The Cost of Golf Course Construction

III

THE cost of installing a suitable drainage system is of course greatly dependent on the cost of digging the ditches. However, in some cases it will also be advisable to change the course of creeks and watercourses, straightening them or making new channels, etc., and frequently it will be found that this will save considerable time and trouble and will be comparatively inexpensive. Care must be exercised to do the work in such a way that a natural result will be obtained, as otherwise the beauty of the golf course will be marred by an unattractive spot.

It will often be best to divert the water from crossing some of the greens or fairways and by judicious grading and filling considerable tile drains may be avoided.

The cost of digging, laying the pipe, and filling will vary with the depth at which the tile is to be laid, and also with the size of the tile. For 3″ tile, laid 2 ft. deep, the cost will run from 2c. to 3c. per lineal foot. The larger sizes of tile must be put down deeper, but the cost of an 8″ drain should not be more than 3c. to 4c. a foot, unless it is necessary to dig a very deep trench. In some it may be possible to secure a trench digging machine from a nearby city or town. These machines, even when not very efficiently operated, will give considerably lower figures than the above. The trenching required for golf course drainage is comparatively easy and the cost will not run nearly as high as in city work. In average soil a man should be able to dig from 100 to 125 feet of 18″ to 24″ deep trench per day; if the work is efficiently done this figure might be raised still higher. Taking the lower figure, we get a cost of 2c. a foot, labor being figured at $2.00 a day. Proper allowance can easily be made for other rates of pay and for more difficult soils. The cost of the foremen will run anywhere from $2.50 to $3.50 a day but will not make a marked difference in the cost of this class of work.

The amount of ditching which will be necessary is of course variable and depends on the local conditions and the extent to which it is desired to drain the course. As mentioned before, much money will be saved to a club if the drainage is carried out on a very elaborate scale when the course is being built, rather than to wait until some future time when an unusually heavy storm does hundreds or thousands of dollars damage. Thorough drainage will prevent much of the loss of expensive seed and fertilizer, which is apt to occur when the course is new. During the past summer alone, several new courses were forced to spend large sums of money to reseed and fertilize greens which had been washed out by a sudden thunderstorm. We have in mind a course in the East where several greens were ruined simply because water flowed over them during a heavy rain, and in this particular case at least it would not have cost $25 to divert the water into other directions. Since the seed and humus alone for these greens averaged, without considering the expense of application at all, about $112, the club lost about $90 apiece, plus the cost of a large amount of labor.

At the Scioto Country Club, whose

very complete and instructive report we have had the pleasure of quoting several times, the drainage system cost approximately $9400. This figure, as has been explained before, is much larger than was anticipated at first, owing to the improvements and extensions of the system which were rendered necessary by the unusual weather conditions during the season of construction. It is very probable that sums approximating this could be spent on a great many golf courses if insurance against interruptions in the play and damage to the course is desired. The putting greens, pits and grass hollows required about 2½ miles of 3″ and 4″ tile. The drain lines varied from 3″ up to 8″, with a few feet of 10″ line. A storm sewer was constructed to take care of exceptional conditions, and for this part of the work it was found necessary to build 1100 ft. of 24″ line. The total amount of tile drain laid was about 45,000 ft., or 8½ miles. Since the total drainage expense as given above includes changing the course of a creek as well as preventing the flow of water over several of the greens by means of suitable grading, it will be seen that the cost of laying the tile itself was very low indeed.

IV

THE WATERING SYSTEM

The average course is sadly deficient in proper watering facilities. We have known a few that had none at all, to the detriment of the greens. The best course to pursue in installing a watering system is to have it designed by a competent engineering firm which specializes in this sort of work. As a rule these firms will submit complete designs and also estimates or bids for the construction work. Except in rare cases it will be more satisfactory to turn the entire work over to these contractors, and in any case no attempt should be made to make the plans. Considerable experience is necessary to design suitable watering systems and it will be cheaper to let an expert do the work.

The question of how much watering facilities will have to be supplied will have to be decided after due consideration of local conditions. The very minimum will be water at each green, but if the fairways are not to be neglected, provision should be made for watering them from end to end. An outlet should also be installed at each tee. In most cases financial considerations will determine how extensive a system can be installed, but if the course is to be kept in prime condition the matter cannot be skimped too much.

For an ordinary golf course, it will be necessary to lay from one to four miles of pipe of various sizes. It is not possible to give the exact cost of a system owing to the present disturbance in the price of piping. By ascertaining the market prices of the various sizes to be used it is not hard to figure this item. The cost of excavating, laying, caulking and backfilling will run from 10c. to 15c. or 16c. a foot, and the total cost per foot of pipe line will be from 50c. to $1.50 per foot. This last figure will vary principally with the source of the water which is to be used. If an adequate quantity of water can be secured with little or no machinery necessary, the cost will be very low, whereas if an elaborate pumping plant, well, etc., is required, the cost may even exceed the figure last given. Probably for most cases, $1.00 a foot will cover everything, including superintendence, etc.

(To be continued)