

SEM Tunneling for Chinatown Station and Crossover Caverns San Francisco Municipal Transportation Agency

Location:	San Francisco, California
Date:	2009 – Present
Structure:	Mined Underground Center Platform Stations with Ancillary Caverns
Length:	Cross Cut Cavern 2,700 sq ft (250 sq m) Station Caverns 2,300 sq ft (213 sq m) Cross Over Cavern 1,750 sq ft (163 sq m)
Cross-Section:	Cross Cut Cavern 67 ft (20 m) Station Caverns 290 ft (90 m) Cross Over Cavern 310 sq ft (95 m)
Geology:	Highly Deformed Fractured Rock, (Melange, Franciscan Rock Formation), Colluvium Consisting of Very Stiff, Brown and Gray Silty Clays, Old Bay Deposits, Sedimentary Marine Deposits, Fluvial Deposits and Fill
Cost:	Approximately \$1.5 Billion
Client:	PB Americas / Wong JV
Owner:	San Francisco Municipal Transportation Agency (SFMTA)



Figure 1. Third Street Light Rail Project Phase 2 alignment.

Expert Review Services:

Phase 2 of the Third Street Light Rail Project is currently underway, which includes the construction of the Chinatown Station, cavern, crossover and cross-cut caverns using the Sequential Excavation Method (SEM).

Gall Zeidler Consultants (GZ) provides expert design review services on the SEM tunneling for the Chinatown Station and associated SEM caverns, which includes review and recommendation of the following aspects of the work: construction staging, multiple drift excavation sequencing, structural design calculations, use of ground improvement measures for dewatering and grouting, settlement mitigation measures involving compensation grouting, structural design calculations, instrumentation and monitoring, waterproofing, contact packaging, and SEM specifications.

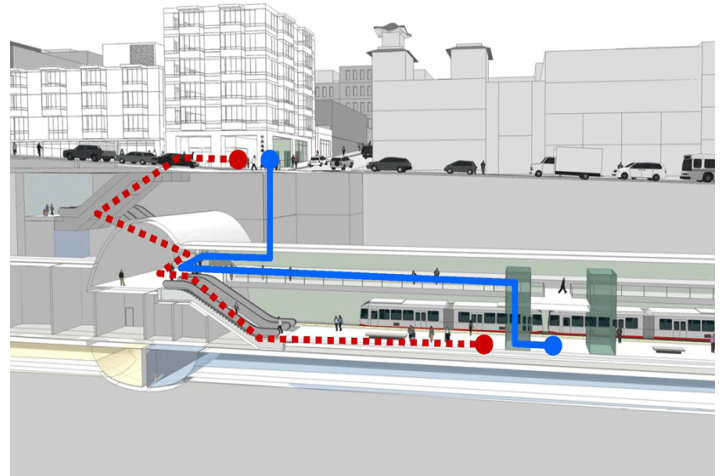


Figure 2. Three-Dimensional (3D) rendering of Chinatown station. (Courtesy of SFMTA)