

Railway Project

Railway Tunnel SS5 of the New Double High Speed Railway Line Lianokladi - Domokos

Central Greece

Project

Railway Tunnel SS5

Construction Cost

Total cost: approx. € 5.5 m.

Project Schedule

Design: 2010 - 2011

Construction: 2008-2014

Project Description

Excavation of the rest part of SS5 Tunnel

Total length: 427m

Unemined length: 32m

Excavation cross section: 140m²

Excavation Method

NATM – Use of mechanical means

Final Lining

Reinforced concrete C30/37

Geology

Basalts, schist-cherts

Our Services

- Special detailed geotechnical design for the unexcavated section of the tunnel
- Detailed structural design for the total length of the tunnel
- Detailed design and rehabilitation of the entrance portal

Construction Details

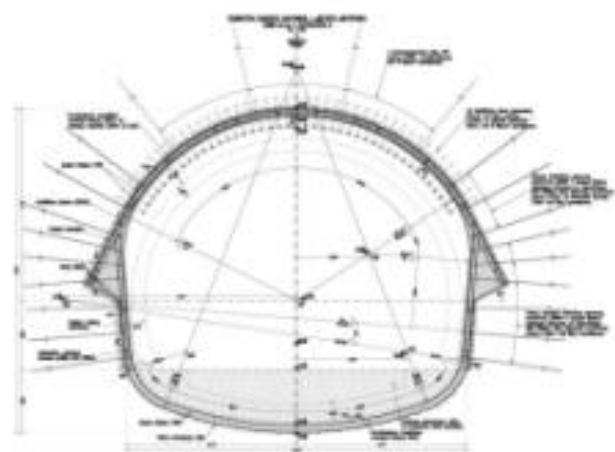
- Use of forepoles and spiles
- Excavation in two phases

Client

AKTOR S.A.



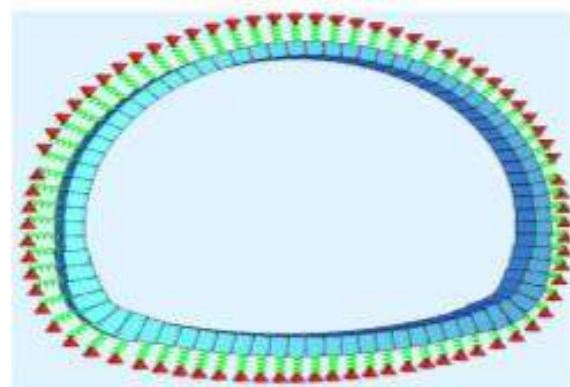
Entrance portal view



Excavation and primary support Typical cross section



Portal skew edge



Static simulation model

Railway Project

Twin Bore Railway Tunnel SS6 of the New Double High Speed Railway Line Lianokladi - Domokos

Central Greece

Project

Twin Bore Railway Tunnel SS6

Project Schedule

Design: 2010 - 2011
 Costruction: 2009 - 2014

Project Description

- Design of unmined part of tunnel, based on collected data from the already excavated part and on back analysis
- Preliminary design check for the adequacy of final lining

Total tunnel length: 2 x \approx 7020m
 Unmined length: 2 x \approx 1800m
 Maximum overburden: 375m
 Excavation cross section: 120m²

Excavation Method

NATM – Use of mechanical means and drilling & blasting

Final Lining

Reinforced concrete C30/37

Geology

Basalts, pillow lavas, dolerites, diabase, peridotites, schist-cherts

Our Services

- Geotechnical design for the excavation and primary support of the unmined part of the tunnel
- Check for the adequacy of final lining

Construction Details

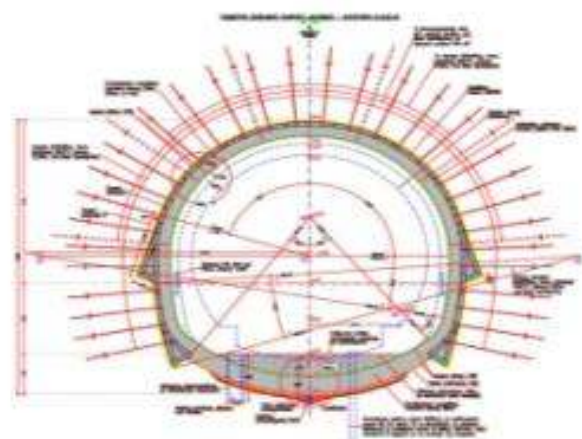
- Use of forepoles and spiles
- Excavation in two phases

Client

AKTOR S.A.



Exit portals view



Excavation and primary support Cross section

Railway Project

Railway Embankments Design for the New Double High Speed Railway Line Liakokladi - Domokos

Central Greece

Project

Designs of reinforced embankments for the project: "Design of infrastructure Works from CH 25+000 until CH 52+000 of the New Double High Speed Railway Line at the section Lianokladi – Domokos"

Project Schedule

Design: 2007 - 2011
Construction: 2008 - 2011

Project Description

Total length of excavation works: 4000m

Embankments : soil or rock fill material reinforced with geogrids

Modulation geometry: one or double sided

Reinforced slopes with gradient 2:3

Deck width: 13.0m – 13.5 m

Maximum height: 20m

Geology

Recent disposals, scree, serpentinized peridotites, limestone's flysh formations, weathered mantle, schistosed serpentinites, ophicalcites (encountered as highly weathered or as rocky formations)

Our Services

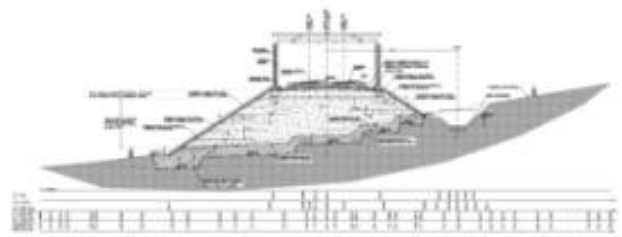
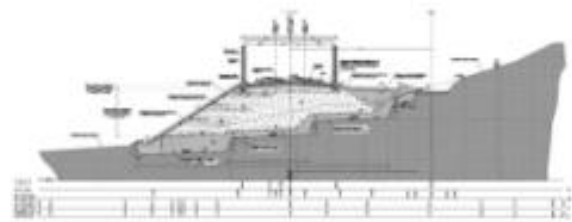
- Detailed design
- Construction drawings

Construction Details

- Construction of drainage – foundation improvement layer and application of separation geotextile
- Construction of embankments with soil fill materials
- Foundation of the embankments with reinforced geogrids
- Installation of 3-D protection geogrid for slope protection

Client

Construction J/V AKTOR S.A. - TERNA S.A.



Embankment typical cross sections