

of the bunker was established. Over the years I had used burlap bags filled with soil or strips of plywood staked in position to form bunker outlines. With plywood, the bunkers were out of play until the sod rooted to a sufficient depth and the banks were stabilized. But by using four-inch plastic tile for establishing the bunker edge, once the sod rooted, generally within 10 days, the bunkers were open for play.

Another reason to use the tile method is that when a shot is played near the bunker edge, the normal follow-through that strikes the edge would be soft and safe, unlike that of wood. To further soften the blow, the plastic is covered with sod. When we lay sod, we put it right over the plastic tile. Take it right into the bunker itself and then sand it the same way. This can be left in place for months until satisfactory root depth is achieved. After the needed time, the plastic tile is removed and the edges are trimmed. The bunker is then totally renovated. Using four-inch plastic tile also makes it easy to maintain a four-inch sand depth throughout the bunker, and the plastic tile can be reused in other bunkers. It is best to use unperforated tile instead of the perforated type. The next step is to review the drainage system and determine the additional needed tile lines.

Our golf course is now more in tune with the original design that Donald Ross envisioned, and Acacia golfers now have a fresh opportunity to appreciate that vision.



*During the Acacia Country Club bunker renovation, drainage pipe was used to delineate the renovated bunker edge.*

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## THE BEST TURF TIPS OF 1994

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# No More Rolling Stones

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by **DAVID A. OATIS**

Director, Northeastern Region, USGA Green Section

**I**T IS NO SECRET that good drainage is a requisite for growing healthy turf on a consistent basis. Regardless of the golf course superintendent's abilities, problems are likely to be experienced if adequate drainage does not exist. Playability suffers, aesthetics suffer, and stress and disease problems are much more common with poorly drained soils. Having said all this, it is clear that most courses have at least a few drainage problems. This can be due to a variety of factors, such as the design or

topography of a golf hole or the poor internal drainage qualities of the existing soils, possibly aggravated by compaction.

Regardless of the reasons for poor drainage, installing effective drain lines isn't all that complicated. We can use high-tech tools like laser grading devices, a common land level, or low-tech tools such as a poor man's level consisting of clear tubing attached to a graduated measuring device. Positive and steady fall of 1% or greater is necessary between the drain's inlet and the outlet. The

inlet obviously must be located below the area in need of drainage, and the outlet must not be restricted.

Despite the simplicity of the concept, ineffective drainage systems are fairly common. In some cases, the drainage pipe may not be sufficiently large enough to handle the volume, or it may have been installed improperly without adequate fall, making it non-functional. Tree roots can also cause problems with drain lines, but sometimes the drains are simply not put in the right





*Open stone drains are effective, but dislodged stones are a nuisance.*



*Gutter Guard holds stones in place and encourages the grass to grow over more quickly.*

locations. There is also the rare occurrence when a drain line actually works too well and creates a droughty situation in the turf immediately over the pipe.

Unfortunately, my turf tip won't cure any of these problems. It cannot insure that a drain line is installed in the right location, it cannot insure that it is installed with adequate and even fall, and it cannot keep tree roots out. However, if you choose to install open stone drains, this turf tip can improve the appearance and the effectiveness of your finished product. It comes from Al Rathjens, golf course superintendent at Raritan Valley Country Club in Somerville, New Jersey. Al has been the superintendent at Raritan Valley for 27 years, and over the course of his tenure

he has installed nearly six miles of drain lines. Al began using open stone drains many years ago and experienced a common problem of stones being dislodged from the trenches by golf carts and mowing equipment. Even more problems were experienced with water washing stones out of the trenches when they were installed on sloped areas. Although open stone drains can be quite effective, the stones that are dislodged are a nuisance and can present a hazard to mowing equipment and even to golfers themselves. It only takes one stone to ruin an expensive bedknife or reel.

To combat the problem, Al devised a very simple and cost-effective strategy; hence, my turf tip "No More Rolling Stones." Al's

simple but effective solution was to use Gutter Guard, which is 6" wide and available in 25' rolls from most hardware stores. The material is placed carefully over the gravel in 4" or 6" trenches. It is then held in place by long aluminum gutter nails and/or turf blanket staples inserted through the mesh and into the sides of the trenches. The Gutter Guard material is available both in plastic and aluminum, and it neatly holds the stone in place and encourages the grass to cover more rapidly by providing additional points of attachment.

So, if you are considering the installation of open stone drains but are concerned about stones washing or becoming dislodged, try this tip and eliminate your rolling stones.