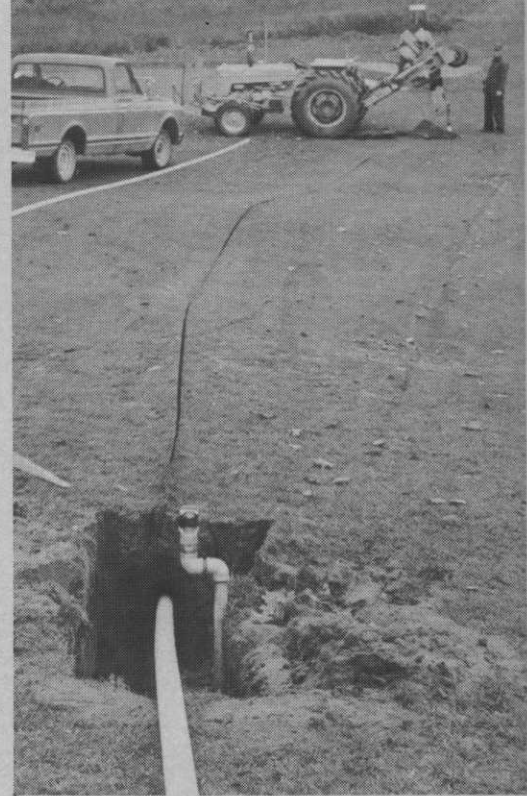


*Jack Soderstrom Tells How to Install*

## **IRRIGATION BY SABER SLICE**



**WHEN IT COMES** to installing sprinkler systems in existing golf courses, Jack Soderstrom has a better idea. Soderstrom, of Sparta, Mich., has been an underground contractor for the past 20 years, but, since 1965, he has specialized in irrigating golf courses. His better idea consists of plowing in the plastic pipe which carries the water.

To do this, Soderstrom uses a machine called a Saber Plow, a tractor-type machine equipped with a vibratory blade in the rear that can bury cable, wire, tubing and pipe down to depths of 3½ feet. Manufactured by Parsons Division of Koehring, Newton, Ia., the Saber Plow provides a major benefit of requiring no restoration.

Thus on existing golf courses, Soderstrom estimates the course savings in restoration at close to 80% because no restoration of turf is required. Naturally this gives him

a keen competitive edge over other methods of installation.

An example of this is a system he recently installed for the Newberry Country Club on its nine-hole course in Newberry, Mich.

Built in 1928, the course had an old, inadequate system that provided water only for the tees and greens — fairways were watered at the whim of Mother Nature. Soderstrom's bid was only slightly higher than the competitive bid based on trenching in the pipe. The considerable restoration of grass required would then have had to be completed by the Club's grounds crew.

To put in the new system, designed by Soderstrom and Spartan distributors of Spartan, Mich., Soderstrom used 4, 3, 2½, 2 and 1½ inch pvc pipe (polyvinylchloride) of 160 P.S.I., and 6- and 8-inch cement-asbestos pipe. Celanese Corp. manufactured the pvc pipe

while Flintite Corp. produced the asbestos variety. All the pipe 3 inches in diameter and smaller, the majority of the system, was plowed in with the DP-30 Saber Plow. For the remaining large diameter pipe, Soderstrom used a Parsons 150 trencher and backfilled with a Case dozer. In all, a total of 16,000 feet of pipe was installed.

Although the Newberry course will be a manual system, automatic systems also make up a good share of Soderstrom's work. These consist of individually controlled sprinkler heads, automatically and individually activated with clocks, which spray water for a period of time preset according to soil conditions. On nine-hole automatic courses, an additional 60,000 to 64,000 feet of control tubing and wires are plowed in. To better handle these controls, Soderstrom added a special handling rack to the front of the DP-30.



All elements of installing an irrigation system with a Saber Plow are shown in this series of pictures. Beginning at the left is the tractor-pulled plow slicing around a green. Plastic pipe is attached to the bottom of the plow by chain and is pulled into place as the tractor moves forward. Holes are needed only for initial entry and for connecting sprinklers. The slice knits quickly. Flotation-type tires help close the slit. When it is necessary to drive on the green, sheets of plywood are used to prevent tire indentations. Installation of joints where sections of pipe meet at a 90-degree angle is a simple operation requiring a matter of minutes to complete. A special carrying attachment handles miles of control cable needed to complete the automatic system.



Because of these controls, the cost of an automatic system is about twice that of a manual system. Average costs, according to Soderstrom, including installation and complete parts, are about \$25,000 for a nine-hole manual course, \$45,000 to \$50,000 for a nine-hole automatic or an 18-hole manual, and \$80,000 to \$90,000 for an 18-hole automatic.

On Newberry's new manual course, to water fairways the grounds keeper waters the desired area by means of a key that he fits into a quick coupling valve. The Toro sprinkler head is at the top of the key. When the area is sufficiently watered, the key is removed and taken to the next coupling valve. System capacity is 500 gallons per minute and, since one sprinkler requires 50 gallons per minute, 10 sprinklers can be activated at once.

On greens and tees there are per-

manent in-ground sprinklers, three or four to a green, two or three on a tee, depending on the size of the green or tee, which all pop up when the water is turned on via a nearby valve. Greens sprinklers each show 15 gallons of water per minute.

On the fairways, the distance between sprinklers was 90 feet (as specified by the course architect) and Soderstrom plowed in 180 feet of pipe at a time, enough to include three sprinkler heads. The Saber Plow pulled the fairway pipe in with a 24-inch blade.

An 18-inch blade was used on the greens. After the line was plowed around the green, the pipe was simply pushed in by hand — a faster process since the time required was a matter of two-three minutes.

Soderstrom described the DP-30 Saber Plow as, "Nothin' but good. To my knowledge, we are the only

contractor in this area using a plow in this type of application. Because the golf courses save on restoration, we are considerably cheaper. On this course, conditions are excellent. The soil is pure sand and we have been able to do all the plowing in second gear."

Soderstrom, who covers the entire state of Michigan, spent about three weeks on the Newberry job and normally handles three or four golf course jobs per year, about half being automatic systems. He spends about eight months of the year on jobs and the remaining four months overhauling equipment, and handling sales contact and planning work for the next year.

With improved grass and ground conditions next year at Newberry, golfers will have one less excuse for not breaking par during their own watering stop at the 19th hole.