



Weehawken Tunnel and East Portal Shotcrete VECP New Jersey Transit Authority Hudson Bergen Light Rail Transit

Location: North Bergen, New Jersey

Date: 2003 – 2005

Structure: Railway Tunnel and Station

Length: 820 feet (250 meters), Transition
Between Station and Running Tunnels
100 feet (30 meters), East Portal

Cross-Section: Width: 53 feet (16.2 meters)
Height: 25 feet (7.6 meters)

Geology: Hard, Massive to Fractured Diabase;
Groundwater Inflow Along
Discontinuities in Fractured Zones

Project Cost: Approximately \$150 Million

Client: Frontier-Kemper / Shae /
Beton-und-Monierbau Joint Venture

Owner: New Jersey Transit (NJT)



Figure 1. Membrane waterproofing system & BA anchors installed prior to secondary shotcrete final lining (SFL) installation in the transition section.

Winner of American Shotcrete Association Outstanding Underground Project Award – Value Engineering Change Proposal:

Following the framework of a Value Engineering Change Proposal (VECP), Gall Zeidler Consultants (GZ) provided a shotcrete final lining design to the contractor of this project. The shotcrete final lining was implemented in lieu of a cast-in-place concrete lining within the transition sections between the two-track running tunnels and the station platform tunnel, as well as in the transition section at the East Portal. Notable features of the design included implementation of micro-polypropylene fibers to enhance the fire resistance of the shotcrete final lining (SFL).

During construction GZ provided quality control for during the final lining installation. In 2009, the design was honored with the Community Service Award for its excellence in construction and renovation of the Hudson-Bergen Light Rail Transit System (HBLRTS).



Figure 2. Finished transition into mined tunnel at the East Portal.