

## Improvements to Lower Gwynns Runs Interceptor, Phase II Baltimore, MD



### PROJECT OVERVIEW AND CHALLENGES

Bradshaw completed 2,500' of tunnel from Franklin Street to Baltimore Street for a 36" gravity sanitary sewer. The 72" tunnel consisted of four segments, the longest of which was 1,200' beneath Amtrak and Norfolk Southern Railroads. Local geology consisted of very hard rock, with UCS tests of up to 37,000 psi, and was further complicated by the presence of periodic veins of highly decomposed rock. The tunnel size was increased from original 60" design to accommodate a double shielded TBM with a greater ability to mine the rock, leaving a bald self-supporting tunnel, while still allowing for the installation of tunnel supports through unstable weathered zones. Transitioning in-and-out of these zones made excavation, steering and TBM maintenance all much more difficult. Despite these adverse conditions, the tunnel was completed and activated on time, thanks to perseverance and collaboration amongst all members of the project team.



### PROJECT INFORMATION - 540

#### OWNER:

City of Baltimore  
Department of Public Works  
Joseph Belardo  
410-396-4700 ext. 371  
Joseph.Belardo@Baltimorecity.gov

#### ENGINEER:

Dewberry Consultants, LLC  
Reza Emtiaz, PE  
410-645-1400  
remtiaznooni@dewberry.com

#### CONTRACTOR:

Bradshaw Construction Corporation

#### CONTRACT VALUE:

\$11,905,600.00

#### COMPLETION DATE:

11/23/2015

#### GEOLOGY:

Baltimore Gneiss

#### EXCAVATION METHOD:

Robbins RH72DS TBM

#### MINING DIMENSIONS:

395', 277', 536', 320', 343', 389', &  
283' x 72"Ø

#### FINAL LINING:

Bald / Rib & Board / Liner Plate  
36" Fiber Reinforced Pipe

#### FOR MORE INFORMATION:

Todd Brown, Project Manager  
410-970-8300  
tbrown@bradshawcc.com  
Refer to Project 540