CASE STUDY
MICROTUNNELING | SLURRY MICROTUNNELING

Project Name:
Lockbourne Intermodal Subtrunk Extension Project

Subcontractor:
Michels Tunneling

Location:
Columbus, OH

Owner:
City of Columbus, Department of Public Utilities

Ground Conditions:
Sand, Silt Sand, Gravel, Cohesive Till, and High Groundwater

Akkerman Equipment:
SL82P MTBM Face-Access system, Mixed-Face Disc Cutter Head, Airlock Chamber, AZ100 TGS

Pipe:
78-in. ID Hobas®

Total Length/Longest:
10,220-lf./1,880-lf.

PROJECT OVERVIEW

The $61.5 M Lockbourne Intermodal Subtrunk Extension Project required extending existing sewer service to the Village of Lockbourne, Northern Pickaway Joint Economic Development District and Rickenbacker International Airport.

Hydro-geological and geophysical studies were performed to select the best technology for tunnel construction that would reduce impacts to nearby residents.

The original design required the microtunneling installation of 10,218-lf. in fourteen reaches. Using a value engineered approach, the subcontractor was able to eliminate several launch and receiving shafts by extending the lengths of the tunnels. In the end, eight runs ranging from 530-1,880-lf. were installed.

THE CHALLENGES

- Wide mixture of ground conditions and high groundwater
- One microtunnel reach under Big Walnut Creek
- The first and last microtunnels were to be completed with no surface access, thus requiring the use of an airlock chamber
- Restricted hauling hours and designated hauling routes
- Construction depths of 30 feet below ground at the launch site to end at 65-foot depths below ground as a result of ground elevation increasing

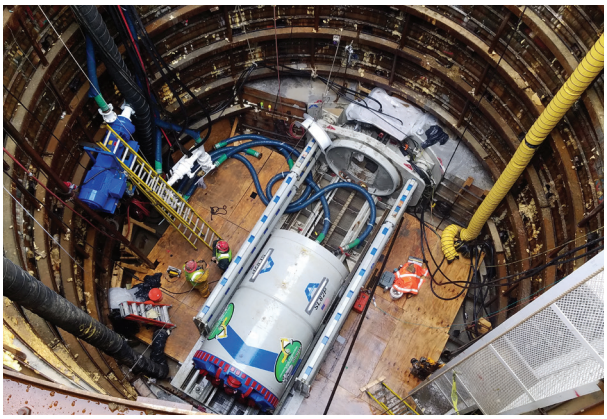
THE SOLUTION

The subcontractor utilized the following Akkerman equipment system to approach the project:

- SL82P Periphery Drive Microtunnel Boring Machine with Face-Access
- AZ100 TGS tunneling navigation system
- Automatic Bentonite Injection System (ABIS) for exact bentonite injection where it was needed

OUTCOME

- Eight alignments successfully completed with precision accuracy
- Value-Engineered approach reduced the number of launch and reception shafts for cost savings to the owner



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