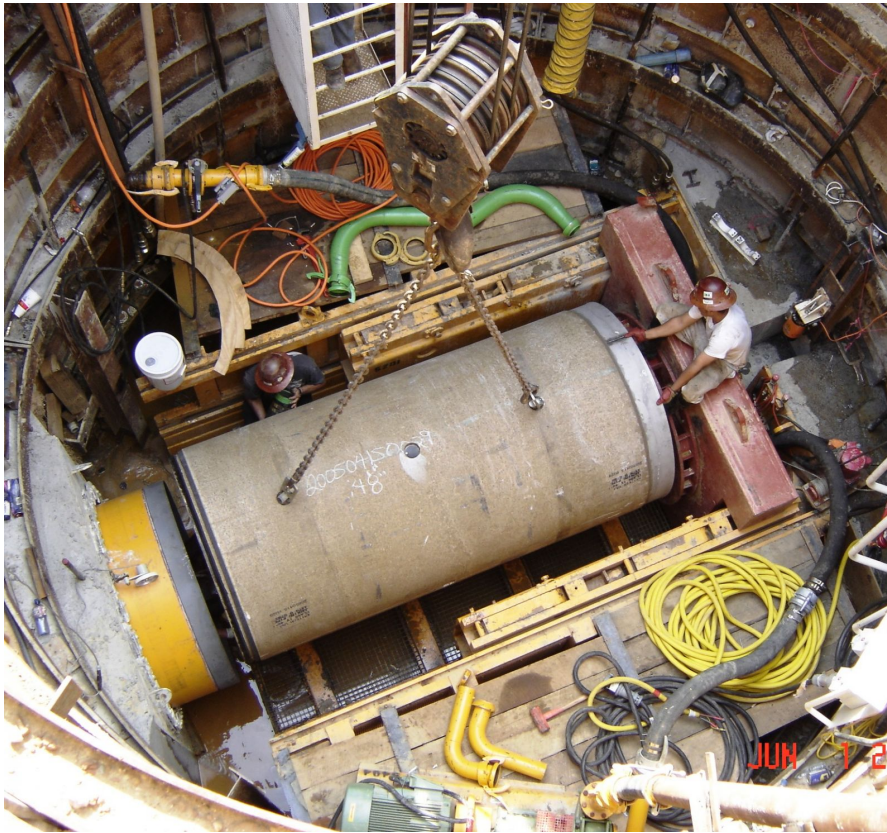


## Upper Jones Falls Interceptor Sewer - Phase 2 Baltimore, MD



### PROJECT OVERVIEW AND CHALLENGES

Bradshaw jacked 6,000' of 48" polycrystalline 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" polycrystalline river crossings and 1,500' of 18" DIP sewer pipe were open-cut. 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  
Jonathan Scott  
410.396.3671  
jonathan.scott@baltimorecity.gov

#### ENGINEER:

Patton, Harris, and Rust Associates  
Graeme Lake, PE  
410.997.8900  
graeme.lake@phra.com

#### 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:

Polycrystalline Pipe 48" Ø

#### FOR MORE INFORMATION:

Todd Brown, Project Manager  
(410) 970-8300  
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Refer to Project 434