

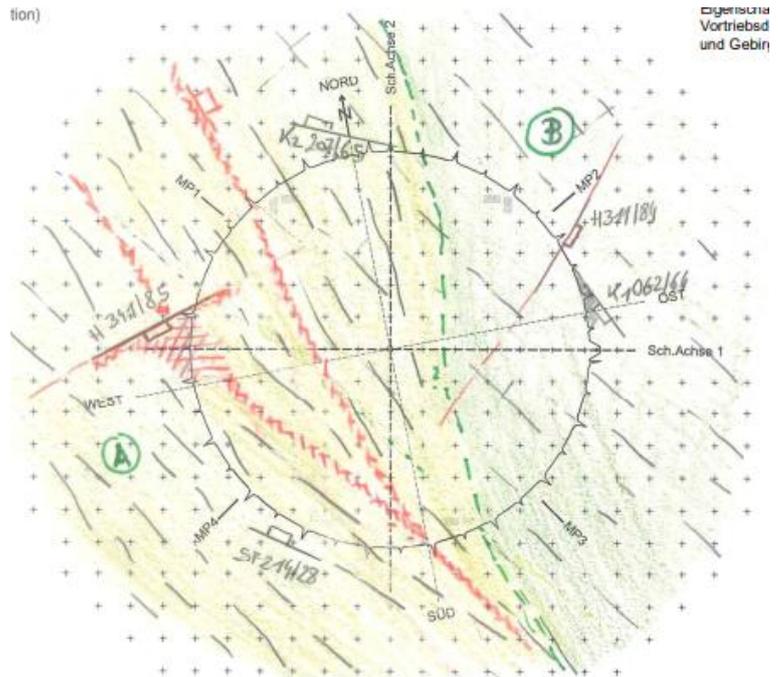
PROJECT DESCRIPTION

Construction Lot 2.1 – Tunnel Frörschnitzgraben of Semmering Base Tunnel is the middle and with approx. 13 km length the longest section of Semmering Base Tunnel. The 4.4 km long tunnel section heading towards Mürzzuschlag is excavated by drilling and blasting, the 8.6 km long construction section in direction Gloggnitz is excavated by two single shield hard-rock TBM, each with a diameter of 10 m.

The tunnel construction is carried out through two shafts, each approx. 400 m deep. At the base of the shafts the emergency stop station is located, which serves as a site installation during construction. Both shafts will be utilised for ventilation and emergency exit during operating phase.

GROUND CONDITIONS

The project area is characterised by a rock mass which is intensely overprinted by brittle tectonics. In a relatively narrow area various rock types of different sub-units of the Semmering- and Wechsel-unit are encountered. The tunnel is excavated through low-metamorphic sedimentary rocks (e.g. phyllite, schist, quartzite, meta-sandstone, and sulphate rocks) of different tectonic units, aquiferous carbonate rocks of different appearance as well as higher metamorphic crystalline schists and gneisses. Geological units are separated by brittle tectonic faults or have been imbricated during the Alpine orogeny with development of wide fault zones. Important supraregional tectonic



Geological documentation of temporary shaft invert, Shaft Frörschnitz 1, depth: 230.5 m

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elements are the Mur-Mürz-Semmering-Vienna Basin-Fault System and associated regional fault zones.

3G TASKS

- Engineering geological and geotechnical design services for detailed design and tender design
- Site supervision for shafts, NATM and TBM tunnels
- Engineering geological - hydrogeological documentation und engineering geological consulting services during construction

KEY DATA

PROJECT:
Semmering Base Tunnel, Construction Lot SBT2.1 – Tunnel Frörschnitzgraben, 2 single track tubes, excavated by TBM and drill &

blast method (NATM), auxiliary structures such as emergency stop station, cross passages and shafts excavated by NATM.

TYPE OF PROJECT:

Engineering geological and geotechnical design, site supervision, engineering geological documentation and consulting during construction

LOCATION:

Frörschnitzgraben, Styria, Austria

PROJECT PERIOD:

Since 2011

CLIENT:

ÖBB-Infrastruktur AG (Austrian Federal Railways)