

Clubhouse, now being built at Mukwonago resort course, is of heavily beamed design to complement the rugged countryside.



## 18-Minute Green

In Mukwonago, a town in the rolling country of southern Wisconsin about 30 miles southwest of Milwaukee, golfers are playing a beautiful new 18-hole course. Nearby, a rich crop of grass is sprouting on still another new 18-hole course that needs only sun, water and time to ready it for play.

A year and a half ago the wooded countryside, alternately hilly and swampy, was inhabited only by rabbits, fox, quail and other wild life. Then, Francis Schroedel, a Milwaukee builder, moved in with an imposing array of "cats," "clams" and other heavy construction equipment. His construction army cut down hundreds of trees, carved three artificial lakes out of the landscape and filled them with spring water, and installed several miles of cast iron pipe in an irrigation system. In a vast landscaping job, his work crews moved hundreds of thousands of cubic yards of earth and added new beauty to an area that was already naturally attractive.

**No. 12 at Rainbow Springs wasn't shaped quite this quickly . . . But it gives an idea of the speed in which the 36 holes at this club were built.**

Exactly 143 days after ground was broken, 160 acres of a 945-acre tract had been transformed into an 18-hole course. Billy Sixty, of the Milwaukee Journal sports staff, describing the speed with which builder, Schroedel, worked, facetiously said the entire 12th green was "raked and shaped by a cat-dozer in exactly 18 minutes." He wasn't too far wrong because about five miles of cast iron pipe were installed in the irrigation system in seven days.

When the job was done, Schroedel and his battalions started work on a second 18-hole course on the same tract. This, too, was completed, except for seeding, by the time the first heavy snow fell.

The first course was dedicated last October, seven months to the day after

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Here is the unfinished finishing hole as it was being cut to size by the big machines. Pro shop is now located in the foreground.

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## **Irrigation System Pre-Assembled at Rainbow Springs**

**T**he unique feature of the Rainbow Springs installation of the cast-iron piping system is that it was designed and planned using modular coordinates. Starting from the back of each of the 12-foot long tees, there are three sprinkler heads installed at 40 feet intervals on each tee. The piping then continues through the center of each fairway, with sprinkler heads at 90-foot intervals, to the front of each green. The piping continues in the form of a Maltese cross.

It was installed before the greens were built, with the result that there are four sprinkler heads around the perimeter of each green. The green piping was varied in length from front to back, and from side to side (depending on the layout of each green) but still held within the modular coordinates. Five miles of pre-assembled piping was laid in seven working days.

### **Cutting, Fitting Made Easy**

The design and engineering also included pre-assembly of all fittings, valves, etc., above ground prior to installation of the cast-iron pipe. These were fitted to the pipe before it was laid. This completely eliminated all cutting and fitting in the tight confines of the two-foot deep trenches. The vertical piping from the cast-iron pipe is galvanized. Valves, etc. are copper. Laterals are of cast-iron.

The fairways of the regulation course consist of a mixture of 50 percent Kentucky Bluegrass, 30 percent Red Fescue, and 10 percent Seaside bent and 10 percent Astoria. This mixture was seeded on the basis of 40 pounds per acre.

Quick development of the turf and greens on the regulation course can be attributed to:

A chemical analysis of the soil before seeding;

The spreading of at least 40 tons of lime, plus at least 45 tons of fertilizer on the fairway and rough areas before seeding;

The preparation of a seedbed mixture



Cast iron irrigation pipe is being laid across the Mukwonago River in front of the No. 2 tee on the standard course at Rainbow Springs.

for the greens of 60 percent torpedo sand, 20 percent black soil, and 20 percent peat moss. This was thoroughly mixed, spread to a thickness of 12 inches and then compressed to a final thickness of 8 inches in the construction of all greens, including the practice greens;

Fifteen pounds of Penncross bent was used in seeding each green;

All fairways and greens are watered as much or as little as required, with the cast-iron piping system and the automatic controls that are in integral part of the system, being used.

### **Turf in Eight Months**

Rainbow Springs had an excellent stand of turf only eight months after seeding (this includes the dormant winter season of 1962-1963) and a statement made in June, 1963, by the state course rating committee said greens, collars and shoulders were as good as any existing golf course in Wisconsin.

There is no artificial tiling of any sort on any part of the course. Greens were designed with natural drainage, ventilation, etc. In addition, each fairway is slightly crowned in the center for natural drainage to adjoining roughs. The roughs, in turn, are swaled and also pitched to drain into the Mukwonago River, which winds its way through the course. This natural drainage eliminates standing, and "casual" water even after a heavy downpour.