

# Interface Between THE Tunnel and No. 7 Subway Extension Tunnel New York MTA Capital Construction

**Location:** New York, New York

**Date:** 2009 – 2011

**Structure:** No. 7 Subway Extension Includes Two Single-Track Running Tunnels and Cross Passages; (THE) Project Includes Four Running, Single Track Tunnels

**Geology:** Mica Schist and Granite Blanketed by Glacial Till Consisting of Clay, Silt, Sand, Gravel, Boulders, and Decomposed Rock

**Cost:** Approximately \$1.2 Billion

**Client:** Fay, Spofford & Thorndike (FST)

**Owner:** New York Metropolitan Transportation Authority Capital Construction

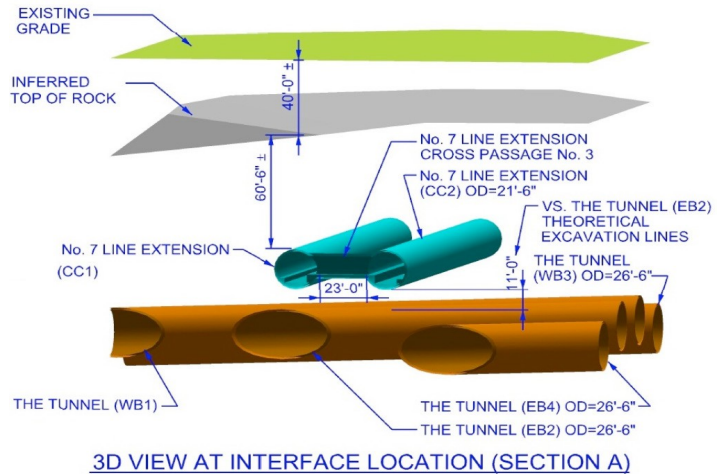


Figure 1. 3D view at interface.

## Assessment of the Impact of THE Tunnel Construction on the No. 7 Subway Extension:

The New Jersey Transit Authority (NJTA) was planning to build the Trans-Hudson-Express (THE) Tunnel Project. This would create an alternate path into Manhattan along with a secondary underground station for passengers. Simultaneously, the No. 7 Subway Line Extension Project is underway by Metropolitan Transportation Authority Capital Construction (MTACC). This will extend the existing subway line, which currently ends at Times Square Station. The area at which the THE tunnels would run underneath the No. 7 Subway Extension tunnels is referred to as the Interface.

Gall Zeidler Consultants (GZ) assisted in assessing the impact of THE tunnel construction on the No. 7 Subway Extension Line tunnels at the Interface. To do so, the host rock and its structural behavior were examined as a result of the envisioned tunneling techniques of both projects. A three-dimensional (3D) numerical analysis was used to support the investigation along with a comprehensive risk analysis.

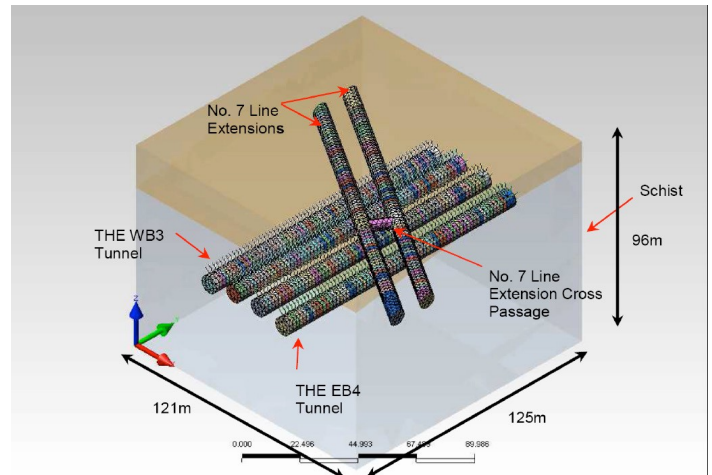


Figure 2. Interface Between No. 7 Subway Extension and THE Tunnel.