



Kathu – Patong New Highway Linkage Project

Municipality of Patong, Expressway Authority of Thailand

Location: Kathu – Patong, Phuket, Thailand

Date: 2009

Structure: Two Dual-Lane Vehicular Tunnels

Length: Approximately 3,940 feet
(1.2 kilometers) Each

Cross-Section: Width: 38.7 feet (11.8 meters)
Height: 62.9 feet (19 meters)

Geology: Massive and Weathered Granite,
Contact Zones to Sedimentary Rock,
Residual Soil, and Colluvium

Cost: Estimated US \$100 Million

Client: EPSILON Co., Ltd.

Owner: Municipality of Patong, Expressway
Authority of Thailand (EXAT)



Figure 1. Proposed West Portal location.

A Feasibility Study for Mined Tunnel Construction:

Gall Zeidler Consultants (GZ) developed conceptual tunneling methods, tunnel cross sections, portals, and approach structures for twin dual-lane highway tunnels connecting the cities of Kathu and Patong, two major cities on the island of Phuket. The tunnels replace the existing windy, narrow and steep road, which gives rise to numerous severe road accidents every year.

The daily number of cars and trucks requires two lanes in each direction to improve the congested traffic situation in the area. In addition the heavy motorbike traffic and utilities for local water, power and communication supply will be accommodated within the tunnels.

The central part of the tunnels will be excavated in a massive granite while the portals and approaches will be located in heavily weathered and tectonized rock formations. The tunnels will be fully equipped with modern ventilation and emergency response features.



Figure 2. Contact zone between granite and sedimentary rock in East Portal area.