



# **CREATIVE** **IDEAS** **IN SHORING & SHIELDING**

**Volume MMV, Issue 1**

**Zito Construction**  
**"Goes Deep"**  
**with Triple Slide Rail to**  
**Install New Grand Blanc**  
**Pump Station**

**As Seen In:**

*Michigan Contractor  
& Builder*

May 7, 2005, Pg. 4

*Cross Section*

Summer 2005, Pg. 70-71

*The Clarifier*

Spring 2005, Pg. 14-18

**I**n football, “going deep,” means attempting an all or nothing pass to the end-zone. It is one of the most exciting plays in football, and it can leave fans both delighted and bedazzled.

“Going deep” in utility construction is also one of the most exciting and challenging executions a contractor can attempt. Recently, Zito Construction of Grand Blanc, Michigan, dug over 42 ft. deep to install a 12 ft. diameter pre-cast concrete wet-well for Grand Blanc Township.

### **Community Growth Necessitated New Pump Station**

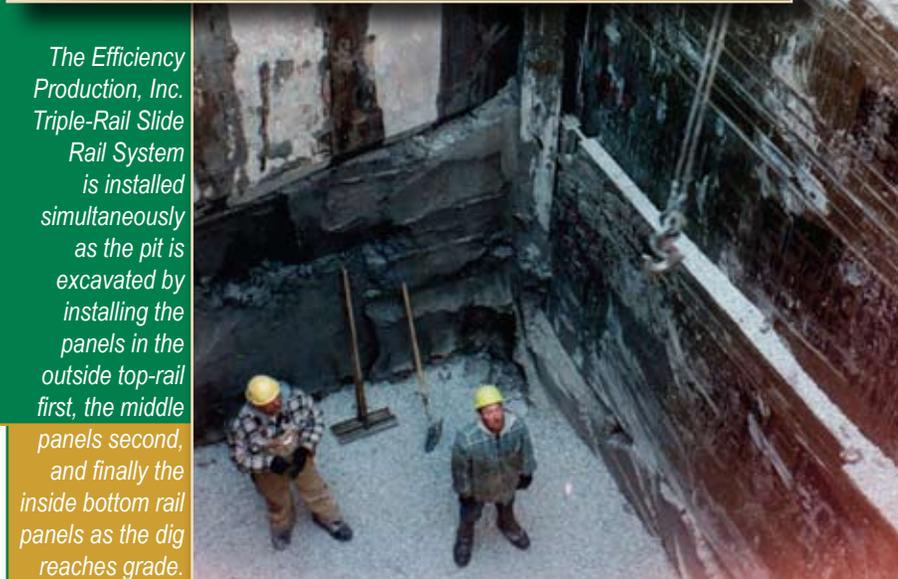
The Grand Blanc area has seen a tremendous amount of new development over the past 10 years. The new community growth simply overwhelmed the existing 36-year-old pump station, prompting the Township to let the \$402,625 project to replace it.

### **No Room to Spare**

Northern Concrete Pipe in Bay City, Michigan, supplied four, 8 ft. tall wet-well sections; one 6.5 ft. section; a 14 in. cap; and a 14 in., 14 x 16 ft. square well-footing.



*Careful and skilled operation is required to lower the only 14 in. of clearance on the short side!*



*The Efficiency Production, Inc. Triple-Rail Slide Rail System is installed simultaneously as the pit is excavated by installing the panels in the outside top-rail first, the middle panels second, and finally the inside bottom rail panels as the dig reaches grade.*

From the bottom of the footing to the top of the cap, the wet-well was 40.9 ft. tall.

Because the new pump station was being installed near a drainage ditch, the existing pump station, and a golf course; it was critical for the pit to be excavated precisely and the shoring system installed to engineered specifications.

### **Slide-Rail System Provides Solution**

Efficiency Production, Inc. in Mason, Michigan, designed and engineered a custom shoring system for the tight, deep pit, utilizing their innovative Slide-Rail System with triple-rail corner posts. After excavating a 10 ft. deep bench, a pit was dug and simultaneously shored with three-tiered Slide Rail Panels in a 16 x 20 ft. four-sided configuration down to a final grade of 32 ft. This tight pit left only 14 and 26 inches of clearance for the 14 x 16 ft. well footing!



the 14 x 16 ft. well-footing into the 20 x 16 pit with

### Execution, Engineering, Ingenuity

Since the Efficiency Slide Rail is a dig & push system, Zito Construction was able to excavate the pit and install the shoring at the same time saving a significant amount of time and money since they could dig straight down to grade and shield the pit as they progressed to required depth. It also allowed them to keep the pit in a tight configuration and avoid encountering surrounding obstacles or underground utilities while excavating.

Using four, 32 ft. triple-rail corner posts, Zito Construction installed the Slide Rail System with 4 and 8 ft. high panels starting in the top outside rail, 4 and 8 ft. high panels in the middle rail, and 8 ft. panels in the lowest inside rail down to grade. The Slide Rail components were rented factory-direct from Efficiency Production, Inc.

### System provides fast installation and removal

Larry Zito, one of eight brothers who own and operate Zito Construction, said that the

installation of the Slide Rail went very well. "We had a similar dig last year that went about 40 ft. deep, and we used three, four-sided stacked trench boxes. When we went to remove them from the pit, one got stuck and it was very hard to remove," Zito said. "I've never used the Slide Rail System before, and it's worked pretty well. I can see a lot of uses for this system."

Efficiency Production Director of Engineering Mike West noted that, "The Slide Rail System is perfect for a dig 30 ft. or more, because

Zito Construction's armless CAT 375 Excavator places the first pump station case atop the well footing deep inside the 32 ft. deep pit, securely shored with Efficiency's triple-rail Slide Rail System.



the triple rail configuration keeps side panels to a manageable, minimal weight. This helps in installation and removal. It's certainly easier than installing and

**Continued on Page 4**

## Pump Station Installed in Three Days!

### Day 1

- Dug 10 ft. bench for working excavation space
- Excavated and simultaneously shored with Efficiency Slide Rail System 16 x 20 ft. pit down to 32 ft. grade

### Day 2

- Backfilled 18 in. gravel bed
- Installed one-foot thick 14 x 16 ft. wet-well footing at bottom of pit
- Installed first of four 12 ft. diameter well sections, 8 ft. tall
- Sealed well section to footing with sealant and concrete

### Day 3

- Backfilled with stone up to lip of first well-section, removed bottom slide-rail panels
- Installed and sealed remaining four round well-sections
- Simultaneously backfilled pit and removed Slide Rail System

removing heavy four-sided trench boxes.”

Soil types varied from the top to bottom of the pit, with soft clay at the top and stiff clay at the bottom plus layers of sand and gravel. The site was de-watered for a month before excavation began. Working in freezing, December temperatures; Zito Construction was able to completely install the new pump station in just three days!

Project inspector, **Jim Howard** from Rowe, Inc., had this to say about the Vassar Road Pump Station project: “I was very impressed on how quickly the pit was dug and the Slide Rail installed. They were able to dig to grade in one day.” Howard added, “Everything has gone very smoothly; no problems with the design or materials. Without the Slide Rail, I think it would have taken a lot longer to install, and would have been much more complicated.”

Also working on this project from Rowe, Inc. was Engineer **Doug Scott**, and Grand Blanc Township Engineer **Jack Wheatley**.

Zito Construction used a CAT 375 Excavator with a four-yard bucket to dig the pit and install the Slide Rail System, plus a 966G Front Loader to maintain stone in a 15-yard Efficiency Production Stone Mizer.

### System Saves Time and Money

“If we had used a sheeting system for this project it would have taken two weeks,” said **John Zito**, another Zito sibling and co-owner of the family business. “I like working with Efficiency Production because they provide great service, and have always treated us well.”

In addition to Larry and John, brothers **Ron and Gerry Zito** worked on the Vassar Road Pump Station project. Zito Construction specializes in road building, earth moving, sewers and water-mains for municipalities and developers in Michigan. They are members of MITA. Their work includes: land clearing, landscaping, boring & jacking, pump stations, sewer jetting, brick pavers, bridges, hydro-seeding, and streetscapes. ■

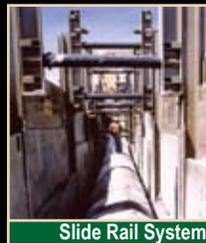
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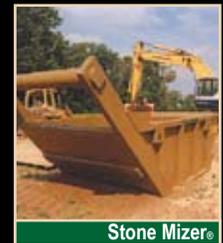
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