Kulmbach Bridge



SHORT DESCRIPTION

New construction of bridge 4-2 on the B 289 over the non-electrified two-track railway line between Bamberg and Hof. This structure is part of the planned Untersteinach bypass (Kulmbach district).

THE PROJECT

The bridge structure is a three-span, double-girdered T-beam bridge that is prestressed in the longitudinal direction. The work to be carried out involved elevating the arch 1.2 metres then lowering it, all while railway services continued to operate.

- Length of the bridge arch: 68.7 m
- Width between railings: 18.60-19.95 m
- Construction height: 1.20 m

The foundations for this bridge are 32 in-situ concrete bored piles with a diameter of 1.2 metres that extend to depths of twelve to 14 metres.

Principal dimensions:

Concrete

- Bored piles: 455 m^3
- Substructures: 925 m^3

- Superstructure: 844 m^3
- Caps: 71 m^3

Steel

- Reinforcing steel: 277 t
- Prestressing steel: 36 t

SERVICES IN DETAIL

- Construction of the bored piles and subsequent construction of the pile caps
- Construction of two abutments and six very narrow pillars with a cross-sectional reduction from bottom to top of 1:25 and rounded corners
- Construction of a supporting structure raised 1.2 metres due to the clearance profile over the railway line and installation of the nail trusses, followed by setting up the formwork for the superstructure
- Installation of the spherical bearings, reinforcement and prestressed reinforcement, followed by concreting work for the superstructure
- Installation of the lowering presses, removal of the supporting framework and lowering of the superstructure after application of the prestressing
- Subsequent waterproofing beneath the caps, laying of the kerbstones and production of the caps

CHALLENGES

- Construction of the superstructure during ongoing railway operations (approximately seven trains per hour)
- Protection of the sewage pressure pipe on the construction site
- Subsequent lowering of the superstructure

FACTS

Location	Friedhofweg , Untersteinach , Germany
Status	completed
Construction volume (value of our services)	1.7 M EUR
Start of construction	October 2016
Completion	December 2017
Contracting entity	Staatliches Bauamt Bayreuth
Project management	Implenia Construction GmbH, Niederlassung Süd
Planning	SRP Schneider & Partner
Concrete volume	2300 m^3
Reinforcement	345 to
Height	4.9 m
Length	68.7 m
Overall length	84 m

SERVICES

- Concrete construction
- Road transport infrastructure
- Structural engineering

https://implenia.com/en/references/detail/ref/kulmbach-bridge/

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