Landscape Design Requirements

1. The planting is designed to comply with the Prescriptive Compliance Option of the Locally Adopted and Enforced Water Efficient Landscape Ordinance (WELO). Completing the mandatory elements of WELO must be documented on landscape plans.

2. The landscape is designed to demonstrate fire safe landscape approaches with loose, less woody plants close to buildings, and trees positioned to allow maintenance of branches away from buildings.

3. The landscape is designed to be disconnected from storm sewers and draining to raingardens or landscape strips, with regard to landscape design requirements.

4. The irrigation is designed to incorporate drip irrigation assemblies to enable the scaling of plans.

5. All irrigation emissions devices must meet the ANSI standard, ASABE/ICC 802-2014 Landscape Irrigation Sprinkler and Emitter Standard. Sprinkler heads must document a distribution uniformity of 80-95%. Rainguns and rain emitters must meet the ASABE/ICC 802-2014 Landscape Irrigation Sprinkler and Emitter Standard requirements.

Additional Guidelines for the Plantings:

1. Firewise plantings are indicated on plant lists and used within 100 feet of homes. Composts are used at a rate of at least four cubic yards per 1,000 square feet to a depth of at least 12 inches.

2. Trees are located for shade on garden areas and to provide solar access for solar panels on roofs. Trees are located away from building structures so that branches extend at least 10 feet beyond the building.

3. Plants are placed in appropriate microclimates by evaluating the direction the fronts of buildings face and the distance of planting from the street.

4. Rainwater and stormwater elements should be reviewed with site design teams and construction crews.

Soil Management Requirements

1. Medium water use plantings do not exceed 25 percent of the total planted and irrigated area.

2. Low water use or climate-adapted species that require little or no summer water are used. Trees are located away from building structures so that branches extend at least 10 feet beyond the building.

3. Permitted landscape area must be smaller than 2500 square feet of planted and irrigated area.

4. Plants are intended for use on sites with less than five inches of rainfall.

Irrigation Design Requirements and Guidelines

1. INSTALL AN AUTOMATIC IRRIGATION CONTROLLER THAT DOES NOT loose processing data, after a power failure, non-volatile memory and utilizes water management software.

2. INSTALL A GAS.

3. ADDITIONAL GUIDELINES FOR THE IRRIGATION SYSTEM:

   1. SYSTEM IS DESIGNED TO REDUCE WATER USE TO THE MINIMUM AMOUNT TO SUSTAIN HEALTHY PLANTS. TURF IS INCLUDED IN THE DESIGN ONLY AS REQUIRED FOR USE.

   2. PRESSURE REDUCTION IS PROVIDED TO ENSURE THE DYNAMIC PRESSURE OF THE SYSTEM is WITHIN THE MANUFACTURER’S RECOMMENDED PRESSURE RANGE FOR THE IRRIGATION EQUIPMENT.

   3. ALL IRRIGATION EMISSION DEVICES MUST MEET THE ANSI STANDARDS ASABE/ICC 802-2014 LANDSCAPE IRRIGATION SPRINKLER AND Emitter STANDARD REQUIREMENTS.

   4. ANY EXISTING ACCESSORIES OR VALVES SHOULD BE IDENTIFIED ON THE PLANS.

   5. ALL LINES TO USE Drip irrigation assemblies to enable the scaling of Plans.

   6. IRRIGATION SYSTEM SHUT OFF VALVE INSTALLED.

   7. TURF: A GROUND COVER SURFACE OF MOWED GRASS (CONVENTIONAL LAWN)

   8. NO STANDARD HIGH WATER USE TURF HAS BEEN INSTALLED

   9. ALL PLANTS INSTALLED ARE LISTED ON PLANS OR ON APPROVED PLANT SUBSTITUTION LIST

   10. ALL PLANTS INSTALLED ARE LISTED ON PLANS OR ON APPROVED PLANT SUBSTITUTION LIST

   11. Drip Irrigation control zone assemblies are installed and functioning

   12. Drip irrigation lines are installed as shown on plans & details

   13. Drip flushouts are installed lowest point of each zone and are functioning

   14. System operates without leaks, breaks or runoffs

   15. Equipment is installed as shown on approved irrigation equipment list, or Equal.

   16. Drip irrigation lines are installed as shown on plans & details

Soil Management Requirements

1. All plants installed are listed on plans or on approved plant substitution list

2. 75% or More of the Plants are Low Water Use Per WUCOLS Region 1

3. No Standard High Water Use turf has been installed

4. Compost has been applied at a rate of at least four cubic yards per one thousand (1,000) square feet area of area incorporated to a depth of six (6) inches into the landscape area.

5. A three (3) inch layer of organic mulch has been applied over all shrub planting areas

6. Compaction is avoided to prevent runoff.

7. No spray irrigation is used

8. Static and dynamic water pressure noted at the point of connection

9. Weather based self-adjusting controller with non-volatile memory is installed per manufacturer specifications

10. Rain sensor and weather sensor (if required for weather data) installed per manufacturer specifications and functioning

11. Controller is appropriately programmed

12. Controller chart is placed in controller housing or attached to controller

13. Controller chart clearly indicates station start and stop zones

14. Controller chart clearly indicates July irrigation schedule for each zone and includes programs:

   a. Days per week, start time, and run times

   b. Irrigation system shut off valve installed

   c. Irrigation system shut off valve location is as shown on plan or on as-built

   d. Drip irrigation control zone assemblies are installed and functioning

   e. Drip irrigation lines are installed as shown on plans & details

   f. Drip flushouts are installed lowest point of each zone and are functioning

   g. System operates without leaks, breaks or runoffs

   h. Equipment is installed as shown on approved irrigation equipment list, or Equal.

   i. Changes are noted on as-built plan and is provided at time of inspection.
2. The garden is designed to capture and infiltrate some storm water on site. When the flow is directed to a swale or rain garden, it is meant to spread the flow to sheetflow over planting areas and no overflow device is needed.

3. Review irrigation sheets and install sleeves under paving surfaces in their correct location.

4. Add any existing trees in red on the plan. Adjust tree locations if needed to fit your site.

5. If needed use a red pen to adjust the layout of driveway, paths and planting areas to fit your yard.

6. Indicate any substitutions to the plantings by crossing out the listed plants and writing the substitution below in red ink. Make sure in the legend, circle the hardscapes materials you will be using and on detail sheets L3.0, L3.1 & L3.2.

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LANDSCAPE PERMIT AREA

PLANT WATER USE TABLE

<table>
<thead>
<tr>
<th>WATER USE</th>
<th>PLAN SF (%)</th>
<th>PERMIT SF (TTL VZ)</th>
<th>PERMIT % (TTL VZ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW</td>
<td>2.13%</td>
<td>137 SF</td>
<td>137%</td>
</tr>
<tr>
<td>MED</td>
<td>131%</td>
<td>225 SF</td>
<td>225%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2.382%</td>
<td>362 SF</td>
<td>362%</td>
</tr>
</tbody>
</table>

IRRGATION VALVE TABLE

<table>
<thead>
<tr>
<th>HYDRO ZONE</th>
<th>PLAN SF</th>
<th>WATER USE</th>
<th>SUB ZONE</th>
<th>SUB-ZONE PERMIT SF</th>
<th>SOIL TYPE</th>
<th>PLANT SOIL</th>
<th>CTRL TYPE</th>
<th>CHECK-OFF COMPONENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 LOW</td>
<td>122%</td>
<td>1888 SF</td>
<td>5</td>
<td>1888 SF</td>
<td></td>
<td>LOW SOIL</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>2 MED</td>
<td>137%</td>
<td>137 SF</td>
<td>1</td>
<td>137 SF</td>
<td></td>
<td>MED SOIL</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>3 LOW</td>
<td>277 SF</td>
<td>277 SF</td>
<td>2</td>
<td>277 SF</td>
<td></td>
<td>LOW SOIL</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>3 TREES</td>
<td>156 SF</td>
<td>156 SF</td>
<td>3</td>
<td>156 SF</td>
<td></td>
<td>TREES SOIL</td>
<td>D</td>
<td></td>
</tr>
</tbody>
</table>

PLANT SOIL: DO NOT EXCEED 1100 SF / 3 GPM EMITTER SPACING 18". IF TOTAL AREA OF ZONE EXCEEDS 2200 SF, ADD A VALVE.
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TREES SOIL: DO NOT EXCEED 1100 SF / 3 GPM EMITTER SPACING 18". IF TOTAL AREA OF ZONE EXCEEDS 2200 SF, ADD A VALVE.

APPLICANT INSTRUCTIONS:
1. ADJUST LAYOUT OF PLANTING BEDS IF CHANGED ON LAYOUT SHEET 1.0.
2. REVIEW IRRIGATION VALVE TABLE TO ADJUST SF AREAS OF VALVE ZONES.
3. IF AREAS EXCEED MAX SUBZONE FLOW (3 GPM) DIVIDE INTO ADDITIONAL SUBZONES AND ENTER SUB-ZONE AREA IN COLUMN.
4. IF PLAN SF EXCEEDS 1100 SF / 3 GPM EMITTER SPACING 18" ADD A VALVE.
5. ENSURE EACH VALVE ROOM SPACING IS 18" OR 12".
6. ADD VALVE AS NEEDED TO VALED MANIFOLD.
7. REVIEW IRRIGATION LEGEND AND CHECK-OFF THAT ALL COMPONENTS ARE SHOWN ON ADJUSTED PLAN.
8. NOTE ANY EQUIPMENT SUBSTITUTIONS.

IRRIGATION LEGEND

CONTROL VALVE
SUMP VALVE
VALVE MANIFOLD
VALVE DECK
PERMIT
GARAGE
SIDEWALK
LANDSCAPE PERMIT AREA
GARAGE
SIDEWALK

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7. REVIEW IRRIGATION LEGEND AND CHECK-OFF THAT ALL COMPONENTS ARE SHOWN ON ADJUSTED PLAN.
8. NOTE ANY EQUIPMENT SUBSTITUTIONS.
installation to be by contractor with a valid current California C-27 license.

1. INSTALLATION TO BE BY CONTRACTOR WITH A VALID CURRENT CALIFORNIA C-27 LICENSE.

2. USE COPPER WIRE WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. USE INSULATING JACKET OF COLOR OTHER THAN WHITE FOR CONTROL WIRE. TAP AND BUNDLE WIRING AT 10 FOOT INTERVALS.

3. ENSURE ADEQUATE PIPE SIZE TO PROVIDE REQUIRED FLOW.

4. USE PVC SCH 40 SLEEVES FOR ALL PIPING AND WIRE UNDER PAVING.

5. PROVIDE CONTROLLER SCHEDULE.

6. THE DESIGN INTENT IS TO PROVIDE THE MINIMUM AMOUNT OF WATER TO THE TREES. ADJUST SCHEDULE ACCORDING TO WEATHER AND SEASON.

7. SCHEDULE THE TREE ZONE TO RUN AT A LOW FREQUENCY AND LONG DURATION TO PROVIDE DEEP WATERING FOR THE TREES.

8. SCHEDULE THE SHRUB ZONES TO RUN AT A LOW FREQUENCY AND LONG DURATION TO PROVIDE DEEP WATERING FOR THE TREES.

9. PROVIDE PVC SCH 40 SLEEVES FOR ALL PIPING AND WIRE UNDER PAVING.

10. MOUNT WEATHER SENSOR ON EXTERIOR WALL OR GUTTER WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED ENVIRONMENT.

11. INSTALL SLEEVES SCREWED TO EXTERIOR WALL OR GUTTER WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED ENVIRONMENT.

12. CLEANING OF SYSTEMS IS REQUIRED TO KEEP SYSTEMS CLEAN AND FREE FROM DEBRIS.

13. DO NOT INSTALL POST MANUFACTURED BUTTON EMITTERS INTO IN-LINE TUBING.

14. CLEANING OF SYSTEMS IS REQUIRED TO KEEP SYSTEMS CLEAN AND FREE FROM DEBRIS.

15. INSTALL IRRIGATION CONTROLLER IN LOCATION APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO FINAL INSTALLATION.

16. INSTALL ALL PLASTIC PIPING IN TRENCHES IN A SERPENTINE MANNER.

17. INSTALLATION TO BE BY CONTRACTOR WITH A VALID CURRENT CALIFORNIA C-27 LICENSE.

18. PROVIDE VALVE BOXES FOR: ISOLATION VALVE, DRIP TRANSITION AND ISOLATION VALVE - BALL VALVE.

19. PROVIDE PVC SCH 40 SLEEVES FOR ALL PIPING AND WIRE UNDER PAVING.

20. INSTALL ALL PLASTIC PIPING IN TRENCHES IN A SERPENTINE MANNER.

21. CLEANING OF SYSTEMS IS REQUIRED TO KEEP SYSTEMS CLEAN AND FREE FROM DEBRIS.

22. USE COPPER WIRE WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. USE INSULATING JACKET OF COLOR OTHER THAN WHITE FOR CONTROL WIRE. TAP AND BUNDLE WIRING AT 10 FOOT INTERVALS.

23. INSTALL CHECK VALVES ON LATERAL LINES AS REQUIRED TO PREVENT LOW HEAD DRAINAGE.

24. CLEANING OF SYSTEMS IS REQUIRED TO KEEP SYSTEMS CLEAN AND FREE FROM DEBRIS.

25. PROVIDE PVC SCH 40 SLEEVES FOR ALL PIPING AND WIRE UNDER PAVING.

26. INSTALL IRRIGATION CONTROLLER IN LOCATION APPROVED BY OWNER'S REPRESENTATIVE.

27. DO NOT USE SMALL DIAMETER DISTRIBUTION TUBING.

28. DO NOT INSTALL POST MANUFACTURED BUTTON EMITTERS INTO IN-LINE TUBING.

29. CLEANING OF SYSTEMS IS REQUIRED TO KEEP SYSTEMS CLEAN AND FREE FROM DEBRIS.

30. MAINTAIN A 3" MIN. DEPTH OF MULCH COVER OVER DRIP TUBING.

31. STAKE DRIP TUBING IN PLACE @ 2 FT O.C. MAX.

32. THE IRRIGATION PLAN IS DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE PERFORMED.

33. CAREFULLY INVESTIGATE EXISTING FIELD CONDITIONS AND NOTIFY OWNER'S REPRESENTATIVE PRIOR TO FINAL INSTALLATION.

34. FLUSH MAINLINES AFTER INSTALLING RISERS AND PRIOR TO INSTALLING OR INSTALLING RISERS AND PRIOR TO INSTALLATION OF TUBING.

35. FLUSH LATERALS AFTER INSTALLING RISERS AND PRIOR TO INSTALLING TUBING.

36. PRESSURE TEST PRIOR TO BACKFILLING, PROVIDE RESULTS TO OWNER'S REPRESENTATIVE. ENSURE 120 VOLT A.C. ELECTRICAL SUPPLY IS PROVIDED FOR ELECTRIC WATER PUMPS.

37. PROVIDE PVC SCH 40 SLEEVES FOR ALL PIPING AND WIRE UNDER PAVING.

38. PERFORM COVERAGE TEST. ADJUST SYSTEM AS NEEDED TO PROVIDE FULL COVERAGE.

39. MAINTAIN A 3" MIN. DEPTH OF MULCH COVER OVER DRIP TUBING.

40. PROVIDE CONTROLLER SCHEDULE.

41. THE DESIGN INTENT IS TO PROVIDE THE MINIMUM AMOUNT OF WATER TO THE TREES. ADJUST SCHEDULE ACCORDING TO WEATHER AND SEASON.

42. SCHEDULE THE SHRUB ZONES TO RUN AT A LOW FREQUENCY AND LONG DURATION TO PROVIDE DEEP WATERING FOR THE TREES. ADJUST SCHEDULE ACCORDING TO WEATHER AND SEASON.

43. PROVIDE PVC SCH 40 SLEEVES FOR ALL PIPING AND WIRE UNDER PAVING.

44. ENSURE THAT CONTROLLER SCHEDULE IS ADJUSTED SEASONALLY AT A MINIMUM.

45. RUN SYSTEM TO CHECK FOR LEAKS AND REPAIR THEM SEASONALLY AT A MINIMUM.
PERMEABLE PAVING - PATH OR PATIO

PERMEABLE INFILTRATION - PEDESTRIAN

PERVERSOS OR PERMEABLE UNIT PAVER - VEHICLE

CONCRETE - VEHICLE - TRENCH DRAIN

GENERAL NOTES:
1. DESIGN STRATEGY: THESE DETAILS ARE PROVIDED TO CREATE OPTIONS FOR PERMEABLE PAVING AND PAVERS THAT PROMOTE INFILTRATION AND INFILTRATION IN LANDSCAPE AREAS. THESE STRATEGIES HELP PREVENT WATER, REFLECT RAIN ON THE GROUND, AND PROVIDE MORE SOIL MOISTURE AVAILABILITY FOR LANDSCAPE PLANTING.

2. THESE DETAILS SHOULD BE EVALUATED BY THE SITE ENGINEER AND ADJUSTED TO SITE CONDITIONS.

3. PAVING DEPTH, DEPTH OF BASE GRAVELS, SUB-BASE PREDICATION AND CONCRETE REINFORCEMENT SHOULD ALL BE EVALUATED AND ADJUSTED AS NEEDED BY A GEOTECHNICAL ENGINEER.

4. SOIL TYPE AFFECTS THE PERFORMANCE OF THESE DETAILS. CLAY SOILS DO NOT INFILTRATE WELL, SO THESE ARE STILL EASY TO INSTALL AND REMOVABLE. ANY REQUIRED PAVING DETAILS AND DESIGN EXIST TO ENSURE THE PAVING IS SMOOTH, FIRM, AND HAS A CROSS SLOPE NOT TO EXCEED 2%. RAINING SLOPE SHOULD BE AVOIDED DURING PAVING, PAVEMENT WITH HANDS. SEE TITLE 24 OF CALIFORNIA CODE FOR ACCESSIBILITY REQUIREMENTS AND STANDARDS.
1. REVIEW PAVING WITH CIVIL & SEE DETAIL #7 ON SHEET L3.2

VEGETATED DRAIN SLEEVE THRU PATH FROM RAINGARDEN

SCALE: 1/2"=1'-0"

SLOPE AWAY FROM BLDG AT 5% INTO SWALE OR DRAINAGE ELEMENT

RAINGARDEN OR SWALE

I

PLANTINGS OR START DOWNSPOUT

9" OF RIVER COBBLE

RAIN GARDEN OR SWALE

G)

®

®

®

®

CONCRETE OR OTHER PAVING

MAX PONDING LEVEL

CLASS II AGGREGATE BASE ROCK

CURB O LET INLET SLOPE CURB O LET SLEEVE AT 2% (1/2" PER FOOT).

SUBGRADE, UNDISTURBED OR COMPACTED TO 95%

VARIES

DRAIN INLET STRUCTURE AT TOP PONDING

MAX WATER LEVEL 2" ABOVE PEA GRAVEL

DOWNSPOUT; BY NDS OR EQUAL

COBBLE AROUND OUTLET PIPE (TYP.)

4" STORMDRAIN PIPE FROM ROOF DOWNSPOUT(S)

ATRIUM DRAIN GRATE ON OUTLET BUBBLER CONNECTED TO

FOR MOSQUITO CONTROL.

2. NO WOOD CHIP OR BARK MULCH IN RAINWATER SYSTEMS TO AVOID CLOGGING STORM DRAINS.

NOTES:

1. MINIMUM SLOPE IN THE DIRECTION OF FLOW TO BE 0.5%. IF SLOPE EXCEEDS

SCARIFY & AMEND NATIVE SOIL AT BOTTOM OF RAIN GARDEN

3" PEA GRAVEL MULCH INSURES NO PONDING WITHIN 72 HRS FOR MOSQUITO

CONTROL. TOTAL DEPTH INCLUDING

3" RISER 2 X 3 X 3 DOWNSPOUT ADAPTER

1. RAINWATER GARDEN DESIGNED FOR CLAY

SHEET FLOW AS NEEDED BY DESIGN.

2. SITE 10' AWAY FROM FOUNDATION.

3. VEGETATED RAINGARDEN W/ OVERLAND FLOW INLET & OUTLET

4. VEGETATED RAINGARDEN W/ PIPED INLET

5. RAINGARDEN OVERFLOWING OVER PAVEMENT SECTION

6. RAINWATER FLOW THRU PERMEABLE PAVING SECTION

7. DRAIN SLEEVE THRU PATH FROM RAINGARDEN

8. SWALE/CASCADE ON SLOPE - SECTION

9. SWALE/CASCADE ON SLOPE - LONGITUDINAL SECTION
SUPPORT THE TRUNK AT JUST ONE LEVEL, NEAR THE TOPS OF 
6" MIN
5' MIN
PROVIDE FLEXIBLE MOVEMENT AT THE POINT WHERE 
I
3
R
2
3" MIN
STAKES ARE FOR PROTECTION OF THE TREE FOR A PERIOD 
30" MIN
MAKE STAKES AS SHORT AS POSSIBLE, BUT HIGH ENOUGH TO 
A
4" MIN
G
5
H
5' MIN
P
3' MIN
18" MIN
18" MIN
A
2
C
C
30" MIN
4
3' MIN
N
T
E
E
NOTE:
1. MAKE STAKES AS SHORT AS POSSIBLE, BUT HIGH ENOUGH TO 
HOLD THE TREE UPRIGHT UNDER CALM CONDITIONS. THE TREE 
SHOULD RETURN TO VERTICAL AFTER THE WIND HAS BENT THE 
TOP.
2. SUPPORT THE TRUNK AT JUST ONE LEVEL, NEAR THE TOPS OF 
THE STAKES.
3. PROVIDE FLEXIBLE MOVEMENT AT THE POINT WHERE 
STRAIGHTEN WRAPS LOCALLY AROUND THE CENTRAL LEADER OF 
THE TREE.
4. TAKE CARE NOT TO CAUSE RUBBING OR GRIZZLING INJURIES.
5. STAKES ARE FOR PROTECTION OF THE TREE FOR A PERIOD
AFTER PLANTING. REMOVE STAKES AS SOON AS TREE 
ESTABLISHES ITS ROOT SYSTEM - WITHIN 12 MONTHS MAX.

NOT TO SCALE
LANDSCAPE TO LAUNDRY SYSTEM OVERVIEW:

LANDSCAPE TO LAUNDRY SYSTEMS ARE DEIGNED TO INSTALL LAUNDRY WATER INTO THE LANDSCAPE THROUGH A 3-WAY DIVERTER VALVE. THIS 3-WAY DIVERTER VALVE IS A NECESSARY COMPONENT, ALLOWING YOU TO SEND DISCHARGE WATER BACK TO THE SERVER SYSTEM WHEN USED DURING THE RAINY SEASON.

INSTALLATION & DESIGN CONSIDERATIONS:

1. **NOTIFY ENFORCING AGENCY**: WITH NO MORE THAN A 5% SLOPE. IF THE SYSTEM IS DESIGNED TO IRRIGATE DOWNHILL FROM THE WASHING MACHINE,

2. **MINIMUM HORIZONTAL DISTANCE IN CLEAR SUBSURFACE AND SUBSOIL IRRIGATION REQUIRED FROM**:  
   - Building structures
   - Pressurized public water main
   - Creek and lakes
   - CPC Table 1502.4 -- LOCATION OF GREY WATER SYSTEM

3. **DESIGN OF SIX SOIL TYPES**:  
   - Fine Sand
   - Design of Six Soil Types

4. **Laundry to Landscape: Graywater System Example**

5. **ADVANCED INFORMATION**
   - **DUCTED DISCHARGE VALVE BY TREES, BUSHES, SHRUBS, SMALL PERENNIALS AND LARGER ANNUALS, BUT IS PROHIBITED ON LAWN, RAISED BEDS, ROOT AND LEAFY VEGETABLES. MODERATE WATER USERS SUCH AS FRUIT TREES AND SHRUBS ARE BEST SERVED BY A DIRECT DISCHARGE VALVE.**
   - **RECOMMENDED DETERGENTS TO ENSURE PLANTS SURVIVE**: AGED SODA LAVON. Graywater IS BEST SERVED BY A DIREC T DISCHARGE VALVE. THE FOLLOWING LIST OF COMMERCIAL DETERGENTS ARE RECOMMENDED FOR USE WITH LAUNDRY TO LANDSCAPE GRAYWATER SYSTEMS:
     - **OASIS LAUNDRY LIQUID EGOS LIQUID DETERGENT**
     - **BIODUC LAUNDRY LIQUID**
     - **BIOKLEEN LAUNDRY LIQUID**
     - **MOUNTAIN GREEN LAUNDRY DETERGENT**
     - **VASKA HERBATERGENT**

6. **APPLICANT INSTRUCTIONS**
   - **1. ESTIMATE YOUR GRAYWATER SUPPLY USING THE CALCULATION PROCESS IN CALCULATIONS SECTION BELOW**
   - **2. COMPLETE, CALCULATIONS TO DETERMINE THE MINIMUM REQUIRED MULCH BASE SIZE PER YOUR SOIL TYPE**
   - **3. MEASURE ACTUAL IRRIGATION FIELD AREA(S) ON SITE AND DEVELOP NUMBER AND SIZE OF MULCH BASES TO USE**
   - **4. REVIEW REQUIRED SETBACKS Shown in CPC Table 1502.4 THIS SHEET**
   - **5. DEVELOP A SITE PLAN ILLUSTRATING THE FOLLOWING: REQUIRED SETBACKS, PROPOSED MULCH BASES, VALUE LOCATIONS, PIPING DIAGRAM AND TREES AND PLANT LOCATIONS TO BENEFIT FROM GRAYWATER**
   - **6. IF BUILDING DESIGN AND CONSTRUCTION PROCESS REVIEW PLAN BEFORE SUBMIT FOR LOCATION OF LAUNDRY NEAR GRAYWATER SUPPLIED LANDSCAPE AREA. CIVIL ENGINEER (FOR ANY POTENTIAL CONFLICTS WITH STORMWATER DRAINAGE) AND GENERAL & LANDSCAPE CONTRACTORS TO REVIEW THIS THREE-WAY VALUE LOCATION AND SUPPLY PIPE LOCATION.**

7. **LAUNDRY TO LANDSCAPE: GRAYWATER SYSTEM OVERVIEW**

8. **GRAYWATER REQUIREMENTS TO COMPLY WITH CALIFORNIA PLUMBING CODE (CPC) STANDARDS**:  
   - **MAKEABLE PROPRIETARY GRAYWATER SYSTEMS**
   - **BE ABLE TO REDIRECT TO SEWER**
   - **NO POWABLE WATER CONNECTION**
   - **CONTAIN GRAYWATER ON SITE**
   - **DIRECT AND CONTAIN GRAYWATER WITHIN MULCH BASINS (IRRIGATION OR DISPOSAL FIELD) BELOW THE GROUND**
   - **GRAYWATER DIVERTED TO LANDSCAPE SHALL NOT CONTAIN HAZARDOUS CHEMICALS**
   - **PERMIT EXEMPTION DOES NOT GRANT INSTALLATION THAT VIOLATES OTHER CODE OR LAWS**

9. **THE DISTANCE MAY INCREASE TO 150-FEET DEPENDING ON SLOPE.**

10. **CALCULATIONS SHEET**:  
    - **California Plumbing Code Estimate**: 
      - **Assign 2 occupants to master bedroom and 1 occupant to each additional bedroom**
      - **Laundry: x (gallons/load*) x (loads/week) + 7 (days/week) gal/day**

11. **SIZE**:  
    - **Discharge Per Day an 24-Hour Period**
    - **Min SQ FT of Irrigation/ Leaching Area Per Max Absorption Capacity in Gallons Per gal/tt = ft**

12. **PERMIT INFORMATION**:  
    - **THE DISTANCE MAY INCREASE TO 150-FEET DEPENDING ON SLOPE. IF THE SYSTEM IS DESIGNED TO IRRIGATE DOWNHILL FROM THE WASHING MACHINE,**

13. **SUMMARY**:  
    - **SUMMARY**:  
      - **This diagram is not drawn to scale and is provided for planning purposes only. It is your responsibility to properly design, install, materials, and use your laundry to landscape graywater system.**
      - **Laundry to landscape system are must be easily switched on and off at the flip of a switch.**
      - **Laundry to landscape system are most be easily switched on and off at the flip of a switch.**
      - **This diagram is not drawn to scale and is provided for planning purposes only. It is your responsibility to properly design, install, materials, and use your laundry to landscape graywater system.**
      - **Graywater systems. If you are unsure of the intricacies of your plumbing system or how to properly design or install a graywater system, please consult with a professional. The District does not assume any liability and responsibility for any direct, indirect, incidental or consequential loss or damage whatsoever arising out of or in connection with providing any access to this diagram.**

14. **LAUNDRY TO LANDSCAPE DETAIL**

15. **Reproduced with permission from the Santa Clara Valley Water District**
LANDSCAPE VIA MULCH BASIN OUTLETS. PLUMBING FOR GRAYWATER SOURCES MUST BE
INSTALLATION & DESIGN CONSIDERATIONS:
DRAIN SYSTEM IS BEST SUITED FOR IRRIGATING TREES, BUSHES, SHRUBS, AND OTHER LARGER
PUMP OR ANY OTHER PUMP. AS THIS SYSTEM REQUIRES CUTTING INTO EXISTING SEWER PIPES
FROM SHOWER DRAINS OR SINKS, IT DOES REQUIRE A SIMPLE OVER THE COUNTER PLUMBING
PERMIT. IF INSTALLING AS PART OF NEW BUILDING CONSTRUCTION OR REMODEL, SHOW
SEPARATED PLUMBING IN PLAN SETS AND STUB OUT PIPING FOR EXTERIOR GRAYWATER SYSTEM
COMPONENTS DURING BUILDING CONSTRUCTION.

BRANCHED DRAIN GRAYWATER REQUIREMENTS TO COMPLY WITH CALIFORNIA PLUMBING CODE
O NOTIFY ENFORCING AGENCY AND SECURE PERMIT FOR INTERIOR PLUMBING COMPONENTS
O BEABLE TO REDIRECT TO SEWER
O NO POTABLE WATER CONNECTION
O CONTAIN GRAYWATER ON SITE
O DIRECT AND CONTAIN GRAYWATER WITHIN MULCH BASINS (IRRIGATION OR DISPOSAL FIELD)
BELLOW THE GROUND SURFACE
O NO PONDING OR RUNOFF
O OUTLETS COVERED BY AT LEAST 2 INCHES OF MULCH, ROCK, OR A SHIELD (E.G. VALVE BOX LID)
O MINIMIZE CONTACT WITH HUMANS AND ANIMALS
O DIVERT WATER TO THE SEWER IF IT CONTAINS DIAPERS, OIL, OTHER CHEMICALS
O GRAYWATER DIVERTED TO LANDSCAPE SHALL NOT CONTAIN HAZARDOUS CHEMICALS
O FOLLOW ALL APPLICABLE CODE OR LAWS
O POST OPERATION AND MAINTENANCE MANUAL
O THE SYSTEM SHALL HAVE A DISCHARGE CAPACITY OF 250 GALLONS PER DAY OR LESS

INSTALLATION & DESIGN CONSIDERATIONS:
WITH A HIGHER POTENTIAL VOLUME OF WATER COMING FROM A SHOWER AND SINK, A BRANCHED
DRAIN SYSTEM IS BEST SUITED FOR IRRIGATING TREES, BUSHES, SHRUBS, AND OTHER LARGER
PERENNIAL PLANTS. THIS IS A SIMPLE SYSTEM AND DOES NOT REQUIRE ELECTRICITY OR A PUMP.
HOWEVER, THE LANDSCAPE AREA MUST BE LOWER IN ELEVATION THAN THE GRAYWATER SOURCE,
AND THE ENTIRE SYSTEM MUST HAVE A DOWNWARD SLOPE OF 2% (1 INCH PER FOOT) TO ENSURE
EVEN DISTRIBUTION.

INSTALLATION DIFFICULTY DEPENDS ON THE EXISTING HOUSING PLUMBING ACCESS TO PIPES
AND THE SLOPE OF LANDSCAPE, WHILE OUTDOOR COMPONENTS CAN BE INSTALLED BY A
HOMEOWNER, A PROFESSIONAL PLUMBER IS NEEDED FOR INSTALLATION OF 3-WAY DIVERTER
VALVE ON THE SEWER LINE. THE HOMEOWNER BY THE OPTION TO INSTALL AN ACTUATOR, WHICH
ALLOWs EASY DIVERSION OF GRAYWATER BETWEEN LANDSCAPE AND THE SEWER LINE.

SYSTEM COSTS & RETAINES: THE COSTS CAN RANGE FROM A THOUSAND DOLLARS WHEN
PRIMARILY INSTALLED BY A HOMEOWNER TO SEVERAL THOUSAND IF INSTALLED BY A
PROFESSIONAL. WHILE MORE COSTLY TO CONSTRUCT THAN A LAUNDRY TO LANDSCAPE SYSTEM,
A BRANCHED DRAIN SYSTEM REQUIREs LITTLE MAINTENANCE AND LASTS A LONG TIME, SINCE IT
HAS NO MOVING PARTS TO BREAK.

RECOMMENDED SOAPS:
MORE SOAPS ARE COMING OUT ALL THE TIME, BUT IT IS ALWAYS IMPORTANT TO READ THE
INGREDIENTS LIST BELOW. SEVERAL THAT ARE KNOWN TO BE GRAYWATER COMPLIANT:
- OASIS - ALL-PURPOSE CLEANER FOR HAND-WASHING, BODY & SHAMPOO
- DR. BRONNER'S MAGIC SOAPS (LIQUID)
- AUBREY ORGANICS SHAMPOO

APPLICANT INSTRUCTIONS:
1. ESTIMATE YOUR GRAYWATER SUPPLY USING THE CALCULATION SECTION THIS SHEET.
2. ESTIMATE MULCH BASIN SIZES, AREA AND VOLUME USING TABLE 3.
3. DEVELOP A GRAYWATER SITE PLAN SHOWING ALL THE SYSTEM COMPONENTS FOR THE PERMIT
APPLICATION. SHOW ALL THE PLAN ELEMENTS LISTED IN #4 - GRAYWATER PLAN BELOW.
4. SUBMIT FOR BUILDING PERMIT EITHER WITH FULL SITE DRAWINGS OR AS A SEPARATE
SUBMITTAL.
5. REVIEW AND CORRECT THE PLUMBING LOCATIONS TO BENEFIT FROM GREYWATER.
6. SUBMIT FOR BUILDING PERMIT EITHER WITH FULL SITE DRAWINGS OR AS A SEPARATE
SUBMITTAL.
1. A rainwater catchment system may not require a building permit provided all of the following are met (California Plumbing Code 1601.3 (I)):
   - Water will be used for outdoor non-spray irrigation
   - Does not require electrical power or makeup water supply connection (see Note 2 and 3)
   - Ratio of height to diameter or width does not exceed 2 to 1
   - Maximum storage capacity of 5,000 gallons

2. Pump and pressure tank likely require inexpensive, over-the-counter, electrical permit.

3. No required setbacks from buildings or side/property lines, though a conversation with your neighbor could be helpful.

4. Tanks can be daisy chained at point "D" using flexible pipe only to reduce chance of leakage in earthquakes.

- Water will be used for outdoor non-spray irrigation
- Does not require electrical power or makeup water supply connection (see Note 2 and 3)
- Ratio of height to diameter or width does not exceed 2 to 1
- Maximum storage capacity of 5,000 gallons

5. There are no required setbacks from buildings or side/property lines, though a conversation with your neighbor could be helpful.

- Water will be used for outdoor non-spray irrigation
- Does not require electrical power or makeup water supply connection (see Note 2 and 3)
- Ratio of height to diameter or width does not exceed 2 to 1
- Maximum storage capacity of 5,000 gallons

NOTES:
1. A rainwater catchment system may not require a building permit provided all of the following are met (California Plumbing Code 1601.3 (I)):
   - Maximum storage capacity of 5,000 gallons
   - Tank is supported directly upon grade
   - Storage tank does not exceed 2 to 1
   - Does not require electrical power or makeup water supply connection (see Note 2 and 3)
   - All other rainwater catchment systems must be submitted for building permit.

2. Pump and pressure tank likely require inexpensive, over-the-counter, electrical permit.

3. If city water plumbed to tank for make up water (city valve or manually operated valve) this permit is required and air-gap is required.

4. Tanks can be daisy chained at point "D" using flexible pipe only to reduce chance of leakage in earthquakes.

5. There are no required setbacks from buildings or side/property lines, though a conversation with your neighbor could be helpful.