

BYGGHERRE:



Vejdirektoratet
Anlægsområde

Dalbro over Ådal

66 HERNING – ÅRHUS, 6615 BORDING - FUNDER



Dansk Brodag 2010
Dalbro over Ådal 66 HERNING – ÅRHUS,
6615 BORDING - FUNDER

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Head of Bridge Competence Center, München
DYWIDAG BAU GmbH

Odense, den 18.03.2010

Schedule

- **STRABAG organisation**
- **Funder Valley bridge**
- **Technical highlights**
 1. **variable vertical alignment of the bridge superstructure**
 2. **variable horizontal alignment of the bridge superstructure**
 3. **Temporary structure to cross the 85m No-Go area at the Funder stream**

MINORITY INTERESTS

ZÜBLIN
42,7 %

STRABAG
GERMANY ~ 34 %

Group Structure

STRABAG

SHAREHOLDER

~ 66%

88 %

57,3 %

STRABAG
GERMANY

STRABAG
OTHER COUNTRIES

ZÜBLIN

BUILDING

CONSTRUCTION &
STRUCTURAL
ENGINEERING

ROAD CONSTRUCTION

SERVICES

CORE BRANDS

DYWIDAG



ZÜBLIN

STRABAG

OPERATIONAL
BUSINESS

SERVICE COMPANIES



Turnover STRABAG SE in Countries (in Mio €)

	2004	2008	2009
Europe	5.782	11.536	11.113
Middle east	63	490	350
other countries	78	1.717	1.558
total	5.964	13.743	13.021

Employees STRABAG SE in Countries

	2004	2008
Europe	32.484	56.870
Middle east	0	8.710
other countries	803	7.428
total	33.287	73.008

Funder valley Bridge

Project Participants:

Client:

Vejdirektoratet Anlægsområdet

Contractor:

Züblin Skandinavia and DYWIDAG München

Design:

K+S Ingenieur-Consult / NIRAS

Site Inspection Client:

Gimsing & Madsen, Horsens

Client Consultant:

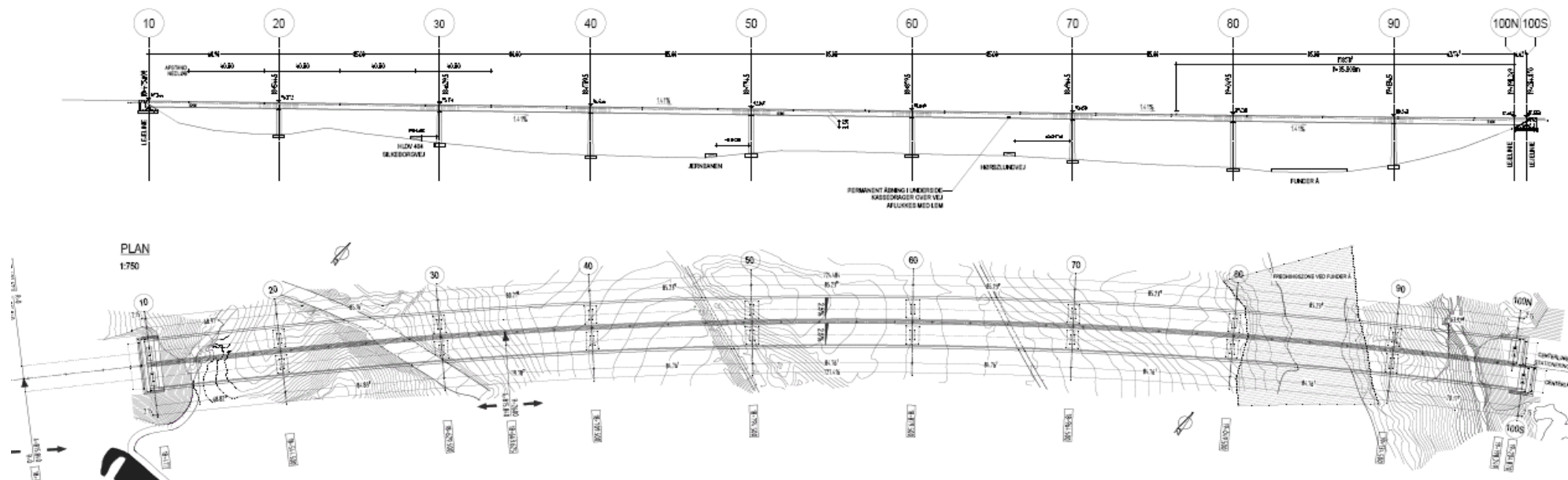
Gimsing & Madsen, Horsens

Independent Checking Engineer:

Gimsing & Madsen, Horsens

Site Inspection Contractor:

NIRAS

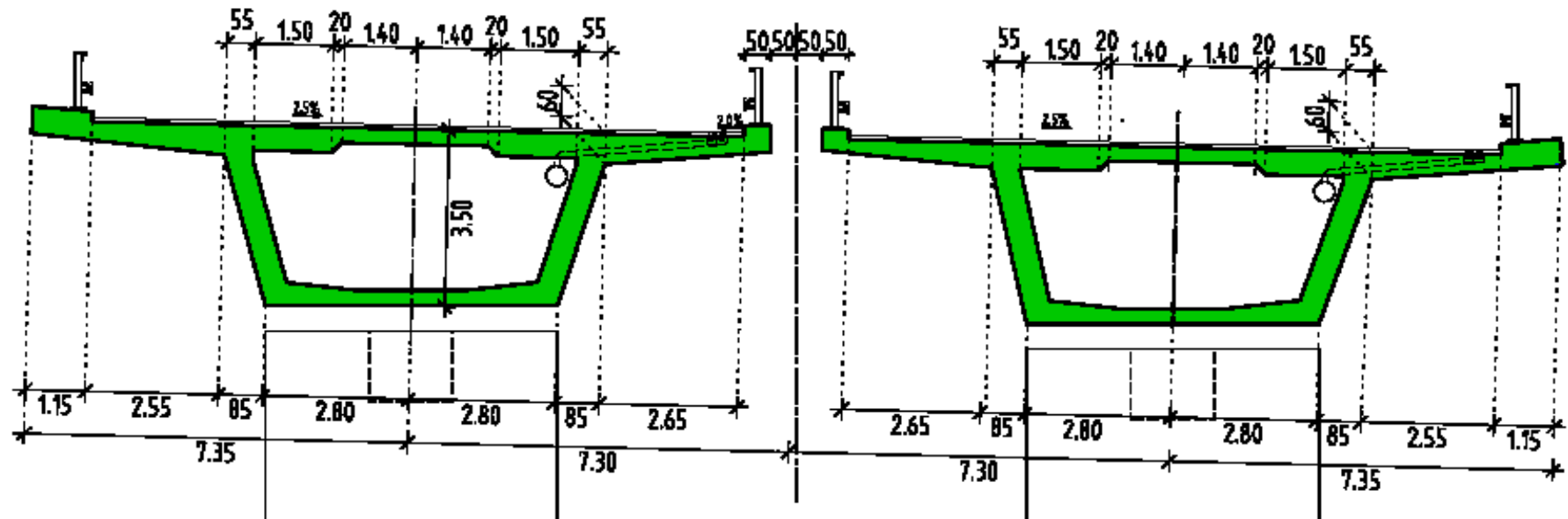


Bridge length north 724m and bridge length south 727m

- 8 permanent piers, 2 abutments
- 9 temporary piers

Superstructure

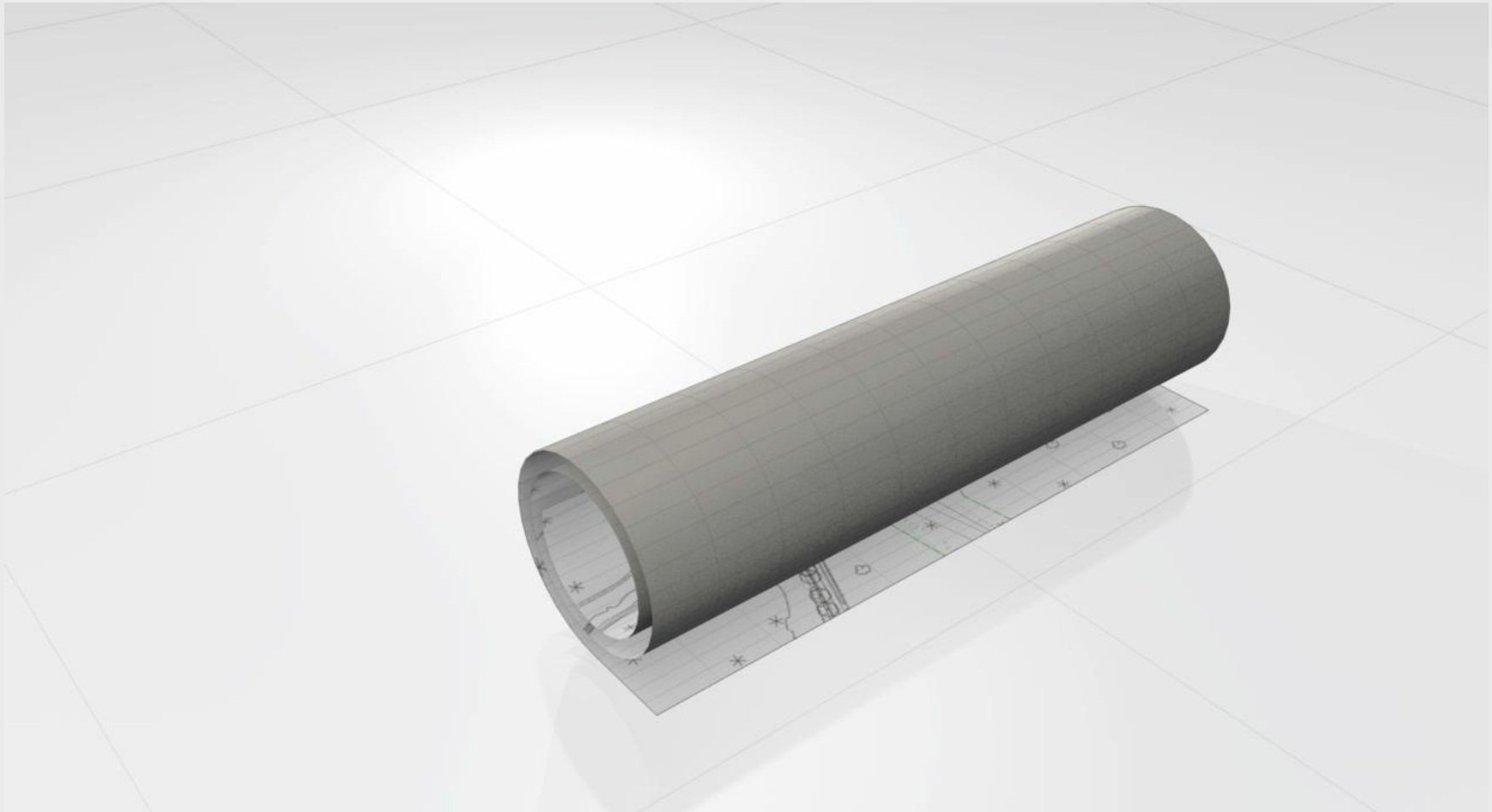
Querschnitt M=1:100



North 26 segments and South 27 segments of about 28m length

Funder Valley Bridge Data

Length of bridge:	727 meter
Height of superstructure:	3,5m to 3,9m
Cross-section of deck:	2x boxgirder
Width of bridge deck:	14,15m
max. height over terrain:	30 m
no. of sections:	26 / 27
section lenght:	app. 28,0 m
Concrete volume:	32.000 m³
Steel quantity in total:	3.600 t
Prestressing steel:	970 t







Temporary piers:

DYWIDAG



Incremental launching

Launching nose







Significant technical highlights of the bridge construction

1. variable vertical alignment of the bridge superstructure

Constant gradient of 1,4% from abutment 10 to pier 70 (cross-section height 3,5m)

Between pier 70 and abutment 100 there is a variable gradient with a radius of 3500m which leads to a change in the cross-section height to 3,9m at abutment 100.

Solution: **divided launching port into section A and B**

Section A: production of trough

Section B: production of bridge deck





Launching port section A for trough production



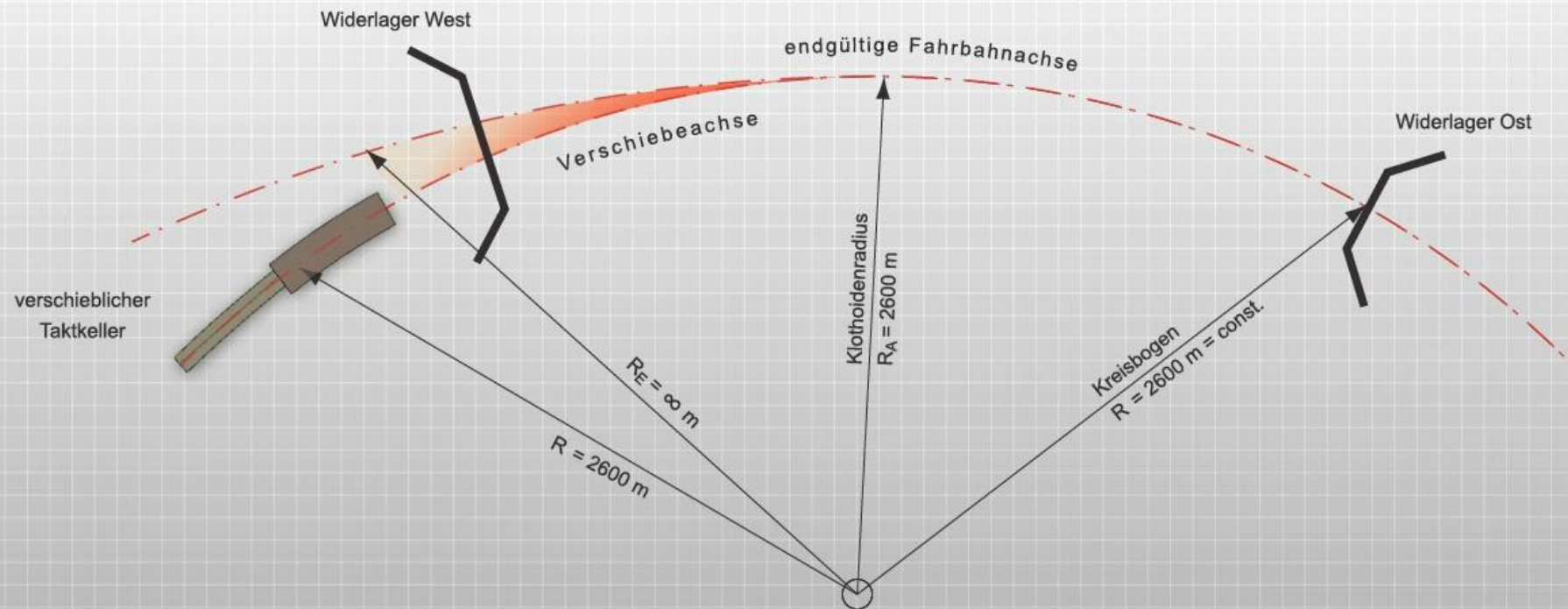


Bridge deck production in section B

Significant technical highlights of the bridge construction

1. variable vertical alignment of the bridge superstructure
2. **variable horizontal alignment of the bridge superstructure**
constant radius of 2600m on a length of 541m followed by a spiral changing the radius to ∞ m over a length of 254m
($A=815\text{m}^2$)

Solution: Match-Cast method (patented by DYWIDAG)



Match-Cast at piers

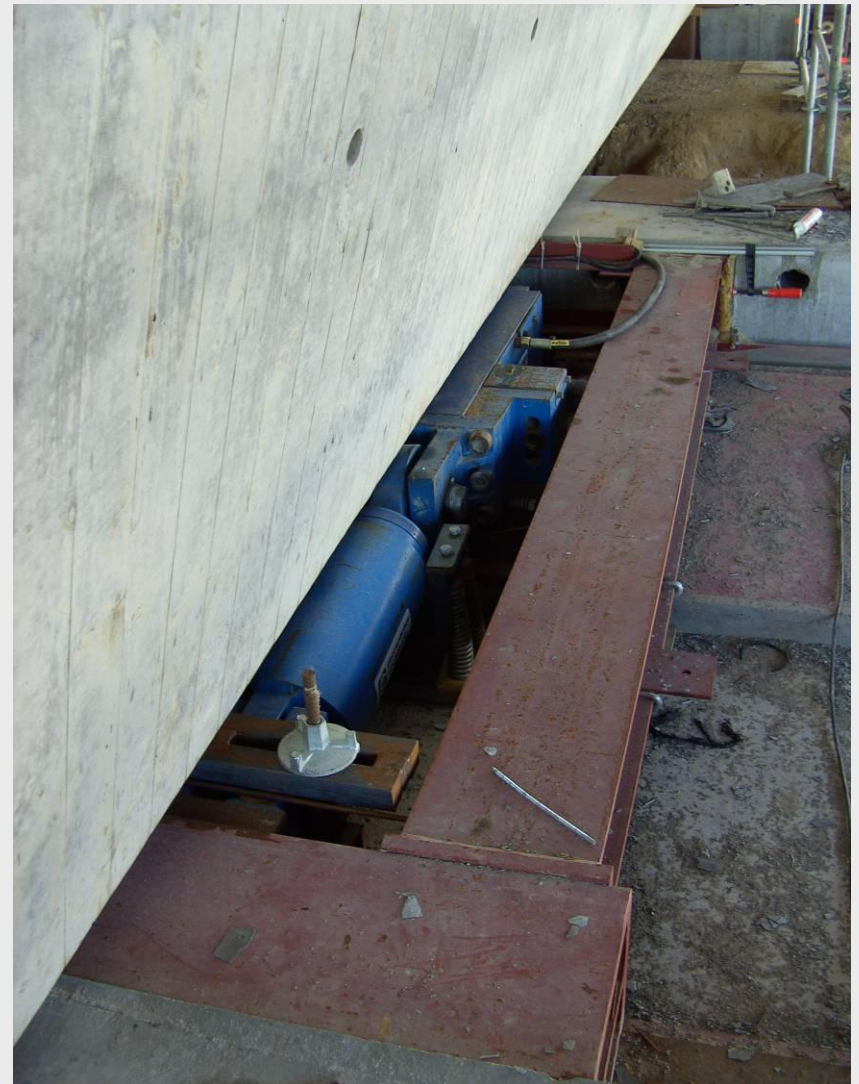
DYWIDAG

Eccentric position on pier 20



Lifting-Launching-Assembly

at the abutment 10

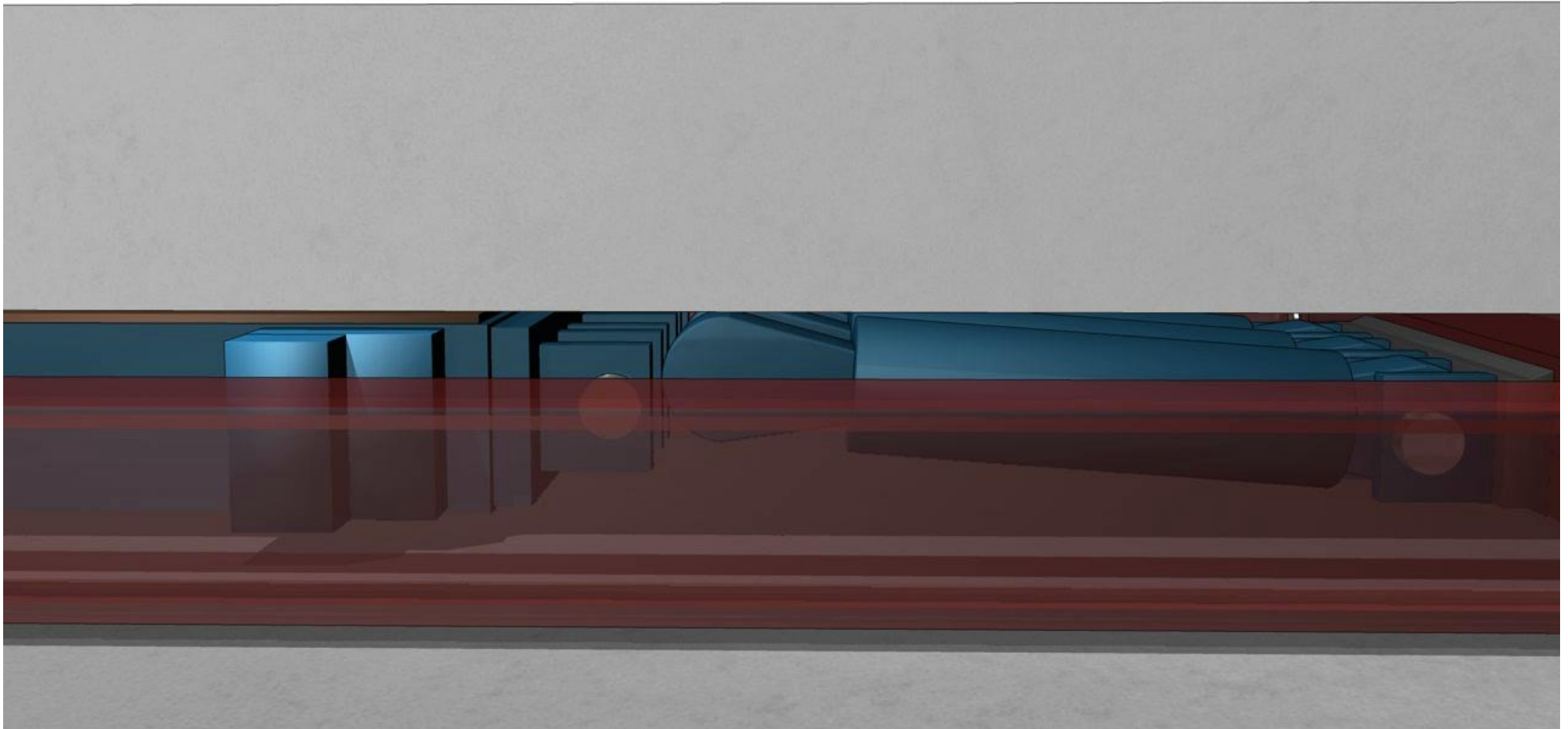




Lifting-Launching-Assembly



Breaking saddle

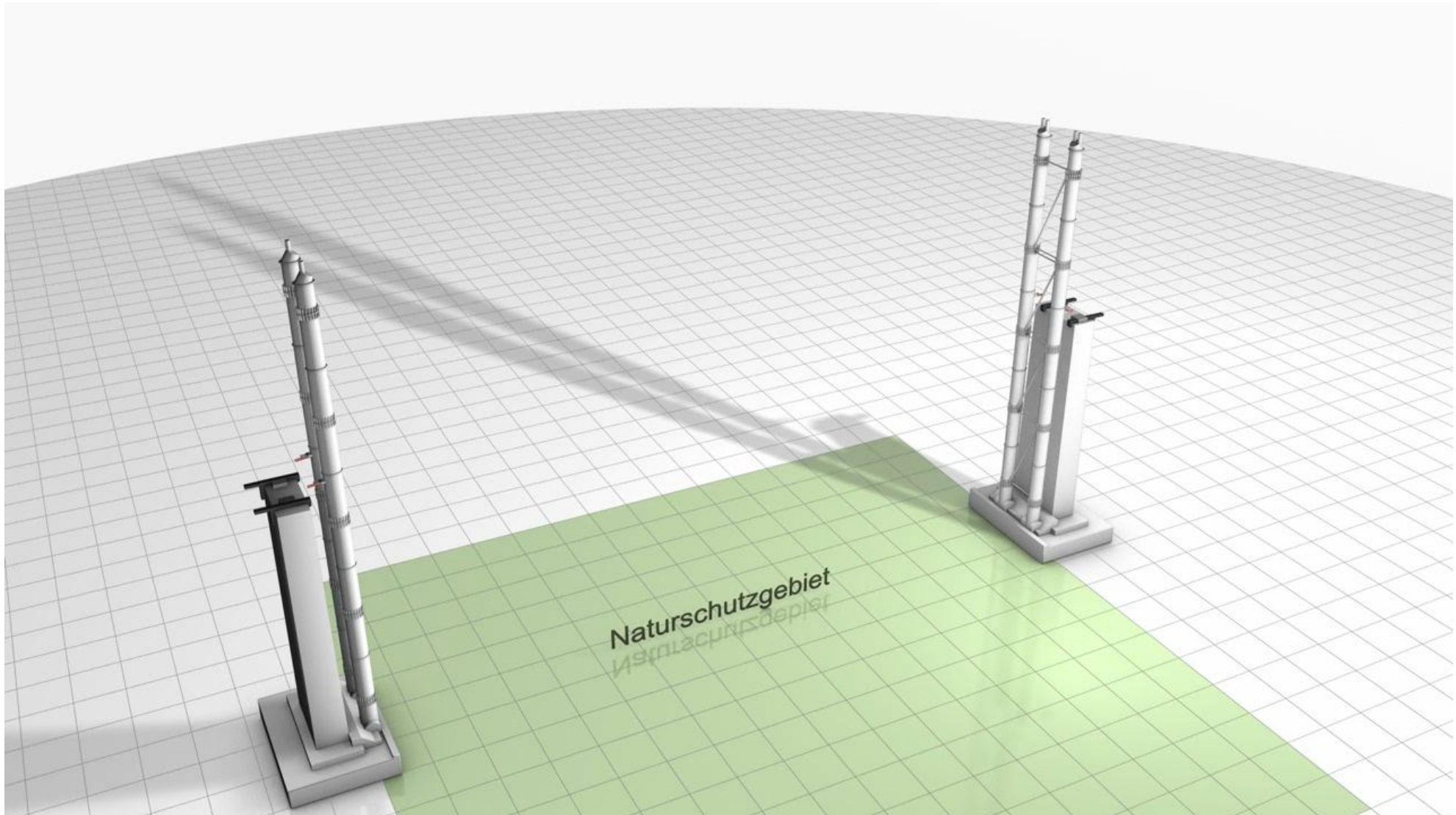


Significant technical highlights of the bridge construction

1. variable vertical alignment of the bridge superstructure
2. variable horizontal alignment of the bridge superstructure
3. **Temporary structure to cross the 85m No-Go area at the Funder stream**

Solution: Steel A-Frame

A-Frame











Prefabricated tendons in section A





Pictures from site







