

Grand Rapids Medical Corridor North Pedestrian Tunnel Spectrum Health System

Location:	Grand Rapids, Michigan
Date:	2006
Structure:	Pedestrian Tunnel
Length:	130 feet (40 meters)
Cross-Section:	Width: 18 feet (5.5 meters) Height: 21 feet (6.4 meters)
Geology:	Medium Dense Glacial Sands; Groundwater Table Below Tunnel Invert
Cost:	Approximately \$2.5 Million
Client:	Kiewit Construction Company
Owner:	Spectrum Health System



Figure 1. Entrance portal through support at excavation wall.

Tunnel Design and Construction Support Services:

The Michigan Street North Pedestrian Tunnel connects the Lemmen Holton Oncology Center of Grand Rapids with the future Spectrum Health building. Gall Zeidler Consultants (GZ) provided construction support services that included shop drawings and New Austrian Tunneling Method (NATM) consulting, particularly related to instrumentation and monitoring.

The mined tunnel was constructed using 15 inch (380 millimeter) thick shotcrete combined with a PVC waterproofing membrane located between the initial and final shotcrete lining layers. To achieve ground improvement, the glacial sands surrounding the tunnel perimeter were grouted using chemical grouts prior to tunnel construction.

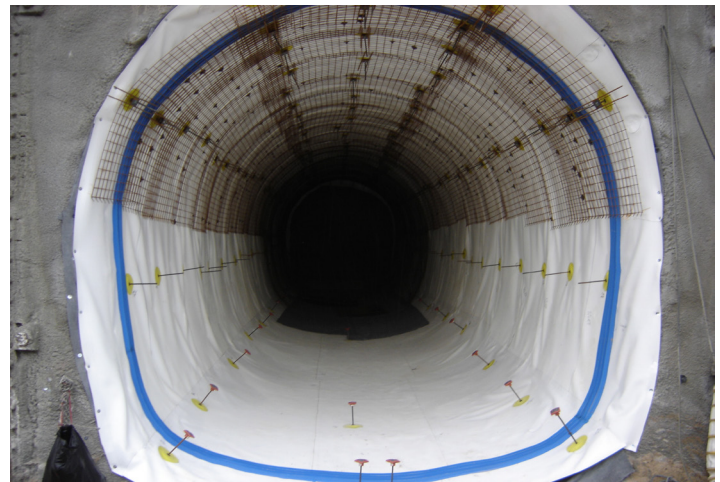


Figure 2. Preparations for shotcrete secondary lining installation onto membrane waterproofing system.