FIELD REHAB REDUCES RAINOUTS AT OLE MISS

BY **KURT D. TISDALE**

Just a little rain used to flood the University of Mississippi women's softball field, but not any more thanks to recent renovations.

"Both the infield and outfield were non-playable after a half an inch to one inch of rainfall," explains Clay Stewart, President of Stewart Environmental Construction, Inc. The Tupelo, MI-based firm specializes in sports field and golf course construction and renovation.

"[The renovation] addressed several problems dating from the original construction. Due to those problems, the university had to make numerous repairs and upgrades over the years," Stewart says. "The original grades, which were done mechanically, had deteriorated and drainage was not moving fast enough. Using new technologies not available at the time of the original construction, we've been able to improve both the surface and sub-surface drainage. We've changed some existing grades to meet our desired drainage criteria, and altered the tight soil configuration to allow more percolation."

First, the crew used a Caterpillar 262 skid steer loader to remove the existing turfgrass. After stripping the sod and removing the existing drainage system, Stewart and his crew began establishing new grades for proper drainage and creating a different soil profile for all turf areas. A Cat D4G LGP track-type tractor smoothed the varied elevation of the existing grade, providing a consistent profile of material, according to Stewart. "We used the D4G dozer to create a level plane and decrease mounding between the planes," he says. "The existing grade had undulations, so we had to remove some soil and do some cut-and-fill. This size machine was ideal for the job, not too big for a small area, but strong enough for the work involved. Once we laser-shot the desired sub-grade, the dozer was able to get to that level without having to re-establish the elevation."

The finished grade of both surface and sub-surface now measures one percent, an increase from the 0.8 percent average of the original grade. "We laser-graded the existing sub-grade," Stewart says. "We installed a larger storm drainage system for surface runoff, and a complete under-drainage system, with 4-inch laterals tied into 6- and 8-inch storm drains." The new irrigation system is designed to connect into a new central system currently under development by the university.

The crew used a Cat 303CR hydraulic excavator to install both the main trunk line storm drainage and the under-drainage system. "We used an excavator instead of a trencher because the excavator can also load a dump trailer. This way we avoided double work," Stewart reports. "In addition, the existing soil was so heavy with clay that a trencher would have had trouble staying on grade."

The sub-surface drainage uses N-12 ADS perforated pipe, chosen for its double wall design, which could be used for both surface and sub-surface. Nyloplast catch basins collect the surface water.

"On the field itself, we've employed a lab-tested pea gravel and a USGA sand mixture. Changing the soil profile improved the percolation rate from 3 to 4 inches an hour to our desired rate of 13 inches per hour, when mixed with the native soil. Testing verified that the sand will bridge over the pea gravel and won't infiltrate it."

Stewart Environmental used a calcinate clay material on infield skinned areas and installed a new warning track of crushed red stone. The crew put down a new field-tested variety of certified 419 Bermuda turfgrass, chosen for its traffic tolerance, denser growth, and greater propensity for self-repair. "It's also more drought and cold tolerant," Stewart says.

After the modifications to the surface and sub-surface drainage system, Stewart says that now even after a 2-inch rain the water moves fast enough to make the field playable within 30-45 minutes. **ST**

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