

# PROSCAPE

By Michael Hurdzan, Ph.D., golf course designer and consultant

**Q:** How do you locate buried plastic tile and water lines without disturbing large areas of turf? J.M.F., Wickford

**A:** Whenever a tile or piping system is planned it should be drawn out on a topographic map with as much detail and accuracy as possible. This plan should then be followed as closely as one can during installation. But if the area being planned is 150 or 200 acres, by necessity the scale of the plan must be 1 inch = 200 feet or 1 inch = 100 feet. At these scales, the width of a pencil line might be equivalent to 5'-10' on the ground.

So the drawn plan should be carefully followed but adjusted in the field as necessary to make the system most functional. If these field changes are significant then these changes should be carefully noted on the original plan. After the project is complete, the plan should be redrawn with all the changes incorporated and this becomes a "drawing of record." From this drawing of record one can quickly see the relative location of the field installation. However even with a detailed record drawing finding the actual installed tile or pipe in the field can sometimes be very costly, aggravating, and laborious.

To reduce the problems of finding the buried conduit several things can be done during installation. One procedure would be to measure the exact distance of the trench from some known landmark such as a large tree, a fence, or building, and note this on the drawing. Another procedure would be to install gravel or sand to the soil surface at every tile intersection or at every major change in direction of the pipe or tile. Not only will this gravel backfill permit you to more easily find the intersections but they also can serve as gravel drop-inlets for surface water. A third method is to drive steel pins into the soil to just below the soil surface at important reference points so these points can again be found using a metal detector.

Once a tile has been uncovered and you wish to check it's function, there is another simple procedure that may aid you. Find the outlet end of the tile that you think is plugged or

broken, or uncover the tile in several places along its length about 100 yards apart, and start running a small stream of water into the tile if it is not already flowing any water. To either trace the flow of this water or to find a stoppage, use food coloring to color the water and simply

look for the marked water. If no colored water comes from the outlet or does not reach the next observation spot down the tile run then you know that you have "bracketed" the disfunction. Repeat the procedure with narrower brackets until you find the problem. **WTT**

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