CASE STUDY
PIPE JACKING & UTILITY TUNNELING | TUNNEL BORING

Project Name:
Blacks Run Interceptor Division 1B Replacement

General Contractor/Subcontractor:
Garney Construction/Aaron Enterprises Inc.

Location:
Harrisonburg, VA

Owner:
Harrisonburg-Rockingham Regional Sewer Authority

Ground Conditions:
Lean clay, soft weathered rock, limestone, and dolomite

Akkerman Equipment:
TBM 600, 74-in. OD Mixed Disc Cutter Head, Tunnel Boring System with 5200 Pump Unit, 524 Haul Unit

Pipe:
72-in. Steel Casing

Total Length/Longest:
200-lf.

PROJECT OVERVIEW

The Blacks Run Interceptor – Division 1B – Replacement project scope included 3,700-lf. of 48-in. sanitary sewer installed by open-cut and trenchless methods.

A 200-lf. section that crossed under Stone Spring Road requiring a tunnel boring machine to maintain traffic on a busy arterial roadway.

THE CHALLENGES

- 72-in. Steel Casing to house 48-in. sanitary sewer interceptor
- Critical line and 1.02% downhill grade
- Limited geotechnical information available
- The test bore showed the presence of lean clay, soft weathered rock, limestone, dolomite at launch and exit shafts
- Strict timeline was in place for the tunnel to keep pace with the open-cut operations going on elsewhere on the project site
- Groundwater encountered at the half-way mark during the downhill run

THE SOLUTION

Akkerman supplied a powerful TBM with a mixed-face disc cutter head mixed-face disc cutter head capable of 24,000 UCS psi to tackle the varied ground conditions.

OUTCOME

- Full-face of rock was encontered at various sections of the tunnel, but the mixed-ground cutter head and TBM system tackled it without issue
- The tunnel was completed on line & grade and on time for crews to go home for Christmas.

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