



The 11-acre lake used for irrigation and recreation at Athens Country Club. The golf course crosses the lake four times.

Forty Years With A Drainage Problem

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I suppose the background of our golf course is a little bit unusual in that it has had only two superintendents since it was founded in 1926. My father organized and built the course with the aid of Donald Ross, the noted golf course architect, just before the depression years of the early 1930's. My father died in 1947, and since that time it has been my pleasure to be golf course superintendent.

We are situated in northeast Georgia, near the Smoky Mountains, in an area that receives 40 to 50 inches of rain each year. The abundant rainfall at times creates real problems; occasionally we are subjected to monsoon downpours. An example occurred last April when nine inches of rain fell within a 24-hour period, and most of it within four hours.

We have a beautiful 11-acre lake that is used for irrigation as well as for recreational purposes. Our course crosses the lake four times.

For 40 years, we have lived with the problem of what to do with the runoff water during a heavy rain. The drainage area above our course is approximately 300 acres of open uncultivated land and timberland.

To correct the situation, an earthen dike was constructed around the lake, which was subject to receiving this runoff water when the course was constructed. This dike was built at great expense in 1926, and it served the purpose of diverting flood water and of keeping the lake clear for recreational purposes.

The real problem occurred at the lake dam where the diversion water had to be lowered approximately 25 feet to the creek bed below the dam. Four times during depression years my father made attempts to lower this water through different types of raceways built of rocks, logs, and other inexpensive materials. Each time floods spoiled his efforts. Then again in 1950,

when the club was in a better financial position, the Soil Conservation Service gave us plans and specifications, and a dike and concrete raceway were constructed. We thought we had the problem solved.

Then the 9-inch rainfall destroyed this dike. We almost had a disaster since the dam along the diversion ditch came within a couple of feet of breaking and destroying our lake and golf course.

This time, I secured the help of J. G. Beacham, for many years the city engineer of Athens, who gave us plans and specifications designed to overcome the problem. His approach was as follows:

1. A complete study was made of the drainage area surrounding the club property from U.S. Coast and Geodetic Survey maps. This included anticipating urbanization of the area in the future. All calculations were based on federal highway specifications of four inches rainfall in one hour, with a frequency of once in 25 years.

2. Since the drainage ditch had always been a maintenance problem, we decided to pave the bottom of the ditch approximately five feet wide with 24-inch slopes to carry normal water flow. This will allow all of our equipment to maintain slopes without hand work.

3. New stone and concrete bridges were built to carry golf carts and equipment traffic at all fairway locations to speed maintenance and play.

4. For the trouble area around the dam and lake, Beacham designed 640 feet of 84-inch metal drain pipe, fully asphalt coated, with a paved invert. This was set on a 2.5 percent grade and included two drop catch basins of concrete that serve to dissipate the force of water, and also as cleanouts in case debris collects during floods.

5. The terminal catch basin also includes a 30-foot section of gabion wall and floor as added protection to the banks of the creek. This material, a series of galvanized metal baskets filled with stones, was chosen since it is flexible enough to change positions due to settling without the danger of cracking.

The project required six months to complete and cost our club \$45,000. We hope it serves the purpose of protecting our lake, providing ease of maintenance, and speeding up play along the diversion ditch for our 650 members for many years to come.



The beginning of the 640 feet of the 84" metal drain pipe laid at 2.5% grade with two reinforced concrete catch basins.



The drain ditch is covered and the metal pipe in underground. Major floods can go to the extreme left if pipe is too small.

The outlet with gabion shows the end of a 40-year drainage problem.

