







**Irrigation Notes:**

- See irrigation legend for complete descriptions of all symbols shown on irrigation plan.
- Point of connection is at the approximate location shown on plan.
- Install all valves in locking plastic valve boxes in shrub and groundcover area where it can be screened by plantings. Install one valve per box. Identify locations and flag on site for Landscape Architect's approval BEFORE excavating for installation.
- Install irrigation system in accordance with manufacturer's specifications, irrigation details, and local codes.
- Indicated pipe locations are schematic. Do not place pipe under paving except where absolutely necessary. Coordinate pipe installation with other trades.
- All piping installed under paving, through walls or footings must be placed inside Schedule 40 PVC sleeves of adequate size to allow free movement of the pipe in the sleeve. All pipe runs in sleeves must be straight, with no bends or angles. Sleeves for recycled-water irrigation lines shall be colored to match the pipe.
- Locate irrigation controller at approximate location shown on plan. 110-v j-box by others. Obtain Landscape Architect's approval of location before installing.
- Emitters shall be located on grade and staked a maximum of 6" (six inches) from the center of the plant, or at edge of rootball, whichever is greater.
- Install flush end valves at the ends of all 1/2" polyethylene drip tubing in round valve boxes with gravel fill.
- Install irrigation lines at the following minimum depths:

Schedule 40 and class 315 PVC mainline:	18" minimum cover
Schedule 40 PVC lateral line:	12" minimum cover
1/2" polyethylene drip tubing:	place on grade with galvanized stakes @ 3' O.C.
1/4" polyethylene micro-tubing:	place on grade with plastic tube stakes.

\*\*Install all rigid pipe as near to edges of planting areas, to avoid conflict with large plants.

**11. Emitter layout:**

4" pot or flatted groundcover:	1 - 1 GPH emitter per plant (flatted groundcover can be watered with microspray emitters).
1 gallon:	2 - 1 GPH emitters per plant.
5 gallon shrubs:	2 - 2 GPH emitters per plant.
15 gallon shrubs/trees:	3 - 2 GPH emitters per plant.
24" box tree:	3 - Hunter HE-60-B Point Source Emitters (Orange 6 GPH)
36" box tree:	4 - Hunter HE-60-B Point Source Emitters (Orange 6 GPH)
48" box tree:	6 - Hunter HE-60-B Point Source Emitters (Orange 6 GPH)
60" box tree or field grown tree:	10 - Hunter HE-60-B Point Source Emitters (Orange 6 GPH)
Trees larger than 60" box:	Provide 14 - Hunter HE-60-B Point Source Emitters (Orange 6 GPH) Confirm final number of emitters with Landscape Architect.

Punch emitter into polyethylene tubing. Attach microtubing to emitter. Attach bug cap to open end of microtubing. Bring microtubing to edge of rootball. Stake end of microtubing with plastic stake manufactured for that purpose.

- In the event of discrepancies in irrigation equipment count, quantities indicated by symbols on the plan prevail.
- Include in the contract price a sufficient amount to allow for supply and installation of additional irrigation equipment to be used. Include 200 linear feet of lateral line, 200 near feet of mainline, and 50 additional spray heads and bodies. Provide the unit price for such irrigation equipment in the bid and credit the owner for each piece of equipment not installed.
- In vicinity of existing trees, use discretion to route lateral lines and mainline as necessary to avoid root damage. Under canopies of existing trees, excavate using hand tools, and route pipe under roots with a minimum 4" clearance. Do not cut roots larger than 2" (two inches) in diameter, unless approved by the Landscape Architect.
- Use variable arc nozzles and / or pressure compensating screens as necessary to prevent overspray in areas where standard nozzles would not be efficient.
- Verify location of backflow preventer, master control valves, controller and point of connection with Landscape Architect prior to installation.
- Install and adjust all spray and bubbler heads to prevent water contact with all built elements.
- Adjust all spray and bubbler heads to minimize overspray onto paved areas.
- Install sprinklers on a 12" pop-up body in shrub areas, on a 12" pop-up body in no-mow turf areas such as (Leymus triticoides 'Lagunita') on a 6" pop up body in Marathon II (or other traditional turf) areas, and on a 4" pop-up body in planters directly adjacent to parking spaces.
- Install check valves at the low end of all irrigation lines to prevent low head drainage.

**Irrigation Pipe Sizing Guidelines:**

Schedule 40 mainline up to 1-1/2"

0-4 gpm	1/2"
5-8 gpm	3/4"
9-12 gpm	1"
13-22 gpm	1-1/4"
23-30 gpm	1-1/2"

Class 315 mainline 2" and up

30-50 gpm	2"
51-70 gpm	2- 1/2"
71-100 gpm	3"

Schedule 40 lateral line

0-4 gpm	1/2"
5-10 gpm	3/4"
11-16 gpm	1"
17-26 gpm	1-1/4"
27-35 gpm	1-1/2"
36-55 gpm	2"
56-80 gpm	2-1/2"
81-120 gpm	3"

Weathermatic valves

0-20 gpm	1"
20-40 gpm	1-1/2"
40-80 gpm	2"

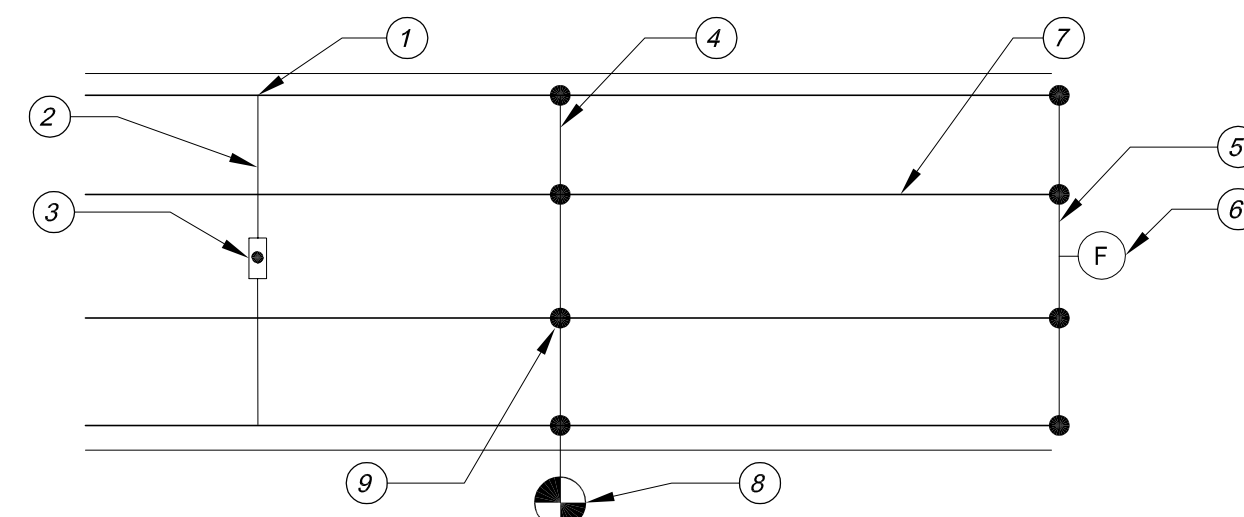
Rainbird XGZ drip valves

0-15 gpm	1"
15-40 gpm	1-1/2"

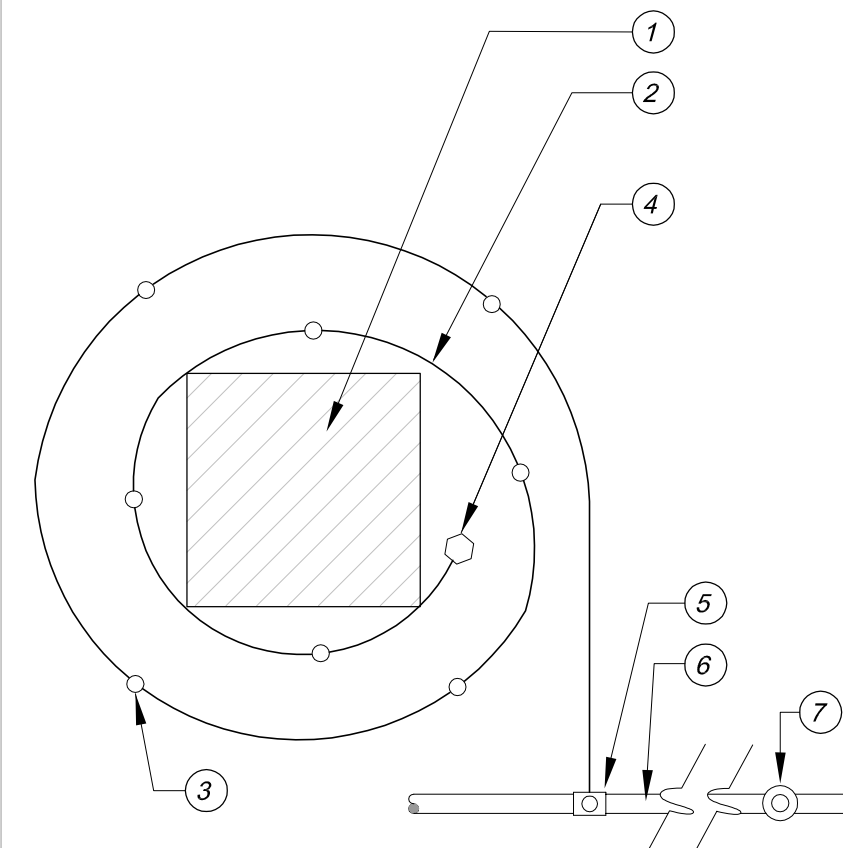
See Sheet LI-1 for MWEO calculations  
See Sheet LI-6 & LI-7 for Irrigation Specifications

- Dripline blank lateral DL 2000 poly connection fittings to dripline laterals.
- Dripline blank lateral.
- Air/vacuum relief valve.
- Lateral line
- PVC header, min. 3/4" size.
- Flush valve.
- Dura-Pol polyethylene tubing in rows 14" to 16" O.C. on level ground.
- Irrigation key.
- Connection to PVC lateral.

- Notes:**
- Install drip flush valve per detail at the end of each tubing section per plan.
  - Install air relief valves per detail at high points of each tubing section per plan.
  - Run air/vacuum relief blank tubing lateral along high point of mound or berm.
  - Attach all in-line drip tubing to blank lateral. More than two relief valves may need to be installed per section.

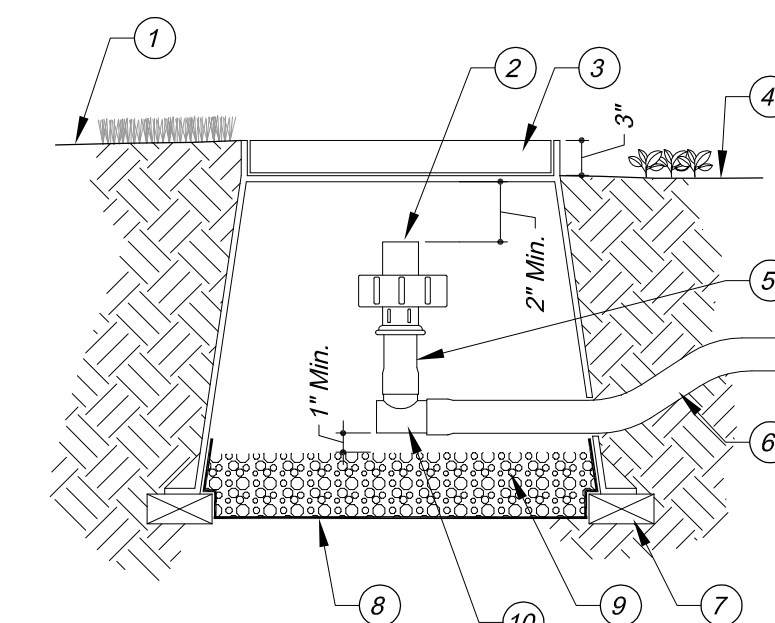


**4 DRIPLINE CONNECTION**  
Not to Scale



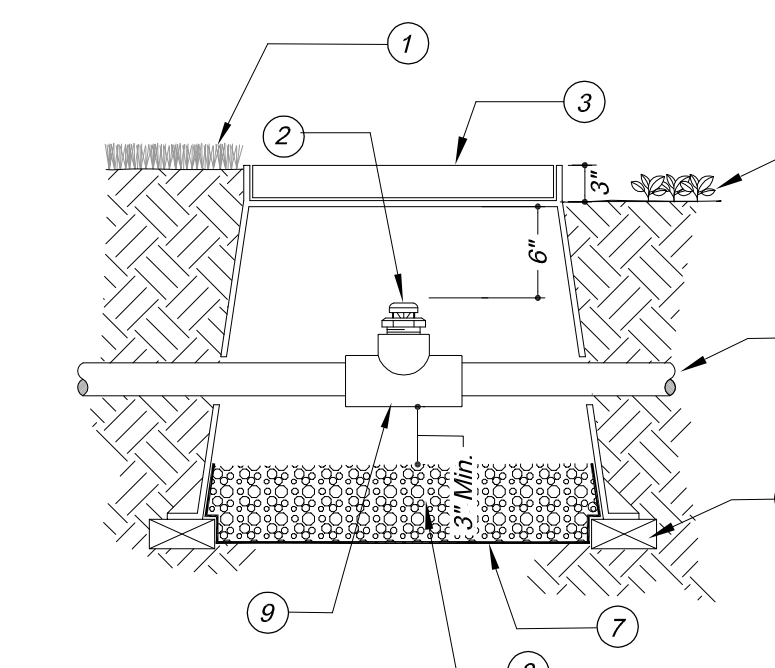
**5 TREE DRIP RING LAYOUT**  
Scale: 1"=1'-0"

- Tree rootball.
  - Polyethylene tubing in rows around tree, 2 required 4 - 6" below grade.
  - Xeribubblers or emitters spaced evenly around rootball of tree. See irrigation notes for schedule and quantities.
  - AGR products "SPIN-LOC" 1025 SETC flush cap SL X 3/4" MHT with plastic cap installed within a round plastic pull box. Place flush valve a minimum of 4' from trunk. If installation is on sloping ground, install the flush valve on the downhill side of the tree.
  - Connection between polyethylene tubing and PVC pipe, SXT PVC ell or tee (1/2") with spin loc x thread male adapter AGR products model #S12MA-565.
  - Lateral line.
  - YD-500-34 Air / vacuum relief valve installed with a FT-050 combination tee and a 3/4" x 1/2" reducer bushing, install air relief assembly inside a 6" planter, min. 1 air / vacuum relief valve per 500' of dripline.
- Notes:**
- All drip tubing to be 4" min. below finish grade.
  - Box to be installed as to allow for proper operation of ball valve. Install at right angle to hardscape edge. install valve off-center in box.
  - Install valve box extensions as required to achieve proper valve installation at mainline depth.



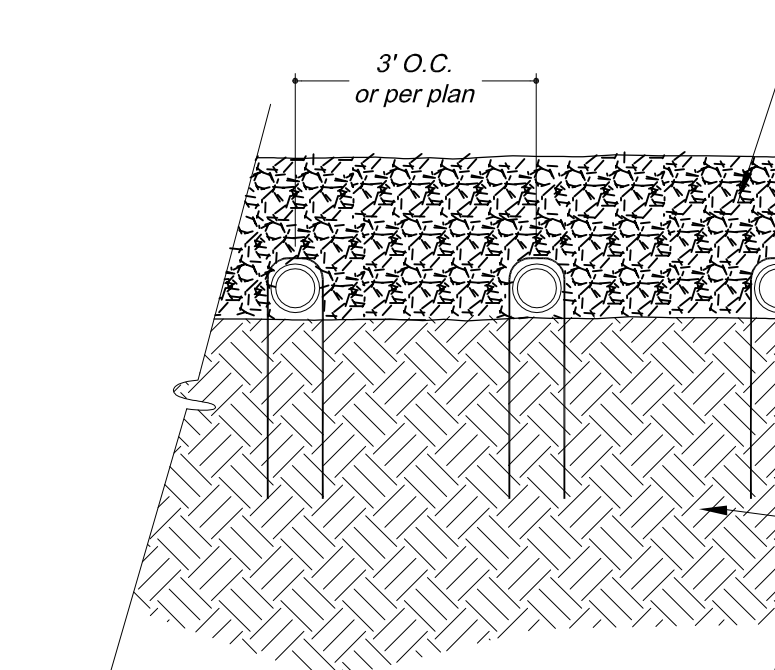
**1 DRIP FLUSH VALVE**  
Scale: 1"=1'-0"

- Finish grade, turf areas.
- Toro FCH-H with DL200 automatic flush valve with DL-75MA-9153 1/4" male adapter.
- Plastic round valve box, 6" size. Heat brand "FV" onto lid.
- Finish grade, shrub areas.
- Drip tubing, length as required.
- Drip tubing, sweep down to enter valve box.
- Brick supports.
- Filter fabric.
- Pea gravel, 3" deep.
- Toro barbed ell (DL-E9018).



**2 DRIP AIR RELIEF VALVE**  
Not to Scale

- Finish grade in turf areas.
- Toro YD-500-34 air/vacuum relief valve.
- Plastic round valve Box, 6" size heat brand "ARV" onto lid.
- Grade in shrub areas.
- DL2000.
- Brick supports.
- Filter fabric.
- Pea gravel, 3" deep.
- 1/2" PVC tee (SxSxT) with toro CA710 comp. adapter.

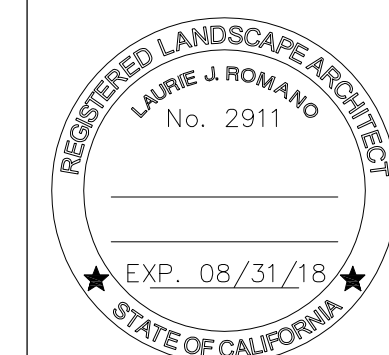


**3 DRIPLINE STAKING AND LAYOUT**  
Not to Scale

- Mulch, see planting notes.
  - Dura-Pol polyethylene tubing.
  - Amended soil per planting notes and specifications. Bring soil level to 3" below finish grade of mulch prior to dripline installation.
  - Galvanized wire Stake, 3' o.c. per irrigation notes.
- Notes:**
- To insure even parallel and level tubing rows it is recommended that the soil level in the planter areas be brought to 3" below grade and properly compacted per the landscape drawings prior to the installation of tubing.
  - Install tubing as indicated on these drawings and secure to grade using wire hoop stakes at 5 feet on center spacing.
  - Backfill final 2" of mulch over the tubing after installation of the tubing.



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**Revisions**

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**IRRIGATION DETAILS**

Issue  
3.23.17

Date 11.22.16	Job Number 16.069
Drawn By MG	Checked by BC
Sheet	of #

**LI-5**



