



CASE STUDY

AUGER BORING | ROCK BORING


Project Name:

Contract 20-05 Oregon St. Reconstruct W.
28th Ave. Utility & Pump Station Upgrades


Prime/Sub Contractors:

PTS Contractors, Inc./Minger Construction, Inc.


Location:

Oshkosh, WI


Owner:

City of Oshkosh


Ground Conditions:

Varying UCS Dolomite Rock


Akkerman Equipment:

Rock Boring Unit, Model RBU 36


Pipe:

36-in. Steel Casing


Total Length/Longest:

150-lf.

PROJECT OVERVIEW

The City of Oshkosh's annual Capital Improvement Plan included concrete paving, utilities upgrades, an upgraded wastewater pump station, and appurtenant work. The utility upgrades included a crossing that passed under an active rail line in rock ground conditions, to increase the capacity of the sewer.

THE CHALLENGES

- Installation in hard Dolomite rock
- Crossing under active rail line
- Risk of settlement
- Elimination of an existing lift station

THE SOLUTION

Minger Construction Inc. selected an Akkerman RBU to fracture the dolomite rock into cuttings and maintaining alignment despite geological variations.

The RBU 36 features:

- 11 - 6.5-in. disc cutters, capable of 5 tons each
- Cutter head rock scrapers to assist in transferring cuttings away from the face, to the inlet cavity, then to the lead auger
- 4 - stabilizer shoes to maintain alignment

The RBU's outer casing was welded to the lead 36-in. steel casing and hex connected to the auger string.

Plenty of groundwater was present to assist with the material transfer, tooling and bearing cooling, and reduced tooling wear. Unique to Akkerman's RBU, the operator can port jetting water through the unit for the same functionality in dry ground.

The operators tripped the augers every casing to check alignment and adjust the RBU stabilizer shoes to compensate for any line and grade variance.

OUTCOME

- Minger completed the drive in challenging rock that would have been otherwise improbable
- No cutter head tooling replacements needed
- Post project rock testing indicated that the project rock samples' unconfined compressive strength range of 9,560 - 16,970

