Project Profile: TBM TUNNELING

BRADSHAW CONSTRUCTION CORPORATION
TUNNELING SPECIALISTS

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
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ENGINEER:
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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:
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Refer to Project 540