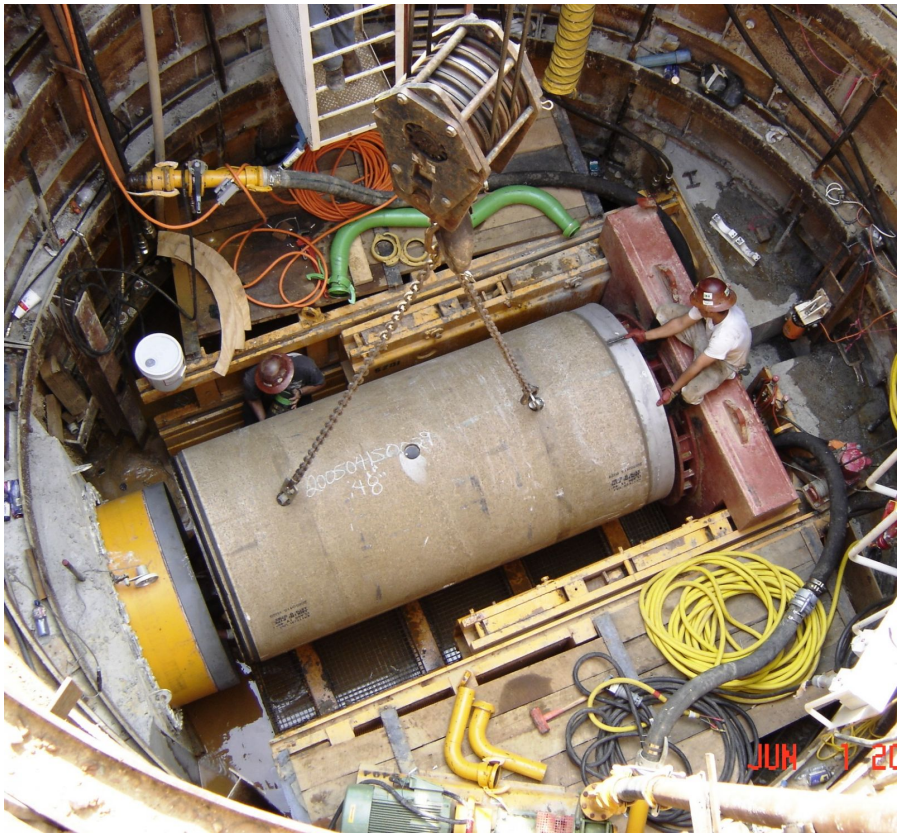
Project Profile: MICROTUNNELING

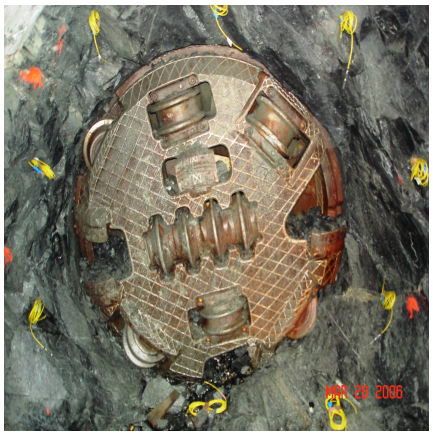
BRADSHAW CONSTRUCTION CORPORATION
TUNNELING SPECIALISTS

Upper Jones Falls Interceptor Sewer - Phase 2
Baltimore, MD



PROJECT OVERVIEW AND CHALLENGES

Bradshaw jacked 6,000' of 48" polycrete sewer pipe using slurry microtunneling through rock and mixed face ground conditions. The longest microtunnel drive was over 900'. Drill and blast tunneling was used for 600' of the sewer installation. The rock strength (UCS) was up to 43,500 psi. Eleven access shafts with pre-cast manholes and/or cast-in-place structures were installed. A unique live sewer crossover structure was installed in an elliptical NATM shaft 40'x70'. Finally, two 48" polycrete river crossings and 1,500' of 18" DIP sewer pipe were opencut. The challenges on this project were extremely hard and abrasive rock ground conditions, limited access to jacking and receiving pits, and the project location in a highly visible part of the City's business and education centers.



PROJECT INFORMATION - 434

OWNER:
City of Baltimore
Department of Public Works
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ENGINEER:
Patton, Harris, and Rust Associates
Graeme Lake, PE
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CONTRACTOR:
Bradshaw Construction Corporation

CONTRACT VALUE:
$23,000,000

COMPLETION DATE:
6/30/2007

GEOLOGY:
Weathered to Strong Granitic Rock - Full and Mixed Face

EXCAVATION METHOD:
Herrenknecht 60" Ø MTBM
Drill & Blast Horseshoe

MINING DIMENSIONS:
6,000' x 60" & 600' x 96" Ø

FINAL LINING:
Polycrete Pipe 48" Ø

FOR MORE INFORMATION:
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Refer to Project 434