

# FAIRWAY WATERING

## Features of Typical Hose and Hoseless Systems Given

By WENDELL P. MILLER

**I**RRIGATION of the entire playing area of golf courses and polo fields is a comparatively new development except in California. The two irrigation plans shown here are intended therefore to illustrate the fundamental differences between the modern California system of hoseless fairway, green and tee watering and the present eastern method of piping the water along the edges of the fairways for use with hose and portable sprinklers.

Eastern courses which are subject to damage from drought or which desire a uniform length of course throughout the playing season are giving serious thought to the hoseless system of irrigation which is almost universal in California where economy of labor and uniformity of water application are of prime importance.

The hoseless system of irrigation that is shown for illustration was the first to be installed east of the Rockies and has been in successful operation since September, 1926 at the Country Club of Detroit. The system was installed before the snap valve was introduced. The sprinkler outlets were therefore installed in batteries of 5 to 8 outlets, each battery supplied by a 3 inch pipe and controlled by one main line valve, located adjacent to the main in the rough. With the advent of the snap valve the batteries of outlets fed from one lead from the main will be reduced to 3 units and the lead from the main to a 2 inch pipe. With the snap valve the water is available at all times at each outlet independent of any other outlet, but nevertheless, a 2 inch gate valve should be installed in the lead from the main to each battery of outlets.

### Hose System Plan.

The hose system of irrigation illustrated by the Westward Country Club plan is basically the main system of a complete California hoseless system, with the final distribution pipes in the fairway omitted. If it should at some future time become apparent to the Westwood officials that it would be more economical of labor and ma-

terials to install a partial or complete hoseless system it will only be necessary to take off the present valve serving as a hose outlet and continue out into the fairway with the distribution pipe.

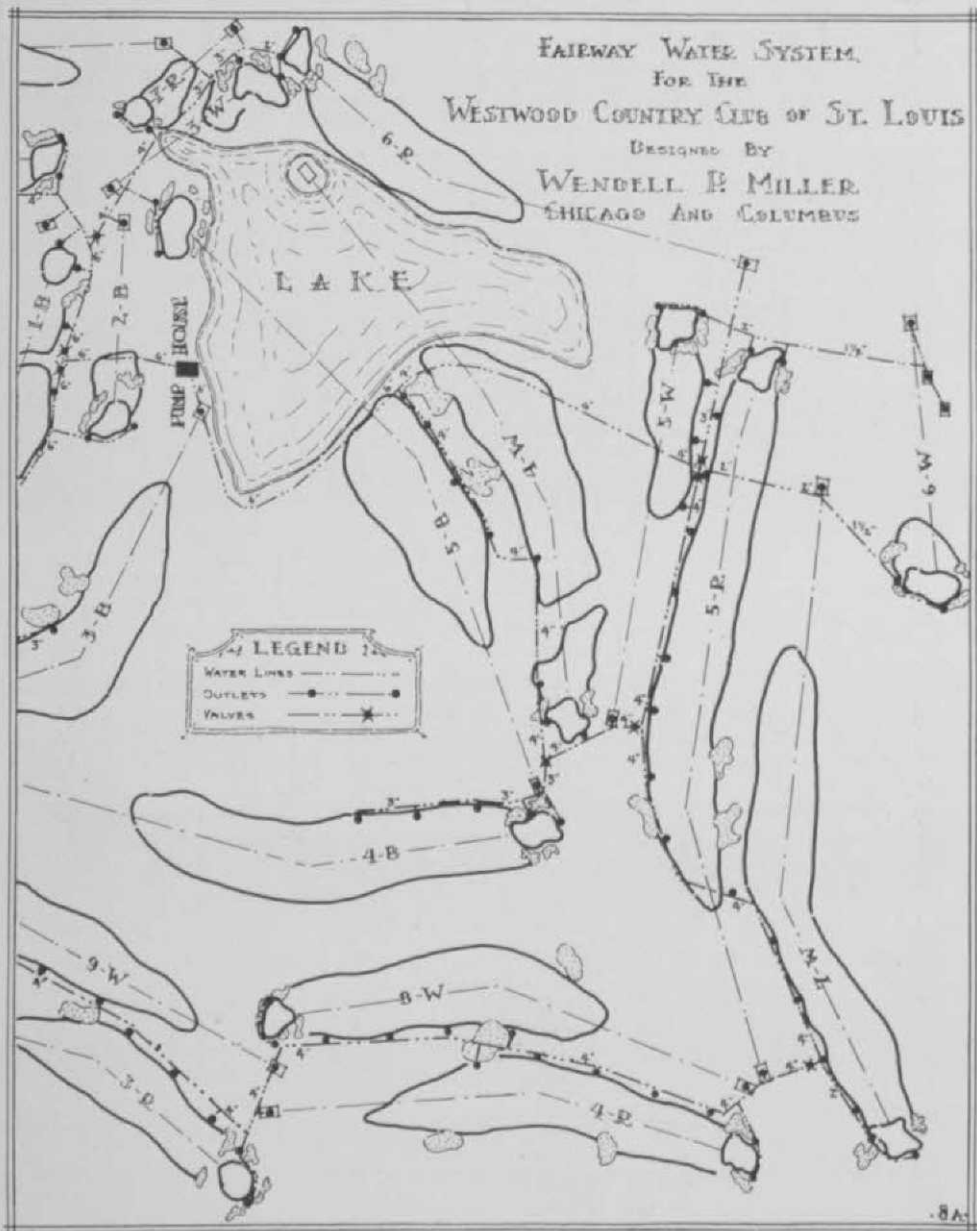
The Country Club of Detroit system provides for sprinkler outlets spaced 70 feet apart on a triangular layout. The first outlet is placed approximately 100 yards in front of the tee and all the fairway area from this point to the green is covered for a width of 150 feet. Allowance for the prevailing wind must be made in spotting the location of the outlets with reference to the center line of the hole.

In the Westwood system the hose outlet valves are placed 120 feet apart, on the edge of the fairway which will give an 80 foot center to center spacing of outlets should the permanent underground hoseless system be installed later.

The Country Club property is practically level so that a pump house pressure of 90 pounds and a minimum running pipe line pressure of 80 pounds insures complete coverage of all area served by the system. The Westwood property is more rolling and requires a pump house pressure of 110 pounds to maintain minimum running line pressure of 60 pounds on the highest points.

The Westwood pressure will be increased to 150 pounds at the pump house if the hoseless system is later installed, as the 80 foot spacing of underground outlets will require a running terminal pressure of 90 pounds to provide uniform and complete coverage under the wind conditions prevailing in St. Louis.

Running terminal pressures above 70 pounds are not practical on hose systems on account of hose fitting difficulties. The nearer the pressure approaches 70 pounds the more economical the labor of applying the water. A 20 ten foot increase from 80 to 100 feet in diameter of sprinkler coverage means an increase in area covered from 5,000 square feet to 7,800 square feet or over a 50 per cent increase in area. In

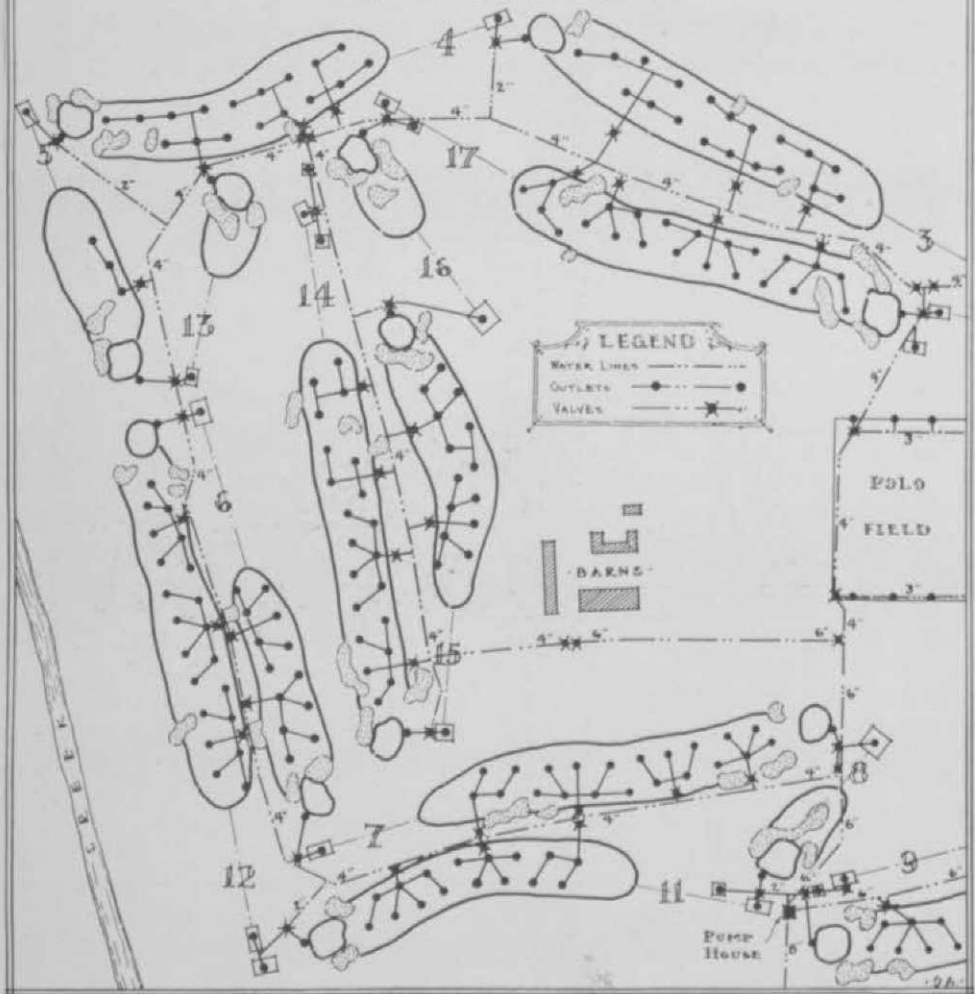


other words a sprinkler that only covers a diameter of 80 feet will require a minimum of 15 moves per acre for a hose type sprinkler whereas the sprinkler covering a diameter of 100 feet will only require a minimum of 9 moves to uniformly cover an acre. This is an increase of 75 per cent in the amount of labor required to operate the sprinklers covering only 80 foot diam-

eters over that required for sprinklers covering 100 foot diameter.

The Country Club buys water from the city at 20 pounds pressure and boosts it to 90 pounds by an automatically controlled electric motor driven centrifugal pump. Westwood pumps its water from a lake by a four cylinder gasoline motor direct con-

COMPLETE HOSELESS WATER SYSTEM  
FOR THE  
COUNTRY CLUB OF DETROIT  
DESIGNED AND INSTALLED BY  
WENDELL P. MILLER  
CHICAGO AND COLUMBUS



nected to a centrifugal pump. The country club plant delivers 450 gallons per minute and the Westwood plant now has one unit of 350 gallons per minute with a second 350 gallon unit planned for this year.

The main piping system of these two systems are identical in that they are both complete loops of 6 and 4 inch cast iron pipe with precalked lead joints. Both sys-

tems are valved at all main intersections to provide isolation laid in machine dug trenches about 2 feet deep and are graded to provide perfect gravity drainage of all lines during the winter.

Club house fire protection is provided through standard steamer hydrants located around the clubhouses and service buildings.