



# INDIANA CONTRACTOR BORES AND POURS IN DEEP EXCAVATION



By James McRay

**S**outh Bend, Indiana, like so many other big communities, is in the midst of storm-sewer separation upgrades. For many cities, that can mean miles of new pipe or upgrading utilities. And with these separation projects occurring inside the city limits in most cases, it's usually very congested around excavation sites and frequently not easily accessible.

When these pits need to be very deep, safety of workers and construction personnel becomes of utmost importance. A safe, reliable shoring system is a critical factor in bidding the work, but tried-and-true trench shields or sloping are almost immediately ruled out as a viable option. What to do?

## NEW SYSTEM OF CHOICE

Traditionally, deep excavations usually meant driving tight-sheeting; a cumbersome, expensive, long, and loud operation. In the past couple of years, however, "slide rail" has become the new system of choice for deep digging contractors.

"It's in a really tight spot in a narrow street in a residential area," says Todd Bell, vice president of Woodruff & Sons, Inc. Contractors, of the Twyckenham Drive excavation site. Woodruff



*Above: The sheeting was perfect for boring the 72-inch-diameter pipe, which was handled by boring specialists L.J. Keefe, out of Mt. Prospect, Illinois.*

*Left: The excavation is in a very tight spot in the right-of-way of Twyckenham Drive in a residential area of South Bend Indiana, eliminating the possibility of trench shields or sloping. Instead, Woodruff & Sons, Inc. Contractors installs a Slide Rail System from Efficiency Production, just a few feet from existing structures.*

was the low bidder on a portion of the sewer separation project installing 72-inch-diameter RCP storm sewer and outfall into the St. Joseph River. The Michigan City, Indiana, contractor is also pouring-in-place a 12-by-12-foot drop-assembly structure, while boring in the pipe from the same excavation pit. "On one side of the pit, the system is only 3 or 4 feet from a structure," Bell adds.

With an obviously challenging excavation ahead of them, Bell contacted Efficiency Production, Inc.—a leading manufacturer of Slide Rail Systems and trench shoring equipment. "This is the second time we've used Efficiency's Slide Rail in 2 years. Last year, we used it on an excavation project in Michigan City," adds Bell. "We really like (their system)."

## CUSTOM-DESIGNED FOR PROJECT

Efficiency's Slide Rail Engineers and CAD technicians quickly drew up a custom-designed system that would work for Woodruff's

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heavily congested site conditions, and reach a final grade of 35-feet deep. "Actually, we've designed and installed a number of Slide Rail Systems for contractors that go 35-feet deep or more," says Greg Ross, Efficiency's manager of slide rail systems, who was on-site for the initial installation. "It's just one of many shoring challenges we've overcome with our Slide Rail."

"It's really cost effective, especially compared to sheeting," adds Bell. "On our last project, I'd say we saved about 10 to 20 percent by using Slide Rail instead of sheeting; and we can keep our own guys working, rather than hiring a sheet piling company or driving sheet piling ourselves."

Efficiency's Universal Slide Rail is a component shoring system comprised of steel panels (similar to trench shield sidewalls) and vertical steel posts. The versatile system can be used in a variety of configurations, such as small four-sided pits; large unobstructed working pits as big as 50 by 50 feet with Efficiency's ClearSpan™ System; or in a linear Multi-Bay™ configuration to install length of pipe over 40 feet.

Woodruff is utilizing a two-bay, 4-Sided Multi-Bay™ Configuration which provides a larger unobstructed area for installing tanks, vaults, and other structures. For Woodruff's installation project, an unobstructed opening of more than 28 feet was made possible utilizing Efficiency's unique Parallel Beam cross-trench support design incorporating external ClearSpan™ waler I-beams.

## EXCAVATION DEPTH CHALLENGE

The biggest challenge for Woodruff, however, wasn't the inside dimension of the pit, but rather the depth. Slide Rail is installed simultaneously as the trench or pit is excavated by sliding the

panels into integrated rails on the posts. Efficiency offers a unique triple-rail post that incorporates an outside slotted rail and two inside "open-faced" rails. The open face design helps eliminate the system binding as it is dug and pushed into place because the inside panels have a little "slack."

The Woodruff also utilized Efficiency's exclusive Shore-Trak™ Sheeting Guide Frame, which integrates into the Slide Rail System, replacing an inside panel, and allows sheeting to be installed on one end much deeper into the excavation. This allowed Woodruff to use 24-foot lengths of KD-6 Sheeting, rather than more difficult-to-handle 36-foot-tall sheets.

The sheeting was perfect for boring the 72-inch-diameter pipe, which was handled by boring specialists L.J. Keefe, out of Mt. Prospect, Illinois. Abonmarche Consultants were the engineering firm for the project. The \$4.2 million project began in November 2009 and is scheduled to be completed by November 2010.

Woodruff & Sons, Inc., is a multi-faceted construction company with an extensive history of quality work in sanitary sewer installation, water transmission, storm drainage improvement, as well as many other excavation-related projects. With two locations in Florida and headquartered in Michigan City, Indiana, they are a state licensed general contractor, underground utility and excavation contractor, and class V fire sprinkler contractor.

Efficiency Production, Inc., "America's Trench Box Builder™," provides the widest selection of standard and custom trench shielding and shoring systems in the industry. Efficiency's versatile products are designed specifically for safe and cost effective installation of utility systems and infrastructure improvements. All products are P.E. certified to meet OSHA and MIOSHA requirements. ■

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