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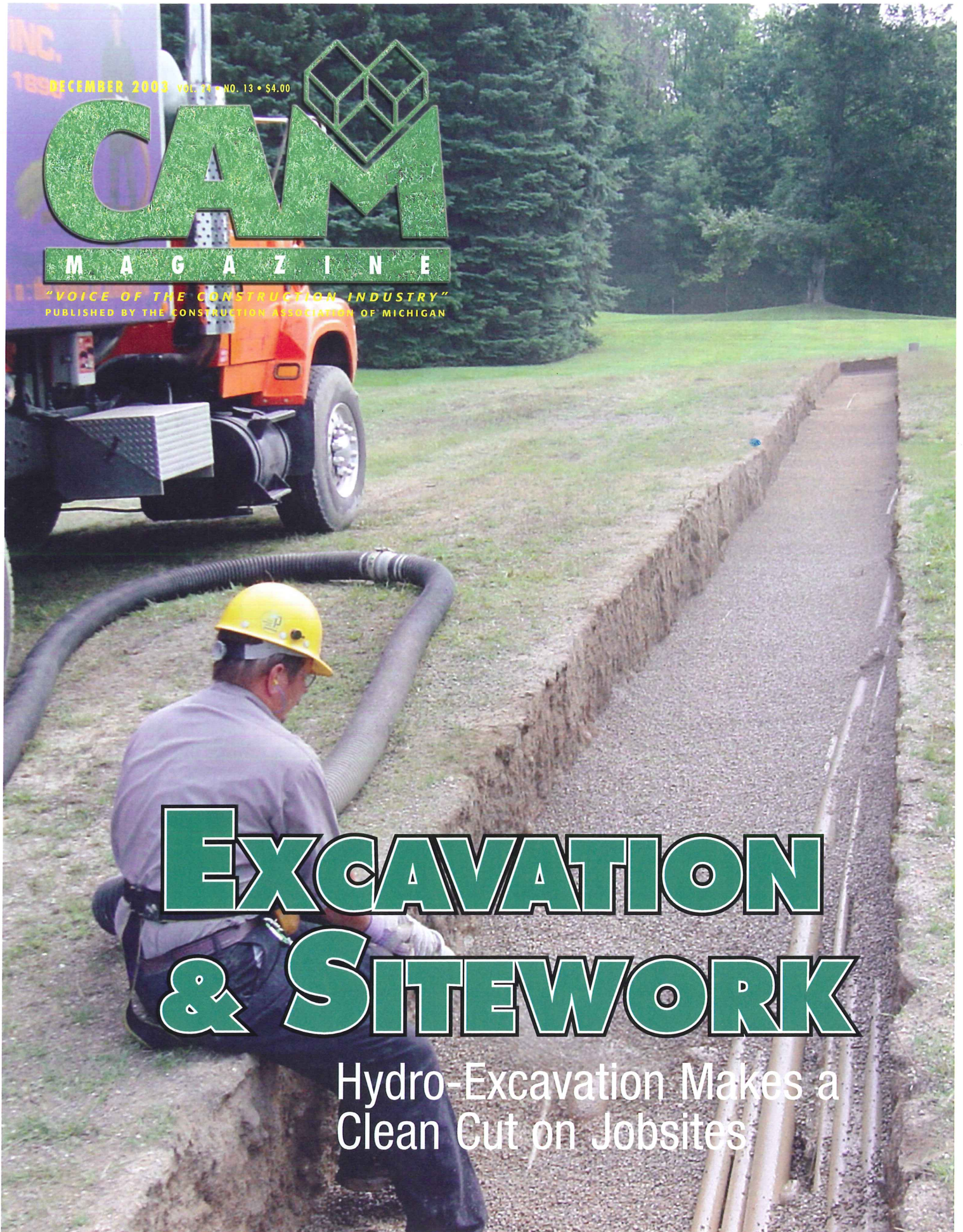
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EXCAVATION & SITEWORK

Hydro-Excavation Makes a
Clean Cut on Jobsites



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THE GROUND WORK FOR SUCCESS

A Different Approach to Excavation and Turf Restoration – Doetsch Industrial Services, Inc.

By: Wendi Sawchuk, Associate Editor

One of the most dangerous factors of any excavation project is the complex network of pipes, wires, cables, etc. that lie below the surface. This vital underground infrastructure carries such things as electricity, gas and water, and gives life to everything above ground. Thus, whenever excavation work is performed on a project, it must be done in such a cautious manner so that the network is not disrupted. Most excavation work is either done by conventional machinery or using shovels to dig by hand. Unfortunately, when the project takes

place in sensitive areas where there are utility lines running in various directions, conventional machinery is usually too cumbersome and the risk of severing one of the lines is quite high. Typically, the only other method to use in these areas or tight spaces is to hand dig using picks and shovels.

Doetsch Industrial Services, Inc., Warren, has recently adopted an excavation alternative that has been used in Canada for decades. Hydro-excavation is the answer for any specialty project where the space is too restricted for workers with shovels to even fit and move around in, as well as for jobs that

require delicate maneuvering around underground utilities. In addition, the company has also incorporated a unique method of erosion control that uses recycled materials on turf restoration projects.

A CLEAN CUT

Instead of machinery or shovels, hydro-excavation cuts the earth using 3,000 lbs. of water pressure through a small hose about a half-inch in diameter. With workers staying on the surface at all times, this lance of high pressure water is pointed directly at the specified area of ground and performs the necessary cut



TOP: Mike Mehal (left) and Don Landis (right) apply the compost to a vegetated wetland by pneumatic conveyance at Quarton Lake. The process did not disrupt the existing plants at any point. RIGHT: Doetsch had completed the actual conveyance of the compost at Quarton Lake by the end of July 2003. BOTTOM: Dave Black (left) and Jason Hale (right) gradually uncover and expose a massive underground configuration of pipes and wires by using hydro-excitation.

hand digging, the Doetsch workers did not need to physically crawl into the tight space to dig. They stood on the surface and shot the water down and followed the cut path in a much quicker fashion. The ability of workers to stay above ground while excavating is also a safety feature, helping them to avoid the risk of a trench collapsing down upon them if they are several feet below ground.

Aside from the obvious safety and time-saving benefits of the process, hydro-excitation allows the digging work to be done during the cold climates when the ground is frozen. Every truck that supplies the water also has an onboard boiler to heat it. Typically, this type of work is rarely done during the winter due to the almost rock hard surfaces. However, the heated water allows the earth to be simply cut just as if it were spring or summer. "This process has

with precise accuracy. While cutting the earth, the water lances do not disturb or damage any underground infrastructure. "We are able to dig in sensitive areas," said Joseph G. Schotthoefer, IV, field supervisor, Doetsch Industrial Services, Inc. "Normally, you hear of an excavating machine that hit a gas line or some other utility line and caused a complete disaster. That is something that we can totally avoid with this method." The 3,000 lbs. of pressure is just enough to cut the earth, but not strong enough to cause any harm to the lines. In many cases, the process is used for line location underground. Not only does the lance cut into the earth, but the water also washes away the dirt from the infrastructure in order to clearly expose everything below.

In fact, a local utility company had contracted Doetsch to perform hydro-excitation at various locations. At one point they were called out to dig about five feet below a building in order to replace some piping. The space was severely restricted above and below ground with pipes and wires running in several directions. "It would have almost been impossible to physically take a shovel and lift it up and throw the dirt out of the building," said Schotthoefer. "With hydro-excitation, we were able to just point our water lance at the necessary spot and perform the cut." Unlike



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The turf restoration process (pneumatic conveyance) that Doetsch Industrial Services, Inc. used on the Quarton Lake project in Birmingham yielded significant vegetation growth in only a matter of about 15 days after applied.

been used up in Canada for years because the ground is frozen most of the year and it was the only way they could excavate," said Schotthoefer.

Another factor that makes hydro-excavation "a clean cut" is the vacuuming of excavated material. As the workers are cutting the earth, an 8" diameter hose simultaneously vacuums all of the slurry directly into a truck. "We are able to excavate an entire area around a massive configuration of piping without leaving large piles of dirt behind," said Schotthoefer. Unlike conventional excavation with machinery or hand tools, the hydro-excavation process disposes of all material immediately and efficiently, and eliminates the need of having the piles of material trucked away, and of finding a location to properly dispose of it all.

PNEUMATIC CONVEYANCE

Once Doetsch had adopted the hydro-excavation process, they wanted to find a way to restore the turf for their customers after everything was located and the project was complete. "We thought that if we could blow rock or sand back into the excavated areas, it would be a great service," said Schotthoefer. They teamed with FiltrexTM International, based in Cleveland, that uses recycled yard waste/compost for erosion control

and vegetation establishment. The yard waste/compost is taken to a place that recycles it into nutrient-rich dirt for ample growth. "It's a natural process where the material heats and cooks itself and has every appearance of dirt by the time it's done," said Schotthoefer. "Once it is recycled into reusable dirt, we purchase it and pneumatically convey the material onto the surface. We have found that it has great erosion control

benefits, as well as being very nutrient rich so there can be full grass growing within two weeks."

Recently, the company completed a turf restoration/erosion control project at Quarton Lake in Birmingham. With Hubbell, Roth & Clark, Inc., Bloomfield Hills, as the consulting engineer and Restoration Dredging, Inc., Auburn, as the general contractor, Doetsch became part of the team to make Quarton Lake a beautiful attraction to residents as well as visitors. By pneumatically conveying 2,000 yards of recycled compost around five total acres of land, they were able to put the finishing touches on the long awaited lake restoration project. "With this process, we are able to simply blow the material out of the hose, and the truck itself is set up so that we can inject the seed directly into recycled mixture and it all comes out at the same time. That way, we don't have to go back

and seed it after it's on the ground, nor supply additional erosion control measures. Thus, it's a one-step, efficient process," said Schotthoefer.

The nutrient-rich recycled compost and grass seed mixture was pneumatically conveyed around the lake toward the end of July 2003. Schotthoefer took several photos of the grass growth to document the progression each day. By August 15, 2003 the five-acre area around the lake had shown substantial growth. Although a few small patches grew in more slowly than desired due to some unexpected variables, the overall growth rate has been remarkable. "After vegetation was established, the application even endured through the hot spell in mid-August. When we came back to water, nothing had really died in that three week period," said Schotthoefer. "It's a good process in terms of establishing roots and good vegetation."

GROUNDWORK FOR SUCCESS

Doetsch Industrial Services, Inc. has definitely adopted two unique methods of excavation and erosion control that have proven successful. Not only is the hydro-excavation service safer, cleaner and more efficient than conventional digging methods, but it's environmentally conscious, as well. It leads to less material removed and decreased environmental disruption.



(Left to right) Tom Vilburn, Jim Steiner, Chad Treglowne and Dave McKellar view their recently completed 850-cubic-yard excavation. The hydro-excavation process successfully uncovered and exposed everything underground without disruption or damage.