



The Great American Lawn

A Human-Modified Ecosystem

Frank Niccoli

Inputs

✘ It is all about inputs versus outputs!



Grassland or Forest Structurally Complex Ecosystem



Turf

Structurally Simple Ecosystem



We the People of
insure domestic Tranquility, provide for the common defence
and our Posterity, do ordain and establish this Constitution

Article 1

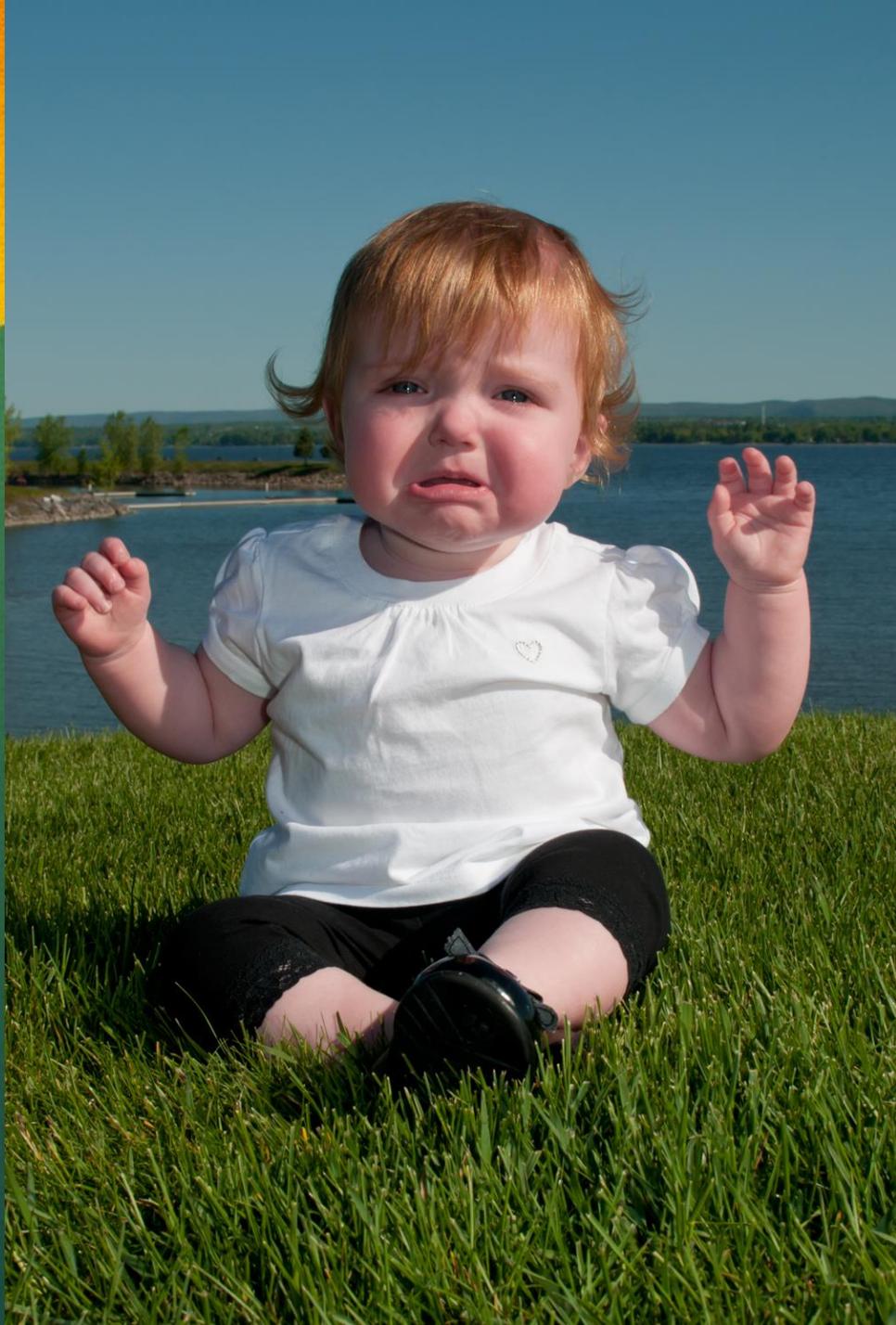
Section 1. All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

Section 2. The House of Representatives shall be composed of Members chosen every second Year by the People of the several States, in each State, shall have the Qualifications requisite for Electors of the most numerous Branch of the State Legislature.
No Person shall be a Representative who shall not have attained to the Age of twenty five Years, and seven Years a Citizen of the United States, when elected, and who shall not, when elected, be an Inhabitant of that State in which he shall be chosen.

Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union according to their Numbers, which shall be determined by adding to the whole Number of free Persons, including those bound to Service for a Term of Years, and not bound themselves of full age, three fifths of all other Persons. The actual Enumeration shall be made within three Years after the first Meeting of the Congress, and within every subsequent Term of seven Years, in such Manner as they shall by Law direct. The Number of Representatives shall not exceed one for every thirty thousand, but each State shall have at least one Representative, and until such Enumeration shall be made, the States of New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Delaware and Maryland, in which the Number of Representatives formerly was determined, shall have the same Number of Representatives as they last had, until the next Enumeration. The House of Representatives shall choose their Speaker and other Officers, and shall have the sole Power of Impeachment.

Section 3. The Senate of the United States shall be composed of two Senators from each State, chosen by the Legislature thereof for a Term of six Years, and they shall be divided so equally as may be





Misconception



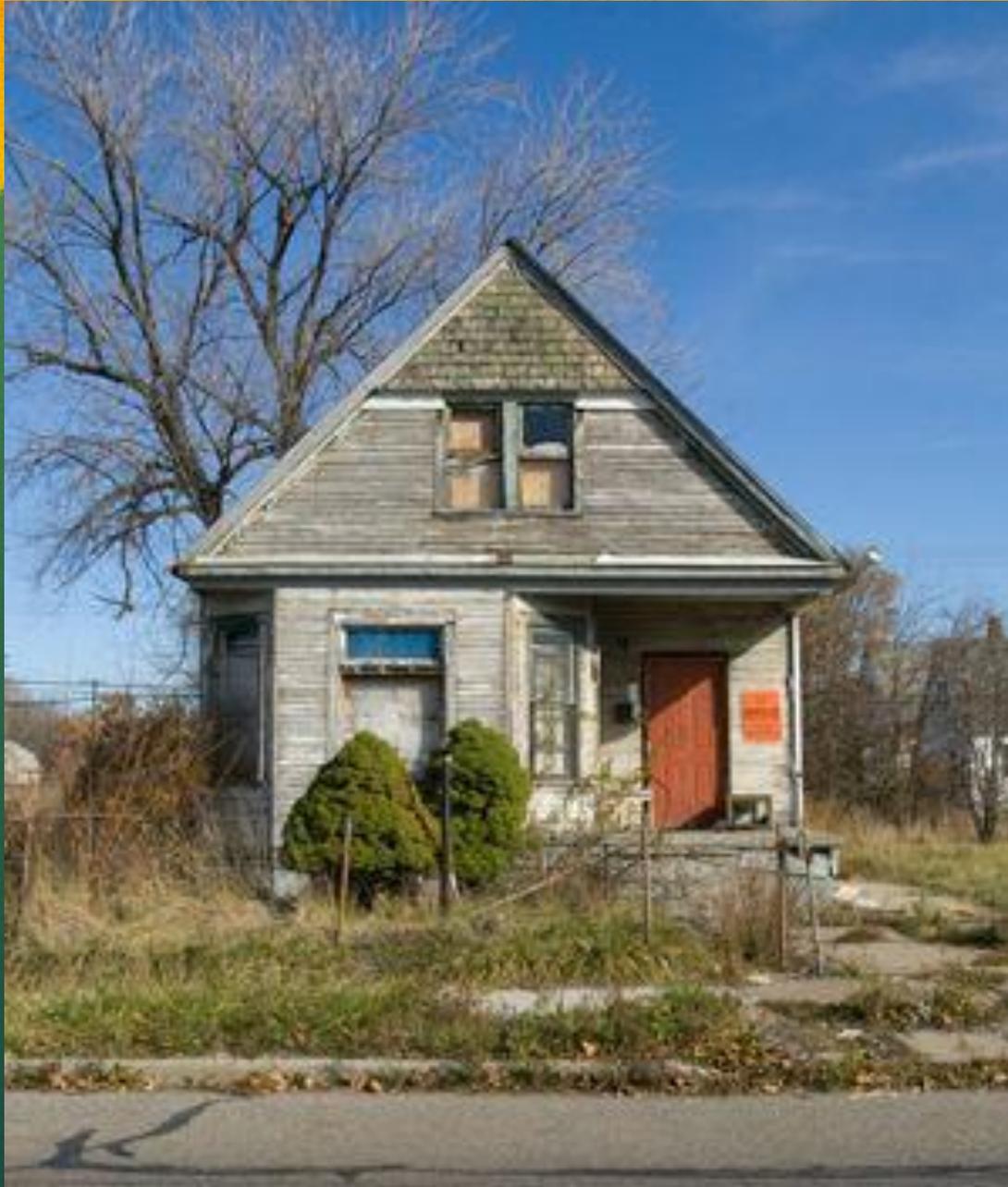








Misconception





Misconception





Turf vs. Lawn



Sustainable



Sustainable



Sustainable



Sustainable



Sustainable



Sustainable



Sustainable lawns need to

Blend well with other grasses and dicot plants.

Have the ability to persist over time.

Maintain adequate densities with modest inputs of water and fertilizer.

Survive significant drought stress.

Produce manageable amount of thatch.

Sustainable Types of Lawn



Sustainable Types of Lawn



Sustainable Types of Lawn



Sustainable Types of Lawn



Sustainable Types of Lawn



Sustainable Types of Lawn



Stumbling Blocks



Native Bentgrass



Delta Grassland Mix



Native Mow Free



Biofiltration Sod



Delta Native Heartland Sod



Native Preservation Mix



Perennial Rye + ???



Sustainable



Perennial Rye + Drought tolerant plants



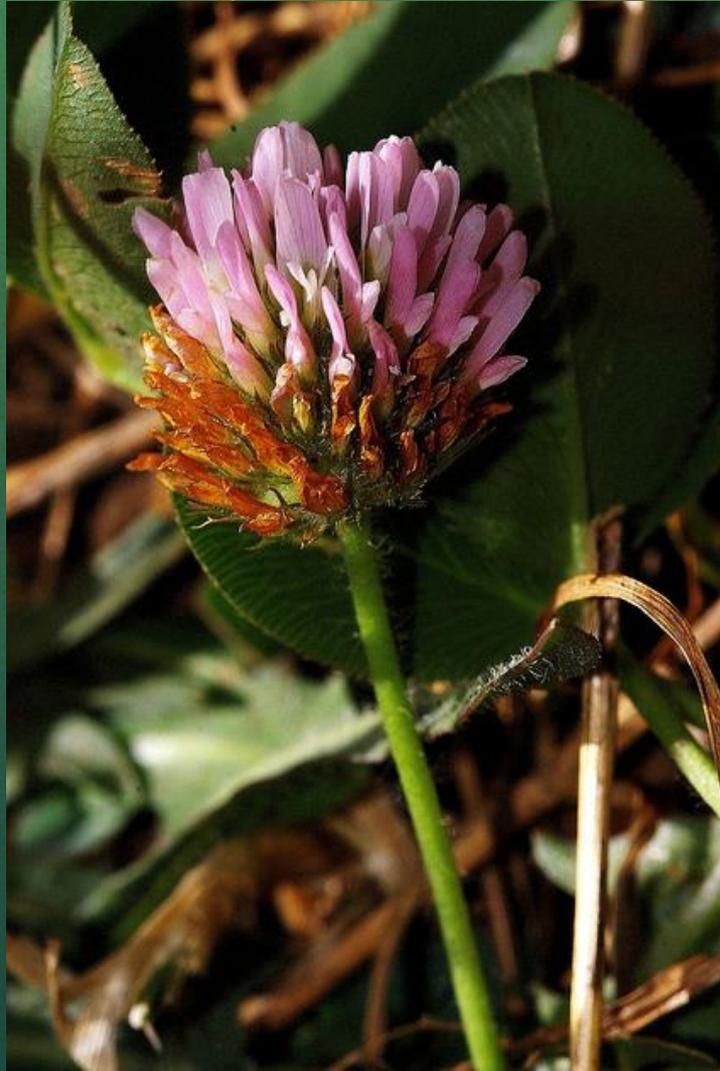
Bellis perennis



Achillea Millefolium



Trifolium fragiferum 'Fresa'



Trifolium repens



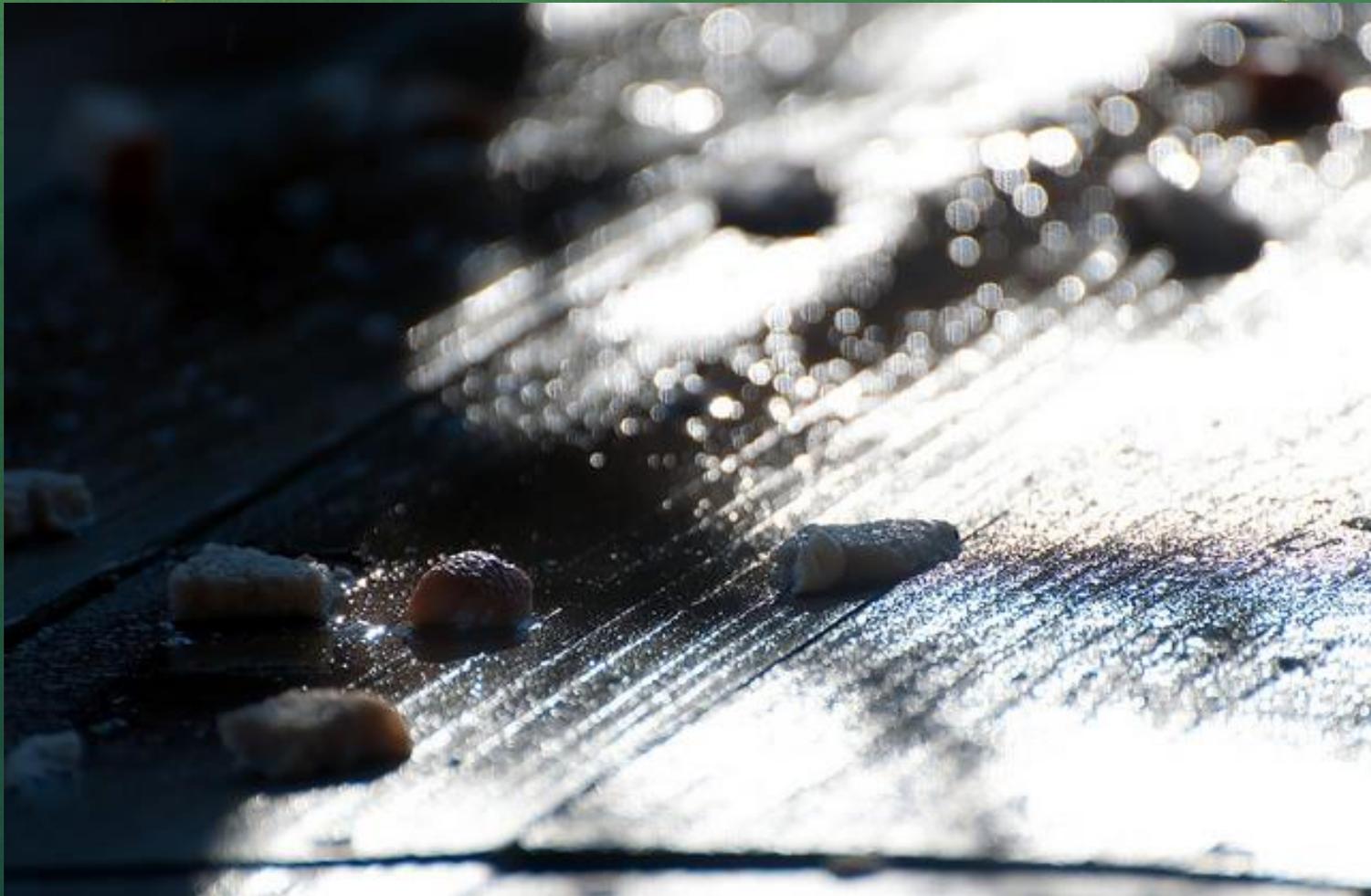
Galium verum



Prunella vulgaris



Perennial Rye + wet or shade tolerant



Glechoma hederacea



Ranunculus repens



Veronica filiformis.



Broad applications



Anthemis nobilis



Oxalis ssp.



Not a perfect solution

- × The driving force will be
 - × Restrictions on water use
 - × Restrictions on herbicide use
 - × Best used on lawns known as drive-by lawns
 - × Not subject to heavy wear
 - × Not fertilized or watered intensely

So much for the theory...here are

× THE FACTS, and nothing but the Facts.

Typical vs. Sustainable

× Water Usage

× Pests

× Diseases

Typical vs. Sustainable

- Definition and Characterizes
- Landscape Design
- Pests and Diseases
- Water Usage

Typical

- Typical is Defined as:
 - Plants that are customary or popular to include in the landscape
 - High maintenance
 - High water use
 - Optimum environmental conditions
 - More susceptible to insects and disease
 - Nonnative

Typical Plant List

- *Ajuga reptans*
- *Agapanthus orientalis*
- *Acuba japonica*
- *Choisya ternata*
- *Hibiscus*
- *Hydrangea*
- *Ilex cornuta*
- *Photinia*
- *Pittosporum*
- *Rhododendron*
- *Betula papyrifera*
- *Ginkgo biloba*
- *Ophiopogon japonicus*
- Annuals
- Turf

Sustainable

✘ Sustainable is Defined as:

- Plants that are native
- Lower maintenance
- Lower water use
- More sustainable
- Less susceptible to insects and disease

Sustainable Plant List

- *Arctostaphylos uva ursi*
- *Erigeron karvinskianus*
- *Heuchera micrantha*
- *Juncus patens*
- *Leymus condensatus*
- *Panicum virgatum*
- *Penstemon*
- *Phalaris arundinaceae*
- *Salvia*
- *Woodwardia fimbriata*
- *Ceanothus* sp.
- *Cistus*
- *Dendromecon*
- *Eriogonum giganteum*
- *Fremontodendron californicum*
- *Halimocistus wintonensis*
- *Lavendula*
- *Teucrium fruticans*
- *Cercis occidentalis*

Pest Comparison

- Typical- Total of 13 Plants
 - 11 out of 13 were susceptible to pests
 - 10 out of 13 were susceptible to disease
 - 13 pests & 6 diseases were identified for annuals
 - 10 pests & 14 diseases were identified for turf

Pest Comparison

Sustainable- Total of 20 Plants

- 5 out of 20 were susceptible to pests
- 5 out of 20 were susceptible to disease
- 14 out of 20 were resistant to both pests and diseases

Growth Conditions

- Growth Conditions Evaluated
 - Low Maintenance,
 - Low Water
 - Drought Tolerant
 - Easy to Grow
- Typical
 - 2 of 12 had one or more of these conditions
- Sustainable
 - 18 of 20 had one or more of these conditions

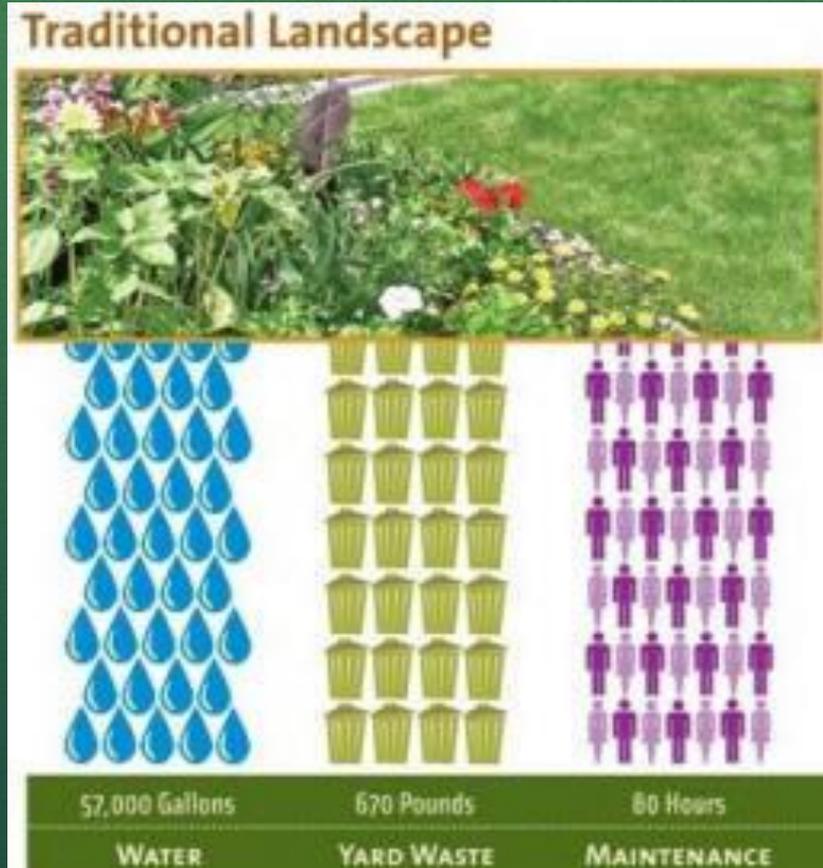
garden\garden Construction Cost

	Sustainable Garden	Typical Garden
<i>Design</i>	<i>\$1500</i>	<i>\$1500</i>
<i>Demolition</i>	<i>\$4100</i>	<i>\$2900</i>
<i>Soil Prep, Mulch</i>	<i>\$5100</i>	<i>\$3500</i>
<i>Irrigation</i>	<i>\$2400</i>	<i>\$3400</i>
<i>Boulders, Bender</i>	<i>\$3100</i>	<i>\$2800</i>
<i>Board</i>	<i>\$3900</i>	<i>None</i>
<i>Infiltration Pit</i>	<i>\$2000</i>	<i>None</i>
<i>Permeable Paving</i>	<i>\$22,100</i>	<i>\$14,100</i>
<i>Total</i>	<i>1998 sq. ft.</i>	<i>1879 sq. ft.</i>
<i>Landscape Area</i>	<i>\$11.06</i>	<i>\$7.50</i>
<i>Cost per sq. ft.</i>		

O-O-O-O-O-H!



The Facts



O-O-O-O-O-O-O-O-H!



The Facts

Sustainable Landscape



6,000 Gallons

WATER



250 Pounds

YARD WASTE



15 Hours

MAINTENANCE

The Facts

Traditional Landscape



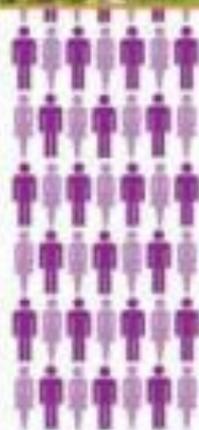
57,000 Gallons

WATER



670 Pounds

YARD WASTE



80 Hours

MAINTENANCE

Sustainable Landscape



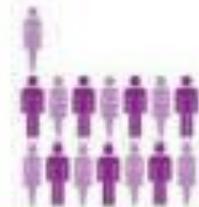
6,000 Gallons

WATER



250 Pounds

YARD WASTE



15 Hours

MAINTENANCE

Show me the Money!

	Spray Heads	Drip System
Typical	75402.88 gallons/year	47881.36 gallons/year
Sustainable	33830.27 gallons/year	20974.77 gallons/year
Difference/gallons	41572 gallons/year	26907 gallons/year
You could save how much \$\$\$\$\$\$?	\$2088.60 in just water	\$1345.35 in just water

Water at a nickel/gallon and about 2100 square feet of garden

Sheet Mulching



Sheet Mulching



Sheet Mulching

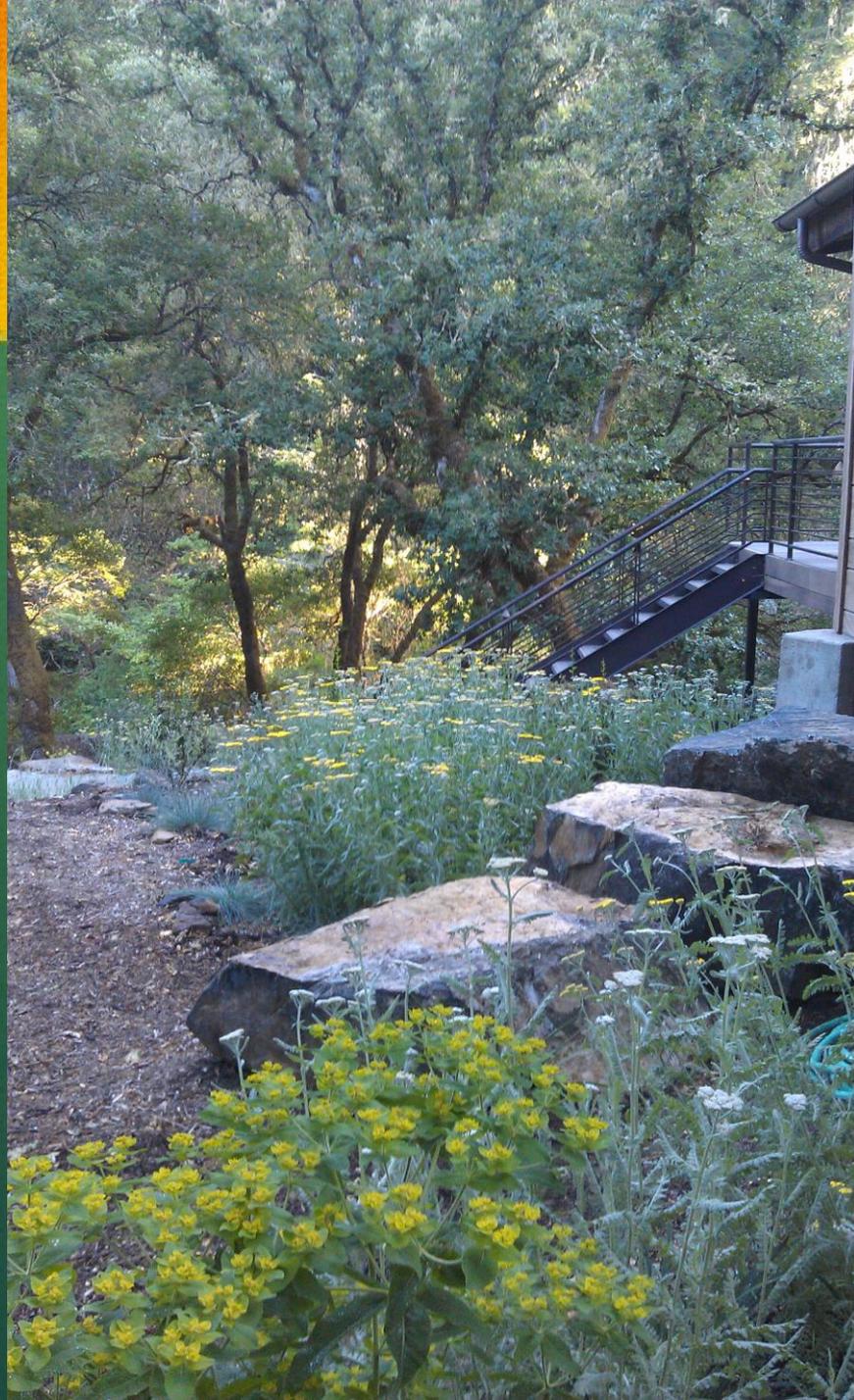
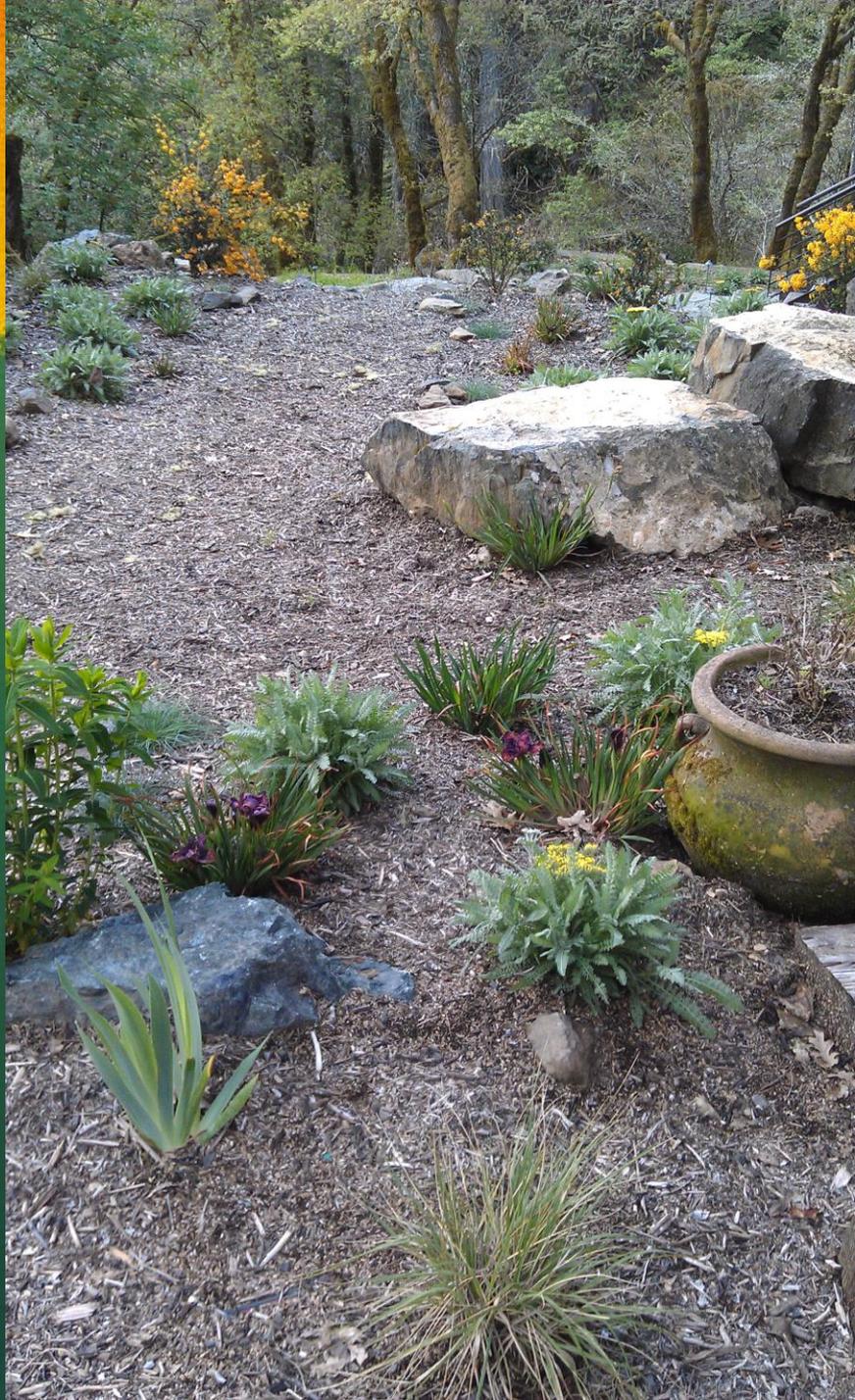




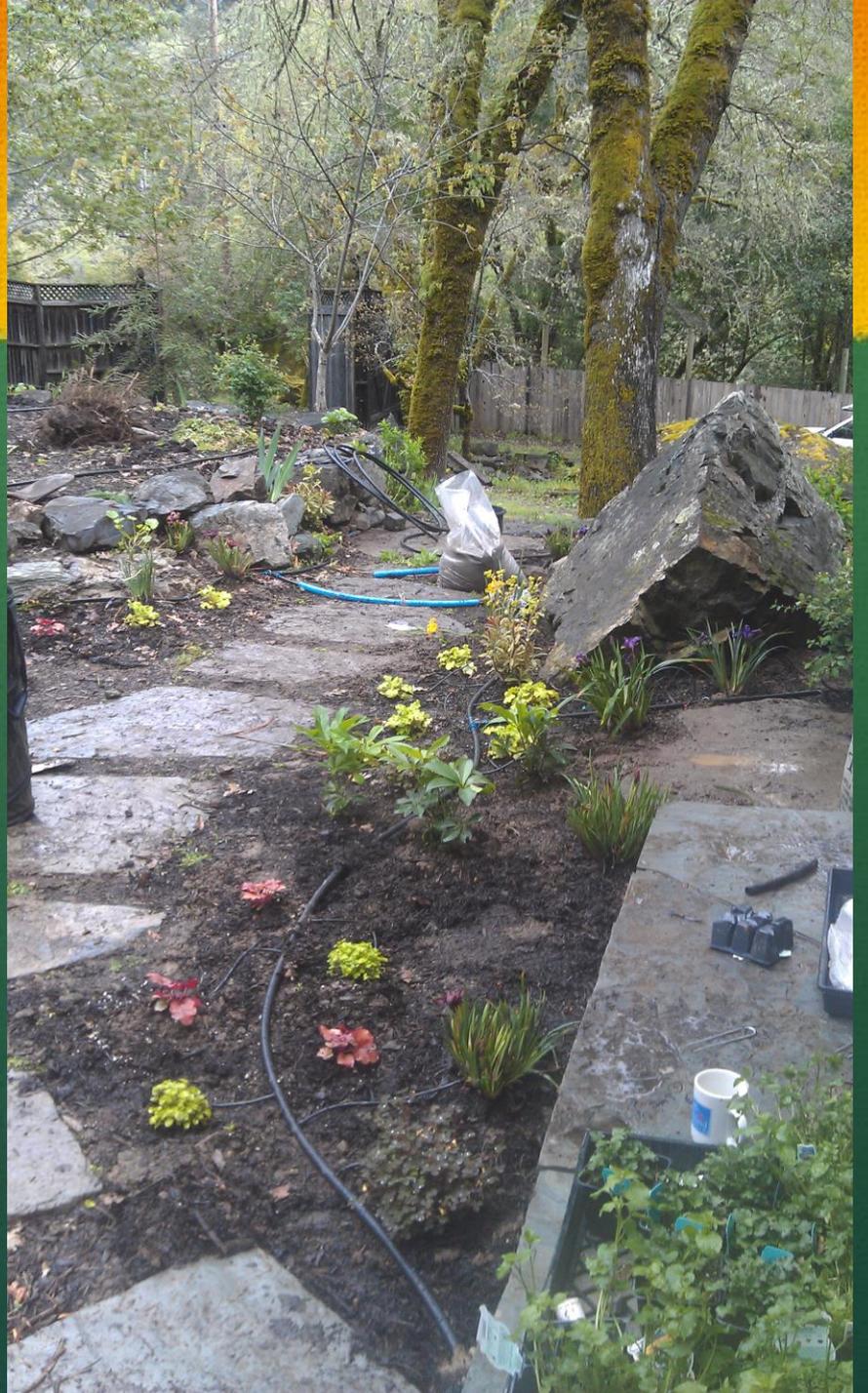


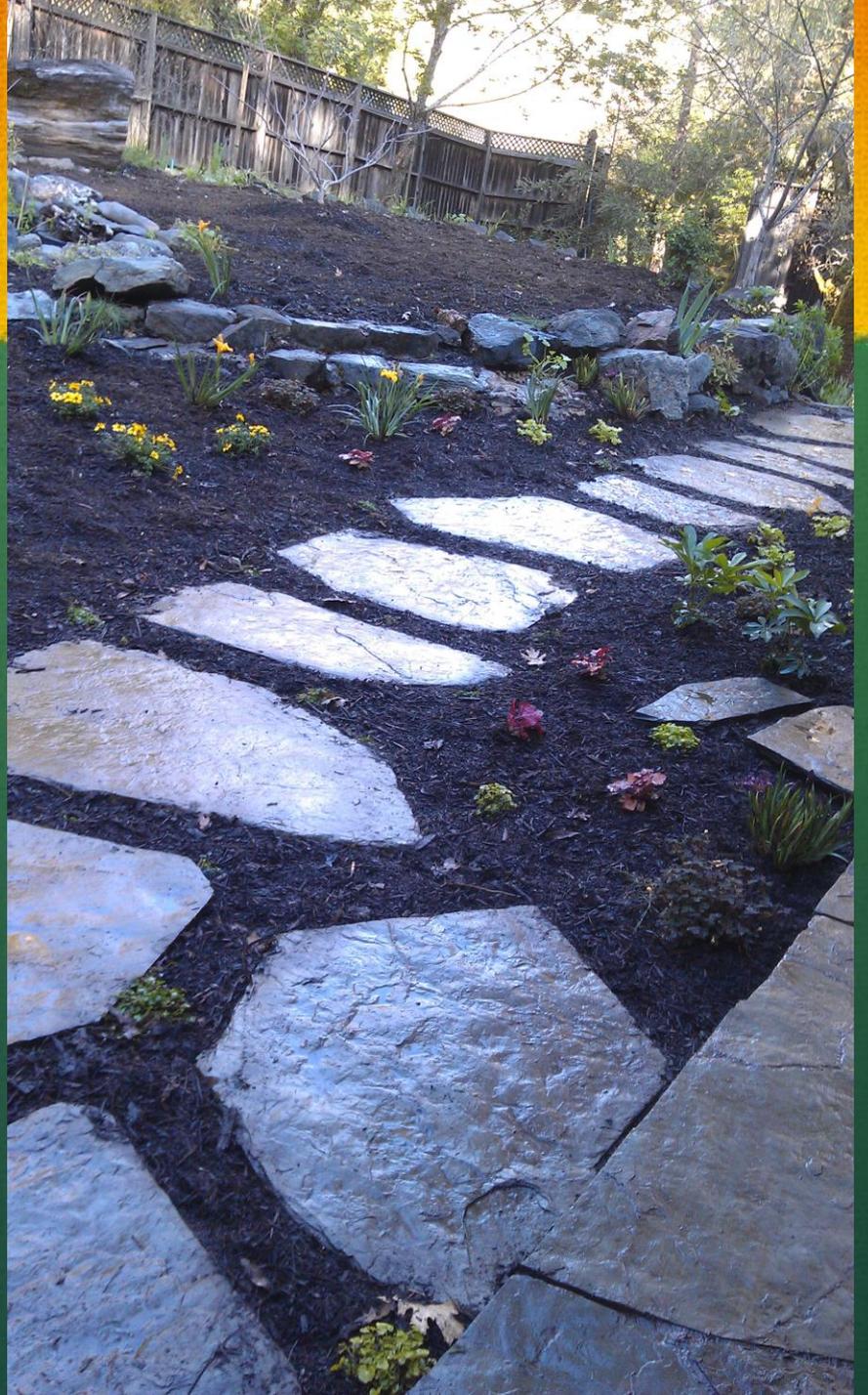
UGA5307022





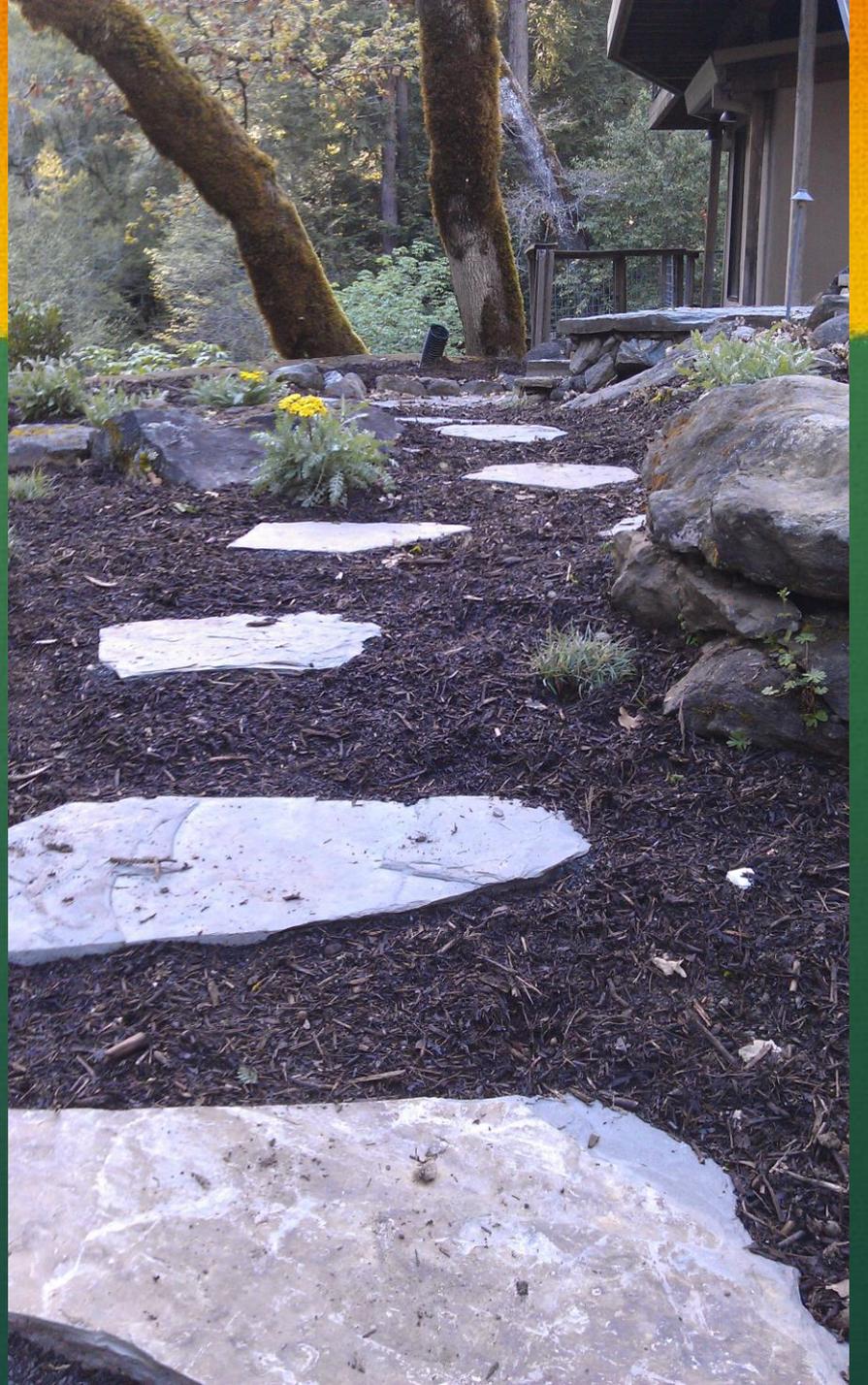
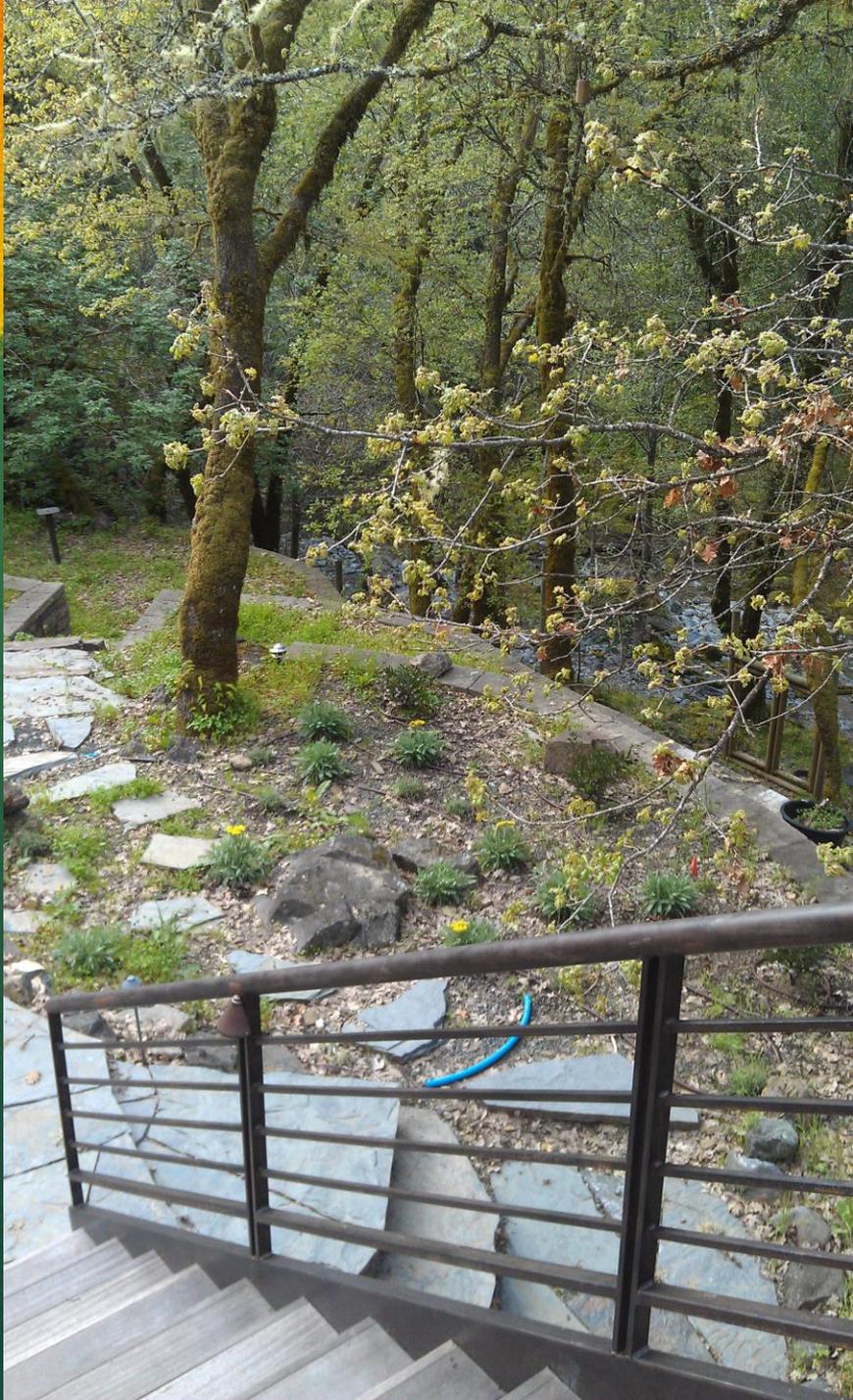
















VEGGIES



WHITE HOUSE LAWN TO VEGGIES



LAWN TO VEGGIES

FREEDOM LAWNS



FREEDOM LAWNS



FREEDOM LAWNS



CALIFORNIA NATIVES



CLARKIA AMONEA



✕ SUN WITH WATER

✕ SMALL UNDER 3'

ERIGERON GLAUCUS



GILIA CAPITATA



PACIFIC COAST NATIVE IRIS



LUPINES



MIMULUS GUTTATUS



SISYRINCHIUM
CALIFORNICUM



BERBERIS AQUIFOLIUM



CALYCANTHUS
OCCIDENTALIS



CARPENTERIA
CALIFORNICA



CERCIS OCCIDENTALIS



GALVESIA SPECIOSUM



RHAMNUS CALIFORNICA



RIBES AUREUM



RIBES SANGUINEUM



TRICHOSTEMMA
LANATUM



LONICERA INVOLUCRATA



RHUS OVATA



ARCTOSTAPHYLOS



BACCHARIS PILULARIS



CEANOTHUS GRISEUS



ERIOGONIUM GIGANTEUM



ERIOGONUM GRANDE



PENSTEMON
HETEROPHYLLUS



SALVIA LEUCOPHYLLA



SISYRINCHIUM BELLUM



**ZAUSCHNERIA
CALIFORNICA**



DENDROMECON
HARFORDII



OENOTHERA HOOKERI



ROMNEYA COULTERI



SALVIA CLEVELANDII



AESCULUS CALIFORNICA



ARBUTUS MENZESII



FREMONTODENDRON
CALIFORNICUM



AQUILEGIA FORMOSA



DICENTRA FORMOSA



VACCINIINIUM OVATUM



ARISTOLOCHIA
CALIFORNICA



**HETEROMELES
ARBUTIFOLIA**



PRUNUS ILICIFOLIA



PRUNUS LYONII



ARTEMESIA CALIFORNICA



DODECATHEON
HENDERSONII



MIMULUS AURANTIACUS



HOLODISCUS DISCOLOR



LEPICHINIA CALYCINA



RIBES SPECIOSUM



**SYMPHORICARPUS
RIVULARIS**



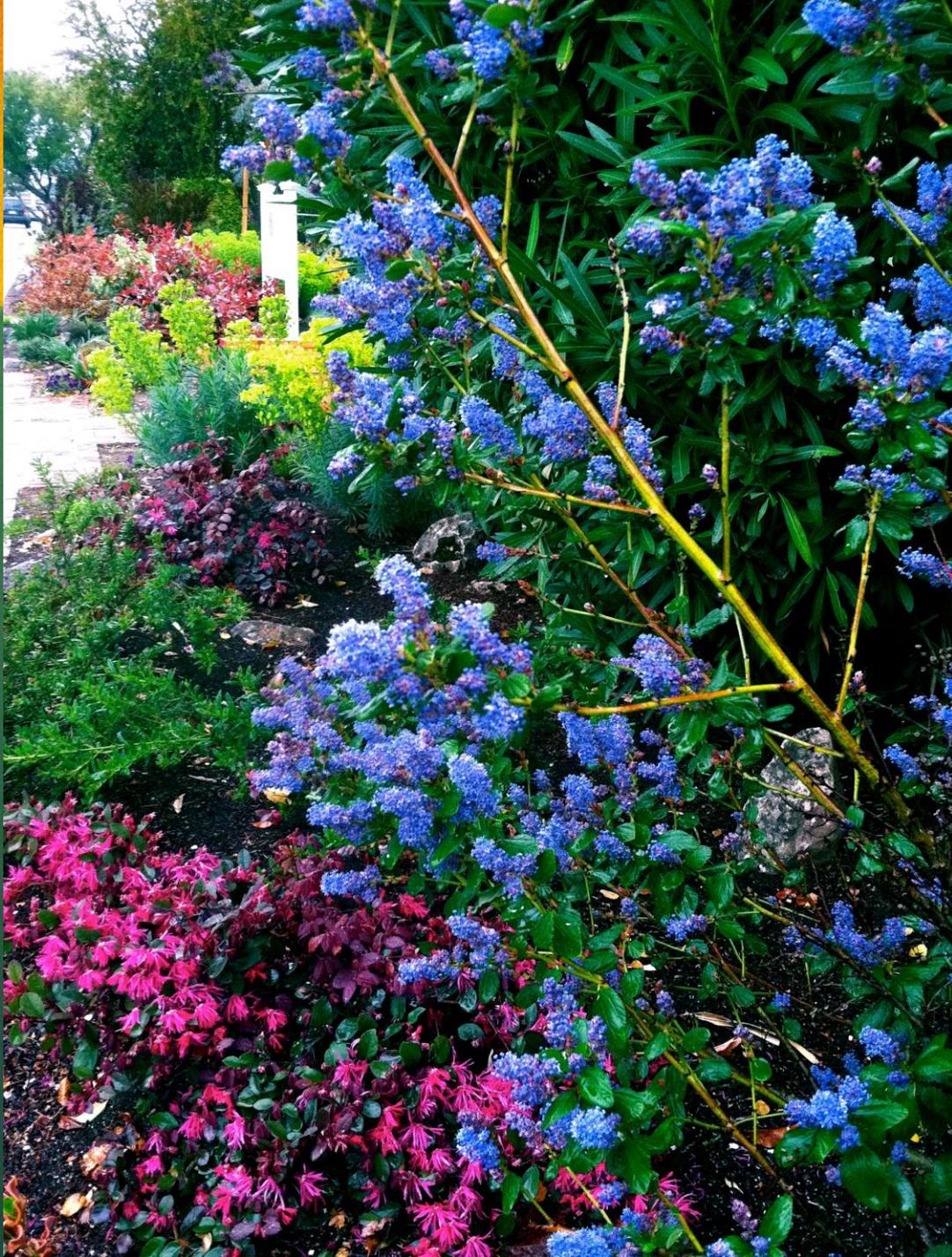
GARRYA ELLIPTICA

Lawn Reduction





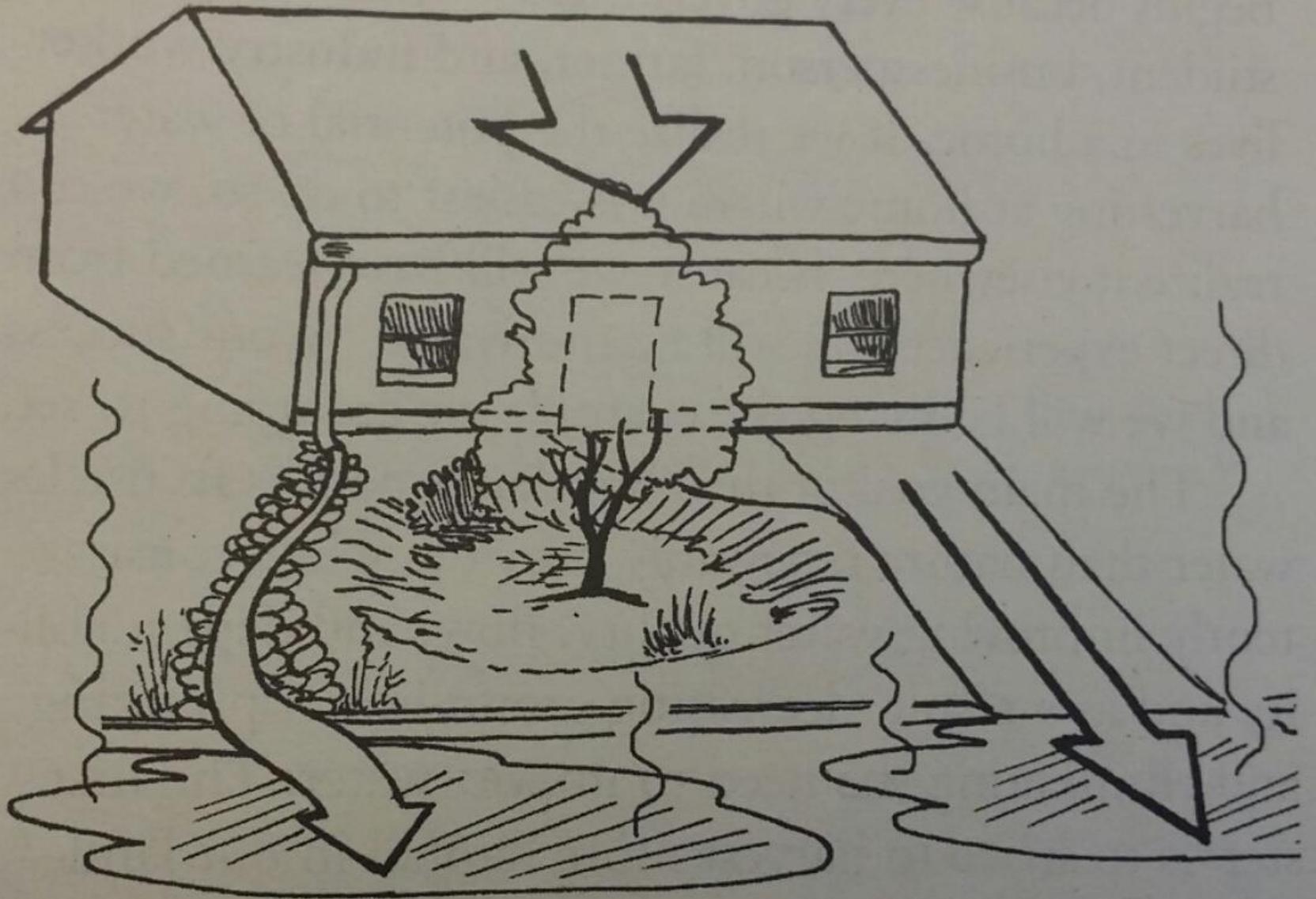






One Step Further...

Misconception





Eye Care
632-8125

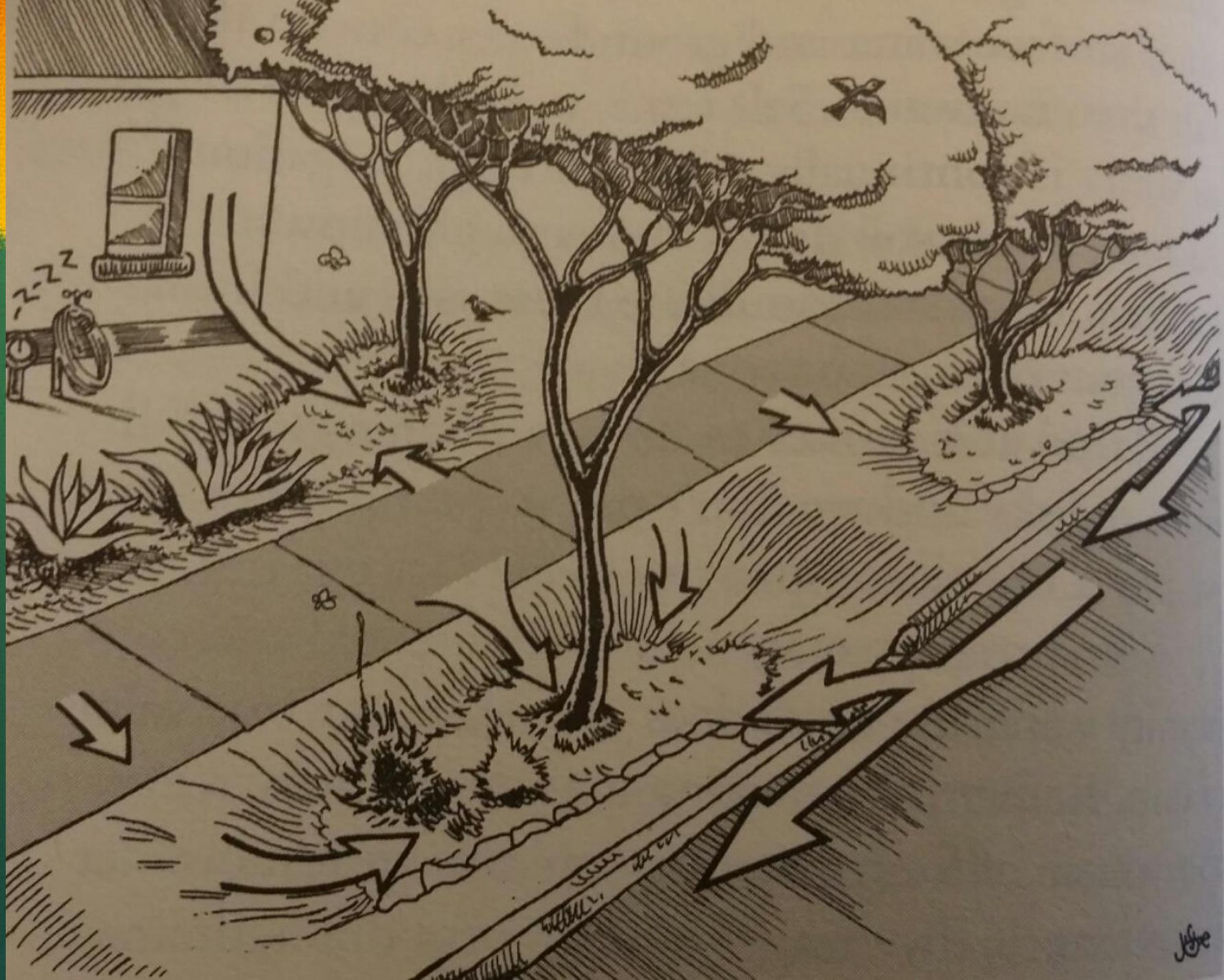
STARBUCKS COFFEE

NOAH'S NEW YORK BAGELS

SIDE


Unauthorized vehicles parked in designated handicapped spaces are subject to penalties. Please advise if you are present with an authorized person. Handicapped vehicles only for residential use.

Posh











Devil Mountain Wholesale Nursery

Artemisia

pycnocephala 'David's Choice'

8-10" h evrgrn shrub for decorative use

Evergreen, nearly prostrate, dwarf

clone of coastal CA native

Well-drained soil. drought tol.

Sun/shade. Hardy to 10deg-

Rocks & Berms









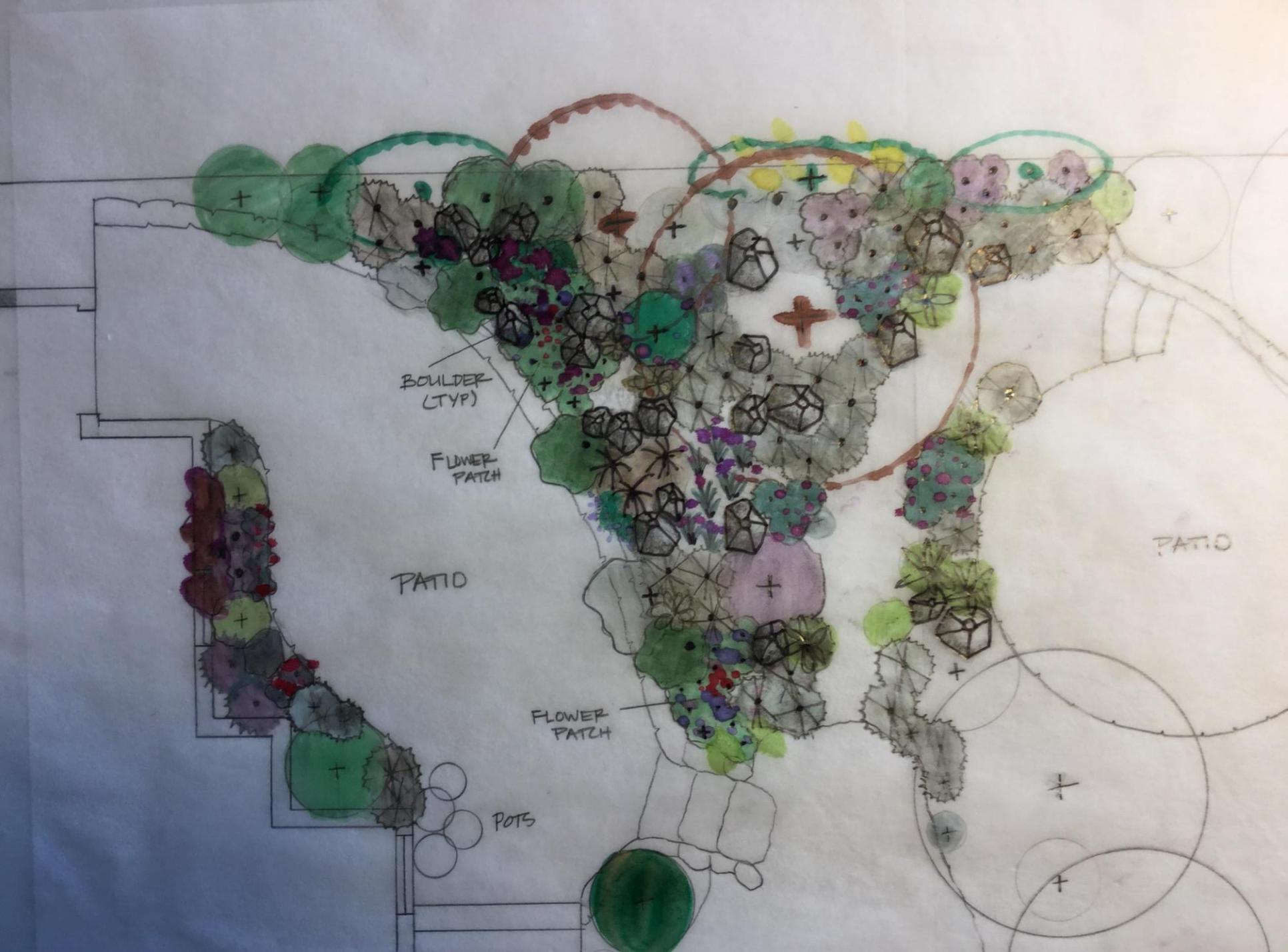


digitalchick



The Magic Formula!





BOULDER
(TYP)

FLOWER
PATCH

PATIO

FLOWER
PATCH

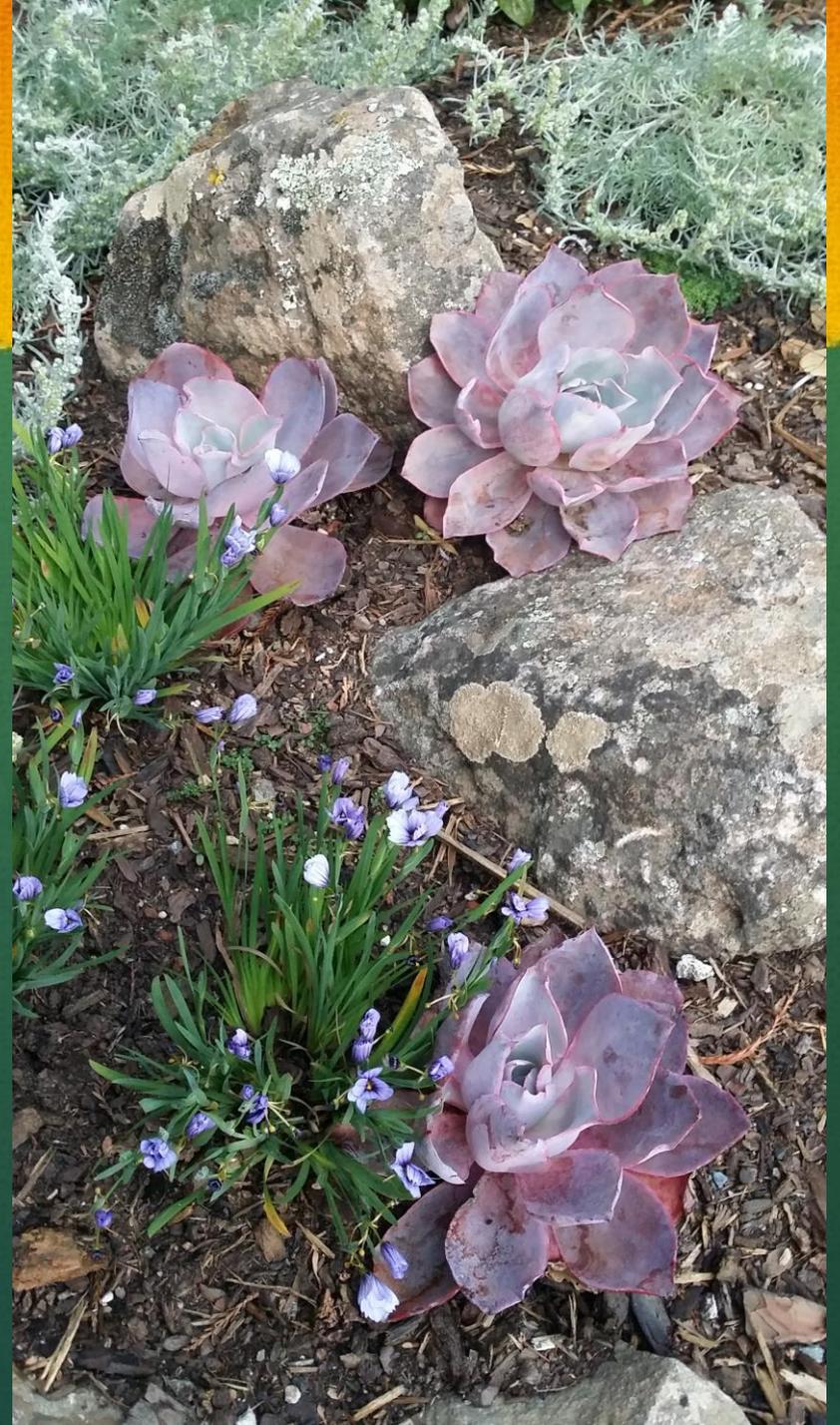
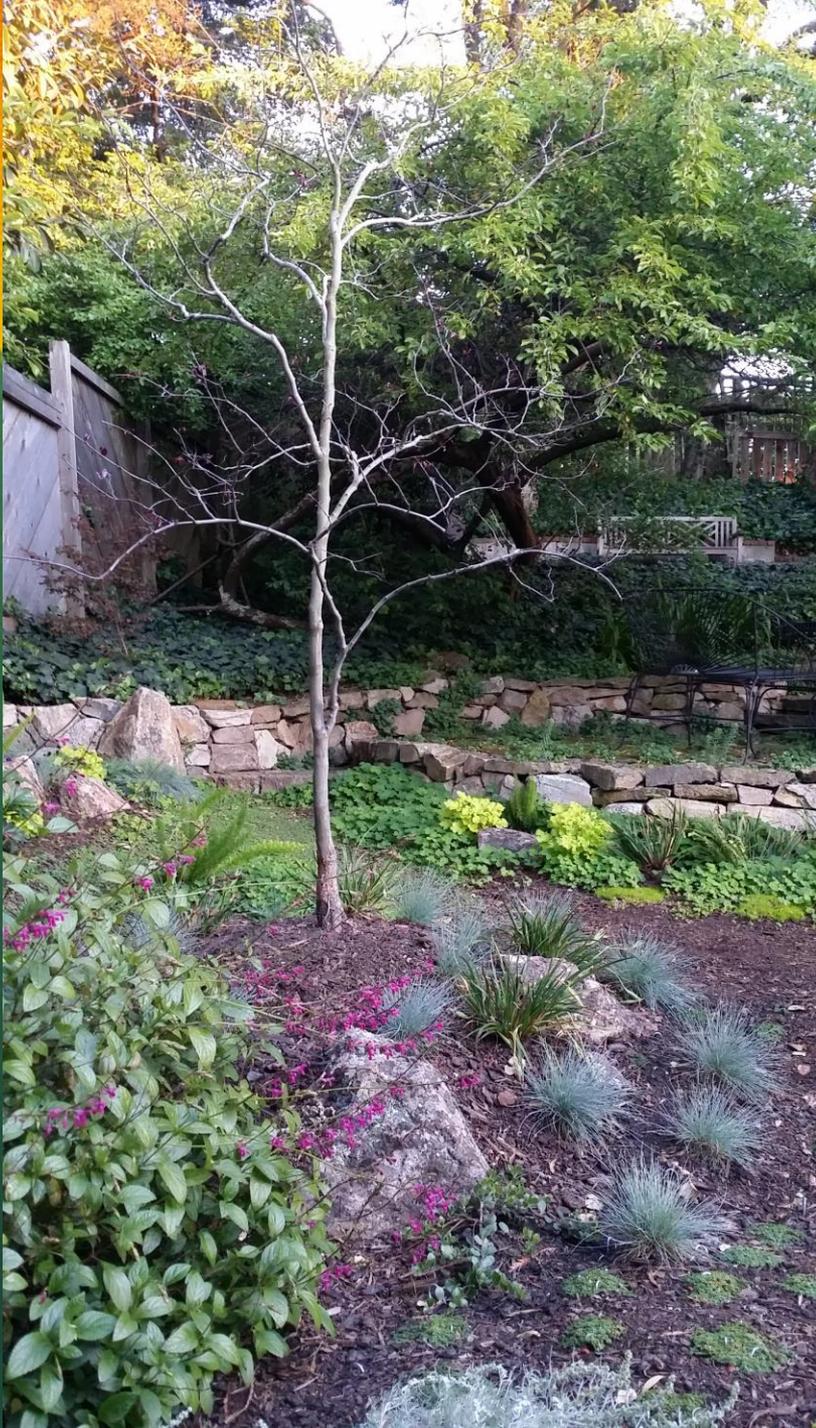
POTS

PATIO

















Rain Garden



Boulders

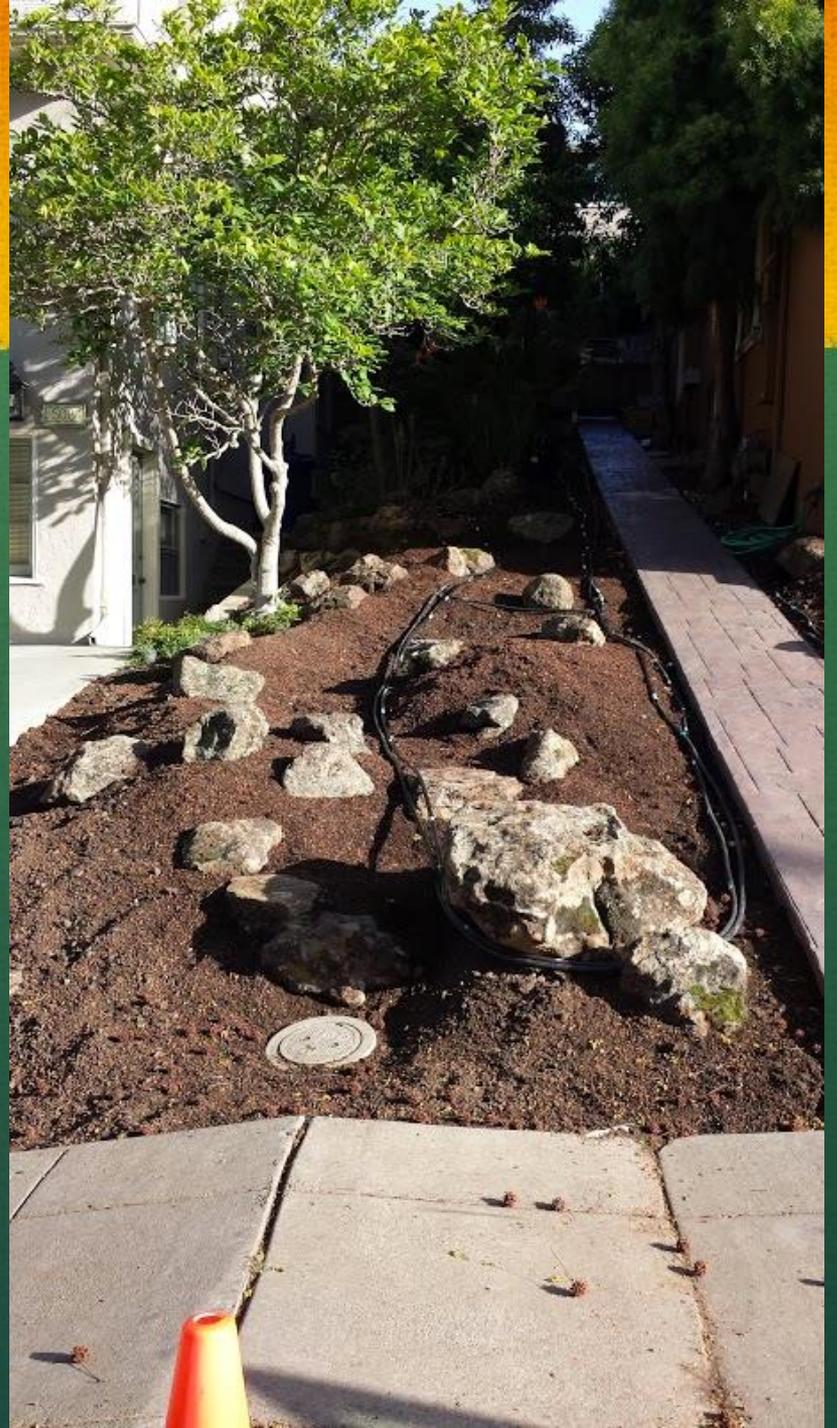


Boulders



Mounds and Low Points

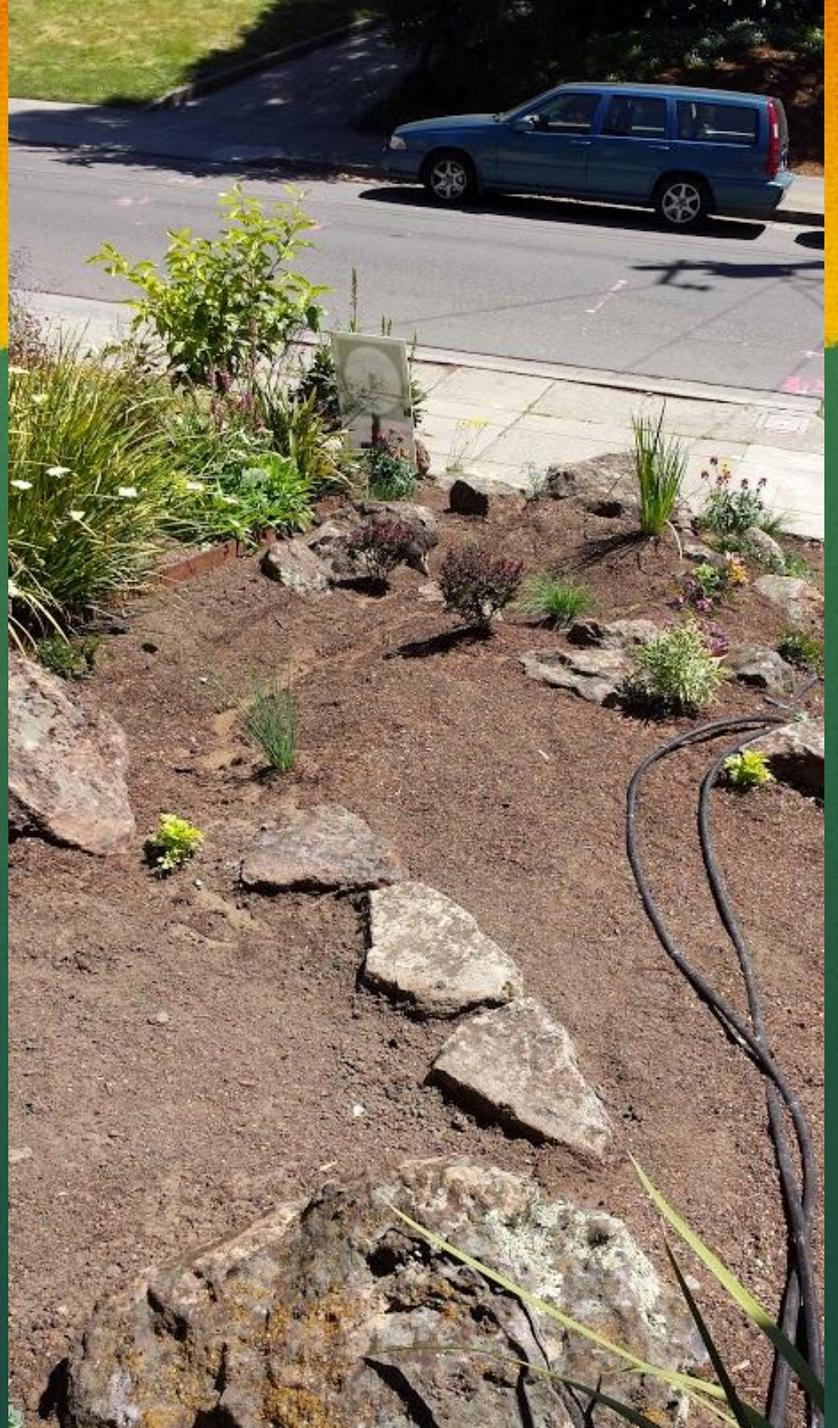




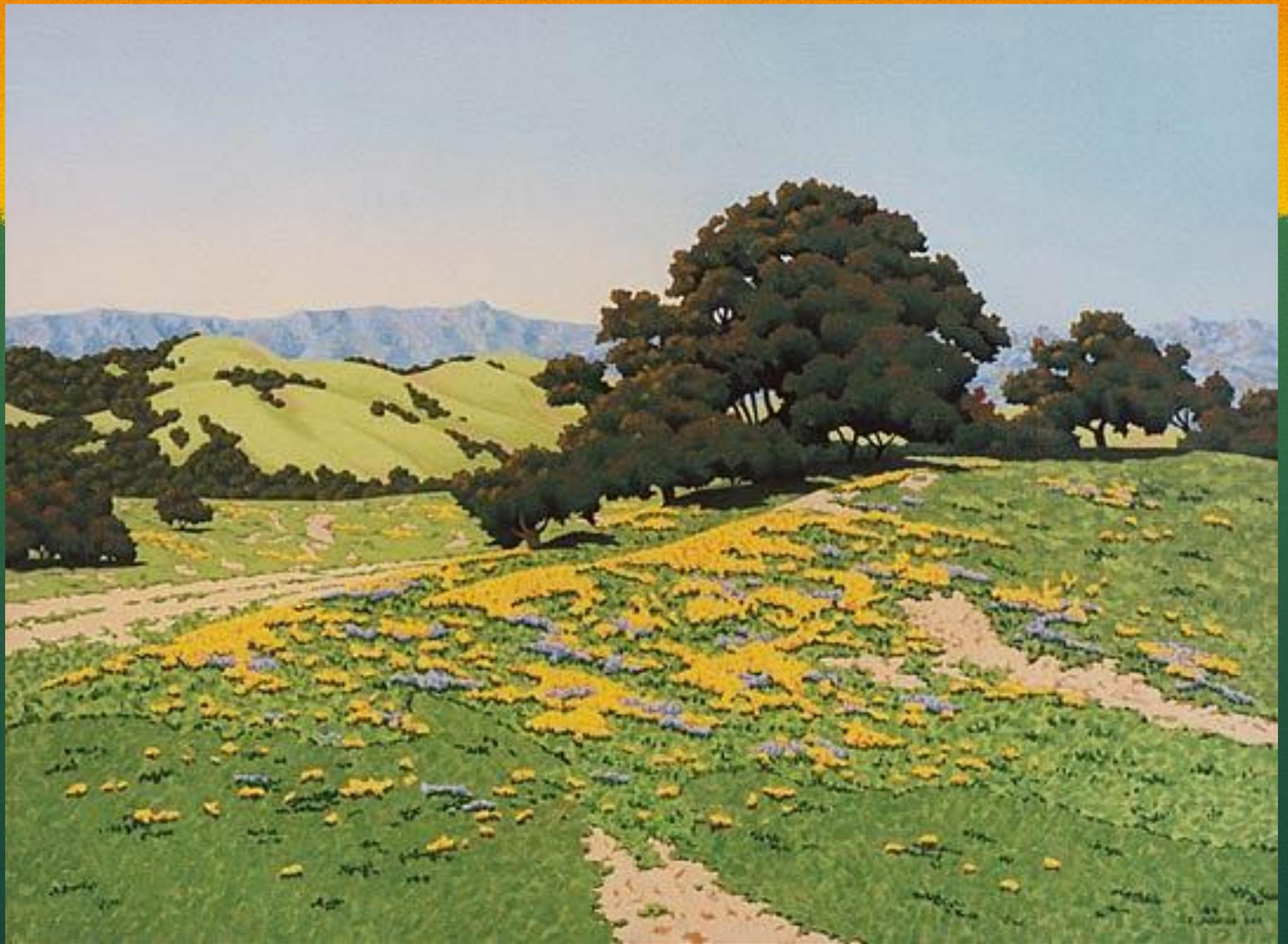
Trees















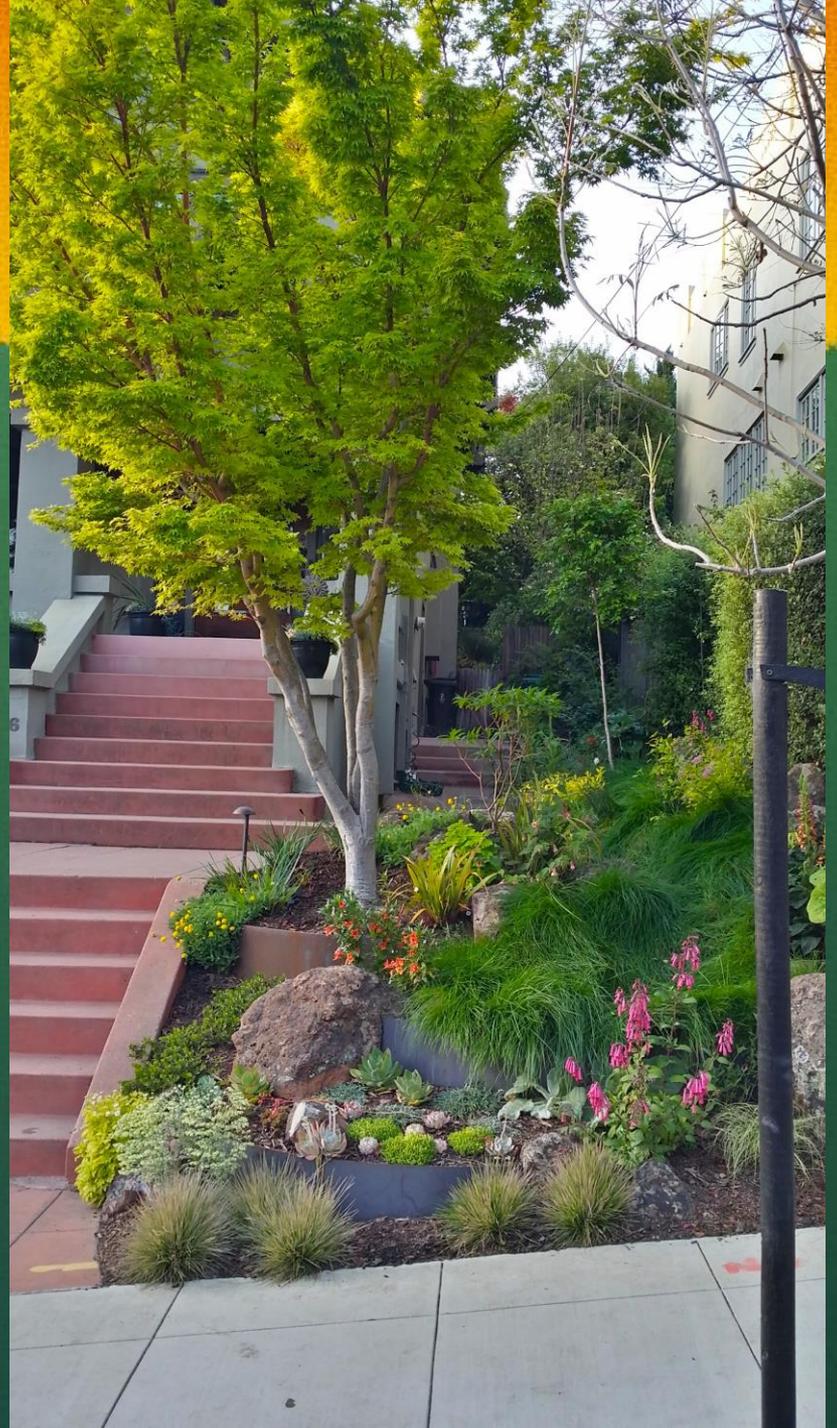
The Works



516

516





Rain Swale





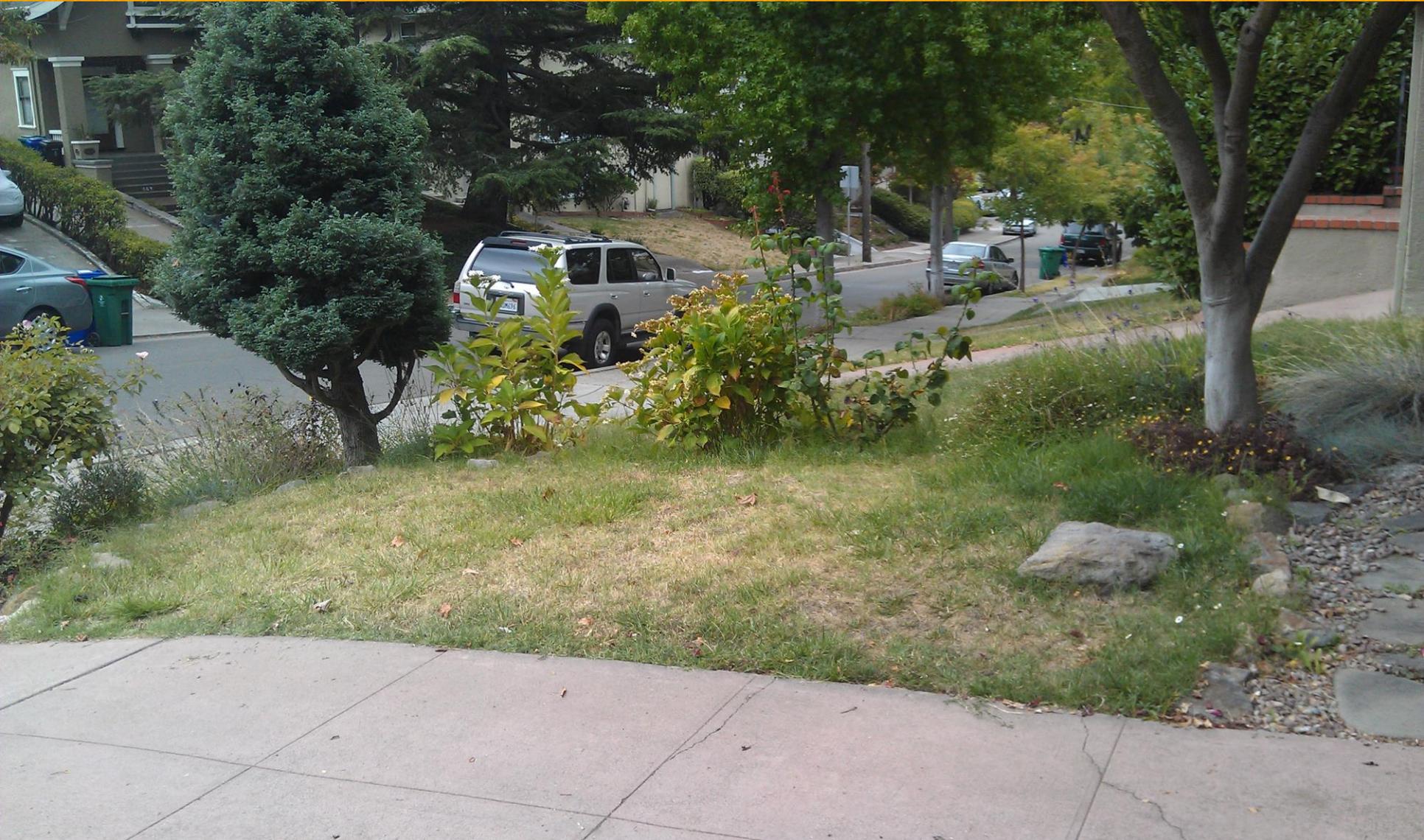


Low-Water Plantings







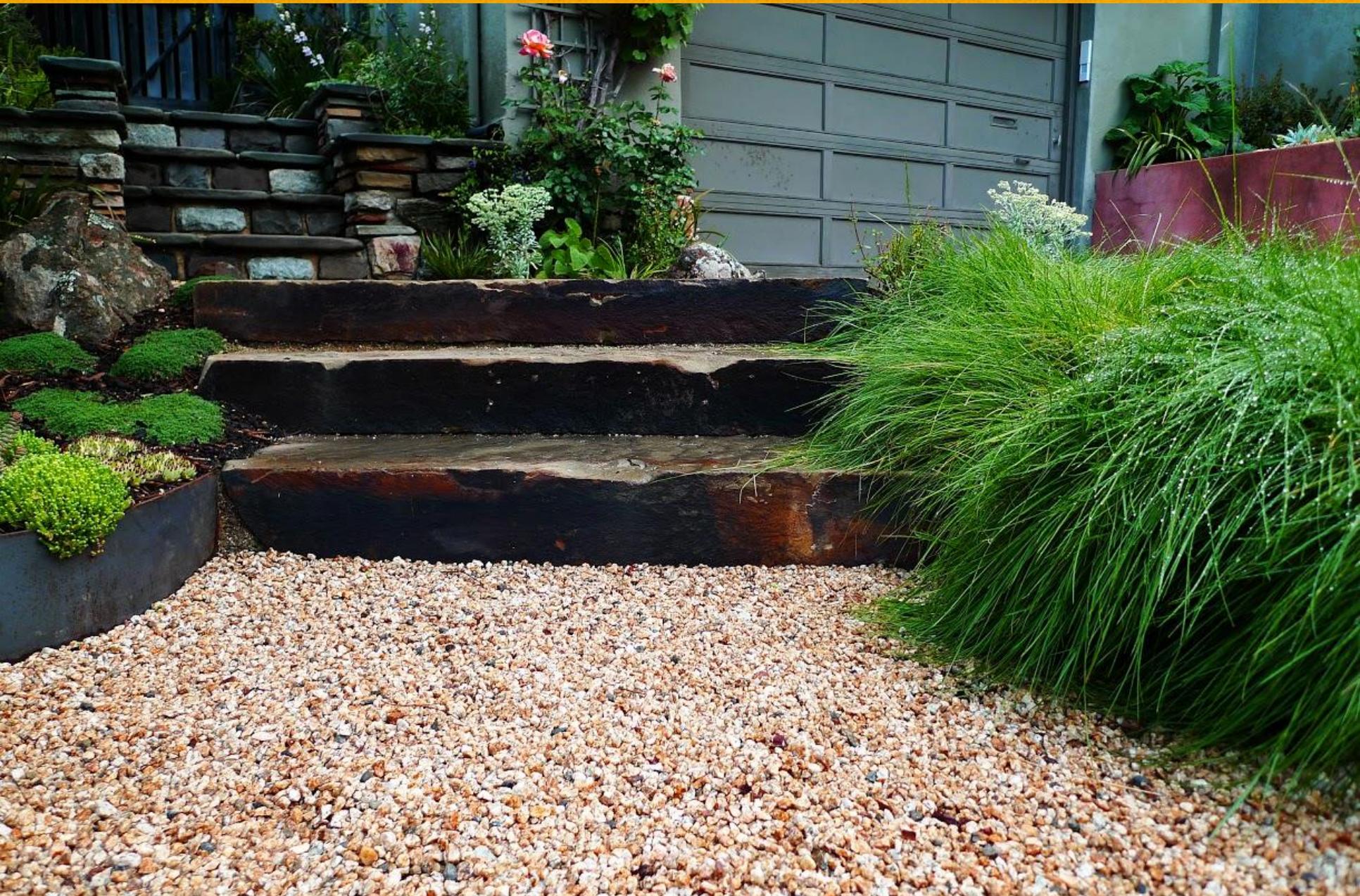


Permeable Paving





Stone, Metal



No-Mow Meadow



Boulders





DIY Design
YOU CAN!





























3109















Post Lawn Design

how to plant after you've let the lawn go

- ✗ Patience key; plants need time to grow and get established and get full size. Expect some failure along the way but don't be afraid to try something different
- ✗ Know your soil and climate: clay is not a bad word, many native plants are adapted to our soil. The Right plant for the right place
 - ✗ burms and mounds, burms and mounds
- ✗ Let the lawn die this summer, sheet mulch if you like, then plant in fall...save water.
- ✗ There's no such thing as NO maintenance, but low maintenance is up to how you respond to a little wildness in the garden. Also don't stress about bugs or a little damage, stand back and look at the garden as a whole.

HOUSE

GARAGE

Simple DIY Design steps

SIDEWALK

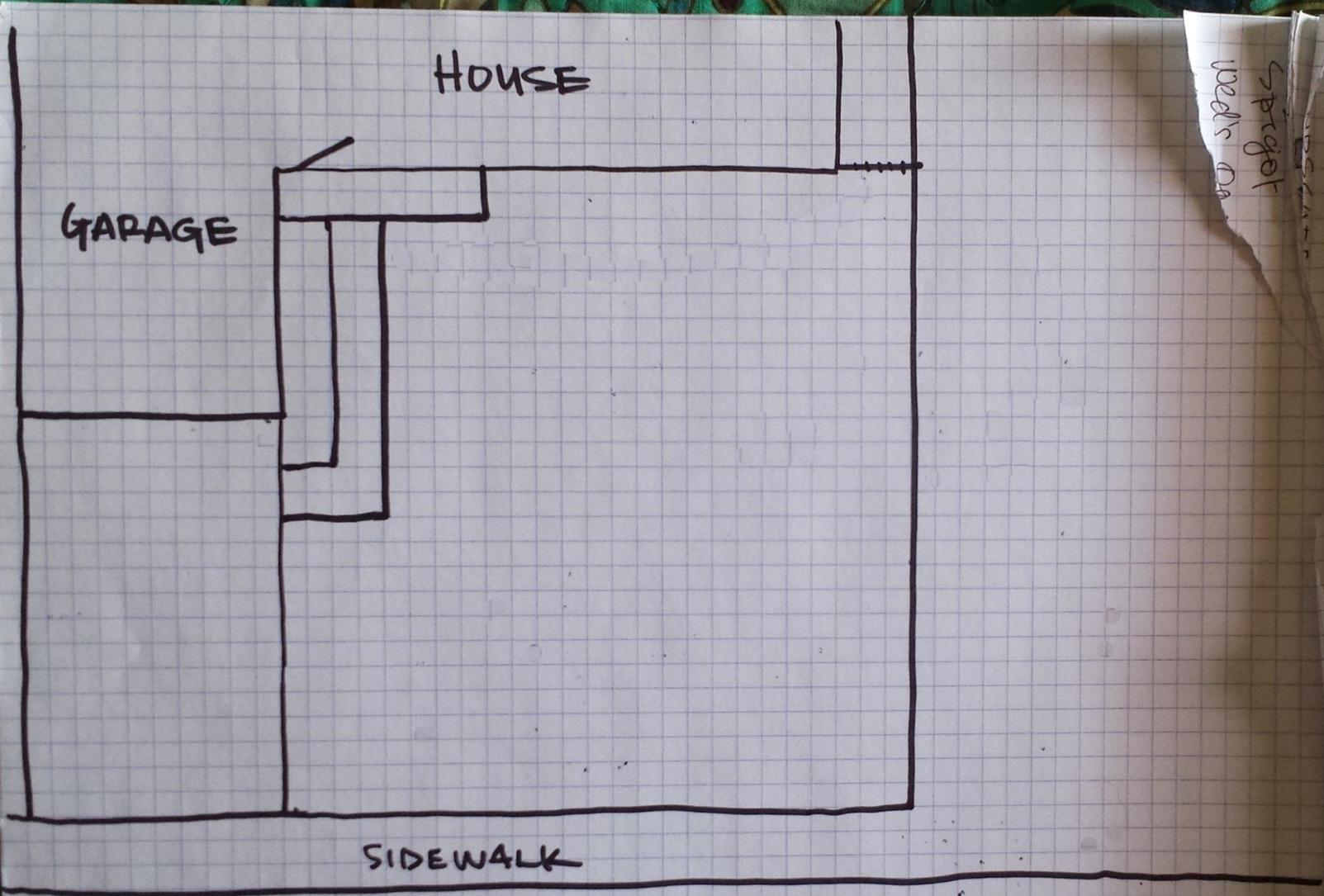
Springer
Week's on
10/23/25

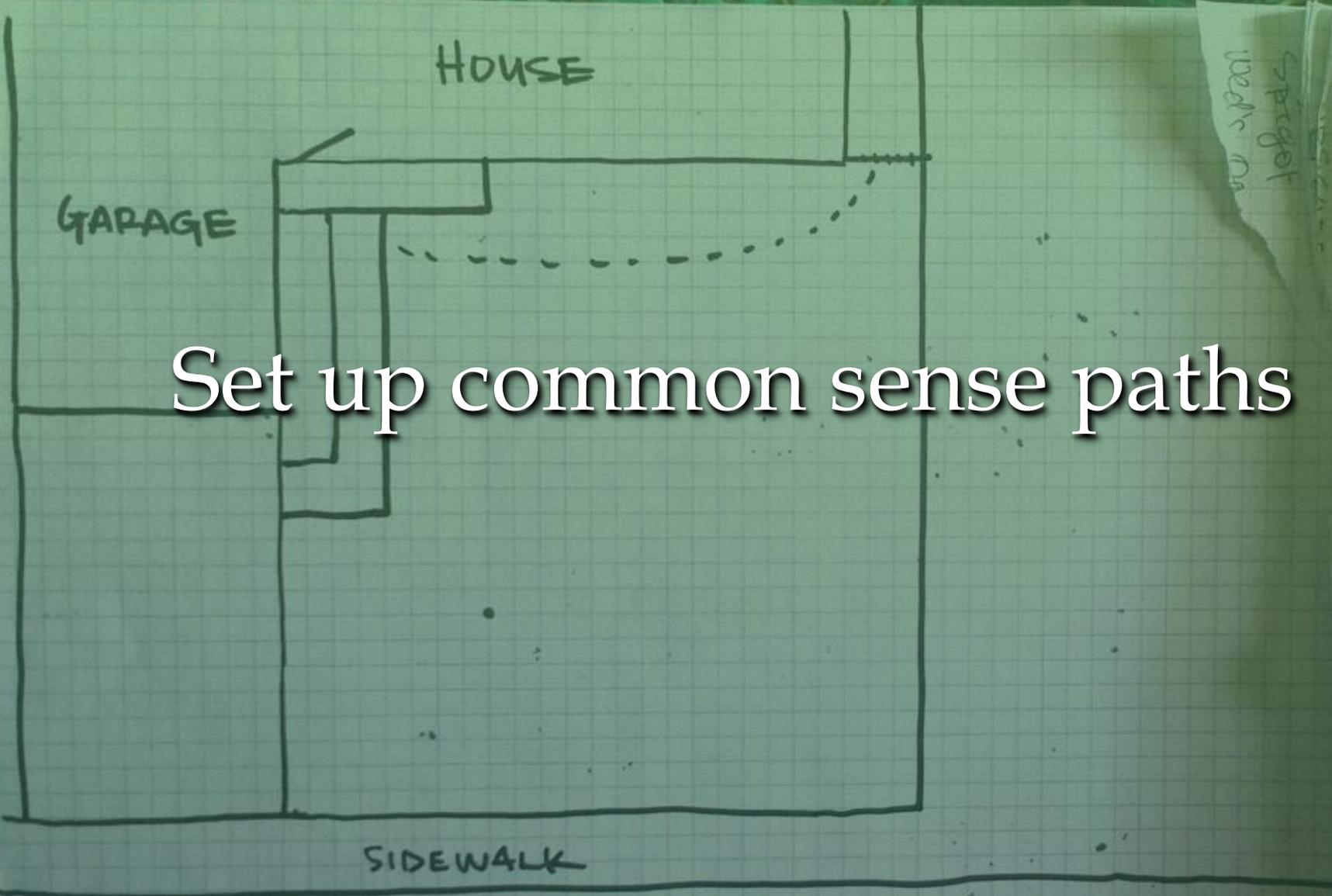
HOUSE

GARAGE

SIDEWALK

Spring
walk on





Spring
weeds na

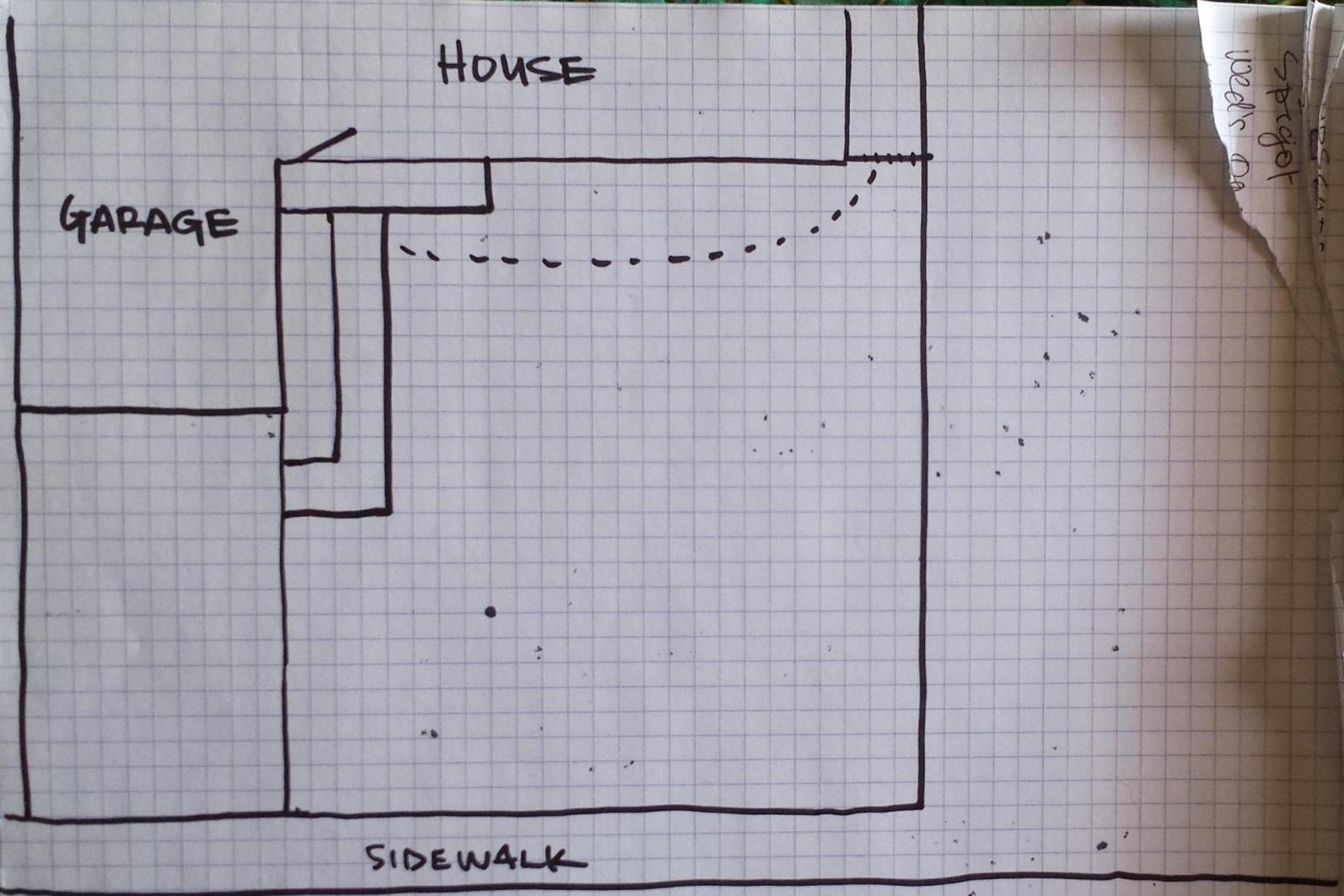
Set up common sense paths

HOUSE

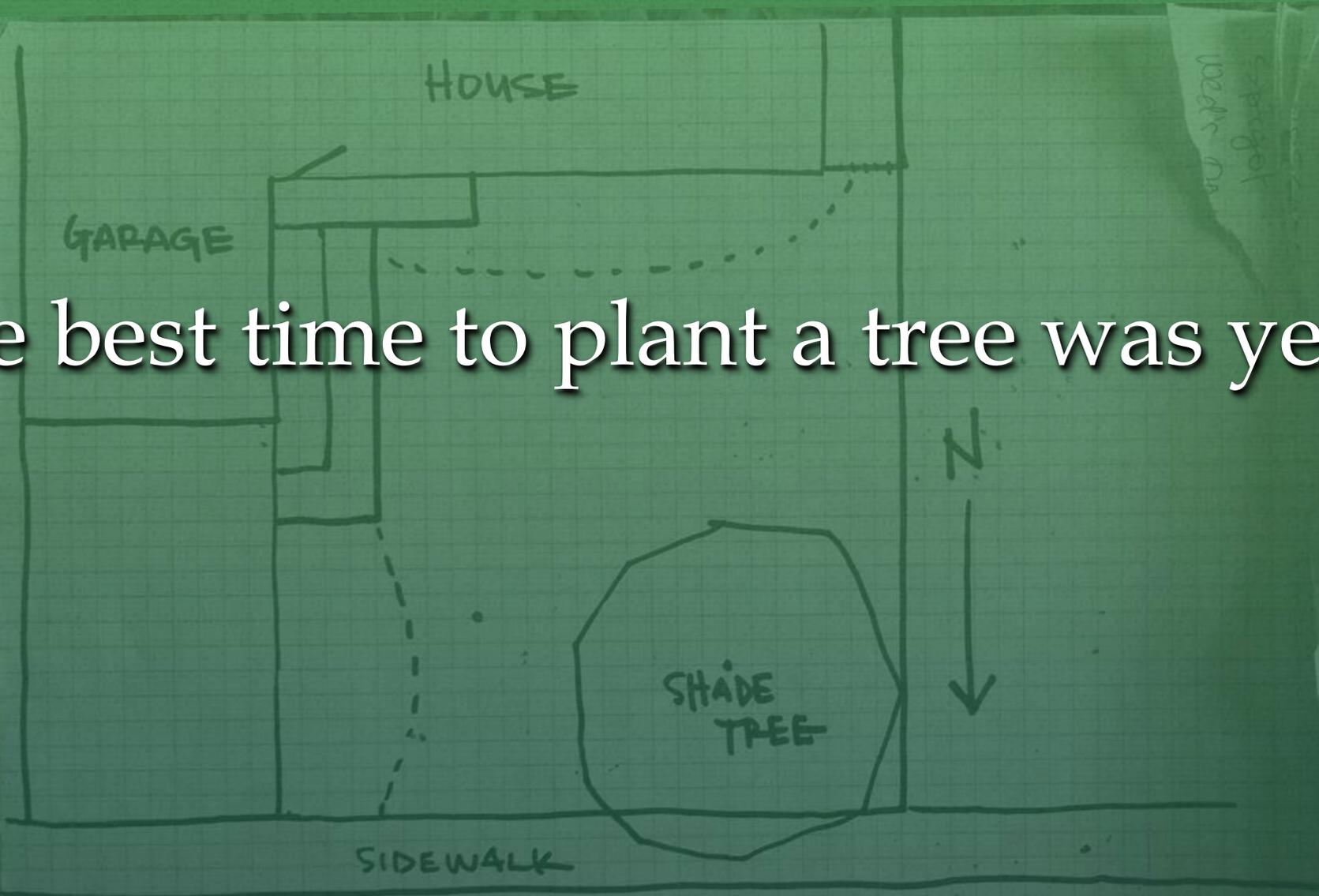
GARAGE

SIDEWALK

Spring
weeds on



The best time to plant a tree was yesterday



HOUSE

GARAGE

SHADE
TREE

SIDEWALK

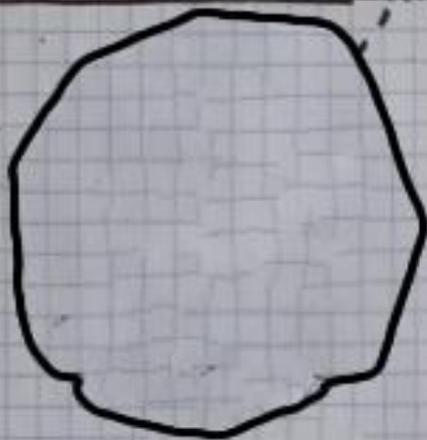
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Spring
walk on

HOUSE

GARAGE

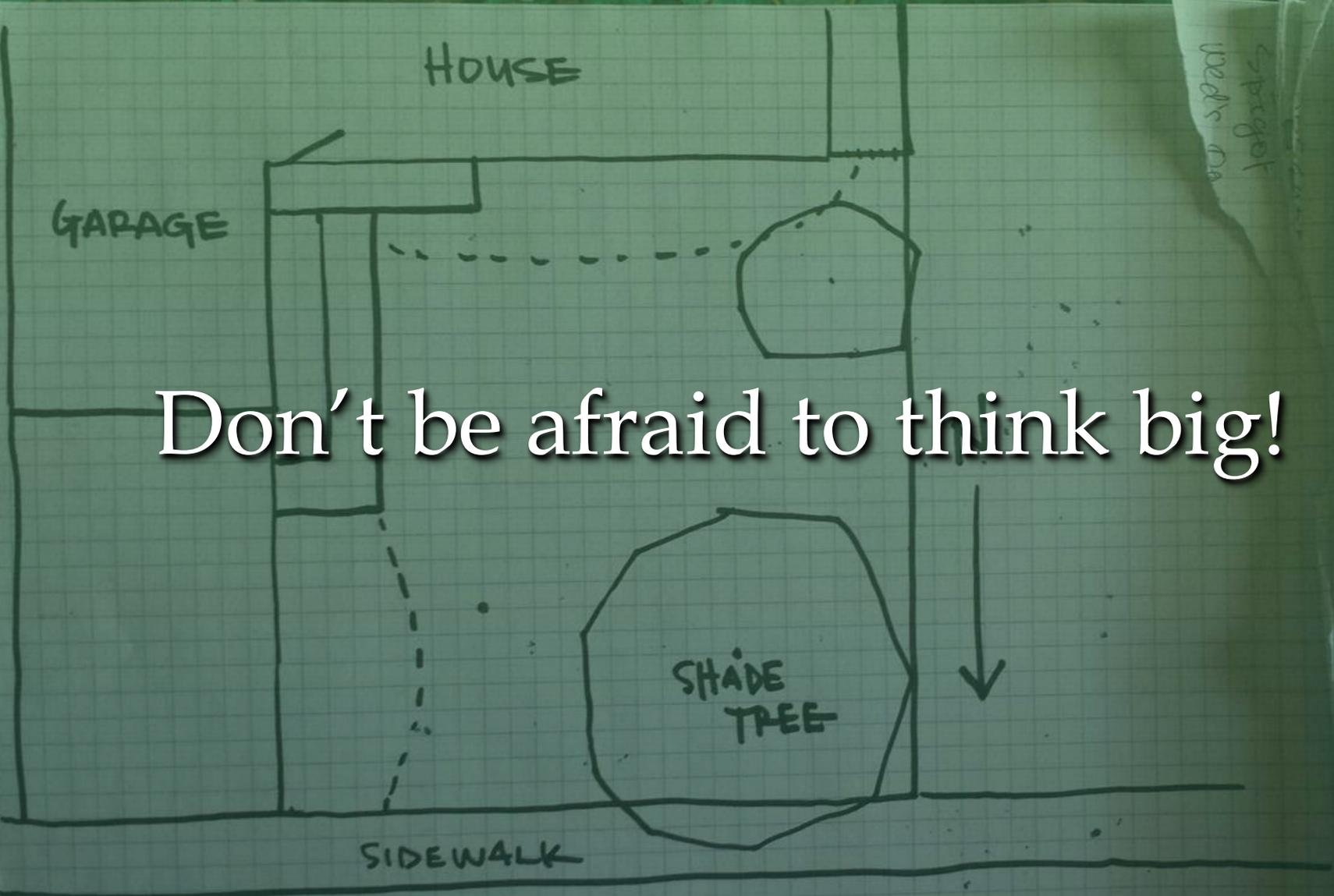


SIDEWALK

N



Spiegel
Weg 10



Don't be afraid to think big!

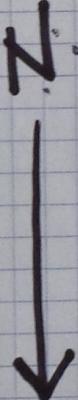
Sprigot
weeds on
to go

HOUSE

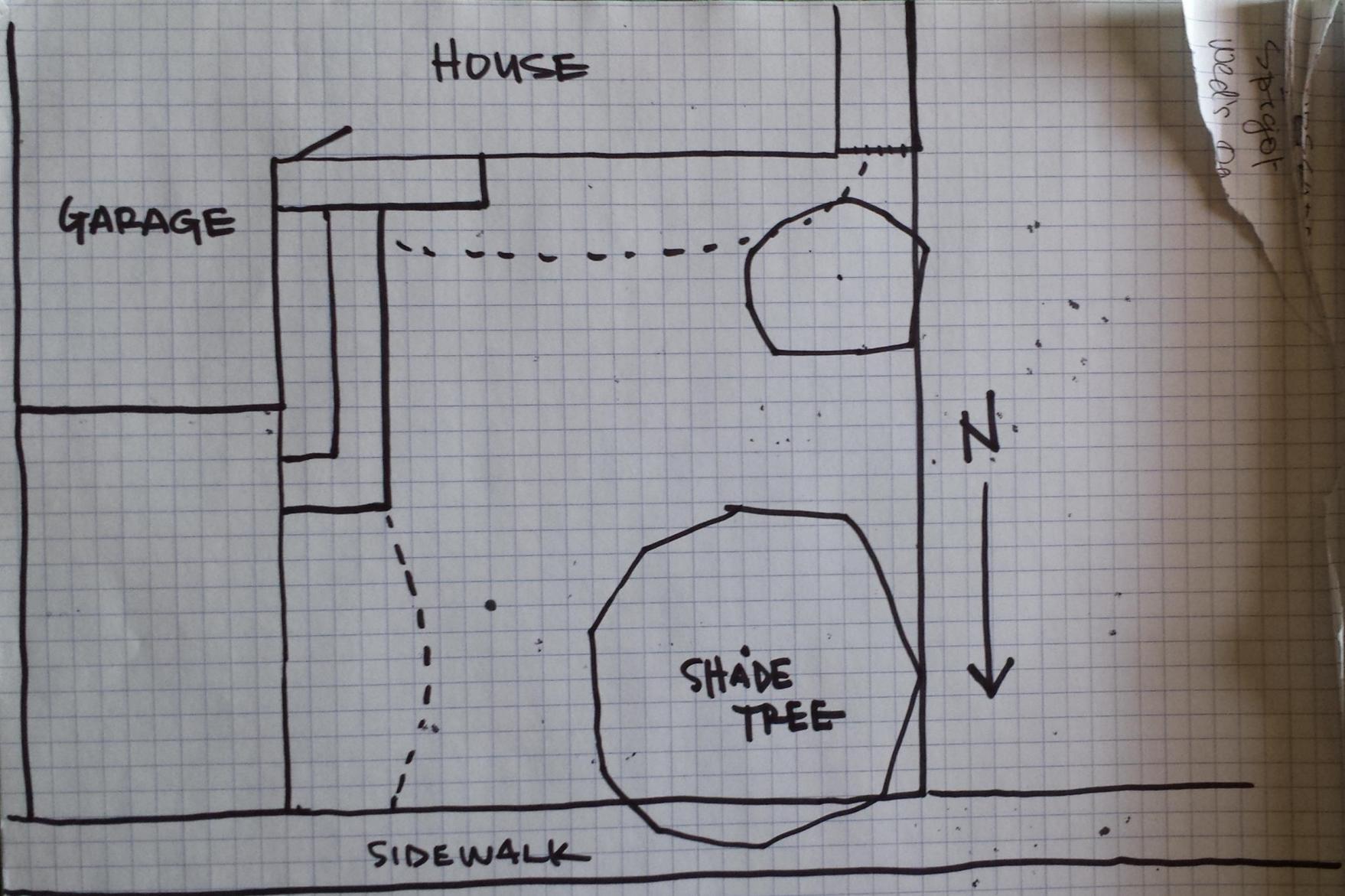
GARAGE

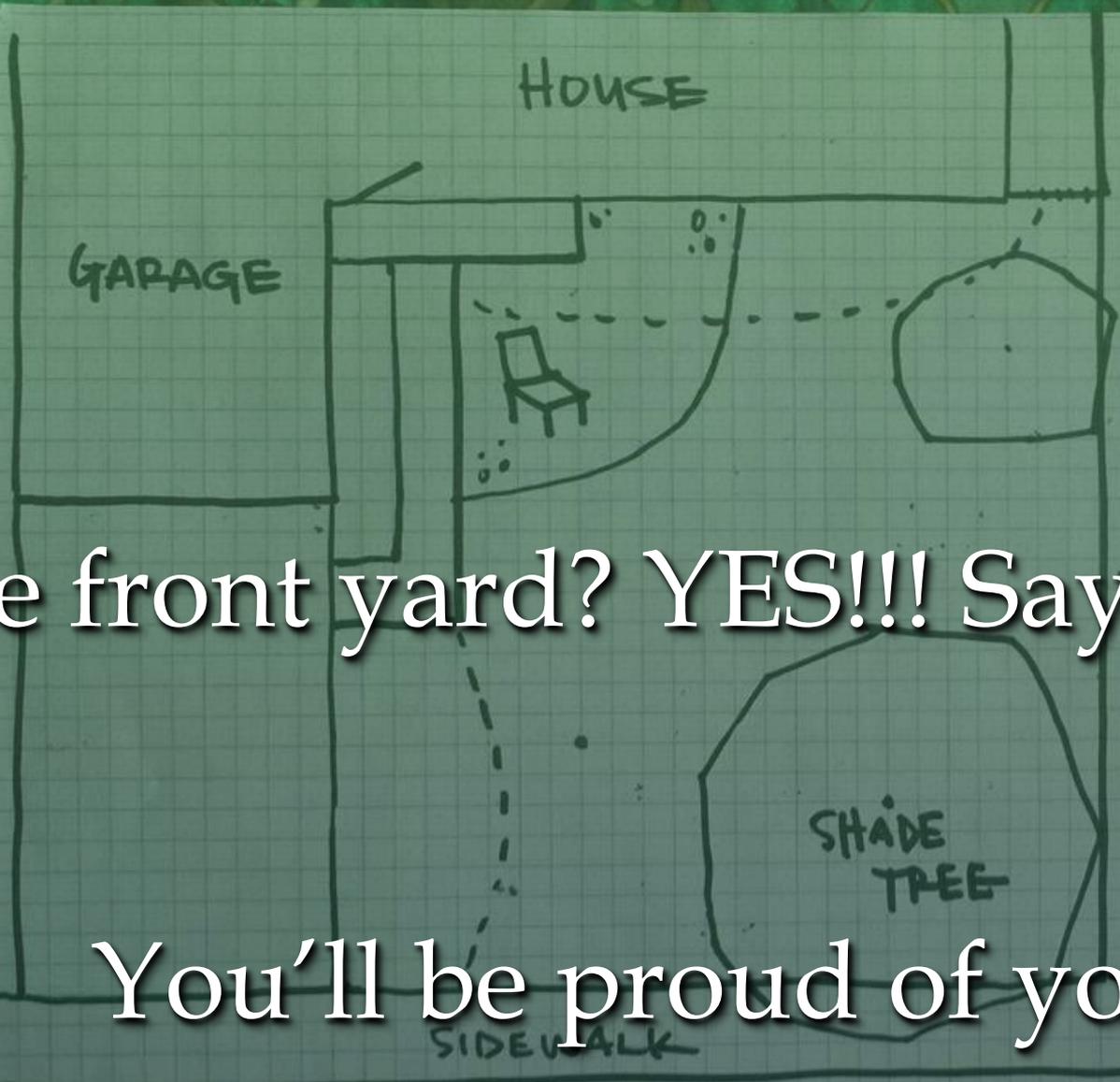
SHADE
TREE

SIDEWALK



Spring
weeds on





Springer
Week's on

the front yard? YES!!! Say hello to your

You'll be proud of your garden.

HOUSE

GARAGE



SHADE
TREE



SIDEWALK

no street
lights

HOUSE

GARAGE

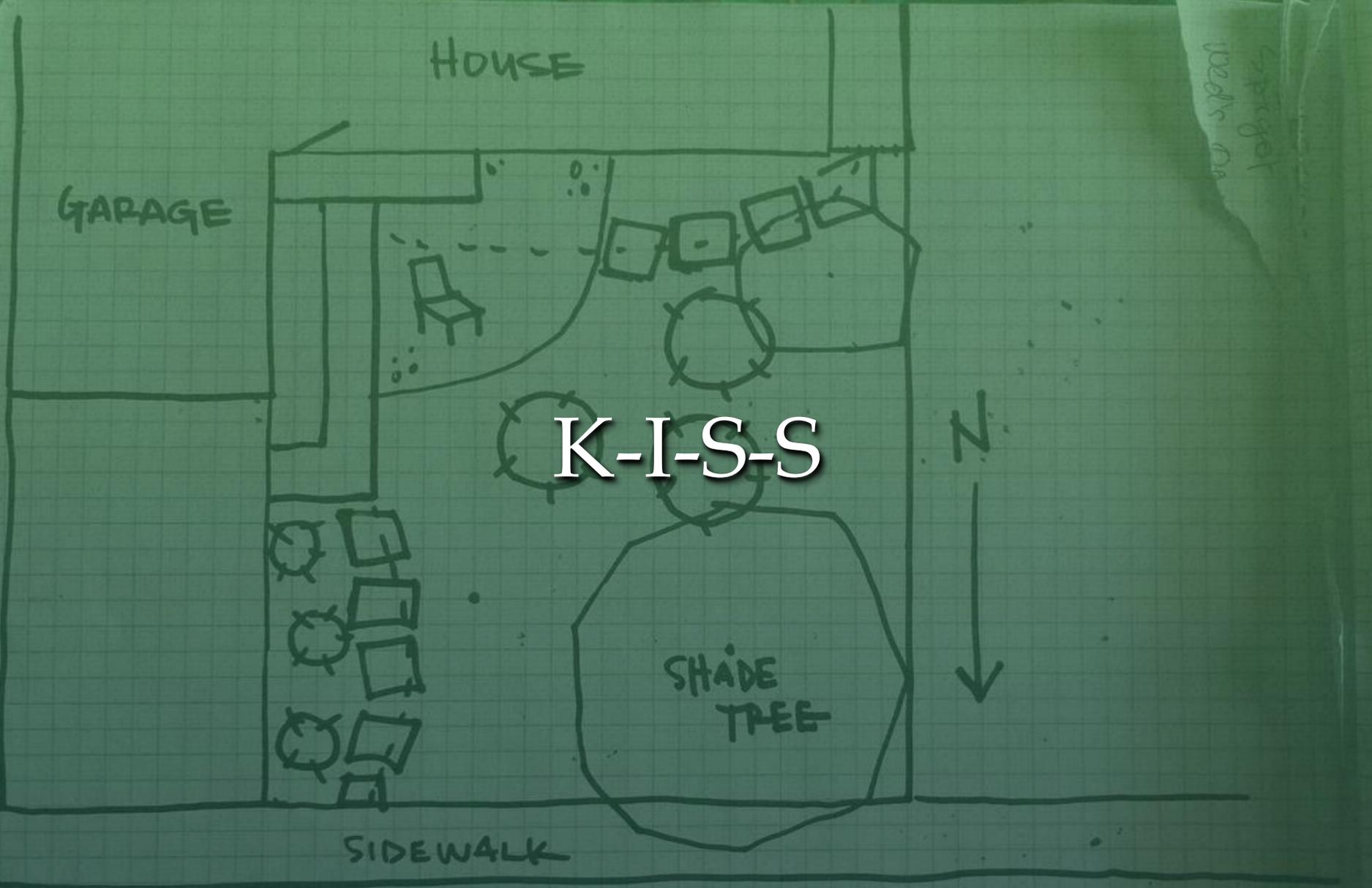
K-I-S-S

SHADE
TREE

SIDEWALK

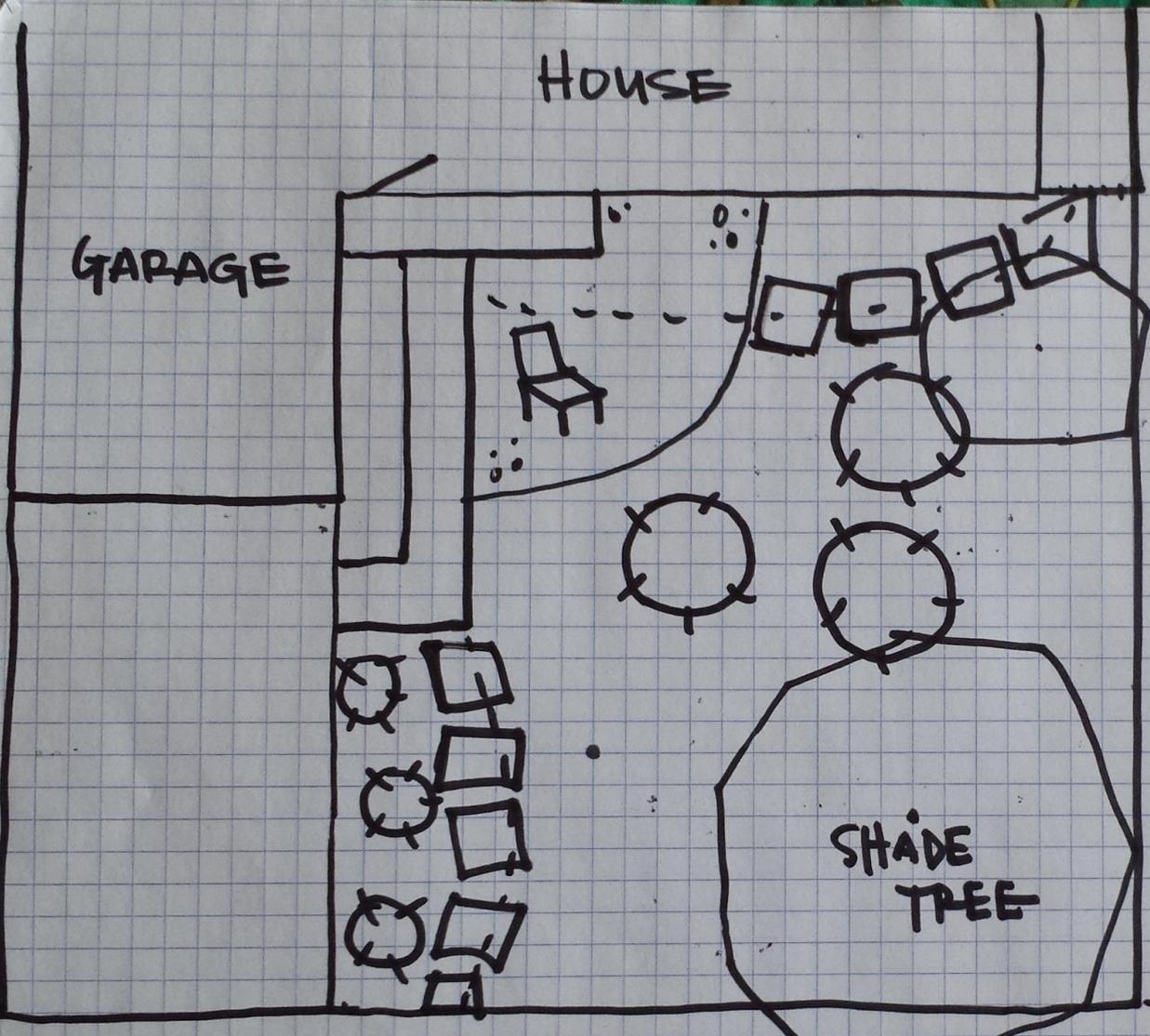


no speed
break on
toys

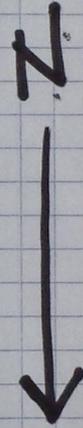


HOUSE

GARAGE



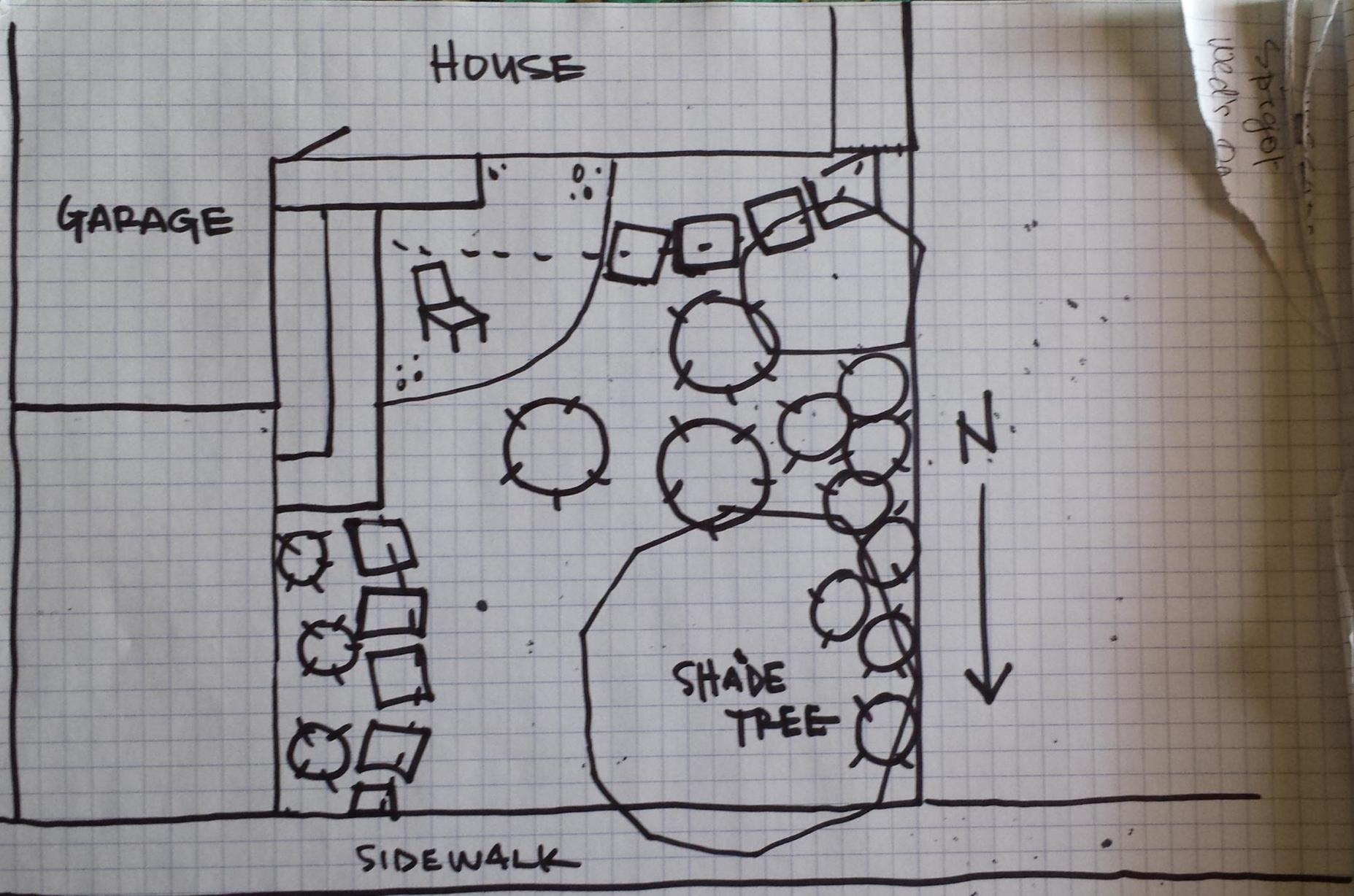
SIDEWALK



Springer
weeds on

HOUSE

GARAGE



SIDEWALK

SHADE
TREE



Springer
works on

HOUSE

GARAGE

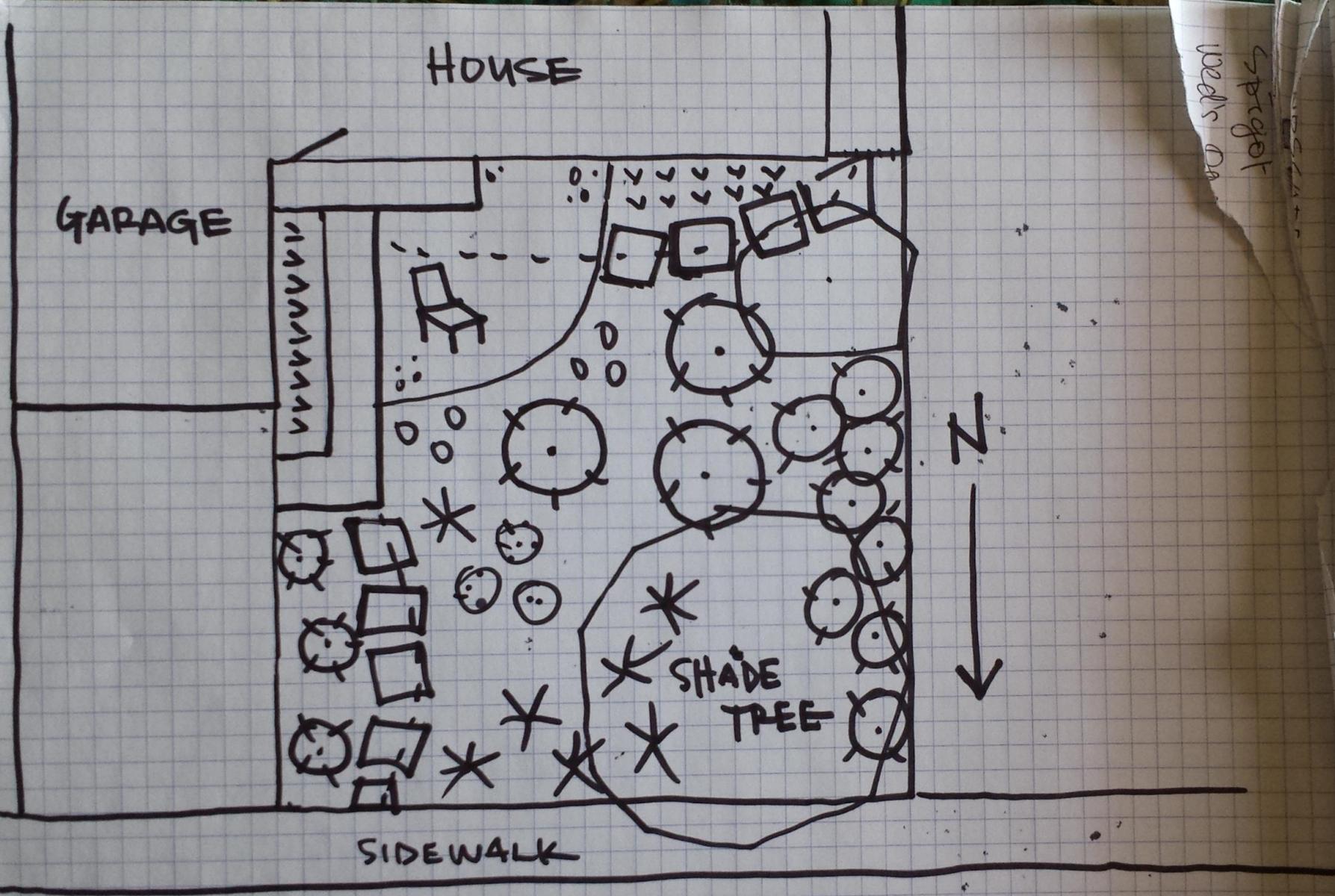
Plants for a little more show

SIDEWALK



HOUSE

GARAGE



Spring
weeds

HOUSE

GARAGE



SIDEWALK

Spring
walks on







Marcie Kramer & Heather Bristow

510-220-6106

missionbluegardens.com

Sustainability



MISSION
BLUE

GARDENS

SINCE



CA Landscape Contractor's License #987728

Bonded & Insured



BAY-FRIENDLY
Landscape Maintenance
Professional
2014-2016



Qualified Water
Efficient Landscaper