CASE STUDY
TUNNEL BORING | STORMWATER

Project Name:
DTW Stormwater Improvements

Prime/Sub Contractors:
D.V.M. Utilities, Inc. – Sterling Heights, MI

Location:
Romulus, MI

Owner:
Detroit Metropolitan Airport Authority

Ground Conditions:
Stiff to hard cohesive clay

Akkerman Equipment:
5200 Pipe Jacking System with Model WM48S-D TBM. Closed-Face Attachment (initial configuration). 524 Haul Unit and Lubrication System

Pipe:
48-in OD steel casing

Total Length/Longest:
370 LF

PROJECT OVERVIEW

D.V.M. Utilities, Inc. completed tunnel boring operations for a stormwater improvement project at Detroit Metropolitan Airport in Romulus, Michigan. The installation required the construction of a 48-in steel casing using pipe jacking methods beneath active airport infrastructure.

Initially configured with a closed-face attachment for anticipated soft ground, the crew encountered stiff, cohesive clay conditions shortly after launch. By adapting equipment configuration in real time, the team maintained production and alignment while completing the installation under demanding subsurface conditions.

THE CHALLENGES

- Transition from anticipated soft ground to stiff, hard clay conditions during excavation
- Maintaining consistent material flow and production in cohesive soils
- Executing installation beneath active airport infrastructure with limited tolerance for disruption
- Adapting equipment configuration without impacting project schedule

THE SOLUTION

- Utilized the Akkerman 5200 Pipe Jacking System with WM48S-D TBM for controlled excavation and pipe installation
- Transitioned from a closed-face configuration to a dirt-cutting head to match actual ground conditions
- Maintained efficient spoil removal using the haul unit to ensure continuous operation
- Leveraged lubrication systems to reduce friction and maintain steady pipe advancement

OUTCOME

- Successfully completed the 370 LF tunnel installation beneath DTW infrastructure
- Maintained production despite unexpected ground condition changes
- Achieved consistent material flow and excavation performance in cohesive clay
- Demonstrated the ability to adapt equipment configuration in real time without delays
- Supported critical stormwater infrastructure improvements at Detroit Metropolitan Airport

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