BACK TO BASICS

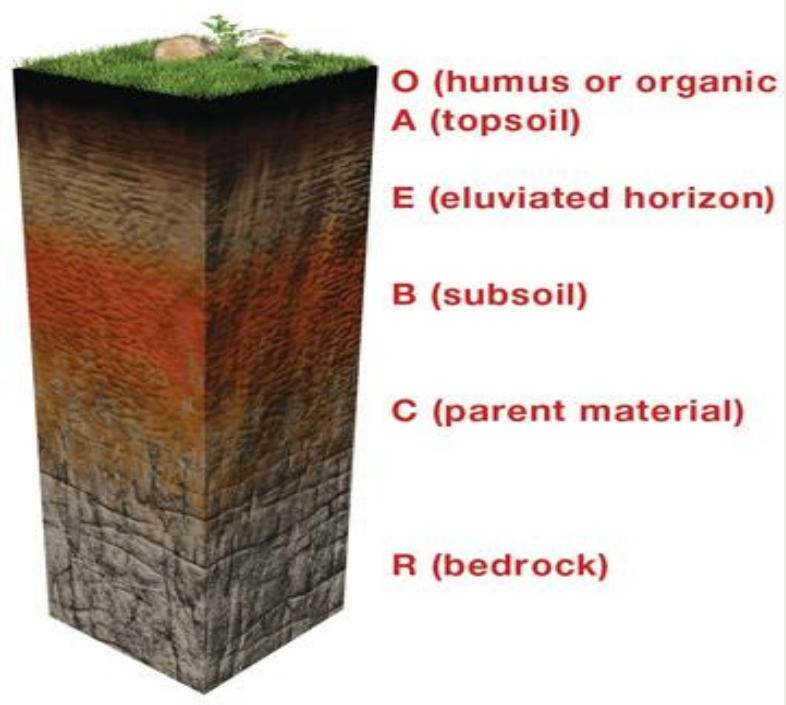
Beginning with soil and ending with mulch.

BEFORE AND AFTER

SOIL

Know your soil !

- Proper irrigation run schedule due to rate at which soil can absorb the water
- Types of plants



SOILS TEST

- Determines soil type
- Deficiency of fertilizer, if any
- Fertilization recommendations, if needed
- pH levels (specific plants)
- Saves money on unnecessary amendments/fertilizer

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 02/07/2018
Date Submitted 01/31/2018

To: Sheri Burke
X-Scape Garden
P.O. Box 921
Shingle Springs, CA 95682

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following:
Location : LANDSCAPE Site ID : 1/31/18.
Thank you for your business.

* For future reference to this analysis please use SUN # 76087-158686.

SOIL ANALYSIS

Saturation Percent (SP)	56		Soil Texture Clay Loam
pH	6.51		
E.C.	0.32	mmho/cm	
Tot.Dissolved Salts	204.8	ppm	
Infiltration Rate (0% Slope)	0.25	in/hr	
% Organic Matter	13.3		
C.E.C.	24.4	meq/100g	
Sodium Absorption Ratio (SAR)	1.3		
Exchangable Sodium Percent (ESP)	0.6		
Gypsum Req. (CaSO4*2H2O)	None Required		
est. Nitrogen Release	3.5	#/1000 sq.ft.	

Nitrate	0.08	ppm	*
Phosphorus	33.66	ppm	************************
Potassium	122.64	ppm	************************
Sulfur	6.04	ppm	********
Chloride	10.33	ppm	********
Carbonates	167.85	ppm	**********************
Sodium	33.30	ppm	
Calcium	3775.01	ppm	**********************
Magnesium	622.14	ppm	*****************
Boron	0.90	ppm	****************************
Copper	3.00	ppm	**********************
Iron	69.63	ppm	********************
Manganese	68.58	ppm	****************************
Zinc	8.06	ppm	**********************************

Very Low | Low | Adequate | Excessive

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(916) 852-8557

DATE 02/07/2018
SUN NUMBER 158686

Information requested by:
Sheri Burke
X-Scape Garden

Information for:
LANDSCAPE
Sample ID: 1/31/18

SOIL RECOMMENDATIONS FOR LANDSCAPE MAINTENANCE

SOIL pH (Acidity and Alkalinity)

The pH of this sample indicates the soil is in a range for normal growth of most plants. No modification is required.

DISSOLVED SALTS (Indicated by E.C. & TDS)

These conditions are in the normal range for plant growth.

SOIL TEXTURE AND RATE OF WATER INFILTRATION

The infiltration rate for all soil textures decreases with increasing ground slope. At 0 to 4%, 5 to 8%, 9 to 12%, 13 to 16% and above 16% the infiltration rate of this sample decreases from 0.25 to 0.20, 0.15, 0.10, 0.06, respectively. Infiltration rate also decreases with percent of ground cover and by compaction.

WATER PENETRATION OF SOIL DUE TO CHEMICAL CHARACTERISTICS

When exchangable Sodium increases in the soil, water penetration decreases. Based on SAR and ESP values this sample has no penetration problem due to soil Sodium. No gypsum is required.

ORGANIC MATTER

Organic matter provides a slow nitrogen release and aids water retention. This sample has a adequate Organic Matter content.
No further organic matter is essential, a 2-3 in. top dressing around shrubs and trees will aid water retention.

SOIL BORON

Boron concenrations are in a range allowing normal plant growth.

SOILS LAB

- California Laboratory Services
  - http://www.californialab.com/, Rancho Cordova
- Morse Laboratories
  - http://www.morselabs.com, Sacramento
- Prima Environmental
  - http://www.primaenvironmental.com, El Dorado
- Soil Testing Service
  - 916-635-7390, Rancho Cordova
- Sunland Analytical
  - http://www.sunland-analytical.com, Rancho Cordova

SOILS REPORT

Visit www.nrcs.usda.gov

National Resources Conservation Services

- Obtain Soil Classifications
  - Home page: click ‘Soil Survey by State’
  - Click ‘California’
  - Click ‘El Dorado 1974’ then READ
- Map out address with specific soil data
  - Home page: click ‘Soil Survey by State’
  - Click ‘Soil Survey’ see blue upper blue tab
  - Click ‘WSS’ in green circle
    - Area of Interest
    - Soil Map
    - Downlown Soil data

SOIL TYPE

Texture – Sand, Silt, Clay

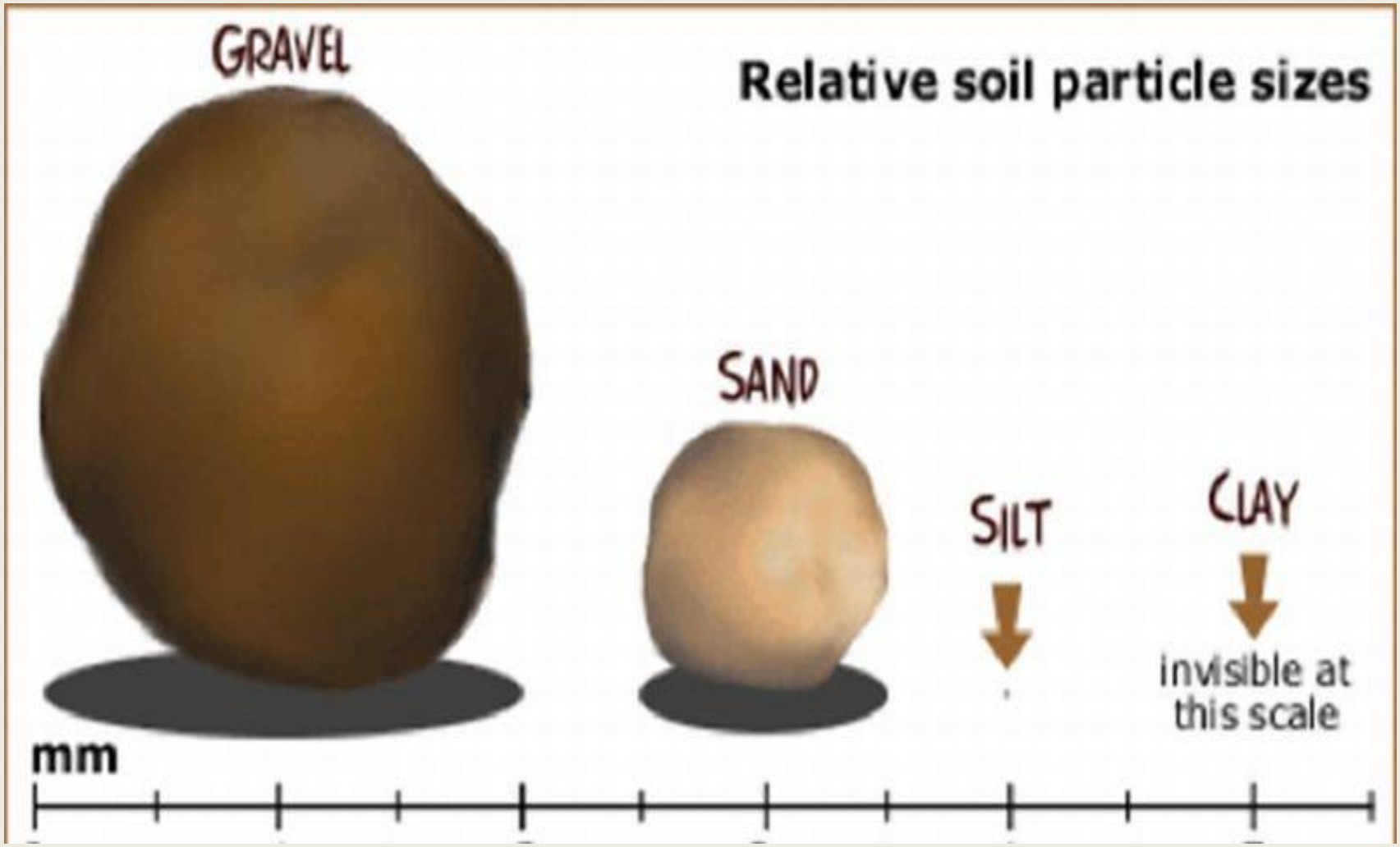
Clay
- Heavy
- Holds more water and fertilizer (nutrients)

Sandy
- Light, course
- Warms up faster in Spring
- Water runs through faster

Silt
- Light
- Water runs slower
- Higher water holding capability

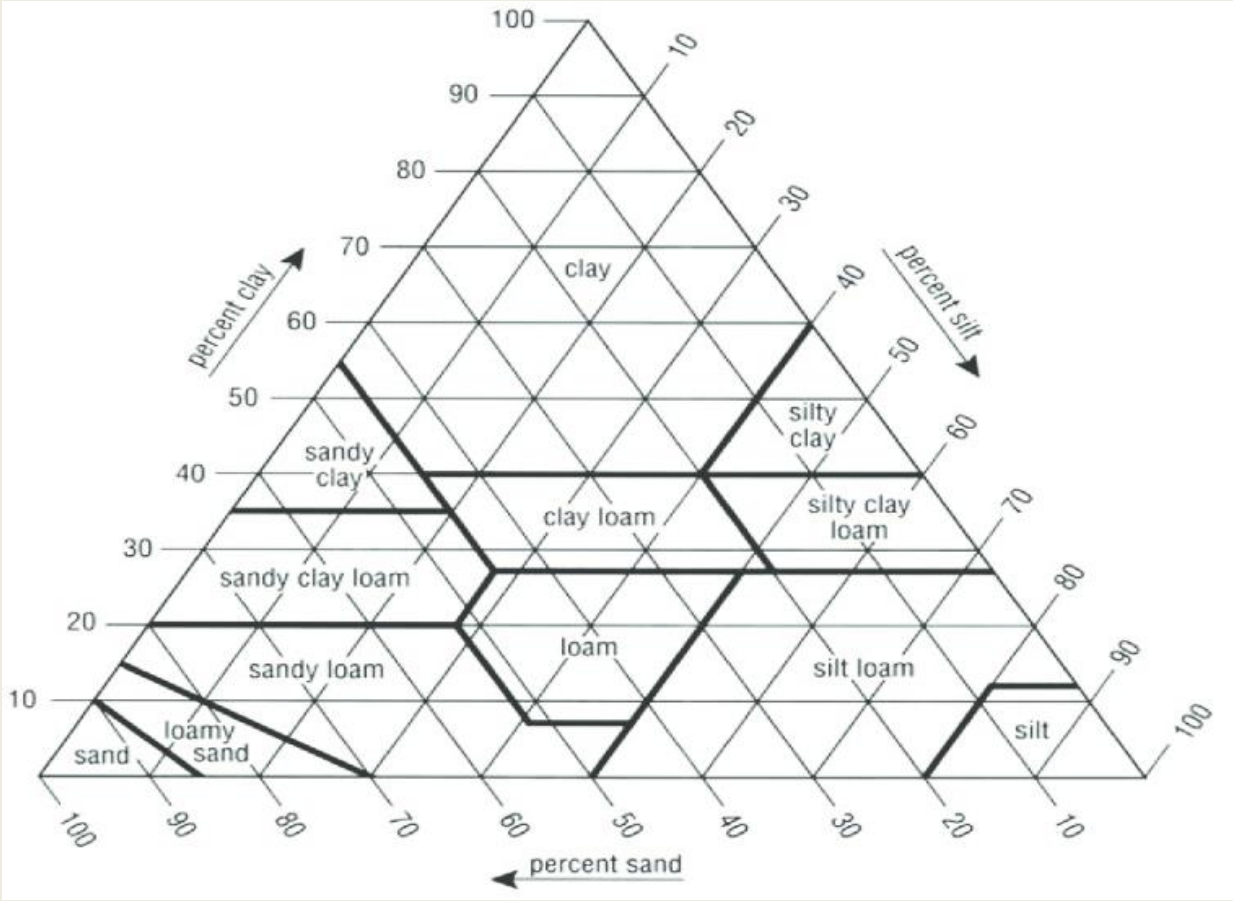
Loam
- Combo of Sand, silt, clay (5%-10% organic matter) THE BEST!!!!

SOIL SIZE


GRAVEL
Relative soil particle sizes
SAND
SILT
CLAY
invisible at this scale
mm

SOIL TEXTURE CLASSICIATIONS

Clay 35% Silt 35% Sand 30% (from soils report)



SOIL TEXTURE FEEL METHOD

- Loamy sand, coarse texture. A cast will form when moist soil is squeezed in the hand. The cast cannot be handled without breaking, no ribbon can be formed.
- Loam, medium texture. A short ribbon can be formed with moist soil. The ribbon will split readily and will break away when about half inch long. The cast will bear some handling.
- Clay loam, medium texture. A ribbon can be formed easily in moist soil. This ribbon is moderately strong, but will break away when it is 3/4 inch long. The cast will bear moderate handling
- Clay, fine texture. A strong ribbon can be formed in moist soil. The ribbon often will be more than one inch long. The cast will bear considerable handling.

FEEL METHOD

SOIL AMENDMENT

Definition of Amendment:

- Improve plant growth by way of improving soil tilth (to loosen) and water infiltration (retention and/or drainage).
- Types: hay, straw, peat moss, sand, wood products, manure, compost

- Amend entire site with rototiller or shovel.
- Rototill under extreme conditions and only one time EVER. Example: subdivisions
- Do NOT amend backfill soil into planting hole.
- Excessive amounts of compost or manure can encourage millipedes, pillbugs, white grubs etc.

COMPOST

What is composting?

- Natural process by which organic materials decompose.

What is compost?

- Soil amendment product that results from proper composting. End product is humus-like material to increase health of soil.

COMPOST FACTORS

Five control factors that maintain an environment that encourages the composting organisms (bacteria and fungi) to thrive 24 hours a day:

- Aeration
  - Turn pile when activity slows
- Moisture
  - Should be at level of 45-60% (ex: wrung out sponge)
- Volume
  - Bin at a minimum of 3’x3’x3’ (1 cubic yard)
- Particle Size
  - 1” to 3” diameter at the largest point
- C:N Ratio (carbon : nitrogen)
  - 30:1 equal volume of ‘browns’ and ‘greens’

COMPOST BINS

Redwood or Cedar

COMPOST RATIO

Carbon

- Fall leaves, dried landscape trimmings, straw, dryer lint (cotton or natural fibers), cardboard, shredded newspaper, wood shavings

Nitrogen

- Grass clippings, fresh landscape trimmings, alfalfa hay, fresh weeds (no seeds), fruit/veggie scraps, coffee grounds/tea bags, aged chicken manure

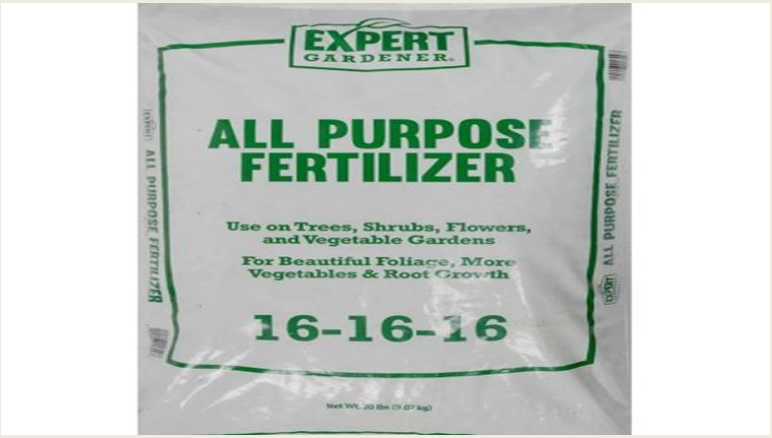
DO NOT ADD: dairy, meat, bones, human waste

MANURE

- Contains animal excrement, plant remains or both.
- Essential nutrients
- Help improve soil structure
- Apply one month prior to planting.

Allows decomposing and leaching of excess salts

FERTILIZER



3 Primary Nutrients (NPK):

- Nitrogen
- Phosphorus
- Potassium

Triple 16-16-16 (NPK) 100 lb Bag **READ LABEL**

- 16 lbs of Nitrogen
- 16 lbs of Phosphorus
- 16 lbs of Potassium

Remaining lbs contains fillers unless secondary nutrients are included which MUST be listed on label

NITROGEN

Nitrogen is naturally low in soils.

- Function
  - Growth and development (lush landscape)
- Symptoms
  - Slow growth, stunting, yellowing of older leaves
- Excess
  - Excessive growth, dark green color, few fruits, onslaught of aphids and other insects and DEER.
- Obtain
  - Compost, manure, blood meal, Urea (synthetic)

PHOSPHORUS

Phosphorus may be low in some soils where there is a lot of rain. The soil tends to be reddish in color, have hardpan or claypan layers.

- Function
  - Promotes blooming and root growth for structure
- Symptoms
  - Slow growth, stunting and purplish leaf color, dying leaf tips
- Excess
  - Interferes with nutrient absorption
- Obtain
  - Compost, manure, bone meal

POTASSIUM

Potassium is not needed in most gardens as the soil naturally contains this nutrient.

- Function
  - Size, shape, color, quality, taste, water movement/respiration
- Symptoms
  - Weak stalks, small fruit, slow growth, poor developed roots, brittle yellow/brown rust edges
- Excess
  - Light green foliage
- Obtain
  - Compost, manure, wood ash

IRON

Low in acid loving plants in alkaline soils

- Function
  - Use of sugar in photosynthesis (def: production of carbohydrate (sugar) from carbon dioxide and water)
- Symptoms
  - Yellowing of the leaves between the veins in younger leaves
- Obtain
  - Iron Chelate or Iron Sulfate

ZINC

Low due to top soil removed (subdivisions)

- Function
  - Strong stem growth
- Symptoms
  - Yellowing to whitening at edge leaf as veins remain dark green
  - Growth of small leaves and/or in clusters
- Obtain
  - Zinc Sulfate, Zinc Ammonium Nitrate, Zinc Chelate

FISH EMULSION

- Remains of processed fish
- NPK 5-1-1
- Adds micronutrients
- Organic fertilizer
- No damage by over usage
- Awesomeness!!!!!!

SYNTHETIC vs. ORGANIC

- Difference:
  - Synthetic is fast acting, can burn leaves if excess
    - Use slow release pellets
  - Organic is slow acting
    - Safer for homeowners, less damage
- Fertilizer/Nutrients must be changed into chemical forms in order for the plants to absorb and use – no difference between the absorption of synthetic vs. organic

FERTILIZER

DO NOT ADD FERTILIZER UNLESS YOU KNOW FOR A **FACT** THAT IT IS NEEDED!!!!!!!!!!!!!!!!!!!

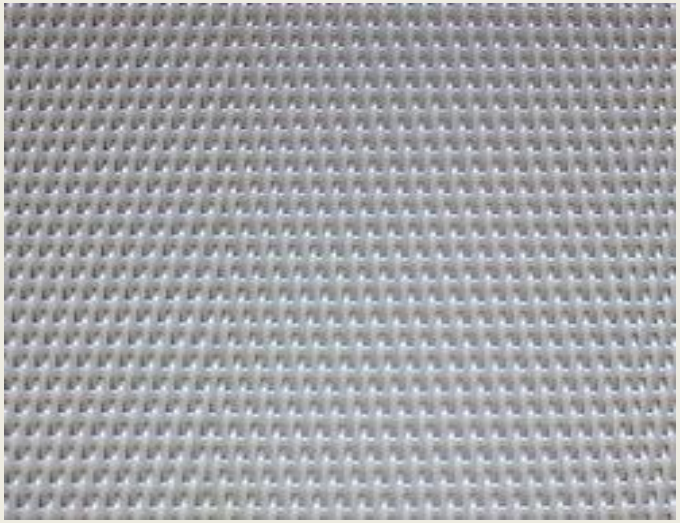
- Most mature/established trees and shrubs that are healthy need little to no fertilizer
- Fertilizing unnecessarily can harm healthy plants by:
  - Increasing plant size at a faster rate
  - Produces weak growth
  - Predisposes to diseases, pests and environmental stress

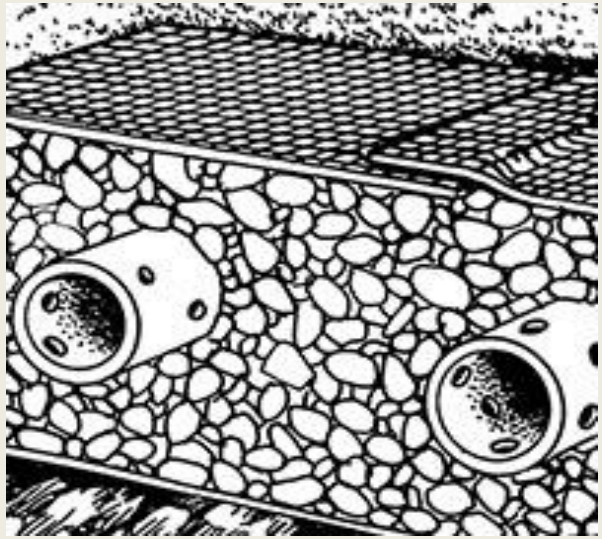
LAWN FERTILIZER

- Cool season lawn
  - Ex: Bent grass, Kentucky Bluegrass, Fescues, Ryegrass
    - Apply Spring and Fall
- Warm season lawn
  - Ex: Bermuda grasses: Maya, Blackjack, Sahara II
    - Apply Spring after fully greened up and 6-8 weeks before first frost

FILTER FABRIC

Filter fabric allows water to flow through the material while blocking sediment, silt and other aggregates. This fabric is used for retaining walls and erosion control methods. It is NOT to be used as landscape fabric.





LANDSCAPE FABRIC

- Water will travel to an opening in fabric
- Very little filtering of water through to soil
- Weeds grow on top
- Compacts soil
- Blocks out oxygen and air

LANDSCAPE FABRIC

IRRIGATION

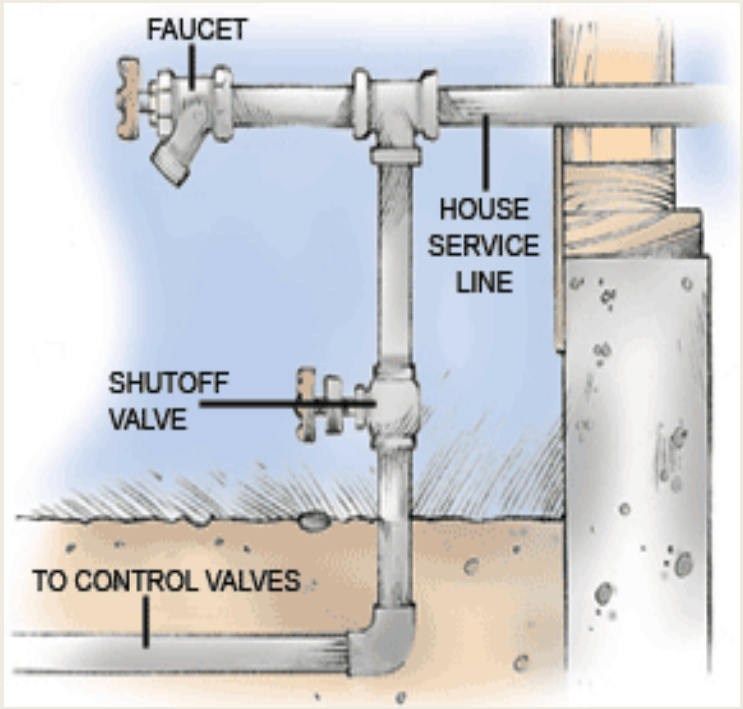
Where is your point of connection (POC)?
Recycled water?
Water pressure?
Where are your valves?
How many valves?
Where is the controller?
What type of controller?

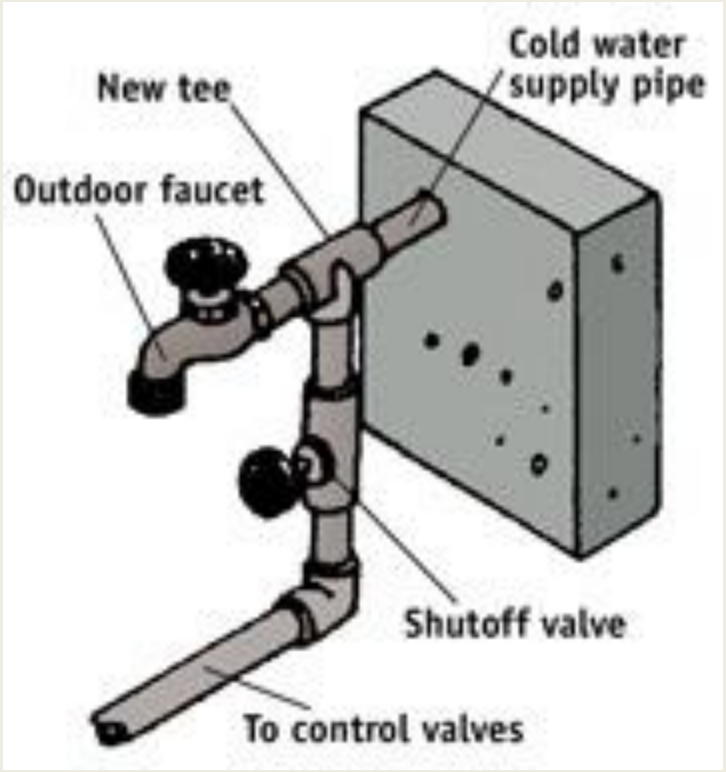
How many stations? Do they match number of valves?
What are the irrigation methods?

- Inline drip
- Point source
- Sprayers

POINT OF CONNECTION

Main line





RECYCLED WATER

Property utilizing recycled water must conform to EID Design & Construction Standards

- Open trench inspection of purple pipe and purple tape
- All valves must be in-line valves and secured in a box (in ground)

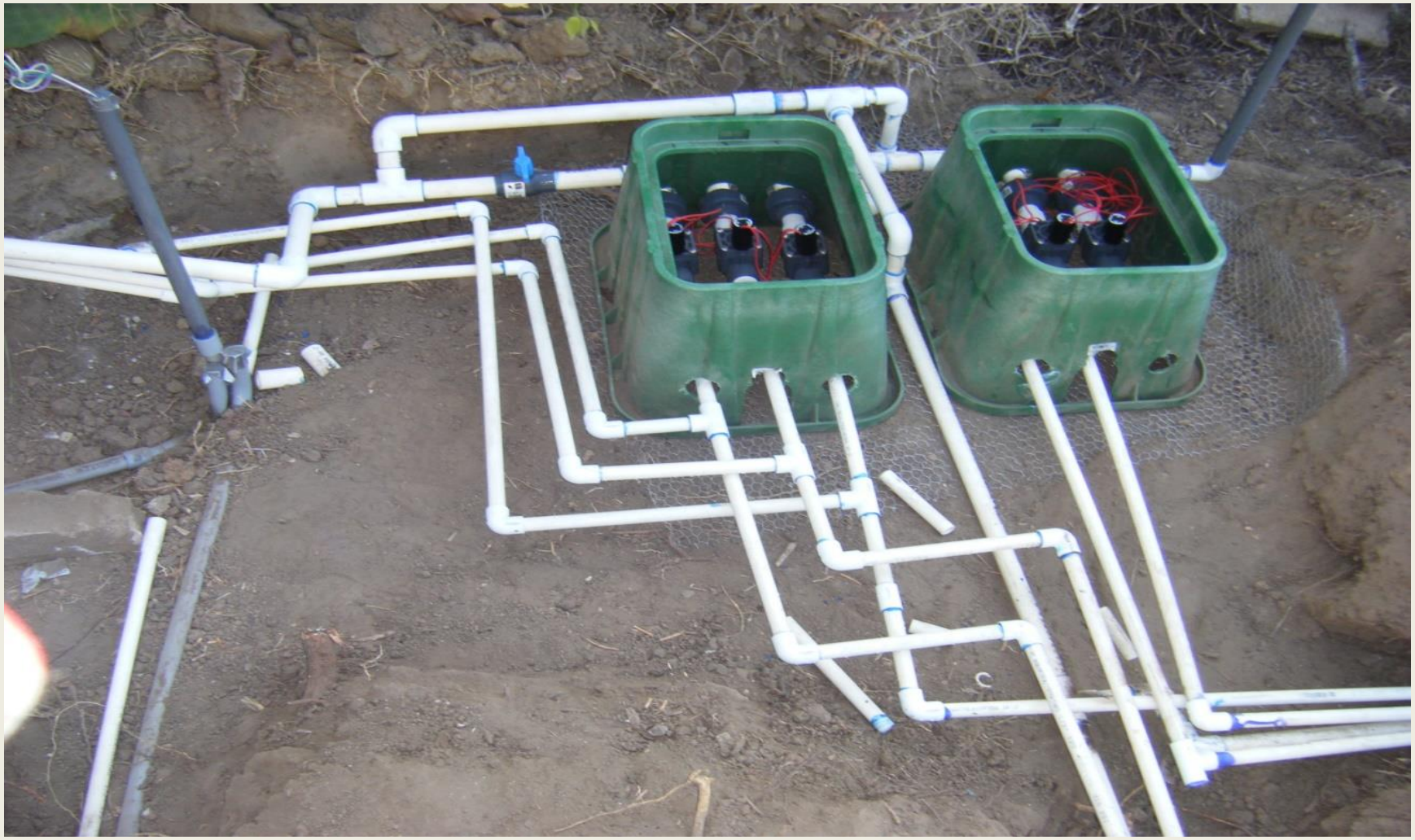
WATER PRESSURE

- Check water pressure (psi) to determine which irrigation method to use.
- Buy gauge with a female hose thread. Make sure rubber gasket is inside gauge for tight fit.
- Turn on water.

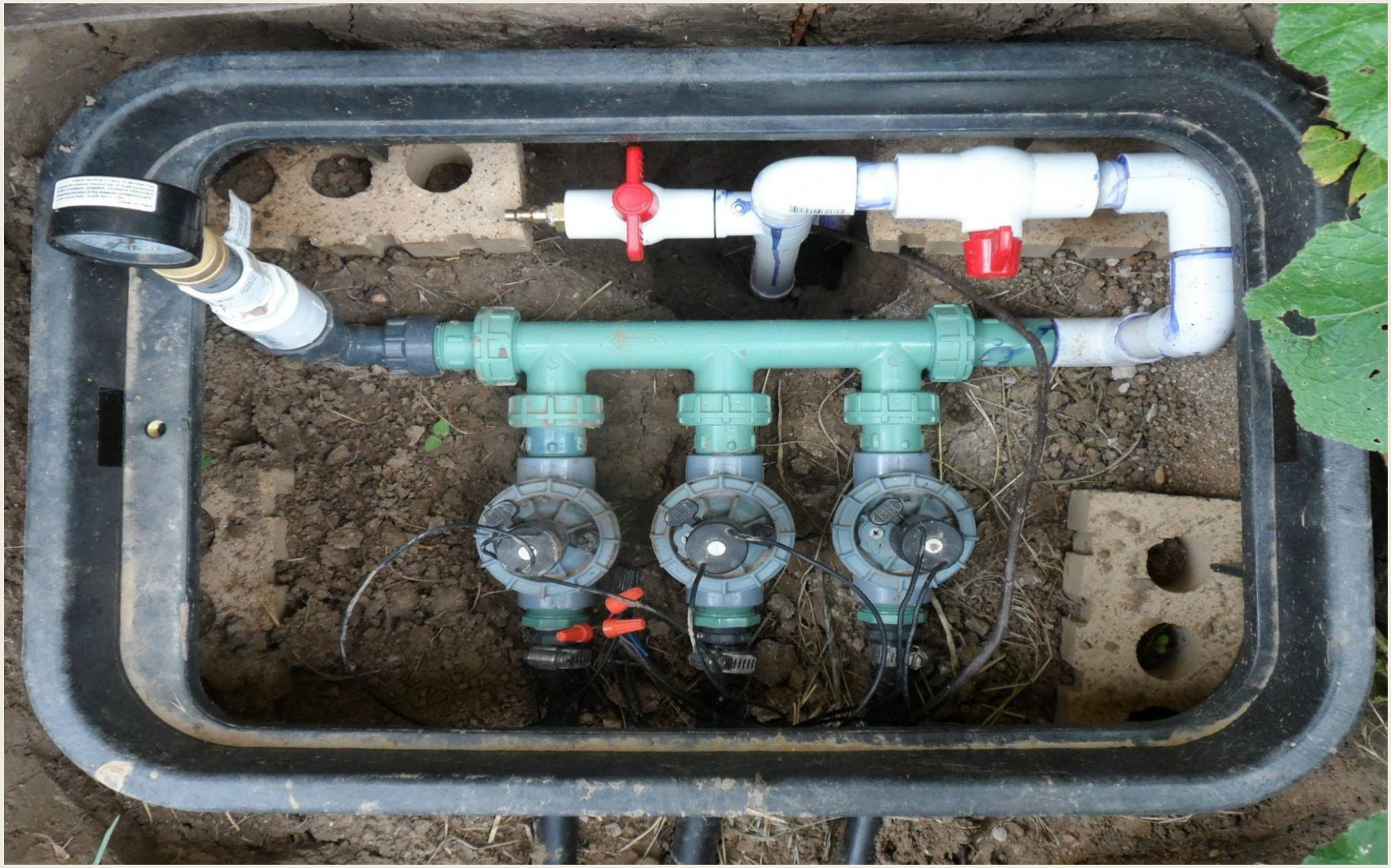
INLINE VALVES

- Must be placed in a box
- Not an anti-siphon valve which means no backflow preventer
- Difficult to detect leaks and/or damage
- Harder to work on

IN LINE VALVES



IN LINE VALVES



ABOVE GROUND VALVES

- Anti-siphon valve with built in backflow preventer
- Detect leaks and/or damages
- Easy to work on
- Varying heights
- Left out in open
- Add pressure regulator

ABOVE GROUND VALVES WITH MANIFOLD

ABOVE GROUND VALVES

HYDROZONE VALVES

MUST use separate valve per hydrozone planting = Very low, Low, Medium, High

- Hydrozone:
  - VL, L
  - L, M
  - M, H
  - H
- Trees
- Shrubs
- Containers
- Veggie including raised beds

PLANT WATER NEEDS

WUCOLS

Water Use Classifications of Landscape Species

http://ucanr.edu/sites/WUCOLS/

Database of water needs, plant types and climate regions

Very low, Low, Medium, High

CONTROLLERS

- Rainbird
- Orbit
- Hunter
- iDig
- Irritrol
- Toro
- Others

SOIL INFILTRATION RATE

Water penetrates soil

Maximum Application Rates for Various Soil Types				
	Grass/Sod		Cultivated	
Soil Type	[in/hr]	[mm/hr]	[in/hr]	[mm/hr]
Clay	0.25	6.5	0.1	2.5
Silt Loam	0.35	9	0.15	4
Clay Loam	0.3	7.5	0.2	5
Loam	0.35	9	0.2	5
Fine Sandy Loam	0.4	10	0.25	6.5
Sandy Loam	0.45	11.5	0.25	6.5
Loamy Sand	0.65	16.5	0.35	9
Sand	0.75	19	0.4	10

IRRIGATION RUN SCHEDULE

Soak and Cycle Method - example

- Water 3 times per run day, one hour apart
- Allows soil to absorb water - **KNOW YOUR SOIL**
- Run schedule is based upon month of July
- Do NOT wait until the soil is dry after Spring to begin irrigating!!!!!!
- EID has same soak and cycle method on website

IRRIGATION RUN SCHEDULE

Based upon Clay Soil - example

- Shrubs (Medium water use) – Monday, Wednesday, Friday
    - 4:00 a.m. for 12 minutes
    - 5:00 a.m. for 15 minutes
    - 6:00 a.m. for 35 minutes
- Trees – Once every week OR once every 2 weeks to a depth of 2’-3’ feet
    - 4:00 a.m. for 12 minutes
    - 5:00 a.m. for 15 minutes
    - 6:00 a.m. for 1 – 2 hours (depending upon species)
- Lawn (keep blades at 3”-4” long)
    - Ex: Turn on irrigation, set timer on phone, stop timer when runoff occurs = MAXIMUM run time – WATER TWICE A WEEK
        - 4:00 a.m. for 12 minutes (example)
        - 5:00 a.m. for 12 minutes
        - 6:00 a.m. for 12 minutes

IRRIGATION RUN SCHEDULE

- Vegetables (raised beds)
    - 7:00 a.m. for 5 minutes
    - 7:30 a.m. for 5 minutes

    NOTE: May have to water in afternoon due to excessive heat

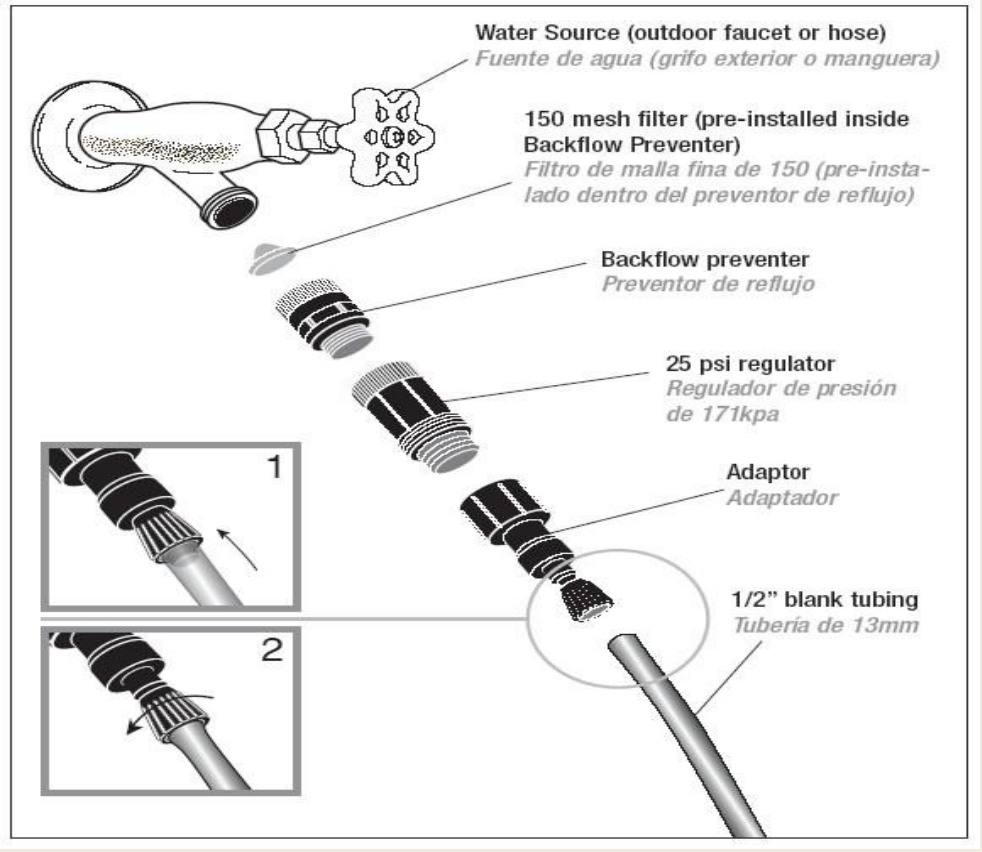
IRRIGATION METHODS

- Hose bib with or without valve ,with Inline drip or Point Source
  - Economical
  - Easy to install
- Inline drip
  - Economical in the long run
  - Easy to intermediate to install
- Point source
  - Economical
  - Constant up keep
  - Easy to install
- Conventional sprayers
  - Costly
  - Labor intensive
  - Easy to intermediate to install

HOSE BIB

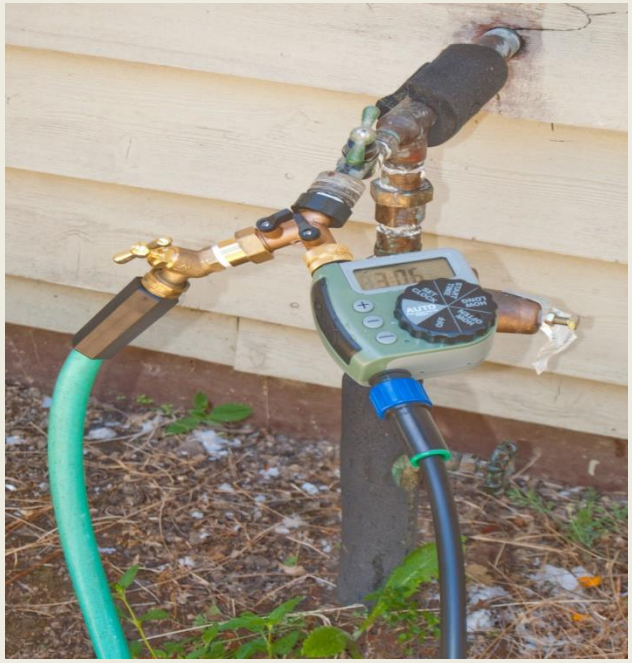
System directly to hose bib

Pressure regulator/filter



HOSE BIB WITH VALVE

System directly to hose bib using battery operated controller with psi regulator/filter



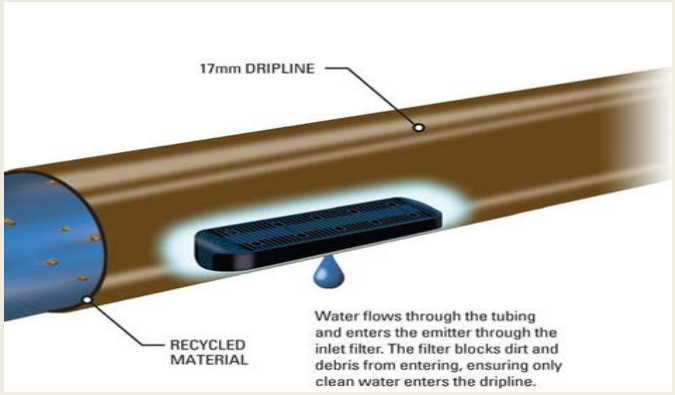
INLINE DRIP TUBING

Inline Drip Emitter ½” Tubing

- Reduces weeds
- Provide a complete wetted area
- Applies water slowly at low pressure at or near the root zone
- Adjust application rate to soil infiltration rate
- 0% water waste (no over spray or evaporation)
- Match water needs to plants
- Little to no damage long term
- Mass, medium to heavy dense plantings

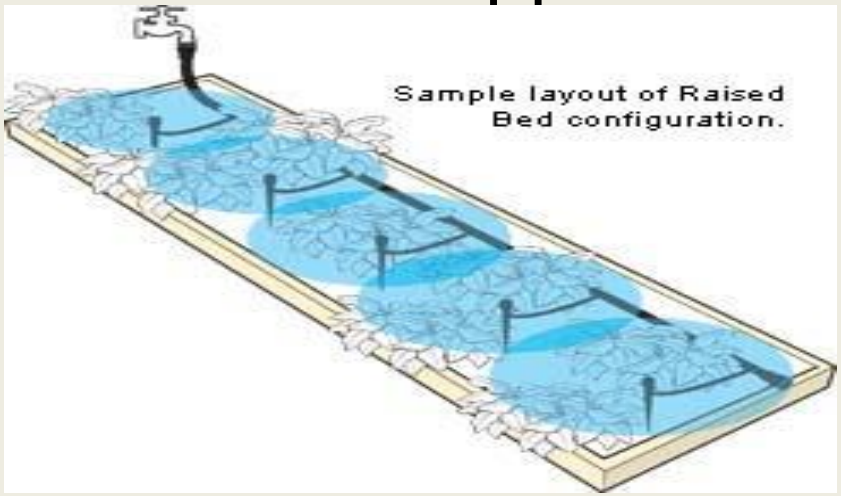
INLINE DRIP EMITTERS

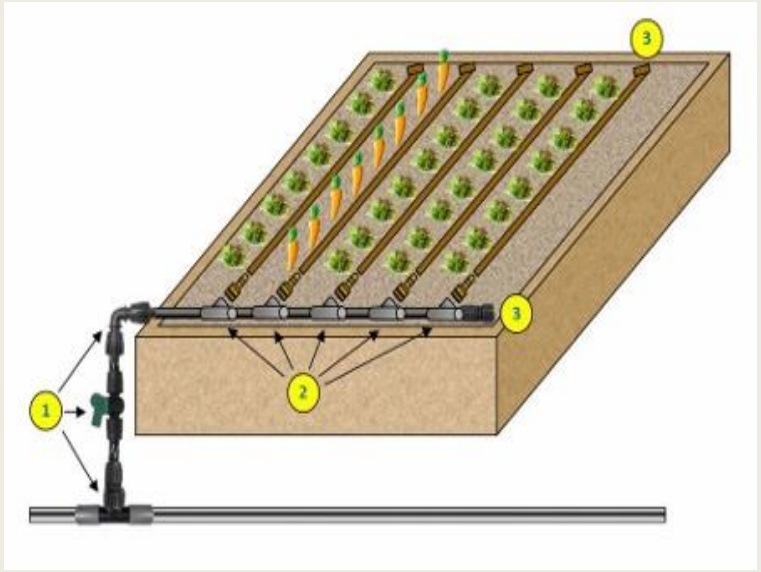
Inline drip emitters



RAISED BEDS

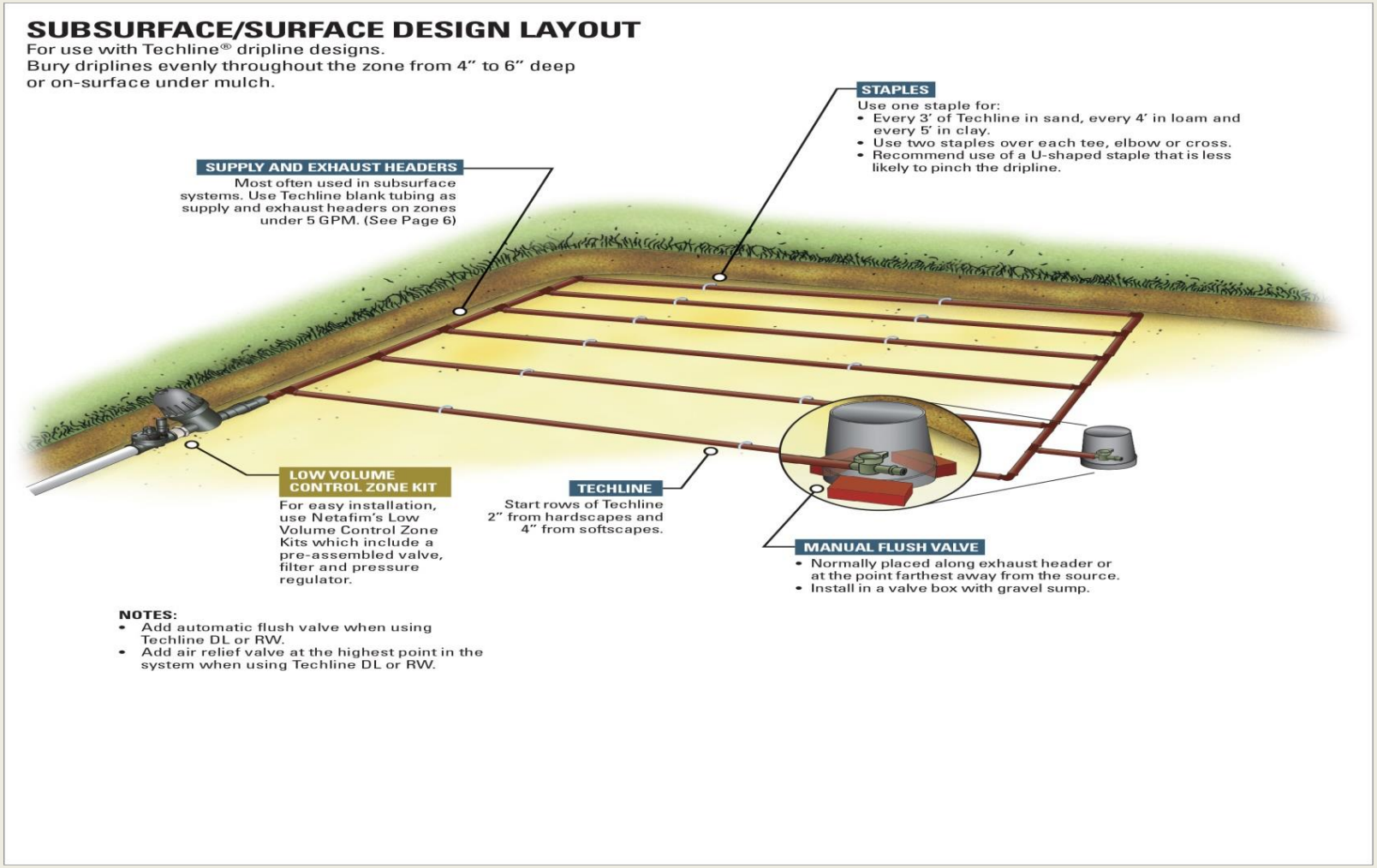
Raised Bed Application





SUBSURFACE

Lawn Inline Subsurface Application



POINT SOURCE

½” or 5/8” Black Poly Tubing with ¼” tubing with emitter of 1 gph or adjusted rate sprayers

IRRIGATION METHODS

Conventional spray zones

- Use of PVC
- MP Rotators ONLY

CONVERT LAWN TO DRIP

- Spray to Drip Retrofit Kits
  - Remove spray heads and internal assembly and replace with new parts
  - Attach fittings or female adaptor to connect to drip tubing and/or black poly tubing
  - Install inline pressure regulator, cover with box
- Remove spray heads including swing arm
  - Attach fittings adaptor to connect to drip tubing and/or black poly tubing
  - Install inline pressure regulator, cover with box

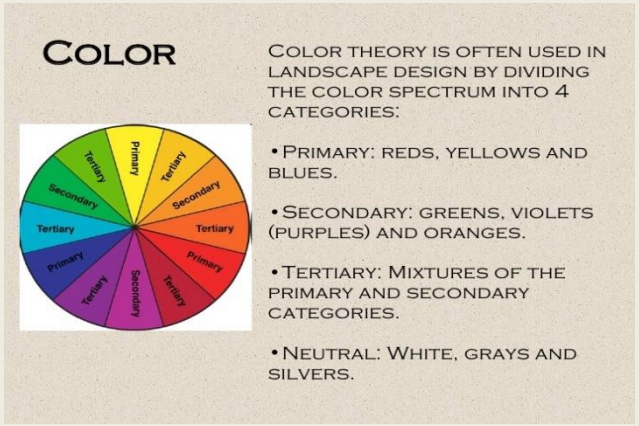
IRRIGATION PARTS

- Inline Drip ½” Tubing
  - Connectors (T’s, Elbows, Singles)
  - Flushing Valve
  - Air Release Valves
  - Staples
- Inline Drip ¼” Tubing (containers)
  - Connectors (T’s, Elbows, Singles)
- Point Source
  - Emitters (gph, sprayers)
  - Connectors (T’s, Elbows, Singles)
  - Staples
- Conventional Pop Up Sprayers
  - PVC
  - Pop Up Sprayers
  - Adaptors

Shut off Valves!!!!

DESIGN

- Principles of Design:
  - Scale: Proportion
  - Balance: Equal visual weight
  - Perspective: Smaller or larger
  - Unity: Groupings
  - Rhythm: Repetition
  - Simplicity: Less is More
  - Repetition: Rhythm
  - Harmony: Pleasing to the eye
  - Accent or Focal point: Dominant
  - Color



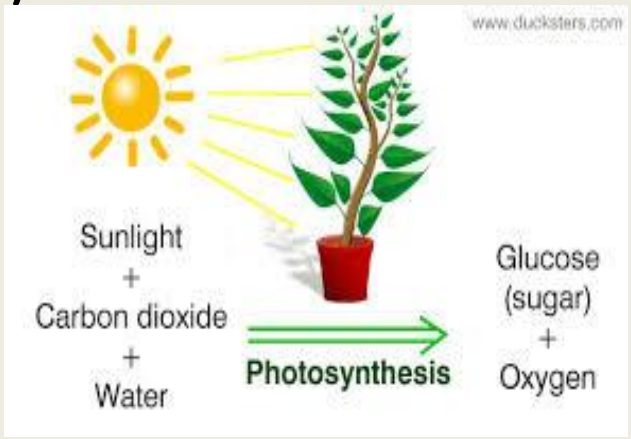
DESIGN

- Design and install at plant maturity
- An extension of the interior
- Personality
- Know your plant before installing
- Deciduous (no leaves in Fall/Winter)
- Evergreen (year around)
- 3’x3’ space
- Garden Art:
  - Containers
  - Pergolas, arbors, trellis

PLANT NEEDS

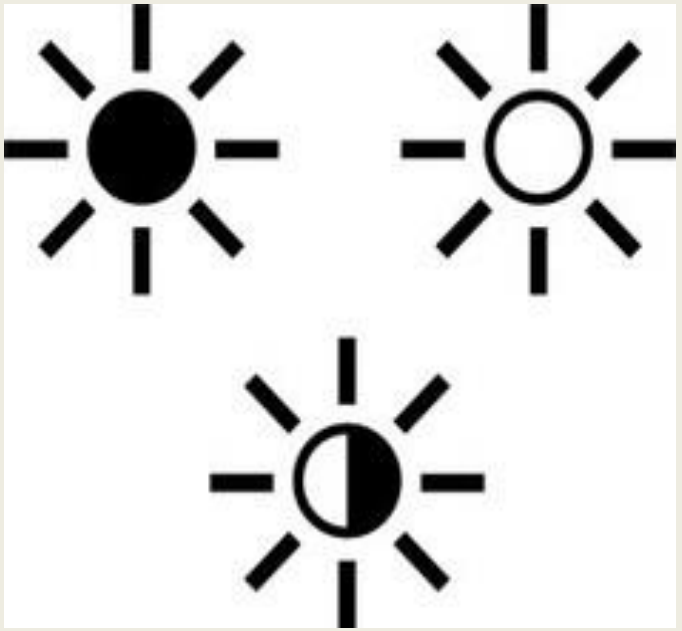
Basics of plant needs

- Food (photosynthesis)
  - Food enters through the leaves (stomata) and travels down through the stalk/stem into the roots
- Water
  - Water goes up from roots/soil and out through the leaves
  - Depth of watering:
    - Leafy veggies/annuals – 6 inches to 1 foot
    - Small shrubs – 1 to 2 feet
    - Large shrubs, trees – 1.5 to 5 feet



PLANT NEEDS

- Sun
  - 6+ consecutive hours of sun
- Part Shade/Part Sun
  - Sun up to 11 a.m.
- Shade
  - NO sun
- Filtered Shade
  - Sun filtering through tree/branches but emphasis on shade



SUNSET ZONES

Western Sunset Book

- El Dorado Hills – Zone 9
- Bass Lake and East – Zone 7

Zones are based on cold hardy NOT heat!!!!!!!!

  - Plants can protect themselves from the heat but NOT the cold

MICROCLIMATES

Nine Common Microclimates

- Wind
- South and West Walls
- North Wall
- Sloping Ground
- Cold Air Pockets
- East Wall
- Eaves
- Shade Trees and Overhanging Structures
- Dry Banks

NURSERIES

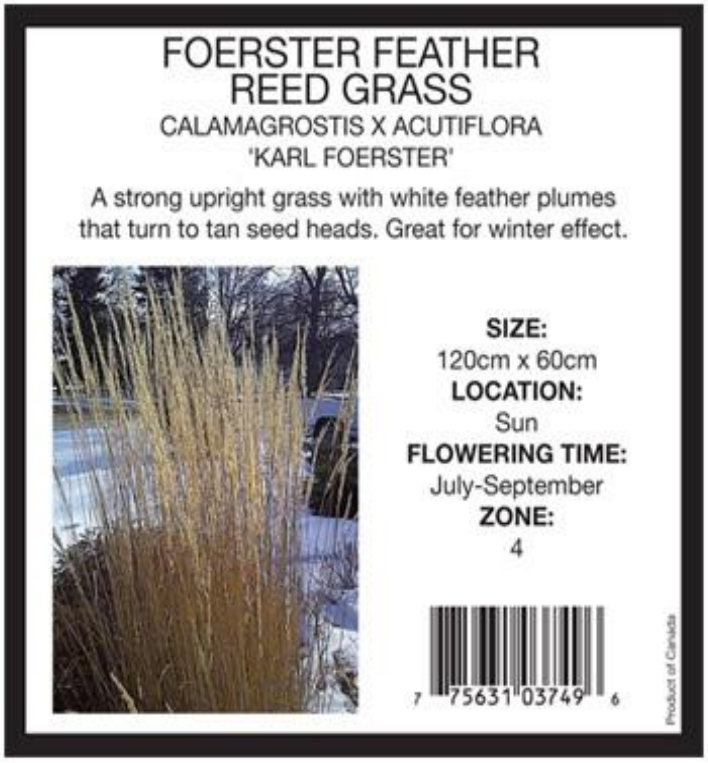
How to select and inspect plants

- Take plant out of pot and inspect roots
  - Root bound – all roots, no soil
  - Not enough roots – pot up into larger pots to charge more money
  - If staked, remove stake for sturdiness
  - Root color
    - Healthy = white or light in color
    - Unhealthy = soft, dark and mushy
  - Inspect for insects – run finger up stalk/leaves
  - Blow on leaves for white flies
  - Tug very lighting on trunk/stem/stalk

PLANT LABELS

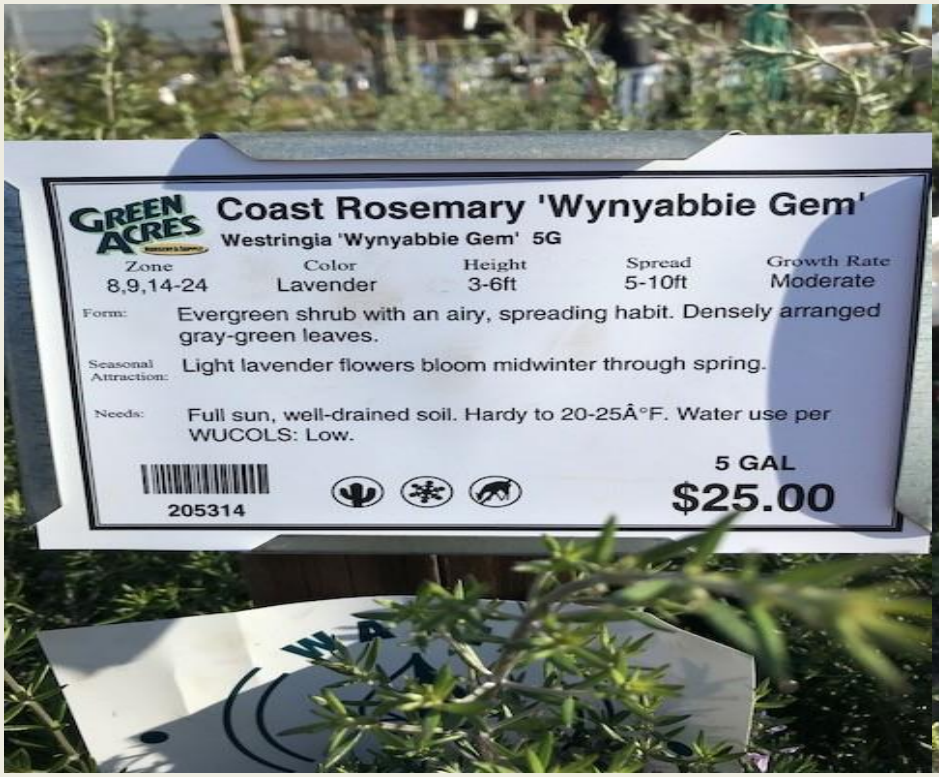
- Download Western Sunset Book app
- Read and read again
- If no zone listed, look it up
- Drought tolerant = MUST water first year
  - Or per plant needs
- Key words
  - Coastal
  - Tropical

PLANT LABELS



PLANT LABELS

Pay attention to the words used in description



TYPES OF PLANTS

- Annuals
  - A plant in which the entire life cycle is normally completed in a single growing season
- Biennials
  - A plant that normally requires two growing seasons to complete its life cycle. First year will be the foliage. Second year comes flowers and/or fruit.
- Perennials
  - A plant that lives from year to year and does not die after flowering once.

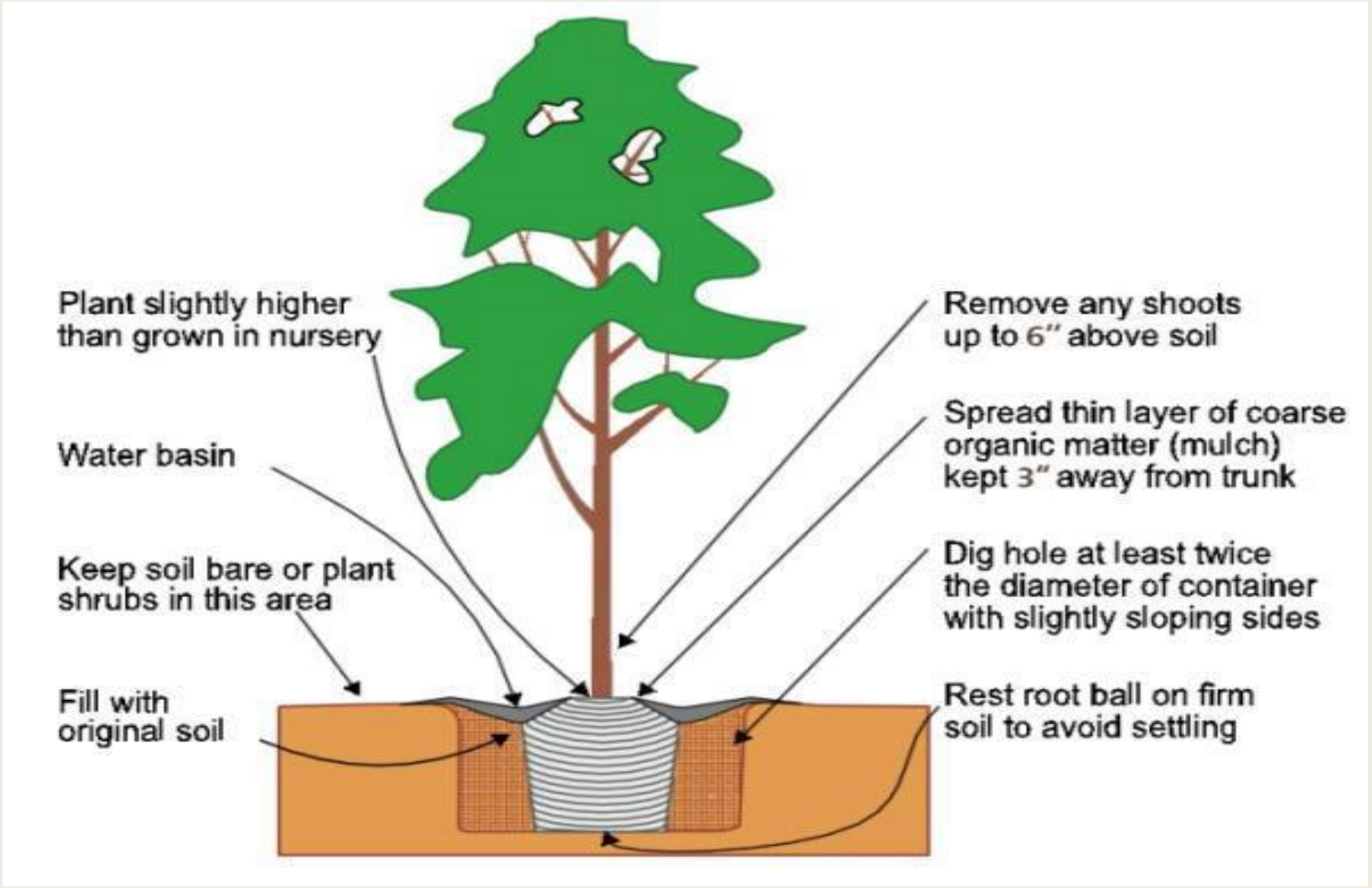
CHOOSING PLANTS

- Right place, right plant
- Growth habit
- Environmental tolerances
  - Salt (ocean spray), smog, deer, rabbit, alkaline soil, heat, frost
- Site location (slope, building)
- Functions of plant
  - Happy
  - Shape, size, color, texture, seasonal, flowering, fruiting

HOW TO INSTALL

- Use a round tip shovel
- Dig hole 1.5-2 times the width of root ball/pot
- Dig depth to same level of root ball minus 1”-1.5” to allow for placement of mulch
- Take plant out of pot and place
- Do NOT touch the roots
- Backfill with same soil that came out of hole
- Install irrigation to plant
- Water by hand to remove air pockets to set
- Mulch

DIAGRAM OF INSTALL



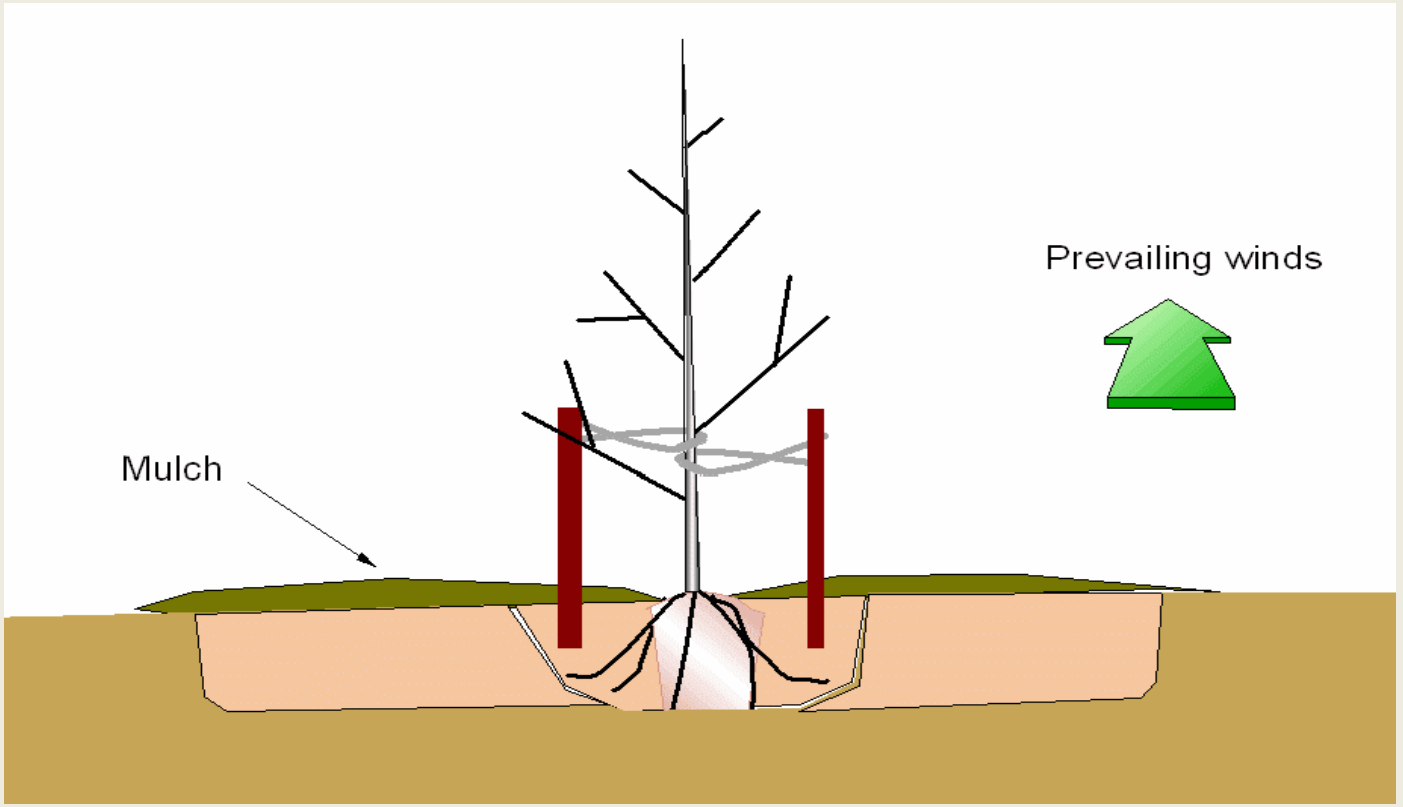
CLEAN UP AFTER INSTALL

- Prune out any dead, broken or diseased branches
- If installing a tree, form a water basin
  - Break basin when rains start
- Thin out, if necessary, to let sun and air in
- Place label or tag for ID

TREES

- Leave stake in pot until tree is installed
- Remove stake
- Check for wind location
- Install 2 stakes on either side of tree on the outside of the root ball
- Stakes are to be REMOVED within 6 months to one year
- DO NOT PLANT UNDER A TREE CANOPY
  - Allelopathy
    - Beneficial or harmful effects on one plant to another plant, from the release of biochemicals

TREE STAKING



TREE STAKING – NO!!!!

HOW TO KILL A LAWN

Sheet mulch is a layered mulch system that builds healthy soil while eliminating lawn

Steps:

- Mow lawn or weedwhack as close to surface
  - Do not remove clippings
- Lay down cardboard or newspaper with an 8” overlay and hold down with landscape staples to keep from flying away
- Place compost or mulch on top by 3” thick
- Install plants

POOR PLANT PERFORMANCE

- Insects and others
  - Buy and use a hand lens
- Disease
- Water – excess or deficient
- Poor drainage
- Light – too much, too little
- Physical or chemical – people or Roundup
- Temperature – too hot, too cold
- Fertilizer

TRANSPLANT

Fall but it can be done any time of year

- Cooler temperatures
- Soil warm
- Cloudy day to reduce sun rays on roots

How to:

- Dig hole at new plant location
  - Fill hole with water to make sure it perks/drains
- Use fork to loosen soil on the outside of the drip line to reduce damage to roots
- Then use round tip shovel to dig up plant
- Place into new hole
- Use same steps as ‘How to Install’

PROPAGATION

- Asexual – identical to ‘mother’ plant
  - Division
    - Dig up plant and split
  - Cuttings
    - Cut at below branch where meets with stalk, root hormone, place in soil, cover for humidity
  - Grafting
    - Main stalk attach cutting, wrap with tap
- Sexual – not identical
  - Seed
    - Store seeds in cold, dark, dry container
    - See expiration dates on seed packet

CONTAINER GARDENING

Benefits of container gardening:

- Limited space
- Adds interest to entire landscape
- Controlled environment (invasive)
- Accessibility
- Little to no weeding
- Create 4 seasons
- Versatile / mobility
  - Deck, patio, pool,

CONTAINER GARDENING

- Use potting soil NOT native/ground soil
  - Applies to raised beds
- Right pot, right plant, right spot, right plant
- Bigger the better (ask me about barrels)
- Irrigation availability
- Pot feet (or brick, stone, etc.)
- Window screen to cover hole
  - DO NOT USE GRAVEL, STYROFOAM, ETC.

GO BIG OR GO HOME

Too small – dries out too quickly

‘HOW TO’ CONTAINERS

- Place container on feet
- Place window screen over hole
- Pour in potting soil to bottom of Root ball
- Water thoroughly by mixing soil
- Place plant(s) into container within 1” from top
- Add soil to half of root ball.
- Sprinkle slow release fertilizer.
- Water again
- Add remaining soil to 1” from top of container
- Water thoroughly

CONTAINER TIPS

When plants get too big

- Lack of growth
- Remove entire plant out of container
- Cut back half plant from top and half of root ball
- Repot with all new soil and slow release fertilizer

Placing containers on soil

- Place container on a stepping stone, slab, etc
- Place container on feet
- Run irrigation line up through middle
- Plant

Additional feeding

  - Once regular irrigation begins, use fish emulsion once a month

IPM
Intergrated Pest Management

Insects and Diseases

- Principal components
  - Pest ID
  - Monitoring and assessing pest numbers and damage
  - Knowledge of the biology of pests and interaction with the host plant
  - Management methods of preventing or controlling pests

IPM

- Management techniques
  - Biological
    - Lady bugs, Wasps, Lacewings
    - Keep food sources in garden for natural enemies
      - Pollen, nectar, water, shelter
  - Cultural control
    - Using resistant varieties of plants
  - Mechanical
    - Handpick
  - Chemical
    - Pesticides
      - Fungicides control fungi
      - Herbicides control weeds
      - Insecticides controls insects

IPM

Applying Pesticides

- REAL LABEL
- Systemic
  - Apply during Fall/Winter
- Dormant sprays with oils
  - Controls overwintering insect and mite pests on deciduous trees
- On contact
  - Bacillus thuringiensis (Bt)
  - Pyrethrums
  - Insecticidal Soap

IPM

Aphid and Whitefly Management

- Prevent outbreaks of aphids by scouting weekly and releasing natural enemies at the first sign of damage.
- Inspect the upper and lower surfaces of plant leaves
- If you disturb the plant foliage, whitefly adults will fly up and be easier to spot.
- Use a hand lens
- Also check for evidence of natural enemies such as lady beetles, lacewings, syrphid fly larvae and the mummified skins of parasitized aphids. Look for disease-killed aphids as well:
    - They may appear off-color, bloated or flattened.

MAINTENANCE

- Irrigation
  - Check weekly for breaks
  - Drain lines in Fall
  - Insulate pipes, valves for Winter
- Tools
  - Sharpen
  - Disinfect
  - Quality or quantity

- Deadheading – removal of spent flowers
- Weeds
  - Apply preemergence before weed seeds emerge from soil
  - Apply Postemergence after the weeds have germinated
- Inspection of plants
  - Overall health

MAINTENANCE

- Snow (insulator)
  - Remove snow off of plants daily
- Frost protection (kills plants)
  - Frost cloth, sheets, burlap
    - Remove during day to receive light and air
    - Remember, plants cannot protect from frost, only heat
- Raking (Fall)
  - Rake up all but ¼ of remaining leaves and leave for mulch and weed and frost protection

PRUNING

- Improper Pruning
  - Destroys the shape and structure
  - Topping (cut back leader)
    - Injures and disfigures trees
  - Predisposing to future problems
    - Weakness of limbs
    - Onslaught of diseases and insects

PRUNING

- Proper Pruning
  - Train young plants
  - Groom for appearance
  - Control shape and size
  - Influence flowering and fruiting
  - Invigorate stagnant growth
  - Removal of damaged, diseased or pest infested growth
  - Prune 1/3 each season

PRUNERS

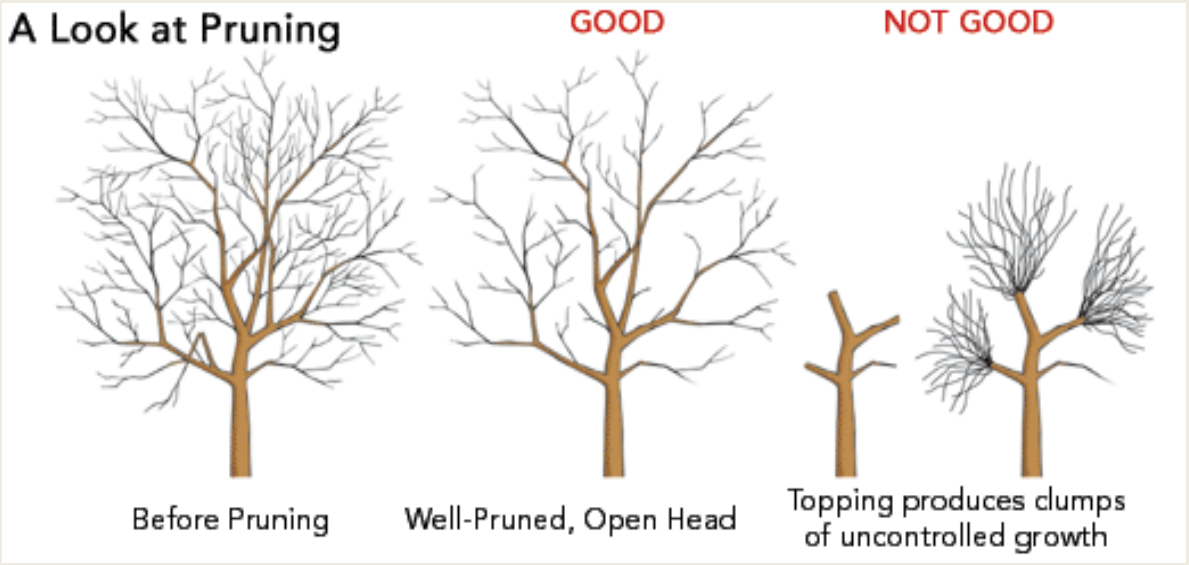
Pruners

- Bypass
  - clean cut on live branches
- Anvil
  - Cutting on dead branches
- Loppers

PRUNING METHODS

Two types

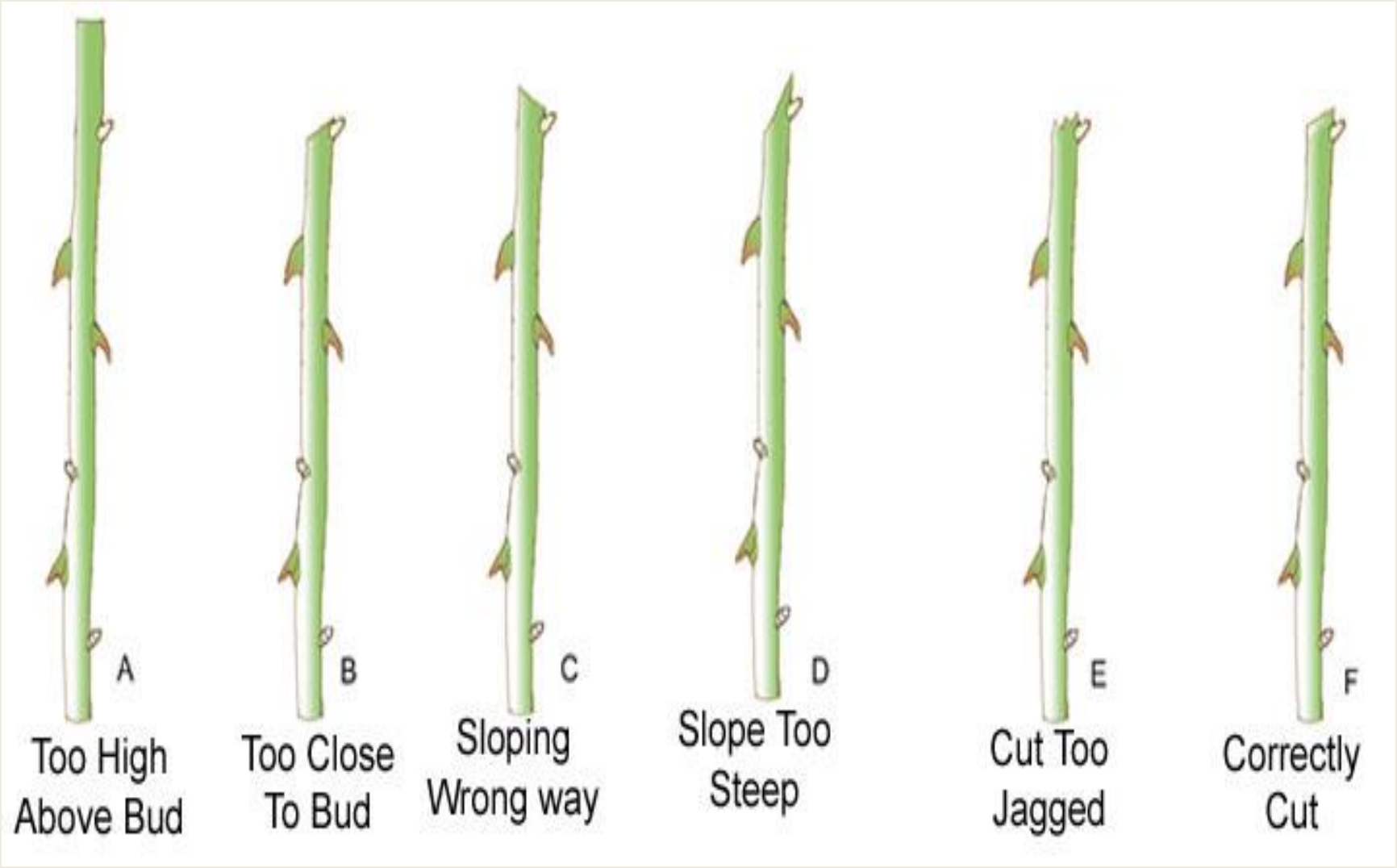
- Heading back (topping off)
  - Cutting to a stub, small lateral or bud
    - Resulting in vigorous, upright, and dense new growth



PRUNING METHODS

- Thin (thinning out)
  - Removing a lateral branch at the trunk/stem
  - 45 degree angle
  - Shortening branch length
    - Resulting in natural growth habit, foliage growth

PRUNING


A
Too High
Above Bud
B
Too Close
To Bud
C
Sloping
Wrong way
D
Slope Too
Steep
E
Cut Too
Jagged
F
Correctly
Cut

MAINTENANCE

Licensed Contractors vs. Maintenance Crew

- Licensed Contractors
  - Over $499
  - Should carry General Liability Insurance, Auto Insurance, Workers Compensation
  - Business License
  - Education ?
- Maintenance (Mow/Blow)
  - Under $499
  - No insurance requirement
  - Education ?

MULCH

- Conserve moisture
- Save water
- Controls weeds
- Maintains soil temperature
- Beautify the landscape

MULCH

How to Apply

- Apply mulch in late Spring when soil warms up
- Apply at 3”-4” every 3-4 years or as needed
- Keep away from tree trunk of at least 6”

Types of mulch

- Compost, decomposed lawn clippings, decorative bark, gravel, rock, decomposed granite, wood chips

STEPS TO A BEAUTIFUL LANDSCAPE

- Step 1
  - Access landscape
    - Look at balance, health of plants, style
- Step 2
  - Maintenance: clean up, prune, weed
  - Irrigation method and repair, if necessary
- Step 3
  - Remove and/or transplant plants
- Step 4
  - Reaccess
- Step 5
  - Go shopping!!!!!

COMMON MISTAKES

- Mistake #1 – Overwatering/Underwatering
- Mistake #2 – Overfertilizing
- Mistake #3 – Wrong Plant/Wrong Place
- Mistake #4 – Cold Hardy
- Mistake #5 – No Mulch
- Mistake #6 – WHAT WERE YOU THINKING ☺