

## 2016 NYCT - 2<sup>nd</sup> Avenue Subway – 63<sup>rd</sup> Street Line



### Highlights

- ~54,000 SF of tunnel and crossover treated in 6 months
- Productivity: 250 SF per man-hour
- Schedule savings for track and systems work

### Project Overview

The 2<sup>nd</sup> Avenue Subway extension includes the G3/G4 Tunnels which were constructed in the 1980s. They connects trains from the 7<sup>th</sup> Avenue line to the 2<sup>nd</sup> Avenue Subway extension. Structural rehabilitation and leak remediation are required to ensure the design life of the existing structures can meet that of the newly constructed extension.

Curtain grouting 1,850 LF of the G3 Track and 900 LF of the G4 Track with NOH2O<sup>®</sup> was selected to prevent groundwater inflow so new installations are not damaged. All work in these areas was performed from work train flat cars in the tunnel sections and scaffolds in the crossover areas.

### Strategy

Sovereign generated a curtain grouting phasing plan which utilized an optimized work train set-up and scaffolding as well as a modified Jetleg drill with carbide bits to increase the drilling rates and guard against equipment failure from active water inflow.

### Results

The production rate of 250 SF per man-hour, including time required for mobilization and follow-up work provided a dry tunnel in a very short time span. This enabled the general contractor to advance track and systems work without delays.