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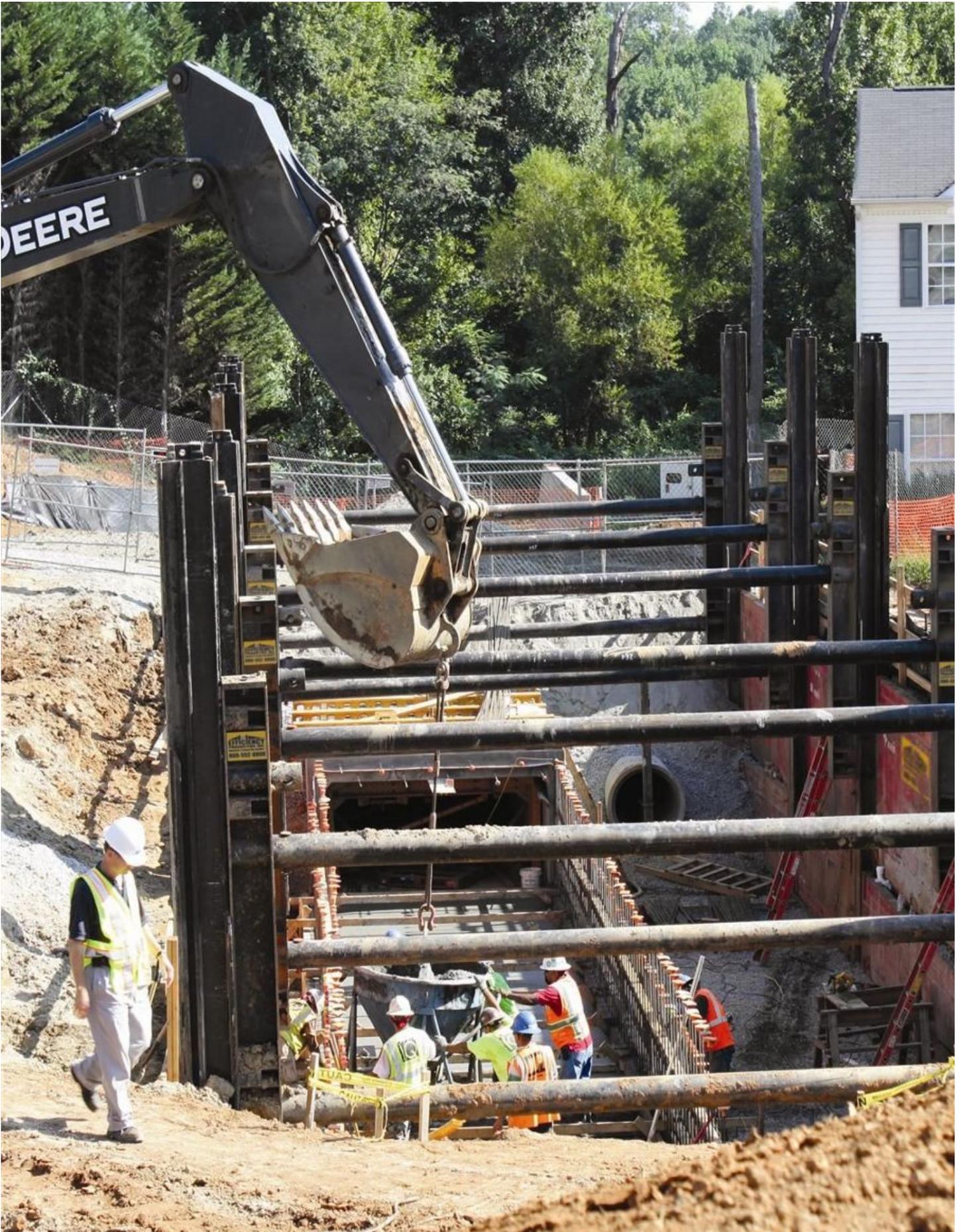
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## Local Contractor

# 'Casts-Its-Way' Through Raleigh Towns

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*Cast-in-place pipes and culverts present a greater safety challenge as the pipeline trench generally needs to be kept open and exposed longer than traditional precast pipe.*



Moffat Pipe, Inc. (MPI), based in Wake Forest, N.C., currently is in the process of installing 320 linear ft. (97.5 m) of 5 by 10 ft. (1.5 by 3 m) cast-in-place concrete culvert pipe through the neighborhoods of Raleigh, N.C.

The new storm-sewer installation is part of the Carolina Pines Dam Rehabilitation Project for the city of Raleigh Storm-Water Division.

Cast-in-place pipes and culverts present several challenges for contractors performing the installation work. Not the least of which is keeping workers safe in the pipeline trench that generally needs to be kept open and exposed longer than traditional precast pipe.

Compounding that challenge for MPI is that the new pipeline is running directly through a portion of Raleigh's residential neighborhoods where active shoring with low vibration adjacent to existing structures is needed.

"North Carolina DOT has some very strict requirements for shoring," said Keith Moffat, one of the officers of MPI. "That usually leaves only tight sheeting or Slide Rail — systems the state considers 'active shoring' — as viable options for shoring excavation projects within NCDOT right-of-ways encroachment agreements."

MPI has used both tight sheeting and Slide Rail, but thought Slide Rail would be preferable on the Carolina Pines project. MPI contacted Efficiency Production Inc. — a manufacturer of Slide Rail and other trench safety equipment — for consultation on shoring this excavation project.

Slide Rail is a component shoring system comprised of steel panels (similar to trench shield sidewalls) and vertical steel posts. Efficiency's 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 ft. (15 by 15 m) with Efficiency's ClearSpan System; or in a four-sided or linear Multi-Bay configuration to install length of pipe over 40 ft. (12 m)

Efficiency's team of Slide Rail experts recommended a five-bay, Linear Multi-Bay Configuration, which provided a long and wide working area to cast-in-place the large culvert, but still met the engineer's requirement for "active-shoring" on the excavation.

Each of the five bays utilized 16 to 20 ft. (4.8 to 6 m) long panels, which when put together created a 96 ft. (29 m) long, 22 ft. (6.7 m) wide space to cast-in-place 84 ft. (25.6 m) of culvert at one time.

Another advantage of Slide Rail? After the trench is backfilled around the culvert, the system components can be removed, leapfrogged forward along the pipeline, and reinstalled.

MPI will need to put the system — with all the same Slide Rail pieces — in the ground only four times to complete the 320 ft. (97.5 m) of new culvert pipe.

MPI also is building two structures to go along the pipeline: a dissipater pad and a concrete inlet structure.

"Slide Rail really isn't new around here, but I still meet engineers and contractors who've never seen it used before," added Moffat. "The Slide Rail I've worked with in the past has been the German-designed system with the big rigid cross members. The Efficiency Slide Rail is so much easier to work with compared to that."

MPI anticipated that it would be using Slide Rail extensively in the future, so it purchased the entire system from an Indianapolis-based trench safety equipment distributor and requested that Efficiency Production paint the Slide Rail panels red, MPI's corporate colors.

Machinery in use by MPI are a John Deere 350D and a Deere 200C excavator, plus a Deere TC62 loader. MPI's \$1.25 million Dam Rehabilitation project began at the end of April and was completed in November.

Moffat Pipe Inc. specializes in water main, sanitary sewer and storm sewer installation and repair. Moffat has experience serving a variety of customers from schools, businesses and municipalities to commercial developers and heavy highway contractors.

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