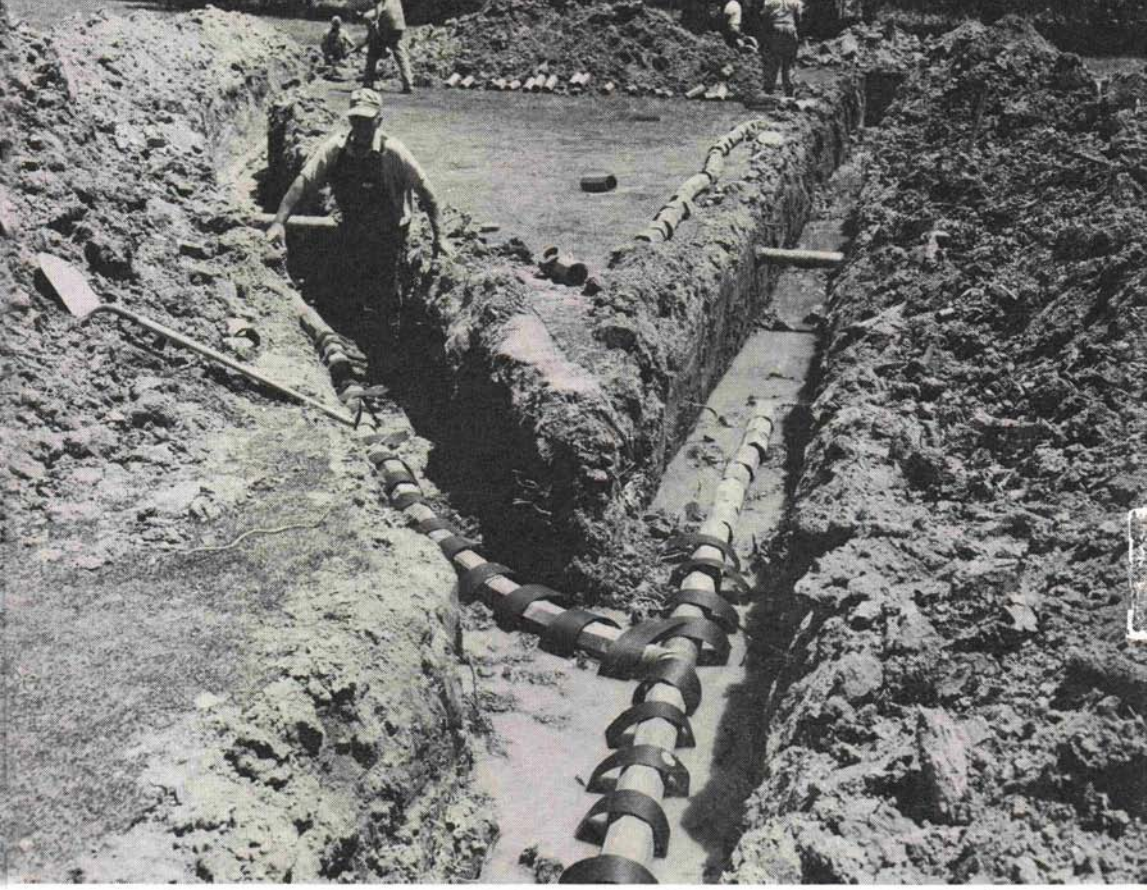

*Tiles are being placed to effect rapid removal of water seeping into the trench. Note the strips of tar paper which were to be used to cover the joints, thus keeping gravel or soil from falling into the tile line. Note also the abundance of tree roots growing out from the sides of the ditch.*

# An Open Championship And A Problem

By **ALEXANDER M. RADKO,** Eastern Director, USGA Green Section

Every club that entertains an Open Championship strives to condition its course as nearly perfectly as possible so that members will be proud to display it to competitors, spectators, and the television audience. Officials at Congressional Country Club, Washington, D. C., worked diligently toward this end in preparation for the 1964 Open last June. Then, three weeks before the Open date, a serious seepage problem became evident across the drive zone on the 13th fairway.

This problem had reared its ugly head off and on in years past at Congressional, but in the maze of other Open preparation detail, all concerned were taken by complete surprise when, despite a very dry Spring of '64, water again ebbed to the surface. In no time the soil and the turf became sopping wet! Now a perfect drive on this hole could become embedded or an otherwise unfair lie could occur. Of course, a ground-under-repair area could be marked off, but this would have broken

*The job at Congressional is nearly complete. Tile has been installed, the gravel backfill is in place. Now a small amount of soil will be replaced and the sod laid back and tamped smooth, ready for the Open.*

the hearts of everyone concerned with conditioning the course—to have the drive zone of one hole marked under repair when all else looked to be shaping up perfectly. What a dilemma! What to do?

Without hesitation, the officials responsible decided to drain it! There wasn't a moment to lose and they well knew it. This was May 25, three weeks before the Open was to begin.

Fate was on Congressional's side for when officials contacted the local Soil Conservation Service branch of the U. S. Department of Agriculture someone was available and could immediately come to assess the situation and draw up the plan for effective drainage. After studying the situation Soil Conservationist Lewis Williams and Conservation Technicians Jim Cole and Bill Knill decided that a double line extending across the entire fairway was required to harness the fresh water spring and by means of tile direct it so that it would drain into the pond to the right of No. 10 green.

The material and equipment required were: 60 tons of ¾ inch gravel, 60 feet of transite, 600 feet of drain tile, a back hoe, a front end loader, a power sod cutter, polyethylene tarps, and tar paper.

The technique employed was as follows:

(1) Approximately 300 square yards of sod were removed to the drainage pattern; it was rolled and set aside for replacement when the job was finished.

(2) Soil then was removed from a

depth of 9 to 48 inches, and was placed on the polyethylene tarps laid to either side of the ditch to minimize damage to the established turf.

(3) The tiles were carefully installed and each joint was wrapped with tar paper as shown in the accompanying photographs.

(4) Tiles then were covered with 8 inches of gravel, and the soil was carefully replaced and tamped.

(5) The lifted sod was relaid.

All was done so well that hardly anyone realized the fairway had been touched. How long did it take? Being in on preliminary conversations, I was amused at the "pop-eyed" reaction of the Soil Conservation representatives when Walter Gallagher, Frank Murphy, Otie Reed, and John Henley — club officials and superintendent, respectively—said, "We'll get the job done tomorrow!" They couldn't believe that Congressional's representatives were serious. Didn't they realize the magnitude of the project? Well, it took two tomorrows, but the job was beautifully done, and the USDA men went away convinced that to get beautiful grass to grow underfoot the Congressional officials would stop at nothing!

# Turf Management at Brae Burn

By **ARTHUR E. ANDERSON**, Golf Course Superintendent

This article is a description of the turf management program at Brae Burn Country Club, Newton, Mass., beginning in the 1930s and developing from recommendations, observations, experiments and results. Help from other superintendents, the USGA Green Section, university turf specialists and commercial men in formulating this program was very considerable and is gratefully acknowledged by the writer. Use of the word "experiment" is misleading because these "experiments" were very roughly qualitative; there were no control plots, and treated areas were later obliterated by what was determined to be the best management program, as the area was part of an operational golf course rather than a turf research field station. Readers are cautioned to interpret this report in terms of the results obtained with the reservation that specifically how and why this program succeeded cannot be pinpointed closely.

The present course evolved during the period from 1897 to 1928 with several greens remaining unmodified since the beginning. It is located on an area of fine sandy loam except for two holes that are on a former peat bog. In early days manures were used as fertilizers, bringing in many weeds, and commercial fertilizers had rations like 4-8-4 or 8-6-6. In 1934 limestone at one ton per acre was applied to greens, tees, and fairways and repeated the next year at one-half this rate. By the late 1930s the pH reading of soils ran from 5.0 to 5.5, and phosphorus and potassium levels were reported to be very high. Basic grasses in fairways were Kentucky bluegrass and bentgrass, but they did not predominate because of the abundance of broadleafed weeds, annual bluegrass, and crabgrass. In 1937 grubs greatly reduced the amount of basic grasses, leaving essentially clover and annual bluegrass with severe summer infesta-