

**2020**  
*Project*  
OF THE *Year*

NEW INSTALLATION HONORABLE MENTION

## SR 37 Offsite Drainage Outfall Storm Sewer - North Segment



The \$21.6 million project, owned by the Indiana DOT, is part of the SR 37 Improvement Project, Phase 1 in Fishers, Indiana. It involved constructing two offsite drainage outfall storm sewers to address roadway drainage to dispense into natural surface water bodies between the 126th to 146th Street corridors.

The SR 37 Improvements Project is in fast-growing Hamilton County. It features at-grade intersections to be redesigned as underpasses, interchanges, and roundabouts to maintain traffic flow along SR 37, alleviate congestion, and

encompasses long-term growth. Midwest Mole Inc. (MWM) of Fishers, Indiana, was awarded the SR 37 Improvement Project Phase 1. MWM was responsible for the two drainage outfall system sewers, site access construction, building a detention pond and outlet, and site restoration. MWM embarked on the south section drainage tunnel in October 2018 with a closed-face TBM to excavate a 2,100-lf, 84-in. tunnel that ran from SR 37 to Lantern Rd. between 126th and 131st Sts., made of steel beams and wood lagging, with 54-in. ID Hobas final liner.

The geology became unconducive to the technology, and at 1,100 lf of 2,100 lf, unanticipated ground conditions were encountered, and MWM determined that completion by microtunneling was necessary. As a subcontractor to MWM Super Excavators Inc. (SEI) of Menomonee Falls, Wisconsin, executed the installation of the second drainage outfall via microtunneling in the north section. SEI used its Akkerman SL60C MTBM system with a mixed-face disc cutter head, and its AZ100 TGS system for tunneling navigation.

Original microtunneling footage comprised 4,285-lf of 54-in. ID RCP pipe with inverts up to 44-ft below grade. Microtunneling work began in August 2019. The first run was finished in September 2019, a record 1,966-lf for this diameter Akkerman MTBM. Completion of the south TBM tunnel added 1,000-lf of microtunneling work under a car dealership with only 15-ft of cover. An additional 660-lf was added by

change order for future connection.

In February 2020, SEI beat that record with the fourth and final alignment - a 2,304-lf curved, 54-in. ID RCP tunnel. This tunnel was the most complex, had the highest amount of water pressure, and featured a 1,975-lf straight section with a 329-lf curve and 1,929-ft radius. At completion, the total microtunneling footage was 5,920 lf, in 1,966-, 1,000-, 650- and 2,304-lf lengths, and installed with precision line and grade accuracy.

### WHY PROJECT IS OUTSTANDING:

Several aspects of this project stand out making it an outstanding project: Two Akkerman MTBM records achieved - 1,966 and 2,304 lf; Longest curved microtunnel on record using the AZ100 TGS system; Record curved installations using AZ100 TGS and small diameter pipe; Demonstration of superior microtunneling skill on a variety of complexities - varying ground conditions including boulders while assuming proper pressures without losing ground; Community viability and long-term vitality; and Reduced traffic disruption - full access to existing lanes of traffic during construction.



#### PROJECT OWNER:

Indiana Department of Transportation

#### ENGINEER:

Indiana Department of Transportation

#### CONTRACTOR:

Midwest Mole, Inc. (prime),  
Super Excavators Inc.  
(microtunneling subcontractor)

#### VALUE OF TRENCHLESS PROJECT (US\$):

\$21.6 million