can also allow diseases to infest your lawn.

To dethatch the lawn, use a thatching rake. Raking the lawn will pull the thatch to the surface where you can use a leaf rake to collect and remove it. There are also dethatching machines which you can rent.

Watering less often, but for longer periods puts water lower in the soil, encouraging deeper grass root growth. Deeper grass roots crowd out weed roots. Deeper roots are also less susceptible to drought. Frequent, lighter watering does more for weeds than grass. The frequency and amount of watering depend on both the condition of the soil and the type of grass.

When fertilizing lawns use an organic fertilizer, preferably one which is time-release. Regular (non-organic) fertilizers are high in salts which cause two problems.

- Salts tend to kill the good organisms living in the soil, like worms.
- Salts build up in soils over time making them less and less productive.

Choosing the Right Plant for Replacement

☑ **Replace dead plants with the same species or one of similar size and watering requirements.**

Plants die. That is a fact of life. When a plant dies and you want to replace it, the best option is to replace it with the same species.

If you don't know what species it was or can't find that plant, the next best thing is to replace the plant with one which is similar in maximum size and water requirements.

Check the plant lists in the Appendices of this document for information about each plant on the list for the Elmer Avenue project.

Replace dead plants with similar species.

Parkway Swales

- ☑ **Keep parkway swales free of debris.**
- ☑ **Pull weeds. Do not use herbicides, insecticides and fertilizers (see Common Weeds page 25).**
- ☑ **Once a month, sweep-up dirt and debris in the street gutters, clear curb inlets and put debris into trash.**
- ☑ **Do not spray-wash any chemical spills or cleaners into swales. When cleaning the driveway use non-toxic, environmentally friendly cleaners.**
- ☑ **For bare soil areas in the swale place 2"- 3" deep, organic mulch. This will reduce erosion, increase soil moisture, and provide nutrients to the plants.**

Parkway swale with stormwater.

The parkway swales running the full length of Elmer Avenue on both sides take water from the street and runoff from residential lots, clean the water and allow much of the water to infiltrate into the soil. Drip irrigation for the plants along the parkway swale is provided by the City for the first two years.

After the two years, residents may connect the swale irrigation system to their own household water supply. Contact a licensed landscape contractor for assistance.

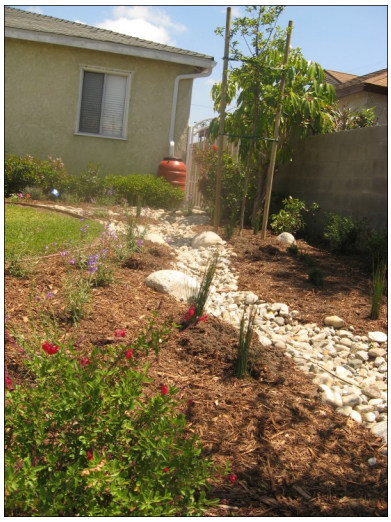
Once plants are established the only maintenance tasks include:

- keeping the swale and pipes free of debris, which could block the flow of water
- keeping plants pruned
- adding additional mulch as necessary.

It is also important not to compact the gravel in the swale. Walking on it should be minimized.

See the **Plants** section starting on page 17 for plant maintenance guidance.

Front Yard Swales



Front yard swale.

- ☑ **Keep swales free of debris.**
- ☑ **Pull weeds. Do not use herbicides, insecticides, and fertilizers (see Common Weeds page 25).**
- ☑ **Where the swale meets the sidewalk, clean concrete surface of dirt and rocks, and put debris into trash.**
- ☑ **Prior to the wet season (Oct.-March) adjust rain gutters and barrel overflows to drain toward the yard swale.**

Swales installed in front yards conduct rain water from down-spouts or rain barrel overflow lines and allow it to infiltrate into the ground or run into the parkway swale.

It is possible that the plants in and around the swale will need extra water the first year or two during the summer. Swales have underground irrigation. See the **Watering** section for more information.

Once plants are established the only maintenance tasks include:

- keeping the garden and pipes free of debris, which could block the flow of water
- keeping plants pruned
- adding additional mulch as necessary.

It is also important not to compact the gravel in the swale. Walking on it should be minimized.

See the **Plants** section starting on page 17 for plant maintenance guidance.

Irrigation System:

Irrigation system layout for parkway swale.

- ☑ **Regularly check proper functioning of sprinklers and drip emitters while in use. Adjust and repair as necessary.**

Much of the irrigation for the parkway swales and the individual residence landscaping is through a drip irrigation system that is underground and requires no maintenance. However, residents should watch for signs of trouble. Water pooling could indicate a leak or broken pipe. Consistently dry patches could indicate clogged emitters. In either case professional assistance is probably necessary. Call TreePeople for parkway problems (see page 1) or contact a licensed landscape contractor for residence assistance.

Some residences have above ground sprinklers which require inspection at least twice a year. Check that spray is covering the intended area. Common problems are broken risers, spray heads turned away from intended area, and clogged spray heads.

Rain barrels and Rain Gutters

Rain barrel and spout.

☑ **Use water in rain barrels to water your landscape.**

☑ **Rain gutters and rain barrels should be cleaned once per year.**

☑ **Rain barrels should be drained before each new rain.**

Even with the gutter guards, the rain gutters and down spouts can become clogged with dirt and small debris. Gutters can be cleaned by hand, with a small trowel or similar tool or with a high pressure sprayer. Care should always be taken when using ladders.

All rain barrels have the same four main parts; the barrel, an inlet with filter at the top, a hose spigot at the bottom and an overflow pipe or hose.

Rain barrel overflow spigot.

The inlet filter should be kept clear of leaves and other large debris at all times.

Dirt, small debris and roofing material will get into the rain barrels and settle in the bottom. This should be rinsed out once per year. Any scum buildup should be cleaned out at the same time. It is possible for debris buildup to clog the hose spigot. Clean out the debris if water does not flow out of the spigot.

When it rains the rain barrels will fill and begin overflowing. This means that the overflow should be directed *away* from the house foundation and *towards* the swale if possible. In order to reduce the overflow during rain, the barrels should be emptied to appropriate locations in the yard before the next rain.

Rain gutters and rain guards are white painted, galvanized steel manufactured by Amerimax.

Rain barrels installed are Chicago Rain Barrel Regular Overflow model.

Trench Drain

Trench drain at base of driveway.

☑ **In October, remove trench drain grates in driveway and sweep-up dirt and debris in the trench. Using a garden hose, flush drain pipe from trench drain to the swale, pick up all debris and deposit into trash.**

Drains should be checked before and after rain events for debris or trash which will prevent proper water flow through the swales.

Trench drains in driveways are bolted down and may be unbolted to gain access for cleaning. Bolt heads are 9/16", and may be opened with a 9/16 in. or 14 mm socket wrench.

Permeable Pavers

☑ **Sweep pavers as part of regular yard maintenance.**

Permeable pavement and pavers allow water to infiltrate into the ground through the gravel between pavers.

It is important to keep leaves and other large debris from covering and clogging the spaces between pavers and reducing infiltration over time.

Sweeping during regular yard maintenance will help prevent clogging. Weed seedlings can start growing in these spaces. Routine sweeping reduces weed maintenance by disturbing weeds while still small.

Permeable pavers in driveway.

The pavers used are Uni Eco-Stone, antique red, placed in a herringbone pattern.

Permeable Concrete in Right-of-Way

☑ **Sweep permeable concrete monthly.**

Permeable concrete allows water to infiltrate through pores in the concrete. If these pores get clogged, then water cannot pass through the concrete.

Keep the permeable concrete clean by monthly sweeping.

Once per year vacuum with a wet/dry vacuum.

Hosing down the concrete can force debris into the pores and so should not be used as a cleaning method.

Permeable concrete close-up.

Permeable concrete next to curb.

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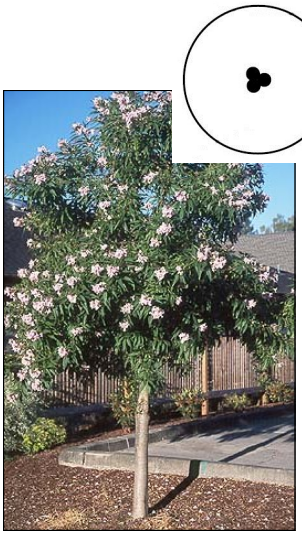
Appendices

Plants

Trees

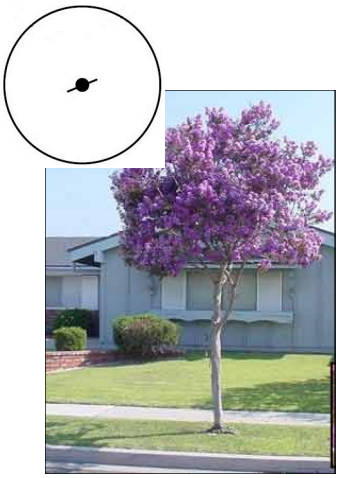
***Cercis occidentalis* (western redbud)**

Magenta flowers followed by round leaves.
Prune after flowering if needed or in winter, remove shoots at trunk base.



***XChitalpa tashkentensis* 'Pink Dawn' (Pink Dawn chitalpa)**

Pale pink trumpet-shaped flowers in spring and summer.
Prune in winter if needed, remove shoots at trunk base.

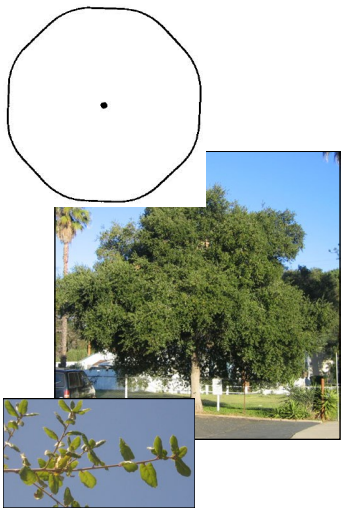


***Lagerstroemia indica* (crape myrtle)**

Lavender flowers in summer.
Prune in winter if needed.
Shoots from the trunk base may be pruned out in winter or summer.

***Plantanus racemosa* (sycamore)**

Large, fuzzy palmate leaves.
'Drop earring' seed pods.
Clean-up large leaves.



***Quercus agrifolia* (coast live oak)**

Large evergreen oak.
Don't water in the summer, except for the first few years.
Prune August to September.

Perennials and Shrubs

***Achillea* 'Moonshine' (Moonshine yarrow)**

Yellow flowers in late spring to early fall.
Cut back dead flower stalks.
Sensitive to overwatering.

***Anigozanthos* 'Harmony' (Harmony kangaroo paw)**

Prune the whole plant to ground level in summer after flowering to promote flowers the following spring.

***Arctostaphylos edmundsii* 'Carmel Sur' (Carmel Sur manzanita)**

Groundcover. Prune in May or June.
Cut back long stems to the main stem where needed.

***Arctostaphylos* 'Emerald Carpet' (Emerald Carpet manzanita)**

Groundcover. Prune in May or June.
Cut back long stems to main stem where needed.
Pinch stems for fuller look.

***Buxus microphylla* (Japanese boxwood)**

Prune/shear in early summer after flowering if needed.

○ ***Carex pansa*** **(California meadow sedge)**

Looks like a grass.
Mow to several inches tall in late summer/ fall if needed.

Ceanothus griseus **var. *horizontalis***
(Carmel Creeper ceanothus)

Groundcover to 15' wide.
Sensitive to overwatering.
Prune in spring after flowering; remove old flower stems.

C ***Cistus salvifolius*** **(sageleaf rockrose)**

Shrub. Trim back after flowering; pinch/ shear in summer for fuller shrub.

Dudleya virens **ssp. *hassei***
(Catalina Island dudleya) Ⓓ

Remove flowering stems as needed.

Dymondia margaretae **(dymondia)**

Green leaves with white edges.
Very drought-tolerant after establishment.
Mow as needed.
Needs regular water.

Epilobium canum **'Everett's Choice'**
(Everett's Choice California fuchsia)
(also called *Zauschneria*)

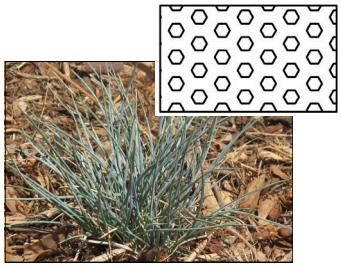
After first 2 years, cut plant back leaving 2" stems in winter.
Check for unwanted seedlings.
Some insects can be a problem.

***Erigeron karvinskianus* (Mexican daisy)**

Best if cut back occasionally in winter.

***Eschscholzia californica* (California poppy)**

The California State flower.
Toss seeds over landscape in late fall.



***Festuca glauca* 'Elijah Blue'**
(Elijah Blue blue fescue)

Cool season grass; may turn brown in hot summers.
Trim in winter months.

***Galvezia speciosa* (island snapdragon)** G

Prune branches in late winter and pinch ends in June to encourage a fuller look.

Daniel Southard

H ***Helianthemum nummularium* (sunrose)**

Groundcover. Cut back in summer after flowering for repeat bloom and to prevent long, thin stems.

***Hemerocallis* 'Rusty Red'**
(Rusty Red daylily)

Remove spent flowers daily.
Divide crowded plants at plant base in early spring or late fall.

Hp ***Hesperaloe parviflora*** **(red yucca)**

Perennial.
Cut off dead flower stalks and leaves.
Clumps can be divided in late winter.
Very little care needed.

Heuchera sanguinea **(coral bells)** ⊙

Dry shade plant that needs a little more water.
Prune back old stems in late fall.
Prune flower stalks after blooming.

■ ***Iris*** **sp. (bearded iris)**

Perennial.
Grows from rhizomes.
Divide every three or four years.

Iris douglasiana **(Douglas' iris)** ◑

Cut back in late fall leaving 1"-2".
When the clump gets large, divide in the fall after the first good rain.
Excessive water may rot plants.

Ⓙ ***Juncus patens*** **(California gray rush)**

Prune as needed.
Can take very little or a lot of water.

Lavandula stoechas **'Otto Quast'** Ⓛ
(Otto Quast Spanish lavender)

Shrub. Deadhead old blooms and prune back a few inches after flowering to keep it dense.

C

***Leymus condensatus* 'Canyon Prince'**
(Canyon Prince giant wild rye)

A large, cool-season grass.
Cut the clumps back to the ground in late summer/ early winter when they become too large.
Divide them at this time to remove what doesn't fit.

Limonium californicum
(California sea lavender, coastal statice)

Cut flowers at stalk base.
Dry flowers and use year round.

R

***Muhlenbergia rigens* (deer grass)**

Cut back to 6" in May.
Divide in late winter/early spring if getting too large for the site.

***Penstemon heterophyllus* 'Margarita BOP'**
(Margarita BOP penstemon)

Perennial.
Cut stalks almost to the ground after flowering.
Be careful not to overwater.

***Rhamnus californica* 'Little Sur'**
(Little Sur coffeeberry)

Evergreen shrub.
Lightly pinch anytime; may be sheared.

***Rhaphiolepis indica* 'Ballerina'**
(Ballerina Indian hawthorn)

Evergreen shrub.
Many flowers late fall to summer.
Cut back long, thin stems after flowering.

***Ribes viburnifolium* (Catalina perfume)**

Groundcover. Evergreen currant.
Prune back upright shoots when they emerge.
Pinch back tips for dense growth.

***Romneya coulteri* 'White Cloud'**
(Matilija poppy)

Perennial. Prune all stems leaving 3"- 4" stubs in winter months.
Control underground stems by cutting them with shovel or plant will spread.

***Rosmarinus officinalis* 'Huntington Carpet'**
(creeping rosemary)

Strong fragrance when leaves are crushed.
Prune in spring after flowering.

Salvia chamaedryoides
(Germander sage, electric blue sage)

Cut back selectively by 1/3 in February.
Sensitive to overwatering in summer.

***Salvia greggii* (autumn sage)**

Cut back older stems by 1/3 in late winter.
Avoid summer pruning.
Prune again in October for winter color.

***Salvia leucantha* 'Midnight'**
(Midnight Mexican bush sage)

Cut back to 6" - 12" after flowering in late fall or winter to encourage new growth.

***Salvia spathacea* (hummingbird sage)**

Very fragrant leaves.
Grows in colonies from underground stems.
Cut out unwanted stems.
Remove dried stalks in summer.
Stake tall flowering stems if needed.

***Sisyrinchium bellum* (blue-eyed grass)**

Cut the dried leaves to ground in the summer.

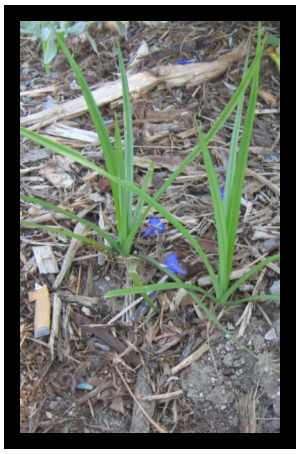
***Verbena peruviana* (Peruvian verbena)**

May grow to a thick 36" wide mat.
Remove old flowers.
Prune in late winter for spring growth.
Cut plants back to remove old wood and encourage new growth.

Common Weeds

***Barbarea vulgaris* (yellow rocket)**

Grows to about 3' tall.
Lower leaves are deeply lobed; upper leaves smaller.
Remove by hand.



***Cyperus esculentus* (yellow nutsedge)**

Grows to about 3' tall.
Found in areas with summer irrigation and is common on Elmer Ave.
Reproduces by seeds and bulbs.
Caution: remove plants when first seen or will infest entire area.

***Erodium cicutarium* (redstem filaree)**

Small pink to reddish-lavender flowers with 5 petals.
Divided leaves from a rosette on the ground.
Seeds resemble a stork's head or beak.
Removal before seeds mature.

***Washingtonia robusta* (Mexican fan palm)**

Long bright, green single leaf with 'ribs'.
Remove entire plant plus roots when about 6" long.

***Hypochaeris glabra* (smooth cat's ear)**

Grows to about 1 ½' tall.
Bottom leaves are shallowly lobed.
Exudes a milky juice when cut.

***Malva parviflora* (little mallow)**

Grows to about 2' tall;
generally low-growing and spreading.
Palmate leaves.
Remove before seeds mature.

Common Weeds

***Medicago* spp. (burclover)**

Stems grow horizontally and can form dense mats as stems root.
Leaves are clover-like with 3 heart-shaped leaflets.

***Oxalis corniculata* (creeping woodsorrel)**

Low-growing perennial with creeping stems.
Shamrock-like leaves with green to dark purple undersides.
Remove by hand to control mature plants and seedlings.

***Plantago lanceolata* (English plantain)**

Swirl of 6”-8” slender leaves at the ground.
Leaves have parallel veins.
Plant has a taproot.
Remove by hand.

***Polygonum arenastrum* (common knotweed)**

Stems grow horizontally with wiry stems to 3’.
Leaves are small and directly attached to stems.
Remove by hand before seeds mature.

***Sonchus oleraceus* (annual sowthistle)**

Grows to 4’ tall, lanky.
Leaves are divided at the plant base and clasp around the bases of stems.
Leaf edge is slightly prickly.
Exudes a milky juice when cut.

***Trifolium* spp. (clover)**

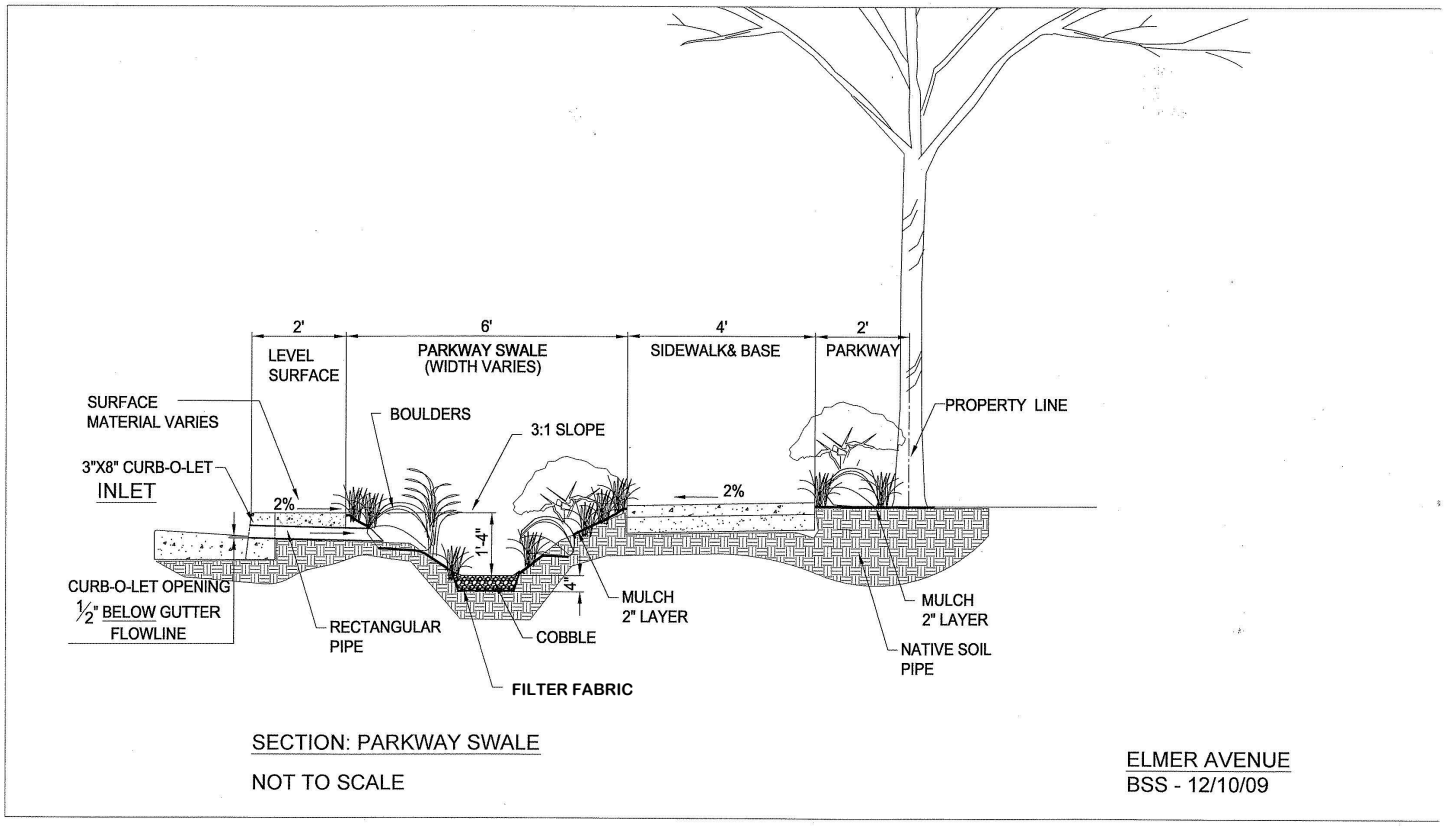
Spreading plant, but may grow to 2’ tall.
White, yellow, pink or red flowers.
Shamrock-like leaves.
Remove by hand before seeds mature.

Plant list by Common names

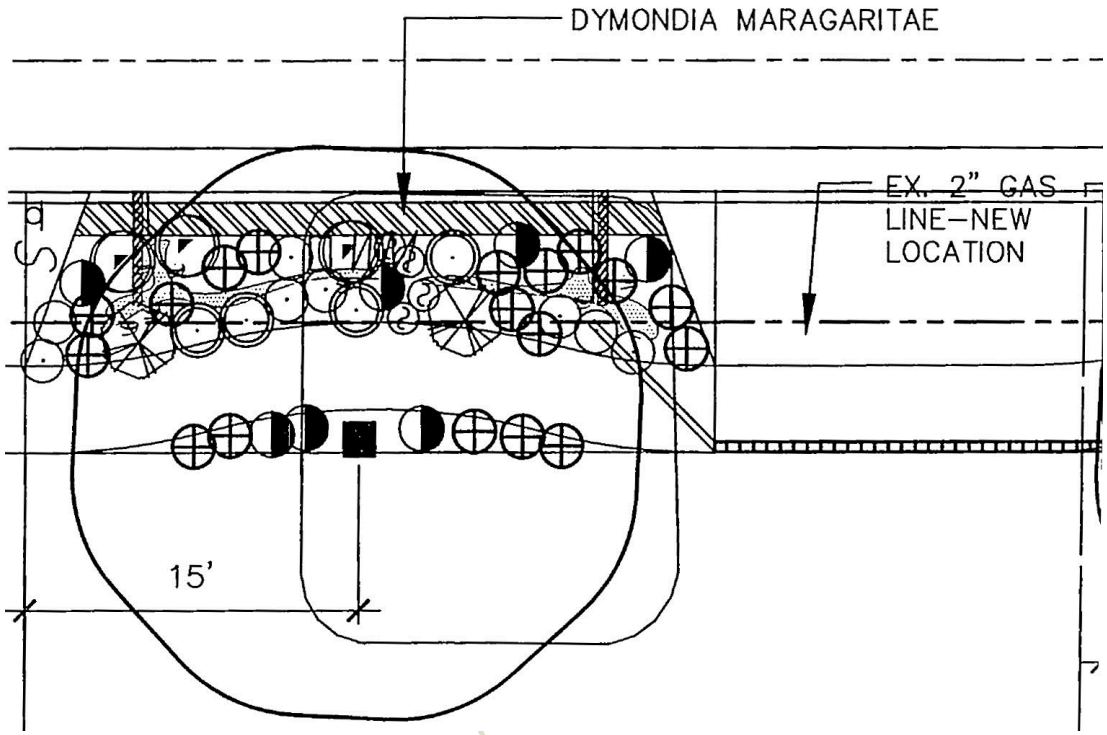
Common name	Scientific name
Trees	
coast live oak	*Quercus agrifolia*
crape myrtle	*Lagerstroemia indica*
Pink Dawn chitalpa	*XChitalpa tashkentensis* 'Pink Dawn'
western redbud	*Cercis occidentalis*
western sycamore	*Platanus racemosa*
Perennials and Shrubs	
autumn sage	*Salvia greggii*
Ballerina Indian hawthorn	*Rhaphiolepis indica* 'Ballerina'
bearded iris	*Iris* sp.
blue-eyed grass	*Sisyrinchium bellum*
California gray rush, common rush	*Juncus patens*
California meadow sedge	*Carex pansa*
California poppy	*Eschscholzia californica*
California sea-lavender, coastal statice	*Limonium californicum*
Canyon Prince giant wild rye	*Leymus condensatus* 'Canyon Prince'
Carmel Creeper ceanothus	*Ceanothus griseus* var. *horizontalis*
Carmel Sur manzanita	*Arctostaphylos* 'Carmel Sur'
Catalina Island dudleya	*Dudleya virens* ssp. *hassei*
Catalina perfume	*Ribes viburnifolium*
coral bells	*Heuchera sanguinea*
creeping rosemary	*Rosmarinus officinalis* 'Huntington Carpet'
deergrass	*Muhlenbergia rigens*
Douglas' iris	*Iris douglasiana*
dymondia	*Dymondia margaretae*
Elijah Blue blue fescue	*Festuca glauca* 'Elijah Blue'

Emerald Carpet manzanita	*Arctostaphylos* 'Emerald Carpet'
Everett's Choice California fuchsia	*Epilobium canum* 'Everett's Choice'
Germander sage, electric blue sage	*Salvia chamaedryoides*
Harmony kangaroo paws	*Anigozanthos* 'Harmony'
hummingbird sage	*Salvia spathacea*
island snapdragon	*Galvezia speciosa*
Japanese boxwood	*Buxus microphylla*
Little Sur coffeeberry	*Rhamnus californica* 'Little Sur'
Margarita BOP penstemon	*Penstemon heterophyllus* 'Margarita BOP'
Matilija poppy	*Romneya coulteri* 'White Cloud'
Mexican daisy	*Erigeron karvinskianus*
Midnight Mexican bush sage	*Salvia leucantha* 'Midnight'
Moonshine yarrow	*Achillea* 'Moonshine'
Otto Quast Spanish lavender	*Lavandula stoechas* 'Otto Quast'
Peruvian verbena	*Verbena peruviana*
red yucca	*Hesperaloe parviflora*
Rusty Red daylily	*Hemerocallis* 'Rusty Red'
sageleaf rockrose	*Cistus salvifolius*
sunrose	*Helianthemum nummularium*

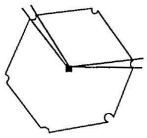
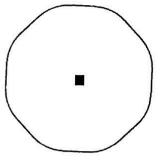
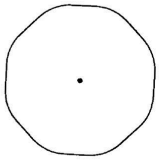
Parkway Swale Detail x-section (example)



Parkway Swale Planting Plan (example)



Parkway Plant List

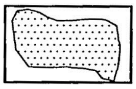
	BOTANICAL NAME	COMMON NAME	SIZE	QTY
	Cercis occidentalis (deciduous)	Western Redbud	24" box	9
	Platanus racemosa (deciduous)	California Sycamore	15 gal.	6
	Quercus agrifolia	Coast live Oak	24" box	11

NOTE: COORDINATE THE REPLACEMENT OF (3) ADDITIONAL TREES AT 11257 STAGG ST. QUERCUS AGRIFOLIA IS THE RECOMMENDED SPECIES.

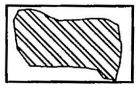
	BOTANICAL NAME	COMMON NAME	SIZE	QTY
	Achillea 'Moonshine'	Yarrow	1 gal.	9
	Anigozanthos 'Harmony' (Tall Yellow)	Kangaroo Paw	1 gal.	9
	Arctostaphylos edmundsii 'Carmel Sur'	Carmel Sur Manzanita	1 gal.	44
	Leymus condensatus 'Canyon Prince'	Wild Rye Grass	5 gal.	6
	Carex pansa	California Meadow Grass	1 gal.	171
	Iris bearded	Bearded Iris	1 gal.	61
	Iris douglasiana	Douglas Iris	1 gal.	87

Parkway Plant List (continued)

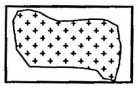
⊕	Juncus patens	California Gray Rush	1 gal.	483
⊙	Limonium californicum	Lavender Sea Lavander	1 gal.	28
◔	Muhlenbergia rigens	Deer Grass	5 gal.	10
⊘	Penstemon heterophyllus 'Margarita Bop'	Penstemon	1 gal.	48
◎	Salvia chamaedryoides	Electric Blue Sage	5 gal.	176
⊙	Salvia greggii (red)	Autumn Sage	5 gal.	50
⊚	Sisyrinchium bellum	Blue–eyed grass	1 gal.	234



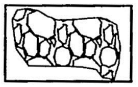
Cobble River Bed: Angular, earth tone, 1/4" – 1/8" size, 4" deep
Place on black landscape filter fabric
612 sf



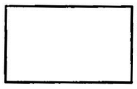
Dymondia margaritae – Silver Carpet
plugs at 6" o.c.
213 sf / 852 plugs



Carex pansa – California Meadow Segde
plugs at 8" o.c.
318sf / 713 plugs



River Rock–4" to 6" diameter
Locate around base of Oak Tree

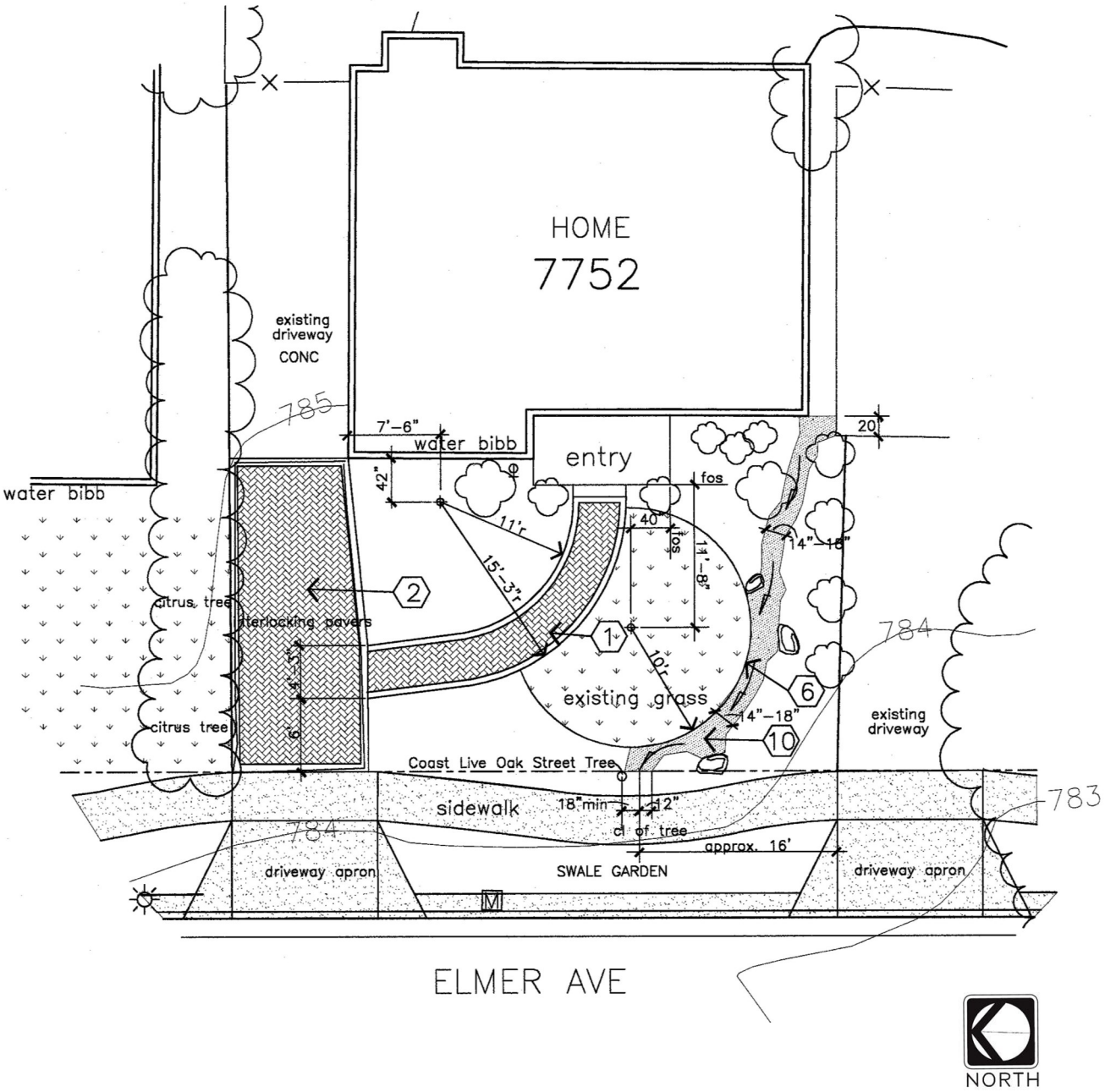


Mulch: 2" deep over all planter areas except where gravel has been placed

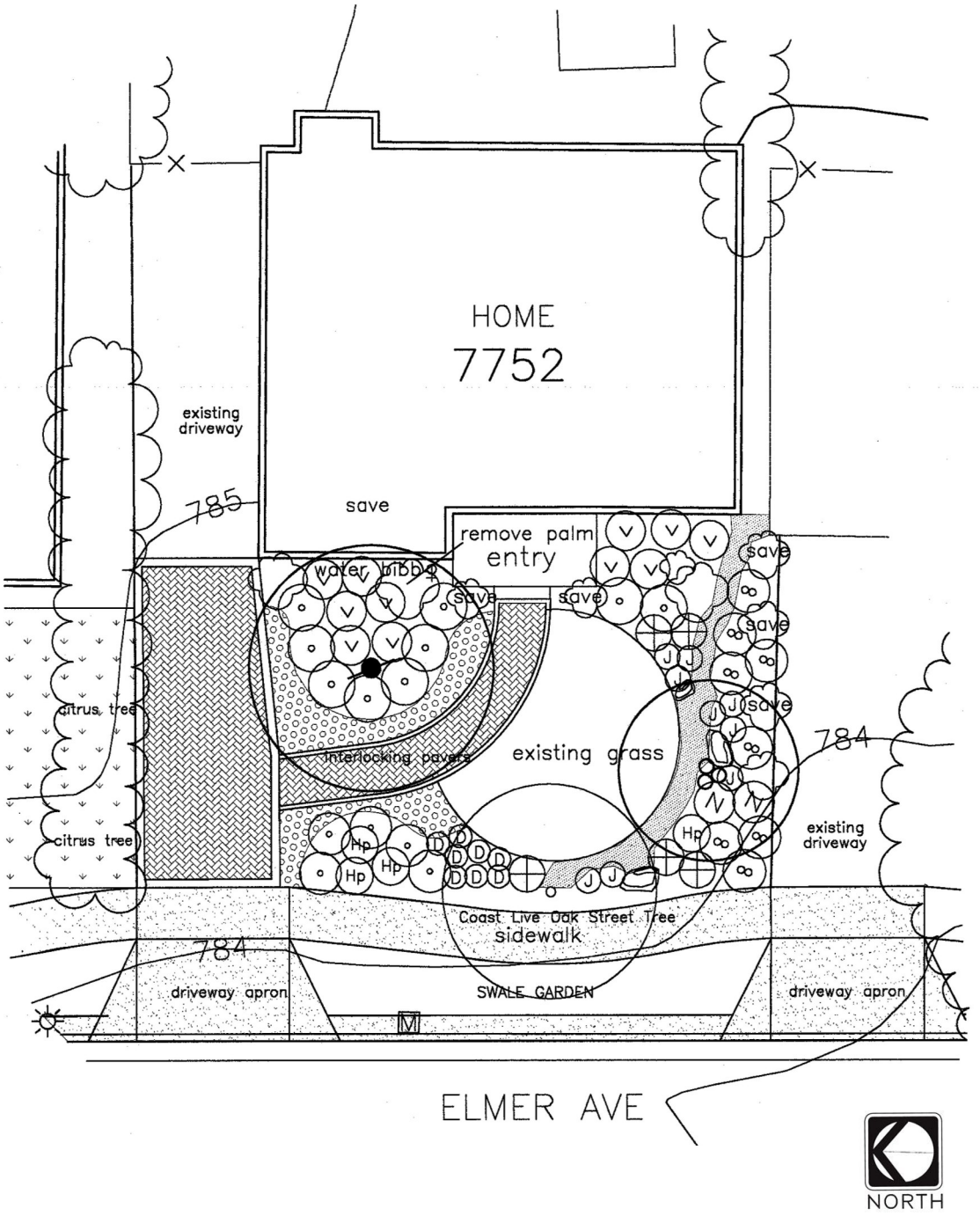
Decorative Rock: River wash boulders, 18" –30" size:

QUANTITY AND SIZE:
50 – 18"
50 – 24"
50 – 30"

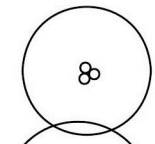
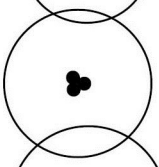
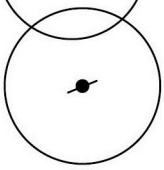
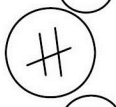
Residential Construction Detail



Residential Planting Detail

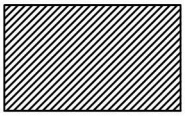


Residential Plant List

	BOTANICAL NAME	COMMON NAME	SIZE	ht.x width	
	Cercis occidentalis	Western Redbud	15 gal.	14' x 14'	
	X Chitalpa tashkentensis 'Pink Dawn'	Chitalpa	15 gal.	16' x16'	pink
	Lagerstroemia indica 'Muskogee'	Crape Myrtle	15 gal.	20' x 12'	
	Salvia leucantha 'Midnight'	Mexican Bush Sage	5 gal.	3'x4'	
	Epilobium californicum 'Everett's Choice'	California Fuchsia	1 gal.	18"x3'	
	Heuchera sanguinea	coral bells	1 gal.	18"x18"	
	Arctostaphylos edmundsii 'Emerald Carpet'	Emerald Carpet Manzanita	1 gal.	1'x5'	pink
	Rosmarinus officinalis 'Huntington Carpet'	Creeping Rosemary	1 gal.	18"x4'	
	Ceanothus griseus horizontalis	Carmel Creeper	1 gal.	18"x8'	
	Penstemon heterophyllus 'Margarita BOP'	Penstemon	1 gal.	1'x1'	
	Erigeron karvinskianus	Mexican Daisy	1 gal.	1'x2'	white
	Carex pansa	California Meadow Sedge	1 gal.	8"x1'	none
	Iris douglasiana	Douglas Iris	1 gal.	1'x2'	blue
alt for 7701	Hemmercallis hybrid 'Rusty Red'	Day Lily	1 gal.	2'x2'	
	Rhaphiolepis indica 'Jack Evans'	Indian Hawthorn	5 gal.	5'x4'	pink
	Salvia greggii	Autumn Sage	5 gal.	3'x4'	red
	Ribes viburnifolium	Catalina Perfume	1 gal.	3'x4'	pink
	Romneya coulteri 'White Cloud'	Matilaja Poppy	5 gal.	3'x4'	white
	Rhamnus californica 'LittleSur'	Coffeeberry	5 gal.	3'x4'	white
	Rhaphiolepis indica 'Ballerina'	Indian Hawthorn	5 gal.	3'x4'	pink

Residential Plant List (continued)

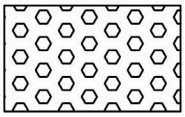
G	Galvezia speciosa	Island Bush Snapdragon	5 gal.	3'x4'	red
L	Lavandula stoechas 'Otto Quast'	Spanish Lavender	1 gal.	3'x4'	blue
C	Cistus salviifolius	Sageleaf Rockrose	1 gal.	3'x4'	white
Lm	Lantana montevidensis	Lantana	1 gal.	2'x4'	
H	Helianthemum nummularium	Sunrose	1 gal.	8"x3'	
Hp	Hesperaloe parviflora	Red Yucca	1 gal.	2'x3'	red
D	Dudleya virens ssp. hassei	Catalina Island Dudleya	1 gal.	6"x1'	none
J	Juncus patens	California Gray Rush	1 gal.	2'x2'	
S	Salvia spathacea	Hummingbird Sage	1 gal.	2'x3'	red



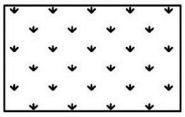
Meadow

Verbena peruviana	Verbena	1 gal. planted at 3' o.c.
Sisyrinchium bellum	Blue-eyed grass	Seeds 1 pound per 1,000 sq. ft.
Eschscholzia californica	California poppy	Seeds 1 pound per 1,000 sq. ft.

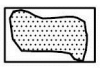
Cover seeded area with 1/4" deep "organic topper", and use water roller to tamp topper down.



Festuca glauca 'Elijah Blue' — Blue Fescue — Flatted ground cover, planted at 10" o.c.



EXISTING GRASS



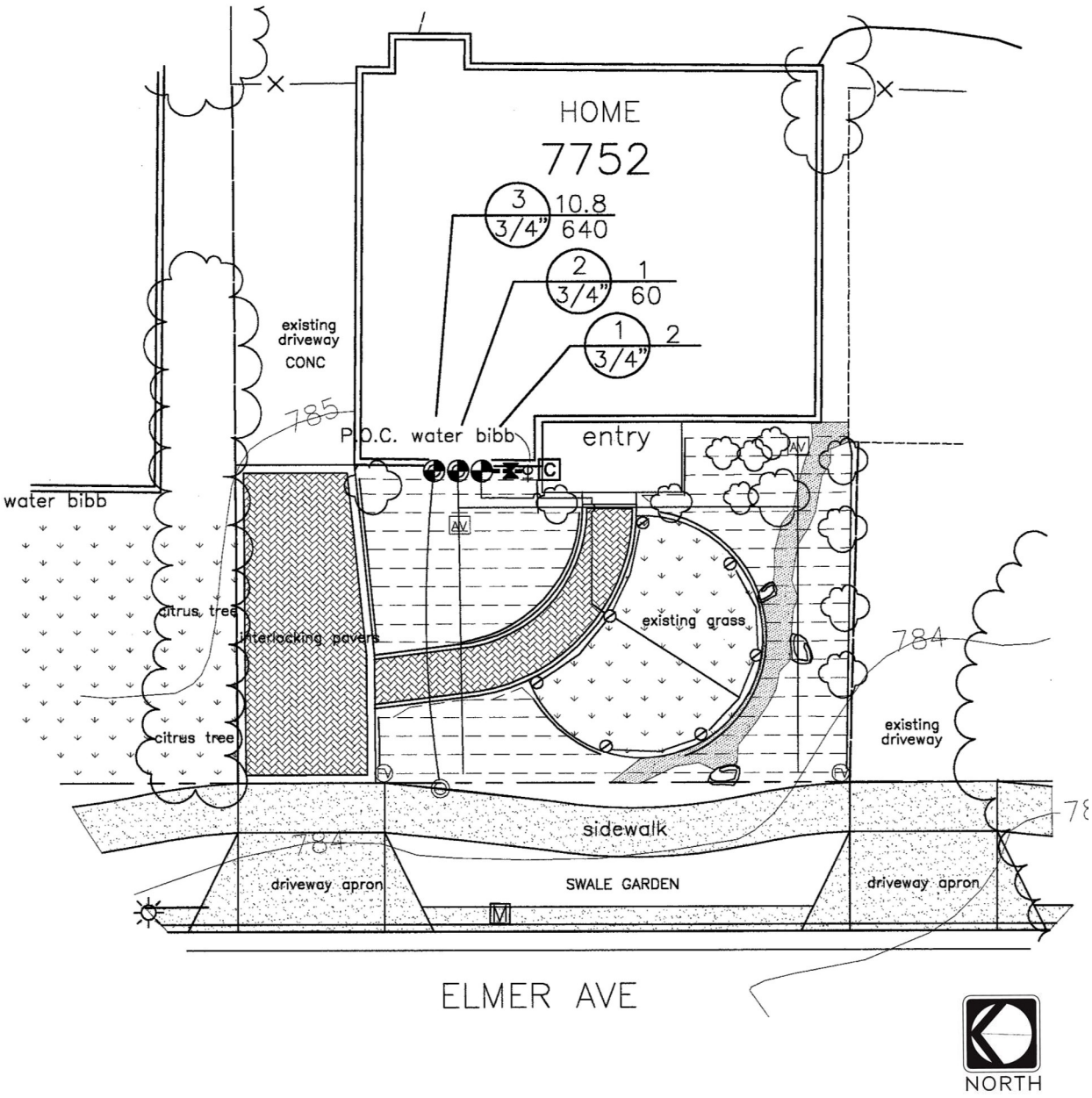
Graded Gravel Mulch: Match City Supply. For bidding purposes: Rounded, earth tone, 1/4" – 1/8" size, 4" deep Place on black landscape filter fabric. Extend filter fabric 6" beyond the gravel edge; cover edges of fabric with 2" deep mulch. Cut 12" long cross silits in fabric t receive 1 gal. container plants. Keep drip lines on top of fabric.

Mulch: 2" deep mulch over all planter areas except where gravel has been placed
Mulch should be nitrogen stabilized green–waste mulch. Size of particles 1/2"–1" .
No bark chips, wood shavings, or lumber debris used. Submit sample to owner and landscape architect for approval.

Decorative Rock: River wash boulders, 12" –30" size.
Match City Supply

NOTE:
PLANT VEGETATION PER PLANTING DETAILS

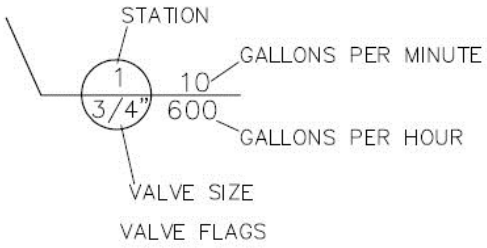
Residential Irrigation Detail



Irrigation

IRRIGATION LEGEND

Symbol	Manufacturer Model Number Type				
FV	TORO DL2000 Automatic Flush Valve (FCH-H) Plumbed to tubing (Typ.)				
AV	TORO DL 2000 AIR/VACUUM Relief Valve (YD-500-34), plumbed to Toro DL 2000 blank tubing (A710) at each high point.				
	TORO DL 2000 Dripline Lateral (RGP 212-05) .5 GPH nom. flow, 20 psi operation (.33 gph per sq. ft.) 12" o.c. emitter spacing, 18" o.c. line spacing, bury line under mulch				
	Air/Vacuum Relief Lateral Toro DL2000 Blank Tubing (A710)				
	DRIP: PVC, Schdule 40, 1" size				
	TORO Automatic Antisiphon Valves, EZ-Flo plus AVB, DZK-EZF-075-LF and DZK-EZF-075-MF KIT: with Y-filter, Control Valve, Pressure regulator and ball valve.				
	Point of connection "manifold", connect setback swale irrigation to homeowner's system. See Sht. L15, "Manifold" detail				
P.O.C.	Point Of Connection water bibb 80 PSI Static Water Pressure				
	Manufacturer - Model Number	Pattern	Radius	PSI	GPM
	Rainbird-1806 with Hunter MP1000 90-210	90°-210°	8'-12'	30	.16, .32, .37
	Rainbird-1806 with Hunter MP1000 360	360°	8'-12'	30	.65
	Rainbird-XP-600X, 8 Series MPR, 8H-MPR half spray	180°	8'	30	.52
	Rainbird-XP-600X, 8 Series MPR,8Q-MPR quarter spray	90°	8'	30	.26
	Rainbird-XP-600X, 5 Series MPR, 5H-MPR half spray	180°	5'	30	.20
	Rainbird-XP-600X, 5 Series MPR, 5Q-MPR quarter	90°	5'	30	.10
	Rainbird-XP-600X, with SQ QTR, quarter spray	90°	4'	30	.12
	Rainbird-XP-600X with SQ HLF, center half spray	180°	2.5'	30	.20
	Rainbird XT-700 Distribution Tubing				
	Irritrol Automatic Anti-siphon Valve (above ground), model 2711 APR, 3/4"				
	Hammond 8402 Brass Ball Valve, line size. Place in Brooks plastic valve box.				
	Irrigation Mainline - 1 1/4" Sch 40 PVC mainline				
	Irrigation Lateral Line - PVC Class 200, size indicated				
C	RAINBIRD ESP-8TM, 8 station controller with RAINBIRD RAIN CHECK automatic Rain Shutoff attach to roof. Power outlet provided by owner, alt. verify with Watershed Council. Replace existing controller Connect existing automatic valves to controller (entire yard). SEE NOTES BELOW.				



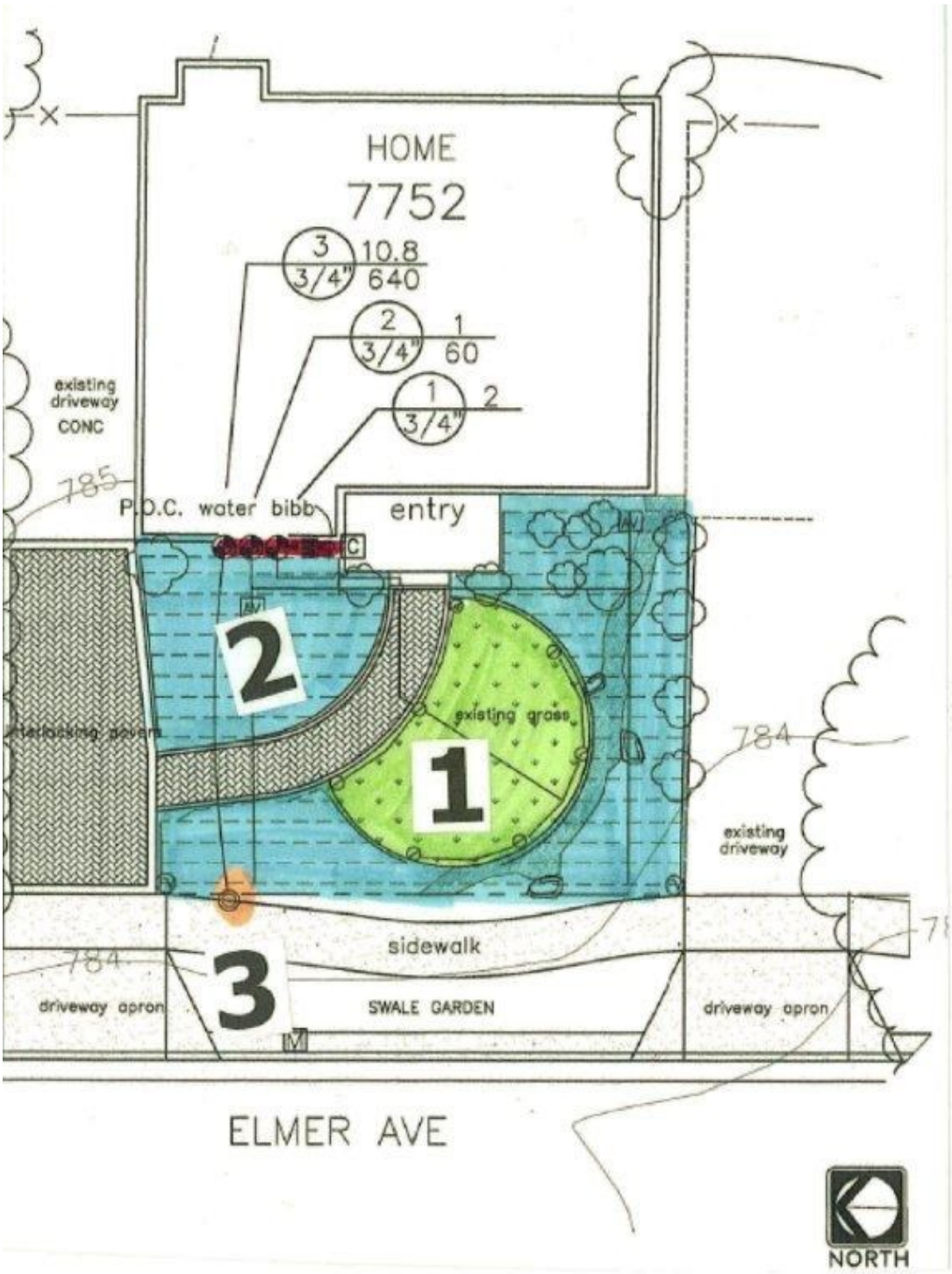
Pressurized mainline

Irrigation box with a "stub-out", a lateral line for future hook up of the City swale irrigation to homeowner's automatic valve and controller

1 This zone uses high-efficient, pop-up, rotor spray head irrigation

2 This zone is a high-efficient drip-line irrigation

3 This zone designates the City's irrigation system in the parkway swales


HOME
7752
3
3/4"
10.8
640
2
3/4"
1
60
1
3/4"
2
existing
driveway
CONC
785
P.O.C. water bibb
entry
2
existing grass
1
784
existing
driveway
sidewalk
784
3
driveway apron
SWALE GARDEN
driveway apron
ELMER AVE
NORTH

Permeable Pavers Guide

Uni Eco-Stone®

The Uni Eco-Stone® paving system is an innovative, environmentally-beneficial pavement system designed to reduce stormwater runoff. When installed, the unique patented design creates drainage openings in the pavement surface which facilitate rainwater infiltration. Uni Eco-Stone is a true interlocking concrete paver that can support heavy vehicular loads, unlike some other types of permeable pavement systems. Uni Eco-Stone can be installed in several patterns and used in a variety of applications.

Uni Eco-Stone pavers are perfect for residential, municipal, commercial and industrial applications, including:

- Driveways
- Parking lots
- Gas stations
- Bridge abutments
- Crosswalks
- Street medians
- Intersections
- Industrial plants
- Industrial yards
- Factory streets
- Highway ramps
- Bridge underpasses
- Bus terminals
- Industrial/Commercial ports

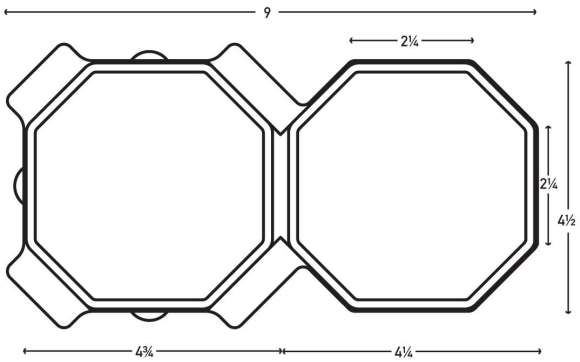
8 cm x 22.9 cm x 11.4 cm
3 1/8" x 9" x 4 1/2"

Product Data*

Coverage	Pieces per Pallet	Coverage per Pallet	Weight per Piece	Weight per Pallet
3.52 pcs / ft² (37.9 pcs / m²)	320	90.8 ft² (8.44 m²)	10 lb. (4.5 kg.)	3,250 lbs.

All Weight per Pallet noted above include a 50 lb pallet weight.

** All metric dimensions are soft converted to Imperial. Dimensions and coverage include 1.5 mm [1/16"] joint.*



Height/Thickness	Width	Length	Stones/sq ft	% of Void
3.125 inch (80 mm)	4.5 inch (115 mm)	9 inch (230 mm)	3.55	12.18%

All ***Weight per Pallet*** noted above include a 50 lb pallet weight.

** All metric dimensions are soft converted to Imperial. Dimensions and coverage include 1.5 mm [1/16"] joint.*

Standard Specification

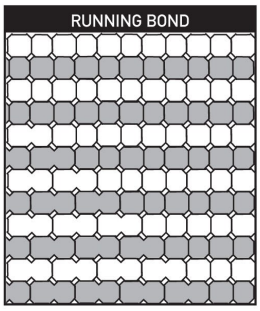
Uni Eco-Stone pavers are manufactured to Mutual Materials standard specifications as well as ASTM: C 936.

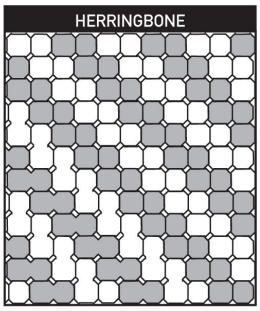
Permeable Pavers Guide

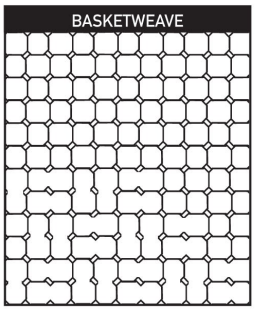
Available Colors

For more information about available colors, please contact a sales representative or visit **www.mutualmaterials.com**. Custom colors may be restricted by the size of the order or project.

Installation Patterns



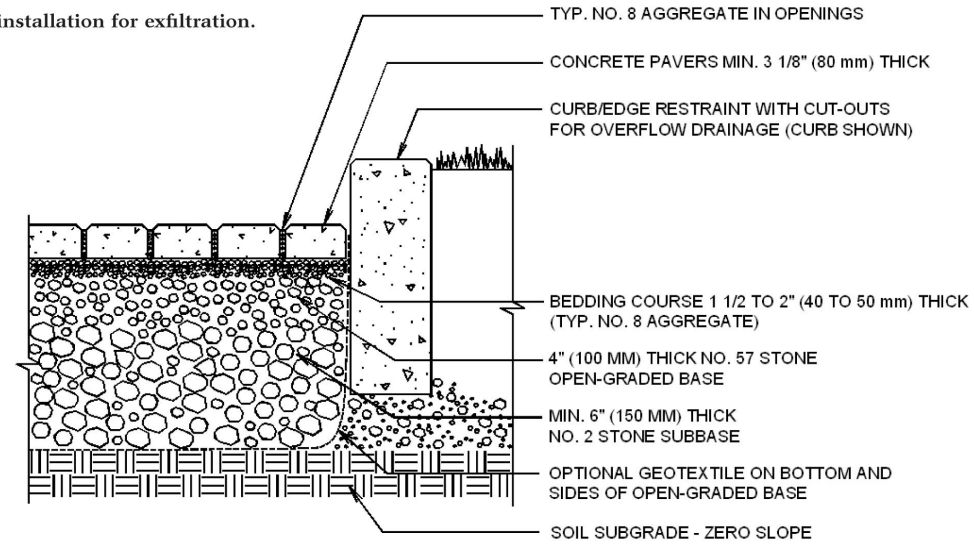




Installation Instructions

Design and installation of Uni Ecoloc® is different from typical interlocking concrete pavers, due to the need for designing with aggregates that aid in rainwater infiltration. For detailed design considerations and installation instructions, please see ICPI Permeable Interlocking Concrete Pavement Manual and other design reports available from a sales representative.

Typical installation for exfiltration.



Uni Eco-Stone® is a registered trademark of Uni-Group USA.

Branch Locations

For product information and customer service, call 1-888-MUTUALØ (688-8250)

Washington		**Oregon**	**Idaho**	**Montana**
Auburn	Olympia (Tumwater)	Bend	Hayden	Kalispell
Bellevue	Port Orchard	Clackamas		Missoula
Bellingham	Redmond	Durham		
Burlington	Spokane	Hillsboro		
Mukilteo	Tacoma (Parkland)	Salem		
	Vancouver, WA			

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Rain barrel Manufacturer's

ChicagoRainBarrel.com

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Product Details - Rain Barrels

GRAY, BLACK &TERRA COTTA
***Regular* Overflow**

55-60 Gallon Food Grade Barrel
Lever / Ball Valve Front Spigot - Connect Garden Hose
Top Overflow - Connect Garden Hose
Bottom Linking to Connect Multiple Rain Barrels
Cover with Screen and Screw Lid
Suggested. Retail - $119.99

Best Seller
BLACK
Wide* Overflow

55-60 Gallon Food Grade Barrel
Lever / Ball Valve Front Spigot
Internal PVC Overflow System*
6' Side Hose Wide Overflow*
Threaded Connector - Bottom
Cover with Screen and Screw Lid
Suggested Retail $129.99

Save Water, Money and Have Fun!

Rain Barrels are beneficial in so many ways...
-reduce water usage
-reduce stormwater runoff
-lower water bills
-good for plants
-fun to use
-reduce landfill waste by recycling food grade barrels

Chicago Rain Barrel uses 55-60 gallon food grade barrels that were previously used to store pickles, olives and syrups. If not converted to rain barrels, many of these barrels would end up in our landfills.

We use quality fittings and parts and offer a one year warranty.
Click here for Instructions

Soil Tests Results

Soil & Plant Laboratory, Inc
Leaders in Soil & Plant Testing Since 1946
www.soilandplantlaboratory.com

Locations:

352 Mathew St.
Santa Clara, CA 95050
(408) 727-0330

1594 North Main St.
Orange, CA 92867
(714) 282-8777

Orange office
Lab No: 09-035-0000
February 11, 2009

Guy Stivers Landscape Architect
160 Centennial Lane, Suite 3
Tustin, CA 92780

Attn: Guy Stivers

WATER AUGMENTATION STUDY

Attached are the results of the analysis performed on a soil sample received by Soil and Plant Laboratory on February 3, 2009. This sample was analyzed for nutrient levels and soil suitability in preparation for a new landscape installation.

Analytical Results:

The reaction of the soil is slightly alkaline and was measured at 7.2 on the pH scale. Measurable lime is favorably absent. This is suitable for a broad range of plants and no pH adjustment is recommended.

The salinity (ECe) and sodium adsorption ratio (SAR) values are safely low. Boron is safely low, yet sufficient for plant nutrition.

Nitrogen is below optimum while phosphorus and potassium are well supplied. Calcium, magnesium and all of the micronutrients are present at levels that should provide well for the nutritional requirements of general landscape plants. Copper, zinc and iron should not require supplementation in this area for a very long time.

Based on USDA soil classification standards, the soil represented by this sample is gravelly loamy sand. 19% of the sample by dry weight is comprised of gravel larger than 2.0 mm in diameter. Of the portion of the sample passing the 2.0 mm screen, 47.9% of the soil is in the coarse sand to very coarse sand range. Based on particle size distribution data, soil at this site may be prone to consolidation and compaction. The estimated water infiltration rate is 0.31 inches per hour. The actual rate of water infiltration may vary depending on the degree of soil compaction.

Recommendations

Surface Soil Preparation for Turf, Groundcover and Mass Planting

If feasible, prior to amending the areas where severe compaction exists, the surface soil should be ripped or tilled to a 9-inch depth. Uniformly broadcast and blend the following with existing soil to a 6-inch depth.

AMOUNT PER 1000 SQ. FT.

4 cu. yds. nitrogen fortified organic amendment
(compost* or redwood or fir sawdust)

5 lbs. ammonium sulfate (21-0-0)

*Rates and fertilizers may have to be adjusted depending on analysis of selected compost.

LMP
www.LmpCorp.com

Soil & Plant Laboratory, Inc
Leaders in Soil & Plant Testing Since 1946
www.soilandplantlaboratory.com

Page 2
Guy Stivers
February 11, 2009

Tree & Shrub Planting Guidelines

1. Excavate planting pits at least twice the diameter of the rootball.
2. The top of the rootball should be at or slightly above final grade.
3. Organic material is not required in the backfill; however if you wish, the amended surface soil or a soil blend consisting of no more than 10% by volume organic matter can be placed in the upper 12 inches of backfill only. Soil below this depth should not contain any added organic matter because of the threat of plant disease and/or anaerobic soil conditions developing.
4. Place slow release fertilizer tablets in the upper 12 inches of backfill at manufacturer's recommended rates. If fertilizer amended soil is used as a backfill the addition of slow release fertilizer tablets is not necessary.
5. Do not cover the original rootball with other soil. Ideally, a temporary soil berm is often constructed around the outer edge of the rootball to help channel water into the rootball and then into surrounding soil until roots are established in the backfill and the rootball is no longer the sole source of water for the plant.
6. Ideally, a weed and turf free zone, preferably 2-3 ft. in diameter, should be maintained just beyond the diameter of the planting hole. A 2-4 inch deep layer of coarse mulch can be placed around the tree or shrub; mulch should be kept a minimum 4-6 inches from the trunk.

Maintenance Fertilization

For turf, groundcover and mass planting areas, uniformly broadcast sulfur coated urea at the rate of 5 lbs. per 1000 sq. ft. The first application should occur approximately 30 days after planting, with repeat applications every 60-90 days or as growth and color dictate. In early spring and fall, substitute a complete fertilizer such as 16-6-8, or equal, for the sulfur coated urea at the rate of 6 lbs. per 1000 sq. ft. to ensure continuing supplies of phosphorus and potassium. Tree and shrub plantings can be maintained with the above fertilizers; however, the frequency between applications should be every 120 days, with the first application 75 days after planting. Follow each fertilization with a thorough irrigation. When plants have become well established, fertilizer applications can be less frequent.

If we can be of any further assistance, please feel free to contact us.

Jason Gihring

Emailed: guystivers@att.net

LMP
www.LmpCorp.com

Guy Stivers Landscape Architect
160 Centennial Lane, Suite 3

Tustin CA 92780

Soil & Plant Laboratory, Inc.
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352 Mathew Street Santa Clara, CA 95050 408-727-0330 (phone) 408-727-5125 (fax)
www.soilandplantlaboratory.com

Project : Water Augmentation Study

COMPREHENSIVE SOIL ANALYSIS

Report No : **09-035-0000**
Purchase Order :
Date Recd : 02/04/2009
Date Printed : 02/09/2009
Page : 1 of 1

Sample Description - Sample ID	Half Sat %	pH	ECe dS/m	NO_3-N ppm	NH_4-N ppm	PO_4-P ppm	K ppm	Ca ppm	Mg ppm	Cu ppm	Zn ppm	Mn ppm	Fe ppm	Organic % dry wt.	Lab No.
	TEC	Qual Lime		Sufficiency Factors											
Soil	17	7.2	1.3	16	9	32	147	1380	157	3.9	20.5	4	102		13941
	85	None		0.7		1.6	1.2	1.0	0.8	3.5	4.8	0.4	2.4		

Saturation Extract Values							Gravel %		Percent of Sample Passing 2 mm Screen						
									Sand					USDA Soil Classification	Lab No.
Ca meq/L	Mg meq/L	Na meq/L	K meq/L	B ppm	SO_4 meq/L	SAR	Coarse 5 - 12	Fine 2 - 5	Very Coarse 1 - 2	Coarse 0.5 - 1	Med. to Very Fine 0.05 - 0.5	Silt .002-.05	Clay 0-.002		
4.2	2.1	3.0	0.9	0.75	2.4	1.7	8.0	11.0	18.8	29.1	39.8	8.3	4.0	Gravelly Loamy Sand	13941

Sufficiency factor (1.0=sufficient for average crop) below each nutrient value. N factor based on 200 ppm constant feed. SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity. Nitrogen(N), Potassium(K), Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu), Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. Sat. ext. method for salinity (ECe as dS/m),Boron (B), Sulfate(SO_4), Sodium(Na). Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm(1/2 inch) sieve. Particle sizes in millimeters. Organic percentage determined by Walkley-Black or Loss on Ignition.

* LOW , SUFFICIENT , HIGH

Resources:

Native Plant Nurseries:

Call ahead/check web site to inquire into hours and plant availability

El Nativo Growers
200 S. Peckham Road
Azusa, CA 91702
(626) 969-7299
www.elnativogrowers.com
Retail sales only via e-mail at:
retailsales@elnativogrowers.com

Matilija Nursery
8225 Water Road
Moorpark, CA 93021
(951) 780-3571
www.matilijanursery.com

Rancho Santa Ana Botanic Garden
1500 N. College Avenue
Claremont, CA 91711
(909) 625-8767
www.rsabg.org
Grow Native Nursery sells plants
Wednesday - Sunday
California Garden Shop
year round

Theodore Payne Foundation for
Wild Flowers and Native Plants
10459 Tuxford Street
Sun Valley, CA 91352
(818) 768-1802
www.theodorepayne.org
The Foundation sells plants all year but days may vary.

Tree-of-Life Nursery
3321 Ortega Hwy. / P.O. Box 635
San Juan Capistrano, CA 92693
(949) 728-0685
www.californianativeplants.com

California Native Plant Society
Sacramento Office
(916) 447-2677
www.cnps.org

Additional Information:

What's That Bug? http://www.whatsthatbug.com
Lots of photos to identify insects.

Bug Guide http://www.bugguide.net
Lots of photos to indentify insects.

UC Davis IPM (Integrated Pest Management) http://www.ipm.ucdavis.edu
Information on pest control

Trees are Good http://treesaregood.com
Click on "Tree Care Information" at the top for tree care and pruning information.

Weed Research and Information Center http://wric.ucdavis.edu/
Click on Weed ID tool on bottom of page, then Weed ID tool on left. Follow directions.

*(**Additional Information** cont.)*

Los Angeles County Agricultural Commissioner. http://acwm.co.la.ca.us.
Click on "Pests/Bugs" for information on insects and diseases. They also offer a free service to identify pests and plant diseases. Follow the directions to send a sample of the insect or disease for identification.

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DiTomaso, Joseph, and Evelyn Healy. 2007. *Weeds of California and Other Western States. Volumes 1 & 2.* University of California, Division of Agriculture and Natural Resources, Publication 3488. (http://anrcatalog.ucdavis.edu/IntegratedPestManagement/3488.aspx)

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TreePeople. 2007. *Rainwater as a Resource: A Report on Three Sites Demonstrating Sustainable Stormwater Management*. Los Angeles, California.

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Photo Credits

1	TreePeople	*Kids help spread mulch*
5b	MICROSOFT® BING™ MAPS	*Two sources of garden mulch*
6a		*ladybug larva*
6b	Www.ButterflyNature.com	*ladybug pupa*
6c	Marlin E. Rice, http://www.ipm.iastate.edu/ipm/icm/node/440	*black beetle*
6d	TreePeople	*praying mantis*
17c	http://www.ci.monterey-park.ca.us/index.aspx?page=1461	*Lagerstroemia indica*
19b	http://www.roseville.ca.us/images/EU/cash4grass/carmel_creeper.jpg	*Ceanothus griseus* var. *horizontalis*
19f	http://www.californianativeplants.com/index.php/plants/34-featured-plants/47-epilobium	***Epilobium canum* 'Everett's Choice'**
20d	Daniel Southard, Potato Rock Nursery	***Galvezia speciosa***
23d	http://www.roseville.ca.us/images/EU/cash4grass/huntington_carpet_rosemary.jpg	*Rosmarinus officinalis* 'Huntington Carpet'

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25a	Regents of the University of California . 2007	*Barbarea vulgaris*
25c	Regents of the University of California . 2007	*Erodium cicutarium*
25c	Regents of the University of California . 2007	*Erodium cicutarium*
25e	Regents of the University of California . 2007	*Hypochaeris glabra*
25f	Regents of the University of California . 2007	*Malva parviflora*
26a	Regents of the University of California . 2007	*Medicago* spp.
26b	Regents of the University of California . 2007	*Oxalis corniculata*
26c	Regents of the University of California . 2007	*Plantago lanceolata*
26d	Regents of the University of California . 2007	*Polygonum arenastrum*
26e	Regents of the University of California . 2007	*Sonchus oleraceus*
26f	Regents of the University of California . 2007	*Trifolium* spp.

To order: http://anrcatalog.ucdavis.edu/

Elmer Ave. Maintenance Checklist & Schedule

Pg	Task	Winter			Spring			Summer			Fall		
		January	February	March	April	May	June	July	August	September	October	November	December
	Soil Care												
5	Fertilization	no	never	not	no	never	not	no	never	not	no	never	not
5	Mulch replacement		check/add				check/add				check/add		
	Irrigation equipment	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly
3	Soil moisture monitoring	as	needed	as	needed	as	needed	as	needed	as	needed	as	needed
11	Backflow prevention certification	X											
7	**Tree maintenance**	check stakes	check stakes	check stakes	check stakes	check stakes	check stakes	check stakes	check stakes	check stakes	check stakes	check stakes	check stakes
17	*Cercis occidentalis* (western redbud)		prune if needed	prune if needed									
17	*Chitalpa tashkentensis* 'Pink Dawn' (chitalpa)	prune if needed											prune if needed
17	*Lagerstroemia indica* (crape myrtle)	prune if needed					prune suckers	prune suckers	prune suckers	prune suckers			prune if needed
17	*Platanus racemosa* (western sycamore)	prune if needed											prune if needed
17	*Quercus agrifolia* (coast live oak)								prune if needed	prune if needed			
7	**Shrubs and perennials**												
18	*Achillea* 'Moonshine'(Moonshine yarrow)					deadhead fls.	deadhead fls.			deadhead fls.			
18	*Anigozanthos* 'Harmony' (Harmony kangaroo paws)							prune to ground					
18	*Arctostaphylos edmundsii* 'Carmel Sur' (Carmel Sur manzanita)					edge if needed	edge if needed						
18	*Arctostaphylos* 'Emerald Carpet' (Emerald Carpet manzanita)					pinch/edge if neede	edge if needed						
18	*Buxus microphylla* (Japanese boxwood)						prune if needed						
19	*Carex pansa* (California meadow sedge)								mow if needed	mow if needed	mow if needed		
19	*Ceanothus griseus* var. *horizontalis* (Carmel Creeper ceanothus)					prune	prune	prune					
19	*Cistus salvifolius* (sageleaf rockrose)	remove old stems					pinch/shear	pinch/shear	pinch/shear				remove old stems
19	*Dudleya virens* ssp. *hassei* (Catalina Island dudleya)						remove stalks	remove stalks	remove stalks	remove stalks			
19	*Dymondia margaretae* (dymondia)	mow as needed		mow as needed			mow as needed			mow as needed			mow as needed
19	*Epilobium canum* 'Everett's Choice' ('Everett's Choice')	cut back hard	cut back hard			remove seedlings		remove seedlings					
20	*Erigeron karvinskianus* (Mexican daisy)	prune if needed	prune if needed										prune if needed
20	*Eschscholzia californica* (California poppy)						pull by hand	pull by hand				seed	
20	*Festuca glauca* 'Elijah Blue' (Elijah Blue blue fescue)	trim as needed	trim as needed										trim as needed
20	*Galvezia speciosa* (island snapdragon)		prune if needed	prune if needed			pinch						
20	*Helianthemum nummularium* (sunrose)							cut back after flowering					
20	*Hemerocallis* 'Rusty Red' (Rusty Red daylily)			divide if needed	deadhead	deadhead			deadhead	deadhead	deadhead	divide if needed	
21	*Hesperaloe parviflora* (red yucca)		divide				deadhead	deadhead	deadhead				
21	*Heuchera sanguinea* (coral bells)											prune if needed	prune if needed
21	*Iris* sp. (bearded iris)										cut back to 2"/divide		
21	*Iris douglasiana* (Douglas' iris)						snip brown tips			snip brown tips	divide/prune if need		prune if needed
21	*Juncus patens* (California gray rush)	prune as needed		prune as needed			prune as needed			prune as needed			prune as needed
21	*Lavandula stoechas* 'Otto Quast' (Spanish lavender)									prune as needed	prune as needed		
22	*Leymus condensatus* 'Canyon Prince' (Canyon Prince wild rye)								cut back hard to 4 - 5" if needed		cut back hard to 4 - 5" if needed		

		Winter			Spring			Summer			Fall		
	Task	**January**	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
22	*Limonium californicum* (California sea-lavender)											cut dried stalks	cut dried stalks
22	*Muhlenbergia rigens* (deergrass)					coppice if needed	coppice if needed						
22	*Penstemon heterophyllus* 'Margarita BOP' (penstemon)							cut back hard	cut back hard				
22	*Rhamnus californica* 'Little Sur' (Little Sur coffeeberry)	lightly pinch?			lightly pinch?			lightly pinch?			lightly pinch?		lightly pinch?
23	*Rhaphiolepis indica* 'Ballerina' (Ballerina Indian hawthorn)	prune as needed										prune as needed	prune as needed
23	*Ribes viburnifolium* (Catalina perfume)	lightly pinch?	lightly pinch?	lightly pinch?	lightly pinch?	lightly pinch?	lightly pinch?	lightly pinch?	lightly pinch?	lightly pinch?	lightly pinch?	lightly pinch?	lightly pinch?
23	*Romneya coulteri* 'White Cloud' (Matilija poppy)	cut back hard	cut back hard										cut back hard
23	*Rosmarinus officinalis* 'Huntington Carpet' (creeping rosemary)					prune if needed	prune if needed						
23	*Salvia chamaedryoides* (Germander sage)		cut back by 1/3										
24	*Salvia greggii* (autumn sage)	prune old stems								cut back by 1/3			prune old stems
24	*Salvia leucantha* 'Midnight' (Midnight Mexican bush sage)	prune old stems											prune old stems
24	*Salvia spathacea* (hummingbird sage)							cut dried stalks		cut dried stalks			
24	*Sisyrinchium bellum* (blue-eyed grass)							trim dried leaves		trim dried leaves			
24	*Verbena peruviana* (Peruvian verbena)	prune	prune										
8	**Lawn**	mow to 3"	mow to 3"	mow to 3"	mow to 3"	mow to 3"	mow to 3"	mow to 3"	mow to 3"	mow to 3"	mow to 3"	mow to 3"	mow to 3"
9	**Plant replacement**	plant										plant	plant
	Weed management												
4	hand pulling	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly
4	oil sprays	as	needed	as	needed	as	needed	as	needed	as	needed	as	needed
	Pest management												
6	Invertebrates (ants, slugs)	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly
6	Disease, fungi, etc.	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly
	Hardscape management												
12	Rain barrel	drain before rain		drain before rain							**Clean/rinse out**	drain before rain	drain before rain
10	Sweep street gutter	as	needed	as	needed	as	needed	as	needed	as	needed	as	needed
11	Clean out roof gutters	as	needed	as	needed					as	needed	as	needed
12	Clean trench drain in driveway	check	check	check	check	check	check	check	check	check	check	check	check
13	Permeable pavers in driveway and pathways	sweep	sweep	sweep	sweep	sweep	sweep	sweep	sweep	sweep	**Vacuum**	sweep	sweep
13	Permeable concrete	sweep	sweep	sweep	sweep	sweep	sweep	sweep	sweep	sweep	**Vacuum**	sweep	sweep
10	**Litter removal in street gutter and parkway swale**	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly
7	**Greenwaste management (green bin)**	recycle	recycle	recycle	recycle	recycle	recycle	recycle	recycle	recycle	recycle	recycle	recycle