

**GENERAL PLANTING AND ROOT CARE GUIDE - 2****MORE THINGS THAT CAN GO WRONG -  
AND HOW TO AVOID THEM**

**G. Sandy Rose, ASCA**  
*Registered Consulting Arborist*

Nothing conveys the message quite like pictures. While this section is far from exhaustive with respect to root problems, it does illustrate a few of the consequences of bad practice and what can develop over time. Drainage can be especially important with newly-planted trees – particularly container-grown ones, as water flows easily through the rootball. Balled and burlapped trees are generally better survivors with fewer inherent problems caused by the grower.



Post Oak – Root flare was buried and paved over when the street and sidewalk were built more than 20 years prior to this event. It appears that the flare was about two feet below the surface. The tree fell over with green canopy due to the decay of the lower trunk and root collar – and a gentle push by the wind.



A Sweet Gum with canopy dieback due to a massive girdling root that wraps around the trunk



like a wooden tire. Because the root flare was deeply buried, the root was undetected until excavation of the flare to determine the cause of the dieback was performed. This tree could not be saved. Burying the root flare can have a variety of consequences – often eventually dramatic.



Live Oak – Over- (volcano) mulched and growing too deep originally, promoting upward root growth into the mulch. This resulted in surface and girdling roots. Note that the flare is still below the surface. Exposing the flare will reveal a much bigger mess.



Photographs and artwork by

**G. Sandy Rose, ASCA**  
**www.GSandyRose.com**  
**817-516-9030**



**Shade Masters, Inc.**  
 P.O. Box 13533  
 Arlington, Texas 76094  
 817-516-9030



Post Oaks – Soil fill due to lot grading. The roots grew upward through the soil above the root flares. Note the small girdling roots.

**The Perils of Container Trees.**

Pine – 4-1/2-inch caliper, approximately six years old from a 45-gallon container. The first lateral root is 5-1/2 inches below the top of the rootball, suggesting that the tree ended up about 6 inches too deep after it was finally transferred to the container. ↓



The orange pencil marks the location of the lateral root. This massive bird's-nest of roots would be very difficult to sort out if salvaging this tree had been attempted.

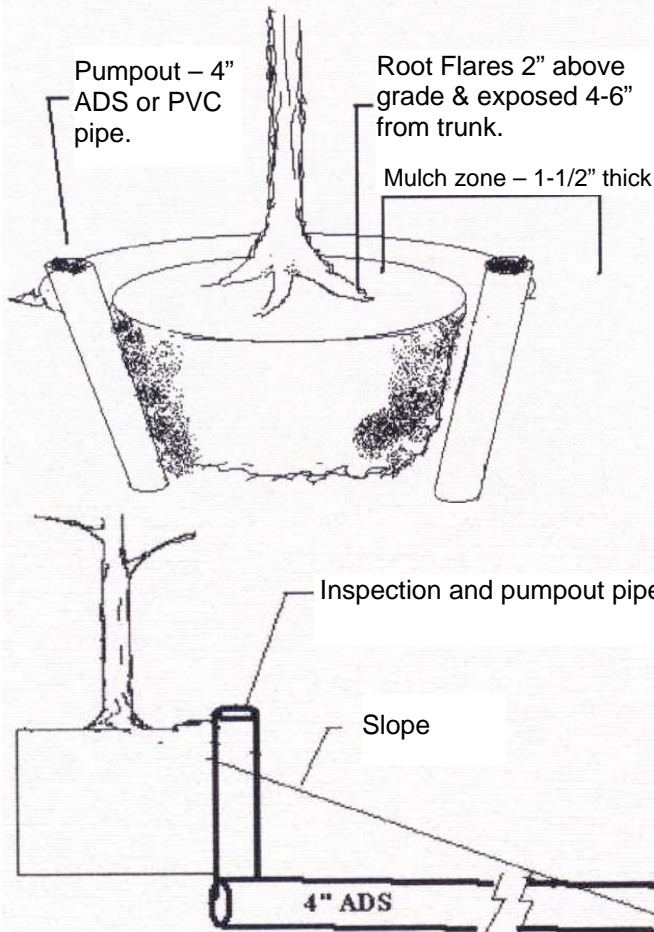


It is not unusual for growers to loose trees because they are allowed to stay in containers that are too small for too long. The tree buyer should gauge if the container looks too small for the tree – because it probably is.

# Drainage

Removing standing water from around a tree is essential for it to survive. Water can accumulate around a tree for several reasons – most often because the tree is planted in a low spot or because the root flare had to be excavated, creating a pit or **treewell**. Newly-planted trees can be subject to standing water at the bottom of the rootball - particularly in tight, heavy soils or where a rock layer is close to the surface.

Visible here are 4-inch ADS pump-out pipes with vented caps. But what is wrong with this picture? This tree has been in the ground for awhile but the duck ring is still there, gradually sloughing to bury the root flare deeper than it already is. →



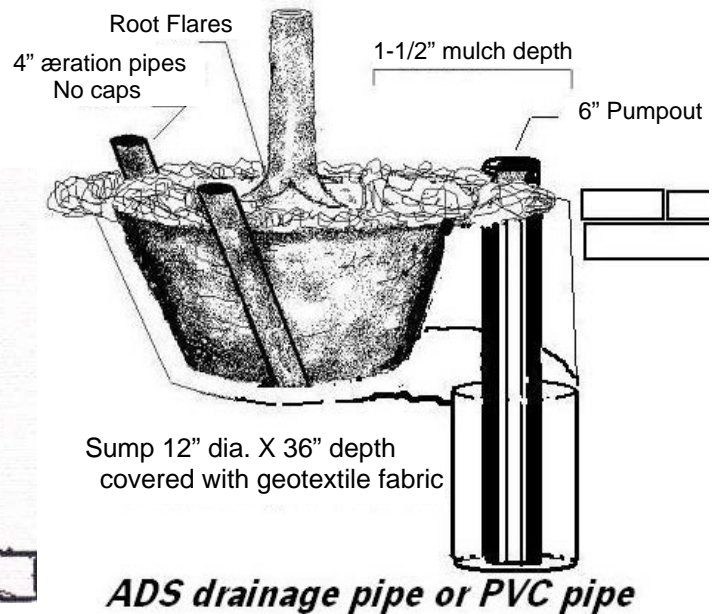
## Three arrangements for drainage.

**Left:** New small tree with pumpout pipes only.

**Bottom Left:** With lateral drain.

**Below:** Treewell detail for paved areas.

**Set pumpouts below the bottom of the rootball.**



# Drip Irrigation Layouts

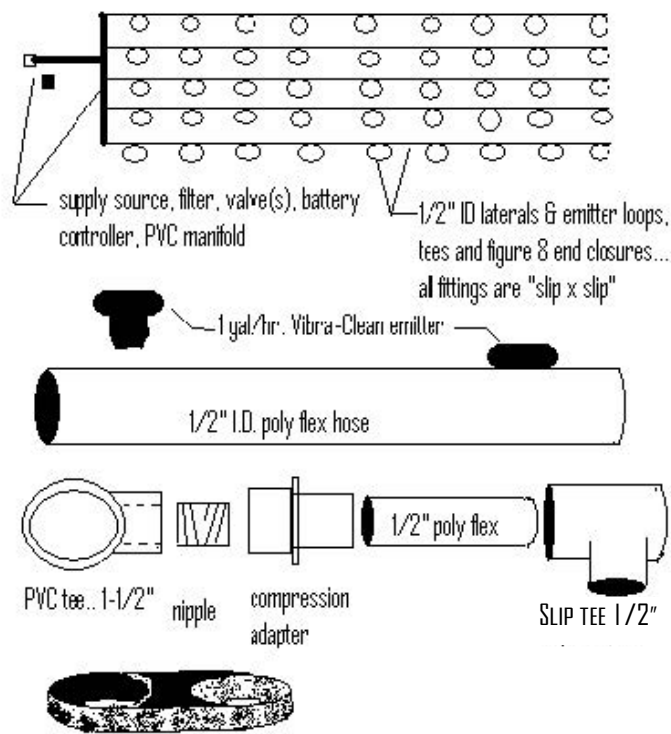
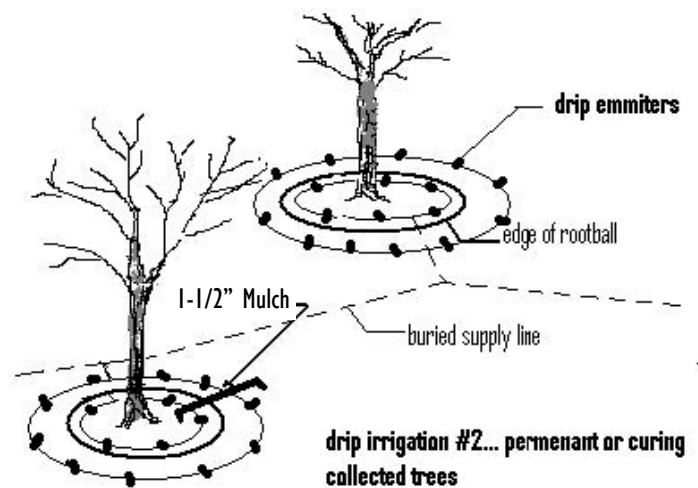
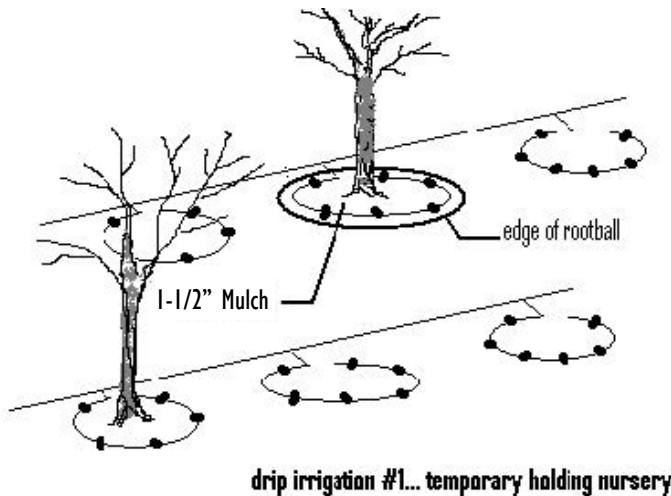


Figure 8 end closures for loops and lateral lines

drip irrigation #3... details

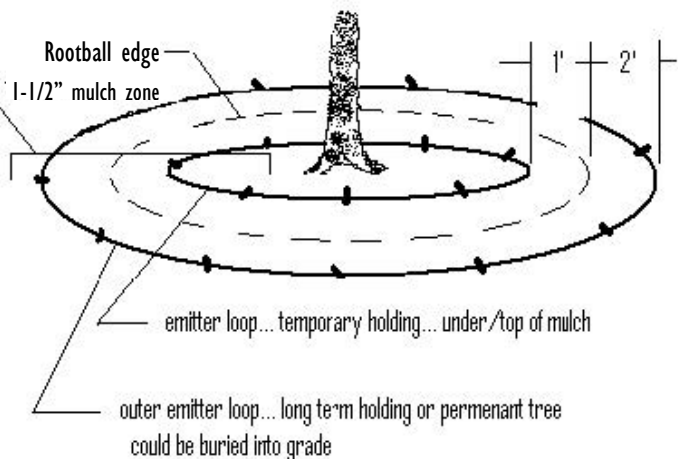
Submatic Irrigation [www.submatic.com](http://www.submatic.com)

## Important Fertigation Notes

If fertigation (injecting liquid fertilizers in the drip system) will be used, it is essential to install flush-out valves at the end of each loop or line. No blind ends! This allows any deposits or precipitates to be flushed out of the line. Before buying fertilizer – especially Humates – make sure emitter orifices are large enough to pass the material. Also, check the quality of the water and the pH for compatibility with the products.

## Drip Irrigation

...is the most efficient method of watering. Subsurface drip is more efficient than surface drip. If subsurface is employed, the lines should be placed 8 inches below the surface. Note that emitters designed for burial (resistant to clogging by the soil) must be used.



## Estimated Emitter Loop Lengths

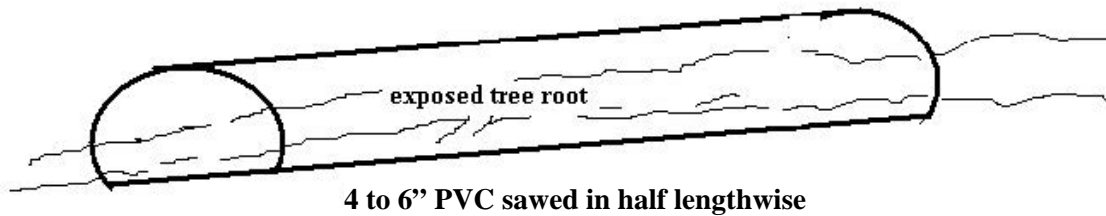
50" Dia. Root Ball – 13 ft. 6 emitters per loop  
90" Dia. Root Ball – 24 ft. 15 emitters per loop

For purposes of estimating materials.

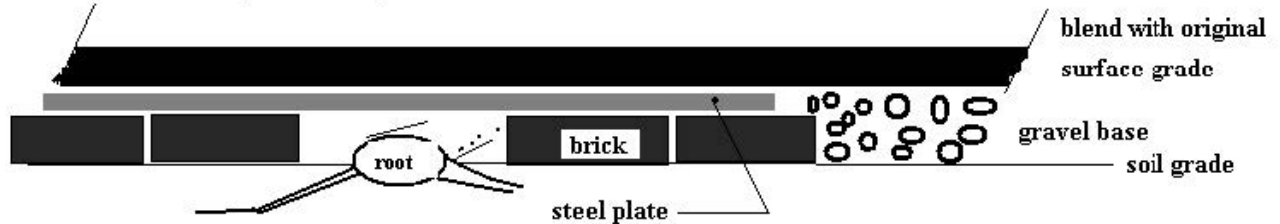
drip irrigation #4... details... placement of loops

# Protection Of Roots When Paths Or Sidewalks Are Constructed Or Replaced.

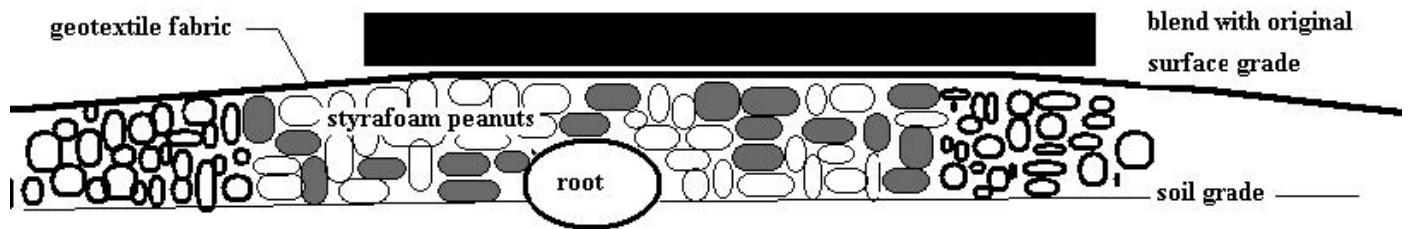
## 1. oblique view..PVC bridge



## 2. side view... steel plate bridge



## 3. side view... styrafoam "peanuts"



## 4. 60/40 mix styrafoam "peanuts" & decomposed gravel

