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1. Deep Excavation for Gravity Separator at Steel Mill (Sweden)

Client: Swedish Steel Corporation, SSAB

Consultants: Viak AB, Stockholm

Contractors: Siab

Grout contractors: Sweba, Gothenburg

The new rolling mill demanded a separator system for the cooling water which contains a lot of ironoxid. A circular sedimentation basin was founded 18 m below the factory area level, just beside a factory hall in operation and under a crane runaway.

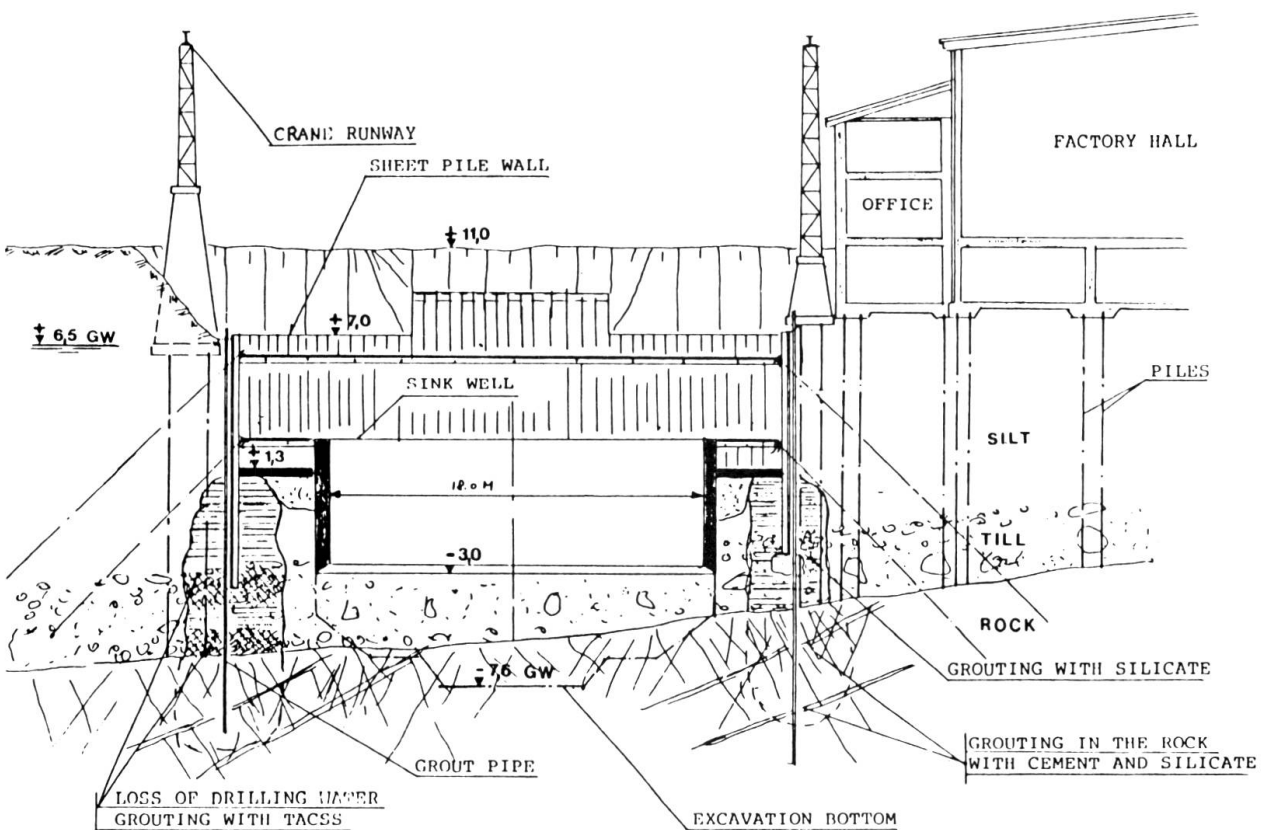
A pumping station was founded at 11 meters depth.

Soil strata

Elevation	Depth	Soil
+12 to +6	0–6 m	Filling of slag, sand and gravel
+6 to app. –2	6–14 m	Silt
–2 to –5	14–17 m	Till with boulders
–5	17 m	Rock, mainly granite

Planned construction method

- Open cut down to +7 = 5 meters below the mill yard. At +7 the adjacent factory hall and the crane runaway are founded. The groundwater level was also found at this level.
- Driving of a sheet pile wall to refusal on rock. If the sheet pile did stop earlier on boulders the vertical stability should be guaranteed by driving steelpiles in pipes welded to every third sheet pile.
- Anchoring the sheet pile wall by oblique wirecables grouted at least 3 meter in the rock.
- Sinking of a prefabricated circular concrete basin, 6 m in height, from elevation + i.e. 11 meters below the ground.
- Lowering of the groundwater tabel to the rock by means of sinkwells outside the sheet pile wall.
- Excavation of the rock in the deepest part of the basin by blasing.



SSAB Domnarvet Borlänge Steel Plant

