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Solving a mud problem

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The Howland High School football field quickly became a muddy mess every season.



Jim Puhalla, president, Sportscape International.

Howland, OH — Howland High School had a terrible mess on its hands last year. The football field kept flooding and, within a few short games, the players were struggling to play ball on a muddy mess. It was not only unsightly, it was unsafe.

The Athletic Department put out a call for proposals to correct the problem and finally chose Boardman, OH-based [Sportscape International](#) to reconstruct the field this summer. Sportscape's president, Jim Puhalla, is a co-author of *Sports Fields: A Manual for Design, Construction and Maintenance* (Wiley, 1999).

Puhalla says he has no doubts about why his firm won the job.

"The first thing we did to win their confidence was to tell them we needed to do a survey," Puhalla says. "A full-blown plan. We're a design/build company so that's our first step. That's how I found out their problem was that half the field was only graded at less than .5% and the other half was 1%. So what they needed, and the cheapest option, was to slope the field side-to-side with a

What's your take on the he-said/he-denied back and forth over the alleged use of banned substances by Roger The Rocket Clemens? At stake is his enshrinement in the most over-rated club in the world, the MLB Hall of Fame. Clemens, a seven time Cy Young winner is the most dominant pitcher since my all-time favorite Bob Feller of the Cleveland Indians. (What a contrast in their careers - indeed the times -with Feller serving in the U.S. Navy during WWII at the peak of his career, and Clemens suspected of cheating.)

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Puhalla explains that the least expensive way to eliminate the existing turf was to turn it over.



After the surface was laser graded, the crew began installing the irrigation. Because the design called for 4,200 feet of diagonal strip drains at 12 in. deep, the irrigation was installed at 18 in. deep.



The sideline drain is the collector drain for all

1% grade."

Other bidders had not only not done a site survey and a plan, but all the others had proposed importing soil to create a crown. Puhalla advised the athletic department to use their native topsoil and not put down a sand layer. His reasoning: water would drain to their native soil just fine through the proposed sand-based sod.

Puhalla convinced the athletic department to invest in a system of diagonal strip drains that would feed into a catch basin. This, he believed, would solve their water-logged field problem.

"I won their confidence by giving them a choice. The crowned field choice would have cost almost double what we spent," Puhalla says.

The work began June 15 and proceeded in four stages:

Stage 1 (1 week) : Plow under the existing turf, pulverize the soil and laser grade the surface.

"The least expensive way to eliminate the existing turf is to simply turn it over. This is the old-fashioned plow method they still use in farming," Puhalla says.

The field was laser graded with a bulldozer three different times: twice from end zone to end zone and once from side to side. "Laser grade more than once, that's the key to getting the grade set really nice," Puhalla says.

Stage 2 (1 week): Install the irrigation at 18 in. deep, the collector drain and catch basin. The collector drain at the

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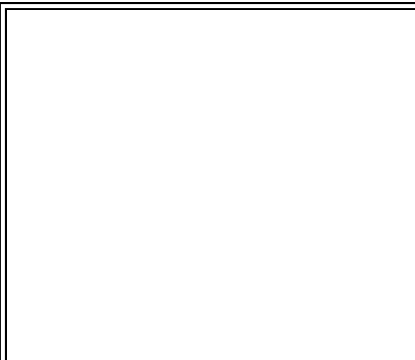
the strip drains and for the surface. It feeds into the newly installed catch basin.



The strip drains feed into the 6-in. connector drain.



The crew fills the diagonal trenches that contain the strip drains with coarse sand.



low end collects water from both the strip drains and the surface via a sideline drain filled with gravel.

Stage 3 (10 days): Dig 12 in.-deep diagonal trenches 15 feet on center, remove the debris and install 4,200 feet of strip drains. Puhalla filled the trenches to the top with coarse sand. "We worked over time there Saturday and Sunday to get that done," Puhalla recalls.

Stage 4 (1 week): Prepare the field for the sod, power rake it, loosen the soil back up, lay the sod. The athletic department chose to work with sand-based sod from [Magic Carpet Turf Farms](#) in Southwest Michigan which presented some challenges. The sod had to be shipped 400 miles in refrigerated trucks, and delivery had to be coordinated taking into account weather conditions in the two different locations.

"We had to time it so they would be cutting eight hours before they shipped it," Puhalla recalls. "I learned that it's pretty hard to work with sod companies that far away because of weather conditions. When it was raining there, it wasn't raining here and when it was raining here it was clear skies at the sod farm."

Puhalla delivered the reconstructed field on July 20 and the players were out on the fields three weeks later.

Puhalla says the way to get to such a successful result begins with the site survey and plan.

"I always advise against going out and moving dirt around without a plan when you start building a field," he advises. "But I know people do it all

the time."



After the completion of sodding.



Four weeks after sodding, the field was ready for play.



With its thousands of feet of drainage, this field will never be muddy again.

About the Author



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