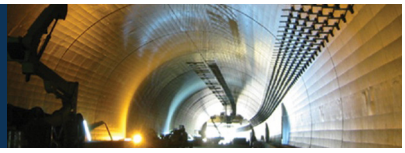
Gall Zeidler Consultants
Geotechnics | Tunnel Design | Engineering



Weehawken Tunnel West Portal Retaining Wall
New Jersey Transit Authority Hudson Bergen Light Rail Transit

Location:	North Bergen, New Jersey
Date:	2005 – 2006
Structure:	Retaining Wall
Wall Height:	9 feet (3 meters)
Geology:	Highly Weathered Sandstone
Cost:	Approximately $150 Million
Client:	Twenty First Century Rail Corporation
Owner:	New Jersey Transit (NJT)

Slope Stability Analysis, Design, and Consulting:

The Weehawken Tunnel Project consisted of the rehabilitation of an approximately 4,200 foot (1,280 meter) long, 23 foot (7 meter) wide excavated tunnel from a double-track freight rail to a double-track light rail system. The project also included a large underground station cavern, an approximately 40 foot (12 meter) diameter elevator shaft, and extensive portal slope stabilization and drainage measures. In order for the 120-year-old Weehawken Tunnel to be reconstructed, a deteriorating slope at the west approach to the tunnel needed to be stabilized.

Gall Zeidler Consultants (GZ) provided Slope Stability analysis and design services for a heavyweight retaining wall made of individual cast-in-situ concrete blocks. 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 1. Unstable rock conditions leading to localized slope raveling near the West Portal.

Figure 2. Construction of concrete block retaining wall near West Portal to stabilize raveling rock.