Marti Holding AG
Bauunternehmungen

A5, Grenchen Witi Tunnel

Client	Department of Public Works Canton Solothurn
Planner, Engineer, Site Supervision	Engineering Joint Venture IGWI und BAWI – BSB + Partner, Biberist – Weber + Brönnimann AG, Berne – Basler & Hofmann AG, Esslingen – Spichiger + Partner AG, Derendingen – SMK, Bauingenieur- und Planungsfirma, Feldbrunnen
Contractor	Witi Tunnel Joint Venture – Marti AG Solothurn – Astrada AG Solothurn – Batigroup AG, Solothurn – Conti AG, Solothurn – Hoch- und Tiefbau AG, Grenchen – Meier + Jäggi AG, Solothurn/Olten – Murer AG, Erstfeld – Schlittler AG, Niederurnen – Zetter AG, Solothurn – Zschokke Locher AG, Zurich
Managing Contractor, Technical Management	Marti AG Solothurn

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1. Portal zone
2. Concreting the floor slab in the building pit enclosed by sheet piling. This is followed by erection of the semi-monolithical tunnel formwork.
3. The simultaneous operations of excavation and of sheet pile wall construction required planning of minute precision for the use of the machinery.

Project
The A5 Autobahn passes through an exceptional natural landscape in the region of Grenchen and Witi. To protect this landscape optimally and ecologically, a tunnel had to be built with a cover at ground level.

Length of tunnel	1,760 m
Length of west ramp	285 m
Length of east ramp	395 m
Total length	2,440 m
Carriageway width in each direction	7.5 m

Construction Period
July 1998 till December 2000

Contract Sum
CHF 122 million

Services
The construction pit sheet pile wall was not erected by means of conventional ground anchors, but in accordance with a contractor option of erecting an anchor wall placed 16 m further back. The pumped water was partly infiltrated back. The concrete work of the tunnel was executed in a weekly cycle, 2 x 12.5 m = 25.0 m per week.

Construction Pit:	
Max. excavation depth	10 m
Excavation solid	820,000 m^3
Backfilling	340,000 m^3
Sheet pile wall	140,000 m^2
Max. pumped water rate	30,000 l/min.
Structure:	
Concrete	144,000 m^3
Steel reinforcement	15,700 tonnes
Waterproofing for ground water	136,000 m^2
Foundation layer	40,000 m^3
Hot mix surfacing	20,000 tonnes

Executed by Marti AG Solothurn