The Waterway Cross Magdeburg

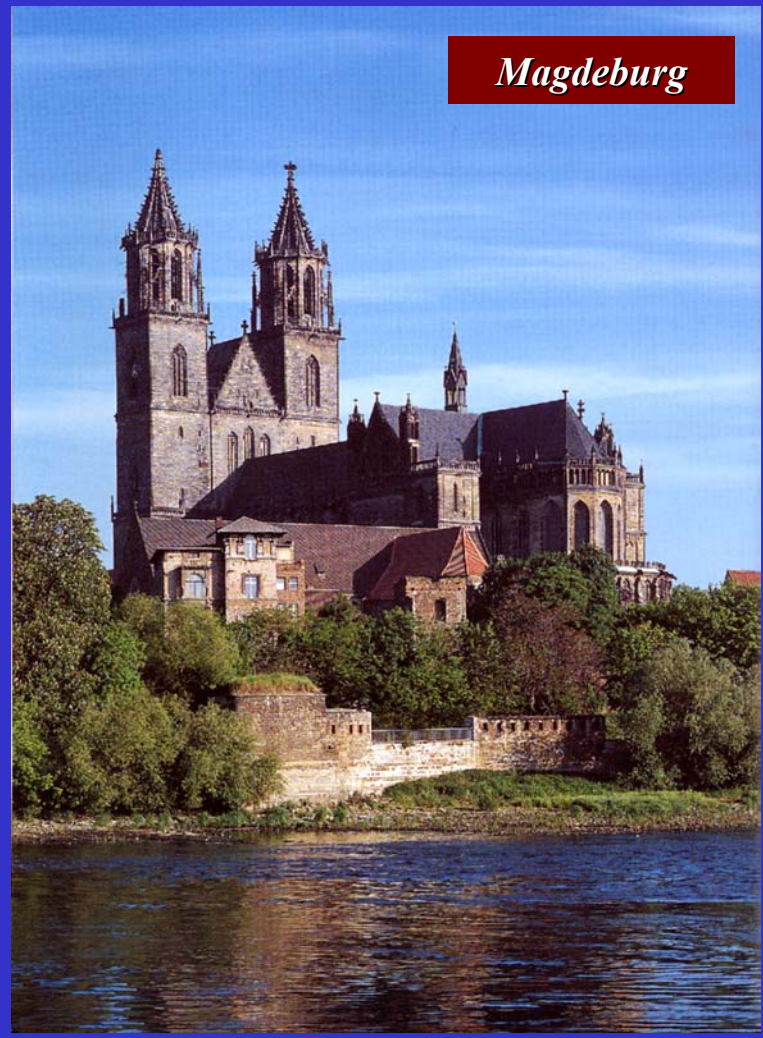
WASSERSTRASSEN NEUBAUAMT MAGDEBURG

Speaker: Thomas Menzel, Magdeburg, Germany

U.S. Section of PIANC

100th Anniversary Meeting **16-19 April 2002**

Emperor Otto II



Waterway network in Germany

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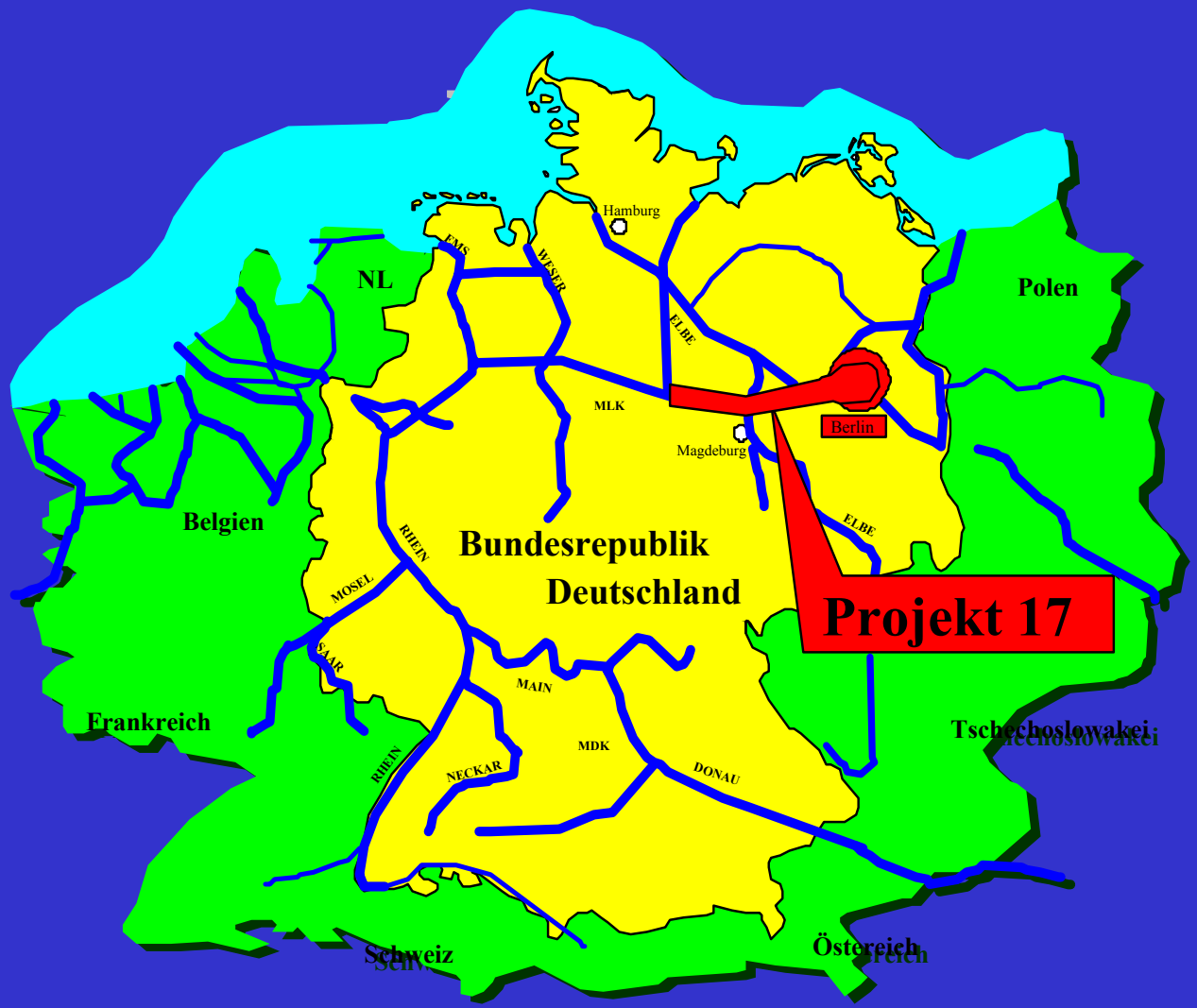
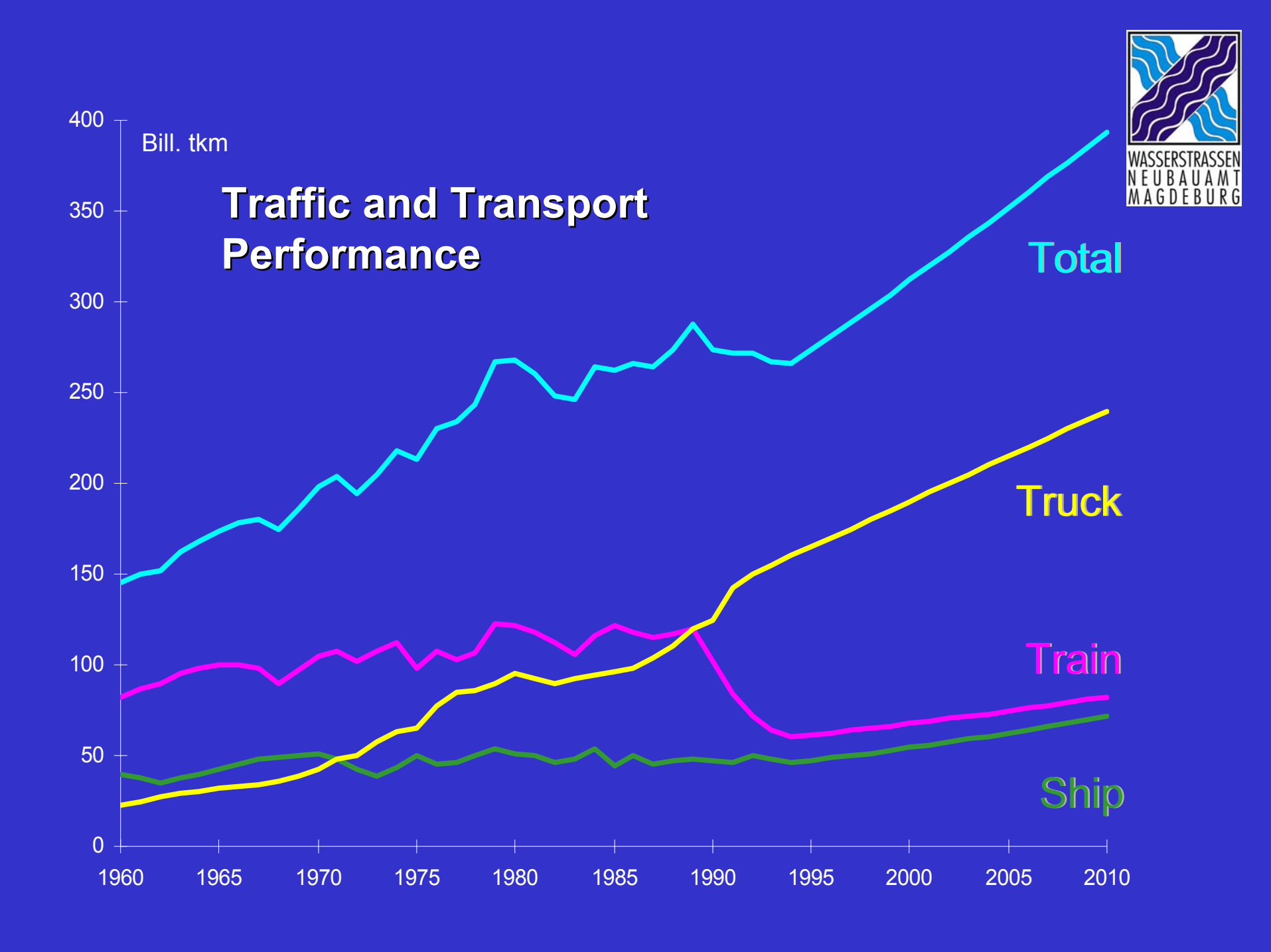
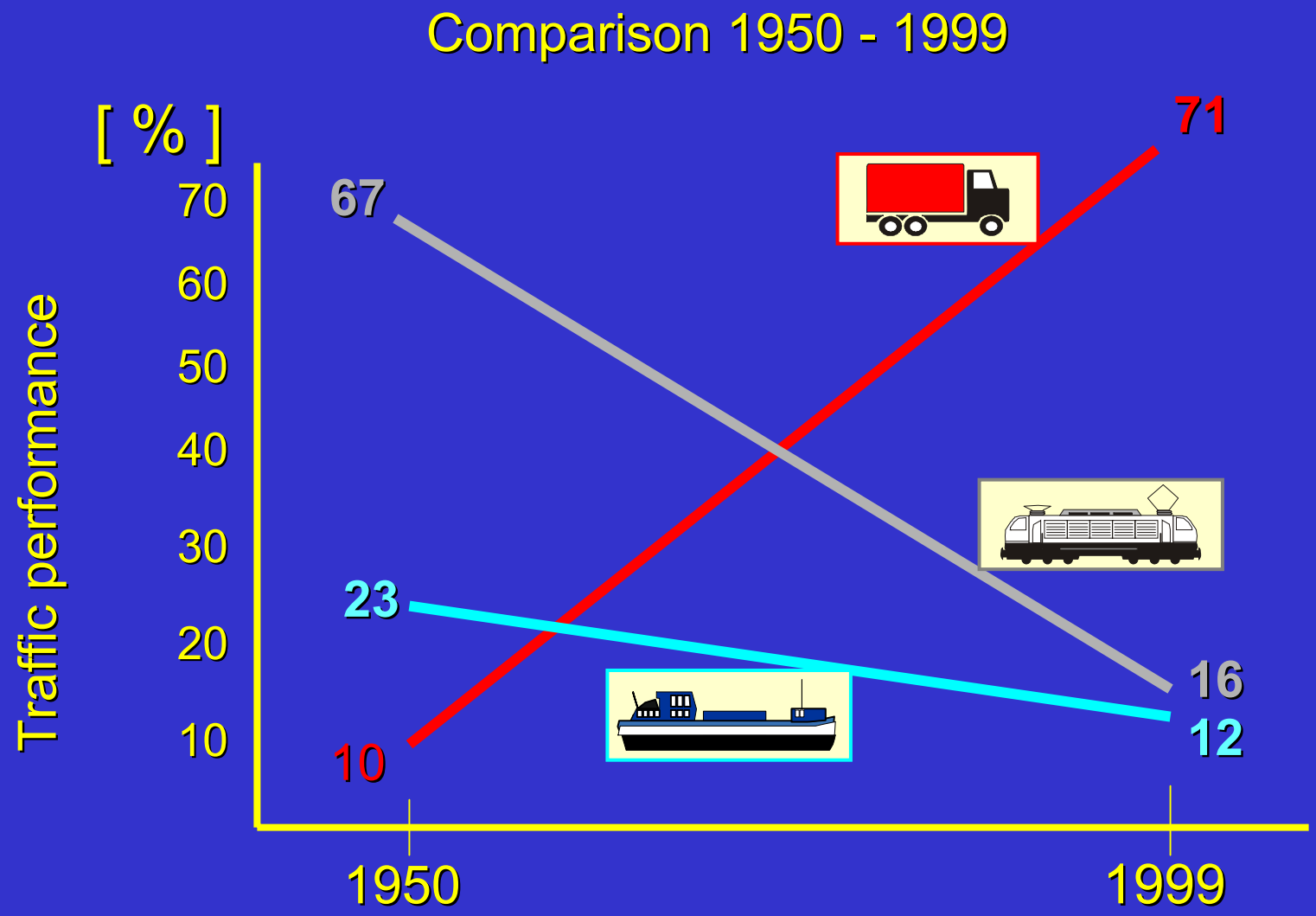


The Mittelland Canal as a connecting link between major German rivers

WASSERSTRASSEN NEUBAUAMT MAGDEBURG


WASSERSTRASSEN
NEUBAUAMT
MAGDEBURG
Traffic and Transport Performance
Bill. tkm
400
350
300
250
200
150
100
50
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
Total
Truck
Train
Ship

Performance of the individual traffic carriers



Traffic and Transportation project no. 17

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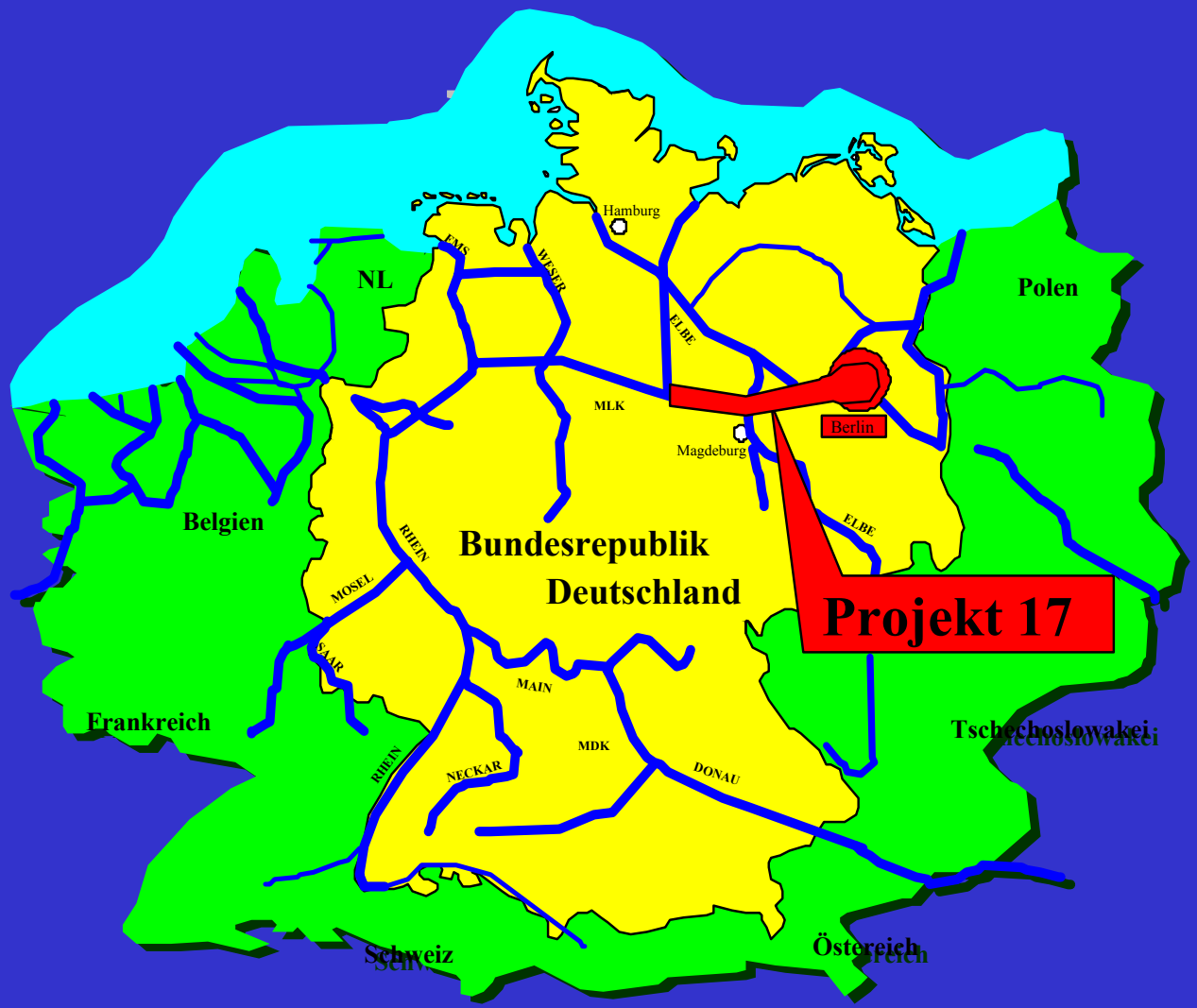
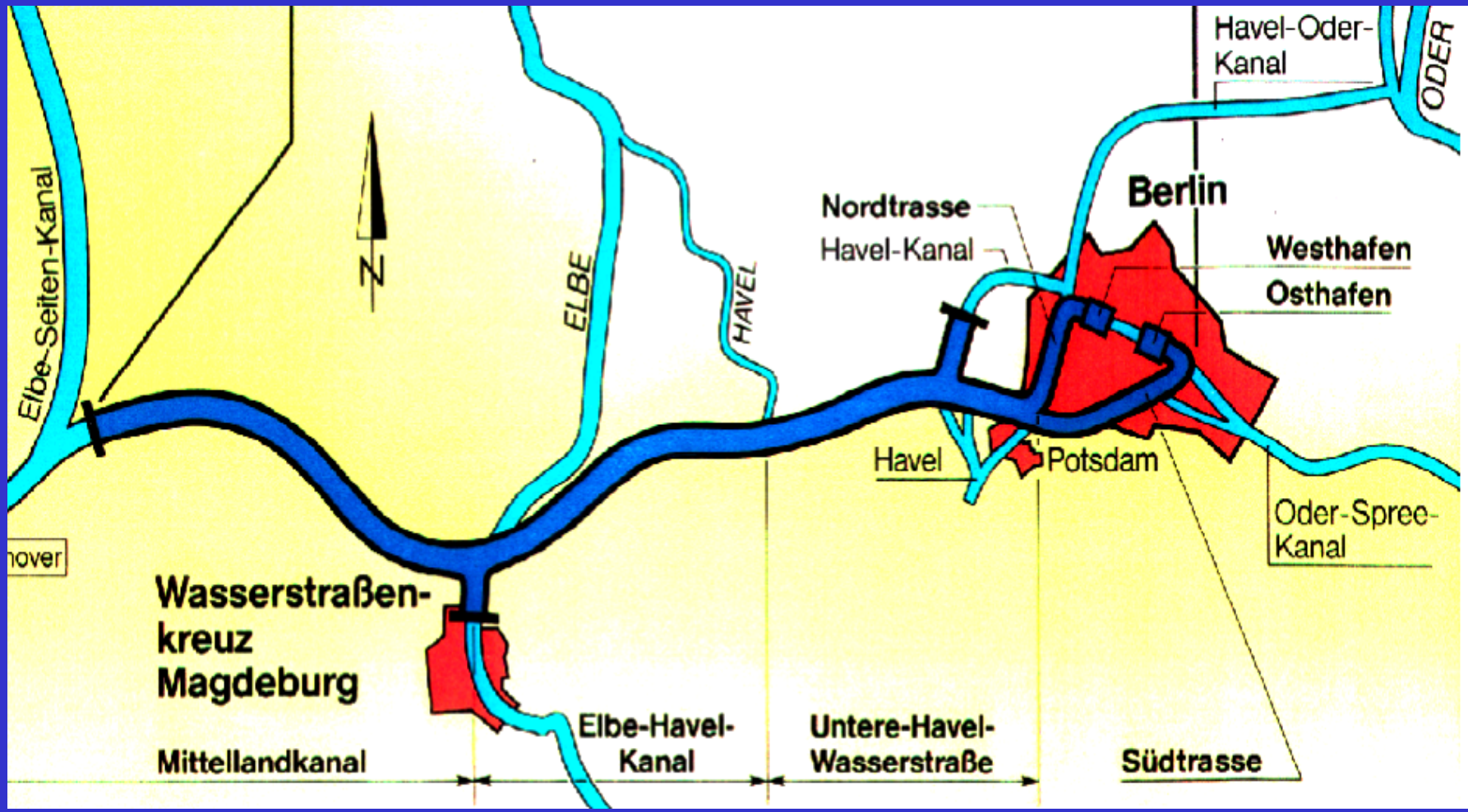


Traffic and Transportation Project no. 17

Waterway link Hanover - Magdeburg - Berlin

WASSERSTRASSEN NEUBAUAMT MAGDEBURG



Trans European Network

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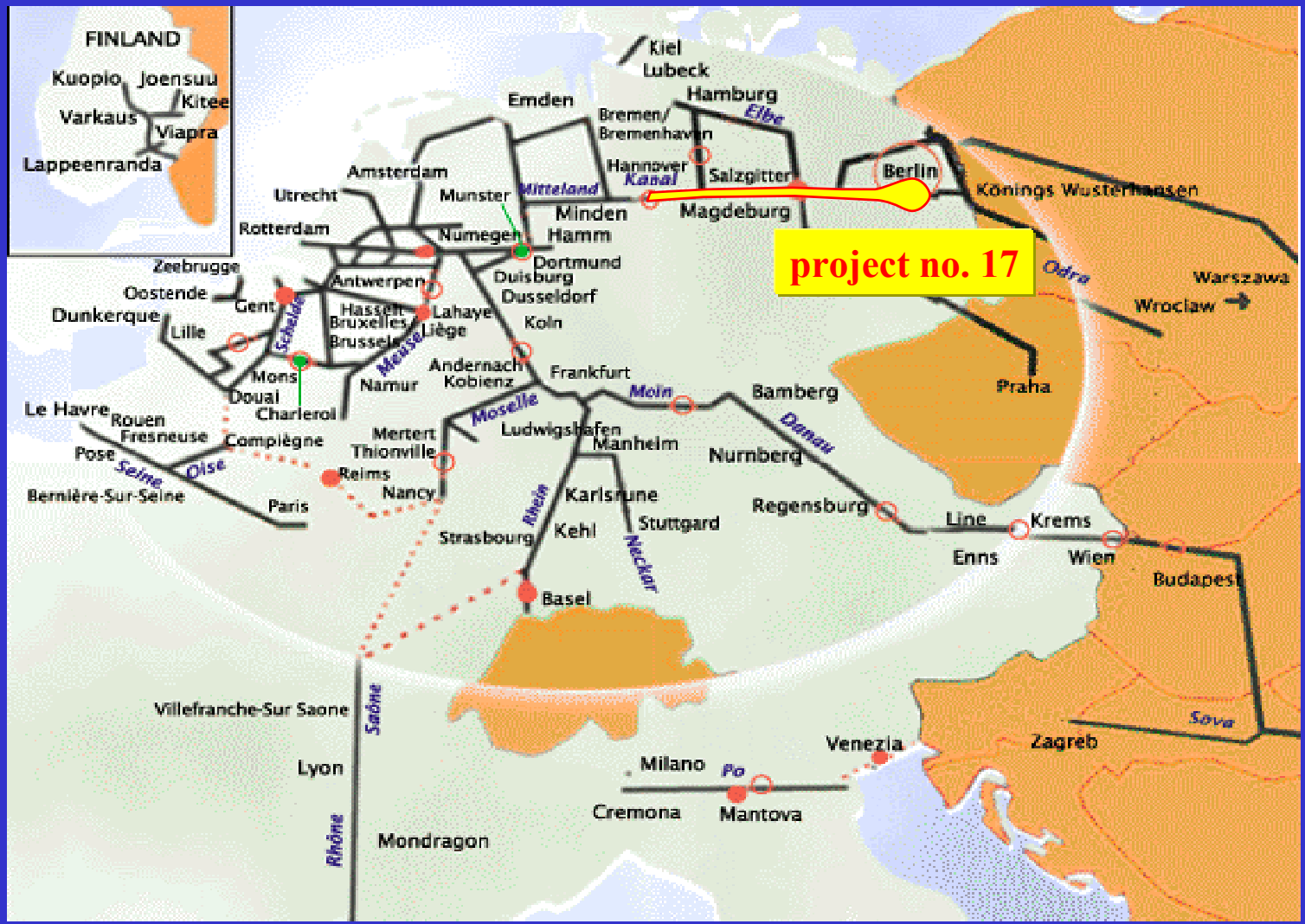

Waterway Cross Magdeburg

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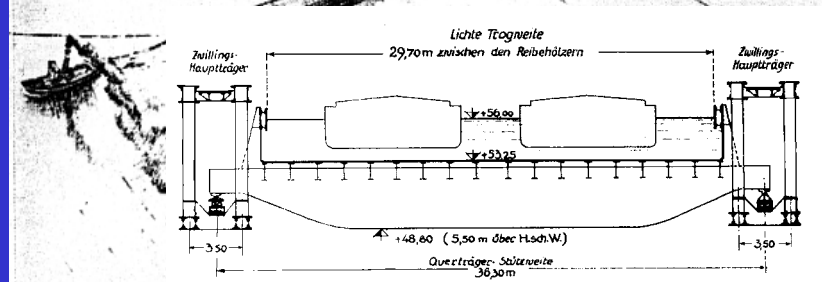
Planning from 1930 for an aqueduct



Waterway Cross Magdeburg

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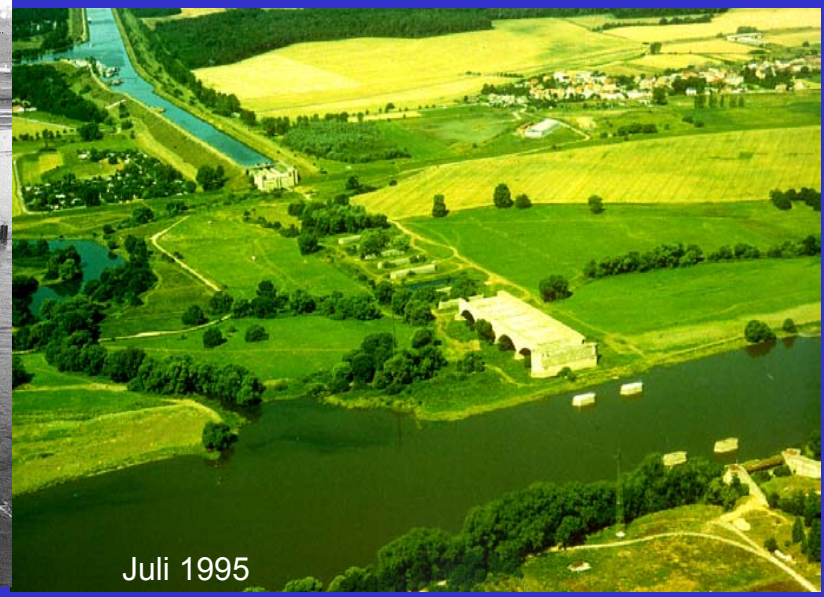
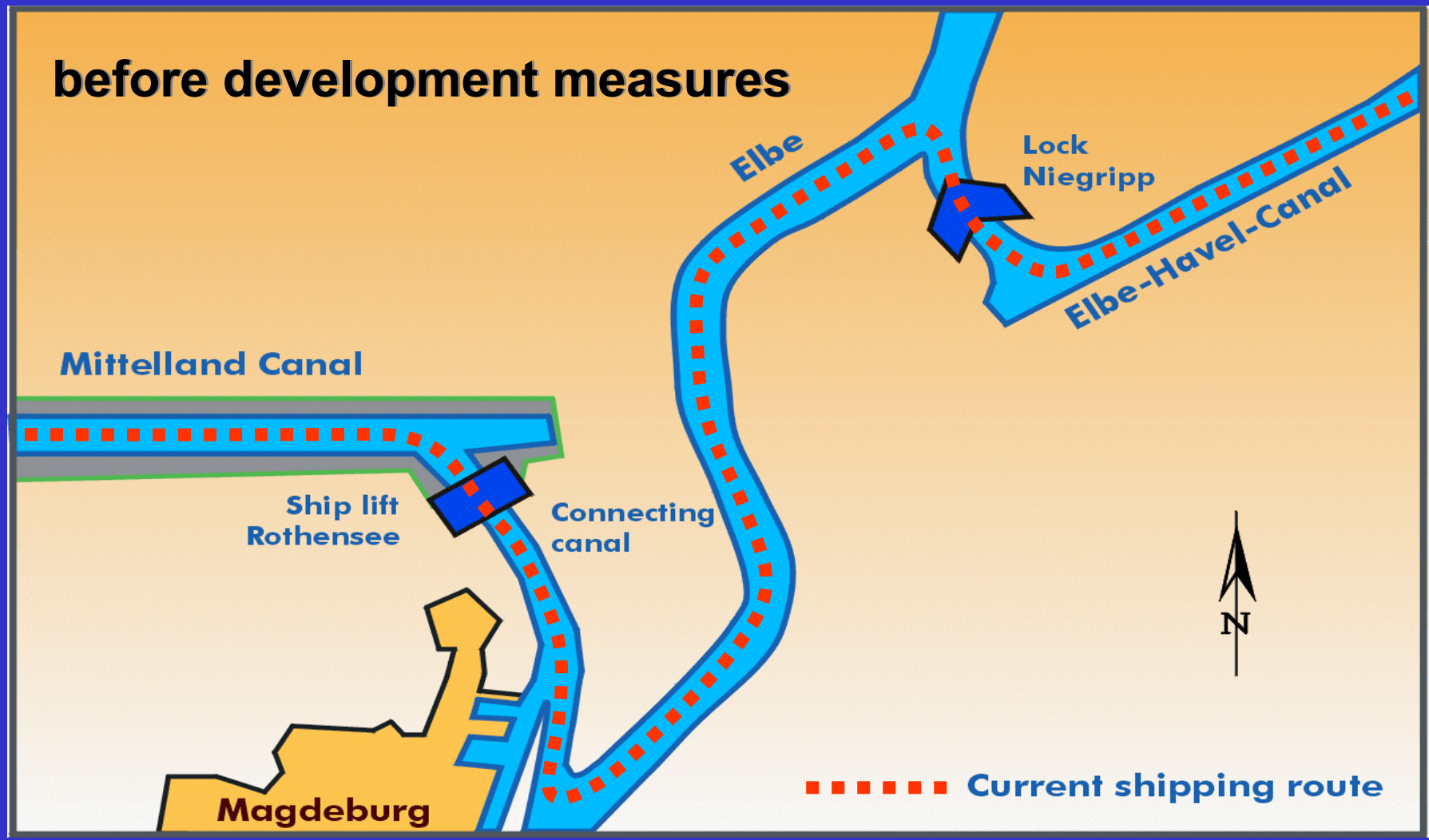
Unfinished Aqueduct



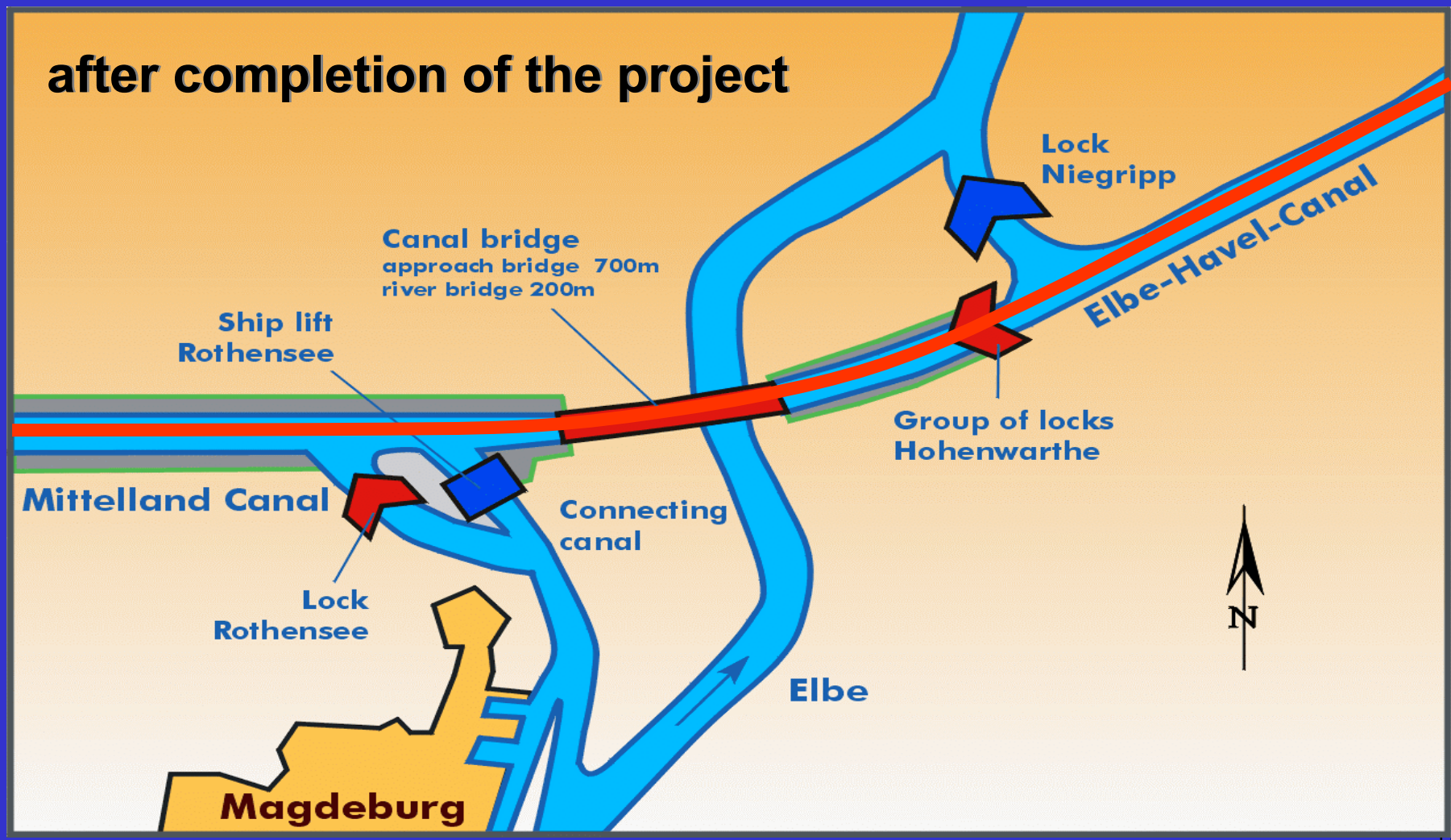
Waterway Cross Magdeburg

WASSERSTRASSEN NEUBAUAMT MAGDEBURG

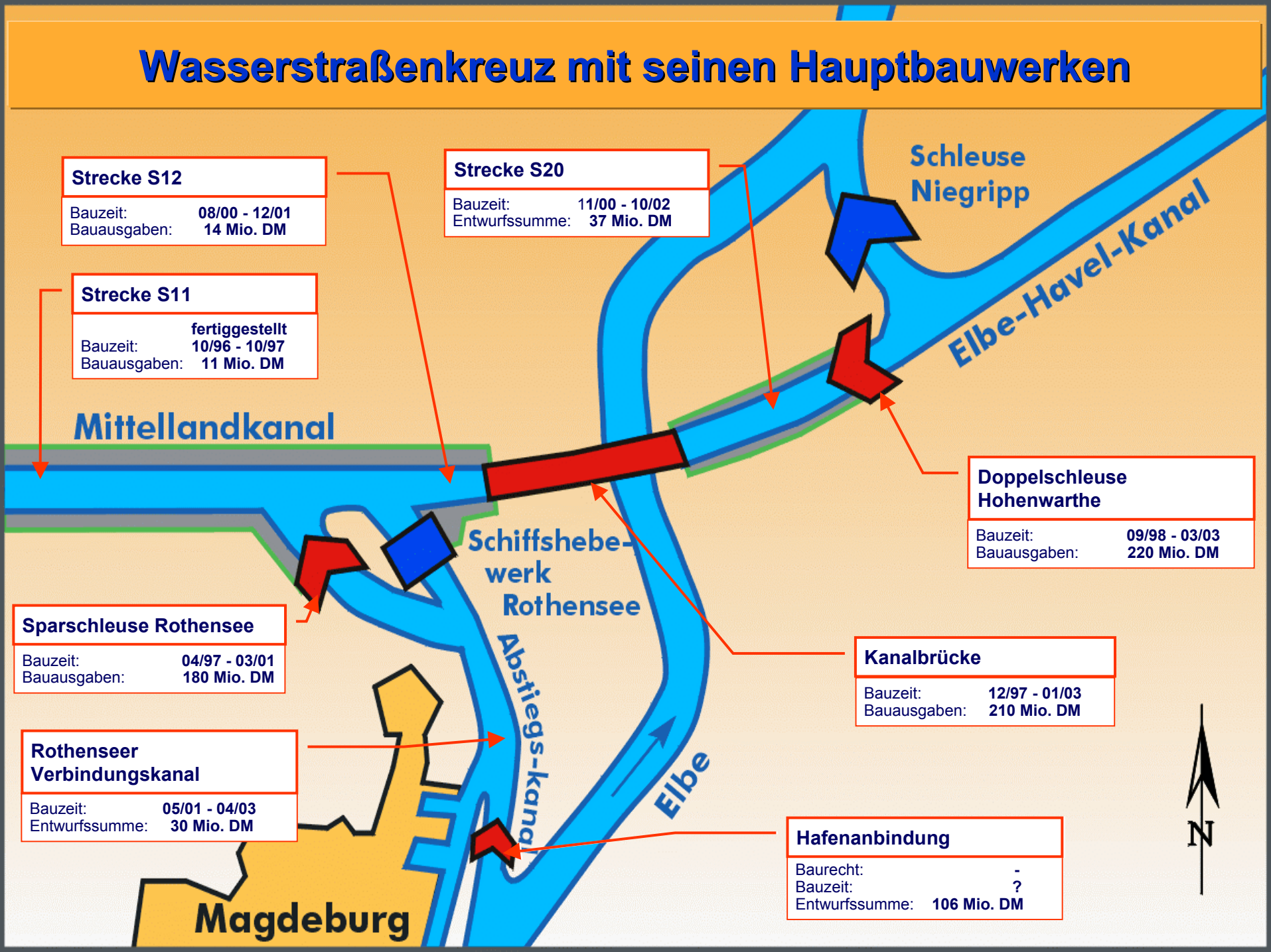


Waterway Cross Magdeburg

WASSERSTRASSEN NEUBAUAMT MAGDEBURG

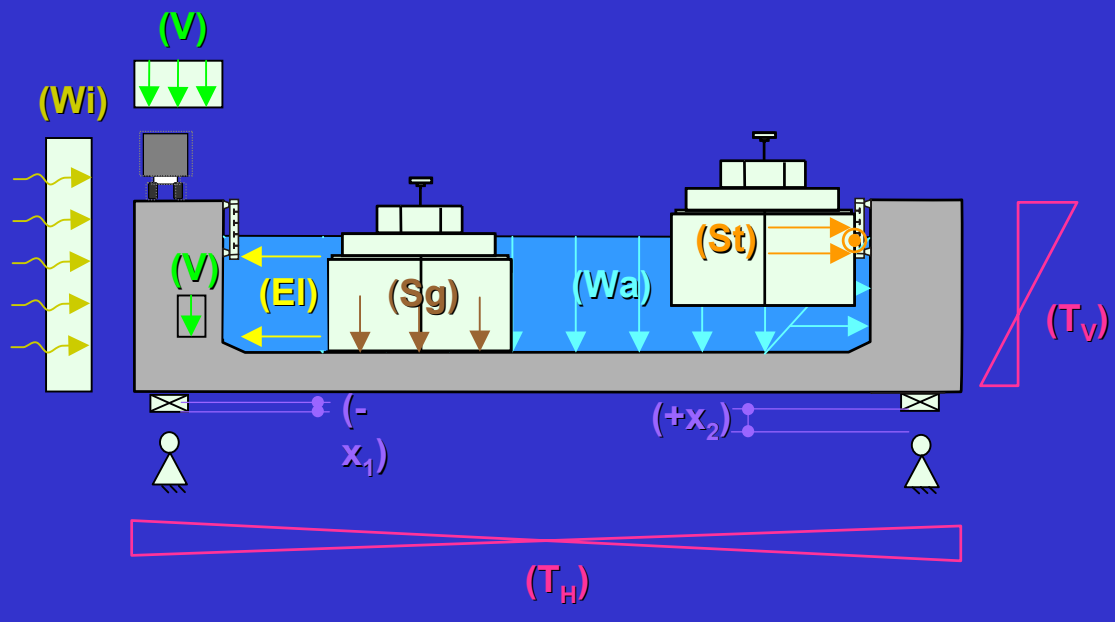


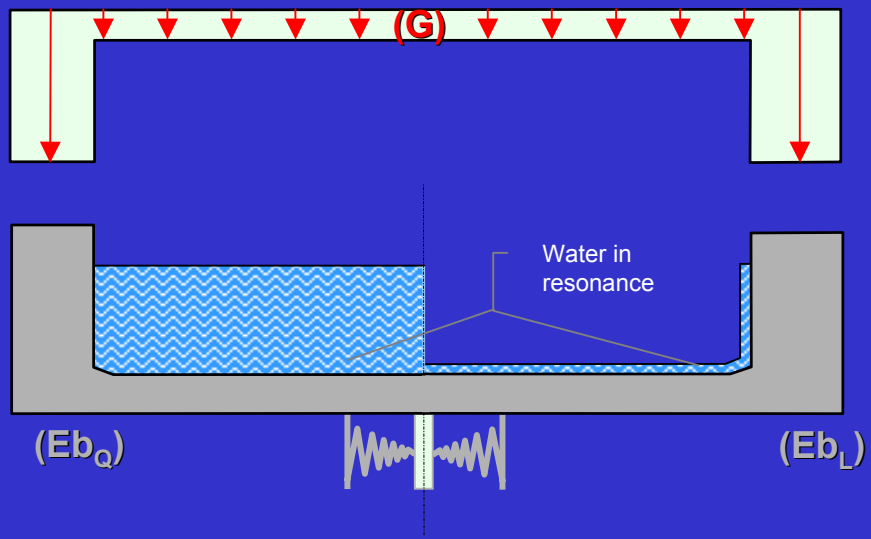
Wasserstraßenkreuz mit seinen Hauptbauwerken



Panel 4: Advanced Technologies ....

weight assumption





dead weight **(G)**

water weight **(Wa)**

wind weight **(Wi)**

a) with traffic [truck]
b) without traffic

traffic weight **(V)**

sinking and elevating

a) distortion of the development site $(-x_1)$
b) elevation of the bearings $(+x_2)$

bump by a ship **(St)**

sinking ship **(Sg)**

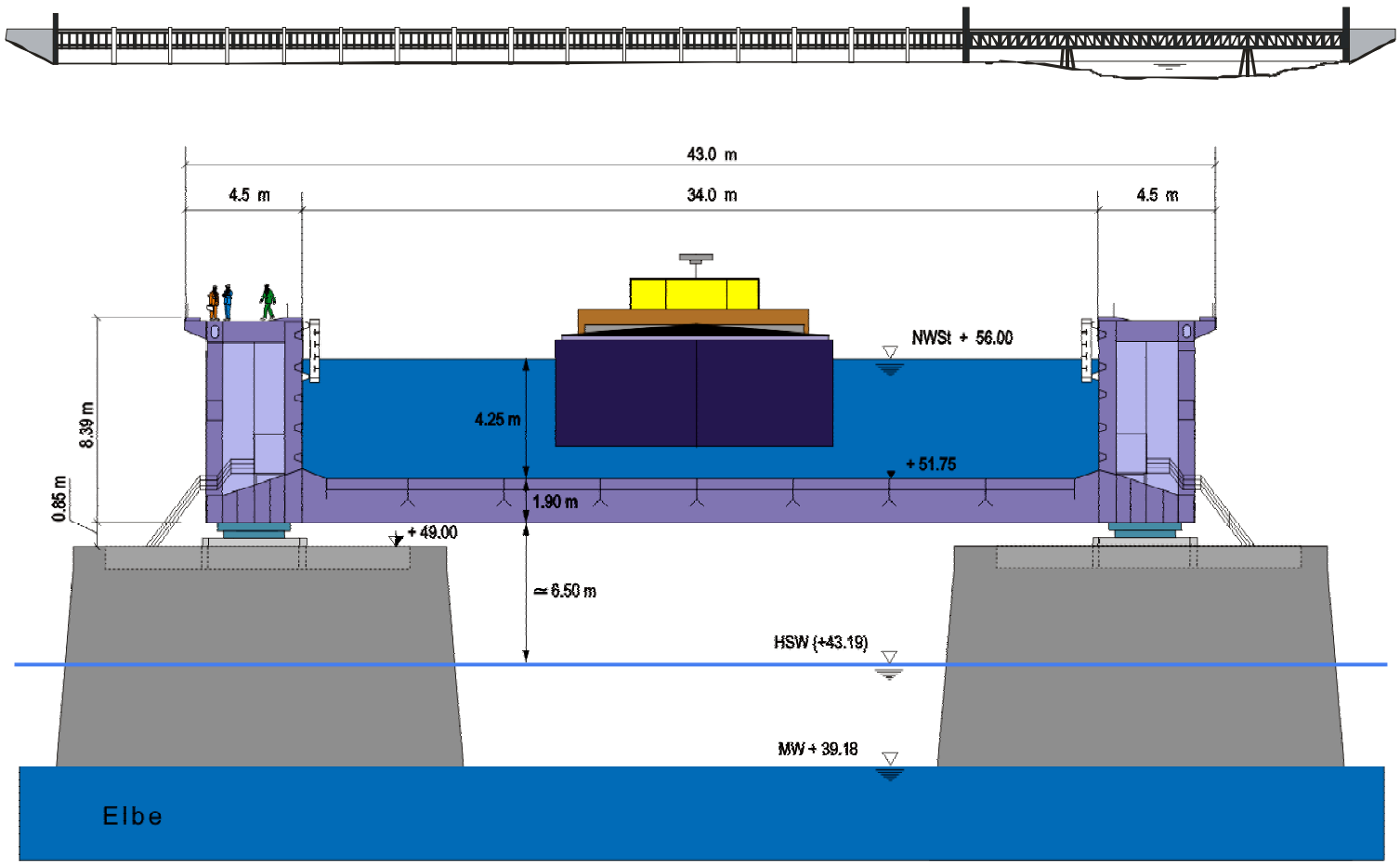
ice weight **(El)**

temperatures
- in horizonta direction (T_H)
- in vertikal direktion (T_V)

earthquake
- in transversed direction (Eb_Q)
- in longitudinal direction (Eb_L)

Aqueduct over the river Elbe

Cross section of the river bridge



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River bridge

Aqueduct over the river Elbe

Phases of moving the river bridge

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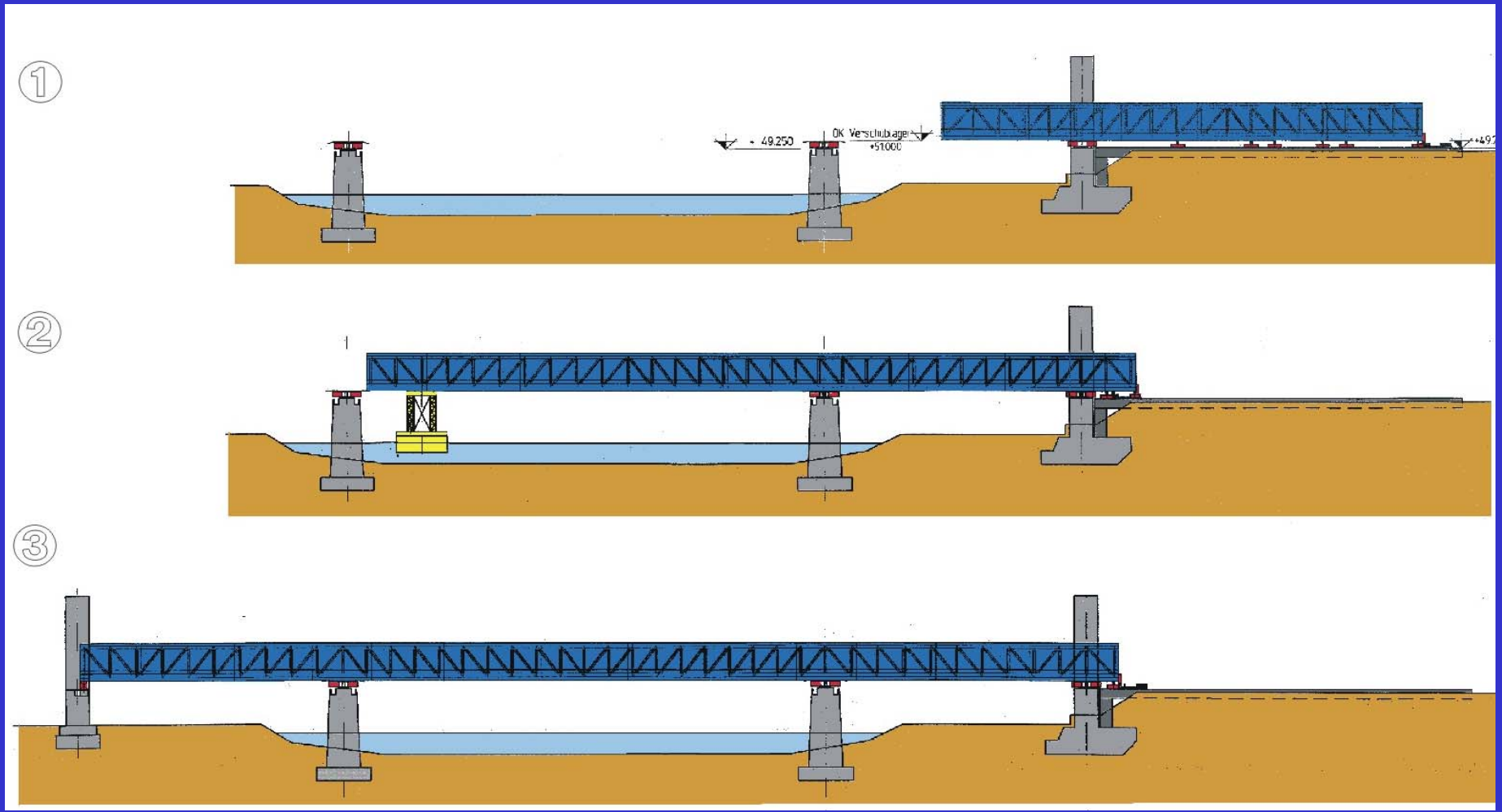

Aqueduct over the river Elbe

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Moving the river bridge across the Elbe

Fünffach Extensometer im Strompfeiler

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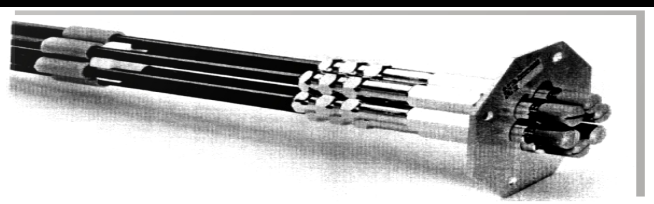
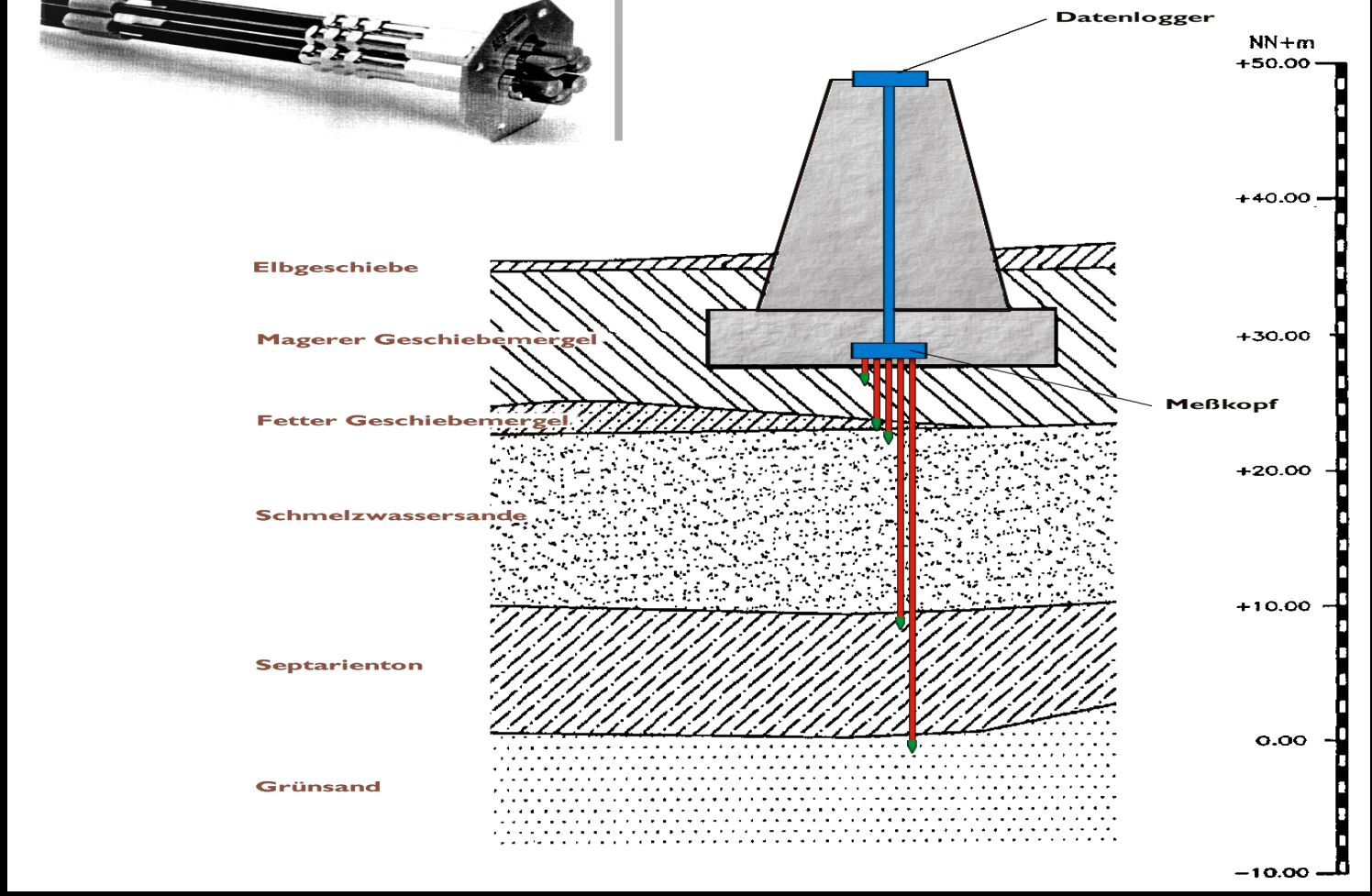
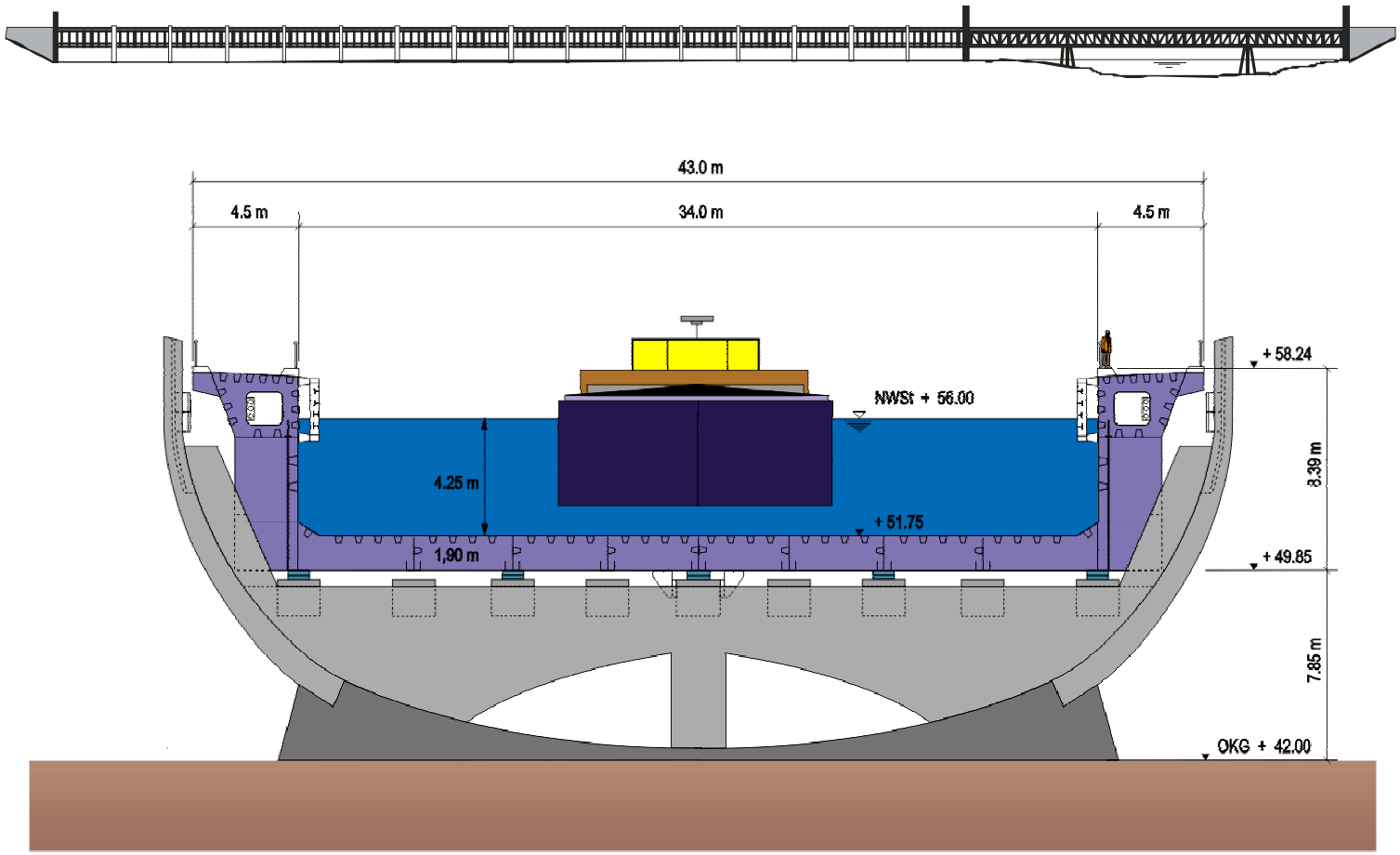




Aqueduct over the river Elbe

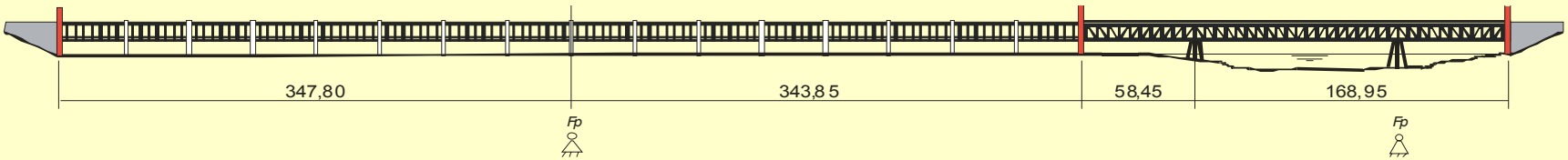
Cross section of the foreland bridge

WASSERSTRASSEN NEUBAUAMT MAGDEBURG



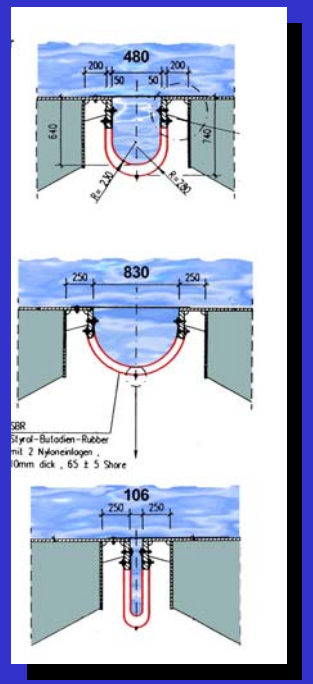
Aqueduct over the river Elbe

Expansion joints



more than 70 cm difference
at the linking point
foreland - riverbridge!

(in total ~ 1.5 m)

+ 10 °C		480 mm
- 40 °C		830 mm
+ 75 °C		106 mm

Aqueduct over the river Elbe

Piers of the foreland bridge

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Kanalbrücke über die Elbe

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Gründung

1200 Ortbetonrammpfähle

Kanalbrücke über die Elbe

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Baugruben Strompfeiler

Watercolour painting

Aqueduct over the river Elbe

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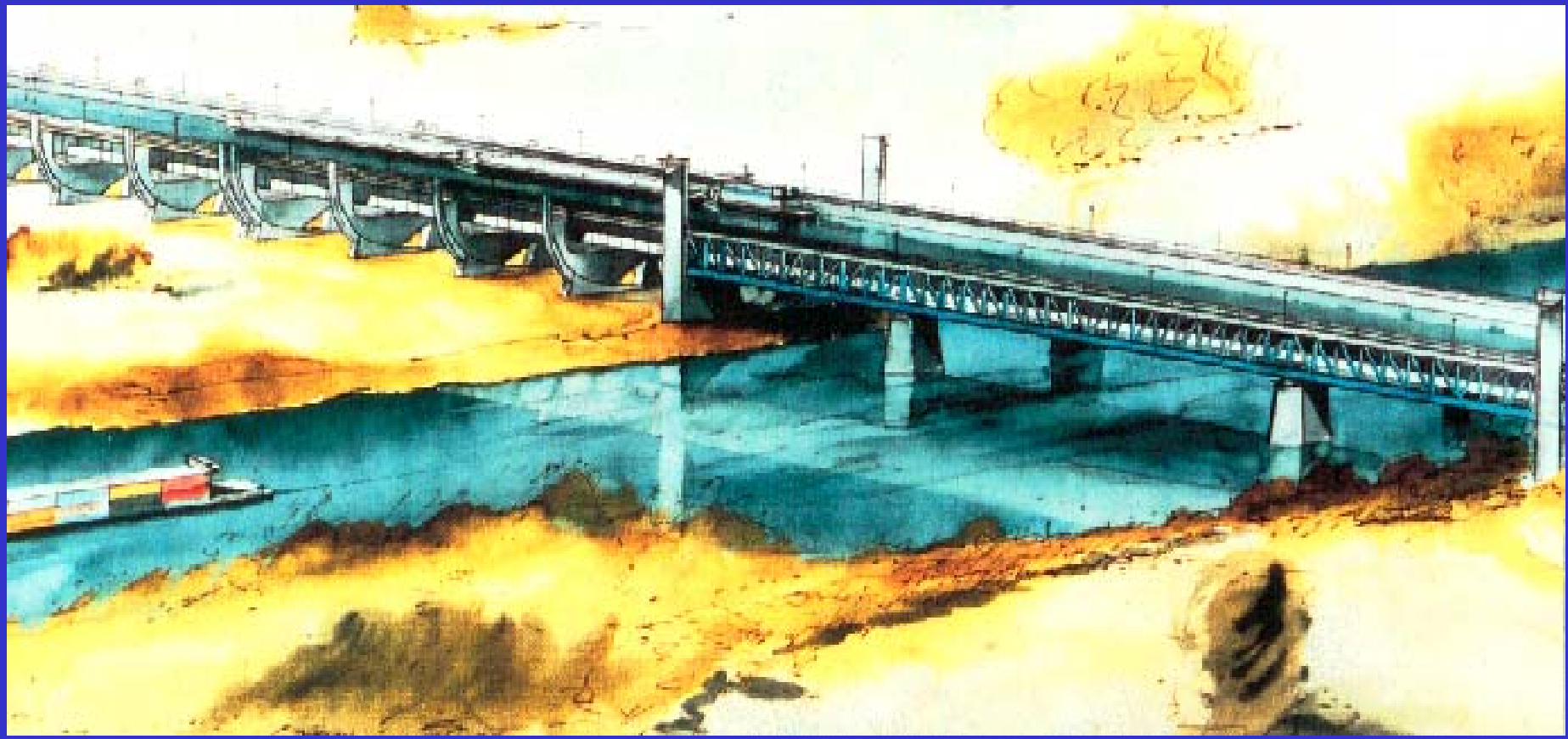

Bearing of the river bridge

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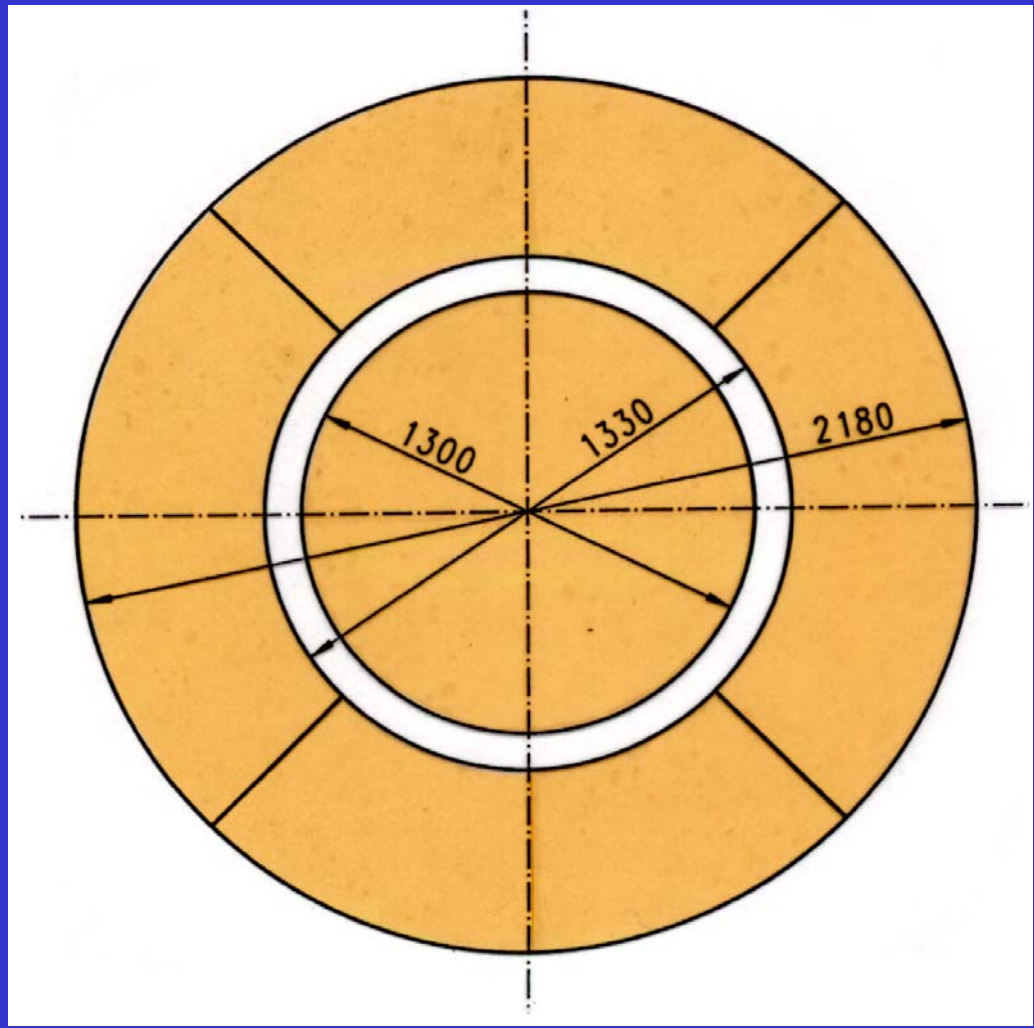

[mm]

Construction of a river bridge bearing

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Construction site double lock Hohenwarthe

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Double lock Hohenwarthe (model)

Sparschleuse Rothensee

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Sparschleuse Rothensee

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Revisionsverschluss im OW

Untertor

Sparschleuse Rothensee

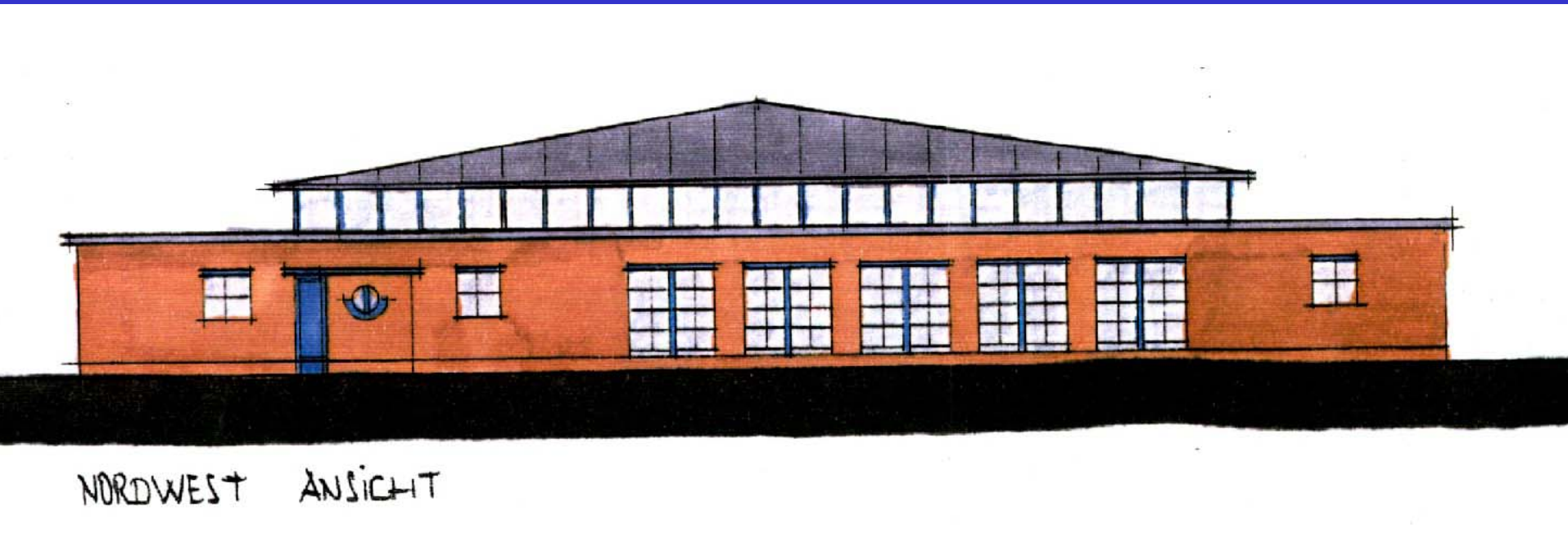
WASSERSTRASSEN NEUBAUAMT MAGDEBURG

Anschluß der Schleuse an den Mittellandkanal im Frühjahr 1999

Trockenlegung des Mittellandkanals

Informationszentrum

WASSERSTRASSEN NEUBAUAMT MAGDEBURG



Wasserstraßenkreuz Magdeburg

Landschaftsplegerischer Begleitplan

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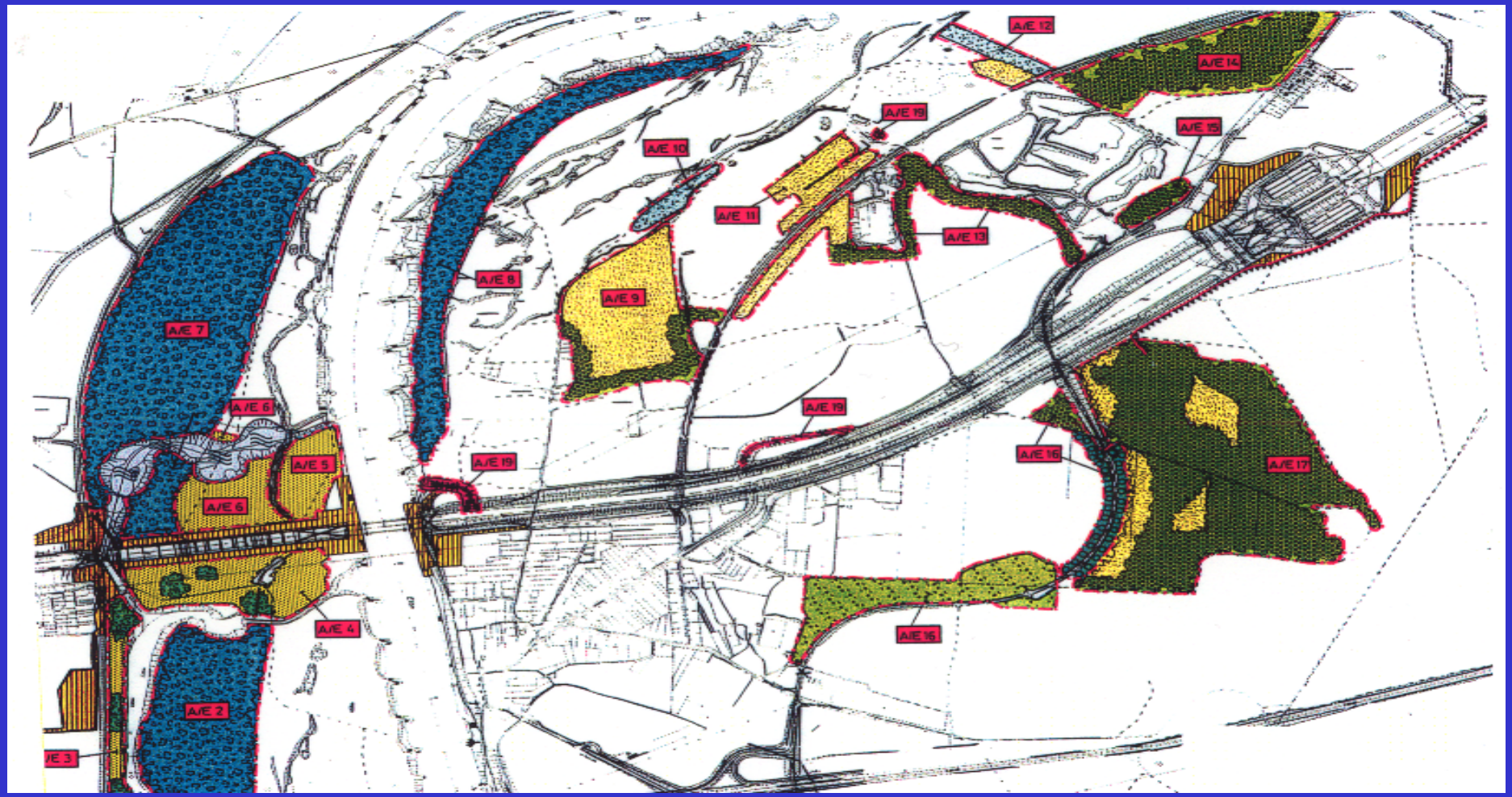

Anbindung der Magdeburger Häfen

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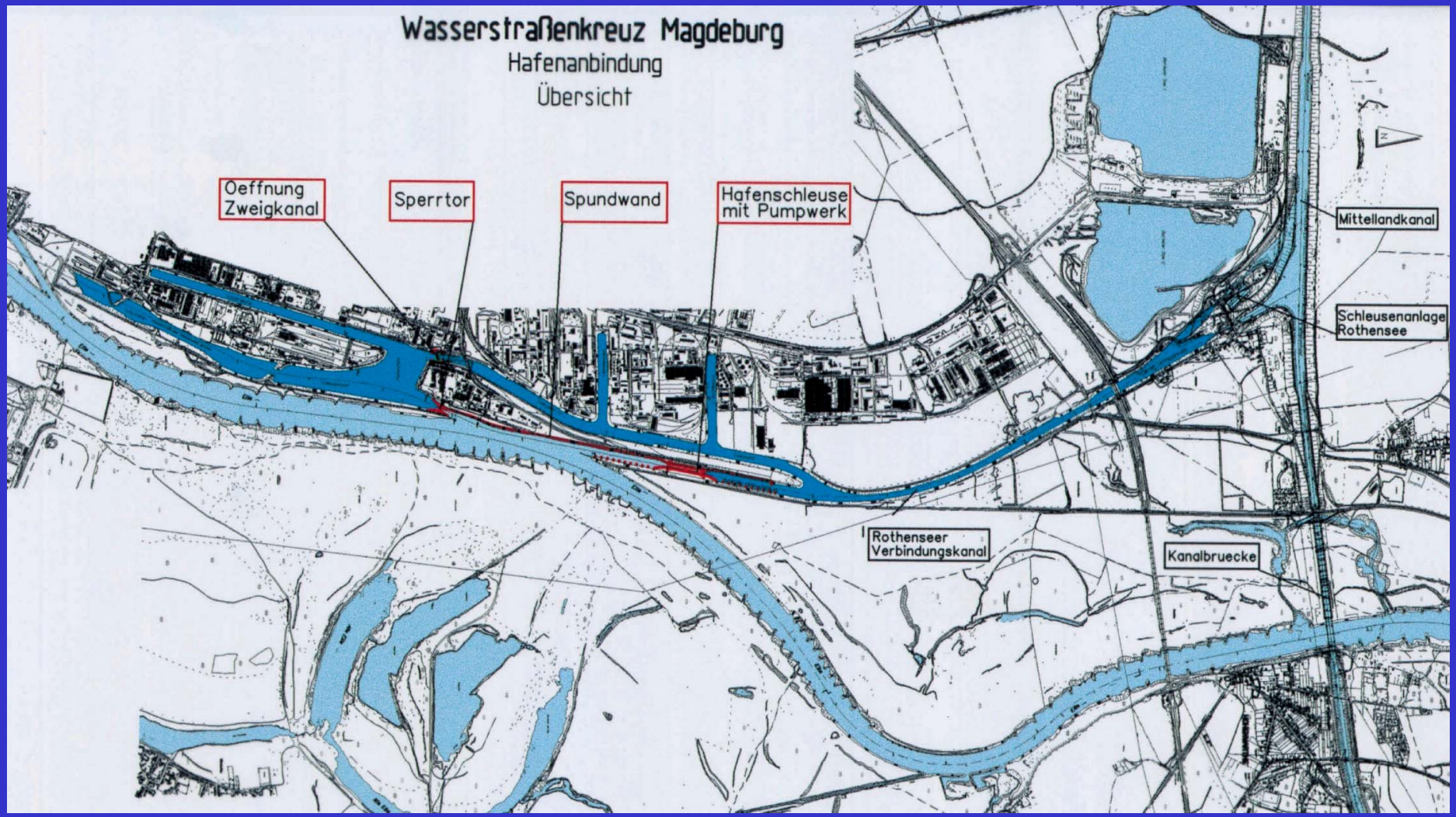

Anbindung der Magdeburger Häfen

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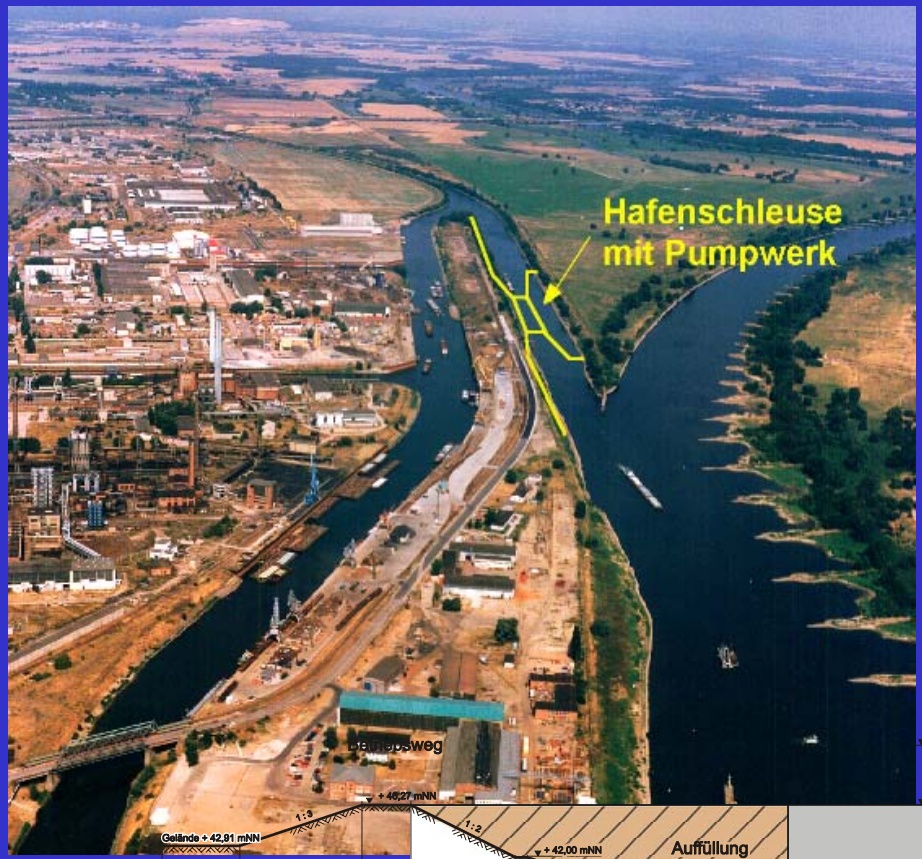
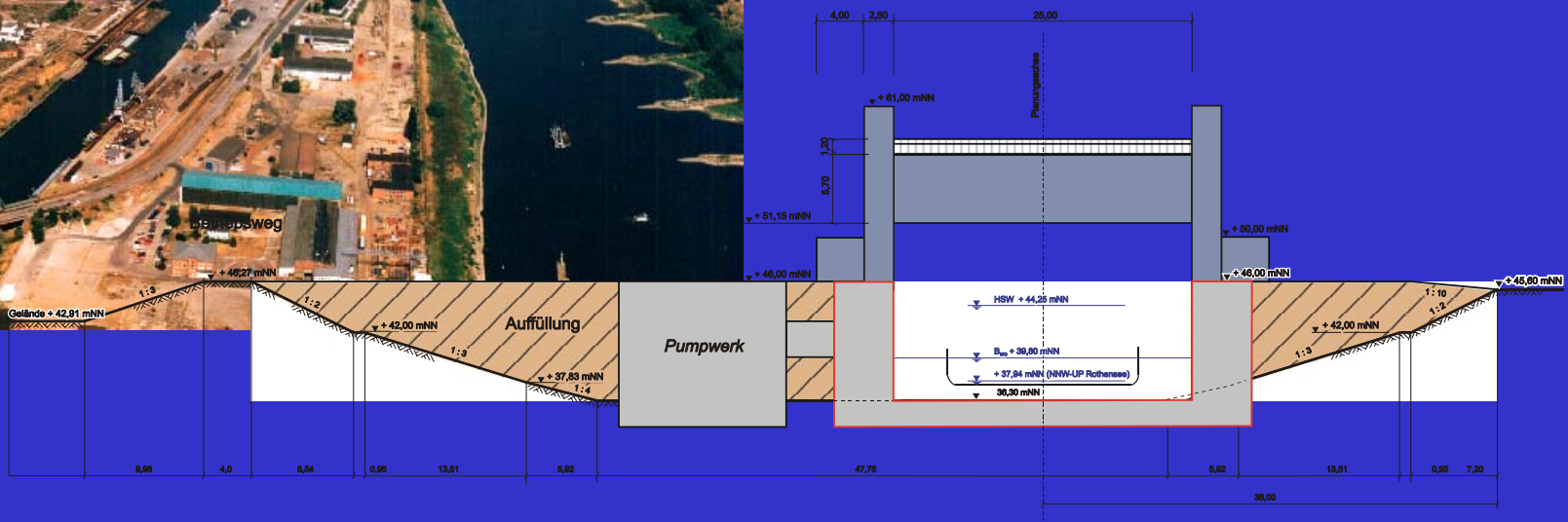
Hafenschleuse





Elbe - Havel - Kanal (EHK)

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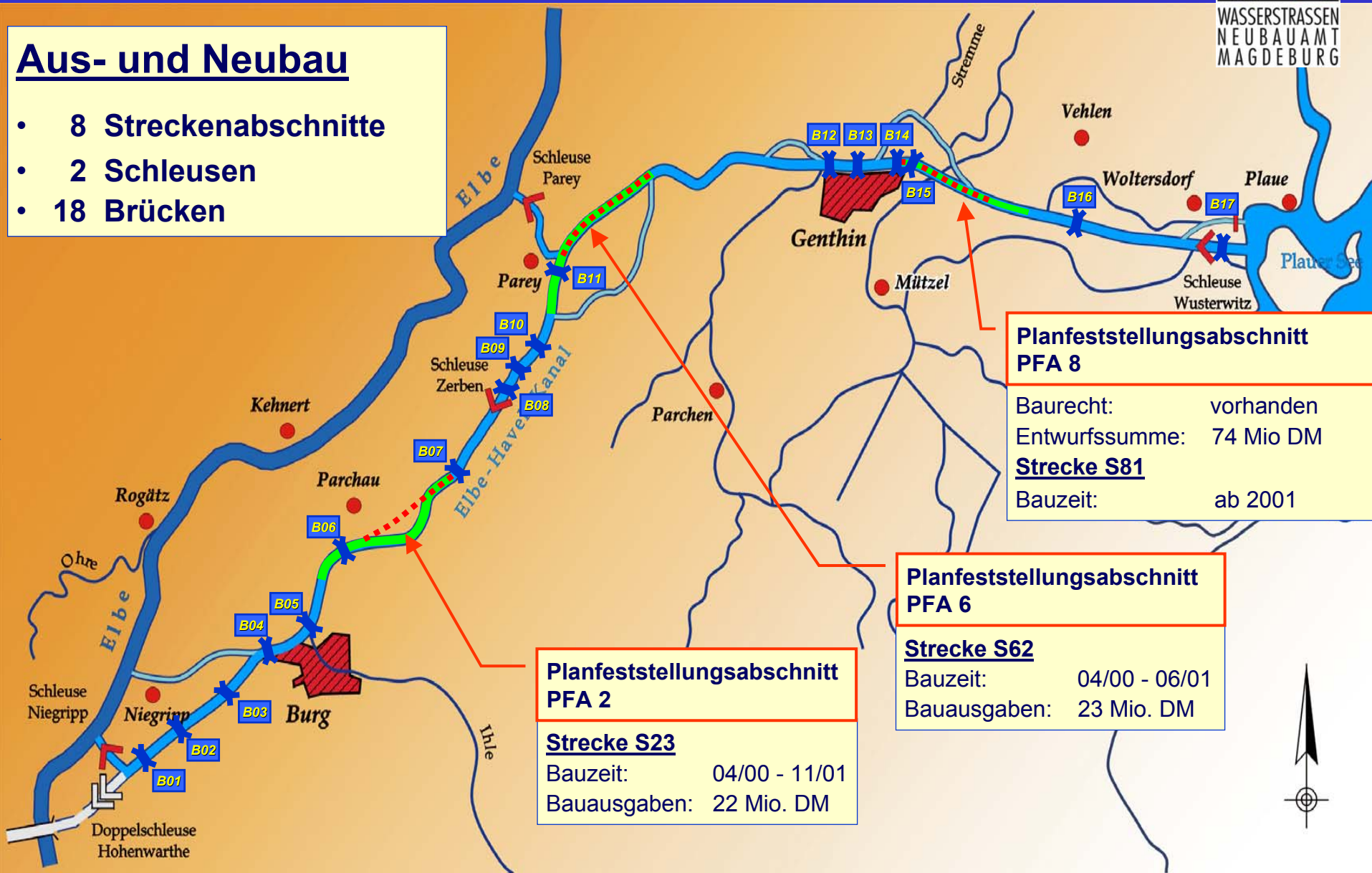
Aus- und Neubau

- 8 Streckenabschnitte
- 2 Schleusen
- 18 Brücken



Planfeststellungsabschnitt PFA 8

Baurecht: vorhanden
Entwurfssumme: 74 Mio DM

Strecke S81

Bauzeit: ab 2001

Planfeststellungsabschnitt PFA 6

Strecke S62

Bauzeit: 04/00 - 06/01
Bauausgaben: 23 Mio. DM

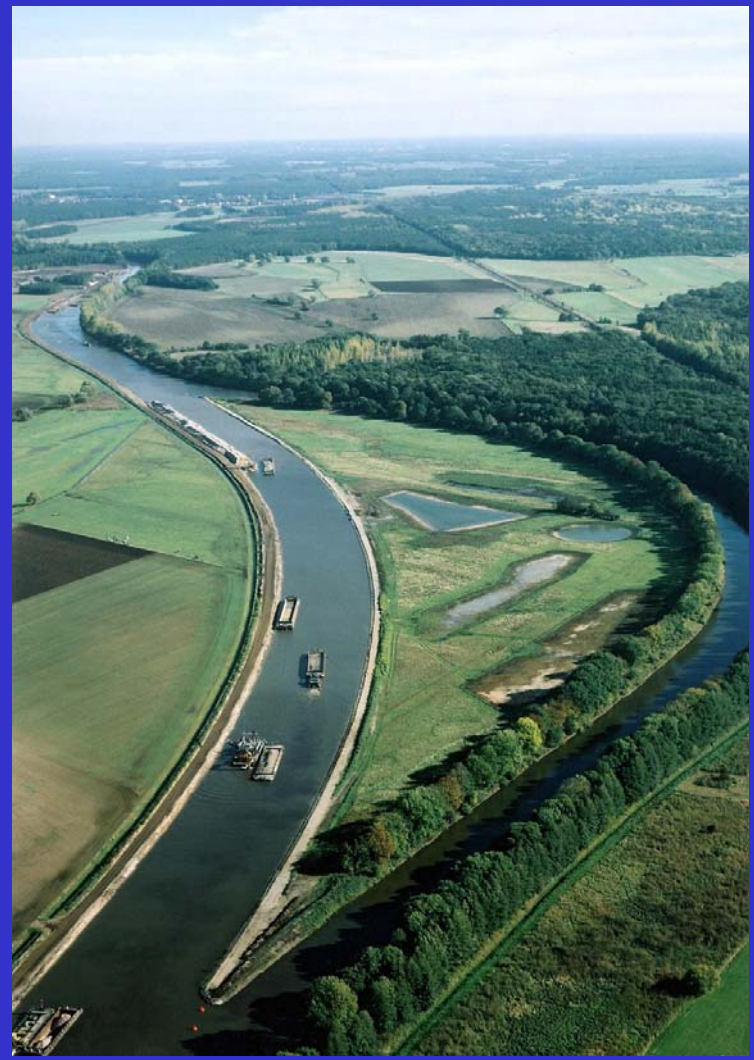
Planfeststellungsabschnitt PFA 2

Strecke S23

Bauzeit: 04/00 - 11/01
Bauausgaben: 22 Mio. DM

EHK Planfeststellungsabschnitt 2

WASSERSTRASSEN NEUBAUAMT MAGDEBURG



Tag der offenen Baustelle

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MAGDEBURG

Differences in the thickness of the layer of clay

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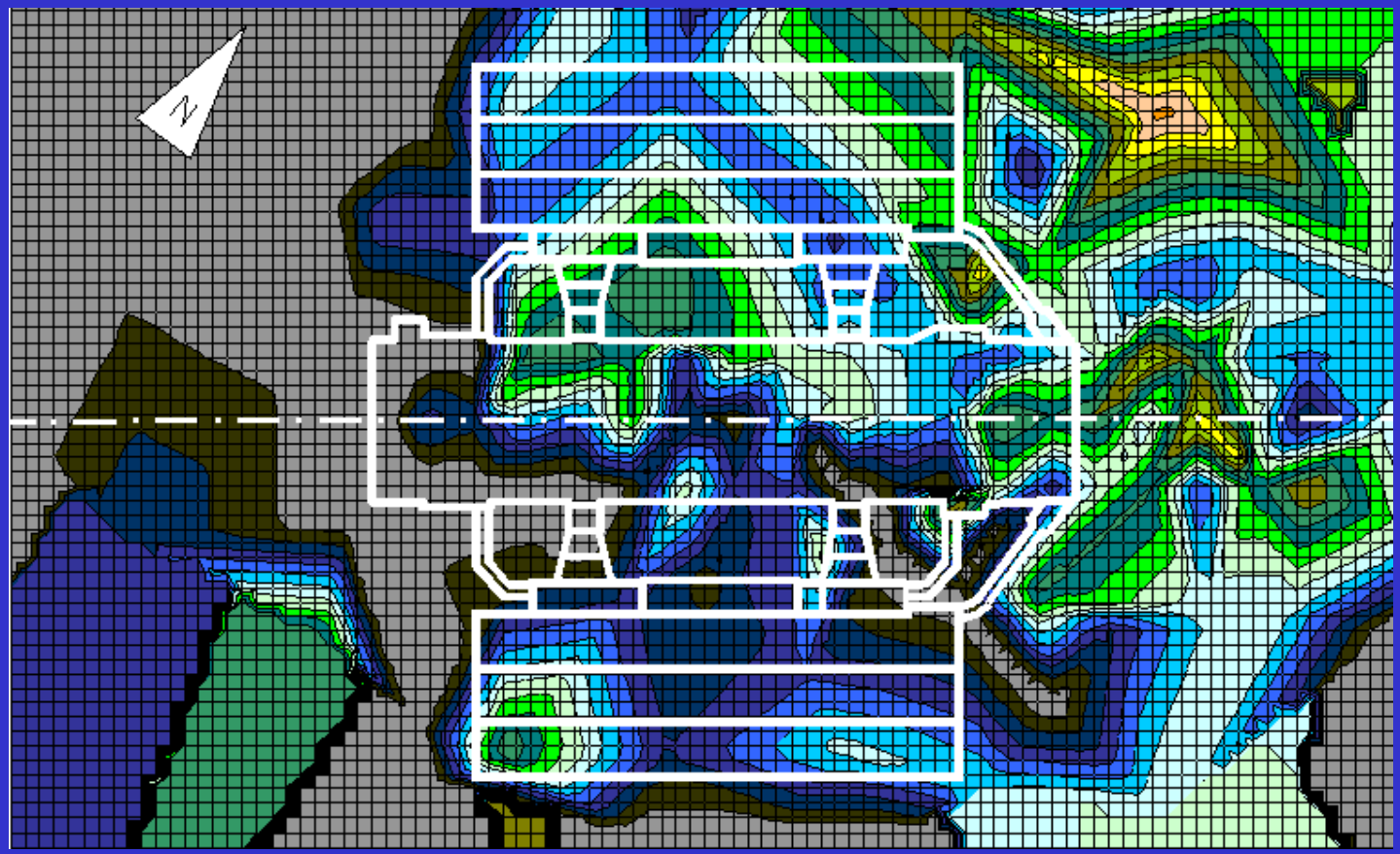

Differences in the sinking of the construction reproduced in the ground plan

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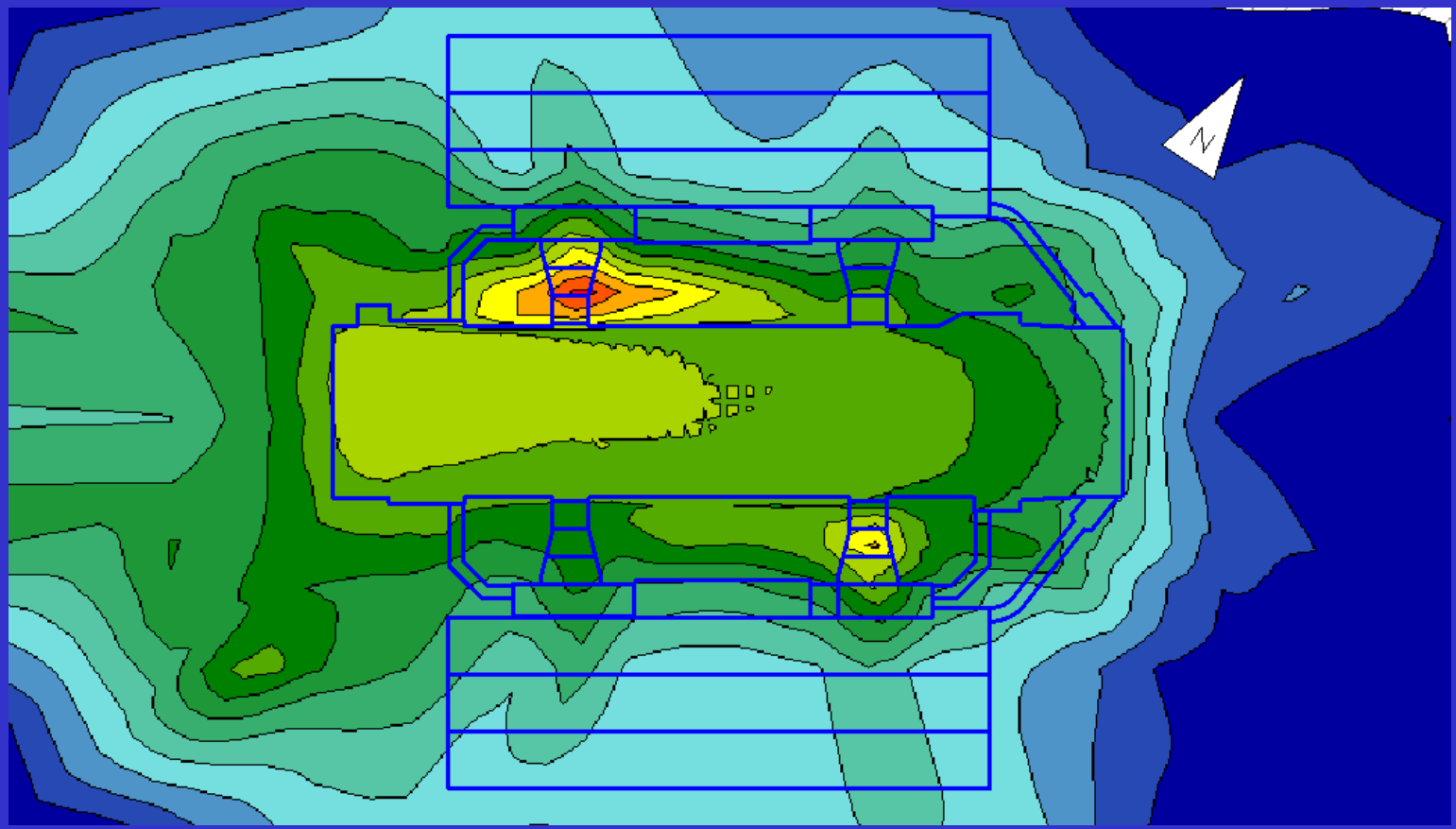

Double lock Hohenwarthe

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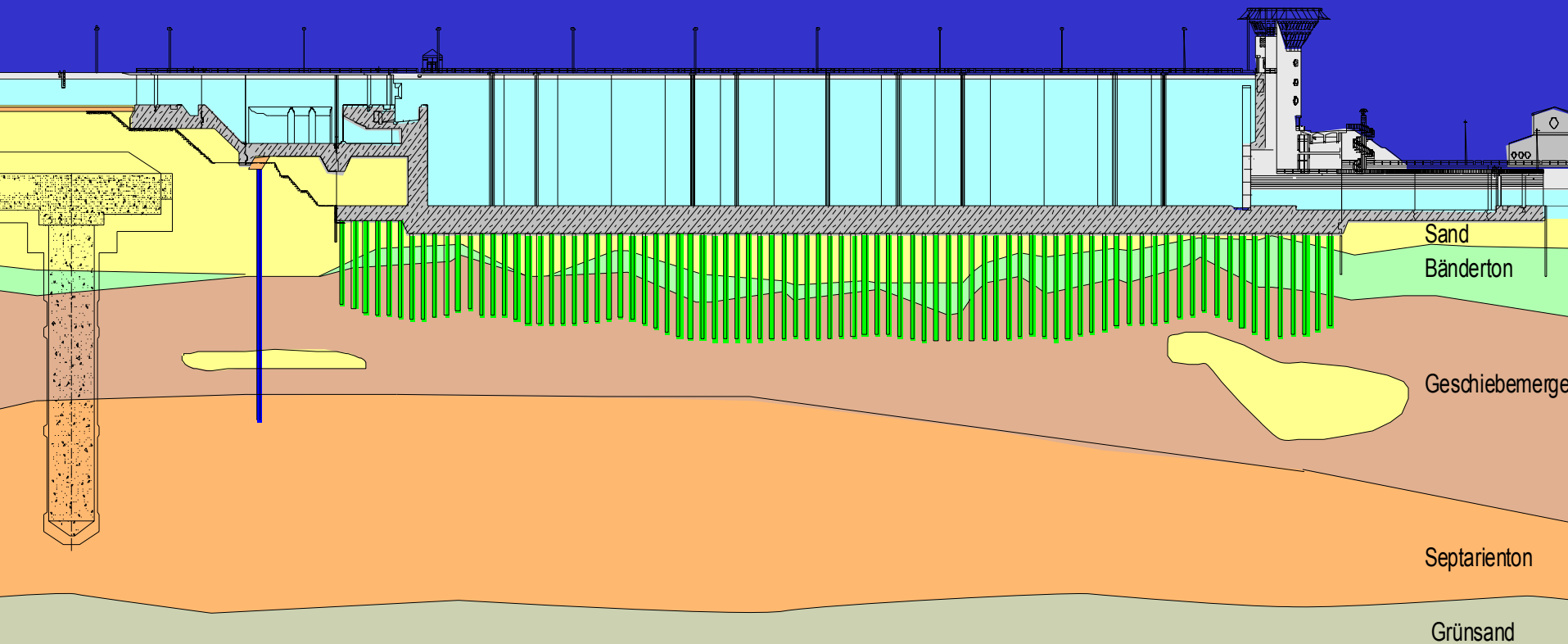
Longitudinal section



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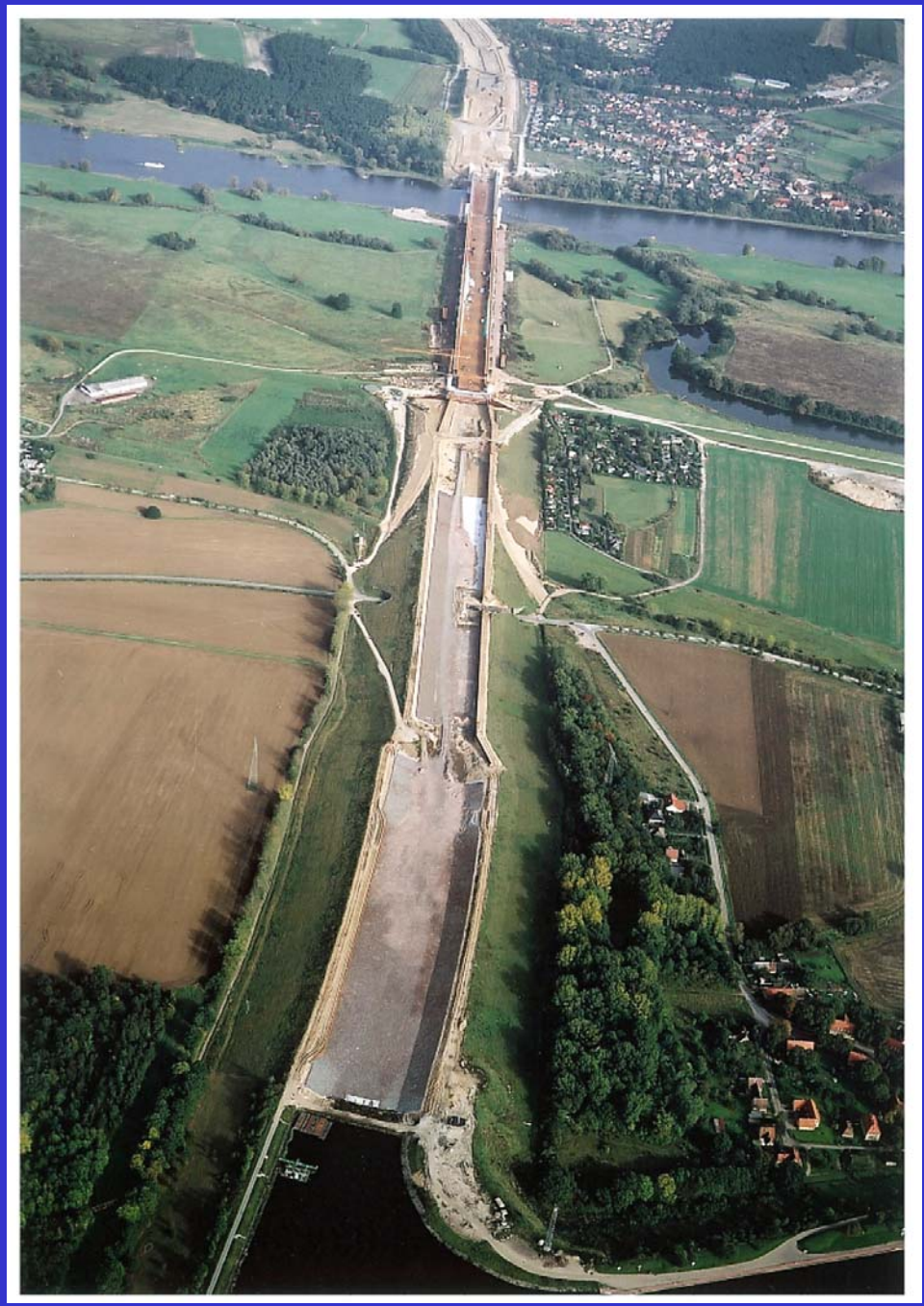
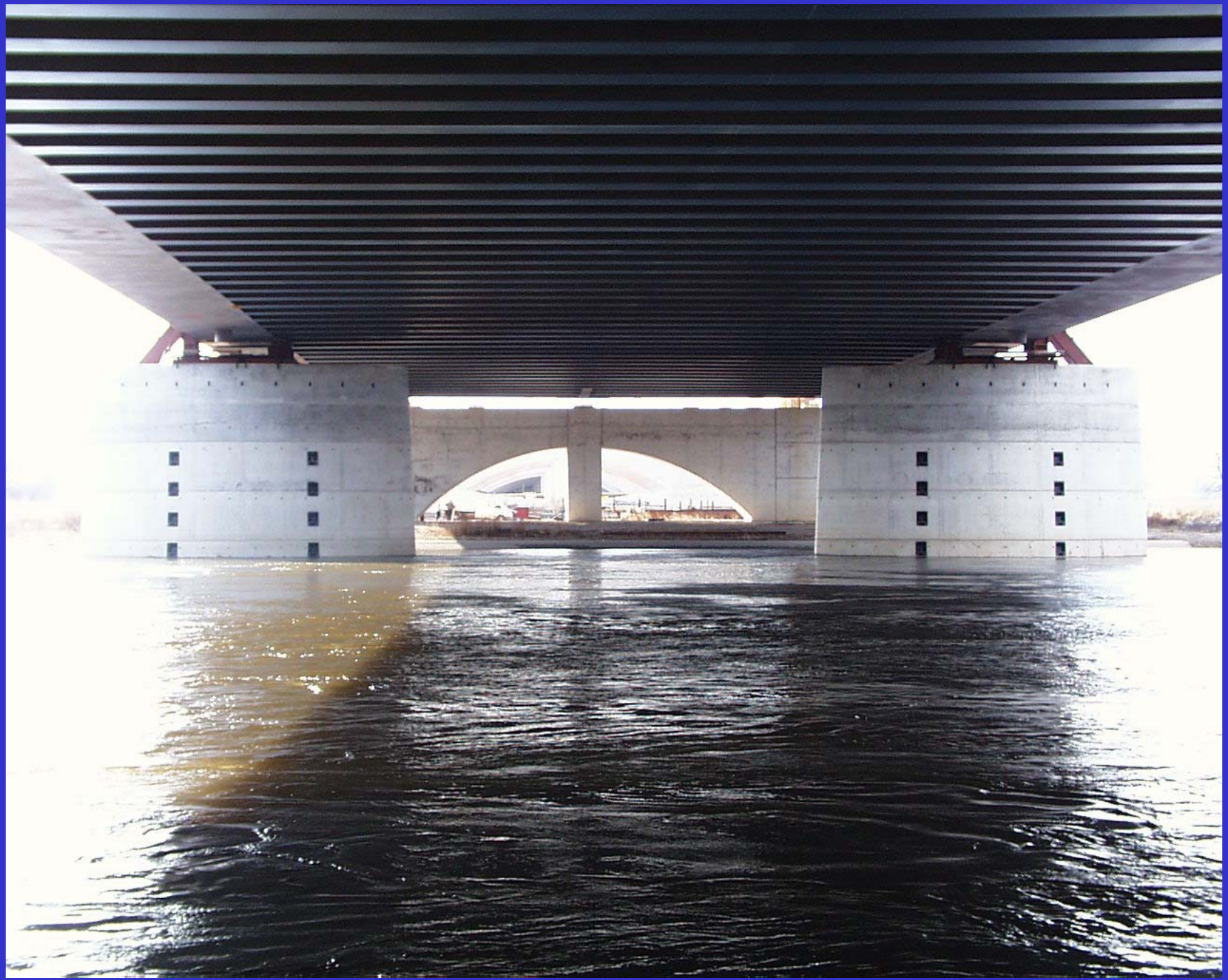
Thank you for your attention !



DSD
DILLINGER STAHLBAU GMBH
WASSERSTRASSEN
NEUBAUAMT
MAGDEBURG
TEL. 0391 / 535 - 0
MD CM 711