

Firming Up the Fairways

Siphon system helps Florida course solve fairway drainage woes

BY LARRY AYLWARD, EDITOR



The Turf Drain Siphon System doesn't require pipe to be graded so it can transport water at a higher elevation than it's collected.

Problem

South Florida rains caused major flooding on the fairways of the Seminole GC. Standing water and soggy fairways did not equal a fine golfing experience.

Solution

Seminole superintendent Hal Hicks turned to a drainage system that siphons water from fairways without grading pipe.

Architect Donald Ross has been praised for his routing of Seminole GC, built in 1929 in North Palm Beach, Fla. It's a spectacular layout that plays along impressive sand dunes separating the Atlantic Ocean and the course's perimeter. But the dunes, while adding greatly to the course's character, have posed challenges to Seminole's superintendents, especially when it comes to drainage. Some of the dunes are as high as 40 feet above sea level. So when it rains, and it pours in south Florida in the summer, the water flows to the middle of the course. "The course has a bathtub effect," says Hal Hicks, Seminole's superintendent since 1989.

The problem

Hicks recalls a storm that dumped more than 20 inches of rain in 24 hours. Occasionally, water has been up to Hicks' waist on some fairways after heavy rains. The water drains slowly after such storms. "We've had to shut down the course for up to a week," Hicks says.

The heavy rain and standing water created a twofold problem:

- How to get the water off the fairways quickly so the course doesn't have to shut down?
- After the water is removed, how to firm up the soggy fairways so the course returns to the playability its members expect?

In the early '90s, Seminole GC installed a drainage system with a series of interconnected concrete drain lines that led to a sump. The system did a decent job of draining the water after a hard rain, but it didn't help solve the problem of soggy turf. "The ground was still soft, and golfers' balls still plugged," Hicks says.

Hicks knew he needed to find a way to firm up the fairways quickly to satisfy members, who prefer the course to play hard and fast.

The solution

In 1995, Hicks met Dennis Hurley, president of the Marrero, La.-based Turf Drainage Co. of America. Hurley told Hicks about his company's Turf Drain Siphon System, and Hicks decided to test it on his course.

Seminole presents a huge challenge from a drainage standpoint, Hurley says, citing five potential problems:

- the proximity of the ocean;
- the high water table;
- difficult digging conditions; and
- a layer of rock below the surface.

The Turf Drain Siphon System siphons water from fairways and can be installed without grading pipe. The system makes sense for flat courses with little elevation change or any course where it's difficult to grade pipe, such as Seminole.

The system is a transportation system for water collected by any means — open inlet or seepage. It works the same way you would siphon gasoline out of a car. Once the system is primed by



This is not an irrigation pond – it's hole No. 1 at Seminole after a flood.

PHOTOS COURTESY OF SEMINOLE GC

using a normally closed valve installed in the irrigation system, the system will transport water over or around mounds and obstacles that are higher than the collection point, and then release the water in an area that is level with or lower than the collection elevation. What's important, however, is not how it works, but what it does. It allows water to be collected at a deeper depth throughout the drainage area — thus giving the soil more storage capacity for future rains.

“On a property such as Seminole, we create an adequate relief with a pump,” Hurley says. “What is different with our system is once we've created one pumped area, we can replicate that area with siphons. So if there are 50 siphons going to one pumped elevation, it's like having 50 pumps. But only one pump and one electrical point have to be maintained.”

Hicks opted to test the Turf Drain Siphon System in the summer of 1995. He picked the third hole — the worst draining area on the course — as the guinea pig for the system. The hole is part of the lowest area on the course and is bordered by a sand dune that runs parallel to the fairway. The constant seepage out of the dune down to the lower elevation of the No. 3 fairway was a factor in the fairway being particularly wet.

The fairway drained well and dried quickly after installation of the system. Hence, Hicks decided he wanted to install separate systems on other holes. The course has been adding systems to a few holes every year.

The original siphons installed in 1995 and



(Left) Seminole assistant superintendents Alan Brown (left) and Chris Deariso display a siphon basin used in the system. (Below) A basin installed in the ground.

1996 featured 2-inch systems. While the systems were adequate to harden fairways after surface water drained, Hicks asked Hurley if he could make a 4-inch system to remove surface water faster. Hurley agreed, and the first 4-inch system was first installed at Seminole in 1997.

While the Turf Drain Siphon System easily handles surface water, Hicks is especially impressed with the system's ability to firm up soggy fairways rapidly. Not only can members get on the course quickly after a heavy rain, they're playing on firm fairways where their balls don't plug.

Outlook

Seminole's members have been receptive to the drainage improvements. “We've explained to them what we're doing, and they can see the difference the system has made,” Hicks says.

So can Hicks, who says the Turf Drain Siphon System has helped cure Seminole's drainage woes.

“We're not closed for as many days [because of hard rains], and members are able to get out and play,” Hicks says. ■

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