

Colorful Desert

GARDEN DESIGN DOCUMENT PACKAGE

FOR MORE INFORMATION VISIT:
INLANDVALLEYGARDENPLANNER.ORG



**Waterwise
Community
Center**

A program of the
Chino Basin Water
Conservation District

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Colorful Desert
GARDEN DESIGN

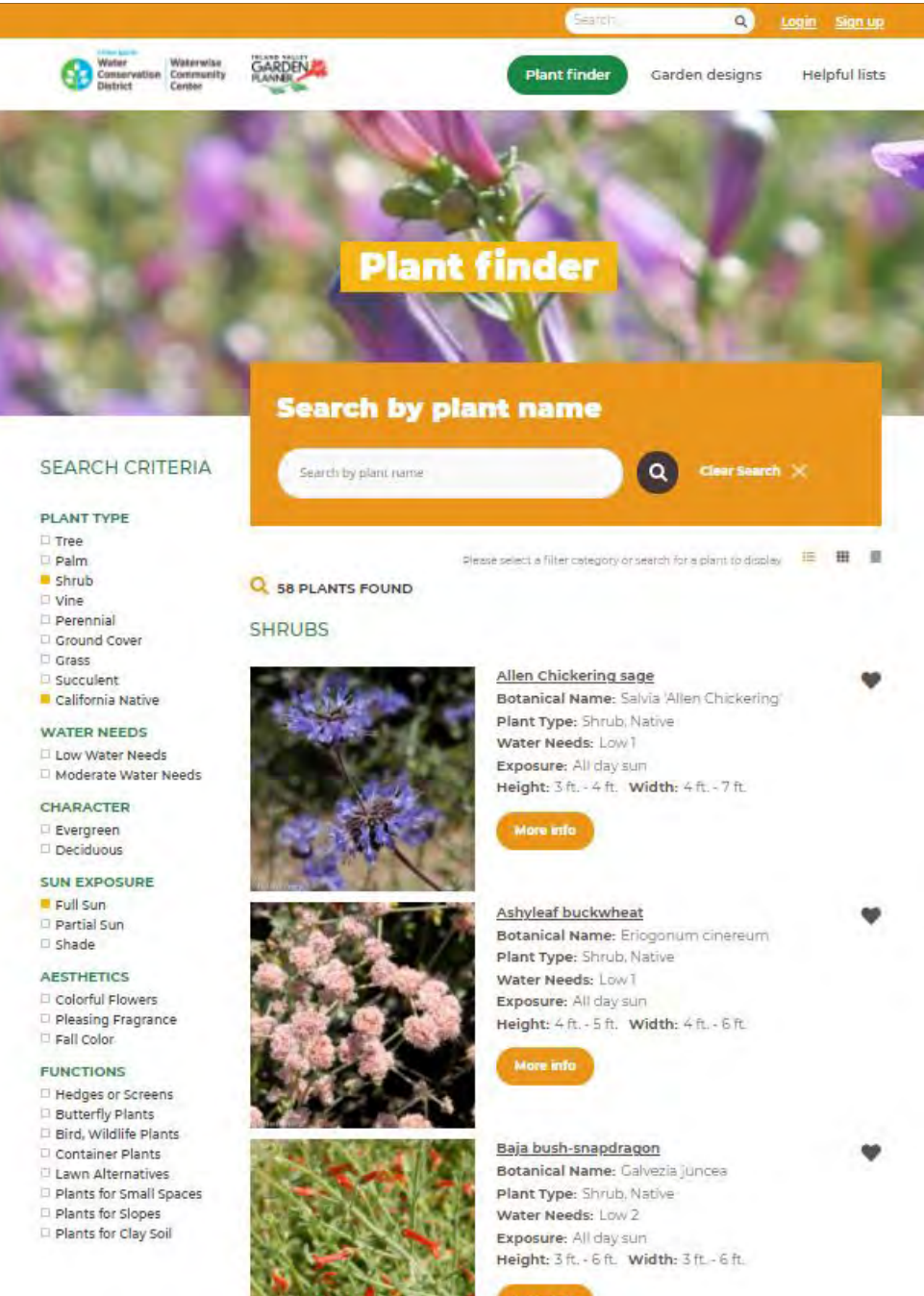


Plant shown in image :
FIRECRACKER PENSTEMON
Penstemon eatonii

Online Resources

PLAN YOUR GARDEN USING :

inlandvalleygardenplanner.org



FOR MORE ABOUT GARDEN DESIGN, PLANT SELECTION, PLANT CARE TIPS & TRICKS AND MORE VISIT: inlandvalleygardenplanner.org

Plant List

FOR COLORFUL DESERT GARDEN DESIGN

COMMON NAME	SCIENTIFIC NAME
APACHE PLUME	<i>Fallugia paradoxa</i>
BAJA FAIRY DUSTER	<i>Calliandra californica</i>
BLADDERPOD	<i>Isomeris arborea</i>
BLUE FINGER	<i>Senecio talinoides ssp. mandraliscae</i>
BRITTLEBUSH, INCIENESO	<i>Encelia farinosa</i>
DESERT MALLOW	<i>Sphaeralcea ambigua</i>
DESERT MUSEUM PALO VERDE	<i>Parkinsonia 'Desert Museum'</i>
FIRECRACKER PENSTEMON	<i>Penstemon eatonii</i>
MEDICINAL ALOE	<i>Aloe vera</i>
MOUNTAIN MARIGOLD	<i>Tagetes lemmonii</i>
PALMER'S MALLOW	<i>Abutilon palmeri</i>
PRICKLY PEAR 'ELLISIANA'	<i>Opuntia canacapa 'Ellisiana'</i>
RED YUCCA	<i>Hesperaloe parviflora</i>

Small Yard Design

Document Package

500 SQ FT.

Includes :

- 05** Small Front Yard Design
- 06** Small Front Yard Design *(with plant labels)*
- 07** Small Front Yard Design | Plan View



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COLORFUL DESERT Small Front Yard Design

NOTES :

- 1** French drain at edge of landscape at sidewalk, to capture water running off - SEE FRENCH DRAIN DETAIL PAGE
- 2** Decomposed Granite pathway
SEE DECOMPOSED GRANITE DETAIL PAGE



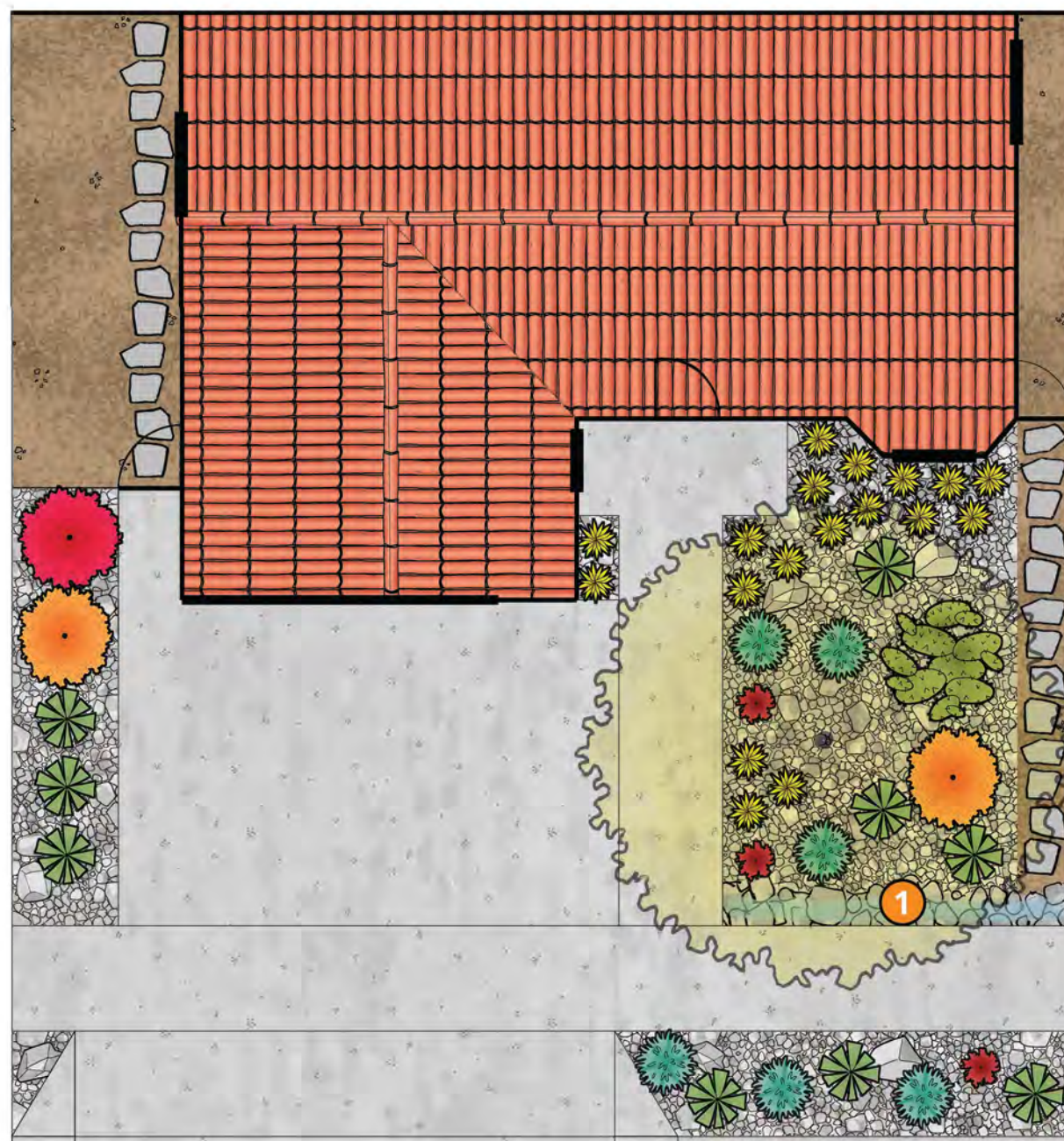
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COLORFUL DESERT Small Front Yard Design WITH PLANT LABELS

NOTES :

- 1** French drain at edge of landscape at sidewalk, to capture water running off - SEE FRENCH DRAIN DETAIL PAGE
- 2** Decomposed Granite pathway
SEE DECOMPOSED GRANITE DETAIL PAGE



NOTES :

1

French drain at edge of landscape at sidewalk, to capture water running off
SEE FRENCH DRAIN DETAIL PAGE

Succulent/Perennials /Shrubs $\leq 4'$ 

Aloe vera
Medicinal Aloe - 2'



Hesperaloe parvifolia
Red Yucca + cvs - 3'



Penstemon eatonii
Firecracker Penstemon - 2'

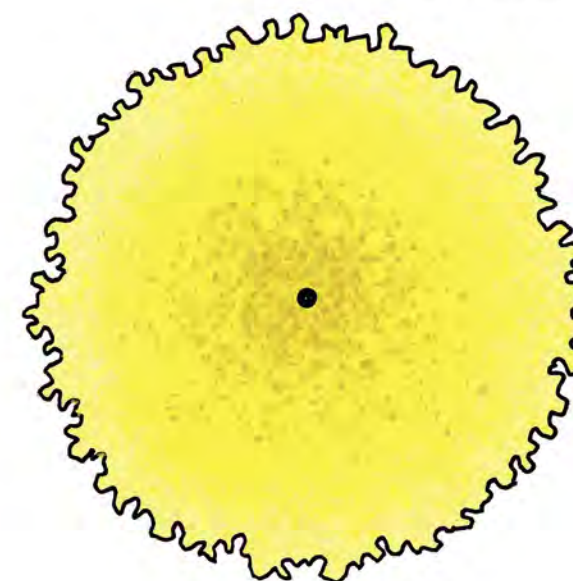
Groundcover



Senecio talinoides ssp. mandraliscae
Blue Finger - 3'

Trees & Large Shurbs

Parkinsonia x 'Desert Museum'
Desert Museum palo verde - 25'

Shrubs/Cactus $\geq 5'$ 

Abutilon palmeri
Indian Mallow - 5'



Calliandra californica
Baja Fairy Duster - 5'

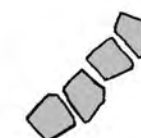


Optunia Cacanapa 'Ellisiana'
Prickly Pear Ellisiana - 6'

Landscape Elements



Boulders



Stepping stones

Groundcovers



Decomposed Granite



Gravel



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COLORFUL DESERT

Small Front Yard Design

PLAN VIEW



SCALE : 1/8" = APPX. 1' AT 11x17 PRINT

Medium Yard Design

Document Package

1,200 SQ FT.

Includes :

- 09** Medium Front Yard Design
- 10** Medium Front Yard Design *(with plant labels)*
- 11** Medium Front Yard Design | Plan View
- 12** Medium Front Yard Design *(without trees)*
- 13** Medium Front Yard Design *(with plant labels + without trees)*



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COLORFUL DESERT Medium Front Yard Design

NOTES :

- 1** Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE



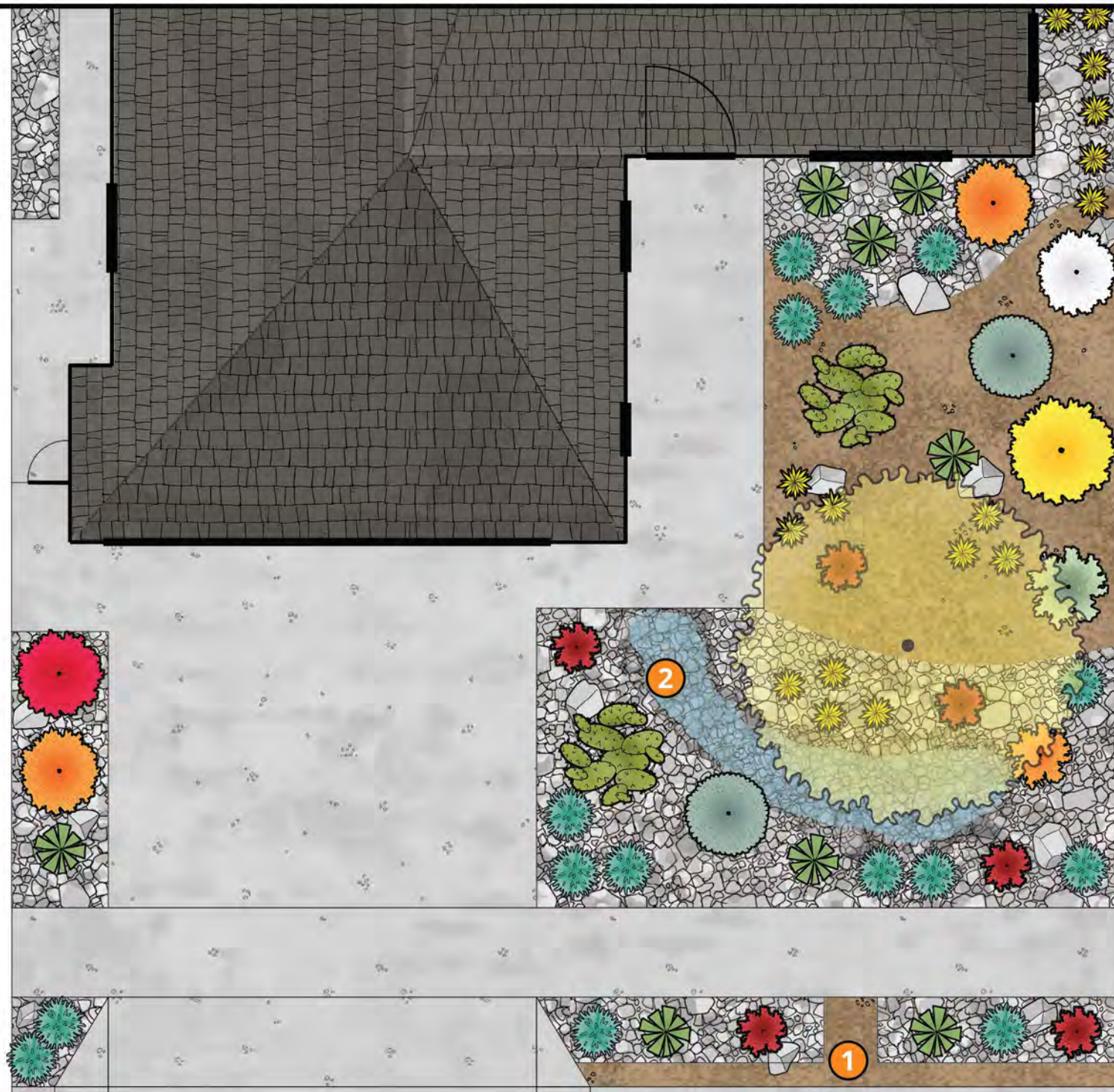
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COLORFUL DESERT Medium Front Yard Design WITH PLANT LABELS

NOTES :

- 1** Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE



Landscape Elements



Succulent/Perennials /Shrubs ≤ 4'

- Aloe vera*
Medicinal Aloe - 2'
- Penstemon eatonii*
Firecracker Penstemon - 3'
- Sphaeralcea ambigua*
Desert Mallow - 4'
- Hesperaloe parvifolia*
Red Yucca - 3'

Shrubs/Cactus

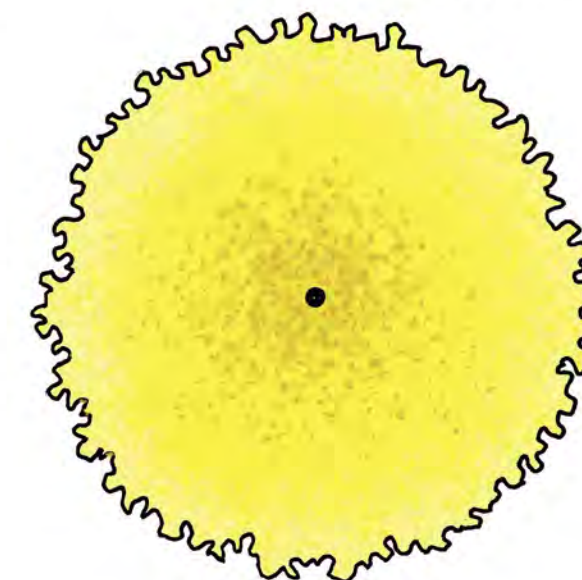
- Abutilon palmeri*
Indian Mallow - 5'
- Calliandra californica*
Baja Fairy Duster - 5'
- Encelia farinosa*
Brittlebush - 5'
- Fallugia paradoxa*
Apache Plume - 5'
- Isomeris arborea*
Bladderpod - 5'
- Optunia Cacanapa 'Ellisiana'*
Prickly Pear Ellisiana - 6'
- Tagetes lemmonii*
Mountain Marigold - 6'

Groundcover

- Senecio talinoides ssp. mandraliscae*
Blue Finger - 3'

Trees

- Parkinsonia x 'Desert Museum'*
Desert Museum palo verde - 25'



NOTES :

- 1** Decomposed Granite pathway along curb for car door exit - SEE DECOMPOSED GRANITE DETAIL PAGE
- 2** Dry stream bed to capture water from roof SEE DRY STREAM BED DETAIL PAGE

Groundcovers

- Decomposed Granite
- Gravel



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COLORFUL DESERT Medium Front Yard Design WITHOUT TREE

NOTES :

- 1** Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE



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COLORFUL DESERT Medium Front Yard Design

WITH PLANT LABELS + WITHOUT TREE

NOTES :

- 1** Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE

Large Yard Design

Document Package

1,800 SQ FT.

Includes :

- 15** Large Front Yard Design
- 16** Large Front Yard Design *(with plant labels)*
- 17** Large Front Yard Design | Plan View
- 18** Large Front Yard Design *(without trees)*
- 19** Large Front Yard Design *(with plant labels + without trees)*



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COLORFUL DESERT Large Front Yard Design

NOTES :

- 1** Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 3** Rain chain - replaces roof drain downspout where
applicable (optional)



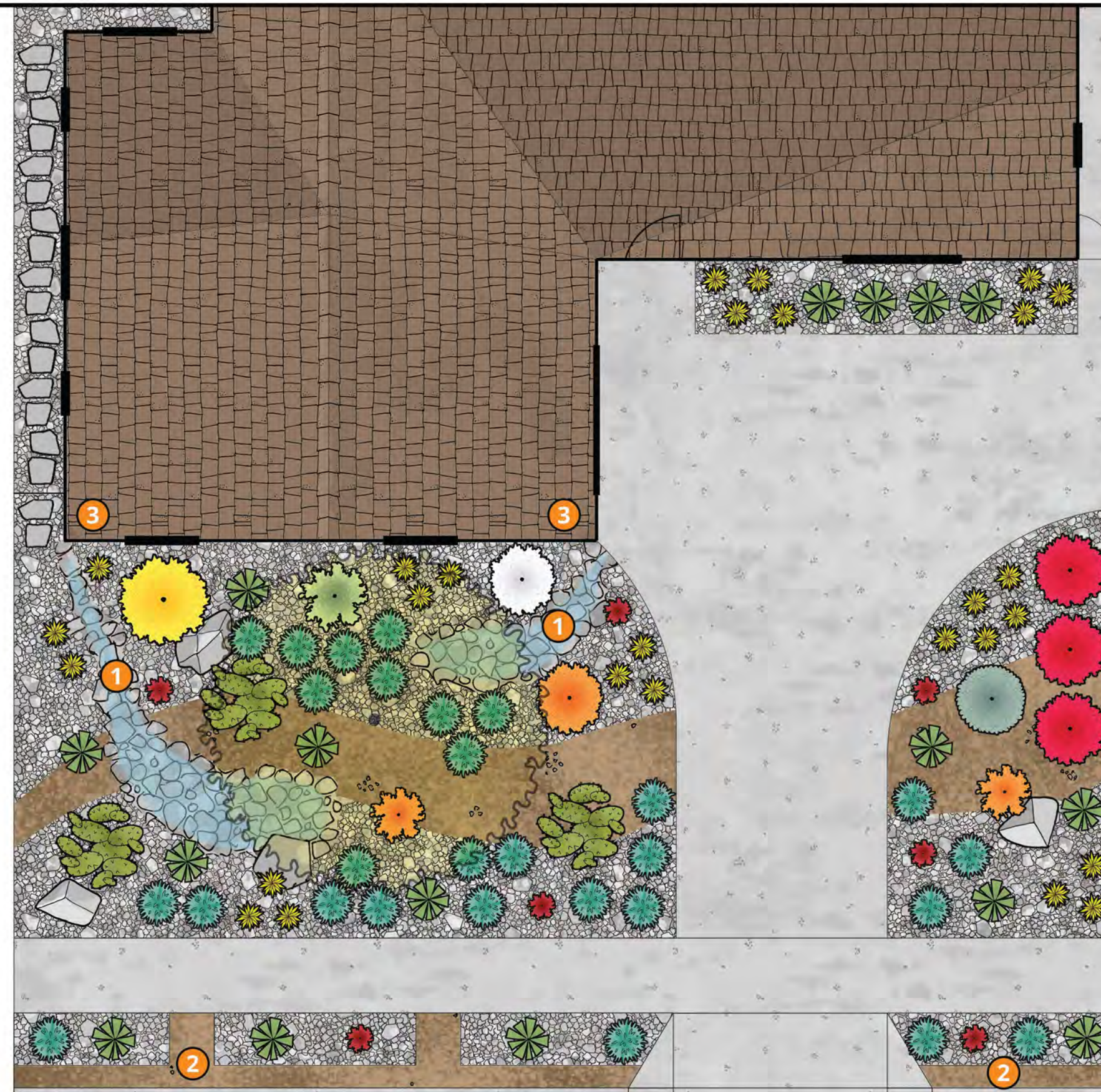
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COLORFUL DESERT Large Front Yard Design WITH PLANT LABELS

NOTES :


- 1** Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 3** Rain chain - replaces roof drain downspout where
applicable (optional)



Succulent/Perennials/Shrubs ≤ 4'

-  *Aloe vera*
Medicinal Aloe - 2'
-  *Hesperaloe parvifolia*
Red Yucca - 3'
-  *Penstemon eatonii*
Firecracker Penstemon - 2'
-  *Sphaeralcea ambigua*
Desert Mallow - 4'

Succulent/Cactus ≥ 5'

-  *Abutilon palmeri*
Palmer's Mallow - 5'
-  *Calliandra californica*
Baja Fairy Duster - 5'
-  *Encelia farinosa*
Inciense Brittlebush - 5'
-  *Fallugia paradoxa*
Apache Plume - 5'
-  *Isomeris arborea*
Bladderpod - 5'
-  *Optunia Cacanapa 'Ellisiana'*
Prickly Pear Ellisiana - 6'
-  *Tagetes lemmonii*
Mountain Marigold - 6'

Trees

- Parkinsonia x 'Desert Museum'*
Desert Museum Palo Verde - 25'

Groundcover

-  *Senecio talinoides ssp. mandraliscae*
Blue Finger - 3'



Decomposed Granite



Gravel

NOTES :

- 1** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 2** Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 3** Rain chain - replaces roof drain downspout where applicable (optional)



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COLORFUL DESERT

Large Front Yard Design

PLAN VIEW



SCALE : 1/8" = APPX. 1' AT 11x17 PRINT



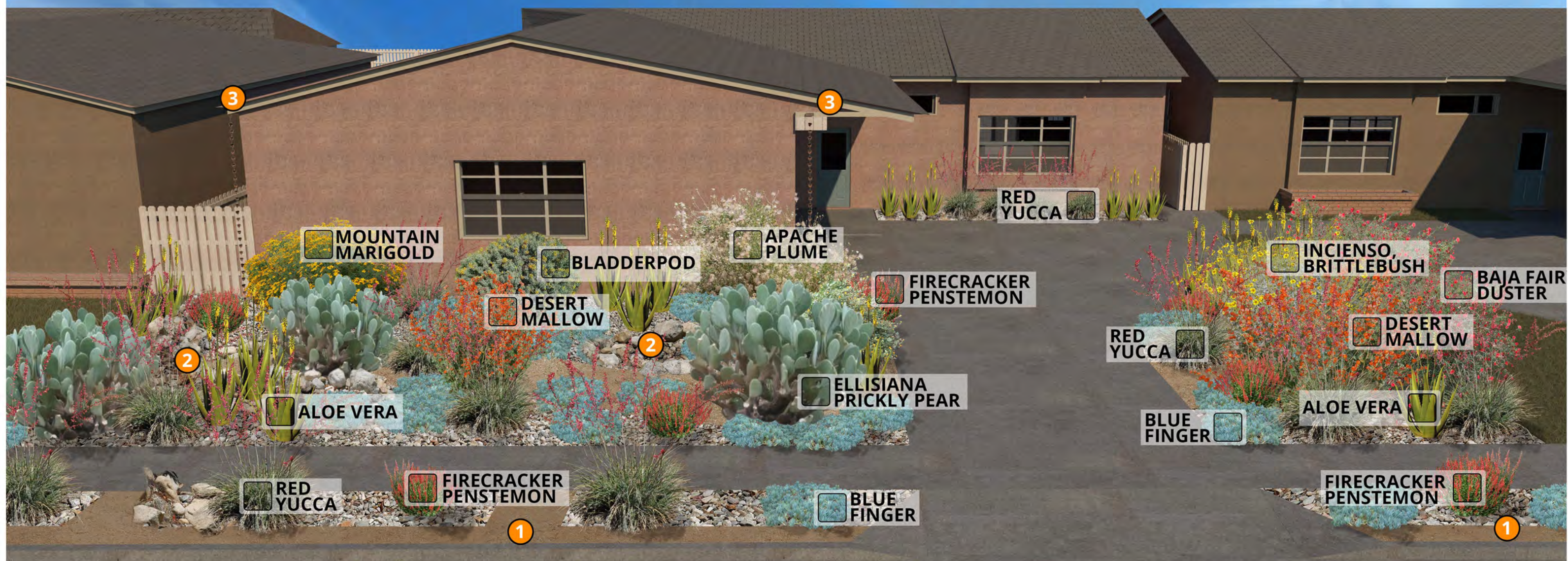
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COLORFUL DESERT Large Front Yard Design WITHOUT TREE

NOTES :

- 1** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 2** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 3** Rain chain - replaces roof drain downspout where
applicable (optional)



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COLORFUL DESERT Large Front Yard Design WITH PLANT LABELS + WITHOUT TREE

NOTES :

- 1** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 2** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 3** Rain chain - replaces roof drain downspout where
applicable (optional)

Extra-Large Yard Design

Document Package

2,500 SQ FT.

Includes :

- 21** Extra-Large Front Yard Design
- 22** Extra-Large Front Yard Design *(with plant labels)*
- 23** Patio Detail
- 24** Patio Detail *(with plant labels)*
- 25** Extra-Large Front Yard Design | Plan View
- 26** Extra-Large Front Yard Design *(without front tree)*
- 27** Extra-Large Front Yard Design *(with plant labels + without front tree)*



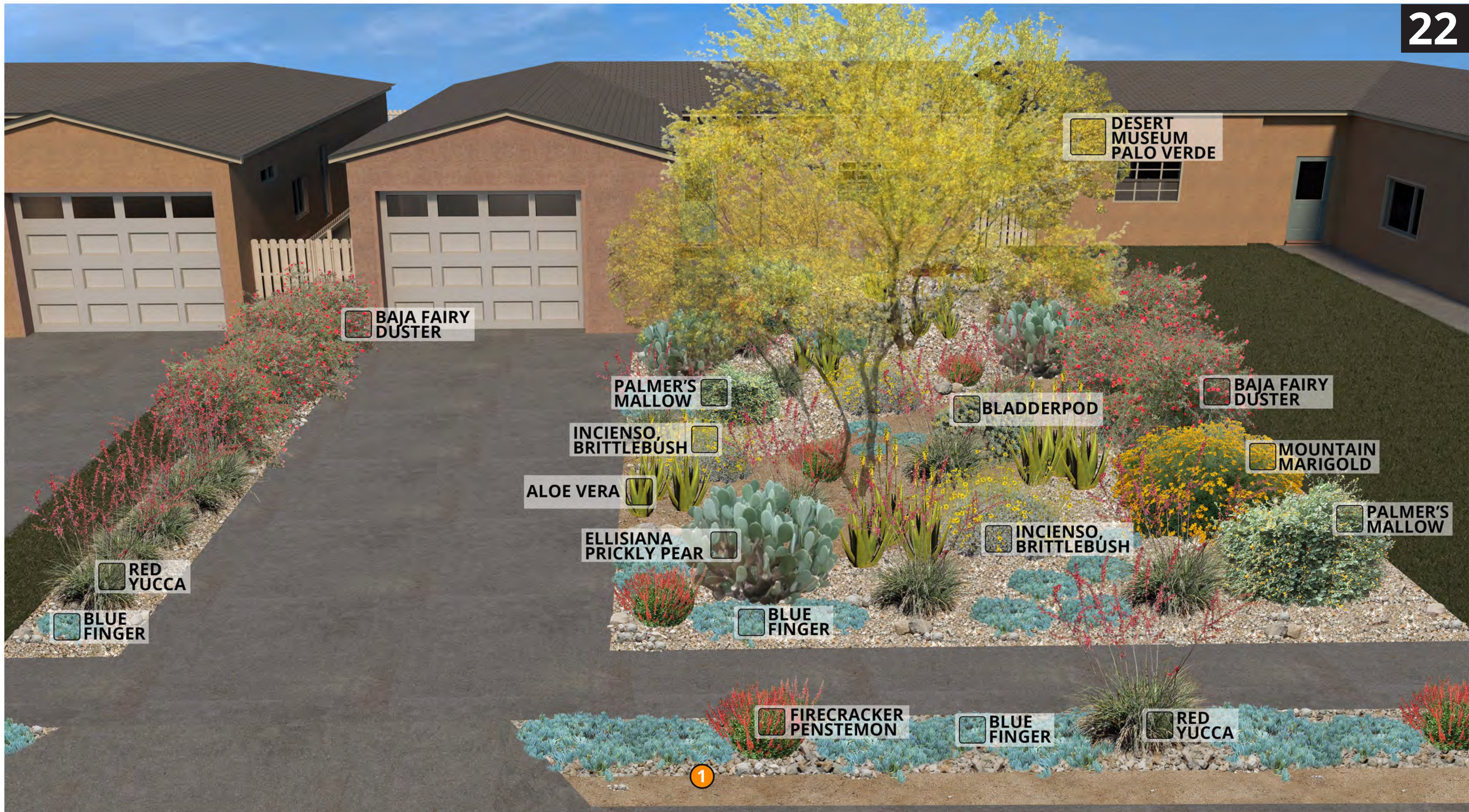
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COLORFUL DESERT Extra-Large Front Yard Design

NOTES :

- 1** Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 3** Rain chain - replaces roof drain downspout where
applicable (optional)



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Conservation District

COLORFUL DESERT Extra-Large Front Yard Design WITH PLANT LABELS

NOTES :

- 1 Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2 Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 3 Rain chain - replaces roof drain downspout where
applicable (optional)



- 1 Flagstone or broken concrete pathway
- 2 Decomposed granite mulch
SEE MULCH DETAIL PAGE
- 3 Gravel mulch
SEE MULCH DETAIL PAGE
- 4 Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE



COLORFUL DESERT

Extra-Large Front Yard Design

PATIO DETAIL

24

DESERT
MUSEUM
PALO VERDE

ELLISIANA
PRICKLY PEAR

FIRECRACKER
PENSTEMON

ALOE VERA

MOUNTAIN
MARIGOLD

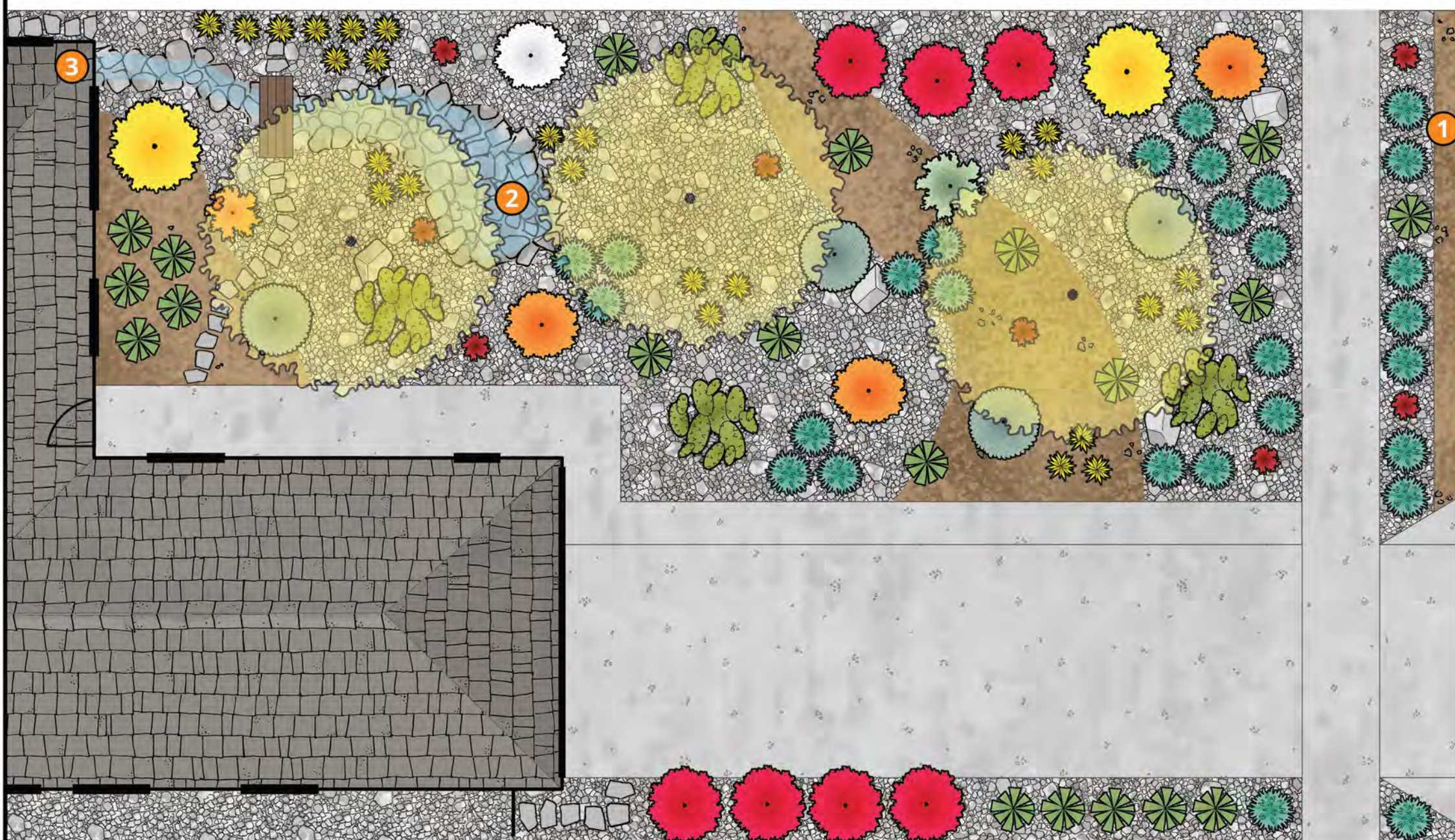
DESERT
MALLOW

INCIENSO,
BRITTLEBUSH

RED
YUCCA

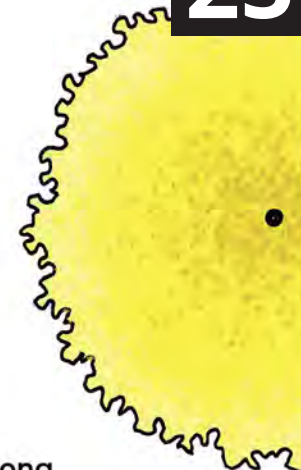
- 1 Flagstone or broken concrete pathway
- 2 Decomposed granite mulch
SEE MULCH DETAIL PAGE
- 3 Gravel mulch
SEE MULCH DETAIL PAGE
- 4 Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE





Trees

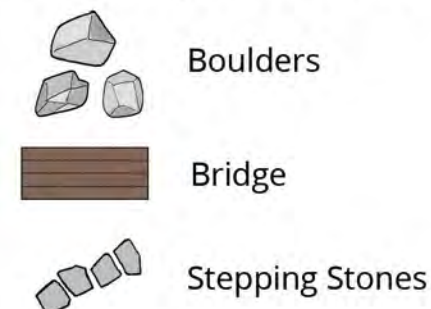
Parkinsonia x 'Desert Museum'
Desert Museum palo verde - 25'



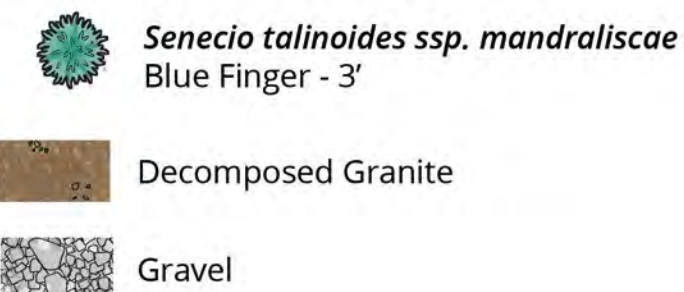
NOTES :

- 1 Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2 Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 3 Rain chain - replaces roof drain downspout where applicable (optional)

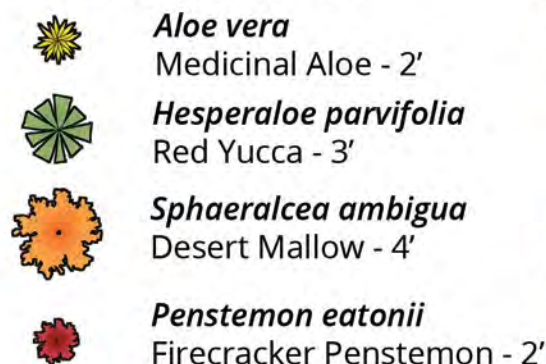
Landscape Elements



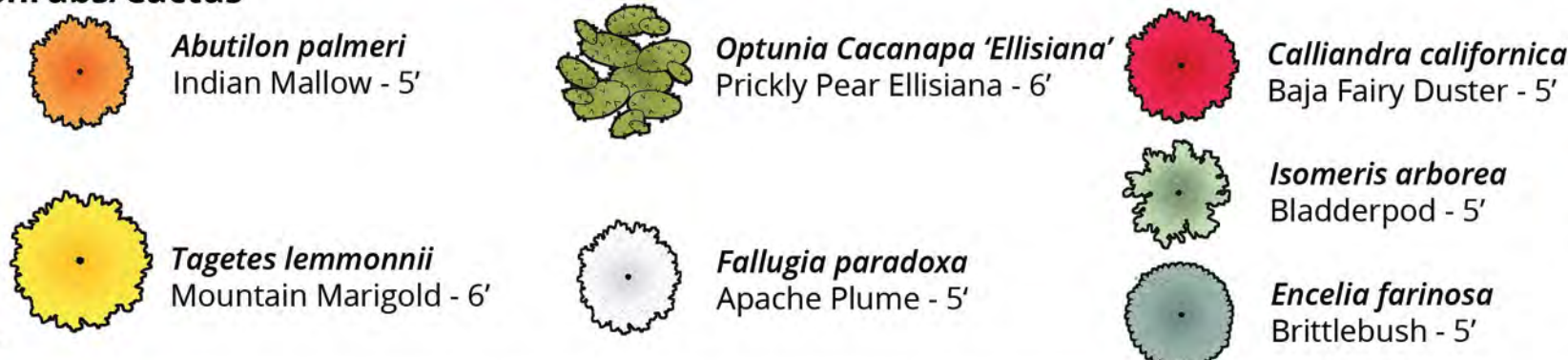
Groundcovers



Perennials/Shrubs ≤ 4'



Shrubs/Cactus





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COLORFUL DESERT Extra-Large Front Yard Design WITHOUT FRONT TREE

NOTES :

- 1** Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2** Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 3** Rain chain - replaces roof drain downspout where
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COLORFUL DESERT

Extra-Large Front Yard Design

WITH PLANT LABELS + WITHOUT FRONT TREE

NOTES :

- 1 Decomposed Granite pathway along curb for car door exit
SEE DECOMPOSED GRANITE DETAIL PAGE
- 2 Dry stream bed to capture water from roof
SEE DRY STREAM BED DETAIL PAGE
- 3 Rain chain - replaces roof drain downspout where applicable (optional)

Detail Pages

Includes :

Bloom Color Calendar **29**
Dry Streambed Detail Pages **30**
French Drain Detail Pages **35**
Mulch Detail Pages **38**
Pathways Detail Pages **41**
Wildflowers Detail Pages **47**
Planting Detail Pages **50**

Bloom Color Calendar

Use this chart to understand what time of year these plants bloom in Southern California gardens
“Bloom seasons” show the main flower color of the plant,
“Off bloom seasons” show the leaf color, which can also be useful in your planting design.
We encourage adding value for the birds, butterflies, and pollinators by having blooms throughout the seasons!

BOXES WITH ICON:
MEANS IT IS USUALLY IN
BLOOM SOMETIME THIS SEASON



garden style :
COLORFUL DESERT

TAKE THE HEAT, WHILE SERVING YOU BEAUTIFUL BLOOMS

Through long-flowering color, this style provides full beauty of a dry landscape with sculptural shapes.

29

PLANT NAME	SPRING	SUMMER	FALL	WINTER
DESERT MUSEUM PALO VERDE	<div></div>	<div></div>	<div></div>	<div></div>
FIRECRACKER PENSTEMON	<div></div>	<div></div>	<div></div>	<div></div>
DESERT MALLOW	<div></div>	<div></div>	<div></div>	<div></div>
ELLISIANA PRICKLY PEAR	<div></div>	<div></div>	<div></div>	<div></div>
PALMER'S MALLOW	<div></div>	<div></div>	<div></div>	<div></div>
APACHE PLUME	<div></div>	<div></div>	<div></div>	<div></div>
BAJA FAIRY DUSTER	<div></div>	<div></div>	<div></div>	<div></div>
ALOE VERA	<div></div>	<div></div>	<div></div>	<div></div>
BLUE FINGER	<div></div>	<div></div>	<div></div>	<div></div>
BLADDERPOD	<div></div>	<div></div>	<div></div>	<div></div>
INCIENSIO, BRITTLEBUSH	<div></div>	<div></div>	<div></div>	<div></div>
MOUNTAIN MARIGOLD	<div></div>	<div></div>	<div></div>	<div></div>
RED YUCCA	<div></div>	<div></div>	<div></div>	<div></div>

PLANT TEXTURES

Photography credit
for plant images :
Robert Perry





Dry Streambed

DETAIL PAGES

30

DRY STREAMBED

What is a dry streambed?

A DRY STREAMBED IS A SUNKEN AREA OF THE LANDSCAPE DESIGNED TO LOOK LIKE A SMALL, SEASONALLY DRY CREEK OR STREAM.

Why might I need a dry streambed?

THEY ARE BUILT IN A LANDSCAPE TO ACCUMULATE RAINWATER FROM ROOFS, DRIVEWAYS, OR OTHER SURFACES AND ALLOW IT TO ABSORB INTO THE GROUND. THESE FEATURES HELP US TREAT RAINWATER LIKE THE RESOURCE IT IS AND MAY HELP SOLVE PUDDLING OR FLOODING ISSUES CURRENTLY EXISTING ON YOUR PROPERTY.

BENEFITS include deeper watering of the garden in rain events, potential groundwater recharge, and improving local water quality by holding and cleaning rainfall through natural processes.

DRY STREAMBED

WITH BERM DETAIL BIRD'S EYE VIEW



Water flows in from
roof gutter down spout

OR

Water flows in
over land

PLAN + BUILD

Online Workshop

For more information about how to plan & build a dry streambed, swale, or infiltration basin for your landscape, **watch** our "Rainwater Harvesting for Home Landscapes" Online workshop recording.

[YOUTU.BE/SSPWOTWAOL0](https://youtu.be/SSPWOTWAOL0)

DRY STREAMBED WITH BERM DETAIL BIRD'S EYE VIEW

Berm created with soil from excavation, to increase pooling depth on slope

Overflow point, slightly lower than top of berm, directs excess water. "Armor" overflow area with gravel / stone to prevent erosion

IMAGE TAKEN AT
THE THEODORE
PAYNE FOUNDATION
NATIVE PLANT
GARDEN TOUR
[nativeplantgardentour.org]



DRY STREAMBED

A dry streambed features rocks and gravel covering much of its surface and may or may not have plants in the part that accumulates water.

SWALE

A similar landscape feature, often called a 'swale', is a sunken area that accumulates water, but does not contain any or many rocks. The term swale, however, can sometimes be a bit confusing because the same word can be used to refer to other types of structures that move water.

INFILTRATION BASIN

The term 'infiltration basin' is used for a landscape feature very similar to a dry streambed or a swale, but it usually refers to a feature that is shaped more like a rounded oval basin that holds and infiltrates water, while a dry streambed or swale is usually longer and narrower (like a dry stream!).

MATERIALS

The gravel, rocks, and boulders used in dry streambeds are usually purchased from landscape material yards or construction materials yards. For a list of businesses that sell this type of material in the western San Bernardino County area, see our :

Local Landscape Suppliers List :
cbwcd.org/suppliers

PLANNING

Dry streambeds do not need to be as large as the ones featured in the **illustrated drawings on the following pages**, but the depicted scale in the drawings helps to show the relevant information. The photos on this page provide some "*real world*" examples of residential-scale dry streambeds. The illustrated details on the next page can also be applied to swales without rock and to infiltration basins.



CALIFORNIA NATIVE GARDEN WITH A DRY STREAMBED,
AND BROKEN CONCRETE BRIDGE [located in POMONA, CA]

For more information about
Berms, see next page!

What is a berm?

BERM

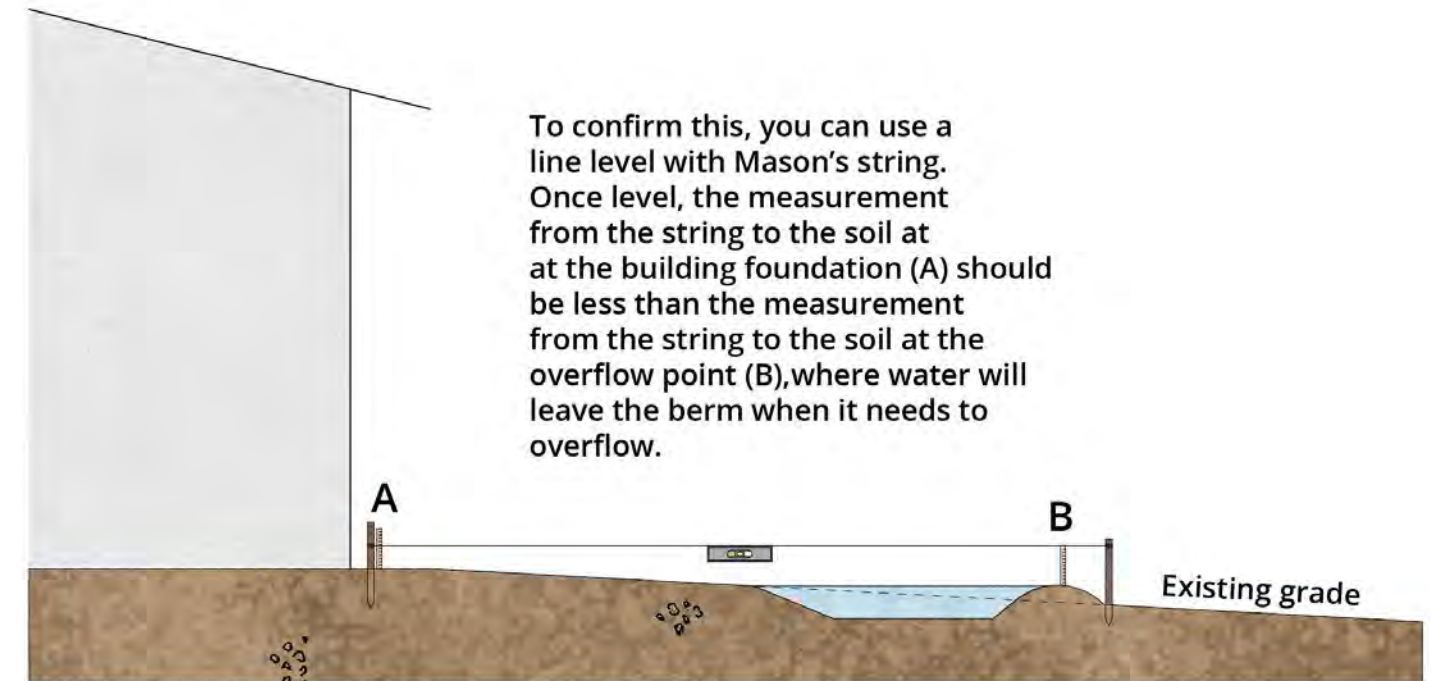
THE BERM IS THE MOUND OF SOIL IMMEDIATELY DOWNSLOPE OF THE EXCAVATED AREA.

BERMS SERVE TO **INCREASE** WATER HOLDING CAPACITY OF DRY STREAMBEDS, SWALES, AND INFILTRATION BASINS ON SLOPED SITES.

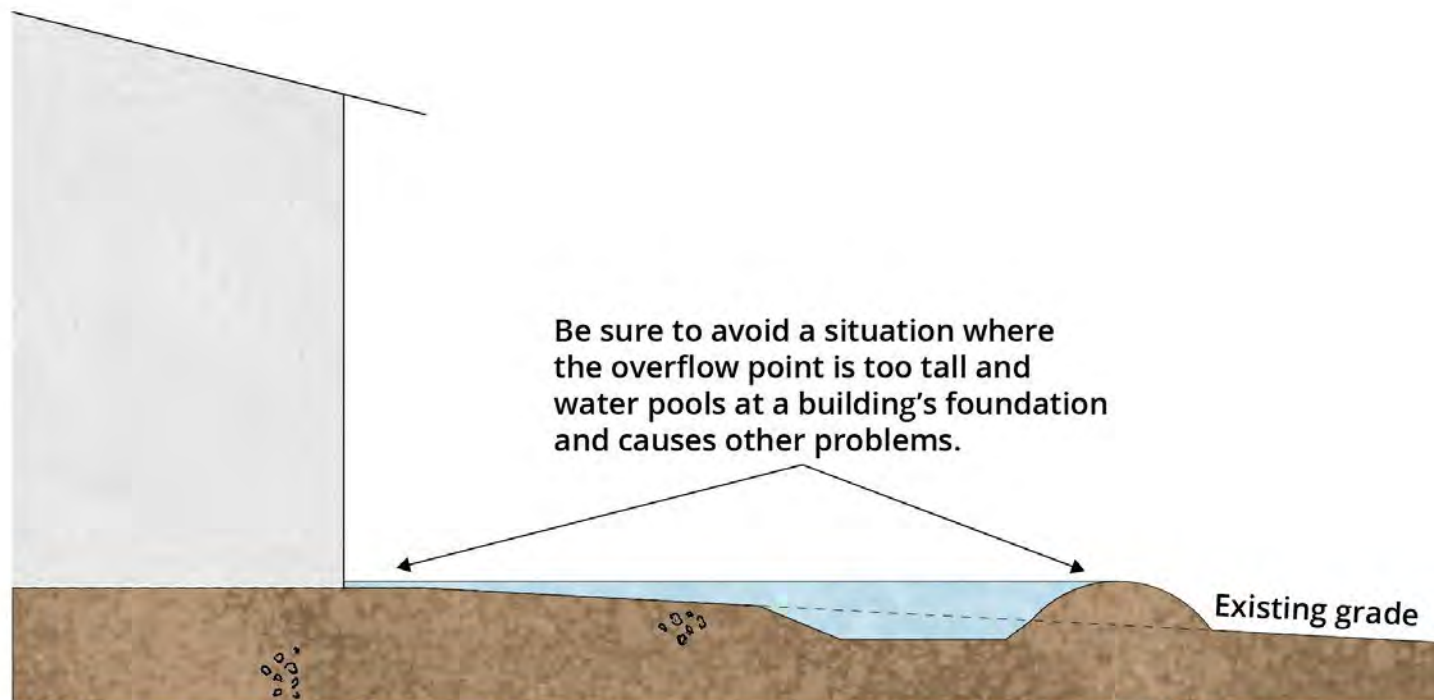
FOR A BIRD'S EYE VIEW OF A DRY STREAMBED AND BERM, REFER TO THE DRAWING ON THE PREVIOUS PAGE.



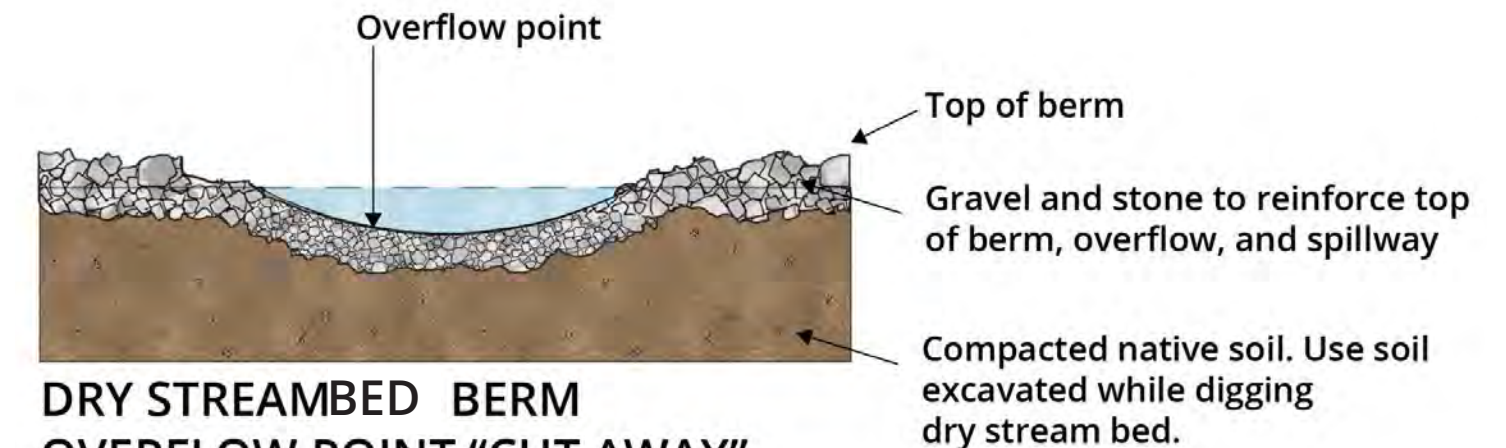
DRY STREAMBED BERM DETAIL FOR SLOPED SITES



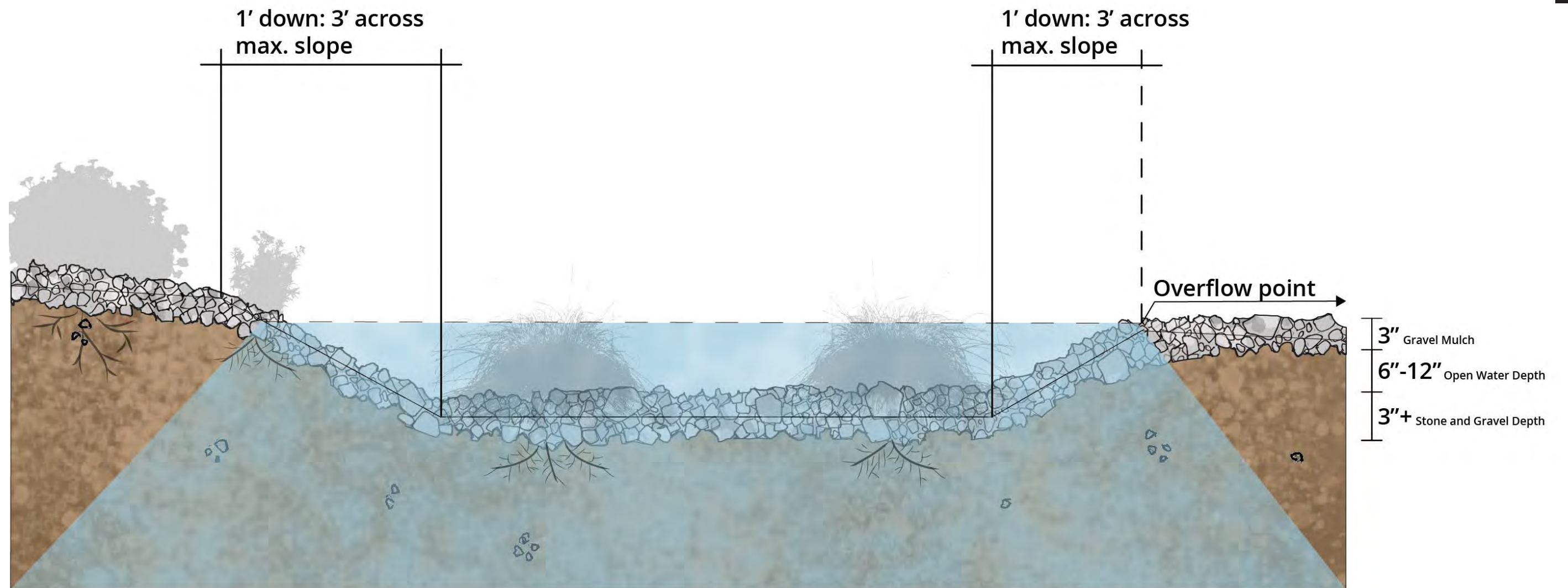
DRY STREAMBED OVERFLOW BERM DETAIL



DRY STREAMBED WITH BERM - TOO TALL - **AVOID THIS SITUATION!**



DRY STREAMBED BERM
OVERFLOW POINT "CUT AWAY"



DRY STREAMBED TYPICAL DETAIL (WITH NO BERM NEEDED)

What plants thrive along or near a dry streambed?

MANY CALIFORNIA NATIVE AND WATERWISE PLANTS THRIVE IN THIS AREA. THIS LIST IS SIMPLY SOME OF OUR FAVORITES FOR THAT CONDITION.

For More Visit :

inlandvalleygardenplanner.org/helpful-lists



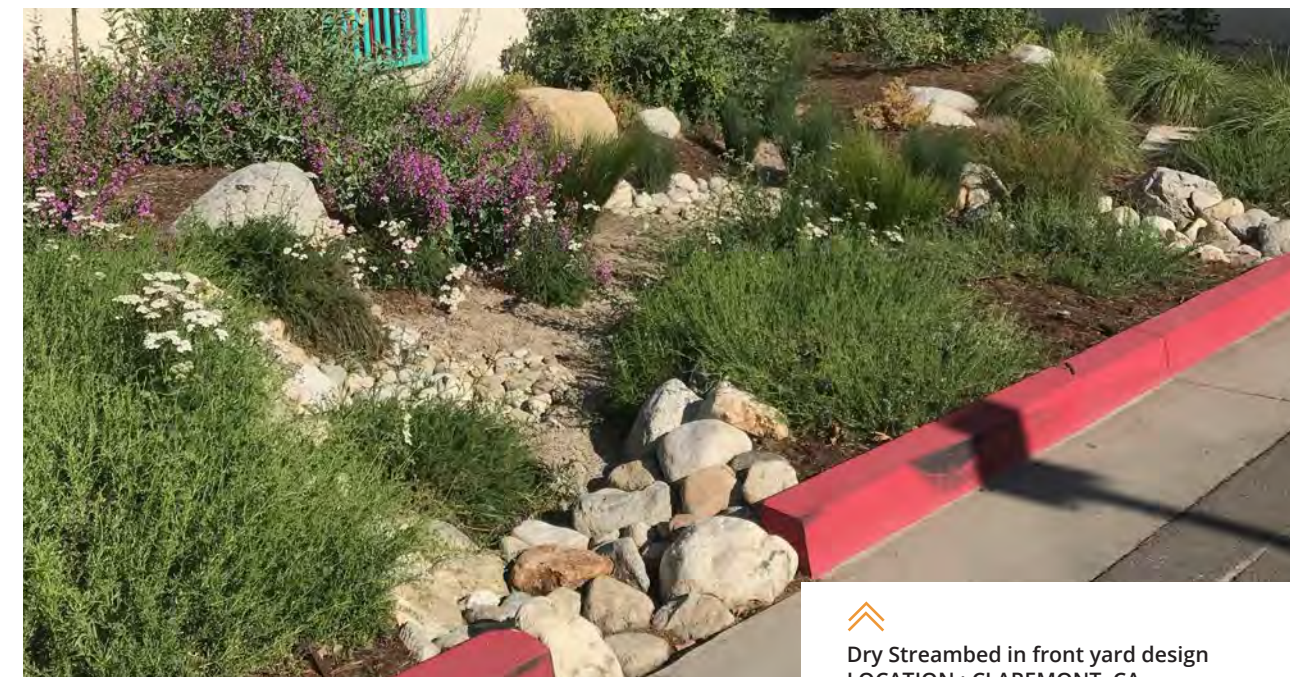
CA GREY RUSH



COMMON YARROW

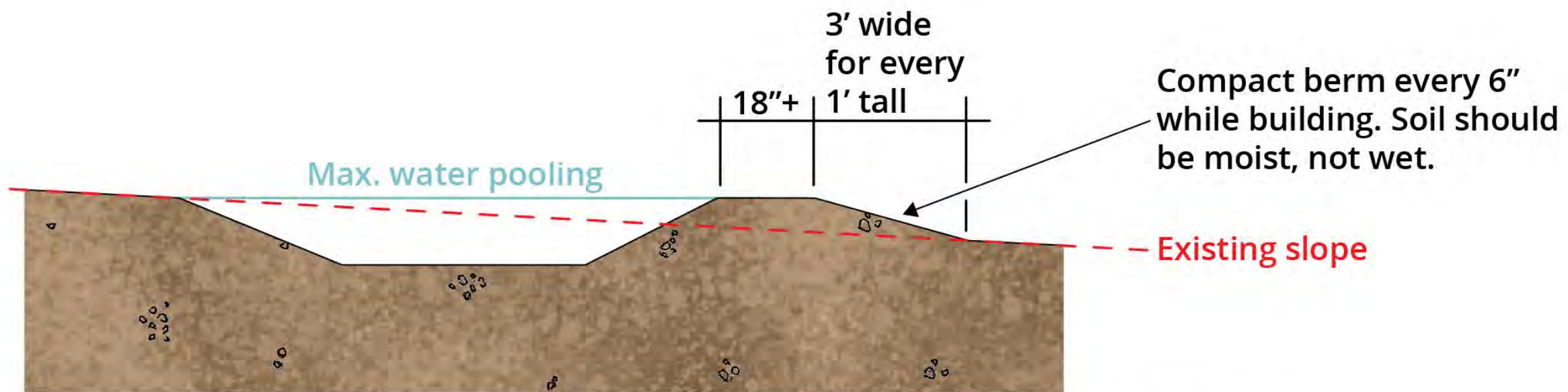


BERKLEY SEDGE



Dry Streambed in front yard design
LOCATION : CLAREMONT, CA

Note: Dry streambeds and infiltration basins should usually only be used in landscape areas w/ less than 8% slope (Approx. 2" over 2' or more accurately 7-3/4" over 8'). To confirm this, you can use a line level, stakes, and a measuring tape, as shown in the "Dry streambed overflow berm detail." Note: The area draining into the dry streambed can be steeper. The area of dry streambed, berm, and immediately downslope are what should be 8% slope or less.



**DRY STREAMBED /INFILTRATION BASIN ON GENTLE SLOPE
BERM WIDTH DETAIL AND NOTES**

French Drain

DETAIL PAGES

35

BENEFITS include deeper watering of the garden in rain events, potential groundwater recharge, and improving local water quality by holding and cleaning rainfall through natural processes.

FRENCH DRAIN

What is a French drain?

FRENCH DRAINS ARE TRENCHES THAT HAVE BEEN FILLED WITH A LARGE DIAMETER GRAVEL, USUALLY 1.5" - 3", FOR THE PURPOSE OF CAPTURING WATER AND EITHER ALLOWING IT TO INFILTRATE IN PLACE, OR SLOWLY MOVING IT TO A PLACE THAT CAN INFILTRATE IT.

Why might I need a French drain?

THEY ARE USEFUL WHEN WATER CAPTURE OR INFILTRATION IS NEEDED ALONG PAVED WALKWAYS, SIDEWALKS, PATIOS, OR OTHER NARROW AREAS WHERE FEATURES LIKE DRY STREAMBEDS WILL NOT WORK.

IMAGE TAKEN AT THE THEODORE PAYNE FOUNDATION
NATIVE PLANT GARDEN TOUR [nativeplantgardentour.org]
GARDEN DESIGN BY : SCRUB JAY STUDIOS

MATERIALS

Cobble or small boulders can be mixed into the top layer of gravel or at the edges of a French drain for a more natural look. The gravel and cobble used in French drains is often purchased from a Landscape Materials Yard or Building Materials Yard. For business that sell these products in the western San Bernardino County area, see our **Local Landscape Suppliers List** : cbwcd.org/suppliers



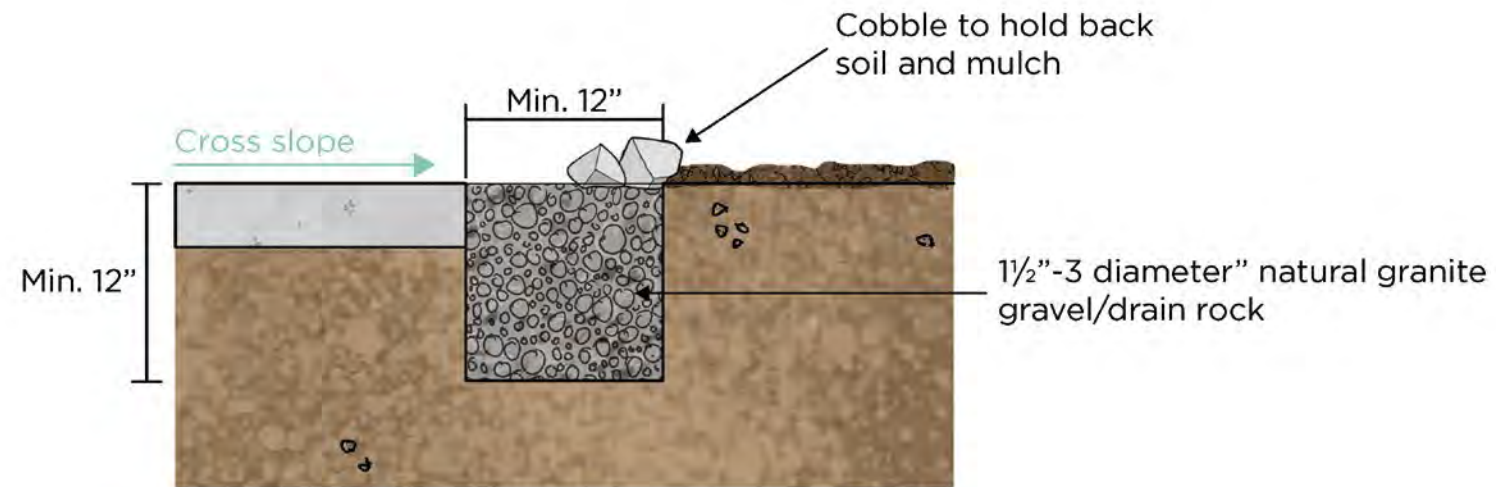
FUNCTION + PURPOSE

Capture Water

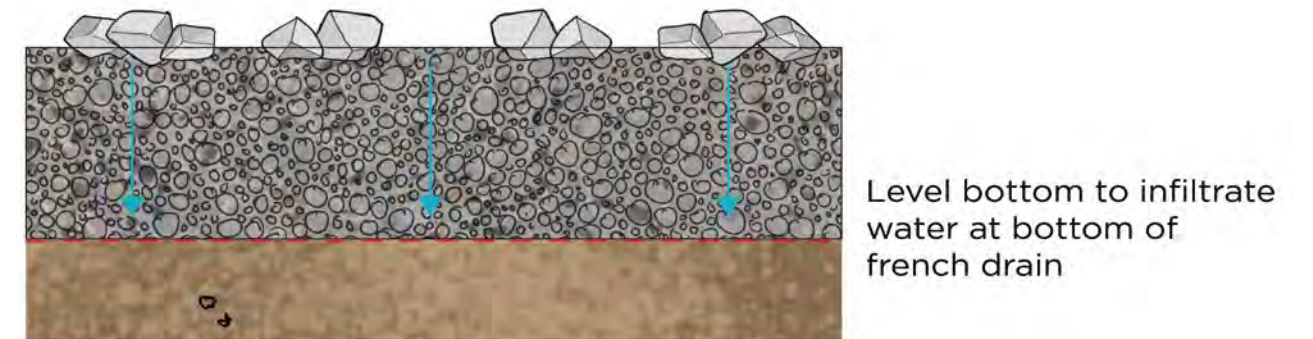
The bottom of the gravel filled trench in this photo is slightly sloped. When it rains, *some* water infiltrates in the trench, but in a large storm event, the slope allows water to move around the side of the house *through* the **French drain**. »

Once the water is safely around and away from the house, it is allowed to drain in a larger dry streambed in the backyard.

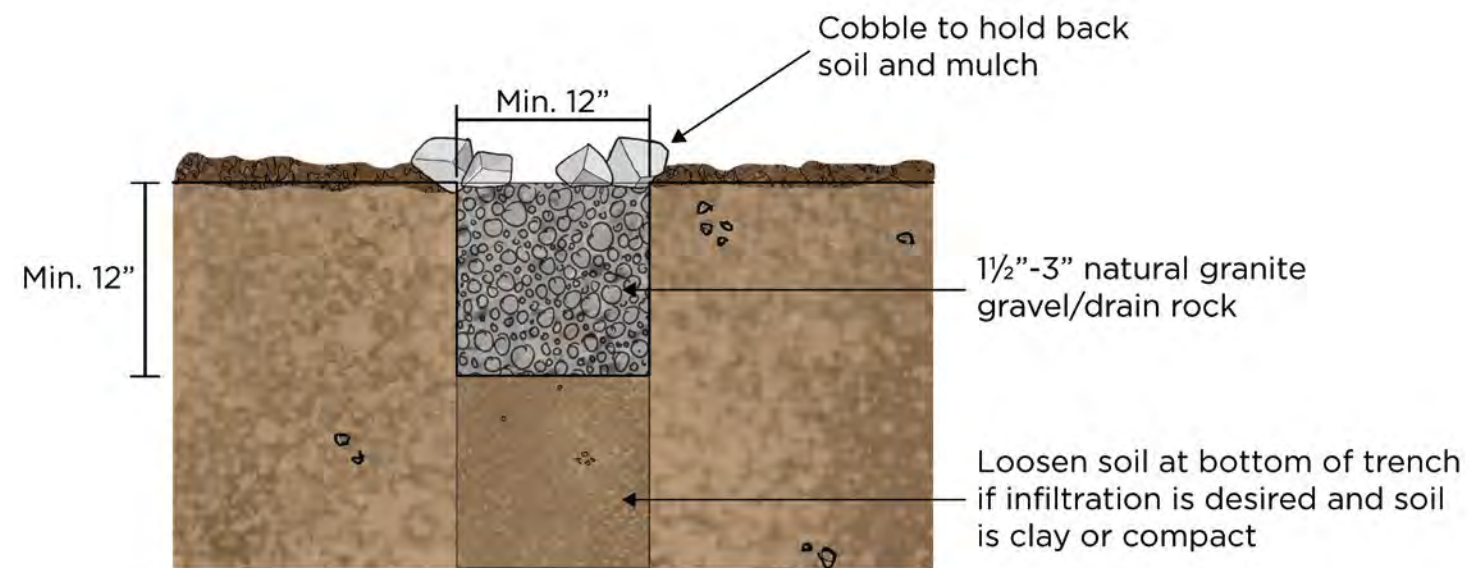




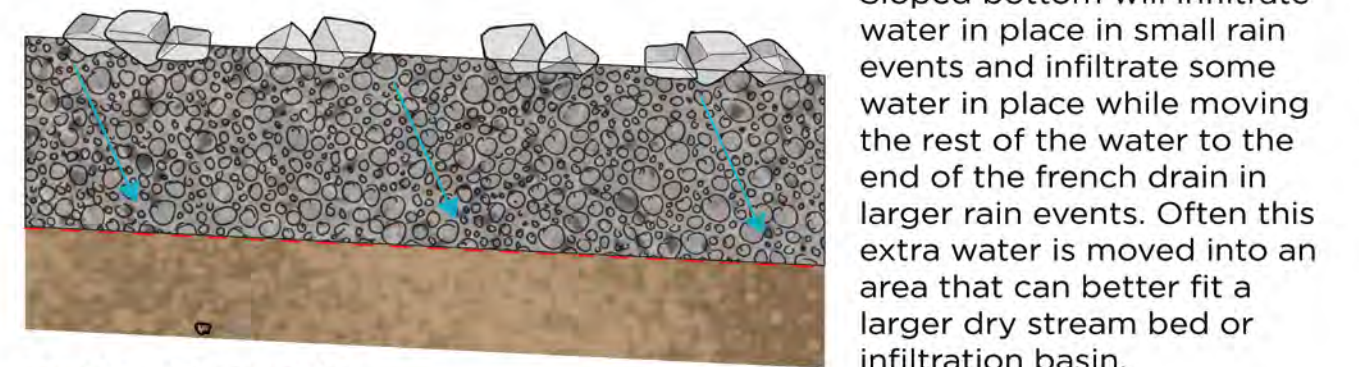
**FRENCH DRAIN
ALONG PAVEMENT**



**FRENCH DRAIN
LEVEL BOTTOM**



**FRENCH DRAIN DETAIL
IN LANDSCAPE**



**FRENCH DRAIN
SLOPED BOTTOM**

Sloped bottom will infiltrate water in place in small rain events and infiltrate some water in place while moving the rest of the water to the end of the french drain in larger rain events. Often this extra water is moved into an area that can better fit a larger dry stream bed or infiltration basin.

Mulch

DETAIL PAGES

MULCH

What is mulch?

MULCH IS A WORD FOR ANY MATERIAL THAT IS USED TO COVER THE SOIL SURFACE IN A GARDEN.

Why might I need mulch?

MULCH HELPS SHADE THE SOIL, ALLOWING THE SOIL TO BETTER RETAIN WATER BY PREVENTING EVAPORATION FROM THE SOIL SURFACE. GENERALLY, A LAYER OF MULCH 2 - 3 INCHES DEEP IS APPLIED TO THE SOIL SURFACE AFTER PLANTING AND IRRIGATION WORK IS COMPLETED.

IMAGE TAKEN AT THE TREE OF LIFE NURSERY IN SAN JUAN CAPISTRANO.

WOODCHIP MULCH

Woodchip mulch is either a combination of ground tree trimmings or a specific product produced from trees (often bark) manufactured for use in the landscape.



It is often one of the more economical ways to cover the soil in a newly planted garden, especially if it can be picked up for free from local mulch give-away programs:

- The Waterwise Community Center gives away woodchip mulch at our headquarters in Montclair (See cbwcd.org/-mulch).

- If a large quantity of mulch is needed, some local community members have been successful obtaining free ground tree trimming mulch through the chipdrop app. If you are considering this, be sure to read all the information on the chipdrop website to be confident it matches your needs and expectations.

ALLOW LEAVES TO JOIN!

For California native plantings, an approximately 2" layer of woodchip mulch may be appropriate when installing new landscapes, but it is best to allow plants to "self-mulch" with their own leaves or chopped-up prunings from native plants in your garden after that, if possible.

MIXING IT UP!

Consider adding some gravel, small boulders, and a few branches or logs either during construction or over time for a naturalistic look. Deep repeated applications of imported woodchip mulch to native plantings can sometimes cause long-term problems, especially if they are *over-watered*.

WOODCHIP MULCH IN YOUR LANDSCAPE

- Fruit trees and most temperate or tropical-climate plants prefer a **deeper mulch** layer of 3" for smaller plants and 4" for trees.
- Be sure to maintain the woodchip mulch **at least 3" away** from the bases and stems of woody plants and shrubs. *Wet mulch up against stems can cause rot and encourage disease.*

BENEFITS IN TYPES OF SOILS

Woodchip breaks down over time, adding organic matter to the soil. This is great for fruit trees and plants that like **rich soil**, and it can help improve the drainage of *heavy clay* and *compacted soils*. California native and waterwise plants in *well-draining soils* may not care about additional organic matter though.

"TOUCH-UP"

As woodchip mulch breaks down, additional woodchip mulch generally needs to be added every few years which can be costly or require large amounts of work in large yards. In yards with California native plants, one might decide to "touch up" the woodchip mulch in pathway areas every few years, but allow the planting areas to "self-mulch" with dropped leaves and chopped up trimmings.



TYPES OF MULCH

Below are the most *common* types of mulch used in gardens. These pages contain information about the best ways to **use** each.

- WOODCHIP MULCH
- GRAVEL MULCH
- DECOMPOSED GRANITE MULCH
- MIXING IN COBBLE & BOULDERS

GARDEN IN *RANCHO CUCAMONGA* MIXING SIZES OF GRAVEL AND BOULDERS, FLAGSTONE, AND AN AREA OF DECOMPOSED GRANITE MULCH IN THE BACKGROUND



GRAVEL MULCH

Gravel mulch is appropriate for *California native and waterwise plants* from dry, sunny areas, including most succulents and desert plants.

Gravel mulch applied to large areas and all one size (for example an entire yard of ¾" gravel) tends to look "industrial" and potentially unattractive. *Mixing sizes of gravel* and choosing to work with the types



of gravel and rock that naturally occur in your area usually results in a much more attractive project.



HOT CLIMATE PRECAUTIONS

Remember that large areas of gravel in our hot climate can **absorb lots of heat** and, if light colored, can create lots of glare in the summer. Remember to *mix in* some heat-tolerant trees or large shrubs in your design if you are using all gravel mulch to provide some shade and structure to your landscape, which will help with these potential issues.

IMAGE TAKEN AT THE THEODORE PAYNE FOUNDATION NATIVE PLANT GARDEN TOUR [nativeplantgardentour.org]

DECOMPOSED GRANITE MULCH



WHAT IT IS

Decomposed granite is a natural product that is much smaller than gravel, and almost *similar to a very sandy soil*. It is similar to the natural soil of some southern California mountain areas, and it can make an appropriate mulch layer for **low water and native plants** from hot sunny areas and succulent gardens.

SLIPPERY SLOPE!

Decomposed granite *erodes easily during rain* when on slopes, so is best applied to relatively **flat landscape areas** only.

PURCHASING D.G. MULCH

Decomposed granite can be purchased “*with binder*” and “*without binder*.” The binder is a product, usually naturally derived, that allows it to be **compacted** and form a hard and relatively resilient walking surface when properly installed. Decomposed granite with binder is usually **used for pathways and patio spaces**, while decomposed granite without binder is **used for mulching planted areas**.

LONG-TERM

As a *mineral mulch*, decomposed granite has the advantage of not needing to be renewed, like woodchip mulch needs, but it **can** have problems with weed **seeds germinating** and growing in it.

MIXING IN COBBLE & BOULDERS

Cobble and boulders of a stone type local to your area are often a nice addition to the garden surface, added among whatever type of mulch you choose, to achieve a **natural** looking effect.

Cobble and boulders are usually purchased at **landscape materials yards** and *charged by the pound*. Delivery is available for a fee. For larger quantities, cobble is usually purchased in metal baskets on pallets, while **larger boulders** can be selected individually.



DECOMPOSED GRANITE MULCH IN GARDEN OF SUCCULENTS MIXED WITH CALIFORNIA NATIVE AND MEDITERRANEAN PLANTS IN A RESIDENTIAL FRONT YARD [located in Pasadena, CA]



IMAGE TAKEN AT TREE OF LIFE NURSERY IN SAN JUAN CAPISTRANO

Pathways

DETAIL PAGES

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USE OF DIFFERENT SIZES OF GRAVEL, STONE, AND RECYCLED CONCRETE FOR PATHWAYS AND PLANTING EDGES. **NOTE** HOW THE RAIN CHAIN BRINGS WATER FROM THE ROOF GUTTER DOWN ONTO THE COBBLESTONES. THE WATER CAN THEN SPREAD OUT ALONG THE GRAVEL PATH AND SLOWLY SINK INTO THE SOIL BELOW.

PATHWAYS

What are pathways?

PATHWAYS ARE WALKING SURFACES OF ANY TYPE THAT ALLOW ACCESS THOUGH A LANDSCAPE. REMEMBER, DON'T FORGET TO LEAVE SPACE FOR YOURSELF AS YOU PLAN FOR ALL YOUR NEW PLANTS!

Why might I need pathways?

PATHWAYS ARE ESSENTIAL TO ENJOY WALKING THOUGH YOUR GARDEN AND TO ACCESS AREAS TO CARE FOR YOUR LANDSCAPE. CHOOSING PERMEABLE MATERIALS LIKE GRAVEL, DECOMPOSED GRANITE, OR JUST A LAYER OF WOOD-CHIP MULCH FOR YOUR PATHWAYS, ALLOWS WATER TO SOAK IN WHEN IT RAINS AND HELPS PREVENT THE RUNOFF AND FLOODING ISSUES THAT CAN BE CAUSED BY CONCRETE HARDSCAPE.

IMAGE TAKEN AT THE THEODORE PAYNE FOUNDATION
NATIVE PLANT GARDEN TOUR [nativeplantgardentour.org]
GARDEN DESIGN BY : SCRUB JAY STUDIOS

TYPES OF PATHWAYS

Below are the *most common* types of pathways and some information about the types of materials with which they might be used :

■ DECOMPOSED GRANITE

■ GRAVEL

PATHWAY TYPES BENEFITS

Decomposed granite and **gravel** are popular choices for pathways and patio areas in California native and waterwise gardens. *Compared* to concrete, brickwork, and other paving, they are less expensive options that have a nice, **natural feel** in the landscape. They are also permeable surfaces:

When it rains, they can **absorb most** of the rainfall in place, allowing it to **soak into the soil** below, rather than runoff and have to be dealt with elsewhere, as is the case with traditional paved surfaces like concrete.

MATERIALS

Materials for **decomposed granite** or **gravel** pathways are usually purchased from landscape materials yards or building materials yards. *Edging* and *permeable landscape fabric* are usually purchased from landscape and irrigation materials suppliers.

For lists of these businesses in the western San Bernardino County area, see our **Local Landscape Suppliers list:** cbwcd.org/suppliers

WALK-ABILITY

Decomposed granite pathway in a newly planted garden showing the path and a narrow “*walking strip*” to allow car doors to open and people to **walk along the curb** to the central path. If the parking strip planter was wider, a wider walking strip might be desirable. »



STABILITY OF D.G. PATHS

Decomposed granite pathways and patios are usually constructed with “*stabilized*” decomposed granite, which is most often mixed in by the supplier and ordered as “*stabilized*.” This additive, usually naturally derived, allows the decomposed granite to be moistened immediately after spreading it out, and compacted with a tamper. This forms a hard, resilient surface with some of the characteristics of harder paving, while retaining a natural feel.

CONSIDERATIONS FOR D.G.

Decomposed granite surfaces have many positive qualities in a landscape space, however, there are some considerations to be aware of:

When wet, as in immediately after a rain event, even stabilized decomposed granite acts somewhat like wet, muddy soil. After getting significantly wet, *it is best to wait* to walk on decomposed granite until it dries some.

Even with stabilized decomposed granite, shoes and dog paws can capture bits of the decomposed granite material and track them inside. That can be avoided by not using decomposed granite immediately near the house. If you have a *transitional space* between the decomposed granite and the house, such as a paved or gravel walk or patio, usually the *small bits of decomposed granite will fall off shoes* before reaching the door.

Finally, decomposed granite is **prone to erosion** on steep slopes, so should generally *not be used for steep pathways*.

EDGING OPTIONS

Decomposed granite pathways and patios should have metal, plastic, or natural rock edging installed to help retain the edge and allow for proper compaction during installation.



PATHWAY SHOWING PLASTIC EDGING IN THE SAME GARDEN AS THE ONE TO THE UPPER LEFT.

GRAVEL PATHWAYS

Gravel pathways and patios are usually constructed of a small “*pea gravel*” or even smaller “*bird’s eye gravel*.” **Pea gravel** is found either as natural small-sized gravel (that has been sifted) or crushed gravel. It is best to use non-crushed gravel because the edges of the gravel are *naturally* more rounded, which has a nicer look and is **more comfortable** to walk on.

It is not as important to use edging with gravel paths and patios but may be desirable depending on your conditions and design.

GRAVEL PATHWAY ALONG THE SIDE OF THE HOUSE ALLOWS WATER COMING OFF THE ROOF SUFFICIENT SPACE TO **SOAK IN** RATHER THAN CAUSE FLOODING UP AGAINST THE HOUSE DURING LARGE RAIN EVENTS.

GROUND COVER MATERIAL SHOWN : 1.5” - 2” GRAVEL

IMAGE TAKEN AT THE THEODORE PAYNE FOUNDATION
NATIVE PLANT GARDEN TOUR [nativeplantgardentour.org]
GARDEN DESIGN BY : SCRUB JAY STUDIOS

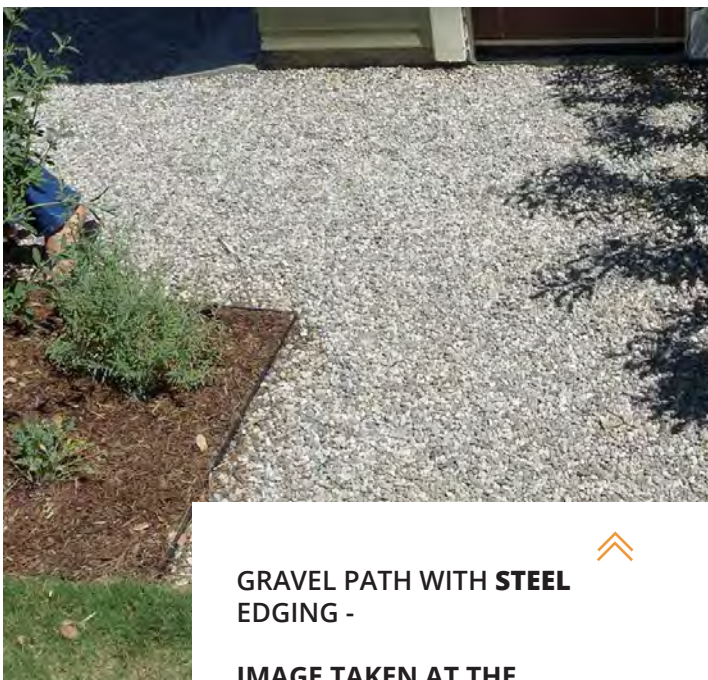
GRAVEL PATIO / DRIVEWAY ALLOWS LARGE QUANTITIES OF RAINWATER TO SOAK IN ON SITE DURING THE RAIN.



IMAGE TAKEN AT THE THEODORE PAYNE FOUNDATION
NATIVE PLANT GARDEN TOUR [nativeplantgardentour.org]

Decomposed granite paths and patios are usually installed with a permeable landscape fabric underneath to keep the decomposed granite and native soil separated over time. Gravel paths and patios may or may not be installed with landscape fabric. It *may help* prevent weeds and *may help* prevent the gravel from sinking into the soil over time, requiring additional gravel. However, it *may be unsightly* if gravel shifts, exposing the fabric. It *might* also be a use of additional materials that may not be necessary in residential gardens if there are not weed problems in that area of the landscape.

On these pages are diagrams showing a "cut away" view illustrating the construction of decomposed granite and gravel paths and patios:

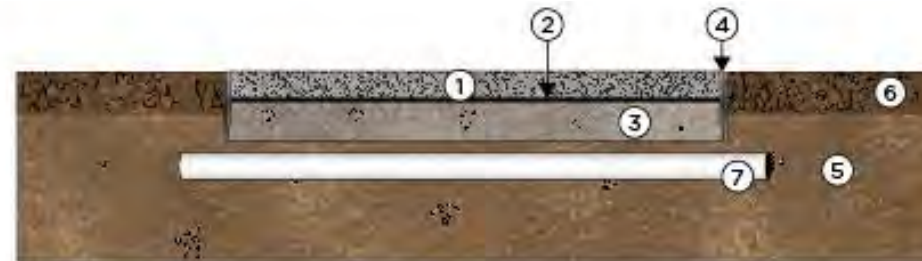


GRAVEL PATH WITH **STEEL** EDGING -

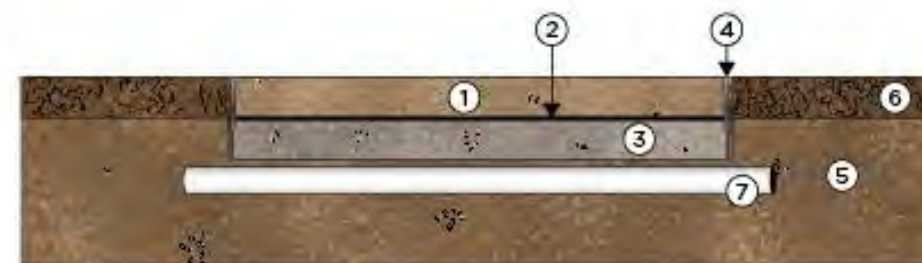
IMAGE TAKEN AT THE THEODORE PAYNE FOUNDATION NATIVE PLANT GARDEN TOUR
[nativeplantgardentour.org]

DECOMPOSED GRANITE PATHWAY WITH STEEL, ALUMINUM, OR PLASTIC EDGING

- 01** Stabilized decomposed granite, compacted on site, 3"
- 02** Permeable landscape fabric
- 03** Compacted road base, 3," optional. It requires much more work to install this sub-layer and is more expensive, but provides a harder, more resilient installation. This is how decomposed granite is usually installed in high-traffic public spaces and is usually a job for a contractor.
- 04** Edging, staked in place. Steel, aluminum, or plastic all work. Steel and aluminum edging generally look better, are more stable, and last longer, but they are much more expensive and more difficult to install.
- 05** Native soil
- 06** Mulch
- 07** 2" or larger PVC pipes installed wherever future irrigation pipes or wiring may need to cross under the pathway, optional. If there is any chance that pipes or wires may need to go under the path in the future, it is much easier to install these "sleeves" of larger diameter pipe when the pathway is being installed. The pipes or wires can then be slid through the sleeves when needed. Covering the ends with unglued PVC caps will keep dirt out of the sleeves.



GRAVEL PATHWAY WITH STEEL,ALUMINUM, OR PLASTIC EDGING



DECOMPOSED GRANITE PATHWAY WITH STEEL, ALUMINUM, OR PLASTIC EDGING

GRAVEL PATHWAY WITH STEEL, ALUMINUM, OR PLASTIC EDGING

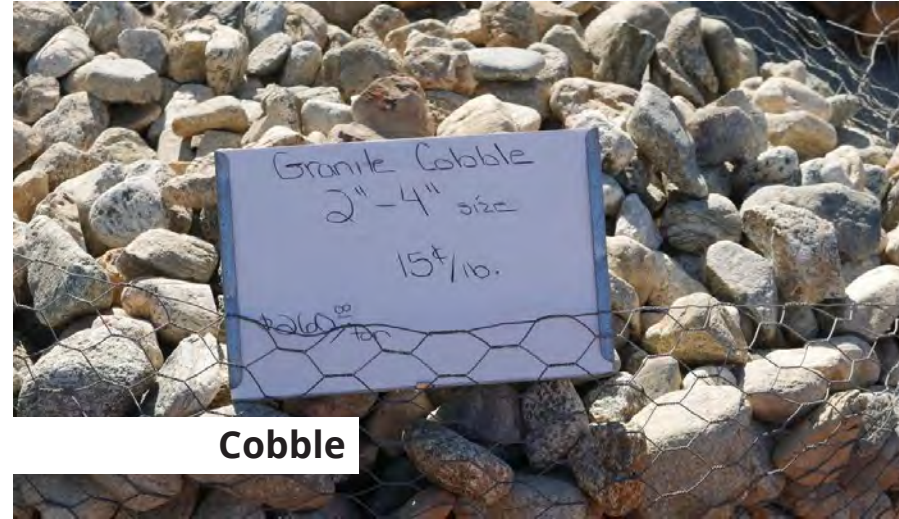
- 01** Pea gravel or Bird's eye gravel 1-2" *deep* depending on product. Test the depth that feels right to walk on for your gravel choice and preferences.
- 02** Permeable landscape fabric, *optional*
- 03** Compacted road base, 3," optional. It requires much more work to install this sub-layer and is more expensive, but provides a harder, more resilient installation. This is how pathways are usually installed in high-traffic public spaces and is usually a job for a contractor.
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DECOMPOSED GRANITE PATHWAY WITH COBBLE EDGING

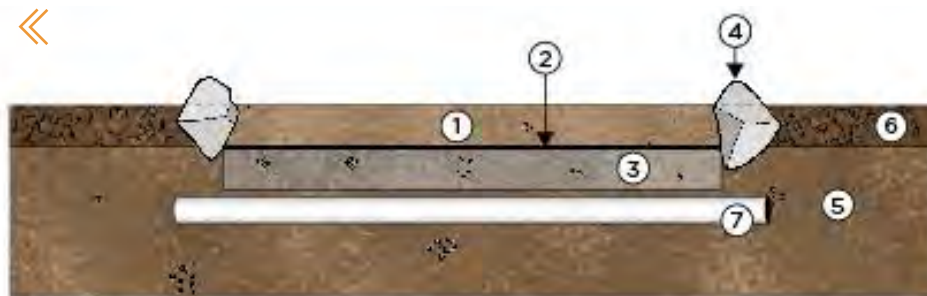
- 01** Stabilized decomposed granite, compacted on site, 3"
- 02** Permeable landscape fabric
- 03** Compacted road base, 3," optional. It requires much more work to install this sub-layer and is more expensive, but provides a harder, more resilient installation. This is how decomposed granite is usually installed in high-traffic public spaces and is usually a job for a contractor.
- 04** River rock / granite cobble and / or small boulders
- 05** Native soil
- 07** 2" or larger PVC pipes installed wherever future irrigation pipes or wiring may need to cross under the pathway, optional. If there is any chance that pipes or wires may need to go under the path in the future, it is much easier to install these "sleeves" of larger diameter pipe when the pathway is being installed. The pipes or wires can then be slid through the sleeves when needed. Covering the ends with unglued PVC caps will keep dirt out of the sleeves.



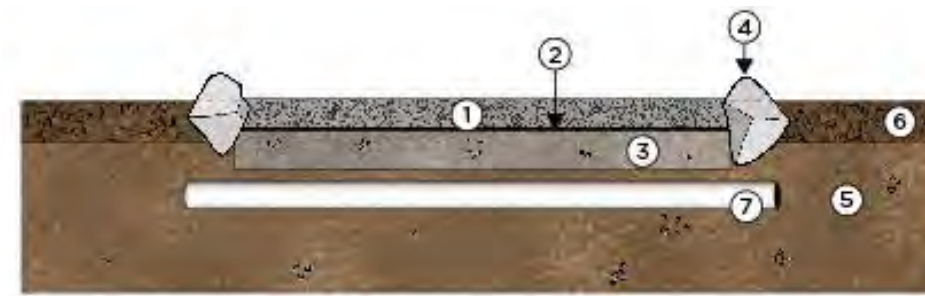
Pea Gravel



Cobble



DECOMPOSED GRANITE PATHWAY WITH COBBLE EDGING



PEA GRAVEL PATHWAY WITH COBBLE EDGING



DECOMPOSED GRANITE PATIO AREA AT TREE OF LIFE NURSERY [located in SAN JUAN CAPISTRANO]

PEA GRAVEL PATHWAY WITH COBBLE EDGING

- 01** Pea gravel or Bird's eye gravel 1-2" deep depending on product. Test the depth that feels right to walk on for your gravel choice and preferences.
- 02** Permeable landscape fabric, optional
- 03** Compacted road base, 3," optional. It requires much more work to install this sub-layer and is more expensive, but provides a harder, more resilient installation. This is how pathways are usually installed in high-traffic public spaces and is usually a job for a contractor.
- 04** River rock / granite cobble and / or small boulders
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Annual Wildflowers

DETAIL PAGES

ANNUAL WILDFLOWERS

What are annual wildflowers?

ANNUAL WILDFLOWERS ARE PLANTS THAT GROW FROM SEED DIRECTLY IN THE LANDSCAPE AND ONLY LIVE FOR ONE SEASON. IN OUR AREA, WE RECOMMEND USING CALIFORNIA NATIVE WILDFLOWERS WHICH ARE SEEDED INTO THE GARDEN INTO THE FALL FOR SPRING BLOOMS.

Why might I use annual wildflowers in my landscape?

WHETHER FOR BEAUTY, FOOD FOR POLLINATORS AND SONG-BIRDS, OR TO FILL EMPTY SPACE, THERE ARE MANY REASONS TO INTEGRATE SOME AREAS OF CALIFORNIA NATIVE ANNUAL WILDFLOWERS INTO AREAS OF YOUR GARDEN THAT ARE NOT ALREADY OCCUPIED BY OTHER PLANTS.

ANNUAL WILDFLOWERS

A few small patches of wildflowers can add a lot to your garden while requiring very little work. However, large meadows of wildflowers do tend to require a lot of weeding, so it is best to start small when you are first experimenting with growing annual wildflowers.

Many different **California native** wildflowers grow easily in our home gardens. Here are some of the easiest and *most beautiful* to start with:

Sunny areas:

- **California poppy**
- **Desert bells**
- **Tansy leaf phacelia** (for larger areas)
- **Clarkia** (many species)

Part shade areas:

- **Clarkia** (many species)

Goldfinches eating clarkia seeds after the blooms have faded and the plants have dried. **Goldfinches love clarkia seeds!**



WHERE TO BUY

Many retailers of California native wildflowers also sell mixes of different wildflower seeds and can help you select which mixes might be best to try in your situation.

Mixes can be a lot of fun, because even with the same seed mix, different spaces in your yard and the weather in different years can result in a different mix of flowers!

In **our area**, local retailers include :

- 01** Grow Native Nursery at the California Botanic Garden in Claremont
- 02** Theodore Payne Foundation in Sun Valley
- 03** Tree of Life Nursery in San Juan Capistrano
- 04** Peaceful Valley Farm Supply, online (if ordering from Peaceful Valley, be sure you are ordering **California native wildflower seeds** or **mixes** as they sell seeds from many other areas as well)



Wildflowers are great for empty spaces in the landscape!

MIX INTO YOUR LANDSCAPE OR EDGES OF PATHWAYS TO GET SEASONAL POPS OF COLOR LIKE THIS **CLARKIA**

PLANTING SEEDS

California native wildflowers must be seeded into your garden in fall though *early winter*. Immediately before the first rains is usually a perfect time to do it. To spread seed, lightly sprinkle your seeds into the desired area, being careful not to spread seeds too closely to small new plantings, because the wildflowers tend to grow *very quickly* and may shade small adjacent plants. Seed can be spread directly on open soil or on top of a mulched garden surface.

Wildflowers will sprout up best in **open soil** or in **lightly mulched** gardens (1-2").

You can either leave the seeds on the surface, or very *lightly* rake them into the soil or mulch, ideally settling them only 1/8"-1/4" or so into the soil.

After seeding you can either just let the rain water them, or, for more control and to help guarantee good **growth**, you can water occasionally, usually no more than once per week when the weather is dry, until they get **established**.

"Established" means it has grown significantly.

Clarkias growing in a very narrow strip of soil without enough room for most planting options.

"OFF-SEASON" WILDFLOWERS

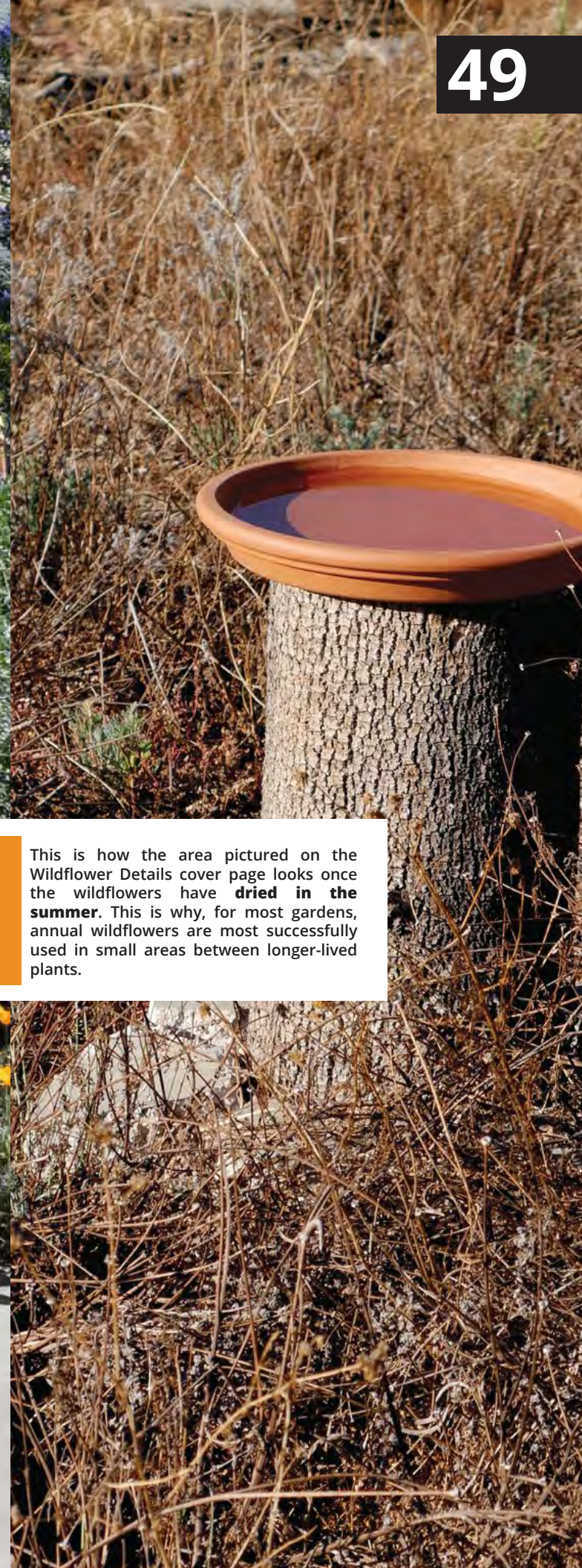
Wildflowers will grow though the fall and winter, then bloom in the spring. If desired, blooms can be extended with an occasional irrigation in the spring.

After blooms fade, allow seeds to **ripen** to feed *seed-eating* birds. If you live in an urban wildland interface area and wildfire is a concern, remove spent wildflowers before they dry. If you live in an urban area without this concern, you may choose to allow plants to dry out and drop seed naturally. Some will be eaten by birds, and some will usually regrow the following season. After seeds drop you may either **chop up** plants to add to the mulch layer, **compost** them if you do not mind wildflower seeds in your compost, or place them in your **green bin**.

California poppies and clarkias lightly seeded in between other, more permanent plantings.



This is how the area pictured on the Wildflower Details cover page looks once the wildflowers have **dried in the summer**. This is why, for most gardens, annual wildflowers are most successfully used in small areas between longer-lived plants.



Planting

DETAIL PAGES

50

PLANTING

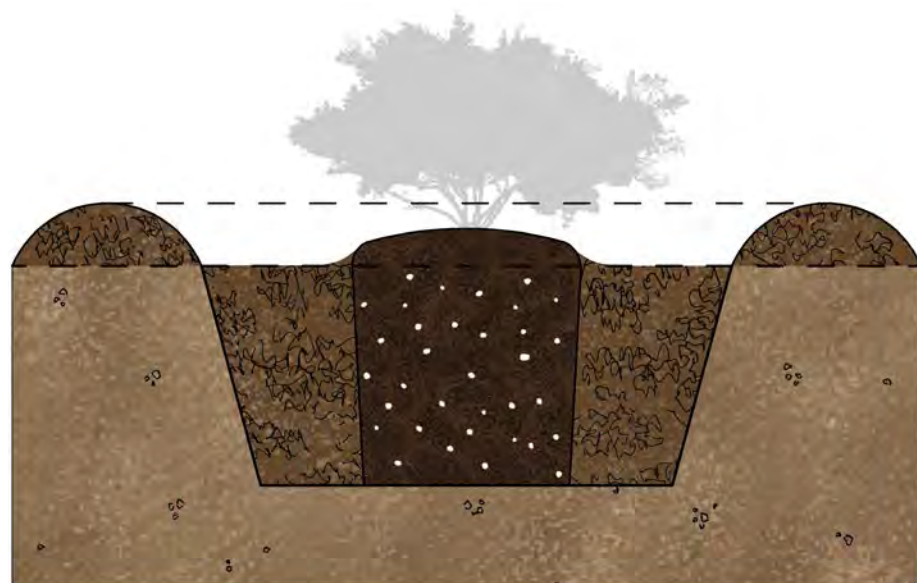
Why might I use these techniques for planting my new landscape?

PLANTING WATERWISE AND CALIFORNIA NATIVE PLANTS PROPERLY IS ONE OF THE MOST IMPORTANT THINGS YOU CAN DO TO SET UP YOUR GARDEN PROJECT FOR SUCCESS. IT IS NOT COMPLICATED, BUT PEOPLE OFTEN TELL US THEY NEVER LEARNED THE TECHNIQUES WE COVER HERE AND IN OUR ONLINE PRESENTATIONS

WE HIGHLY RECOMMEND YOU CHECK OUT OUR "INSTALLATION AND ESTABLISHMENT OF CALIFORNIA NATIVE AND WATERWISE GARDENS" ONLINE WORKSHOP RECORDING ON OUR YOUTUBE CHANNEL AT [CBWCD.ORG/YOUTUBE](https://www.cbwcd.org/youtube).

WE GUIDE YOU THROUGH A STEP-BY-STEP PLANTING PROCESS AND PROVIDE MANY MORE TIPS TO HELP MAKE YOUR PROJECT A SUCCESS!





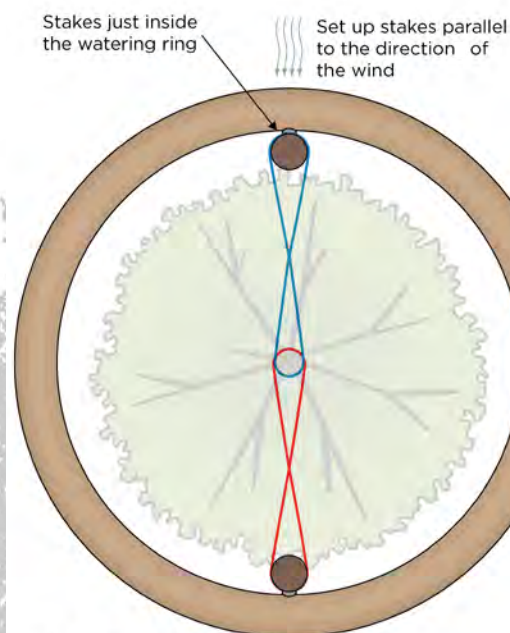
PLANTING FOR 1 & 5 GALLON PLANTS

Watering ring to 2" above top of root ball

2"
1-2"

Top of root ball 1-2" above surrounding soil level

Dig hole slightly less deep than and twice as wide as root ball. Usually backfill with native soil only. No fertilizer is needed! Add up to 1/4 compost only if soil is extremely rocky or very heavy clay.



PLANTING DETAIL TREE OVERHEAD VIEW

NOTE : PROPER STAKING AND TYING OF TREES THAT REQUIRE STAKING IS ESSENTIAL TO ESTABLISH A STRONG TREE THAT HAS THE BEST CHANCE OF RESTING DAMAGE DURING STRONG WINDS.

TREE STAKES

In most situations, **tree stakes** should be firmly inserted into the soil about *two feet from the main trunk* of the tree, parallel with the main direction of winds on the site, and should use "*figure eight*" shaped ties with proper tree tie material and tree stakes, available from a local landscape supply store. For local locations in the western San Bernardino County area, see our **Local Landscape Suppliers List** : cbwcd.org/suppliers
A *post pounder* will be needed to properly install tree stakes.

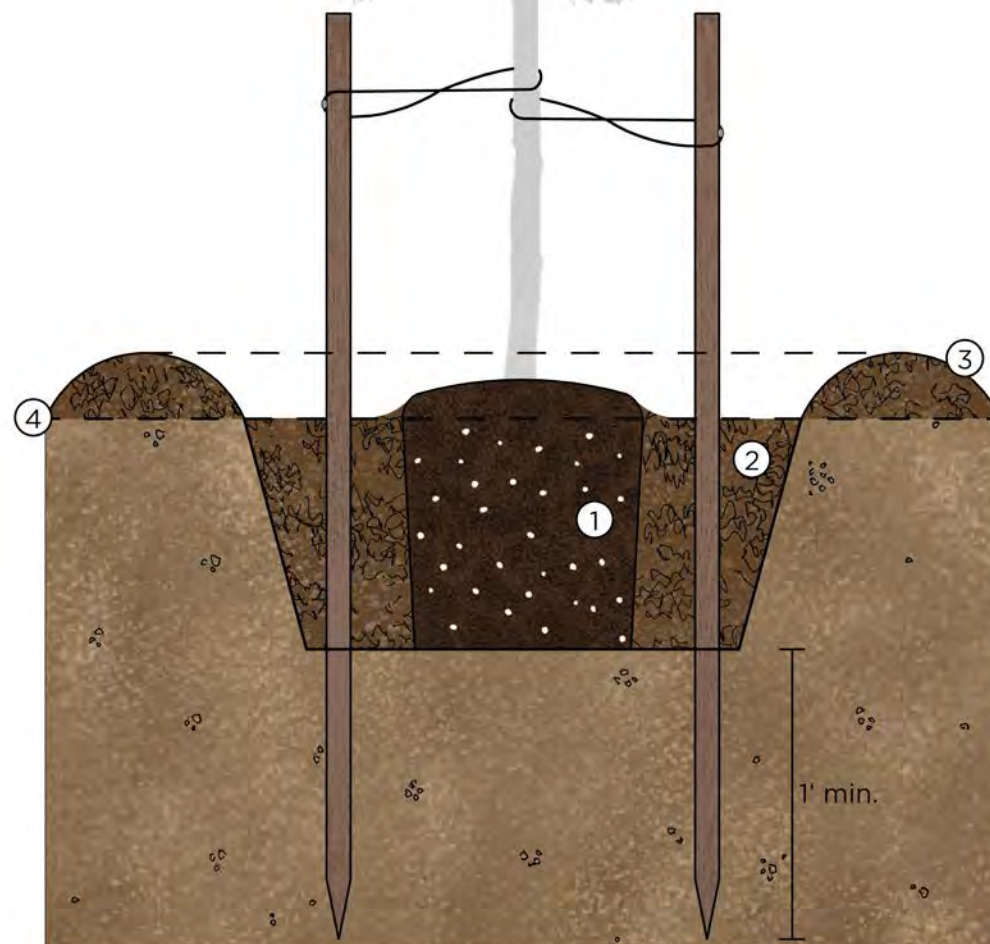
TREE TIES

Ties should be applied as low on the trunk as possible to support the tree as needed, but also allowing the tree to move in the breeze to establish strength. If the tree came with a stake attached to it in the nursery pot, remove it during the process of properly setting these longer-term stakes and ties. **Remove** stakes and ties as soon as the tree has **developed** the strength to stand on its own, often after *1-2 years*, depending on the size and structure of the tree at the time of planting. The stakes and ties are like a crutch, and they should be on *no longer* than they need to be so that the tree can continue to better develop structural strength on its own.

KEY

PLANTING DETAIL 5 AND 15 GALLON TREES

- # Key for image to the right,
Planting detail for 5 and 15 gallon trees
- 1 LIGHTLY LOOSEN OR SHAVE ROOT BALL TO ENSURE ROOTS GROW OUTWARD AND DO NOT CIRCLE (SEE ONLINE WORKSHOP MENTIONED ON PREVIOUS PAGE FOR MORE DETAILS)
 - 2 NATIVE SOIL BACKFILL
 - 3 BUILD "WATERING RING" TO ALLOW FOR AT LEAST 1-2" OF WATER TO POOL ON TOP OF THE ROOTBALL OF THE TREE WHEN FULL
 - 4 STURDY AND COMPACTED "WATERING RING" TO ALLOW FOR DEEP IRRIGATION THROUGH THE DEPTH OF THE ROOT BALL AFTER PLANTING. IF YOU WILL BE CONTINUING TO WATER WITH A HOSE, BE SURE TO MAINTAIN THIS WATERING RING SO IT CONTINUES TO BE ABLE TO HOLD ENOUGH WATER.



PLANTING DETAIL 5 AND 15 GALLON TREES

Watering ring min. 1"-2" above top of root ball

1-2"
1-2"

Top of root ball 1-2" above surrounding soil level

Dig hole slightly less deep than and twice as wide as root ball. Usually backfill with native soil only. No fertilizer is needed! Add up to 1/4 compost only if soil is extremely rocky or very heavy clay.

A close-up photograph of a plant with numerous thin, green, upright stems. Each stem is topped with a dense, rounded cluster of small, pink flowers. The flowers have a delicate, multi-petaled appearance. The background is a soft, out-of-focus green, suggesting a garden or field setting. The overall composition is vibrant and natural.

Enjoy the space *you* design!