

## S 7 FÜRSTENFELD EXPRESSWAY, RIEGERSDORF - HEILIGENKREUZ SECTION, CONTRACT SECTION 8

Client: ASFINAG Bau Management GmbH  
Development Period: since 2009

### THE PROJECT

The 29 km long new construction of the S 7 Fürstenfeld expressway starts in the West from the A 2 Southern Motorway at Riegersdorf and runs Southeast to the Hungarian border at Heiligenkreuz. The Contract Section 8 in the western section of the project comprises mainly the Rudersdorf Tunnel (length 2.9 km), partly prepared by the mining method and partly by a cut-and-cover method, and the adjacent trough structure (length 300 m) at the East side of the tunnel.

### OUR FUNCTION

For this project, BGG Consult attends to the fields of engineering geology, hydrogeology, geotechnics and geomechanics, starting from the tender phase. Based on numerous underground investigations as well as soil mechanical and rock mechanical laboratory tests, a geotechnical and hydrogeological expert's report has been prepared for the specific requirements of the Contract Section 8. During implementation, the construction measures which are relevant in the field of geotechnics and hydrogeology are supervised.

*Construction pit support system, cut-and-cover west:*

The temporary slopes of the construction pit for the tunnel tubes were prepared with a very low gradient (1:2) or secured by anchored shotcrete. In the area of the mining portal, a slip joint several metres below the contact surface has been discovered during excavation, which was not recognizable in the boreholes during investigation and obviously has been activated by the load relief of the excavation. For this reason, additional retaining elements in form of anchored bored pile walls were necessary and the construction procedure for two blocks of the southern tube was changed to a cut-and-cover top-down method.

Due to the intensive geotechnical supervision and the technical monitoring, the measures could be adjusted to the new situation technically correct and economically efficient.



*Construction pit support system in the area of the mining portal west and cut-and-cover top-down method at the southern tube*