

MICHIGAN STREET TUNNEL

Grand Rapids, MI



- **Owner:**
Michigan Street Development, LLC, Grand Rapids, MI
- **General Contractor**
Kiewit Construction Company, Omaha, NE
- **Technique(s) Utilized:**
Chemical Grouting

Nicholson completed a chemical grouting program to support the construction of the Michigan Street Tunnel in Grand Rapids, Michigan. The \$3 million pedestrian tunnel connects the Lemmen-Holton Cancer Pavilion of Spectrum Health and DeVos Children's Hospital.

The 105-foot-long, 20 foot-diameter tunnel was constructed using the New Austrian Tunneling Method. Because the site's ground conditions primarily consist of fine sand, chemical grouting was specified to stabilize the sand and enable open-face tunneling. Nicholson treated 3,425 cubic yards of sand with a sodium-silicate-based grout. The chemical grout was injected through 41 tube-a-manchette (TAM) sleeves, each one over 100 feet long. The TAM sleeves were drilled horizontally in order to maintain an active, undisturbed roadway above. The chemical grouting process created a treated mass of stabilized sand so the tunnel could be excavated with less risk of overburden collapse.