Albvorlandtunnel









SHORT DESCRIPTION

The new railway link (NBS) Wendlingen-Ulm together with Stuttgart 21 significantly improves the infrastructure of Baden-Württemberg and thus creates shortened travel and transport times not only in Baden-Württemberg but also across Germany and Europe.

THE PROJECT

In the course of the NBS Wendlingen-Ulm, Implenia carries out the construction of the approximately 11.1 km long project section 2.1 a/b (section **Albvorlandtunnel**). The Albvorlandtunnel (AVT) consists of two single-track tunnel tubes (north and south) with a length of 8,176 m each and cross passages every 475 m. In total the tunnel tubes are connected via 16 cross passagess. The tunnel drive is carried out over a distance of 5,900 m per tube with an EPB shield TBM, which has a diameter of 11 m, and over a distance of 2,100 m in shotcrete construction method. The final inner lining consists of a concrete segment lining with a thickness of 0.45 m.

In addition, the portal structures East and West are built in cut-and-cover method as sonic-boom structures. In the west, the approximately 1.1 km long freight train connection coming from Wendlingen crosses the motorway A8 in a single-track tunnel and also enters into the AVT's northern tube over a connection tunnel with a length of 167 m. Also on the

Westportal, the “Kleine Wendlinger Kurve” (approx. 1.0 km) connects the new railway line by means of a tunnel and trough construction to the existing line heading south to Tübingen.

CHALLENGES

With a maximum overburden of 75 m in the flat area of Albvorland, the two single-track tunnel tubes have to be driven almost at ground level. In the south of the city of Kirchheim unter Teck, the busy A8 motorway will be crossed with only small overburdens and ongoing operation.

FURTHER INFORMATION

Key Figures

- Realization 2016 – 2021
- Total length 2 x 8.2 km
- Excav. cross section 93 m^2
- Geology Clay and clay marlstone, silt and siltstone, marl-, lime- and sandstone

Construction methods

- “Albvorlandtunnel”
  - EPB-TBM drive, Mining technique, L = 1 x 7.978 m, 1 x 7.651 m, Ø = 10,87 m,
  - inner concrete segment lining, t = 0.45 m;
  - Shotcrete method, L = 2 x 2,100 m; 16 cross passages every 500 m;
- “Kleine Wendlinger Kurve“
  - Tunnel and trough structure, L = ca. 530 m;
  - Freight train connection
  - Mining technique, single-track tunnel under motorway A8 and connection to AVT,
  - L = ca. 1,130 m;
  - Retaining walls, ground water tank, trenches;
  - Tunnel portals (Sonic-Boom-structures) east and west

Project Participants
Client
Deutsche Bahn, DB Netz AG,
DB Projekt Stuttgart-Ulm GmbH
Planner
ILF, Obermeyer Planen und Beraten GmbH, PSP Consulting Engineers GmbH
Consortium
Implenia AG

FACTS

Location	Nürtinger Straße 50, Wendlingen am Neckar , Germany
Status	completed
Construction volume (value of our services)	675 M EUR
Start of construction	January 2016

Completion	August 2021
Contracting entity	DB Netz AG, Niederlassung Südwest, vertreten durch DB Projekt Stuttgart-Ulm GmbH
Planning	Büchting + Streit AG, Gunzenlehstr. 22-24, 80689 München
Concrete volume	40000 m^3
Reinforcement	4600 to
Other tunnelling	✓
Overall length	8200 m
Tunnel length	11100 m
Cross-sectional area	93 m^2

SERVICES

- Tunnelling
- Transport tunnels
- Service tunnels
- Civil engineering
- Concrete construction
- Urban transport infrastructure
- Rail transport infrastructure
- Structural engineering