

Short Burst, Big Savings

In the midst of a \$53 million addition to the Mechanical Engineering building on the Purdue University campus in Indiana, it was discovered that a 15-foot deep, 12-inch clay sewer lateral that serviced the building had a collapsed section of pipe.

“Due to the nature of the break, lining was not an option,” said Brad Rynearson, project supervisor with TPI Utility Construction (TPI). With project phases being held up by this break, and students roaming the campus, the pipe had to be replaced promptly, safely and most of all, within budget.

“The lateral was only 75 feet long, but because of the depth, the shoring alone was estimated at more than \$50,000 if the job had been open cut,” said Rynearson, “This quickly moved the mood toward a different solution.”

There were only two methods possible for this particular situation: open cut or pipebursting. It quickly became obvious that open cut replacement of 75-feet of pipe would be an expensive proposition, plus safety concerns for thousands of students navigating around a 15-foot deep open trench on a daily basis.

Enter pipebursting

For more than 20 years, the pipebursting method has experienced exceptional growth worldwide. Bursting is a method where the existing pipe is fractured by applying outward pressure inside the pipe, expanding the annulus and pushing the cracked pipe into the surrounding soil while at the same time pulling in new pipe.

The potential impact on social, financial and safety issues were major factors in deciding to use the pipebursting method at the Purdue project. “A pipebursting job is usually considered high profile when it contains long replacement lengths, large diameter pipe or multiple up-sizes,” said Nate Hrabosky, Midwest territory manager at HammerHead. “However, the job completed at Purdue University was a notable exception.”

According to Rynearson, Purdue University saved an estimated 75 percent over open cut costs and the job was completed in three days versus three weeks.

Executing the job

“I contacted Gary Nirich of Vermeer Midwest in Indiana, he was instrumental in assisting TPI with equipment selection,” said Rynearson. “After a short meeting, we decided that the best equipment for this

particular job was to use an 8-inch HammerHead Mole pipebursting tool, 12-inch head and the HydroGuide HG12 winch.” By using an 8-inch tool with 12-inch bursting head, they were able to utilize the Earth Tool Company patented manhole exit method which saved an excavation.

Happy customers

The most challenging aspects of this project were the tight working spaces and assuring the safety of the students walking the grounds. “The pipe and the equipment had to be craned in and out to even get to the site,” said Rynearson. It was important to execute the job quickly as the University was not too keen about having a 15-foot deep hole in close proximity to the student’s walking path. “Having the proper equipment helped us execute the project quickly,” said Rynearson. The winch has a hydraulic deployable boom that only took 15 minutes to setup. After that, it was only another 20 minutes of actual pipebursting time to get the 65 feet of pipe in the ground.

There is no doubt that Purdue University was happy with the results. In addition to the dollar and time savings, the expansion project was put back on schedule and much of the existing landscape was preserved. “I want to thank all those involved from Vermeer and HammerHead for helping us prove to Purdue University and others that trenchless technology has a place in the utility construction field. It saves time and money,” says Rynearson. “There is no doubt that pipebursting was the right method for the job, never go to a gun fight with a knife.”

FOR MORE INFORMATION:

Utility contractor:

TPI Utility Construction, (317) 769-4777

Purdue engineering:

Purdue University, Utility Plant Office Facility, (765) 494-3415, purdue.edu

Lateral pipebursting:

HammerHead, (800) 331-6653, hammerheadmole.com



Top: Space was extremely limited. The pipe had to be held by crane on the jobsite. **Bottom:** The HydroGuide HG12 winch has a hydraulic deployable boom that only took 15 minutes to setup.